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The Act on the Magyar Nemzeti Bank lays down the basic tasks of the central bank, which include promoting the stability of the financial system. To maintain and promote financial stability it is essential that the parties involved have access to a wide range of information on the financial system as a whole, its overall framework and the narrower and broader conditions for its operation. To this end, and in accordance with the practice of other central banks, Magyar Nemzeti Bank publishes this semi-annual 'Report on Financial Stability' in order to inform the professional public regarding the state of the country's financial system and the MNB's judgement of its stability in the light of domestic and international developments.

In the Report, the Bank seeks to publish the latest statistics, based on internationally applied methods, describing the state and robustness of the financial system in a manner that enables comparison whenever possible. Furthermore, the Bank intends to provide a comprehensive analysis of the situation of the sectors participating in financial intermediation or exerting any influence over its stability, as well as of macroeconomic developments. In view of the fact that as a small open country, Hungary is closely integrated into the international flows of goods and capital, the Report gives separate coverage of those global cyclical and monetary developments that seem to bear relevance for financial stability.

Monetary Council's Assessment of financial stability

At its meeting on 2 December 2002, the Monetary Council discussed and approved for publication the *Report on Financial Stability.* In addition to focusing on the analyses of macroeconomic environment and financial system stability, the *Report* addresses two issues in detail – the sustainability of current account deficits, and the expected future developments in the Hungarian housing market and housing finance. The major findings of the *Report* are summarised below.

Uncertainty, slow growth and high risk premia characterise international economy and capital markets. Fast improvement cannot be expected.

Since publication of the May *Report*, the conviction has strengthened that a global economic recovery can only be expected in 2003. The Member States of the Economic and Monetary Union (EMU), Hungary's most important trading partners, also anticipate slow growth in the months ahead. This sets limits to the growth prospects of the domestic economy. Investors' appetite for risk is low and risk premia are high in global financial markets, due to the current economic slowdown, the risks carried by some emerging countries and faltering investor confidence in listed companies. As a result of the developments observed in the real economy and financial markets, the risk perception of developed-country financial sectors, particularly of those of European countries, has deteriorated somewhat.

Hungary's risk perception has been shaped by a combination of rising domestic imbalances and expectations related to European convergence.

Amidst these unfavourable external events, the risk perception of the Hungarian economy has recently been influenced by contrasting developments. The pick-up in domestic demand, fuelled by rapid wage growth and fiscal loosening, represents a source of risk to macroeconomic stability and slows down disinflation. Standard and Poor's downgrade of Hungary's domestic sovereign debt was also evidence of the shift in risk perception. However, events which increased the likelihood of a near-term accession to the European Union and fast convergence required to obtain early EMU membership have been ameliorating the effects of adverse developments since mid-summer. These positive developments include the announcement of the Government's Medium-term Economic Policy Programme as well as decisions taken on the accession timetable and the conditions of joining the EU. Moody's improvement of Hungary's foreign currency-denominated sovereign debt rating has boosted confidence. Investors have attached greater importance to the positive factors, which is reflected in the decline in risk premium and appreciation of the exchange rate.

The current account deficit is sustainable over the medium term.

Households' declining propensity to save and the increasing public sector borrowing requirement have resulted in a rise in the current account deficit. With a pick-up in economic activity, the corporate sector's borrowing requirement is likely to increase as well. If the public sector borrowing requirement is reduced, consistent with the Medium-term Economic Policy Programme, the current account deficit may stabilise around the current 5% in the coming

years. With GDP growing by 4% on average, a current account deficit of around 5%–6% is seen as sustainable over the medium term. Moreover, the European convergence process raises the sustainable level of current account deficit, as it allows faster growth and reduces the amount of interest to be paid on existing debt.

The most important preconditions for preserving a stable economic environment are implementation of the nominal convergence programme...

Currently, a potential turnaround in expectations related to Hungary's entry into EMU is considered to be the most important risk factor. Exuberant optimism of participants playing on convergence may result in a growing wedge between low interest rates, sustained appreciation of the currency and economic fundamentals. Euphoria easily turning into scepticism may lead to significant exchange rate and interest rate corrections, thereby forcing both domestic agents and the authorities responsible for conducting economic policy to make costly adjustments.

Given that the current favourable risk assessments are shaped primarily by expectations of accession to EMU, it is particularly important to meet the inflation and fiscal policy criteria of accession at the envisaged pace.

...and wage growth consistent with productivity.

The slow adjustment of private sector wage growth fuels real appreciation of the forint, exposing corporate sector financial stability to risk. Corporate sector profitability can only be prevented from deteriorating further by negotiating a wage deal that is consistent with the disinflation path and gains in productivity.

Position of the banking sector continues to be stable.

Stable performance and profitability continued to characterise the performance of the Hungarian banking sector in 2002 H1. With the slowdown in economic activity, growth in bank lending to the corporate sector remained modest relative to the pre-2001 period. By contrast, outstanding household debt has continued to grow robustly, owing to a shift in banks' attention toward the household sector, extension of the subsidised housing finance scheme and spectacular improvement in households' income position.

Enterprise sector indebtedness does not carry major risks,…

The income position of the enterprise sector changed little in H1; however, the decline in commercial property prices reduced the value of its assets. Despite the rapid increase in leverage in recent years, the level of enterprise sector indebtedness is still not a cause for concern, given the strong role of equity within financing. Although companies' demand for credit fell, banks stepped up lending in excess of the increase in balance sheet total by rearranging their balance sheets. This indicates their strong commitment toward the sector. Lending to medium-sized companies and micro firms grew well above the average.

…but the slowdown in economic activity may add to credit

In the future, the protracted economic slowdown and the massive cyclical deterioration in manufacturing sector profitability, coupled with strong speculative pressures evident in the property sector and diminishing natural cover, may be an increasing source

risks. of risk.

Households' income and indebtedness both increased… Real income of the household sector rose robustly in 2002 H1. Growth in consumption was vigorous. Investment spending rose as a result of the extension of the system of subsidised housing, with the consequence that the savings rate fell. Non-bank financial savings continued to gain ground as well. The sector's indebtedness and the interest burden increased, but remained below values typical of developed countries.

…and borrowing with high risk spreads continued. Increasingly dynamic growth in household lending, seen over the past few years, continued in 2002 H1. The banking sector's outstanding loans to households rose by 25 per cent in six months, due mainly to strong momentum in mortgage loans. The currently still unsaturated market enables banks to use fairly high risk spreads, which, except in the case of subsidised house loans, represents considerable excess costs for households. However, the lending expansion was not associated with an increase in property prices, which is seen as a positive sign in the context of the threat of possible property price bubbles.

Extraordinary increase in house loans The state housing subsidy scheme, introduced in 2001, helped interest rates on property loans fall to the level of euro interest rates. These low rates, in turn, were instrumental in lending increasing rapidly. As a medium-term consequence, an upsurge in dwelling prices should not be expected as an effect of falling interest rates when Hungary adopts the euro. It may expose stability to risks in the short term, if: (i) households' income expectations prove unfounded and they overestimate their ability to service debt due to the lack of adequate experience; and (ii) lending grows more rapidly than banks develop their risk management systems, which may result in a substantial increase in credit risk. Should the current high growth rate of long-term loans remain, it may also expose the banking sector to risks over the long term. Liquidity risk can only be reduced gradually, simultaneously with the increase in long-term funding as a result of headway by institutional investors and a reduction in market rates.

Banks' credit portfolio quality deteriorated. Banks' credit portfolio quality deteriorated in the period under review. Presumably because of profitability considerations, their practice of rating and provisioning was not adjusted to the current international and domestic economic outlook, and failed to take account of the robust increase in the proportion of more risky segments within total lending. In view of this, banks' current practices seem overly optimistic, particularly in respect of the corporate segment; however, this does not expose the financial intermediary system to risks.

Banks are not facing significant market risks, and are seen as having Exposures to both forint and foreign currency interest rate risks rose in 2002 H1. The increase in volatility of forint rates may justify a narrowing of open interest positions.

adequate liquidity.

Exchange rate volatility was lower and banks' propensity to take on risks higher in the review period relative to the previous year. But, in the aftermath of currency depreciation in the summer, banks' behaviour became more risk averse.

The rapid build-up of short-term loans to households and the more modest rise in customer deposits led to tighter bank liquidity; however, liquidity indicators have not yet shown evidence of excessive risks.

Banking sector profitability remains strong.

Although somewhat weaker relative to the all-time highs recorded a year earlier, the banking sector's profitability ratios indicate outstanding performance in 2002 H1. Significant one-off effects also contributed to the robust increase in banks' profits in the comparable period in 2001. This explains most of the slight deterioration in profitability in the review period. As a favourable development, though, the combined market share of loss-making banks fell considerably. In addition to a modest increase in interest income, there was a robust rise in commission and fee income, which resulted in a shift towards non-interest income within banks' income structure.

Lending by financial enterprises carries increasing risks

A very strong increase in activities carrying credit risks characterised financial enterprises' leasing and lending activities. The vast bulk of this was accounted for by bank-owned firms encouraged by the change to regulations. The Council considers it problematic that the possibility of an increase in risks at the consolidated level preceded the introduction of consolidated data reporting.

Stress tests show a reassuring picture of stability

The stress tests conducted to analyse the banking sector's exposure to market and credit risks indicate that the sector has good ability to tolerate stress. Potential unexpected high lending losses, i.e. lending shocks, may result in much higher losses for the sector than market shocks. However, potential losses caused by lending shocks also fell in the review period relative to the previous year.

I. Macroeconomic indicators, autumn 2002

I. 1 The global business cycle and international capital markets

The *external economic environment* is of crucial importance for Hungarian economic growth and macroeconomic stability via the channels of foreign trade and other international cooperation, balance of payments financing and capital inflows. As exports account for over one-half of Hungarian GDP, external activity has a considerable influence on the domestic economy. With over 70% of Hungarian exports directed to the euro area, the European business cycle has the most powerful direct impact on the domestic economy. Nevertheless, the experience of recent years suggests that European activity is determined by global economic activity, in particular economic activity in the US. In this way, the global economic environment sets limits, via the European economy, to Hungarian economic growth prospects.

The international environment also affects the Hungarian economy through the *financial channel.* As an emerging country with an open capital market and a permanent deficit on the current account of its balance of payments, Hungary relies heavily on the inflow of external funds. The conditions for the involvement of foreign capital, with particular regard to portfolio capital, are set on the international money and capital markets. As international financial developments are guided by US capital markets, it is important for Hungary to monitor developments on the global, and especially the American, money and capital markets. Share prices in the banking and financial sector in the European capital markets are important indicators of how the market feels about the stability of financial institutions which are also active in Hungary. Special attention should be paid to the situation of the European telecommunications sector, which has a powerful influence on a large segment of the domestic corporate sector.

International investors do not yet treat Hungary on a par with developed countries with regard to financial risk. Consequently, the extra yields required from Hungarian investment instruments are strongly affected by factors influencing investors' 'appetite' for risk. Evidence indicates that individual countries are often categorized into groups and taken under the same umbrella in terms of risk.

With accession to the European Union and the euro area quickly approaching, the exchange rate, the interest rates and inflation expectations appear to be highly sensitive to *news about accession prospects.* Market participants tend to have the same perception of accession countries, or certain groups of accession countries, such as Poland, the Czech Republic and Hungary, for example. News about the outlook for one country's accession is often regarded as reflecting the chances and ambitions of the entire group. As a result, Hungarian macroeconomic variables may be directly affected by the outlook for this more well-defined region and thus it is important to monitor developments in neighbouring countries as well.

The global business cycle

As the expected improvement in global macroeconomic conditions has failed to materialise in the period since the May Report, economic recovery is now not predicted to start sooner than next year.

Table I-1 Rates of global and regional economic growth (per cent)

	2000	2001	2002*	2003*
Global economy	4.7	2.2	2.8	3.7
Euro area	3.5	1.5	0.75**	2**
United States	3.8	0.3	2.2	2.6
Japan	2.4	-0.3	-0.5	1.1
Eastern and Central Europe	3.8	3.0	2.7	3.8
Latin America	4.0	0.6	-0.6	3.0

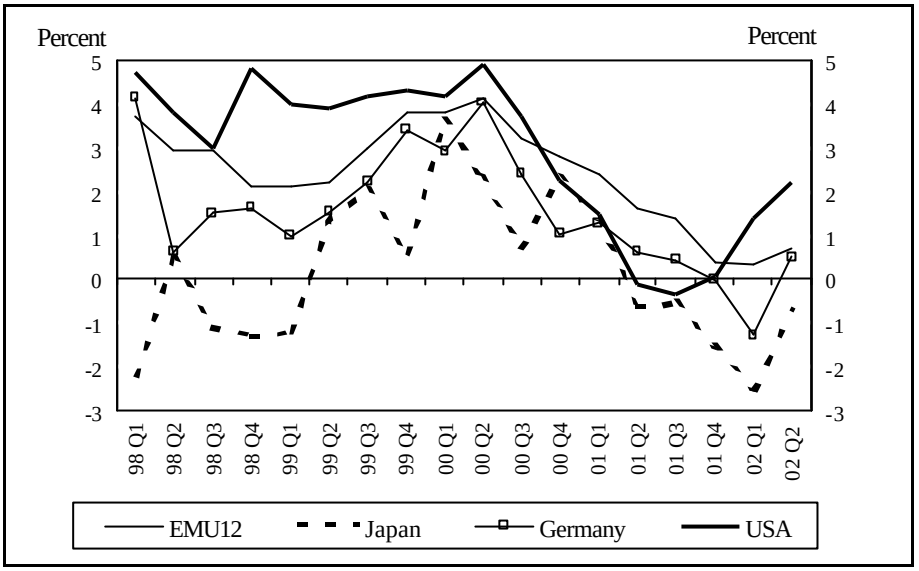
Source: IMF(2002): *World Economic Outlook*, September.
*Forecast Chart I-1

** Forecasts relating to the euro area were revised down at end-October.

In the summer, the various cyclical indicators painted a contradictory picture of the short-term prospects of the US and European economies. Although the US economy showed signs of a recovery (see Chart I-1), the opinion in late summer was that no upswing would come before 2003. In early 2000, the longest boom in American economic history was interrupted by a slump in demand for IT products and an ensuing plunge in the price of IT shares. At the time of the terrorist attacks on 11 September 2001, the American economy was already slowing down, with household financial wealth on the decline and the debt burden on the increase. Weak consumer demand also caused corporate investment to fall off, along with rising unemployment. After the collapse of ENRON in late 2001, US stock markets were shaken by a series of scandals, further eroding equity prices and household financial wealth.

Recovery was first expected for early 2002 and then the second half of 2002, but is not likely to come sooner than 2003. Consumer confidenceλ the driving force behind growth in the pastλ has declined, due primarily to the wealth effect of the plunge in stock market prices and accounting irregularities at large exchange-traded companies. Facing weaker consumer confidence, companies are not planning to expand capacities, which has caused business investment to lose momentum.

Chart I-1 Real GDP growth rates
(Annualised, seasonally adjusted values)



Source: Eurostat New Cronos

One of the key factors to blame for the slowdown of the Hungarian economy is the fact that *growth rate in the EMU-12 has dropped below 1 %*, due to the overall slowdown in the global business cycle. Even though the adoption of the euro has created a large closed unit of economies, the euro area continues to depend to a great extent on the state of the US and the world economy. Euro-area performance is primarily hampered by the ailing German economy, the former engine of the Union. Germany had been highly successful thanks to a strategy based primarily on exporting capital goods, as well as a fortuitous combination of rapid growth and macroeconomic stability. The German economy has been severely hit by the slump in the export markets (just as by the Russian and Asian crises previously). In addition, due to certain internal factors, the conditions for flexible adjustment have also been lacking. The anomalies associated with US companies also appeared in the European corporate sector as early as 2002 in the form of similar accounting irregularities, a heavily indebted corporate sector and shaken confidence. Hence, business expectations grew more pessimistic in Europe as well over the summer.

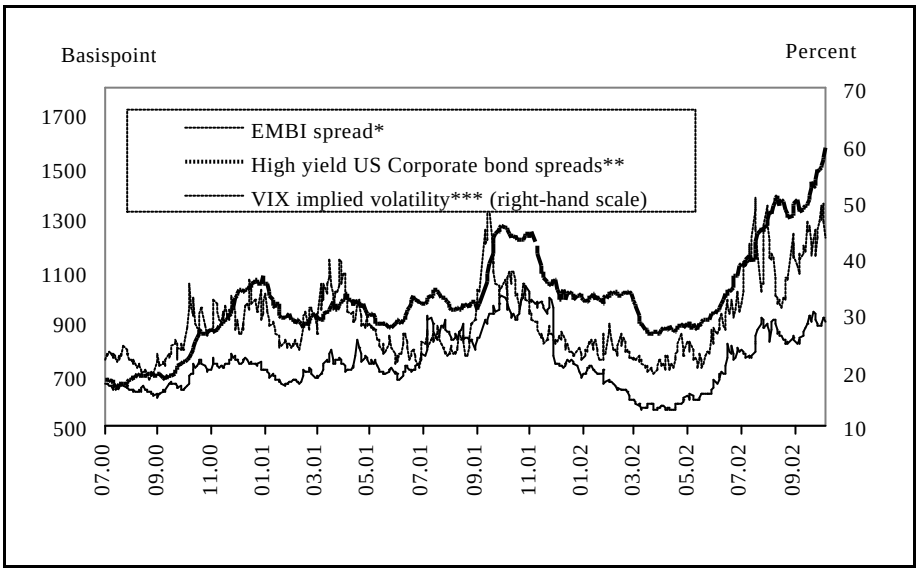
In light of the above cyclical developments, it is hardly a surprise that in October 2002 market participants both in the US and EMU expected their respective central banks to reduce interest rates before the year-end. Indeed, the Fed made a surprisingly large cut of 0.5% on 6 November, and expressed the view that no further cuts were needed. The main factor behind the decision was a combination of dwindling consumer and business confidence, and rising unemployment. Another contributory factor may have been the uncertainty surrounding a possible war with Iraq. In contrast, the ECB's decision is influenced by a different difficulty, namely that inflation continues to hover near and above the upper limit (2%), and some key EMU participants are running budget deficits approaching the 3% threshold. While the weakening growth prospects and the considerable strengthening of the euro (from 0.92 cents to USD 1.0, i.e. near parity) since May serve to reign in inflation expectations, uncertainty about oil prices due to the possible war against Iraq may be exerting upward pressure. Consequently, the ECB decided not to follow the Fed's lead in early November. Nevertheless, as was explained at the press conference

following the decision the ECB had indeed seriously considered an interest rate cut, due to the worsening outlook for growth. Market participants continue to expect a reduction in rates before the end of 2002.

Global financial markets

As financial markets become increasingly risk averse, there is upward pressure on the yields on riskier securities. This stronger risk aversion is due to the uncertainty about global economic conditions and prospects, in particular the economic *slowdown in developed countries*, the increase in financial risks incurred by *Latin American* countries, such as Argentina, Brazil, Uruguay, and continuing worries about the financial situation of US firms. This is also reflected in the sharp rise in global risk indicators, which are back to the levels seen at the time of the terrorist attacks in September 2001 (see Chart I-2). Developed country investors have increased in their portfolios the ratio of less risky instruments to high-risk investments, such as equities. This phenomenon has been especially spectacular in the euro area, where M3 has grown at a roughly 7% rate compared with a "reference" value of 4.5%, due to this portfolio reallocation.[1] Nevertheless, despite stronger risk aversion, the amount of capital inflows into emerging countries with good credit ratings has remained virtually unchanged. Despite an increase in risk premia, the simultaneous drop in yields on long-term US and euro-area government securities caused lending rates to fall.[2]

Chart I-2 Global risk indicators



***** The EMBI fell, as the share of certain heavily indebted Latin American countries was reduced in early 2002. As, however, market participants also viewed the switch as a signal, the fall was not due solely to the new weights, but also reflected a genuine drop in the index.
** High-risk US corporate bond spreads (S&P U.S. Industrial Speculative Grade Credit Index).
*** Implied volatility derived from options for S&P100-index (VIX) (right-hand scale).

[1] European Central Bank: *Monthly Bulletin*, October 2002, p 9, http://www.ecb.int

[2] Bank for International Settlements (2002): *International banking and financial market developments*, *Quarterly Review*, September, p 9.

Indicative of growing uncertainty, there has been a significant increase in the risk posed by developed country financial sectors, in particular banks and insurers. Undoubtedly, the drop *in the price of bank and insurance company equities has contributed a great deal to the downturn in stock market indices*. Nevertheless, this poses no immediate risk to global financial stability. However, further delay in the start of a recovery could definitely push up the risk to stability. Another source of near-term global risk may be a loss of investor confidence, due to lingering corporate management problems in the US and shaken financial sector stability in Europe in the wake of blows suffered by one or two prominent participants, a sudden reversal of capital flows directed into the US and uncertainties about a number of important developing markets.[3]

The outlook for this region

There have been opposing developments in the period since the previous report. Giving ten countries the green light in October for accession from 2004 had positive reverberations, helping to stabilise the exchange rate of the forint and inflation expectations. On the other hand, a number of accession countries have substantially increased their budget deficits, which led to Standard and Poor's downgrade of government debt issued in the national currencies by Poland, the Czech Republic and Hungary. Fitch IBCA is contemplating a similar move with regard to Hungarian government securities, in response to deteriorating fiscal and external balances. This is offset, to a certain extent, by Moody's announcement that it will upgrade the foreign exchange government debt of eight accession countries. Accordingly, Hungary has received an A1 rating, together with the Czech Republic and Estonia, which corresponds to the government debt rating of Greece, which was upgraded to A1 a couple of months ago. On the whole, since May expectations reflecting the external and domestic perception of Hungary's macroeconomic situation have been conducive to macroeconomic stability.

I. 2 Domestic financial markets

The global weakening in risk appetite has also fed through to Hungarian markets, although to a lesser extent than elsewhere or than could be expected based on previous experience. Most of this impact was felt in the period between May and August, while in the subsequent period news about the outlook for accession and domestic macroeconomic conditions dominated the scene. All in all, FDI fell only marginally, while stock market investments have seen an outflow of EUR 88 million. Only the government securities market received considerable inflows of portfolio capital, with Hungarian securities viewed as the most convenient instruments for the convergence game. This is because although we are one of the favourites for rapid accession, Hungarian interest rates contain the highest premium.

Government securities may grow even more attractive due to low US interest rates, as portfolio investors will probably try to improve low yields by investing in higher-

[3] International Monetary Fund: *Global Financial Stability Report*, September 2002, p 5-6, http://www.imf.org

yielding risk-free European bonds in addition to higher-risk but high-yield securities, including Hungarian government securities.

Portfolio investments carry the risk that the direction of investment flows may change at short notice, which may impose an adjustment burden on the exchange rate and the banking system. This might happen if investors participating in the convergence game expect that accession to EMU will fail to take place over the assumed horizon and will be postponed. In that case, many investors might feel that it is no longer worth the wait, prompting great numbers of them to wind up their positions. There is no danger of this for the time being, as with the outcome of the Irish referendum and the agreement reached concerning the financial conditions of enlargement, no foreseeable event could significantly hamper enlargement.[4] International financial investors[5] forecast private capital inflows into the emerging markets of Europe to continue at a robust pace in the course of 2003, predominantly in the form of direct lending to companies, such as inter-company loans. By contrast, portfolio capital inflows into equities and bonds are expected to remain flat within the region.

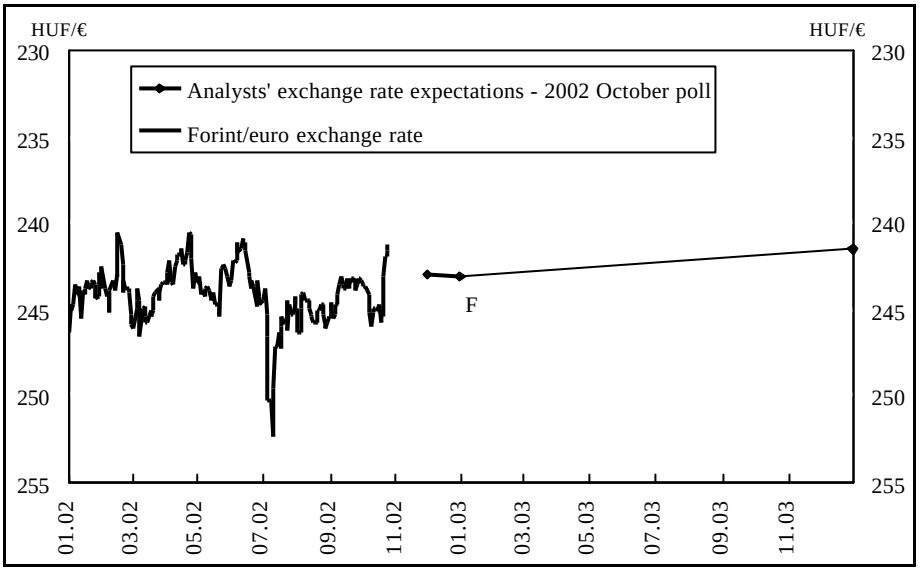
I. 2. 1 Exchange rate of the forint and the interbank foreign exchange market

Since May, domestic and international developments have influenced the exchange rate of the forint less strongly than prior to the previous *Report.* Therefore, the exchange rate has been *much less volatile* than previously. This has been the case since the end of the summer in particular, with news about global risks nearly ceasing to have any impact. Nor has the exchange rate been affected by domestic macroeconomic developments, as the primary influence on expectations during the reviewed period has been the news about the prospective date of EU accession (see Chart I-3 and I-4).

[4] In principle, such could be the effect of one or two EU member countries refusing to ratify the enlargement document. However, there is no evidence of the existence of any influential anti-enlargement political force. Naturally, some member states have reservations, but these are associated mainly with certain particulars and conditions and not accession as such. A possible change in the conditions, such as the sum of direct agricultural funds or the size of structural funds, would hardly affect the perception of macroeconomic and financial stability.

[5] International Institute of Finance*: Capital Flows to Emerging Market Economies,* September 2002, http://www.iif.com/

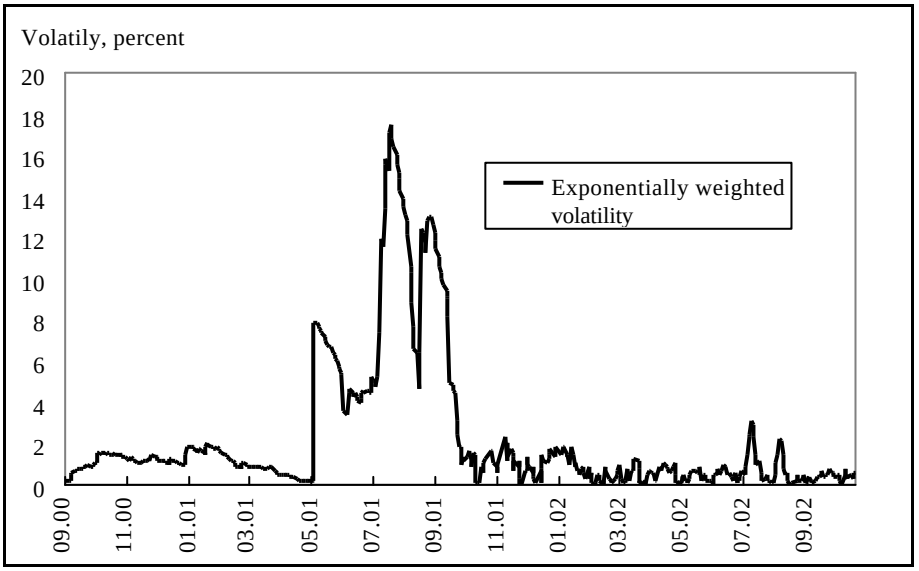
Chart I-3 Forint exchange rate and analyst expectations



Source: MNB and Reuters

Global indicators of risk started to rise during the summer, but did not have a perceptible effect on the exchange rate. In early October, prior to the Irish referendum, the exchange rate weakened slightly as the possibility of a negative outcome implied that the date of accession could be postponed. Market participants were concerned that such a turn of events might undermine economic policy's commitment to convergence. However, the favourable outcome of the referendum and, soon after, the official announcement of the accession date caused the forint to continue to strengthen. Market analysts expect the exchange rate at end-2002 and 2003 to remain similar to the current rate (see Chart I-3).

Chart I-4 Volatility of the exchange rate of the forint



Source: MNB

Turnover in the *interbank foreign exchange markets* has continued to increase since May (see **Error! Reference source not found.**), while the average spread has appeared to be little affected this year by exchange rate risk and other factors, staying

basically within a range of HUF 0.2 and 0.3 (see Chart I-5). Similar to the exchange rate, the spread has remained stable since May, unaffected by news about the economy. Government bond investors have shown keener demand for instruments suitable for hedging exchange rate risk. This implies that market participants have access to cheaper hedging instruments, thanks to increasing liquidity and the moderate spread, which is conducive to financial stability.

Table I-2 Average daily turnover

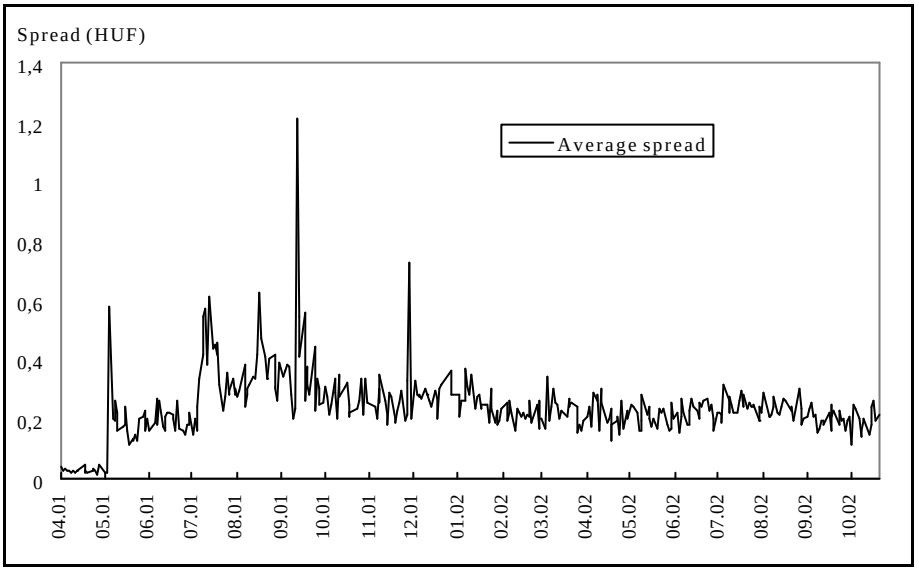
(Spot and derivatives transactions)

HUF billions

	2001 Q2	2001 Q3	2001 Q4	2002 Q1	2002 Q2
HUF/Forex	96358	97593	116970	126266	138021
HUF/Forex	145696	256417	286776	340188	381739
Total	242054	354010	403746	466454	519760

Source: MNB

Chart I-5 Average spread on the interbank exchange rate market

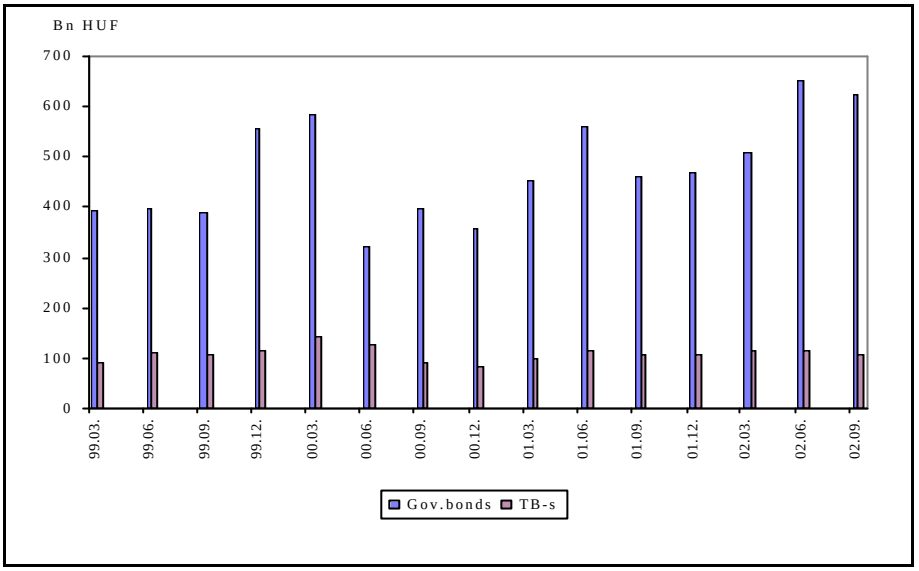


Source: MNB

I. 2. 2 Turnover at the government securities market in a breakdown by holders

Since the May *Report*, the *government securities market* has experienced an increase in *turnover*. This has been primarily due to a pick-up in government bond transactions by institutional investors, primary dealers and non-residents. Residents bought more government bonds, presumably in an effort to reallocate portfolios towards lower-risk securities. Furthermore, the rise in non-residents' transactions could be attributed to higher demand for forint-denominated securities.

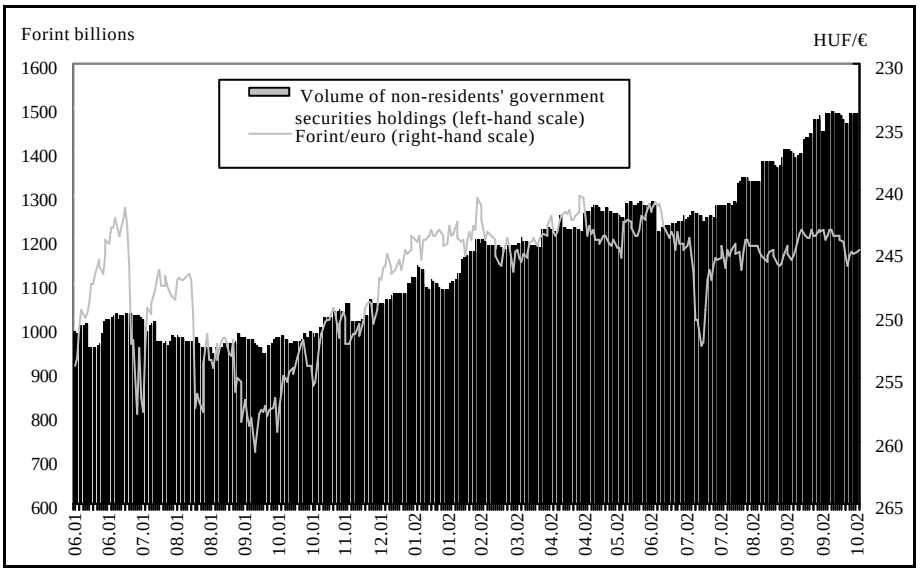
Chart I-6 KELER-OTC's secondary turnover in government securities*



*Single turnover data deflated by the CPI (1992=100).
Source: Hungarian State Treasury (ÁKK), www.allampapir.hu.

Non-residents' *government securities holdings* have been rising steadily since May. This upward trend has been unaffected even by large shifts in the exchange rate, implying that holders trust that macroeconomic stability will be maintained over the medium and long term, and in particular, that the forthcoming integration into Europe will prove to be a strong stabilising force. On the other hand, non-residents have altered their shares of short-term and long-term government securities markedly since May. While reducing their holdings of discount treasury bills from 8% to 4%, they have raised their share of long-term government securities from 40% to 44%. On the whole, they have nearly reached the 33% record share of total government paper seen in mid-2001. Demand for government securities declined slightly during the days prior to the Irish referendum, followed by a quick recovery following the positive outcome.

Chart I-7 Non-residents' government security holdings



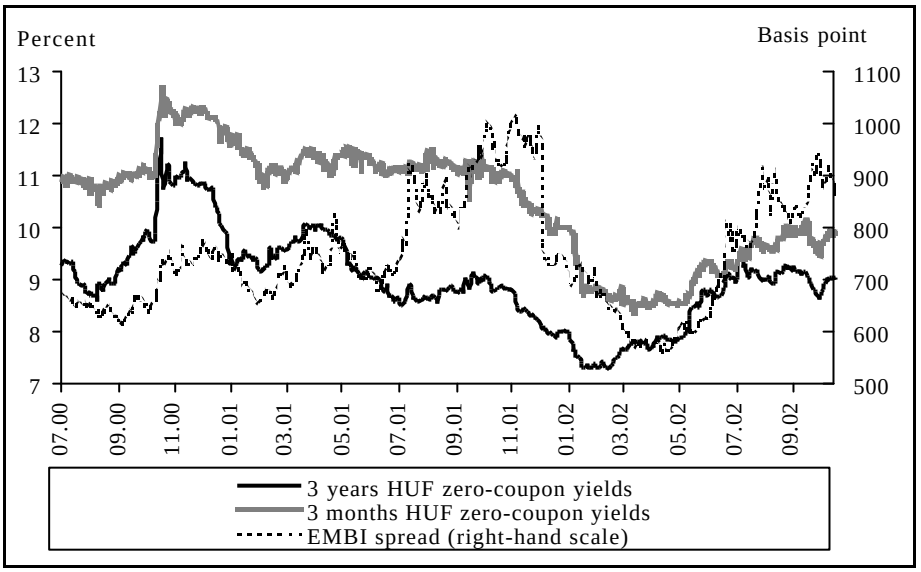
Source: MNB

Unlike non-residents, resident households have reduced their positions in long-term government securities, as well as their equity holdings. By contrast, they have bought a larger volume of short-term government securities. Apparently, households prefer relatively high-yielding, safe short-term paper to higher-risk instruments.

I. 2. 3 Interest rate changes

In terms of interest rates, the period since the previous *Report* can be divided into two phases. The first phase from April to the middle of the summer saw a rise in yields at all maturities. This upward trend was interrupted during the second phase, when yields even began to decline (see Chart I-8).

Chart I-8 EMBI versus domestic three-month and three-year zero coupon yields

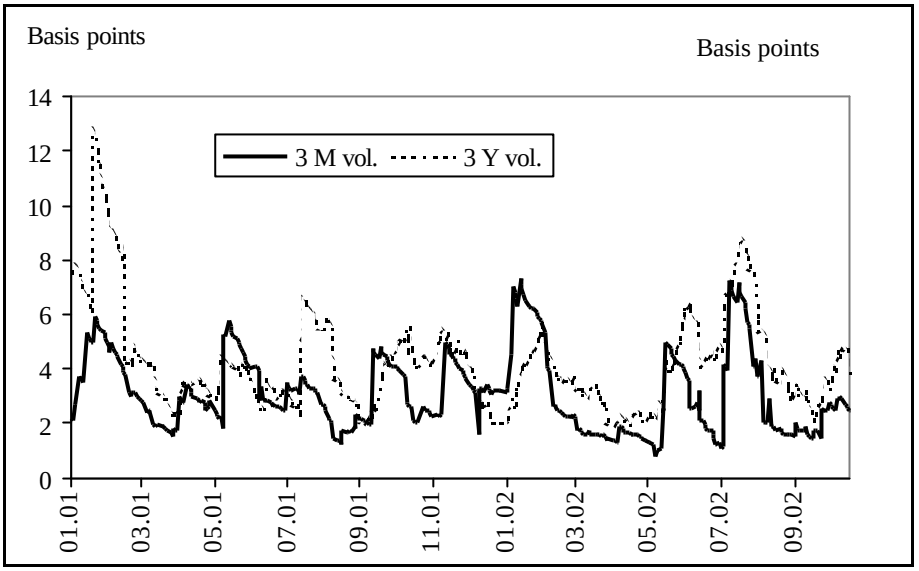


Source: MNB, JP Morgan
Note: The value of EMBI fell as the share of a few heavily-indebted Latin American countries was reduced in early 2002. At the same time, with market participants also viewing the switch as a signal, part of the fall in the index was genuine and not only the consequence of the new weights.

During the *first phase*, yields rose as inflation expectations increased, due to rapid wage growth and robust expansion in aggregate demand. The MNB raised interest rates by 0.5% each on 22 May and 9 June. The increase in global risk indicators exerted further upward pressure on interest rates. However, yields on *longer-term* instruments did not follow the upward path of global risk indicators (see Chart I-8). The development of such yields was greatly affected by *prospects for EU-EMU accession.* Every piece of information suggesting that the date of accession was further away caused yields to increase. This upward trend was interrupted in the *middle of the summer* as an optimistic outlook for *accession* caused yields to moderate. This was followed on 18 November by a 50-basis-point cut in the central bank rate.

The greatest drop in prices during the period under review occurred in the medium-term section of the yield curve, as is reflected in (Chart I-9)in the higher volatility of medium-term yields than short-term yields. Expectations of an increase in interest rates moderated due to a strengthening of the forint and, the favourable outcome of the Irish referendum in October, disappearing fully by end-October.

Chart I-9 Daily volatility of three-month and three-year benchmark yields *

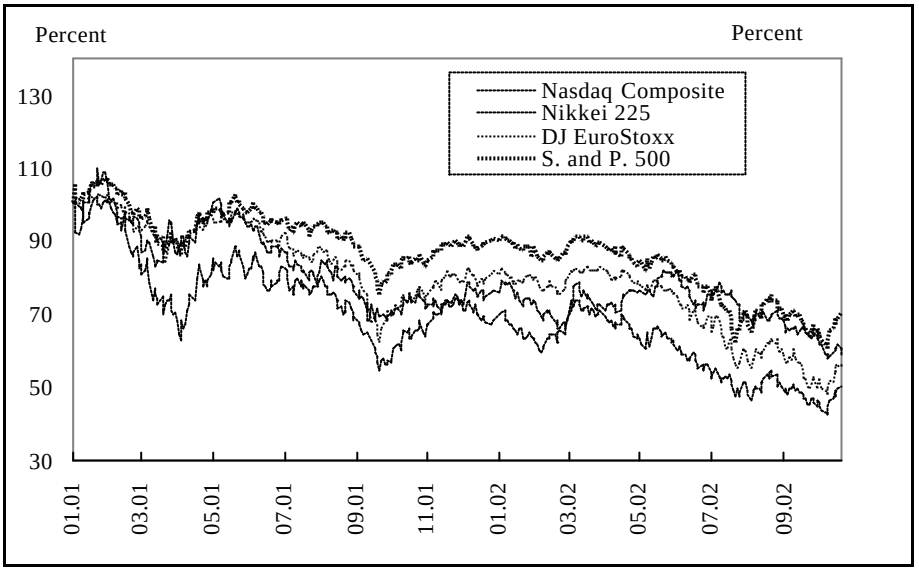


* 20-day moving average, weighted exponentially.
Source: MNB

I. 2. 4 The equity market

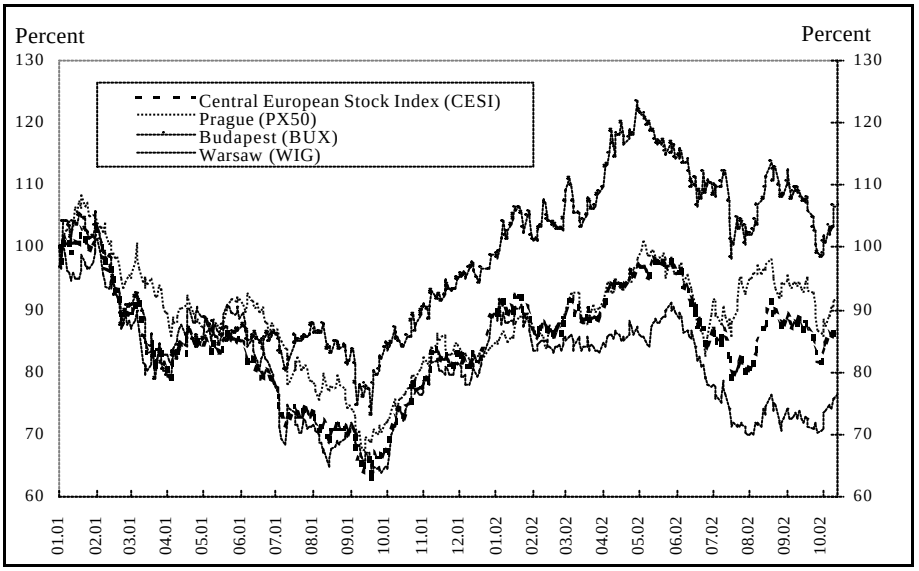
Stock-market indices tend to be highly correlated in both the developed and the Central and Eastern European countries (see Chart I-10 and Chart I-11). Developed country indices fell much more sharply relative to their levels in early 2001. The different behaviour of the two regions can be explained by their different reactions to disturbances. While the Asian and Russian crises caused a larger and lingering drop in the indices of less developed Central European stock exchanges, developed country stock markets appeared to be more vulnerable to a loss of confidence, emanating from the US stock markets and related to corporate performance. The decline in confidence, which reached rock bottom with the ENRON crisis, slowly infected the developed European stock markets as well. From May 2002, the relative performance of Central European indices in dollar terms also improved because of the weakening of the US dollar against the euro.

Chart I-10 Relative performance of leading US equity indices (USD)



Source: Reuters

Chart I-11 Relative performance of Central European equity indices (USD)



Source: Reuters

Similar to the other Central European stock-market indices, the BUX has moved erratically since May in a similar range to that in early 2001, but slightly exceeding the other indices. The average daily turnover in equities of HUF 13.6 billion traded at the Budapest Stock Exchange (BSE) was roughly identical to last year's figures, but is only one-third of the record value in 2000.

I. 3 Growth and inflation

I. 3. 1 Growth prospects

As a small open economy, Hungary can achieve sustainable rapid growth provided that it is in cyclical synchrony with international markets. The slower expansion of Hungarian export markets limits the growth prospects of the Hungarian economy. The downturn has been mitigated by robust growth in *certain components of domestic demand*, such as public and household consumption and public investment. Over the short term these components of demand stimulate growth, but they cannot be the foundation for long-term growth. This is because domestic demand relies heavily on imports, and the aforementioned components of demand fail to create capacities capable of producing exports which could offset imports.

One of the key sources of the increase in aggregate demand is the rising budget deficit. Fiscal policy cannot be sustainable over the long term unless it delivers fiscal convergence, namely a deficit of 3% over the medium term. However, the deficit grew considerably in 2002, and may amount to as much as 8% of GDP by the year-end. The acceleration in aggregate demand called for a tighter monetary policy, so that the disinflation process can be maintained. Added to this, imprudently strong nominal wage increases since 2001 Q3 have stimulated real income growth far in excess of productivity growth. This has left no room for easing monetary policy, leading to an unfortunate combination of tight monetary and lax fiscal conditions.

Table I-3 Components of GDP and aggregate demand

Percentage changes on a year earlier

	2001					2002	
	Q1	Q2	Q3	Q4	Total**	Q1	Q2
Household consumption expenditure	5.2	4.7	4.7	5.8	5.1	9.5	8.7
Social benefits in kinds	0.2	0.1	-1.0	-0.4	-0.3	2.4	4.3
Household consumption	4.1	3.7	3.6	4.7	4.0	8.1	7.8
Public consumption	-0.4	1.1	0.2	0.9	0.4	4.5	3.8
Fixed capital investment	4.1	2.4	2.9	3.1	3.1	8.6	5.1
Gross investment*	5.3	3.2	-8.9	-5.6	-1.4	-6.2	-6.7
Domestic use, total	4.0	3.3	-0.5	1.7	2.1	3.8	3.2
Exports	19.3	15.0	7.8	-2.1	9.1	6.3	7.6
Imports	18.1	13.9	1.2	-4.1	6.3	7.5	7.7
GDP	4.4	4.0	3.7	3.3	3.8	2.9	3.1

*Figures include the difference between production- and use-side calculations, the statistical discrepancy.

**Preliminary data I. The annual figures have been revised by the preliminary data II, which are not available in a quarterly breakdown.

Source: MNB

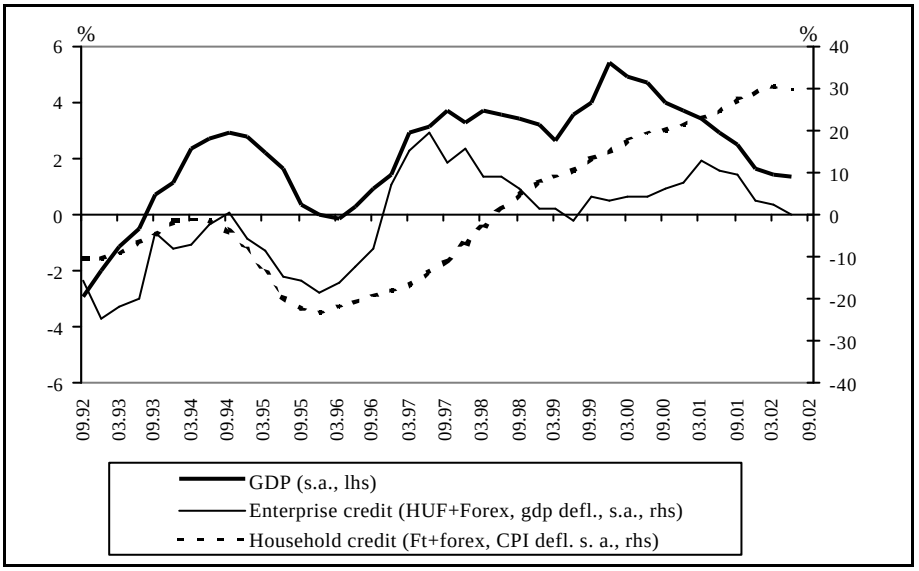
Thus, the main macroeconomic risk lies in the unfavourable composition of aggregate demand rather than the rate of growth (see **Error! Reference source not found.**). With a pick-up in the activity of Hungary's main trading partners delayed and external demand flat, domestic demand is and will probably remain the engine of growth.

In a breakdown by public, enterprise and household sectors, aggregate indicators of investment activity (see Chart I-14) reveal that while enterprise sector investment

activity has grown at a decelerating rate since mid-1998, households and particularly the government sector have stepped up investment.

Household lending growth, buoyant since 1995 independently of GDP growth, has continued. This trend is driven by two forces, one of which is that the level of household sector indebtedness is lower in Hungary than the normal rate in market economies. Household lending growth has been stimulated by convergence to the structurally justified long-term level, in addition to enhanced macroeconomic stability, better long-term growth prospects and, not least, the emergence of a competitive, well-capitalised banking sector. The other factor is wider access to and the features of *government subsidised loans* for home building and the purchase of flats and houses. Government subsidies reduce the household *interest burden*, which *becomes predictable* thanks to a cap on interest payments over at least the medium term. The bottom line is that people are encouraged to take advantage of the favourable borrowing terms. This makes household demand for housing credit largely independent of current economic activity. This is reflected in shrinking household net savings, with household net lending down from approximately HUF 420 billion in the first nine months of 2001 to HUF 180 billion in the corresponding period of 2002.

Chart I-12 Economic activity vis-à-vis the stock of bank lending



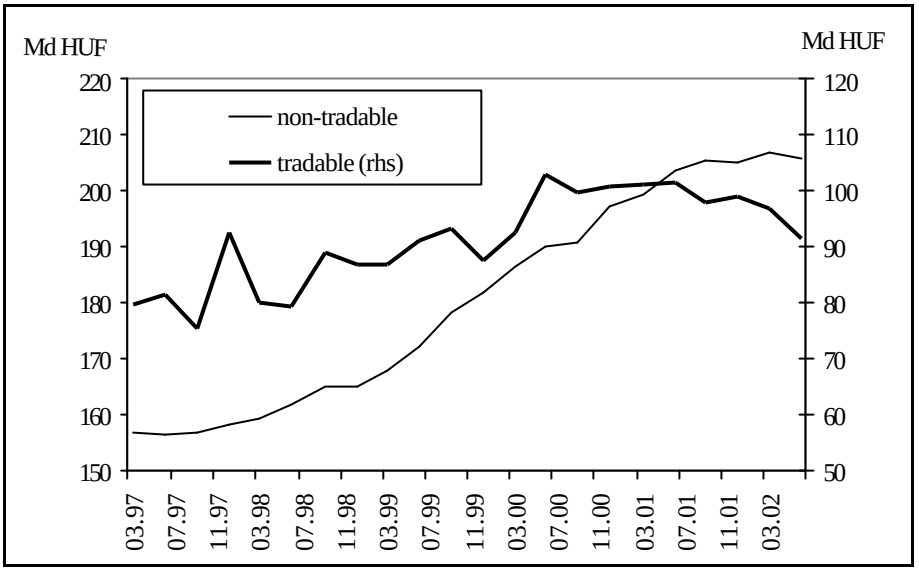
Source: MNB

Note: Seasonally adjusted data at constant 1995 prices. Lending also includes loans in foreign currency. The time series excluding foreign currency loans would be approximately parallel with the one inclusive of foreign currency loans. Accordingly, the decline seen at the end of the series reflects a 'deliberate' fall in the rate of lending growth rather than the exchange rate effect due to the strengthening of the forint.

The slowdown in activity and the concurrent drop in investment growth have exerted downward pressure on *corporate demand for bank loans* (see Chart I-12), as companies made efforts to *adjust to the sluggish activity.* Weaker investment and the lower level of capacity utilisation indicate a lower need for new loans, and a simultaneous slowdown in company cash flows, which increases the risk of borrowing and lending. The situation varies across the industries. Investment has declined in manufacturing, the chief producer of internationally traded goods, due to weak external demand. By contrast, in industries producing goods for the domestic

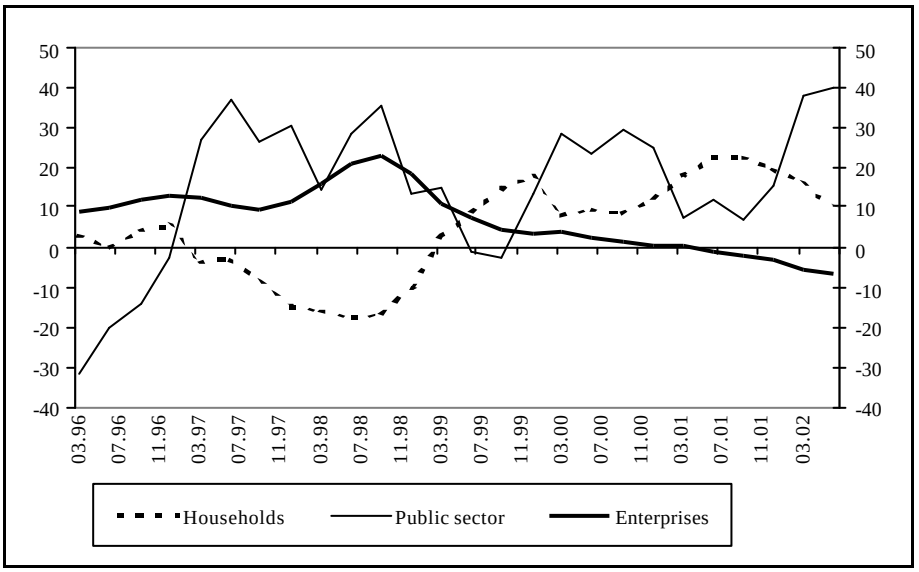
market, and not participating in international competition, investment has not fallen as sharply. Even though data on corporate profitability are only available for the period to end-2001, last year's trend is likely to have continued. Accordingly, exporters' profitability has deteriorated in relative terms. In contrast, companies producing primarily for domestic demand and not competing with non-residents have managed to catch up with the exporters. (This is discussed in greater detail in the section 'Profitability and stability within the enterprise sector'.)

Chart I-13 Investment activity in manufacturing vis-à-vis market services and construction



Source: MNB
Note: Seasonally adjusted data, deflated by investment price indices estimated for the individual industries.

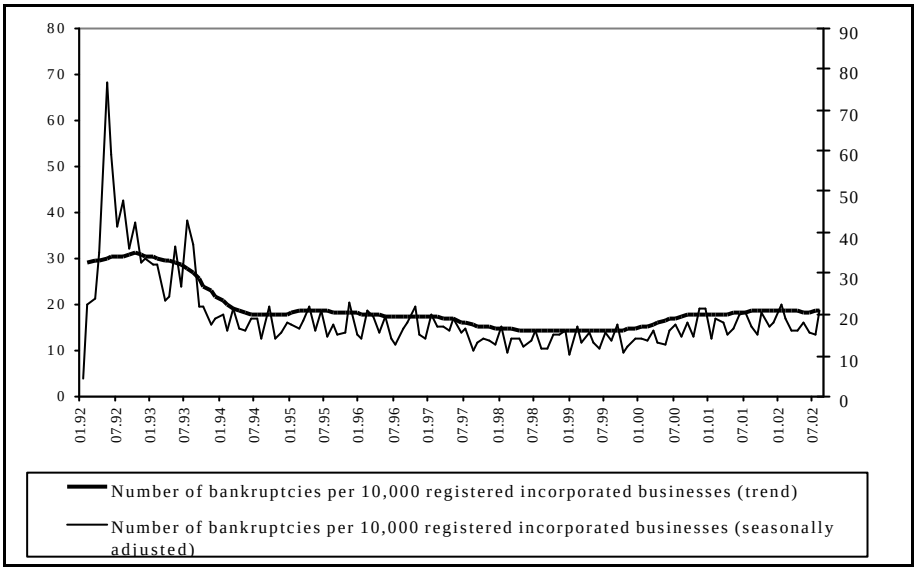
Chart I-14 Investment activity in a breakdown by sectors



Source: MNB
Note: Seasonally adjusted data, deflated by estimates for sectoral investment price indices.

Chart I-15 shows the number of bankruptcies relating exclusively to incorporated businesses.[6] The trend fitted to the original data reveals that most bankruptcy procedures were launched directly at the time of the crisis during the period of transformation and when the new bankruptcy and financial laws were passed, enforcing strict budget constraints. Thanks to economic restructuring, the proportion of bankruptcies has dropped, and reached its lowest level during the period of fast growth. Since mid-2000, when activity slowed down after the rapid growth, the relative number of bankruptcies has been on the rise, approaching the figures seen during the restructuring period.

Chart I-15 Number of bankruptcies and liquidations*



* Data exclusively on incorporated businesses.
Source: CSO and Opten, www.opten.hu.

I. 3. 2 Inflation

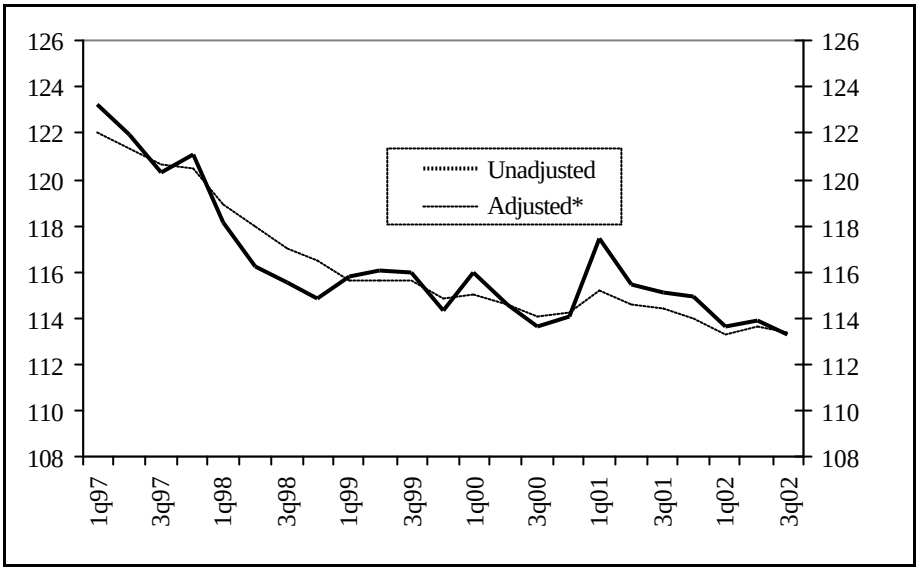
Changes in the macroeconomic environment have exerted inflationary pressure. Fiscal policy started to ease in 2001, and at the time of the elections reached levels that are unsustainable over the long term. In addition to a relaxed fiscal policy, another macroeconomic risk is persistently high wage inflation. As nominal wages within the private sector are increasing far in excess of 10%, real wages are growing at a rate that is several times higher than productivity growth, while inflation remains moderate. Apparently, real wages have failed to adjust to the economic slowdown, and the setting of nominal wages reflects substantial inflation inertia. Rapid private-sector wage growth is exacerbated by similarly large increases in the pay of public servants and civil servants.

These inflationary pressures highlight the fact that disinflation cannot be maintained unless monetary conditions are tightened. The structure of inflation is another cause for concern. The moderate rate since July is due to prices that are not influenced by

[6] The reason for this selection is the unavailability of a longer time series. Furthermore, this category of firms is probably the most strongly affected by cyclical ups and downs, and associated bankruptcies and liquidations.

monetary policy and tend to be rather volatile. Therefore, the MNB pointed out the risk to inflation in its November inflation report.[7]

Chart I-16 Wage inflation within the private sector



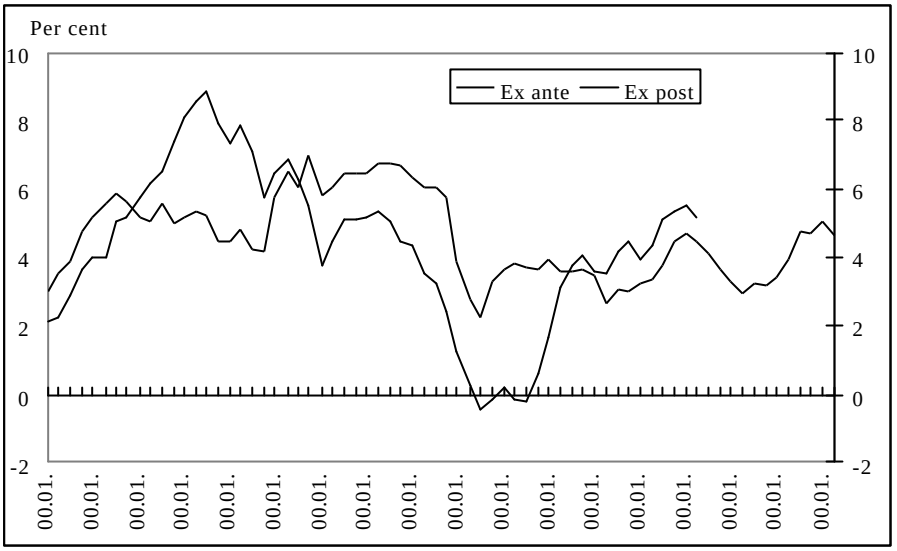
*Seasonally adjusted data recalculated using a statistical technique for businesses employing more than five people. The statistical bias due to the minimum wage increase is removed.

Source: MNB

Unpredictable inflation which is not in line with expectations carries financial risks as it alters the real value of cash flows between debtors and creditors. One of the indicators of predictability is the differential between *ex ante* and *ex post* real interest rates. A wide gap between the two rates represents a threat to financial stability. The time series in Chart I-17 covers only a few months after the new inflation targeting strategy was adopted. It is thus not sufficiently long to show how much the new regime has reduced the error in expectations. Nevertheless, the Bank believes that lower and less volatile inflation, coupled with a credible and efficient monetary regime, will increase the rationality of private sector decisions and reduce the probability of large discrepancies.

[7] See MNB website: www.mnb.hu

Chart I-17 One-year *ex ante* and *ex post* real interest rates based on a Reuters poll *



***** The *ex ante* real interest rate is the monthly average of one-year zero coupon yields deflated by the inflation rate projected in the current month for one year ahead by Reuters analysts. The ex *post* real interest rate denotes the real yield actually earned by investors on a bond. The one-year zero coupon yield is deflated by the rate of inflation measured during the bond's term to maturity, i.e. 12 months later.
Source: MNB

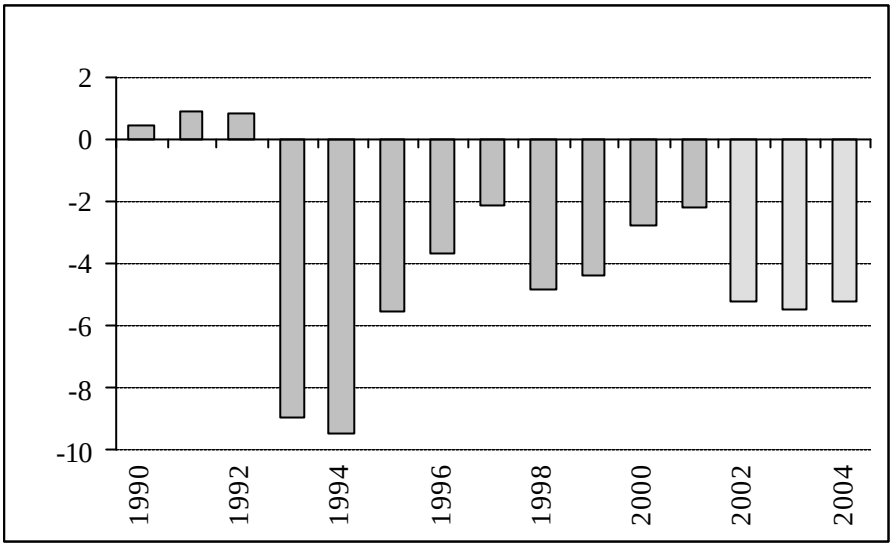
Changes in the one-year *ex post* and expectations-based *ex ante* real interest rates suggest that in the beginning market participants expected disinflation to be somewhat slower. From the point of view of financial stability it is crucial that the gap between expected and actual real interest rates narrows, being an indicator of the accuracy with which market participants foretell the expected interest burden at the time of making their decisions. The chart also shows occurrence of higher real interest rates than currently.

I. 4 External balance

Hungary's current account deficit is expected to deteriorate by 3% of GDP in 2002. The deficit for the year as a whole is expected to amount to EUR 3,500 million, i.e. 5.2% of GDP. During the next two years the external financing requirement is projected to remain of a similar order of magnitude (see Chart I-18).[8]

[8] The external financing requirement is derived as the balance of the capital account and the deficit on current account.

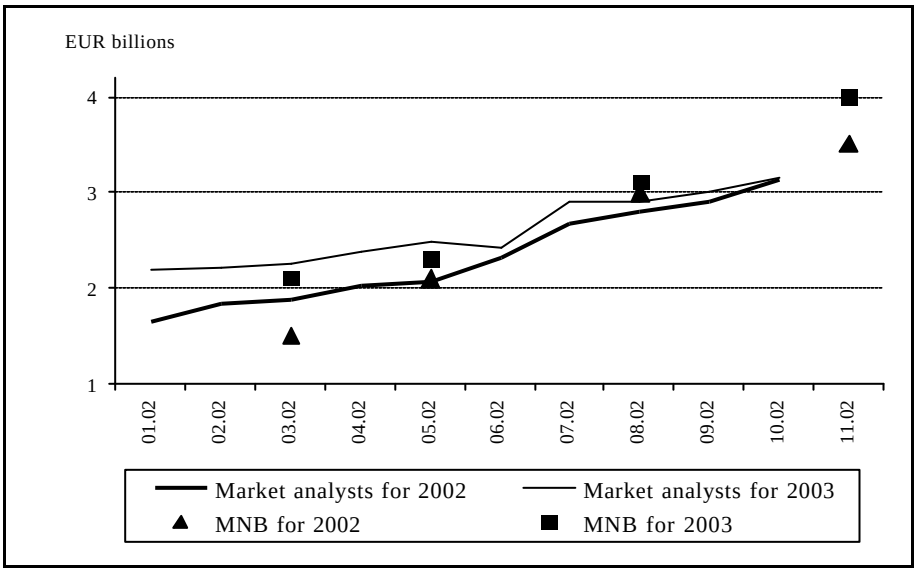
Chart I-18 Current account balance as a proportion of GDP, 1990-2004*



*2002-2004, MNB forecast

Both the Bank and market analysts were surprised by this strong deterioration on the current account, and as new information became available they increased their forecasts for both this year and 2003 (see Chart I-19). The higher deficit forecasts were primarily due to a shift in the fiscal path and to households' lower propensity to save, while the delay in the pick-up in global activity reduced the expected deficit.

Chart I-19 Changes in MNB and market forecasts given in 2002 for the 2002 and 2003 current account deficit



This year's higher deficit has been primarily due to an increase in net trade expenditure and a drop in net receipts from services, in particular tourism. The underlying cause has been higher spending on imported goods due to rapidly rising household incomes and only subdued rise in exports due to the global slowdown, a (presumably temporary) world-wide decline in tourism and the real appreciation of the forint. By contrast, companies have postponed a great number of planned

investment projects, due to slightly weaker profitability and slower external demand growth, which has led to a drop in imports.

The current account deficit indicates that aggregate domestic savings provide insufficient cover to finance aggregate investment. The deterioration in the external financing requirement, forecast to amount to 3.5% of GDP this year, is primarily due to a higher general government financing requirement as a result of an expansionary fiscal policy. Another important factor behind the increase in the deficit is the decline in net household lending, which is in turn due to slightly falling household savings in real terms, despite buoyant income growth, and the rapid expansion of subsidised building loans. At the same time, companies have curbed their investment expenditure as external demand has weakened, and may turn into net savers, in a rather unusual development (see Table I-4).

Though the deficit is not expected to improve significantly as a percentage of GDP over the next two years, its composition is expected to change for the better. The MNB projects a 1% drop in the general government financing requirement as a proportion of GDP next year, in addition to another 1.5% reduction in 2004 provided that the government's medium-term economic programme is successfully implemented. It is good news in the context of financing the external imbalance if the general government reduces its weight within the total external financing requirement. This is because a persistently high fiscal requirement would exert upward pressure on gross public debt, as well as on the risk premium on government securities.

Net household lending is expected to continue to decrease, although at a slower pace. The increase in household sector indebtedness appears to be a long-term trend, converging to a structure of wealth similar to the EU's. Household indebtedness has been fuelled by an upsurge in real incomes and wide availability of credit extended within a centrally-subsidised interest rate framework. It may pose a financing risk if households expect real income growth to be permanent at the current robust rate, as this encourages borrowing. On the other hand, the global recovery expected next year will, in all likelihood, stimulate investment spending by companies. This is expected to take place through replenishing the currently exceptionally low inventory levels rather than through an increase in capacities.

All in all, fast on the course towards European integration, Hungary can safely sustain higher external imbalances than those seen in previous years. The approximately 5% deficit on current account appears to be sustainable over the long term, even in the context of an average GDP rise of 4%.[9] In addition, Hungary's accession to the European Union and later the euro area, and even the convergence process by itself, raise the sustainable level of the current account deficit by facilitating faster growth and mitigating the interest burden on debt. By ruling out the possibility of a currency crisis, membership in the euro area will loosen the balance of payments constraint. However, a balance of payments crisis, i.e. a sudden reversal of capital flows, may occur even when Hungary is a member.

[9] For more on this, see *The Relationship between the Current Account Deficit and Financial Stability* by Balázs Világi.

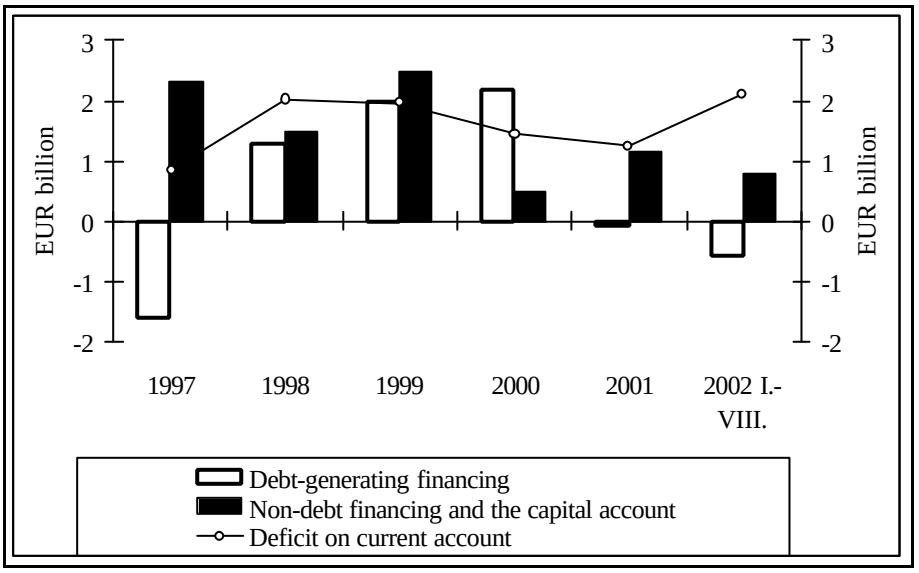
Table I-4 Financing capacity of sectors as a percentage of GDP, 1999-2004*

	1999	2000	2001	2002	2003	2004
General Government	-6.0	-3.8	-5.0	-7.8	-6.6	-5.3
Households	5.8	5.1	5.2	2.6	2.2	2.0
Companies	-3.5	-3.5	-1.7	0.2	-0.8	-1.8
External financing requirement	-3.8	-2.3	-1.5	-5.0	-5.2	-4.9
Current account balance	-4.4	-2.8	-2.2	-5.2	-5.5	-5.2

* Forecasts for 2002-2004.

An assessment of financial stability requires an analysis of the channels of external financing. A favourable liabilities structure implies as high of a proportion of FDI, equity portfolio and long-term bond investments as possible, which, according to international experience, are less prone to volatility than short-term instruments at the time of a financial crisis.[10] Hungary has received net FDI in the order of EUR 1 billion for a number of years. While equity portfolio investments since the change of systems have amounted to a total of EUR 2 billion in net terms, during the past two years outflows have been in the same order of magnitude as the inflows. At the same time, as the dates of joining the European Union and the euro area are approaching and membership is becoming more of a certainty, there is increased demand for long-term bonds. Based on the principle of prudence and not relying on net inflows into equity portfolios over the next few years, there may be a rise in the share of more volatile components in financing the current account deficit, which is higher than in the previous years (see Chart I-20).

Chart I-20 Channels of financing the current account deficit
1997 – August 2002 *



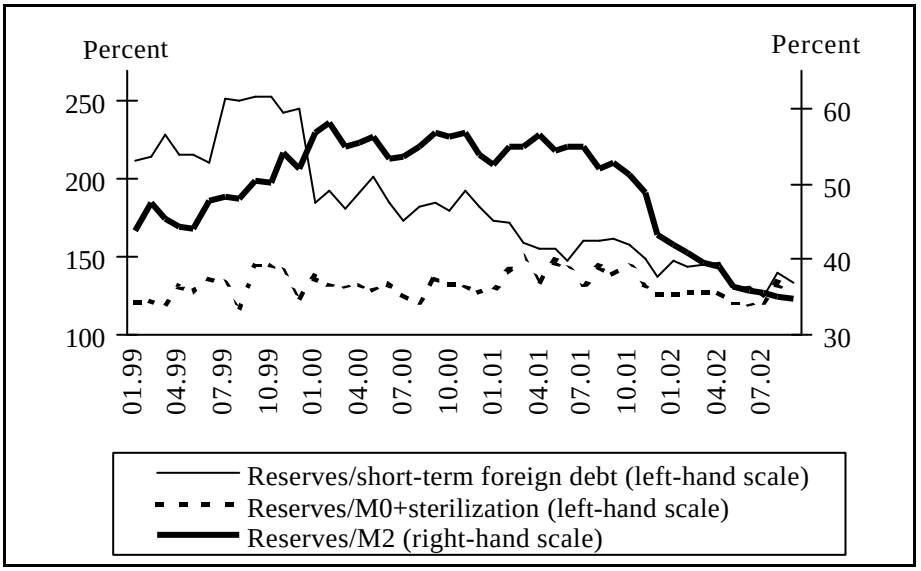
* Debt-type and non-debt type financing and the aggregate capital account are not equal to the current account balance. The discrepancy is recorded as a change in central bank reserves and the entry for errors and omissions.

[10] International experience suggests that the structure of external financing also depends on a particular country's level of development. Accordingly, FDI has a relatively higher weight in the external financing of less developed countries. Other financing components are becoming increasingly important in the course of the catch-up process, parallel with a decline in the share of FDI.

As discussed at length in previous *Reports*, international investors often use certain indicators which in combination are capable of predicting with great probability the threat of a currency or balance of payments crisis. Such indicators include a low level or sharp fall in reserves, or the ratios of reserves/M0, reserves/M2, reserves/imports and reserves/short-term foreign debt, as well as a large or fast-growing current account deficit. As central bank reserves have fallen significantly, down by approximately EUR 3 billion over the past one year, due to the reserves policy approved by the Monetary Council, these indicators have also deteriorated, but are still clear of critical levels.

The decline seen in these indicators over the past twelve months does not follow a permanent trend. Instead, it seems to reflect one-off institutional changes and deliberate shifts in central bank policy. These changes include one-off real appreciation intended to eliminate the undervaluation of the currency, full-scale liberalisation of foreign exchange regulations, entailing the possibility of an increase in short-term debt and, above all, an amendment to the reserves policy. Under the previous narrow-band exchange rate regime, central bank intervention in foreign exchange markets caused the level of reserves to rise over EUR 13 billion. In contrast, the Monetary Council judged that under the newly introduced exchange rate regime it was justified to reduce foreign exchange reserves to EUR 9 billion, the most efficient way of which was a cut in the government's net foreign currency borrowing. Accordingly, the government's maturing foreign currency debt was renewed in 2002 by issuing forint-denominated bonds. Consistent with the intended institutional reduction, the EUR 9 billion reserves, viewed as optimal, complies with every requirement of international investors and every rule of thumb (see Chart I-21).

Chart I-21 Measures of foreign exchange reserves



The reserves/M0+sterilisation instruments ratio is an important indicator of the domestic credibility of the currency. Provided that this ratio exceeds 100%, it meets the reserve requirement of even the currency board, the most credible exchange rate peg. Even though the indicator has sunk to 120% over the past one and a half years, it is still higher than the reference values.

The reserves/M2 ratio is another safeguard for the convertibility of the domestic currency. Furthermore, this indicator has empirically proven to be a good predictor of a number of crises, as shown by subsequent analyses. The ratio maintained by later

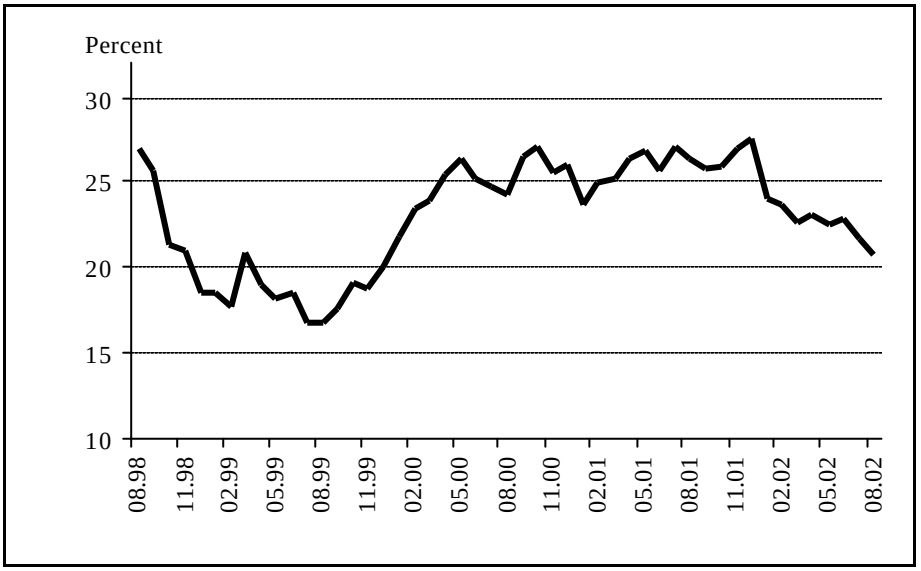
entrants into the euro area was not higher than 20% during the reference period, with the customary level for catching-up countries being in the range of 30 to 40%. Though somewhat worsening recently, the current ratio of 35% gives no cause for concern.

The reserves/imports ratio, which had been permanently over 4, has fallen over the past two years, due to the drop in reserves and robust import growth. The general rule is to have reserves that provide cover for imports of three months, a requirement slightly overfulfilled by the current 3.5 ratio. MNB economists believe that this indicator plays only a minor role as the danger of an export shock causing Hungary's foreign currency revenues to stop while imports remain unchanged, is next to naught, due to deep European integration, the diversified export structure and the significant weight of foreign-owned subsidiaries.

Even though full foreign exchange liberalisation in May 2001 enabled non-resident investors to purchase short-term government securities, the reserves/short-term foreign debt ratio has remained reassuringly high at nearly 120%. This implies that the reserves are so large that they could easily service next year's total debt payment without the need to borrow from abroad.

Since the start of the year, gross short-term debt declined slightly relative to total gross debt (see Chart I-22).

Chart I-22 Hungary's short-term foreign liabilities as a proportion of total foreign debt

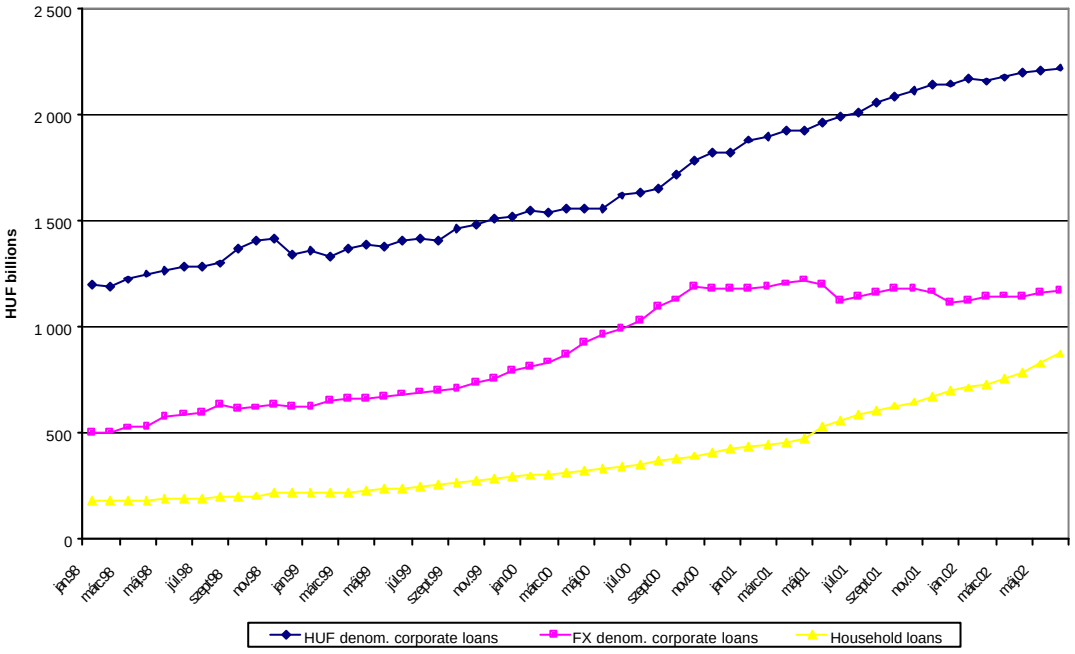


The decline was partly due to a change in methodology, as some short-term corporate liabilities to non-residents were reclassified into the category of inter-company loans as of 1 January 2002. Nevertheless, companies have genuinely managed to reduce slightly their short-term foreign liabilities, presumably by curbing their investment expenditure. An additional factor in the decline has been a drop in MNB bill holdings, with non-resident investors continuing to prefer longer-term securities.

II. Banking sector stability

With the cyclical slowdown in economic activity, growth in lending to the corporate sector remained modest in 2002 H1 relative to the period preceding 2001. Owing to the shift in banks' focus towards the household sector, the extension of the housing subsidy scheme and the spectacular improvement in households' income position, lending to the sector continued to increase at a robust pace (see Chart II-1). As a result, the banking sector's outstanding loans[11] rose by 7.5% in nominal terms in the period under review.

Chart II-1 Forint and foreign currency loans outstanding to households and non-financial corporations, expressed in forint terms



* Due to the introduction of the new sector classification, from May 2001 sole proprietors' loans are included in household loans, instead of corporate loans as in earlier periods.

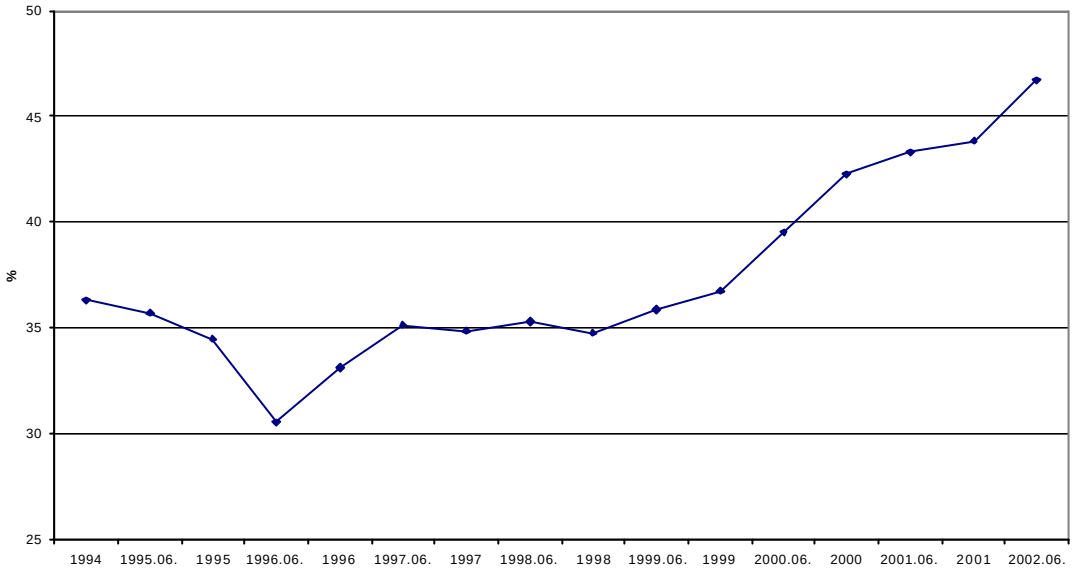
The 1% increase in the balance sheet total, associated with an 8.5% increase in risk-weighted balance sheet items, indicates that the banking sector has continued to redirect its focus toward customers carrying higher risks. This robust pick-up in lending occurred simultaneously with a drop in deposits from the household sector, representing the largest weight within liabilities. Banks rearranged their claims from short-term foreign assets and claims on the central bank towards long-term customer loans. As a result of all these factors, the combined share of loans to the corporate and household sectors increased significantly, by nearly 3 percentage points (see Chart II-2).

The expansion of activities carrying credit risks was also reflected in the very strong upsurge in financial enterprises' leasing and lending activities, in addition to a rise in

[11] Outstanding loans include those of the central government and other sectors, and the corporate and household sectors. The institutions analysed do not include MFB and Eximbank.

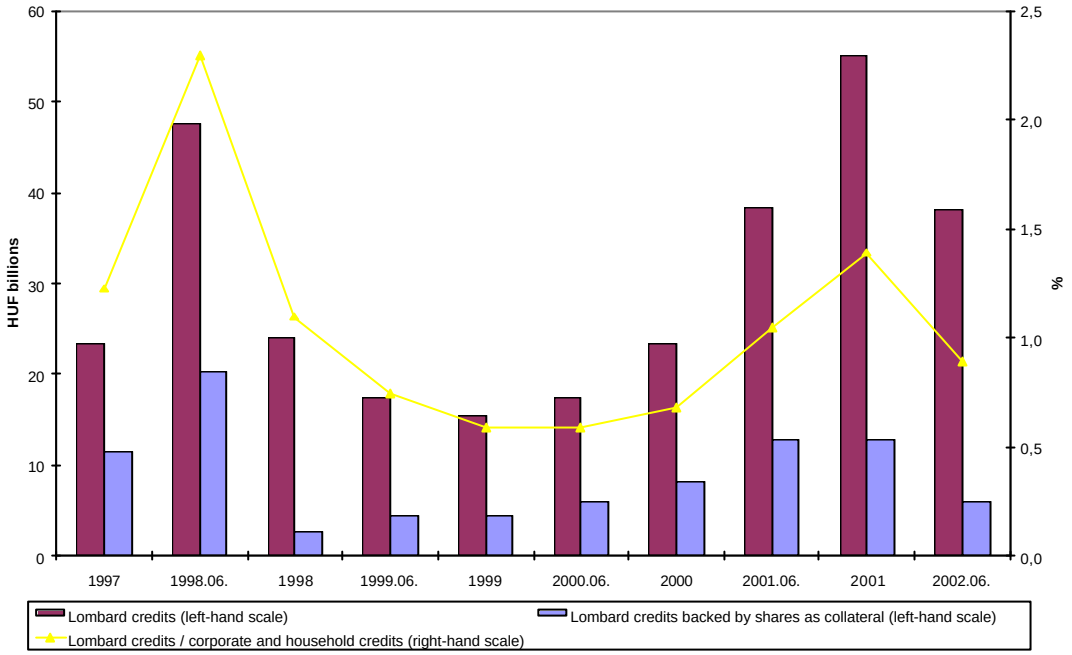
outstanding bank lending. As the vast bulk of this growth was accounted for by bank-owned entities, the increase in credit risks at a consolidated level exceeded the measures derived from the analysis of banks' balance sheets. Financial enterprises' leasing and lending activities will be discussed in detail in an article at the end of this *Report*.

Chart II-2 Corporate and household loans as a combined proportion of balance sheet total



The volume and percentage share of loans extended against securities as collateral are low within total customer loans. Consequently, the potential risk of any securities market price bubble developing is seen as marginal. Another factor mitigating risks is that the percentage share of loans for purchasing securities within lombard loans is also low, at only 3% in the case of households and 10% as for the non-financial corporations at the end of H1. An indication of cautious bank behaviour, outstanding loans provided against shares as collateral fell significantly, as due to the impact of adverse events in international money and capital markets there was a considerable increase in risks carried by the domestic equity market (see Chart II-3).

Chart II-3 Lombard loans



II. 1 Risks in lending to non-financial corporations

Income position

Non-financial corporations' income position did not change significantly in 2002 H1. The unfavourable economic environment prompted companies to cut back fixed investment spending drastically, leading the sector to become a net saver in the period under review.

The ratio of non-financial corporations' income to GDP rose gradually up to end-2000, with the borrowing requirement falling and the propensity to invest rising. This is an indication of the corporate sector gathering strength in earlier years. However, from 2001 the decline in accumulating expenditure due to a deterioration in the business climate was also a factor contributing to the sector's falling indebtedness. Meanwhile, companies' income position barely changed as a proportion of GDP. Consequently, the increase in the sector's disposable income was largely consistent with growth in GDP.

The ratio of non-financial sector disposable income to GDP is unlikely to change significantly in 2002 as a whole.[12] The slower-than-anticipated expansion of external demand and the currently high ratio of existing capacities to future orders are expected to lead to a further decline in fixed investment spending. As a result, the non-financial corporate sector, behaving rationally, may retain its net saving position.

Commercial property

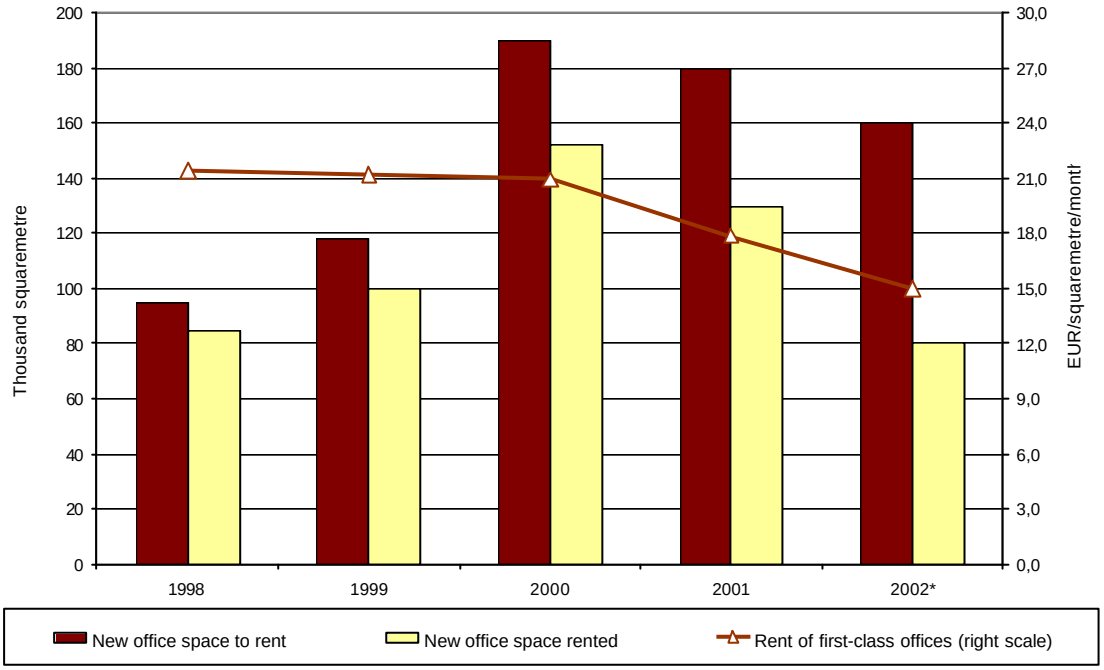
Within companies' properties, a distinct role should be given to developments in the prices of commercial property, in order to be able to discover the risks facing banks.

In the office market, there continues to be strong oversupply, which has already led to a decline in selling prices and rental fees. Although the rate at which supply grew has

[12] See the November 2002 issue of the *Quarterly Report on Inflation*.

eased off slightly since 2000, there has been a stronger decline in demand for newly built offices (see Chart II-4).
This trend continued in 2002 H1. Only a half of newly built office space was rented in the period under review, as a result of which the vacancy rate, rising further, crawled above 23%, with a drop in the monthly average rental fee to EUR 12–15 per square metre. In comparison, before 2001 the average rental fee was above EUR 20 and the vacancy rate stood below 20%. This is a good illustration of demand lagging behind supply. Selling prices were also hard hit by persistent oversupply – they fell by 3% in the market of used offices and by 3%–4% in that of newly built offices.[13] Presumably, though, the Hungarian office market will have become slightly saturated by next year, on account of the ongoing development projects. The likely result of this will be that property prices will probably not rise in excess of inflation in the near term and that rental fees will not bounce back.

Chart II-4 New office space available and rented in Budapest



Source: DTZ Hungary.
* Forecast.

However, the market of retail outlets may also be a source of risks, in addition to the office market. The very lively construction boom reflected in the erection of a wide variety of outlets continues; and the feverish momentum of building shopping centres remains almost fully unabated. Although households' income position has recently improved dramatically, to which demand for goods has adjusted quickly, a further increase in the number of shops may carry risks.

Indebtedness

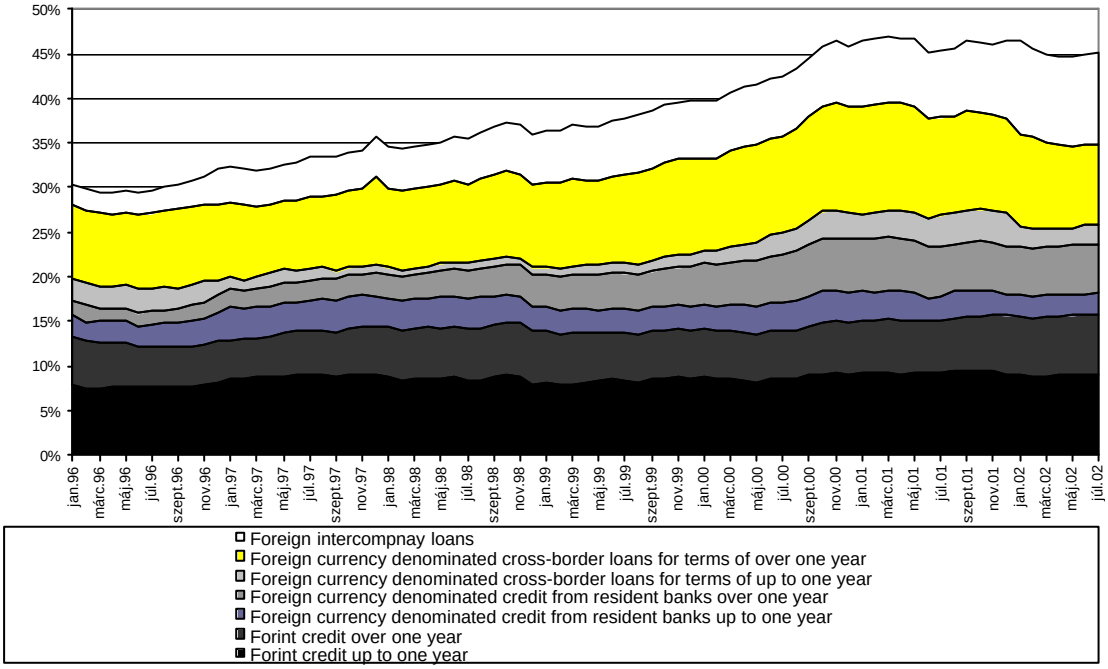
From the perspective of system stability, the MNB continues to view corporate sector indebtedness as little cause for concern, despite the fast increase in leverage in recent years, given that the role of equity within financing still remains above the average of developed markets.

[13] According to a survey by GKI and Wallis Ingatlan Rt.

The build-up of non-financial corporate sector indebtedness to the financial intermediary system and owners has stalled over the past twelve months, which may be viewed as a positive development. Expressed in domestic currency terms, outstanding lending stabilised at around 45% of GDP (see Chart II-5), which, in addition to last year's forint appreciation, was owing to the fact that the non-financial corporate sector reached a net savings position by 2002 H1.

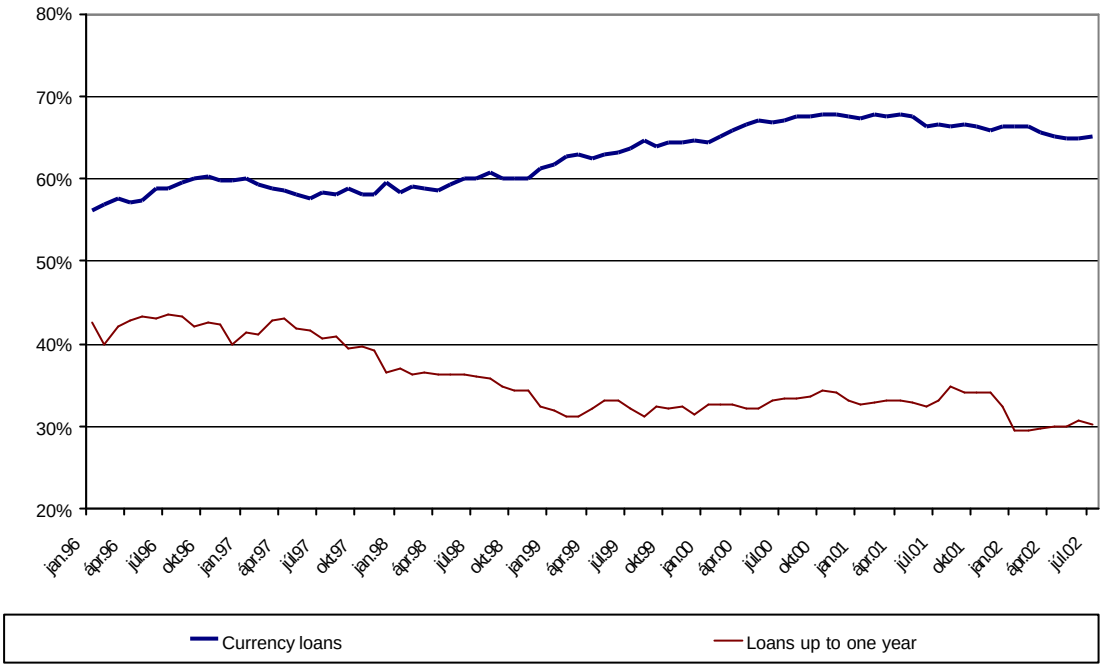
The structure of loans continued to undergo a change as well. There was a shift within foreign currency-denominated loans towards inter-company loans which are much more flexible from the perspective of raising finance, to the detriment of foreign bank loans. Amplifying this process, the demand of multinational companies with natural cover for short-term foreign currency loans has been falling since early 2001, due to the declining rate of export growth. Consequently, as a favourable development, the average maturity of outstanding debt lengthened further. Moreover, the percentage share within the outstanding total of loans to the non-financial corporate sector with maturities of less than a year fell to 30% by 2002 H1 (see Chart II-6). This is broadly comparable with the European Union average.[14]

Chart II-5 Loans outstanding to non-financial corporations as a per cent of GDP



[14] It should be noted, however, that the average remaining maturity of long-term loans is still several times longer in the EU than in Hungary.

Chart II-6 Percentage share of loans carrying exchange rate and liquidity risks for non-financial corporations within the total



As a negative development, however, the share of foreign currency loans as a proportion of total outstanding lending has only been falling slowly (they accounted for 67.6% in 2000 and for 65% in 2002 H1), despite the increase in the exchange rate risk facing companies without natural cover, due to the widening of the forint's intervention band.

Domestic banks' credit risks

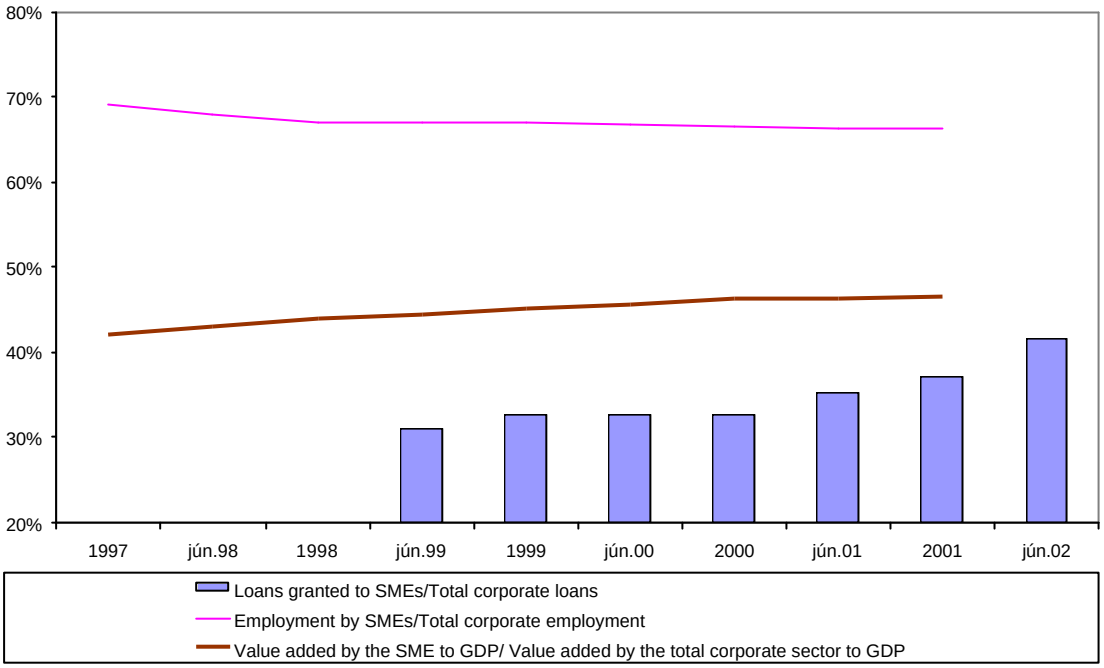
The economic slowdown was a key factor in the modest rise in loans to the non-financial corporate sector in 2002 H1. However, outstanding loans expanded by 4%, whereas the balance sheet total remained virtually unchanged. This indicates banks' strong commitment toward the sector.

There was a slight shift within lending, mainly towards long-term foreign currency-denominated loans. Most of this shift was attributable in part to the construction sector (which is primarily indebted in euros) being in the upward phase of its cycle (due to property and motorway construction projects), and in part to telecommunications developments. There was a slowdown in the growth rate of short-term foreign currency loans, due to multinationals' declining requirement for operating assets. Forint loans also grew at a more modest pace, explained by domestic firms' falling propensity to accumulate. As a result, the forint equivalent of corporate sector foreign currency loans as a proportion of the outstanding total rose only slightly in 2002 H1, from 34.1% to 34.5%. Looking at the maturity profile, the share of loans for more than a year resumed rising, with their share in the total edging up from 55.1% to 55.6%.

In terms of the size of borrowing companies, lending to small firms has been rising. On the demand side, the increase in the number of small and medium-sized enterprises (SMEs) and, consequently, their higher borrowing requirement, has encouraged banks to shift their focus towards smaller firms from 2001, with the saturation of the market of large firms as a compelling factor on the supply side. This suggests that the loan stock has started to catch up rapidly with the actual role SMEs play in the economy and the labour market (see Chart II-7).

Outstanding borrowings by SMEs continued to rise in 2002 H1. Whereas large firms' loans fell by 3.5%, those of smaller firms surged by 16.8%, as a result of which SMEs' loans as a proportion of the total jumped from 37% to 42%. It is important to note that, due to keener competition, lending to medium-sized companies increased by 22% and that to micro firms by 20% in the period, the latter mainly on account of an increase in subsidies. The growth rate of small firms' loans was comparable with that of total lending to the corporate sector.

Chart II-7 Small and medium-sized firms' role in the economy and the labour market and their outstanding bank loans



* Data on small and medium-sized firms' borrowings are only available from 1999 H1.

Source: APEH database.

In the current economic context, the rapid growth of small and medium-sized companies as a proportion of total domestic lending adds to banks' risks. Nevertheless, financing SMEs in Hungary will likely exceed average growth in outstanding loans to the corporate sector, in line with economic development and owing to the priorities of economic policy, i.e. the intention to increase the importance of smaller firms.

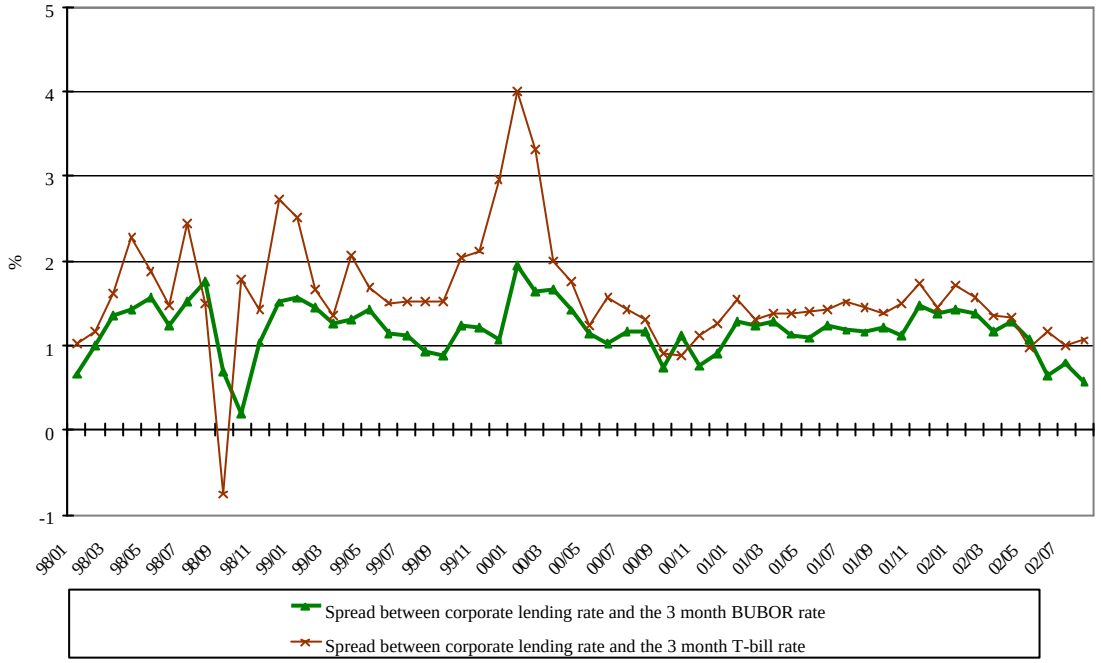
Taking into consideration that the diversification of corporate loans has not improved in the past six months, declining risk premiums will perhaps provide an increasingly smaller cover for portfolio losses which are likely to increase due to the slowdown in economic activity.

The risk premiums, seen as fairly stable a year earlier, fell significantly in Q2, from 1%–1.5% (see Chart II-8), given that lending rates followed only partially and with some lag the 50 basis point rate increase by the MNB in May and the further tightening priced in by the interbank market as early as June. (Among EMU members, the average risk premium on corporate loans has fluctuated around 1%–2% in recent years.) Presumably, very fierce competition will prompt participants to delay changes to interest rates, despite higher risks.

In the near future, however, risk premiums are expected to rise modestly, as interbank rates and market rates will eventually prompt a stronger increase in lending rates, though perhaps only slowly. In addition, the increase in credit risk over a certain limit

will also encourage banks to build the expected effects of the sources of risk into their spreads, despite tight market conditions.

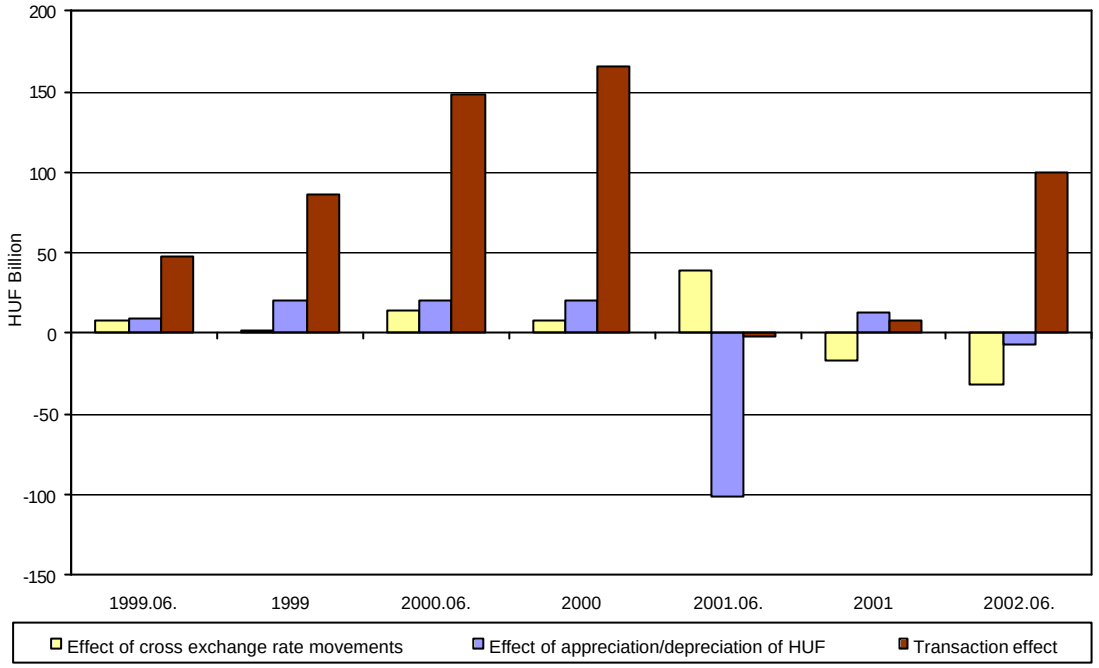
Chart II-8 Risk premiums*



* Banks ensured the source of lending by rearranging their assets and by borrowing from the interbank market in 2002 H1. Consequently, both types of spread are worth examining.

Foreign currency loans outstanding to the corporate sector rose by 5.2% in 2002 H1. The major factor behind this growth was the pick-up in lending activity, given that volume changes contributed 8.7% to the rise in the stock of foreign currency loans. Exchange rate movements reduced outstanding loans by 2.8% and price changes by another 0.7% (see Chart II-9). This was mainly attributable to the slight appreciation of the forint vis-à-vis the euro and the massive weakening of the dollar.

Chart II-9 Components of changes in non-financial corporate sector outstanding foreign currency loans (six-monthly cumulative effects)

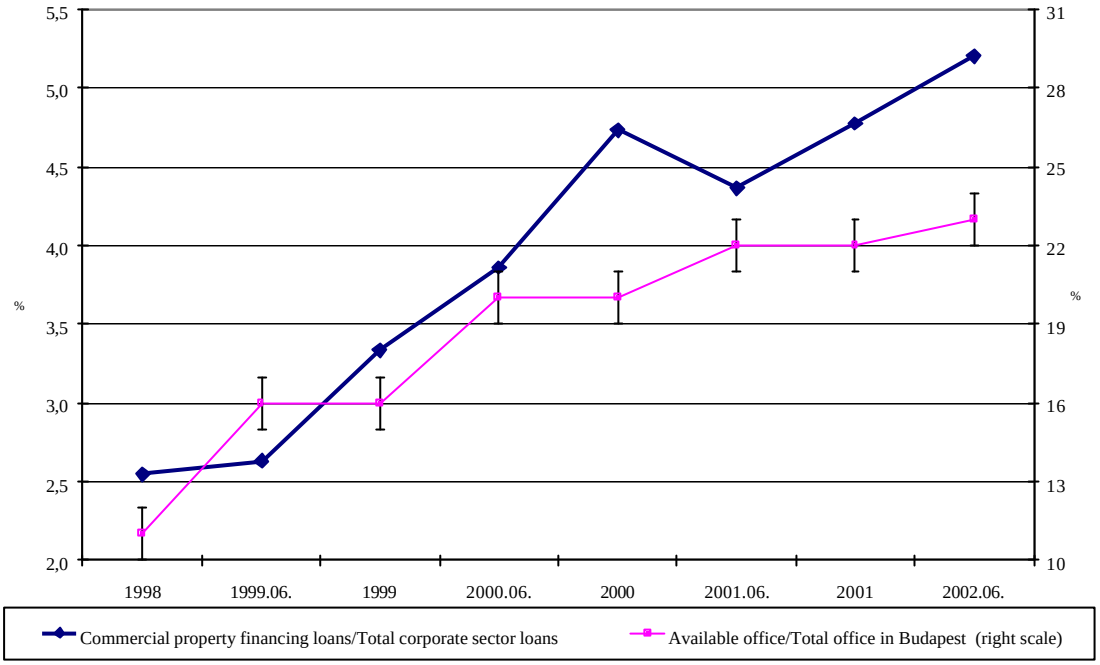


The average maturity of foreign currency loans rose further, which is a favourable event from the perspective of assessing corporate sector stability. Long maturities accounted for almost the whole of this increase in the first half. As a result, the sector's long-term foreign currency loans made up nearly three-quarters of the outstanding total. Consistent with the further increase in property and fixed investment loans, and owing to the considerable decline in the US dollar's exchange rate, the share of euro-denominated loans within total foreign currency loans surged from 67% to 75% in the period under review.

The robust rise in business property loans continued in 2002 H1. Recovering from the temporary loss of momentum caused by the appreciation of the forint, the loan stock resumed its increase, which was derived almost entirely from the rising volume of transactions. Business property loans had risen to 5.2% of total loans outstanding to the corporate sector by the end of 2002 H1 (see Chart II-10).

Although the importance of loans to build offices, shopping centres and development projects continue to be low within total bank lending, the recent increased share of business property loans may expose the financial intermediary system to higher risks. Rental fees, the majority of which are denominated in euros, provide natural cover for business property development loans which are almost entirely foreign currency-based. However, rising office vacancy rates due to massive oversupply, coupled with rapidly falling rental fees, may mar credit quality and accelerate the process of property development loans losing their value.

Chart II-10 Property development loans



* Loans to build and develop commercial property.

Source: DTZ Hungary.

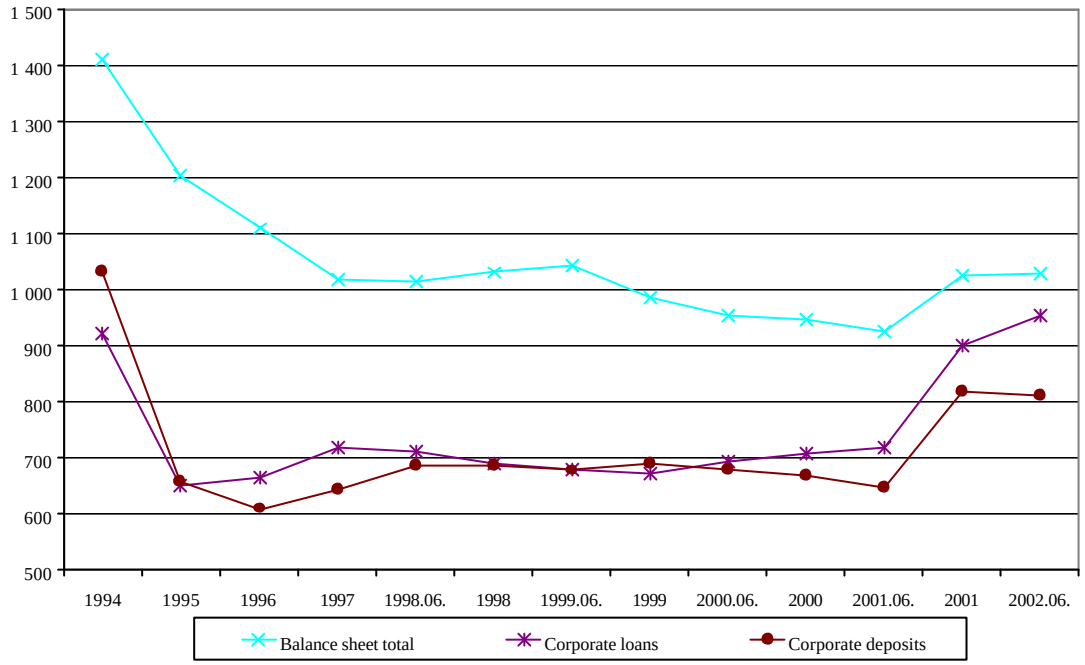
Potentially carrying additional risk, three large banks continue to account for the overwhelming majority (70%) of outstanding loans, where the percentage share of property loans is nearly double that registered by the banking sector. Consequently, the impact of the expected drop in property sector profitability may be concentrated on those banks. One additional source of risk may be that, despite the likely fall in their net revenues (caused by the faster increase in the prices of building materials and wage costs relative to property prices, at real values), property firms have not yet retreated from the market, as they continue to anticipate a future pick-up. Speculative construction projects are underway as well, which may lead to the development of price bubbles. Moreover, although less and less firms are engaged in construction projects, the total floorspace of houses built continues to rise. However, it has been a positive development recently that banks have started to recognise potential sources of risk – they are reluctant to finance new construction projects with a higher own resource requirement (currently 30%), unless draft rental contracts for at least 30%–50% of space for lease are concluded.

Competition continues to be fierce in the corporate segment, as interest rate spreads are hardly rising, despite the increase in concentration.[15] In 2002 H1, further concentration of the market of corporate loans was attributable to some banks stepping up their lending activity (reflected mainly in buoyant lending to small and medium-sized firms, and project financing), rather than to the effect of last year's merger activity. The gauge measuring the degree of concentration, therefore, reached the

[15] However, bringing to a square their market share, the indicator of concentration for large banks results a higher role than the actual.

1,000 mark[16] by the end of the review period (see Chart II-11). Interestingly, the process of concentration within the balance sheet total and the market of corporate deposits ceased. Bank consolidation leading to a further concentration of the business will, perhaps, prove to be a long-term process.

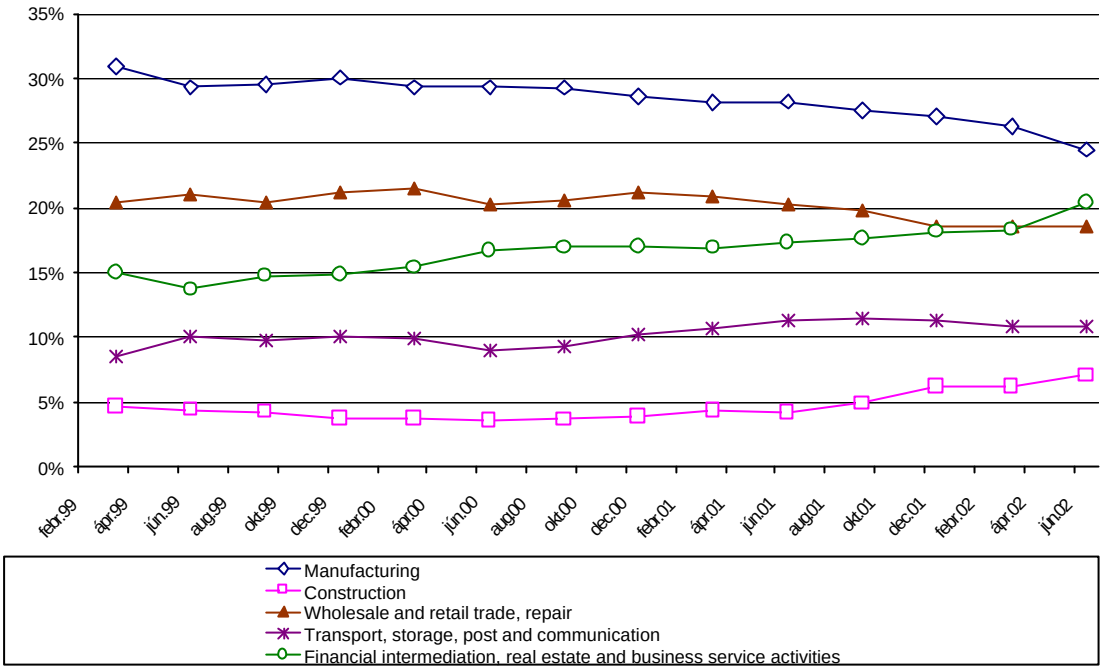
Chart II-11 Market concentration of non-financial corporations' loans and deposits as well as the balance sheet total



The structural transformation of the Hungarian economy has also left its mark on the sectoral breakdown of corporate loans. The unfavourable economic environment and the uncertain outlook for growth has encouraged companies to postpone planned investment projects. As a consequence, the share of the producer sector within total loans is falling, in favour of the services sector (see Chart II-12).
The roles of machinery and equipment, refined petroleum product manufacturers and the chemical industry fell within the total loan portfolio. Consistent with the trends of earlier periods, the share of loans extended to food industry firms also fell. Lending by banks only picked up in the property market and the closely related services market. Based on this, only construction, and the financial, property and business services sectors increased their share in total outstanding loans. The role of wholesale and retail trade remained unchanged within banks' aggregate loan portfolio.

[16] Three categories of market concentration can be distinguished based on the Herfindhal-Hirschman Index (HHI-index), such as
HHI < 1000: unconcentrated or 'atomistic' market;
HHI > 1000 and < 1800: moderately concentrated market;
HHI > 1800: highly concentrated market.

Chart II-12 Non-financial corporate loans in a breakdown by economic sector



Uncertainties surrounding global economic performance, and particularly the outlook for the European economy, are unlikely to encourage Hungarian firms to step up spending in the near future, nor is the sector's income position expected to improve much. The higher losses in banks' portfolios and their increasingly tight liquidity may also retard corporate borrowing activity in the coming period.

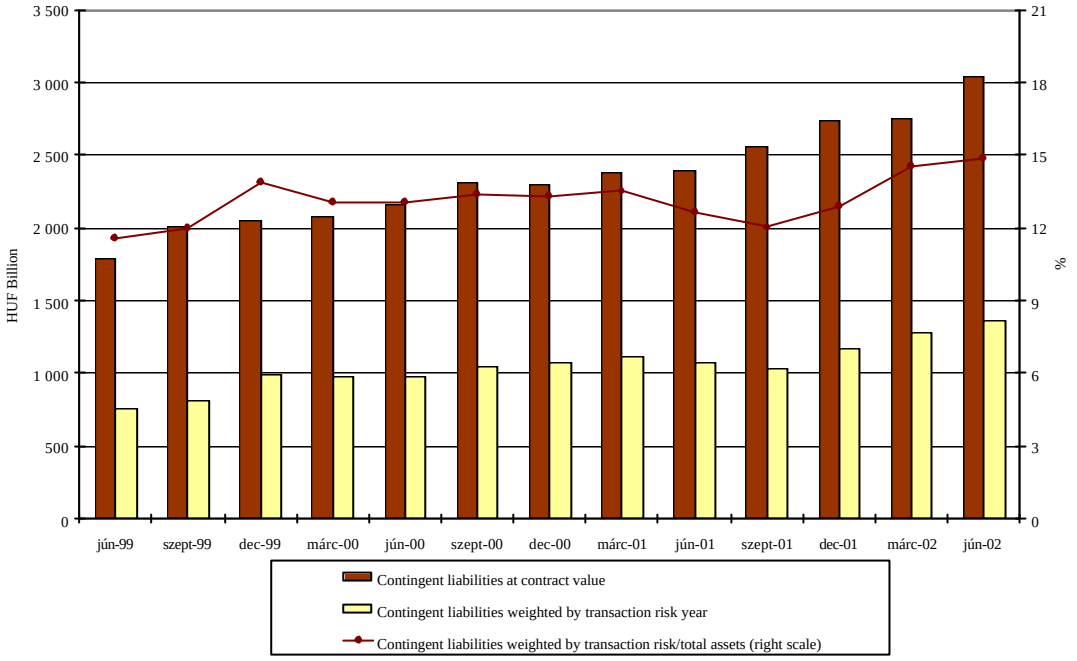
The banking sector's risks carried by corporate loans are still not deemed significant, due to domestic firms' modest indebtedness relative to developed markets. However, the cyclical deterioration in manufacturing sector profitability (profitability in manufacturing fell by one-third in 2001, and no improvement is expected in 2002), coupled with escalating speculative pressures in the property business and the weakening of natural cover, may expose banks to increasing sources of risk.

Contingent liabilities

In the sharp competition for corporate customers, banks' contingent liabilities continued to rise robustly in 2002 H1. The combined contract value of contingent liabilities grew 8.9% faster than the balance sheet total. Their customer risk-weighted value increased by 16.8%, with their proportion of the balance sheet total, weighted by total transaction and customer risk, surging to 14.9% (see Chart II-13).

In the Bank's evaluation, the deterioration in the perception of risks carried by contingent liabilities is a negative development. The stock of contingent liabilities carrying full risk increased by 30%. Here, the total of credit lines non-callable within one year unconditionally rose by more than 50%. The amount of lower-risk transactions fell slightly, while that of risk-free transactions rose by 10%. Within contingent liabilities, forint-denominated guarantees and credit lines continue to be dominant (80%).

Chart II-13 Contingent liabilities of the banking sector



II. 2 Risks in lending to households

Income position

In 2002 H1, the growth rate of households' net real income was much stronger than in the comparable periods of earlier years. This was partly related to the parliamentary elections and partly to the drop in inflation following band widening. Consumption grew at a more even pace in the period; however, accumulation expenses rose significantly due to the further extension of the subsidised housing scheme,[17] with the result that the savings rate fell. The low propensity of households to save, experienced during the year to date, is expected to remain in the near future.

Owing to two opposing factors, net financial wealth of households grew evenly in 2002 H1. The increase in financial assets, supported by a considerable rise in real income, offset the strong build-up in outstanding loans (see Chart II-14). However, the MNB expects a slowdown and, perhaps, a possible drop in growth in net financial wealth in the near future, taking into account the presumably more modest increase in real income and anticipated developments in investment expenditures. This view is underpinned by developments in households' net financing capacity in 2002 H1 as well (see Chart II-15).

[17] From March 2002, subsidies are also available for buying used homes.

Chart II-14 Annual real changes in the value of financial assets and liabilities

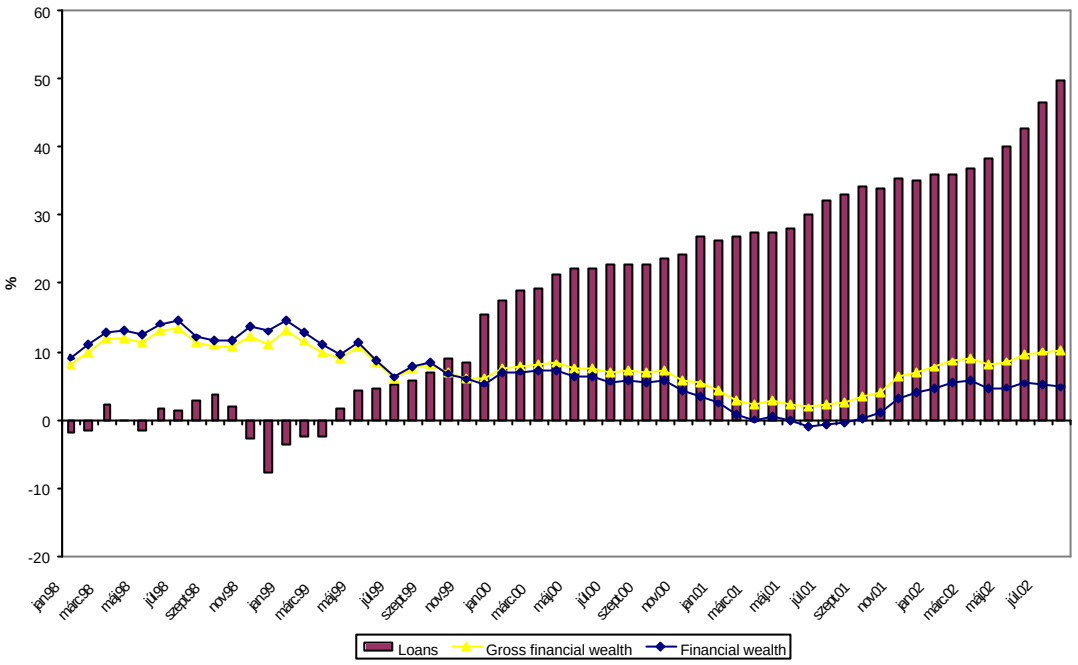
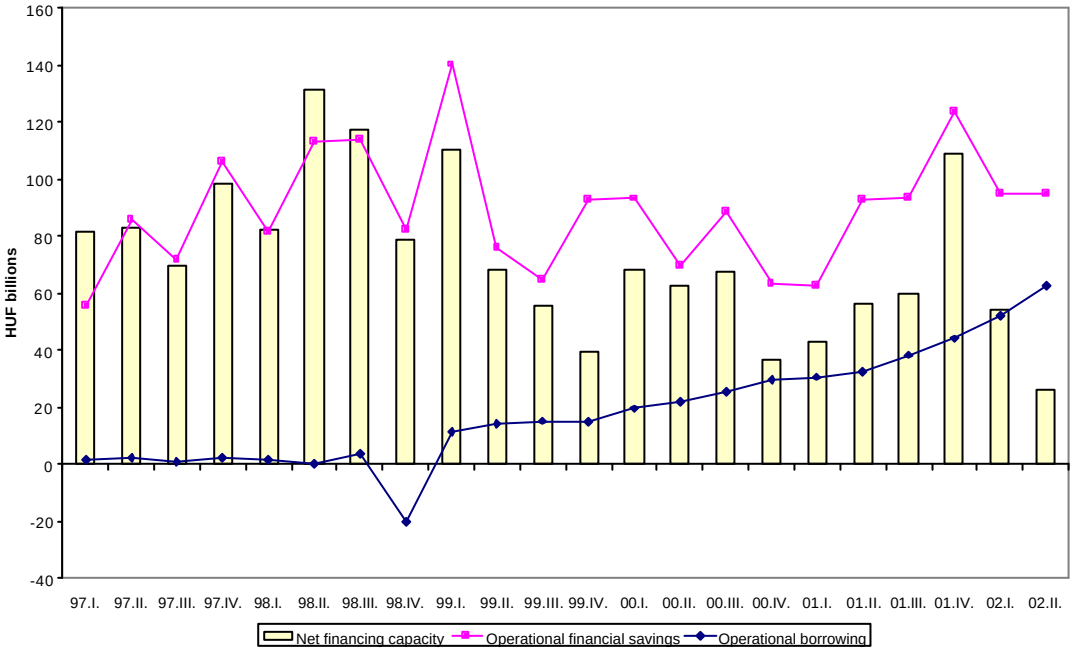


Chart II-15 Quarterly developments in net financing capacity*



* Seasonally adjusted data, calculated on the basis of early-1997 constant prices.

Structure of financial savings

Following a 18-month pause, the shift towards non-bank savings instruments resumed in 2002 H1. The uninterrupted growth in savings in pension fund and life insurance schemes is seen as a favourable development from the perspective of judging risks. This trend is expected to continue over the long term (see Chart II-16). Risks carried

by the portfolio have been falling definitely in the past several years, owing to the diminishing importance of shares and the gradual fall in foreign currency deposits following band widening[18] (see Chart II-17).

Chart II-16 Composition of financial wealth

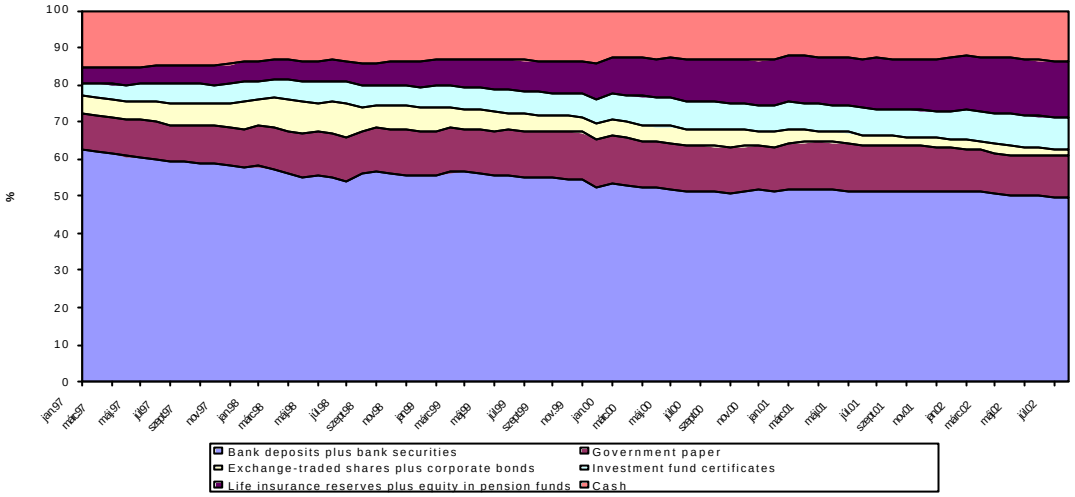
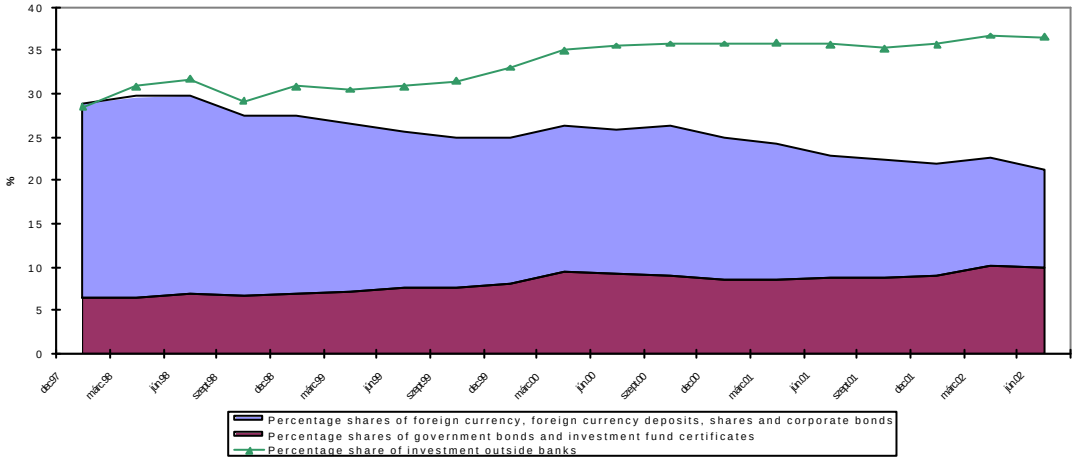


Chart II-17 Ratios of non-bank savings and high-risk assets to total financial wealth

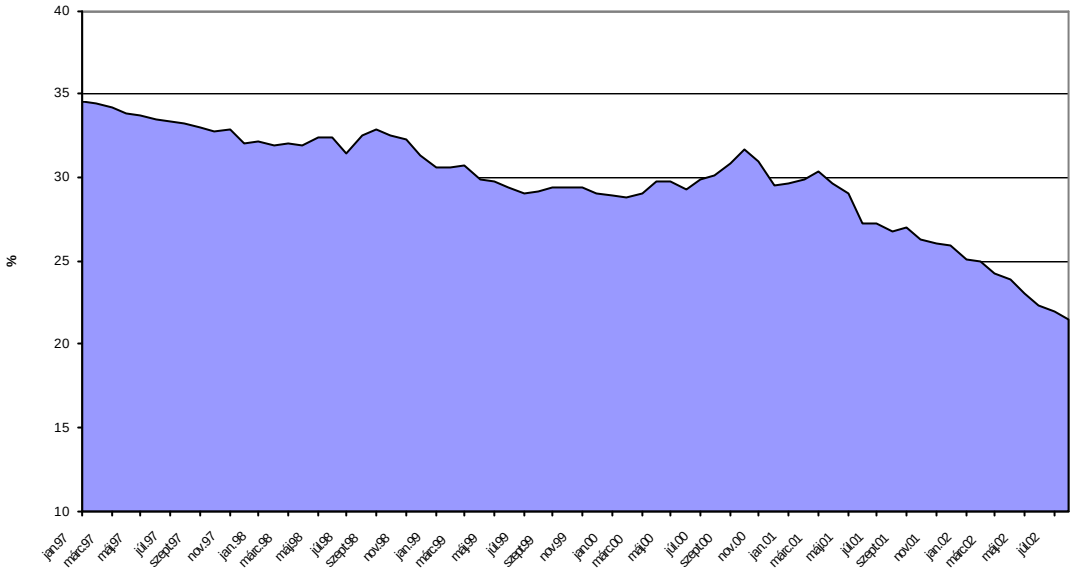
Bank deposits account for nearly one-half of households' financial savings. The



decline in the relative importance of foreign currency deposits within total bank deposits in the past few years became more pronounced following band widening (see Chart II-18). The drop in foreign currency deposits in 2001 H1 was a response to the appreciation of the forint, in contrast with the drop in 2002 H1, which was caused mainly by the transaction effect. The exchange rate risk increasing due to band widening and the decline in inflation both prompted households to reduce their foreign currency deposits. This downward trend is expected to continue over the longer term as well.

[18] The definitive reason for the temporary rise at end-2001 was the replacement of member currencies by the euro.

Chart II-18 Foreign currency deposits as a proportion of forint deposits



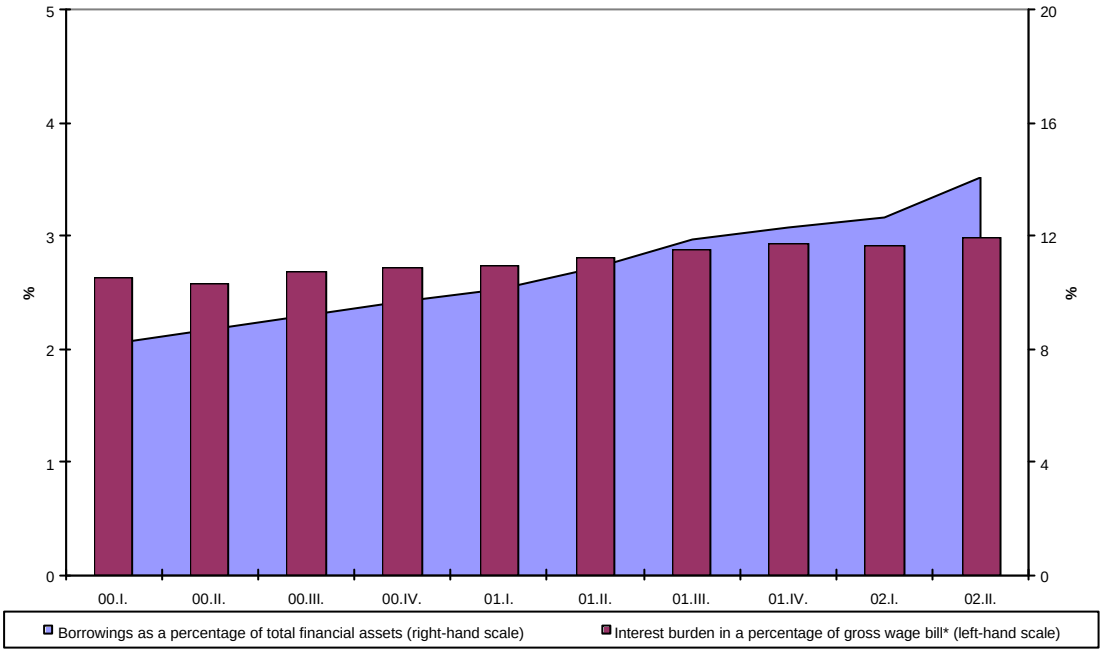
Indebtedness

Indebtedness and the interest burden of households[19] have been rising steadily since bottoming out in 1998, although they remain far below the values typical of developed countries.[20] Favourably from the perspective of evaluating risks carried by lending to the sector, the increase in the sector's relative interest burden has been much more modest in comparison with the strong rise in its relative indebtedness (see Chart II-19). This reflects the declining importance within total loans of consumer credit and other loans bearing higher rates and the increasingly higher proportion of subsidised housing loans within total home-building loans (see Chart II-20). Naturally, the low interest rates paid by households on outstanding subsidised loans do not imply lower risk spreads for credit institutions. This is seen as favourable from the perspective of cover for credit risks.

[19] Data on household income are not available for the period after 2000. Therefore, in the analysis interest is related to the gross wage bill.

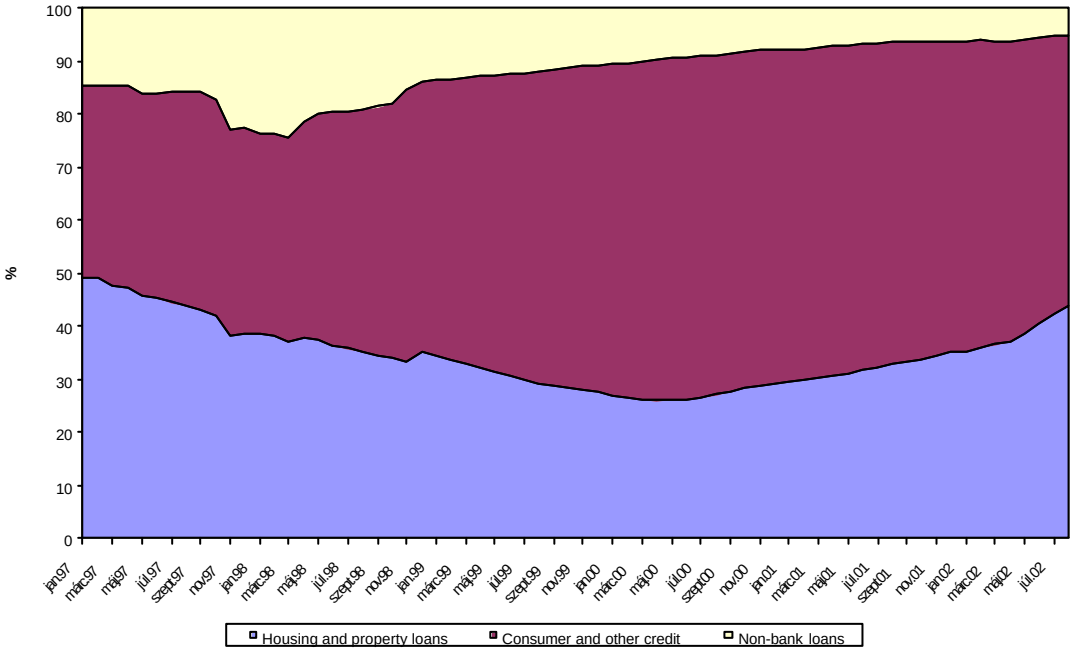
[20] However, additional costs of households above principal repayment are actually higher than interest costs, due to handling and other charges as well as fees and commissions.

Chart II-19 Households' relative outstanding loans and interest burden*



* Estimated monthly interest burden.

Chart II-20 Composition of total household debt

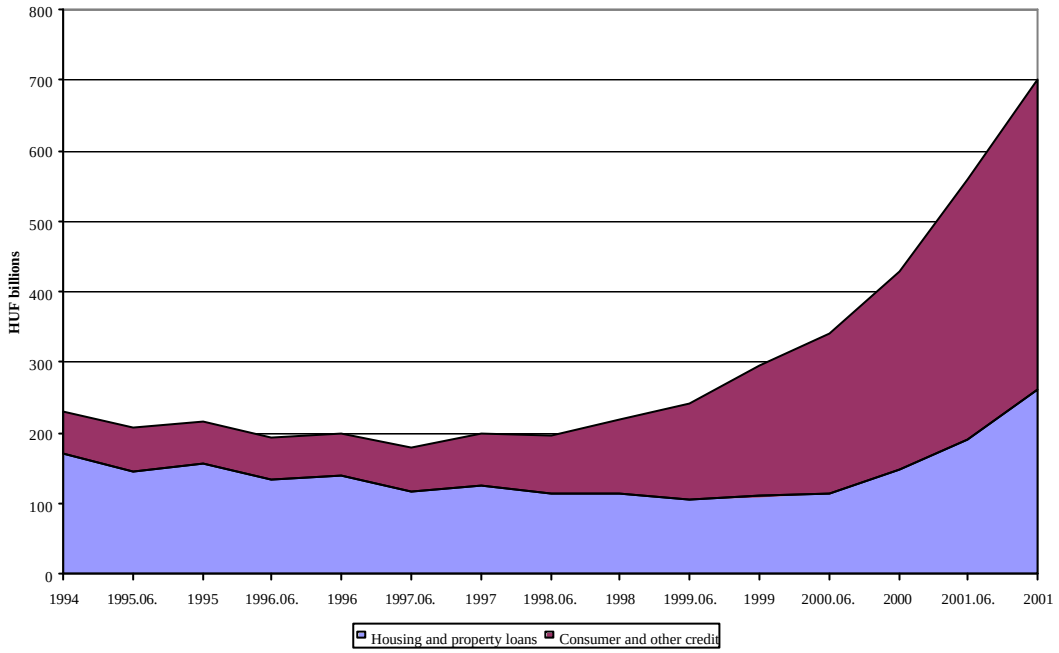


Domestic banks' credit risks

Dynamic growth in lending to households, seen over the past several years, continued in 2002 H1. The banking sector's total loans outstanding to households, excluding sole proprietors, rose by 24.9% in the period, up from 20.6% a year earlier (see Chart II-21). At 96.6%, nearly the entire loan stock is comprised of forint loans. The share of

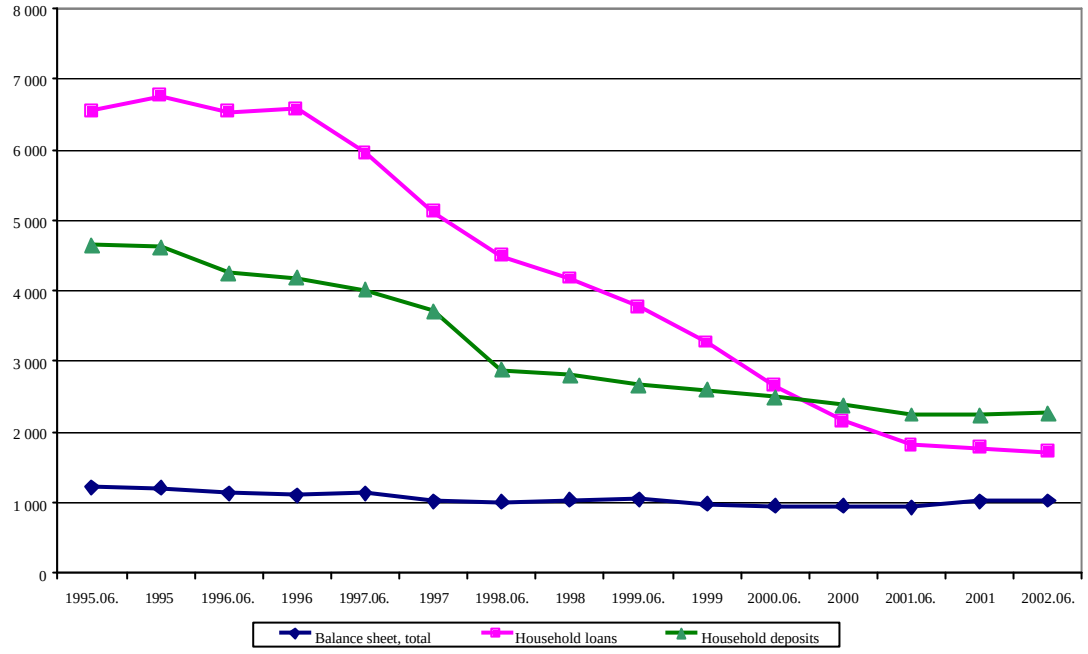
long-term loans increased by 2 percentage points, to 90%, simultaneously with a pick-up in housing loans.

Chart II-21 Households' bank loans*



* From 2001, sole proprietors are re-classified from the corporate sector into the household sector.

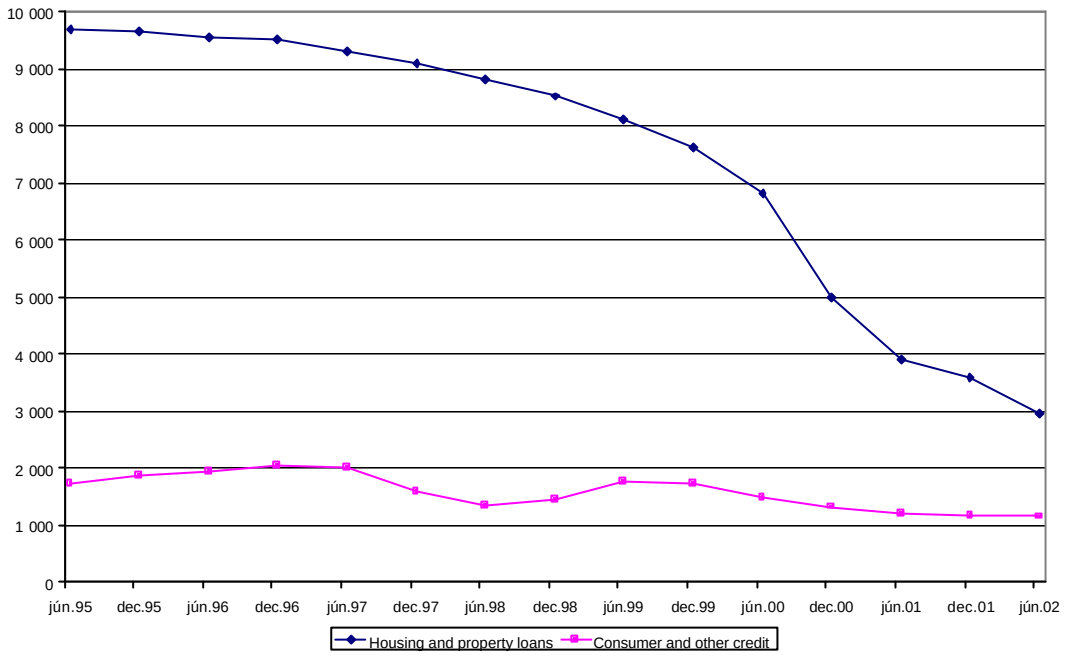
Chart II-22 Market concentration of household sector loans and deposits (Herfindhal index)



Looking at the total stock of household loans, the reduction in concentration stopped at a fairly high level, despite the strong expansion of lending (see Chart II-22). There are several reasons for this. First, the relatively quick decline in concentration in earlier periods was due in part to the rapid increase in consumer credit and other loans representing a dominant share which has recently slowed down. On this partial market, concentration settled at a fairly efficient level. Second, owing to their small share and the still very high degree of concentration, the expansion of housing loans which only started a couple of years ago and the related reduction in concentration had little effect on the overall concentration of the total household loan stock (see Chart II-23). Due to the significant increase in the proportion of housing loans, developments in the partial market will likely have a greater and greater influence on the concentration of the entire loan stock in the future. In addition, the consolidation process of the banking sector will shape and, presumably, increase the degree of concentration. The gradual reduction in concentration in the area of deposit collection, continuing for several years now, also seems to be stabilising at a fairly high level.[21]

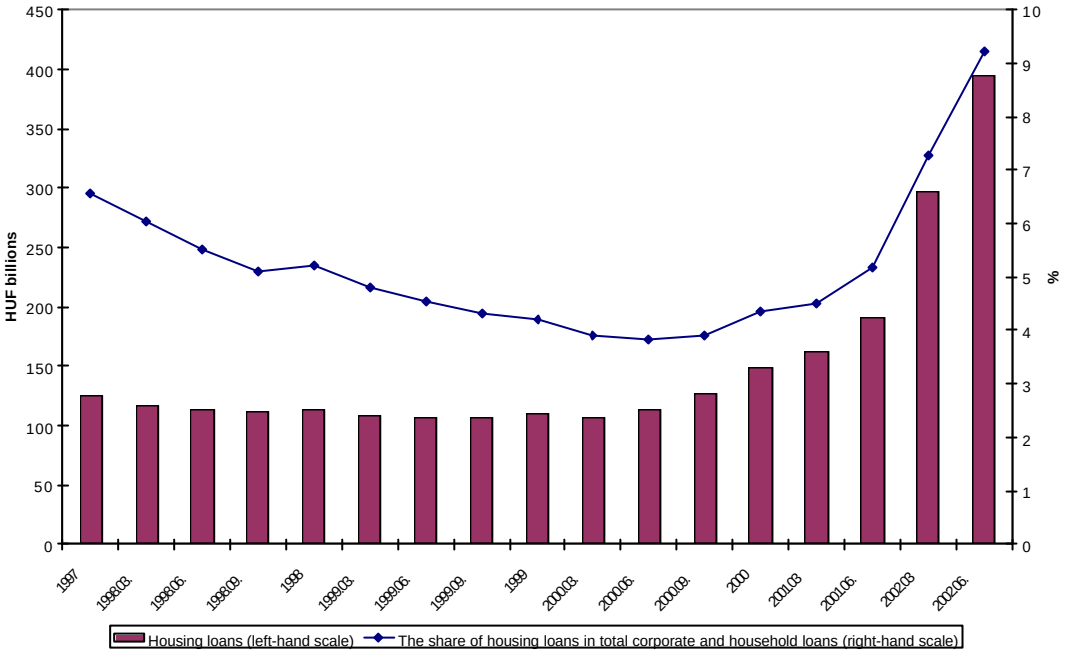
[21] Calculating the degree of concentration was significantly influenced by whether or not the subsidiary of a given bank is treated as a separate entity In addition, concentration of loans to and deposits from households, measured by the Herfindhal index, would be much lower if savings cooperatives with small household loans and deposits which are nevertheless significant in combination were taken into account in the calculation.

Chart II-23 Concentration of housing loans, and consumer credit and other loans (Herfindhal index)



Outstanding housing mortgage loans have been rising dynamically over the last two years, primarily because of the momentum provided by the Government's housing subsidy programme. The strong, 50% increase in 2002 H1 was concentrated in the second quarter and on subsidised loans, as a result of the extension of the programme to purchases of used homes in March. This is reflected in the fall in lending at market conditions and the shift in favour of subsidised loans.

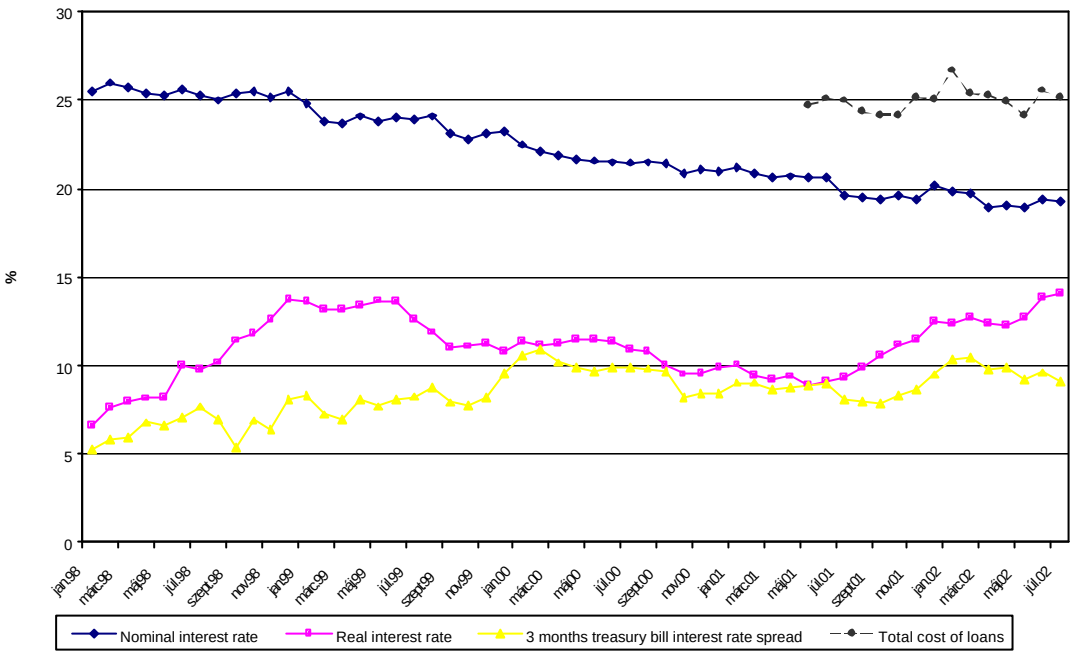
Chart II-24 Housing mortgage loans



Simultaneously with the pick-up in the volume of housing loans, the percentage share of housing mortgage loans within the outstanding corporate and household sector loans is also rising – the growth rate for these loans continued to increase significantly in 2002 H1 (see Chart II-24).[22] At the end of the period, housing loans accounted for 45% of the household loan stock, and for 59% in the case of the five largest banks.

[22] For risks in housing loans, lending rates, property prices and the risks of a potential property market bubble, see “The risks and institutional structure of housing finance” in this report.

Chart II-25 Nominal and real interest rates on non-housing loans and their spread over DTB yields



Outstanding consumer credit and other loans rose by 10% in the period under review, but their growth rate slowed. This is partly due to banks transferring car purchasing finance to their leasing firms. With the financing chain lengthening, these loan stocks are recorded in banks' balance sheets as lending to financial enterprises rather than consumer credit. The slow decline in nominal interest rates has halted recently, with the average APRC fluctuating at a fairly high level of around 25%. Owing to the massive demand, the differential between interest rates on consumer credit and other loans, and risk-free market yields increased between 1998–2000, and has been moving between 8%–10% since then. The contemporaneous real interest rate which is used by banks in their pricing practice (as well as by households presumably) fell between 1999–2000, then subsequently rose. This, compared with the recent drop in the growth rate of outstanding consumer credit and other loans, may reflect households' stronger interest sensitivity (see Chart II-25). Domestic real interest rates on consumer credit and other loans are considerably higher in Hungary than in the euro area. The vast bulk of the loan stock is denominated in forints. Long-term loans have continued to account for a share of around 82% for several years now.

The expected slowdown in the growth rate of net financial wealth, and its potential temporary drop, are natural companions of the structural adjustment process, at least up to a certain level. From the perspective of judging risks, it is favourable that the interest burden has been rising more modestly than indebtedness. Another positive factor is that the share of higher-risk assets has been falling within household savings. Despite the increasingly stronger rise in the household loan stock, and particularly in subsidised housing loans, concentration in this customer segment continues to be high. The unsaturated market makes it possible for banks to apply fairly high risk spreads, which, except in the case of subsidised housing loans, imposes significant excess burdens on households. At the same time, however, the expansion of lending

for housing has not been associated with a rise in property prices. This lessens the risk of potential price bubbles in the property market.

II. 3 Portfolio quality

The ratio of classified portfolio items to the total portfolio has been falling as a trend. It reached its 'historical' low at 6.8% in June 2002 (see Chart II-26). With a jump in special-watch items, this trend was interrupted by data for end-2001, explained by a change in the rating practice of one large bank.

As far as systemic risks are concerned, a different, and slightly deteriorating picture emerges on a yearly level, if classified items are examined somewhat more narrowly, as a proportion of total balance sheet items to be classified. As the rating of off-balance sheet items improved in the first half, being 98.5% problem-free, this increase in volume was responsible for the overall improvement in the total portfolio.

Chart II-26 Classified assets as a proportion of the total portfolio and of balance sheet items to be classified

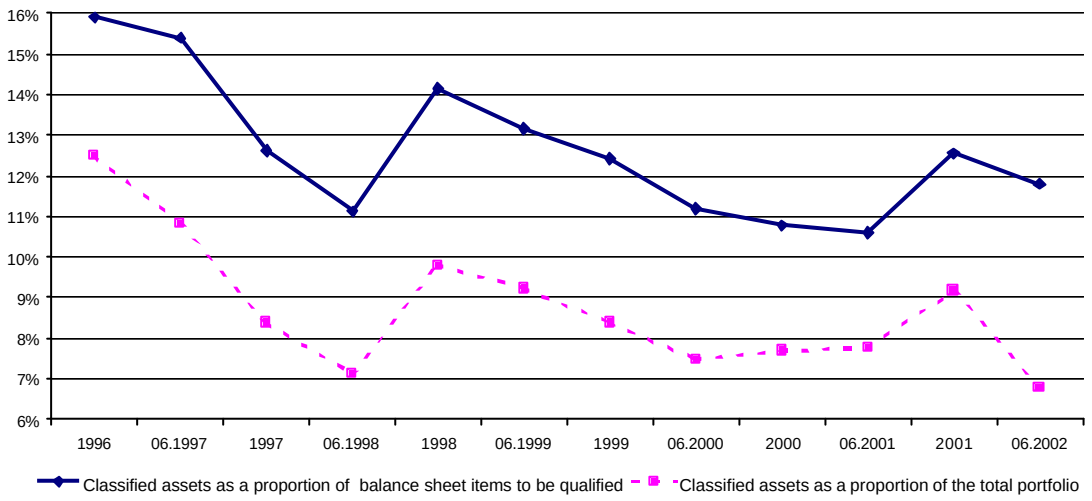
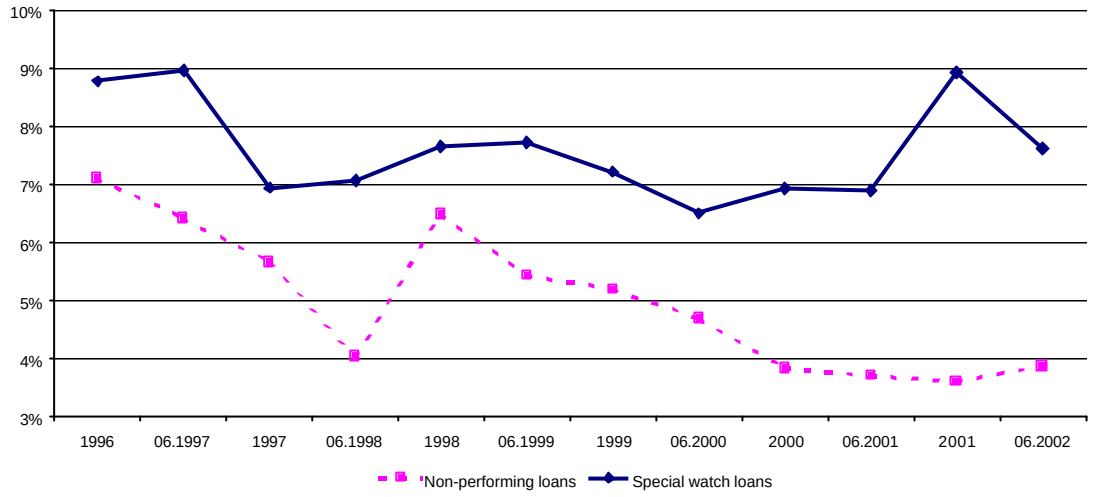


Chart II-27 Special-watch and non-performing loans as a proportion of balance sheet items to be classified



There was a significant fall in the percentage share of special-watch items in the period under review, together with a slight increase in the share of non-performing loans (see Chart II-27). The change in special-watch items was accounted for by the large bank already noted.

Examination of the proportions of the various classified asset categories within total balance sheet items to be classified reveals that by end-2000 the banking sector had recovered from the shock caused by the Russian financial crisis, and the ratios of those items had returned to values seen in the period prior to June 1998. However, the economic slowdown which started in 2000 H2 was a factor hindering a further considerable improvement in the portfolio – first, the percentage share of items in the upper categories, then that of those in the increasingly worse categories, began rising. Eliminating the effect of the one large bank already discussed, special-watch items as a proportion of the total have been rising continuously since 2000 H2, apart from minor fluctuations. And, since 2001 H1 the ratio of substandard items has also been rising, associated with a rise in the ratio of doubtful items since 2002 H1. In the absence of a general economic upturn (external demand and corporate fixed investment are only expected to pick up slowly next year), the ratio of bad assets, currently stagnating, is expected to increase.

It should be noted that, as a whole, there has been no dramatic deterioration in the loan portfolio in the past twelve months. The lending expansion, i.e. the effect of large amounts of new loans improving portfolio quality, provides a partial explanation for this. In addition, the ratios of recorded losses in value within the various classified asset categories fell in the period (see Table II-1). The average allowance for loss in value fell both in the corporate and household segments. Using the allowances for the year earlier period, banks should have recorded HUF 17.6 billion more in losses. The increase in the outstanding amount of overdue claims (at 22% and at 16% including re-negotiated claims) was comparable with the growth rate of the volumes of classified balance sheet items (19%) and non-performing items (15.5%). Assuming banks' collateral policy remains broadly unchanged suggests that there was no improvement in the contents of the various classified asset categories.

Table II-1 Recorded losses in value in the various classified asset categories as a proportion of the gross value of balance sheet items

Recorded losses in value as a percentage of gross value	Special watch	Substandard	Doubtful	Bad
30-jun-01	3,6%	22,5%	51,6%	90,3%
31.dec.01	2,3%	22,0%	47,4%	89,0%
30-jun-02	2,5%	18,5%	46,4%	87,5%
Recorded losses in value as a percentage of gross value - households'loans				
30-jun-01	6,8%	20,7%	47,6%	96,3%
31.dec.01	1,9%	19,4%	44,2%	95,4%
30-jun-02	1,8%	16,2%	41,8%	90,9%
Recorded losses in value as a percentage of gross value - non-financial firms'loans				
30-jun-01	2,4%	18,2%	50,3%	90,5%
31.dec.01	2,3%	22,0%	47,4%	89,0%
30-jun-02	2,0%	17,6%	44,9%	87,7%

All these suggest that, with the current slowdown in economic activity, banks attempt to maintain a certain level of profitability, anticipating that economic performance will turn upwards in the near term and that later they will not be forced to record much higher losses in value, due to the currently low allowances for losses in value. However, the current practice of classifying loans and recording losses which reflects a positive scenario seems to be overly optimistic, given the current domestic and international economic outlook. The Bank, therefore, expects the end-of-year audited data to reflect higher allowances than the current ones.

Corporate loan portfolio quality

Portfolio quality deteriorated in the manner as described in the previous section – with special-watch and substandard items the first to increase, followed by an increase in the ratio of doubtful loans (see Charts II-28 and II-29). Based on the recent stagnation in the European economic activity, the uncertainties facing large firms and the shift within the expansion of lending to the corporate sector towards higher-risk segments, the Bank expects an increase in bad loans and a slight deterioration in portfolio quality. However, the ratio of non-performing loans is unlikely to surge in the short term.

Chart II-28 Growth in lending to the corporate sector, and special-watch and non-performing loans as a proportion of the total corporate assets

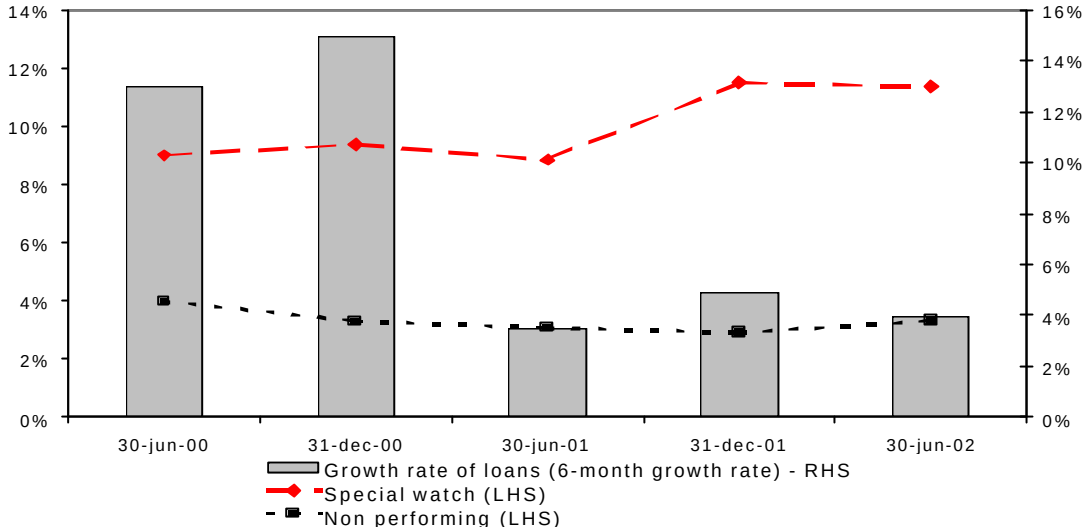
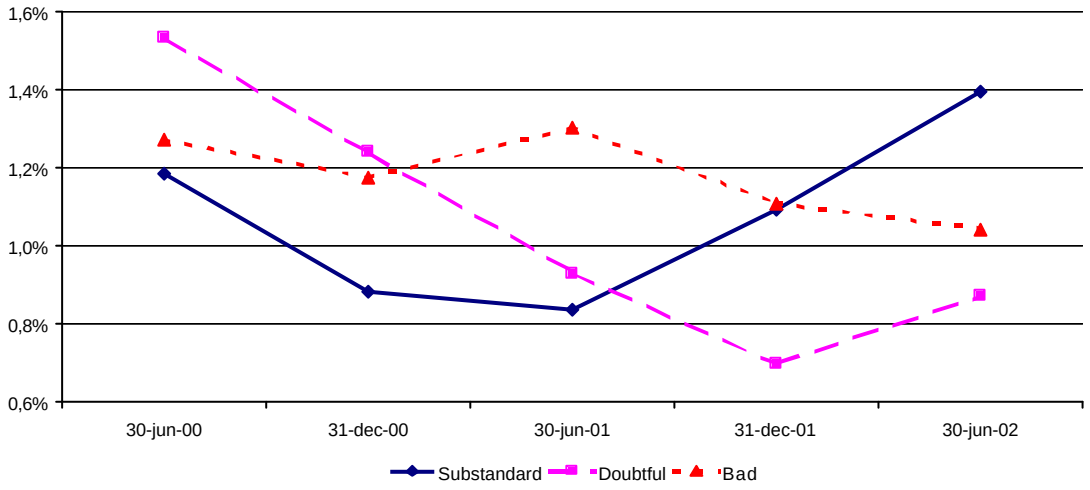


Chart II-29 Ratios of non-performing corporate loans



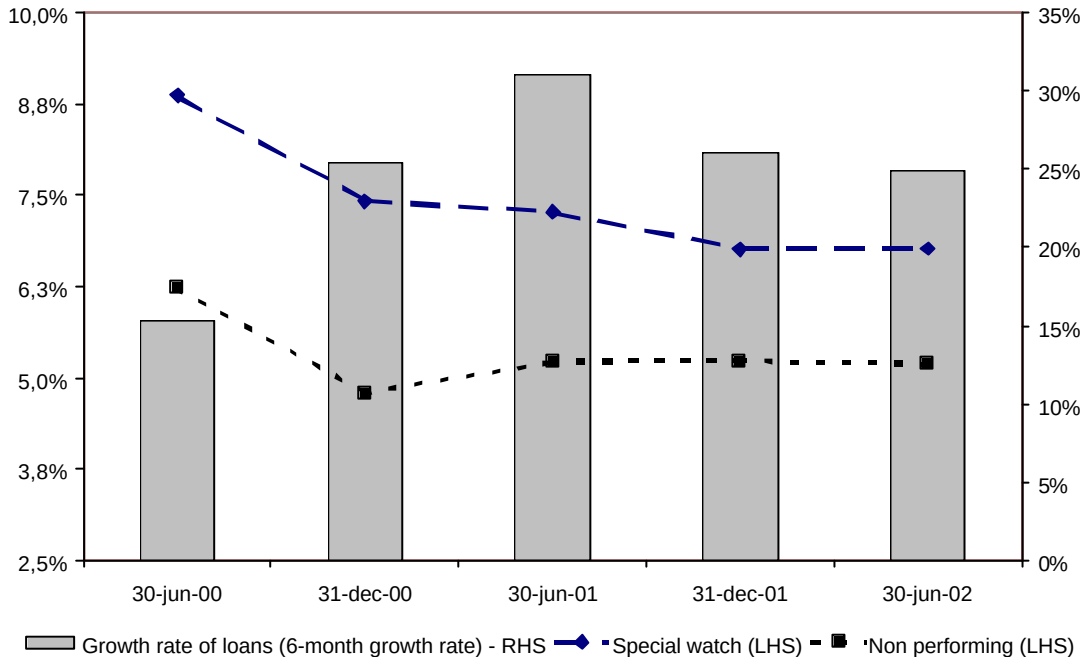
Household loan portfolio quality

Portfolio quality has remained virtually static over the past 18 months, despite the massive amount of new loans and the favourable shift within lending to households (see Chart II-30). As the new loans are generally problem-free,[23] they improve the quality of the outstanding total. Another positive event from the perspective of portfolio quality was that the shift in banks' focus from consumer credit towards property loans bearing lower risks continued in 2002 H1.

[23] It is an established practice at a number of banks to classify immediately into the special-watch category uncollateralised loans to households.

In the past year, the increase in overdue claims on households (32%) has remained below growth in the volumes of classified balance sheet items (51%) and non-performing loans (56%). This suggests a more cautious qualifying practice than in earlier periods, which may be a partial explanation for the decrease in recorded losses in value. On the whole, banks appear to pursue somewhat more cautious practices for classifying items and recording losses in value in the household market in comparison with the corporate market.

Chart II-30 Growth in lending to the household sector, and special-watch and non-performing loans as a proportion of the total household assets



Taken as a whole, banks' failed to adjust their practices for classifying loans and recording losses in value to current international and domestic economic prospects and also did not take account of the rapid increase in higher-risk segments within their outstanding loans, presumably due to profitability considerations. Based on these, their current practices seem too optimistic, particularly in the corporate segment; however, the extent of this does not expose the financial intermediary system major risks. A further deterioration in portfolio quality is expected in lending to the corporate sector. Year-end audited data will likely reflect higher allowances for loss in value than currently.

II. 4 Market risks

II.4.1 Exposure to interest rate risk

Interest rate volatility increased in 2002 relative to the previous year – bank rates fell in Q1, and then rose following a slight pause in the wake of increases in official rates in May and July. Similar to the latest significant interest rate increase in October 2000, corporate borrowing rates reacted nearly comparably with changes in market yields, with household deposit rates responding with some delay and much more modestly.[24] The extent to which household borrowing rates reflected the effect of interest rate increases by Magyar Nemzeti Bank was much less, given that by September interest rates on consumer credit had returned to the April level following a short episode of increase. By contrast, property loan rates fell in the same period.

The spread between average rates on interest-bearing assets and the costs of interest-bearing liabilities remained virtually unchanged in 2002 H1, following a rise in the previous year, while the ratio of interest-bearing assets to interest-bearing liabilities rose further slightly (see Table II-2).

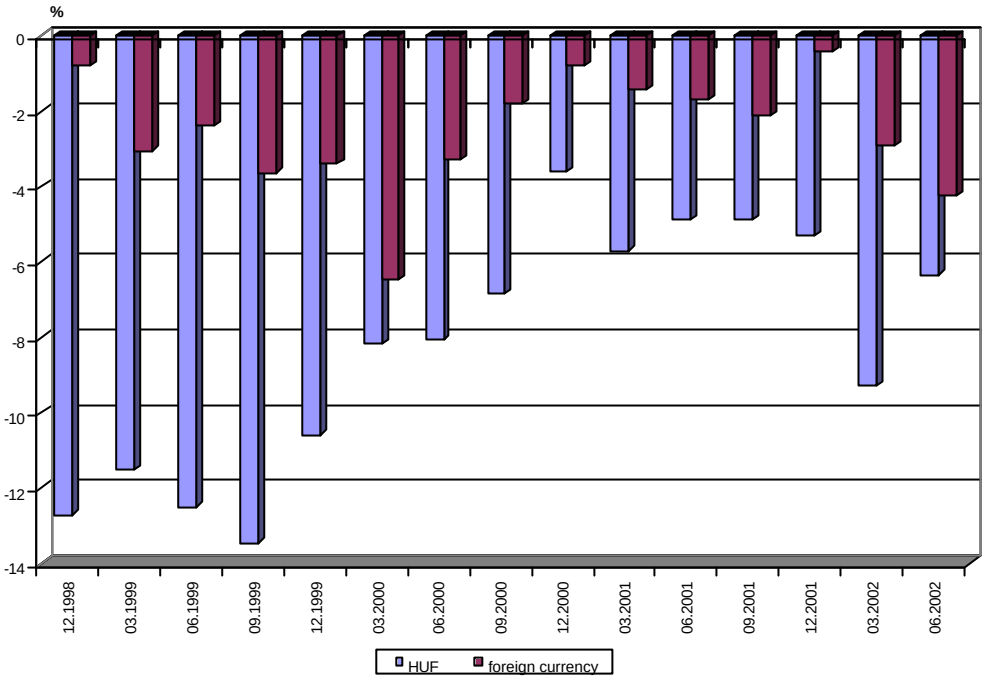
Table II-II-2 Major indicators of banks' interest rate exposures

	December 2001	*June 2002*
90-day cumulated forint gap (HUF billions)	–480	–580
90-day cumulated foreign currency gap (HUF billions)	–38	–388
90-day cumulated euro gap (HUF billions)		–140
90-day cumulated dollar gap (HUF billions)		–248
90-day cumulated forint gap/balance sheet total	–5.3%	–6.3%
90-day cumulated foreign currency gap/balance sheet total	–0.4%	–4.2%
	2001	*2002 H1*
Average of interest-bearing assets/average of interest-bearing liabilities	109.0%	109.2%
Spread (interest income/average of interest-bearing assets less interest expenditure/average of interest-bearing liabilities)	4.0%	4.0%

Despite increasing interest rate volatility, banks' negative repricing gaps increased both on the forint and foreign currency sides (see Chart II-31). The 90-day cumulated forint repricing gap widened by HUF 100 billion relative to end-2001, with its share of the balance sheet total rising by 1 percentage point. The foreign currency repricing gap widened by HUF 350 billion, with a 3.5 percentage point increase in its proportion of the balance sheet total. Looking at the breakdown by the most important currencies, i.e. the euro and dollar, the interest rate risks carried by dollar assets are higher in the banking sector, accounting for around two-thirds of the total foreign currency gap.

[24] In the period April–September 2002, interest rates on short-term loans to the corporate sector rose by 101 basis points and short-term household deposit rates by only 35 basis points. Calculating with monthly averages, the three-month BUBOR rose 127 basis points in the same period.

Chart II-31 Banks' 90-day cumulated repricing gaps[25]



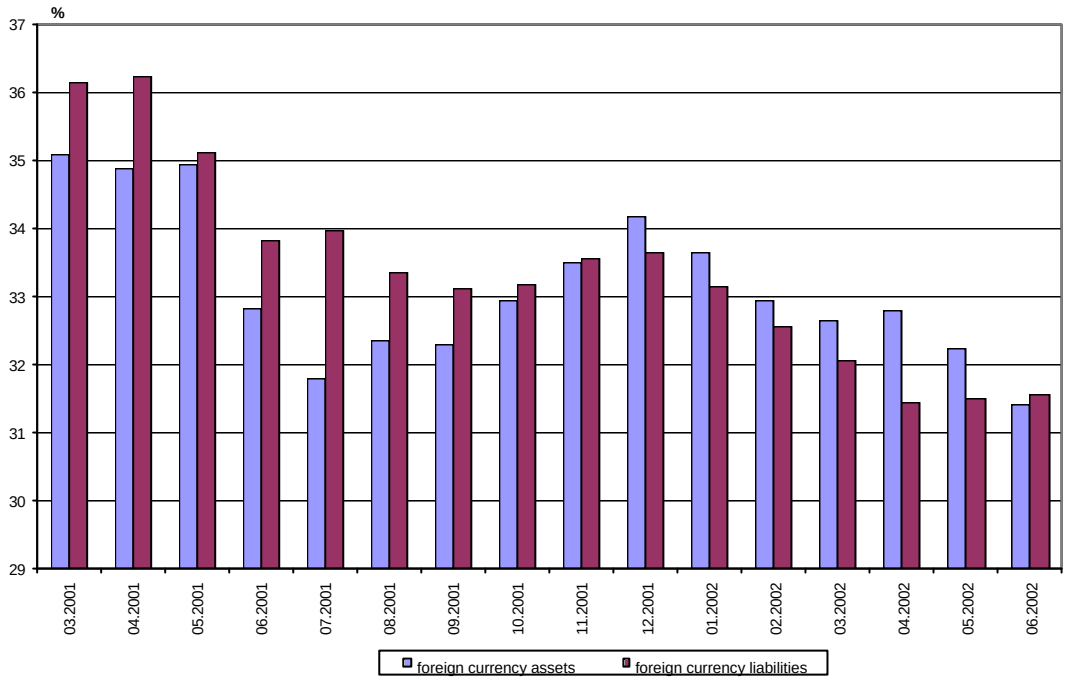
Taken as a whole, banks' exposure to interest rate risks increased in 2002 H1 relative to the previous year, although the temporary increase in forint interest rate volatility would have justified a narrowing of open interest rate positions.

II.4.2 Exposure to exchange rate risks

Looking at the denominational structure of the banking sector's balance sheet, the share of foreign currency items fell in 2002 H1, following an increase in the final quarter of 2001 (see Chart II-32). Foreign currency assets and liabilities accounted for 31.4% and 31.5% respectively of the balance sheet total at the end of the review period and their shares declined by 2.8 and 2.1 percentage points respectively (they have fallen by 3.5 and 4.7 percentage points since band widening). On the assets side, foreign currency assets vis-à-vis non-residents fell significantly as a proportion, in contrast to foreign currency loans to the corporate sector rising slightly and those to non-bank financial intermediaries jumping sharply. On the liabilities side, the reduction in foreign currency liabilities was attributable mainly to foreign currency liabilities to non-residents and households' foreign currency deposits.

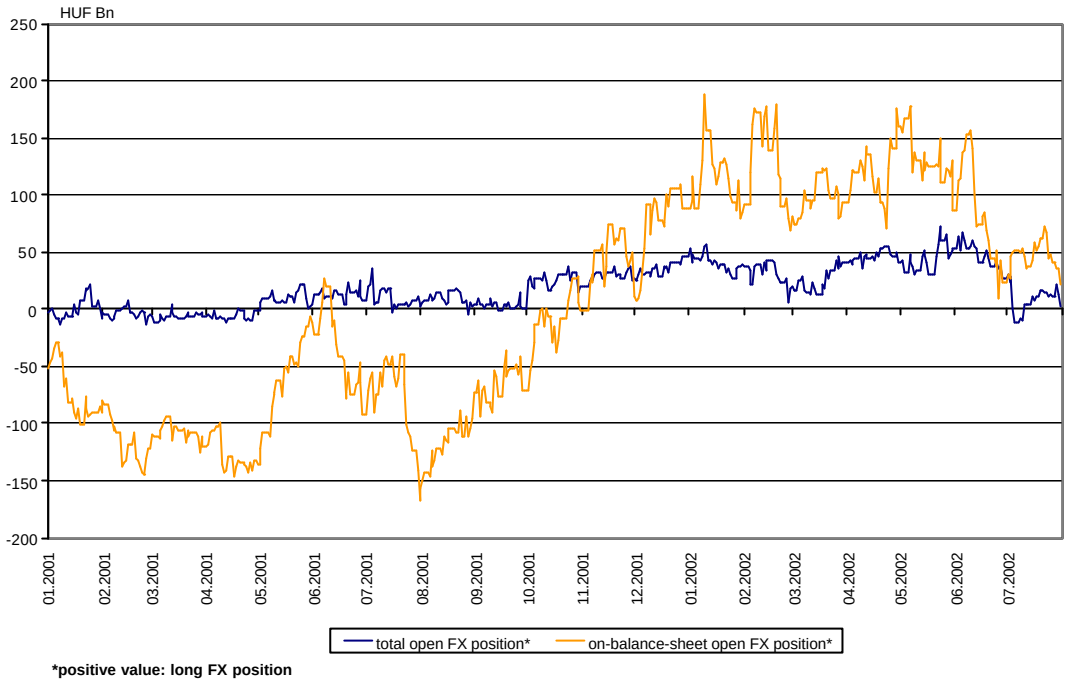
[25] The FX repricing gap includes the sum of EUR and USD gaps (from 2002, banks are obliged to report in the five major currencies: EUR, USD, GBP, CHF and JPY).

Chart II-32 Foreign currency assets and liabilities as a proportion of the balance sheet total



The banking sector's on-balance sheet long position increased significantly in December 2001, and peaked January 2002 (HUF 187 billion). It then fluctuated in a range between HUF 68–178 billion up to early July. The moderate weakening of the forint’s exchange rate in June, followed by a massive decline in early July, was reflected differently in the banking sector's on-balance sheet open position. Whereas the depreciation in June was associated with a considerable closing of the on-balance sheet position via the strong decline in non-bank participants' demand for forint, the currency's weakness in early July was not associated with significant capital outflows. As a result, the on-balance sheet long position did not fall, but settled at a lower level (around HUF 50 billion) relative to the period preceding June (see Chart II-33).

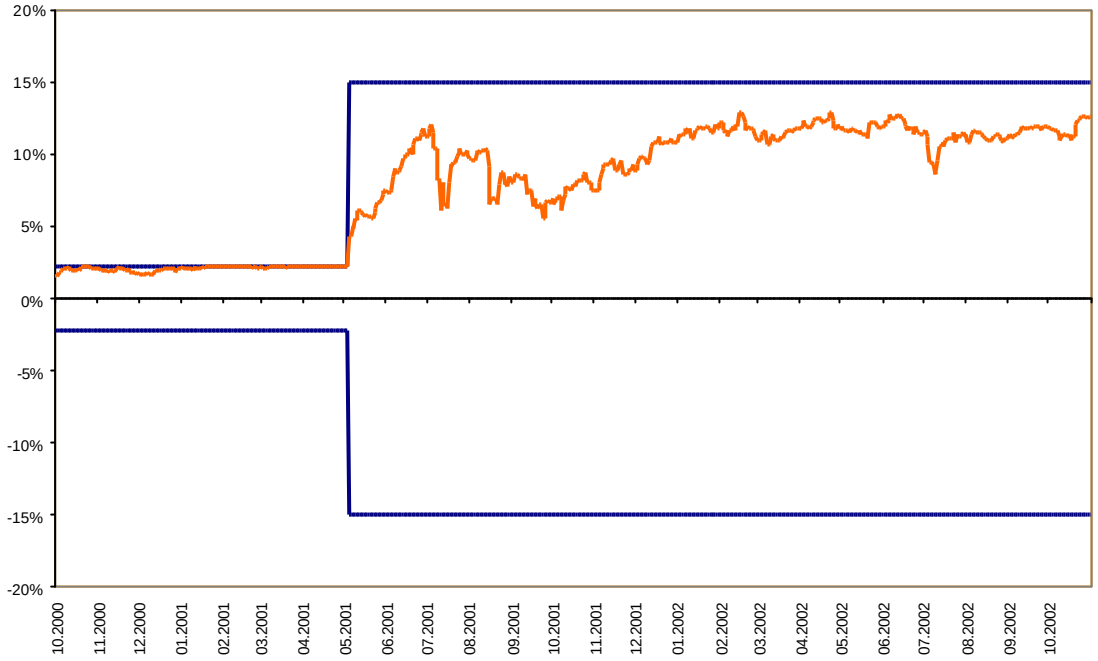
Chart II-33 Total and on-balance sheet open position of the banking sector



***positive value: long FX position**

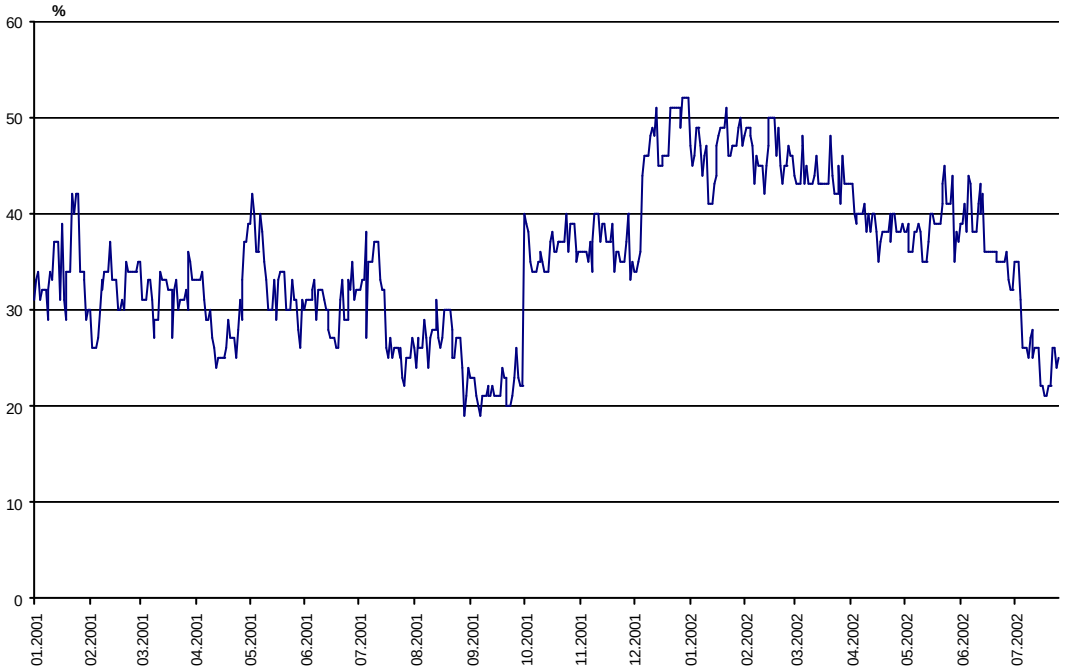
Following band widening in May 2001, the total foreign currency position of the banking sector was transposed to the long side, with banks characterized by a low propensity to take on risk due to increased exchange rate volatility. The sector's total foreign currency position started opening up in October 2001, and banks held long foreign currency positions amounting to HUF 30-50 billion throughout most of 2002 H1. When the currency weakened in June, banks reduced their total long foreign currency position, followed by the closure of the total position, with a shift to the short side for a couple of days during the fall in the exchange rate in early July. In the second half of July, a tighter position developed, characteristic of the period following band widening (see Chart II-34).

Chart II-34 Movements in the forint exchange rate



Utilisation by banks of their limits on open positions varied between 35%–50% in the most part of 2002 H1. This was higher than the level seen in the previous year. Following the significant exchange rate weakening in early July, the utilisation rate fell considerably, and fluctuated between 20%–25% in the second half of the month (see Chart II-35).

Chart II-35 Utilisation of limits on open positions in the banking sector

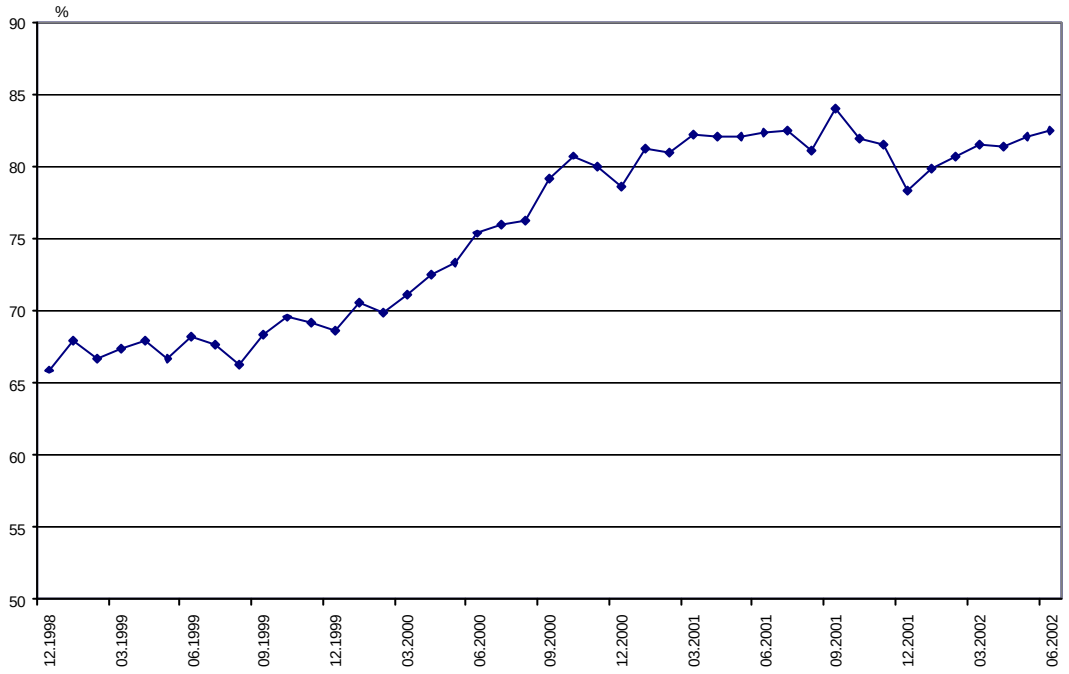


Taken as a whole, exchange rate volatility was lower and banks' propensity to take on risks a little higher in the period January–May 2002. However, banks' behaviour became much more risk averse in the wake of the currency weakening in June–July.

II. 5 Banking sector liquidity

In 2002 H1, the loan-to-deposit ratio[26] for the entire banking sector (calculated on the basis of end-of-month stocks) began rising again following the fall in the final quarter of 2001, and as a result of continuing lending expansion and slower customer deposit growth. However, the value of the indicator fell short of the peak registered at the end of 2001 Q3 (see Chart II-36). Having increased in the previous year, the combined market share of banks with loan-to-deposit ratios of above 100% remained unchanged at 46.5%.

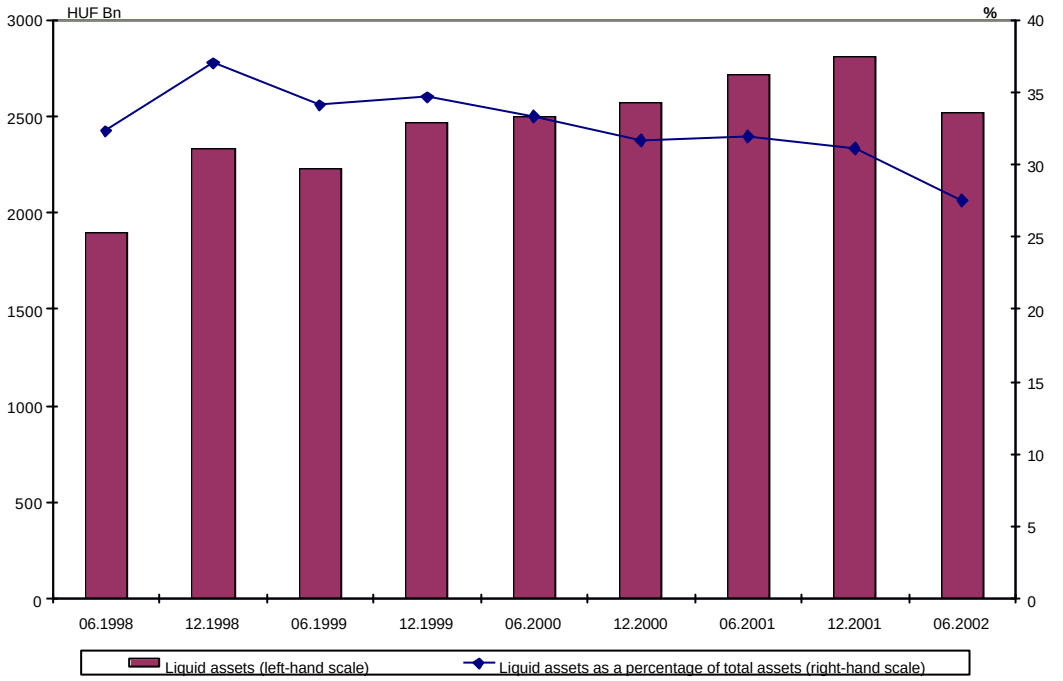
Chart II-36 Banks' loan-to-deposit ratio (end-of-month stocks)



The sector's assets and liabilities side indicators continue to show little evidence of excessive risks, although the former show that liquidity tightened in 2002 H1. The ratio of banks' liquid assets to the balance sheet total fell significantly, following stagnation in 2001; however, at 27%, it is still sufficiently high (see Chart II-37). The ratio of money market funds, considered the most volatile category, was 6.5%, remaining broadly unchanged at the level seen at end-2001.

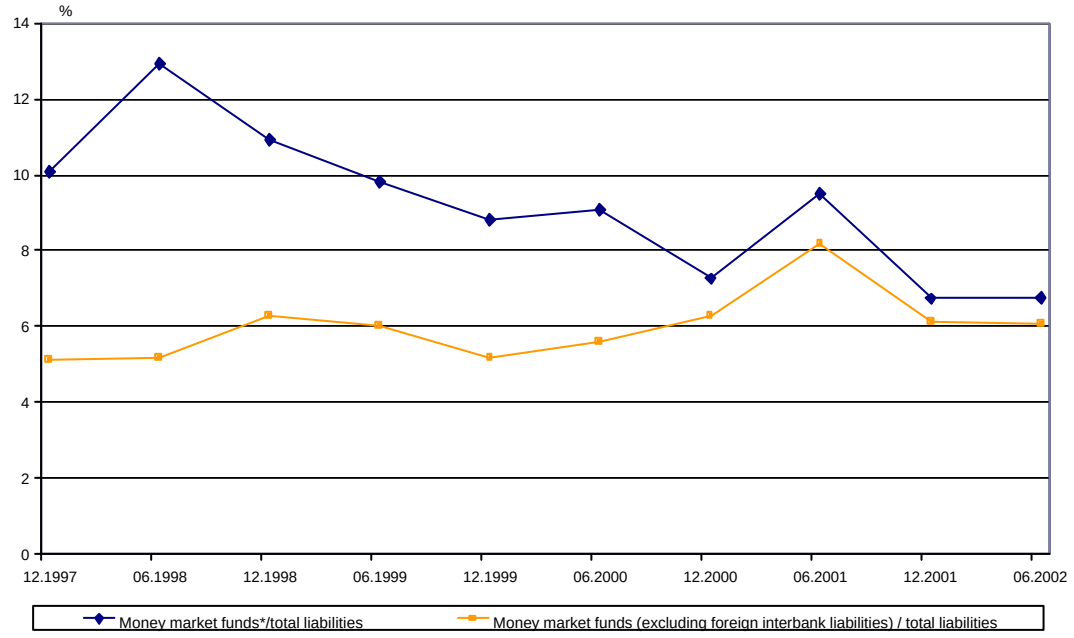
[26] Outstanding loans to non-financial corporations, auxiliary companies and households/deposits of non-financial corporations, auxiliary companies and households plus securities holdings.

Chart II-37 Liquid assets



* Liquid assets include vault cash and settlement accounts, treasury bill and government bond holdings (excluding consolidation bonds), central bank bills, claims on the central bank and interbank loans with maturities between 0–14 days.

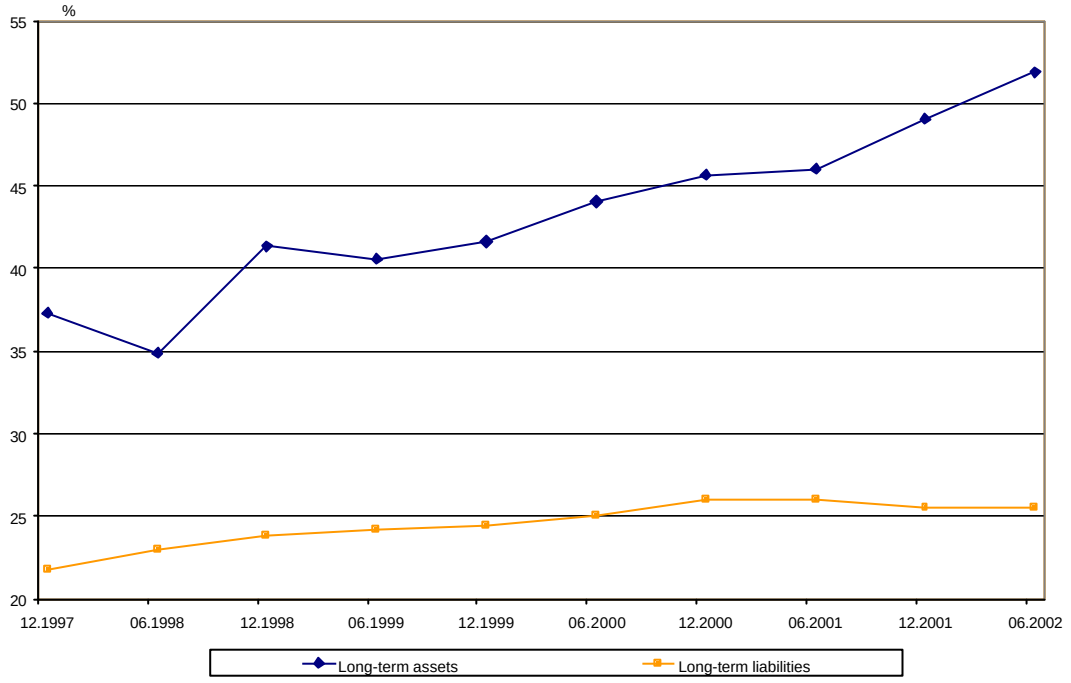
Chart II-38 Money market exposures



***Money market funds: short term interbank liabilities + central bank repo**

Maturity transformation by the sector continued to increase in 2002 H1, as the source of the increase in loans with longer maturities, fuelled by strong demand for housing loans, was primarily short-term deposits (see Chart II-38). There are banks which try to raise longer-term forint funds by issuing securities and, consequently, to improve the maturity match between assets and liabilities. As a result of this, the outstanding amount of forint-denominated securities issued by banks surged by 81% in the review period, owing to a couple of large bond issues, although at 2% their proportion of the banking sector's external liabilities remained fairly low (see Chart II-39).

Chart II-39 Long-term assets and liabilities of the banking sector as a proportion of the balance sheet total



On balance, the sector's liquidity tightened in 2002 H1, mainly due to the rapid increase in long-term loans to households and the more subdued rise in customer deposits. Nevertheless, the liquidity indicators still do not show excessive risks.

II. 6 Capital position and capital adequacy

In 2001 H1, there were a number of regulatory changes to the calculation of the capital adequacy ratio (CAR)[27] which affected both the method of calculation and its value. As a result of these changes, the sector's average CAR had risen to 13.9% by the end of 2001. In 2002 H1, the indicator started falling and reached 12.5%. Adjusting this value for retained earnings expected on the basis of financial results for 2002 H1 and the increase in general risk provisions[28] yields a 13.4% CAR, which is

[27] The most important of these was the inclusion of general risk provisions in primary capital elements, which added more than HUF 50 billion to regulatory capital.

[28] Increasing the regulatory capital-based CAR by the 'interim after tax profit * (1–dividend payout ratio)', the dividend payout ratio appears to have been stable in 2000 and 2001 (23.3% and 23.8% respectively). A 30% ratio has been used for 2002 as a cautious estimate. General risk provisions have

only 0.5 of a percentage point worse than its value at the previous year's end (see Chart II-40).

All banks satisfied the statutory 8% minimum for CAR. However, the combined market share of banks with CAR below 10% increased further, reaching 29.5%, the highest level since 1996. Two of the five banks with the largest balance sheet total have belonged to this group for a some time now. Table II-3 shows that, whereas the market share of the five banks with the largest balance sheet total, considered as having utmost importance from the perspective of banking sector stability, has been rising continuously, reaching 60%, their CAR has been falling, remaining permanently below the market average (see Table II-3).

Table II-3 Capital adequacy of the five largest banks

	20 June 2001	32 December 2001	30 June 2002
Share of the five largest banks of the banking sector's assets	54.8	59.6	59.9
CAR of the five largest banks	12.1	11.8	10.5
Average CAR of the banking sector	13.5	13.9	12.5

Box 1 Comparing coverage ratio with stress CAR

The coverage ratio, used in earlier issues of the *Report*, was not consistent with CAR, due to its calculation method. In order to eliminate this problem, the Bank has replaced the coverage ratio with a 'stress CAR' indicator which is comparable in content but calculated on the basis of a revised method. In calculating the indicator, the net value of non-performing assets is deducted both from primary capital elements reduced by deductions applied in calculating CAR and from the risk-adjusted balance sheet total, as if those assets were written off in full, based on a hypothetical extreme scenario.

Stress CAR indicator = (regulatory capital for CAR – supplementary capital – net value of non-performing assets) / (risk-adjusted balance sheet total – net value of non-performing assets)

Bank staff derived the coverage ratio by adjusting equity/total assets, a simple indicator measuring leverage. The basis for this adjustment was provided by the extreme scenario also used for calculating the stress CAR. In the case of the stress CAR indicator, analysts use the category of capital which starts from regulatory capital. In calculating the coverage ratio, the interim value of equity included interim profits (as if there were no dividend payments), whereas only the interim negative results were included in the regulatory capital for CAR. From this difference it follows that, at mid-year the coverage ratio has tended to be higher, and the CAR and stress CAR lower, than the year-end values.

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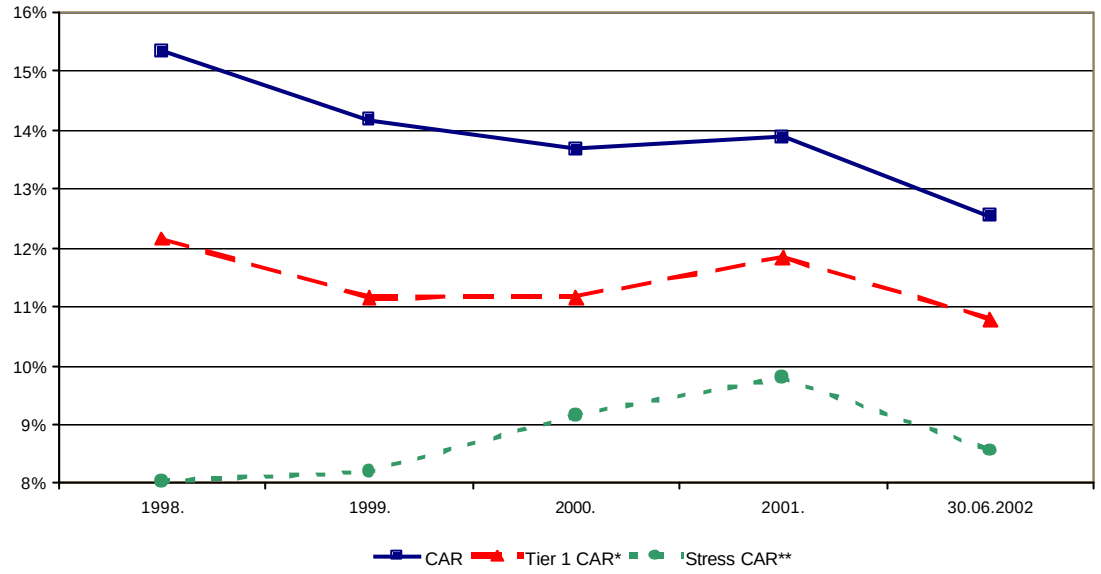
been ignored, as their allocation on the one hand increases the regulatory capital and on the other hand decreases after tax profits, so its effect on regulatory capital is minimal. Including this adjustment, the regulatory capital amounts to HUF 796 billion.

The stress CAR suggests that the banking sector would react without any serious shock to a hypothetical negative scenario – the banking sector's CAR would exceed the statutory 8% minimum, which indicates the sector's strong capital position (see Chart II-41).

Chart II-40 Capital adequacy ratio (CAR), tier 1 CAR and stress CAR



*Tier 1 capital / risk adjusted total assets
**(tier 1 capital - net value of non-performing claims) / (risk adjusted total assets - net value of non-performing claims)

Large banks, relevant for system stability, individually, as a group or the sector as a whole, can be placed in a matrix defined by a capital axis and a risks axis (see Chart II-41). In this, capital providing cover for unexpected losses is defined as the ratio of primary capital-based CAR to risk-adjusted balance sheet total and risk is defined as the ratio of possible maximum losses on loans currently qualifying as non-performing to risk-adjusted balance sheet total. The straight line dividing the field into two is a set of points, where, after incurring maximum losses, the primary capital-based CAR remains 8%,[29] i.e. here banks' even comply with minimum capital requirements in such an extreme situation, without supplementary capital holdings. The higher the sector as a whole or an individual bank is above the straight line, the stronger their capital position is, and vice versa. Based on this, the banking sector's capital position can be judged as strong in the face of unexpected credit losses. Within this, the average capital position of large banks relative to their credit risks is weaker than the sector's average, but its distance from the straight line is not significant.

[29] More exactly, it will be a little higher than 8%, as, in writing off non-performing assets to 100%, the net value of non-performing loans must be deducted not only from the numerator (primary capital), but from the denominator as well (risk-adjusted balance sheet total).

Chart II-41 The ten largest banks' tier 1 CAR and their possible maximum losses on non-performing assets, 30 June 2002

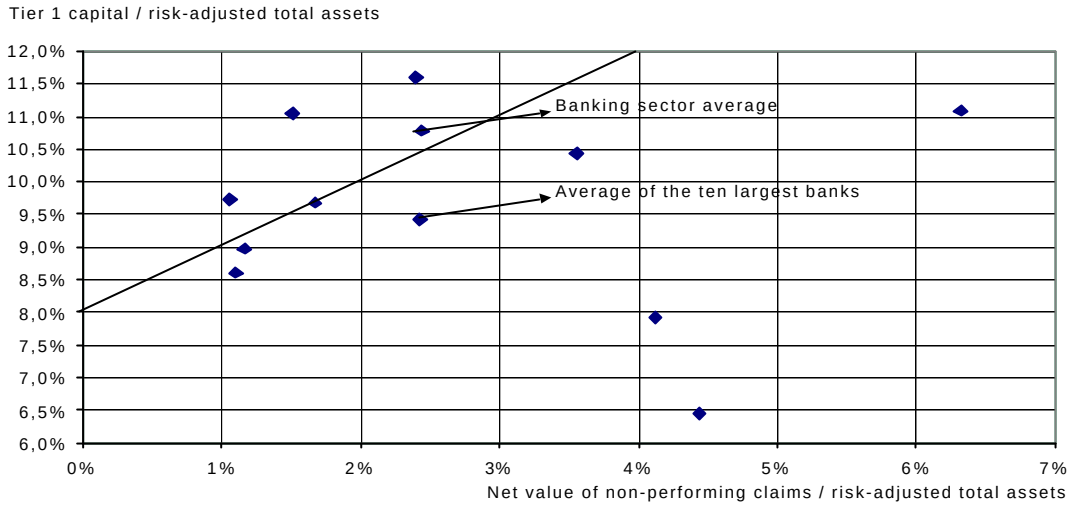


Table II-4 Components of the risk-adjusted balance sheet total

Assets at risk-adjusted values	30.06.2001	31.12.2001	30.06.2002	30.06.2002 / 30.06.2001*
20 per cent weight	4,6%	5,0%	3,4%	0,88
50 per cent weight	2,0%	2,4%	3,5%	2,11
100 per cent weight	73,7%	73,6%	72,2%	1,16
Sum of adjusted balance sheet items	80,3%	80,9%	79,1%	1,17
Adjusted value of contingent and other future liabilities	18,9%	18,2%	20,0%	1,25
Adjusted value of forward claims	0,8%	0,8%	0,9%	1,36
Total adjusted balance sheet (HUF billions) = 100%	5031	5363	5955	1,18

*The index values have been derived from incremental changes in the backround data, and not from the percentage shares

The risk-adjusted balance sheet total increased by 18% in one year, much more strongly than the balance sheet total, which increased by 7.6% (see Table II-4). This can be ascribed to the continuation of the lending expansion seen in earlier years, which led to a rearrangement of the balance sheet structure – the value of low-risk items with 0 or 20% risk weights fell not only as a proportion of the total but in absolute value as well. By contrast, higher-risk items, primarily housing loans covered by properties with 50% risk weight, increased significantly. During the same period, regulatory capital increased at 10.2%,[30] which was lower in comparison with growth in the risk-adjusted balance sheet total (see Chart II-42).

Supplementary capital elements fell further as a proportion of regulatory capital, as in most cases banks did not roll over maturing subordinated loan capital and the nominal value of primary capital elements rose further.

Capital deductions due to investments in other financial intermediaries (OFI) increased by 40% to HUF 52.9 billion in one year. Two large banks accounted for 93% of the increase in stock. However, their stable capital position even allowed for

[30] Calculated on the basis of the Act on Credit Institutions. It only includes interim profits.

this increase, thereby strengthening their own universal banking activities and market positions.

One special feature of Hungarian regulations is that the rule on investments, parent and subsidiary companies loans and large exposures allows banks to overrun the prudential limits expressed as a percentage of regulatory capital, if banks provide 100 per cent cover for these excesses in capital, i.e. if they subtract it from their regulatory capital.

Total excesses over limits jumped 37% at end-2001 (see Chart II-43), then fell in 2002 H1. Their current value is HUF 52.5 billion, which is still seen as excessively high, as it is nearly 20% higher than a year ago. This strong fluctuation may be explained primarily by a change in parent and subsidiary companies' loans. A significant part of excesses over limit may be traced to the activities of a few large banks, and is linked mainly to parent and subsidiary companies' loans. In addition, excesses over the investment limit, as defined in Article 83 (2) of the Credit Institutions Act was also significant. Deductions due to excesses reduced the combined CAR by nearly 1 percentage point. They also partially explain the below-average CARs of large banks, which would be able to improve their capital position significantly by winding down excesses. There was a 45% increase in the capital requirement of the trading book and exchange rate risk in one year.

Chart II-42 Regulatory capital and its components

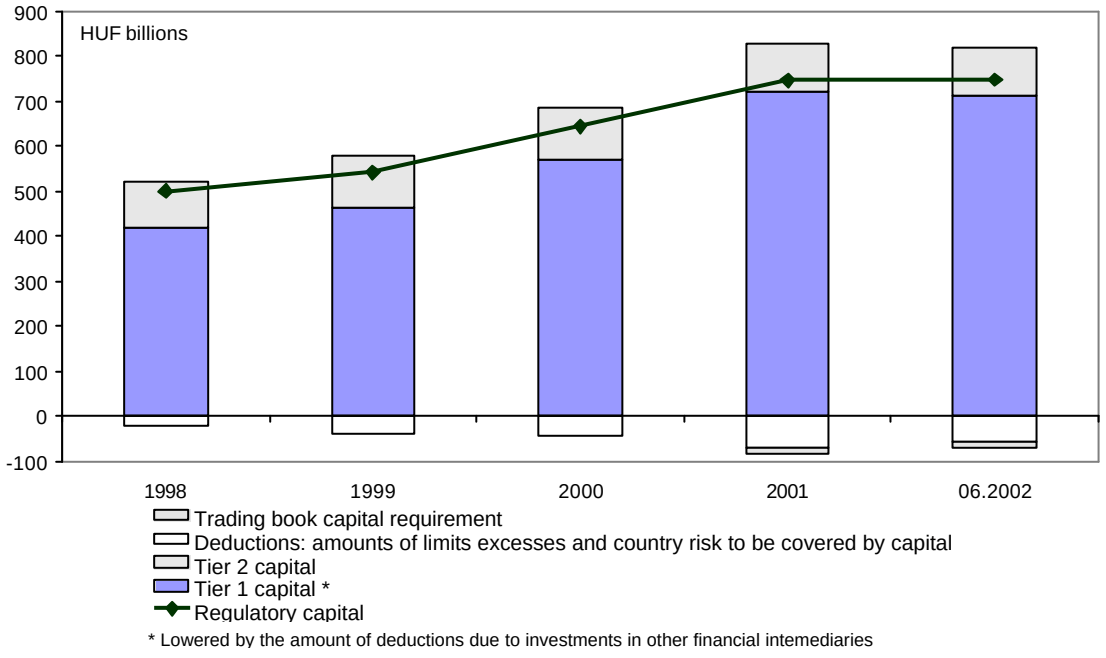
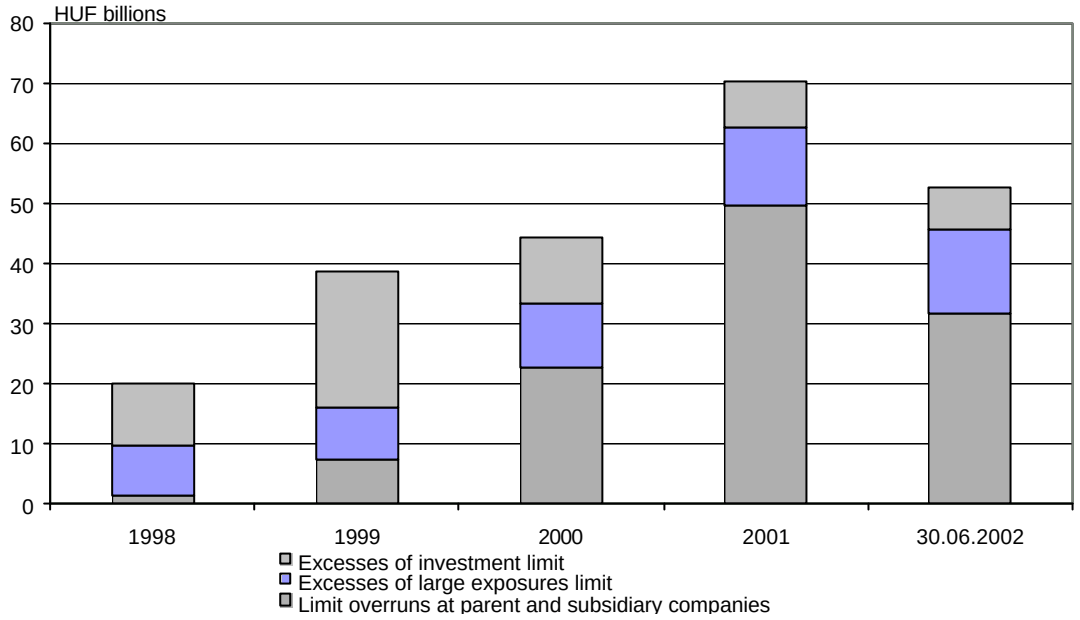


Chart II-43 Excesses over limits pursuant to the Credit Institutions Act



*According to the Hungarian regulations limit excesses should be covered by capital.

Overall, the banking sector's capital position is currently stable, although large banks relevant for the sector's stability register below-average CARs. However, the lending expansion will likely continue in the future. This will cause a steady rise in banks' need for additional capital. In the absence of external funding, banks' capital position would deteriorate as a trend. Presumably owners will ensure this additional capital required and, therefore, a massive deterioration in the sector's capital position is not expected. In calculating the regulatory capital, deductions due to OFI investments, and excesses over limits which concentrate on a couple of large banks significantly detract from the capital adequacy of the banks in question, therefore, a reduction in excesses over limits would be justified.

II. 7 Profitability

In 2002 H1, the net income of the Hungarian banking sector fell slightly relative to the record profits registered in 2001. After-tax profits in the review period, at HUF 70.8 billion, were 5% lower than in the base period. This compares with a 57% increase in 2001 H1 (see Table II-5). Accordingly, the annualised indicators of returns on assets and equity deteriorated slightly – after-tax ROA fell from 1.81% to 1.59%, with after-tax ROE falling from 20.8% to 17.3%.[31] It should be taken into account in comparing the outcome for the two periods that one-off factors also improved the sector's results in 2001 H1.[32] Operating profits,[33] derived by deducting operating costs from operating

[31] Due to the seasonal patterns in profits, annualised data for H1 are only comparable with those for the same period of the previous year, and they are not comparable with annual data, as they are higher.
[32] The one-off contributions to profits in 2001 H1 were the sale of MÉBIT, and releases of provisions due to regulatory changes. The resulting additional profits amounted to some HUF 24 billion.

income is perhaps a better reflection of the underlying developments in profitability, showing an increase of 12% in 2002 H1, in comparison with 23% a year earlier.[34] This suggests that profitability in the banking sector as a whole did not deteriorate, although it improved much more modestly than in the comparable period of 2001.
Whereas in 2001 the majority of banks were able to improve their profitability, the picture was more varied in 2002 H1 – the number of loss-making banks increased, and the majority of profitable banks earned less profits relative to the same period of the previous year. However, the fall from 18% to 8% in the combined market share of loss-making banks in comparison with 2001 was a positive development from the perspective of stability.

Table II-5 Banking sector profits

HUF Bn	H1 2001	H1 2002	H1 2002/ H1 2001
Net interest income	170,4	179,9	105,6%
Change in value adjustments/provisions	-13,1	-5,3	40,3%
Net fee and commission income	47,4	60,4	127,4%
Net profit on financial operations	37,7	20,6	54,7%
Other income	-11,7	-14,7	125,9%
GROSS PROFIT ON FINANCIAL AND INVESTMENT SERVICES	233,3	242,2	103,8%
Operating costs	155,9	164,2	105,4%
NET PROFIT ON FINANCIAL AND INVESTMENT SERVICES	77,5	78,0	100,7%
Profit or loss on operations other than financial and investment services	-0,1	2,3	
PROFIT ON ORDINARY ACTIVITIES	77,3	80,3	103,8%
Extraordinary profit	4,5	0,2	5,1%
PRE-TAX PROFIT	81,8	80,5	98,3%
Tax payable	7,2	9,6	133,4%
AFTER-TAX PROFIT	74,6	70,8	94,9%

Net interest income, accounting for the largest share within operating income, increased by only 5.6% in nominal terms, indicating stagnation in real terms relative to a 7% real increase in 2001 H1.[35] Although less strongly than a year earlier, the rise in customer loans as a proportion of total assets continued to influence positively developments in net interest income. The interest rate spread, however, stagnated following the growth seen in the previous year.

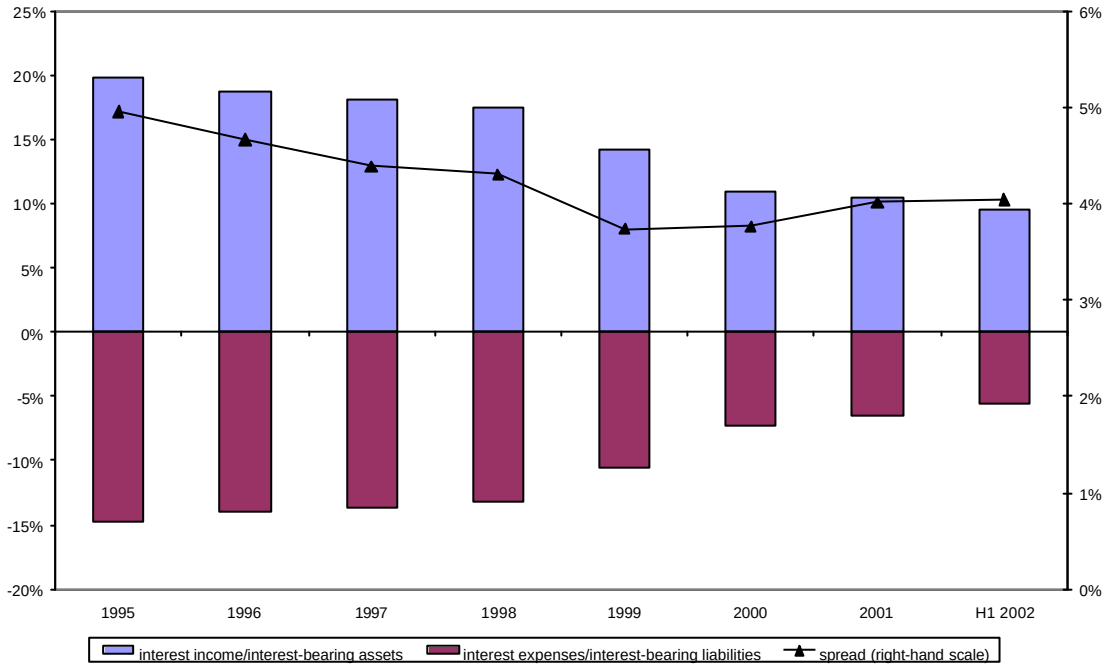
Calculated on the basis of average stocks, the combined share of corporate and household sector loans within the balance sheet total rose by 2.4 percentage points in 2002 H1, primarily on account of fast growth in household loans. At 6.1%, the structural change in the balance sheet was much stronger in the comparable period of 2001. Lower interest income from corporate loans, resulting from a drop in growth in lending to the corporate sector, provides an explanation for the massive slowdown in growth in net interest income. Comparing the average stocks for the two periods, the growth rate of corporate loans plunged from 27% in 2001 H1 to 7% in 2002 H1. Although foreign currency loans saw the largest drop,[36] there was also a significant fall in forint loans, as these were more dominant in terms of net interest income.

[33] Operating income = profits from financial and investment services – change in loss in value/provisions – other income.
[34] After eliminating from the 2001 data the effect on profits of the sale of MÉBIT.
[35] Calculating on the basis of the average consumer price index (5.9%).
[36] Due in part to the forint appreciation.

The continued very robust rise in interest income from lending to the household sector was insufficient to offset the fall in interest income from lending to the corporate sector, due to the small proportion of household loans in overall lending. Interest income from consumer credit and housing loans increased from 6% to 10% as a proportion of total interest income. This indicates the increasing role of household lending in generating profits.[37]

The spread stopped rising in 2002 H1 (see Chart II-44), which was another factor that dampened the increase in net interest income. In comparing the actual outcomes, it is important to note the significant reduction in the required reserve ratio in 2001, which had a positive one-off impact on developments in the spread and, consequently, on net interest income.

Chart II-44 Components of spread



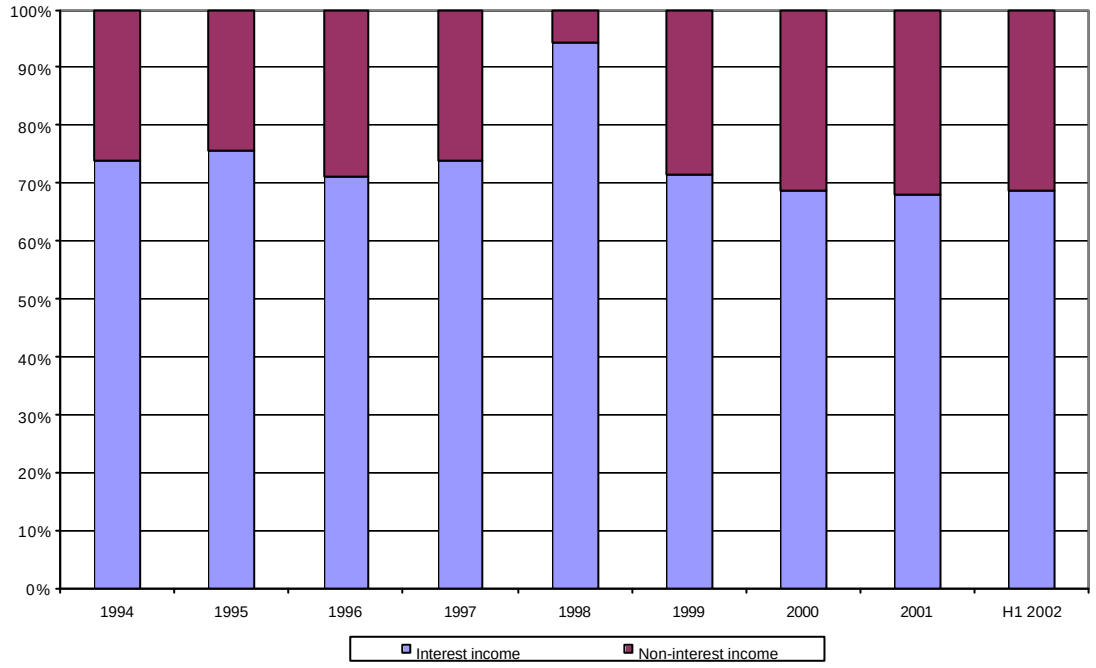
The massive rise in commission and fee income from banks' financial and investment services, at 27.4%, was one factor that partly offset the modest increase in net interest income. The growth rate of commission and fee income from banks' financial services, accounting for the vast bulk (91%) of the total commission and fee income, was 10 percentage points higher than in the comparable period of 2001. Banks' commission receipts rose strongly after band widening and foreign exchange liberalisation, hand in hand with a massive rise in turnover in the interbank foreign exchange market, which presumably also played a role.

Profits from financial operations fell by nearly one-half. Reasons for this included the massive contribution to profits for 2001 H1 of proceeds from the sale of ABN AMRO's insurance business (MÉBIT). After eliminating this one-off factor from the base data, profits from financial operations increased by 9% in 2002 H1. Here, profits

[37] Although housing loans and consumer credit do not include all loans to households and, in the case of mortgage loans, they also include small amounts of loans to the corporate sector , they nevertheless present the best picture of the role lending to households plays in generating profits.

from foreign exchange trading and exchange rate movements, accounting for the largest part of profits from financial operations, increased by merely 3%, much more modestly relative to the 14% increase in 2001 H1. It should be taken into account in comparing the outcomes for the review period and the base period that currency appreciation following band widening in 2001 yielded significant one-off profits for banks. Net losses incurred on securities holdings were much lower in comparison with the same period of previous year. This contributed to the improvement in net profits from financial operations.
Actual developments in the income structure can be captured best by eliminating the effect of the sale of MÉBIT, as was noted above. Accordingly, there was a shift towards non-interest income in 2002 H1, as the percentage share of non-interest income within operating income rose from 29.7% in 2001 H1 to 31.4% in the period under review (see Chart II-45).

Chart II-45 Net interest income and non-interest income as a proportion of operating income



The change in loss in value and provisions reduced the sector's profits by only HUF 5.3 billion in 2002 H1. This was much less than the negative effect in the base period, when it amounted to HUF 13 billion.[38] The increase in banks' recorded loss in value from outstanding loans to the corporate and household sectors as well as in respect of investments was lower than in 2001 H1.

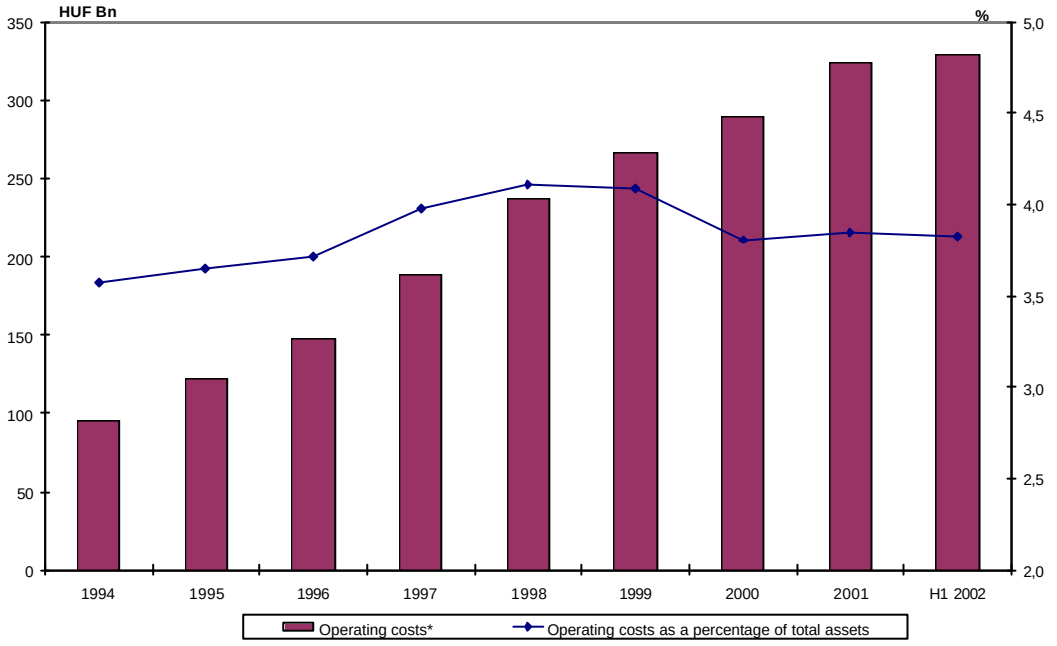
Operating costs of the banking sector increased nearly identically with average inflation, at 5.4%, in 2002 H1. This virtually meant a continuation of the previous year's trend, whereby the rate of increase in costs was only higher than inflation due to excess costs caused by mergers. Playing a role in the modest increase in costs was the

[38] The actual difference in the change in loss in value relative to the same period of the previous year is even higher, as the release of provisions on account of the regulatory changes improved the balance of loss in value and provisions by some HUF 12 billion in 2001 H1.

significant drop in the increase in real terms in personnel expenses relative to the base period.

Despite the moderate increase in operating costs, the cost-income ratio improved only marginally relative to 2001, falling from 63.4% to 62.6%.[39] By contrast, there was still no improvement in the operating costs-to-balance sheet total ratio, at 3.8%, as the modest increase in costs was associated with a subdued increase in the balance sheet total (see Chart II-46).

Chart II-46 Operating costs as a proportion of the balance sheet total



*Annualized data for H1 2002

[39] Eliminating from the base data the revenue and cost effects of the sale of MÉBIT.

III. Special topics in the context of stability

III.1 Stress tests to assess market and credit risk within the banking sector[40]

The assessment of risk exposures within the banking sector is again complemented with an analysis of various credit and market shocks. For the purposes of analysis, the losses caused by the individual shocks are expressed as a percentage of the core capital.

The results of stress tests depend on changes in three factors, such as banks' capital adequacy (core capital in this case), the composition and evolution of bank portfolios and the selected scenarios.

As far as banks' **capital adequacy** is concerned, the banking sector increased its core capital by 36% in 2001. This rate significantly exceeds the growth rate of total classified assets and non-performing loans (NPL) of 27% and 3%, respectively.[41]

Calculation results are also significantly influenced by the MNB having altered the duration factors applied in measuring the effect of interest rate changes (Table III-1).[42] This change by itself accounts for a 20% and 36% increase in losses induced by interest rate shocks to the existing forint and foreign currency portfolios, respectively. This effect is largely offset by the aforementioned 36% rise in the core capital.[43]

Table III-1 Change in the applied duration factors

	0-30 days	31-90 days	91 days to 1 year	1- 2 years	Over 2 years
Former duration	0	0.2	0.55	1.25	2.5
New duration	0.04	0.16	0.55	1.38	3.56

[40] Consistent with the previous practice, the stress tests were carried out on audited data for end-2001. The results of previous tests and a detailed description of the methodology used can be found in the February and November 2001 issues of the *Report*. The original methodology has remained virtually unchanged, and any minor changes (such as the applied duration or change in the tested market risk scenarios) are pointed out in the text.

[41] It is difficult to judge how the change in the accounting method used in the calculation of capital has contributed to this.

[42] See BCBS (2001) Principles for the Management and Supervision of Interest Rate Risk, Supporting document to the New Basle Capital Accord.

[43] Exchange rate shock calculations have remained unaffected by the change in methodology.

Market risk

Maturity balances on which market risk calculations are based had a highly volatile composition both within the reviewed period and compared with previous years. Chart III-1 depicts maturity structures weighted with the discount and duration factors,[44] with the sums of positive and negative net positions given separately. Basically, these values reflect the extent of risk exposures. The losses due to interest rate and exchange rate shocks are proportionate. For example, a rise (fall) in interest rates will cause a loss to banks with positive (negative) net positions.

Chart III-1 Maturity structure of the banking sector's interest rate sensitive portfolio (discounted and duration-weighted positive/negative net positions, HUF millions)

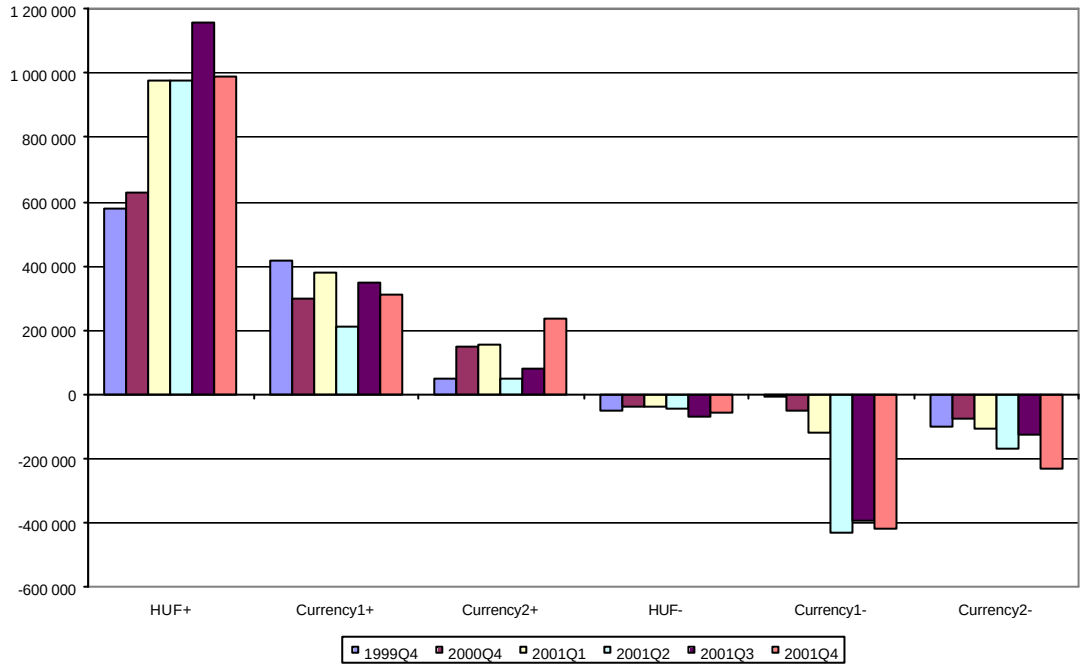


Table III-2 offers an even better illustration of the composition-related sensitivity of the portfolio to shocks of different nature and direction, but these figures also reflect the effect of capital adequacy.

[44] Category Foreign currency2 depicts discounted (but not duration weighted) net positions, from which the exchange rate risk is computed. Note that the MNB used different duration values for 2001 and 1999-2000.

Table III-2 Gradient to the loss/core capital curve

	Positive shock	Negative shock
Domestic interest rate	1.09	0.07
Foreign interest rate	0.34	0.46
Exchange rate	0.25	0.26

Naturally, actual losses are also influenced by the size of the exposure and shock.

The **selected shocks** have remained virtually unchanged (Table III-3). The tests on market interest rates and the exchange rate involved both historical and hypothetical scenarios. The historical shocks were defined in terms of the largest change affecting selected variables in a four-week period, corresponding to a one-month holding period. The decision was reached not mechanically, but after considering several time series (such as DTB yields, interbank rates and BUBOR in relation to the domestic interest rate and change in the forint/euro and forint/dollar exchange rates in relation to the exchange rate shock). The selection of hypothetical shocks was based on recommendations from BIS and other institutions (such as UBS, RiskMetrics, etc.). These provide the extreme scenarios (Shock1 and Shock3).

Table III-3 Market risk shocks

Market risk:	Domestic interest rate	Foreign interest rate	Exchange rate (%)
Shock1	+500 bp	+200 bp	+40%
Shock2	+400bp	+65 bp	+10%
Shock3	-300bp	-200 bp	-40%
Shock4		-65 bp	-10%

The **losses caused by market shocks** have remained virtually unchanged relative to those at end-2000 (Table III-4). The only small increase in losses was related to the exchange rate, due to a reallocation of portfolios.[45] There was a substantial rise in the weighted value of the forint portfolio, but this effect was largely offset by the increase in core capital. The greatest loss would be caused by an increase in domestic interest rates and a substantial (+/-40%) change in the exchange rate of the forint.

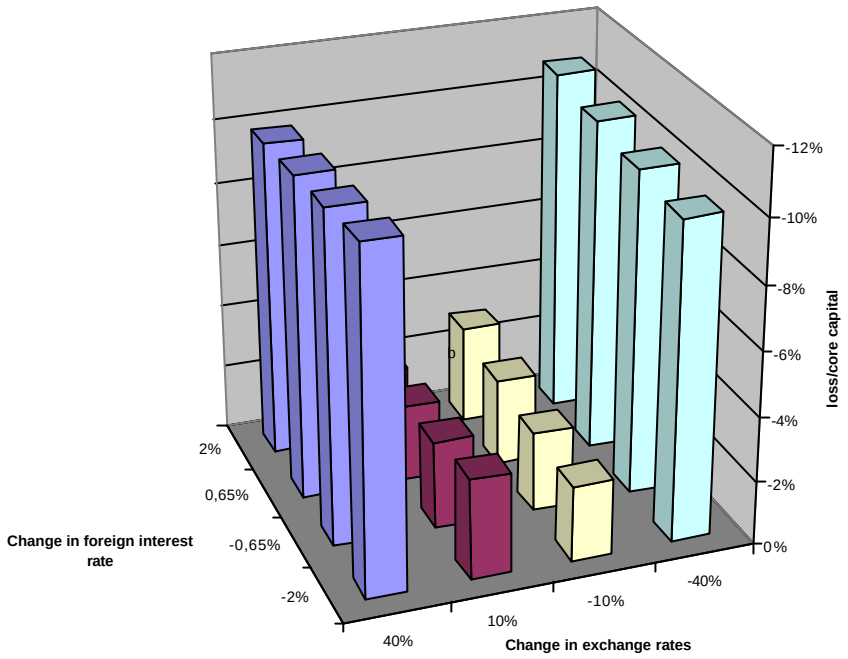
[45] Even though the share of foreign currency assets and liabilities also fell within bank balance sheets, the weighted net positions used in the tests increased, at least in a comparison with end-of-year values.

Table III-4 Losses caused by market shocks as a percentage of core capital

	2001		2000	
	Shock	Losses	Shock	Losses
Domestic interest rate	+500bp	-5.4%	+560bp	-5.3%
	+400bp	-4.4%	+500bp	-4.7%
	-300bp	-0.2%		
Foreign interest rate	+200bp	-0.7%	+188bp	-1.5%
	+65bp	-0.2%	+65bp	-0.5%
	-65bp	-0.3%		
	-200bp	-0.9%		
Exchange rate	+40%	-10.2%	16.70%	-1.8%
	+10%	-2.5%	12%	-1.3%
	-40%	-10.3%		
	-10%	-2.6%		

Chart III-2 showing the combined effect of forex scenarios also confirms that forex risk is linked predominantly to the exchange rate, with only negligible risk associated with the foreign interest rate.

Chart III-2 Combined effect of change in foreign interest rates and exchange rates



An analysis of individual data reveals that there is not one bank where the loss reaches the value of the core capital. Furthermore, the number and market share of banks with significant (above 30%) relative losses has continued to decrease relative to 2000.

Correlated tests also support the previous findings, namely that the only genuine change on the previous year is a slight rise in forex risk (Table III-5). As a consequence, there has been a reversal in the order of domestic and external risks, relative to 2000.

Table III-5 Results of correlated tests (VAR = 1%)

	Shock1		Shock2		Shock3	
	2000	2001	2000	2001	2000	2001
Domestic interest rate	-1.9%	-1.8%	-1.2%	-1.1%	-3.1%	-3.0%
Foreign interest rate and the exchange rate	-1.4%	-2.2%	-1.0%	-1.6%	-2.7%	-3.9%

It should be noted that the data on exchange rate risk are not based on consolidated statements. Therefore, it cannot be known for certain whether the restrictions relating to forex positions, which appear to have been effective in reining in bank exposures, are effective at the level of bank groups. On the whole, it can be stated with a reasonable degree of certainty that a dramatic shift in market interest rates and the exchange rate would not cause any serious losses either to individual banks or the banking sector as a whole. Losses caused by changes in foreign interest rates are negligible. The greatest losses would be caused by a substantial (40%) change in the exchange rate of the forint, as well as an increase in domestic interest rates.

Credit risk

The tests revealed two important developments with regard to **credit portfolios** (Table III-6). Robust growth of the credit portfolio has caused the share of risk-free assets to continue rising, simultaneously with a drop in the share as well as absolute and relative standard deviation of NPLs.

Table III-6 Year-end asset portfolio of Hungarian banks

	NPL		Share of risk-free assets (%)	Standard deviation of NPLs (HUF millions and %)	
	Share	Change (t/t-1)		1994-2000 and 1995-2001	1995-2000 and 1996-2001
1999	2.7%		21.1%		
2000	1.9%	81%	18.2%	61,557 (31.4%)	48,531 (26.8%)
2001	1.5%	103%	14.8%	44,822 (24.7%)	45,372 (25.7%)

The types of the selected **credit shocks** have remained unchanged relative to previous years (Table III-7).

Table III-7 Selected credit shocks

Credit risk	
Shock1	Half of risk-free assets become loans
Shock2	NPL increases by 2s(1995-2001)
Shock3	NPL increases by 2s(1996-2001)
Shock4	NPL doubles

The **results** suggest that credit shocks continue to cause much greater losses than market shocks (Table III-8). Nevertheless, the situation is better than a year earlier, as aggregate losses continue to be moderate in relative terms. All the factors influencing the test results have improved, with an increase in the core capital and a drop in the share and standard deviation of NPLs, reflected in both the composition of the portfolio and the tested scenarios. With respect to Scenarios 2, 3 and 4, the merger of two large banks made a great contribution to the reduction in losses. Even with these two banks excluded, losses sustained by the banking sector as a whole have fallen by one-fourth (4-6 percentage points) in the context of these shocks.

Table III-8 Losses caused by credit shocks as a percentage of core capital

	Shock1	Shock2	Shock3	Shock4
2001	1.8%	18.3%	15.9%	13.4%
2000	3.0%	29.6%	24.5%	17.0%

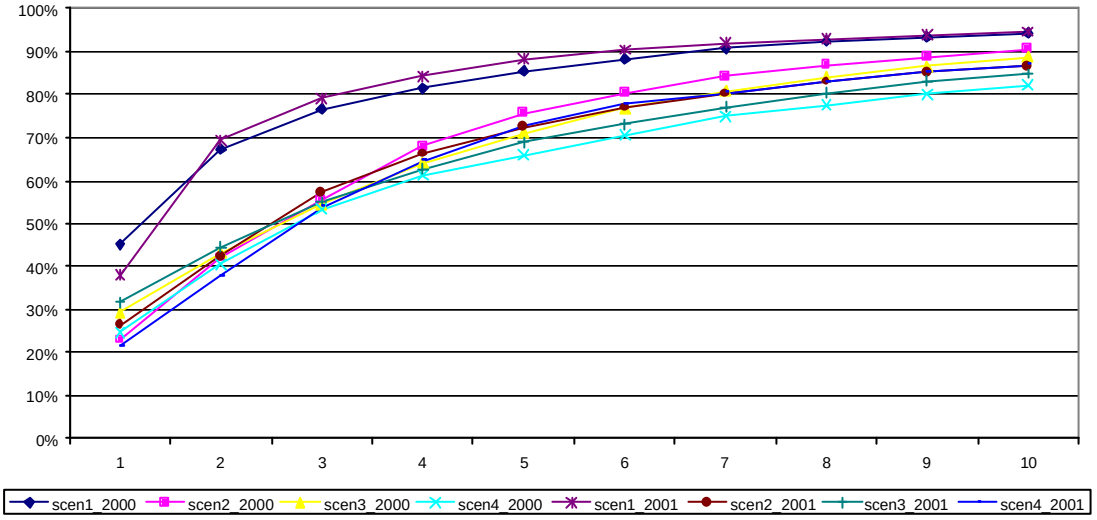
It is also a welcome development that the number and market share of banks losing their full capital continued to decrease in 2001 (Table III-9).

Table III-9 Share of banks losing their full capital

	Shock 2		Shock 3	
	2000	2001	2000	2001
Assets	22.0%	5.3%	5.3%	5.3%
Losses	71.9%	30.9%	33.4%	36.0%

The concentration of losses did not change notably, despite the noted merger of K&H Bank and ABN-Amro (Chart III-3). The strong concentration of losses under the first scenario is due to the concentration of risk-free assets. The losses caused by this shock would be negligible.

Chart III-3 Concentration of credit losses



Taking everything into consideration, the fall in credit shock-induced losses was primarily due to factors (such as the upsurge in core capital and the merger of the two banks) that can be viewed, at least partially, as unique. Therefore, this welcome favourable trend should not lead to over-optimism. The other positive development was that banks that had suffered large losses previously also saw an improvement, reflected in a lower share of banks losing their total capital.

III.2 Leasing and credit operations of financial enterprises

In 2001 and the first half of 2002, financial enterprises providing leasing and credit services grew at an exceptionally fast pace. During the first six months of 2002, the combined growth rate of credit and leasing operations rose by roughly 32%, comprising a 20% rise in leasing claims and 47% higher credit claims. Leasing and credit accounted for an equal share of total transaction value. Enterprises with some kind of bank affiliation accounted for most of the growth, due to a pick-up in car and utility vehicle financing and, to a lesser extent, an increase in property leasing and property loans. Bank-owned enterprises have become increasingly active since the final quarter of 2001, as parent banks stepped up lending to their own firms, in order to encourage these highly profitable and relatively safe businesses. This has also been encouraged by change in the regulatory framework.

An amendment to the Act on Credit Institutions and Financial Enterprises (ACI) provides that from January 2001 a credit institution is not required to comply with a large exposure limit in relation to its own subsidiaries, provided that the enterprises involved are under consolidated supervision. Accordingly, banks can now grant substantial loans to their own affiliates, even though the consolidated supervisory framework and reporting are not complete yet. Without this amendment to the Act, banks would only be allowed to have risk exposure through their own subsidiaries up to 15% of their regulatory capital, and loans in excess of this limit would have to be secured by capital. This ratio is currently much higher than 15% in respect of a few large banks. It would have been more conducive to financial stability if the restrictions had been lifted only when consolidated supervision was fully in place.

While financial enterprises can hold an asset portfolio with the same risk exposure as banks, they have to meet considerably less stringent external risk measurement and management rules than banks. The licenses held by financial enterprises are generally confined to selected business lines. Accordingly, their exposures are concentrated in a handful of businesses, which entails inadequate portfolio diversification. This monolithic feature poses a greater risk to non-bank financial enterprises than to bank-owned firms, as the latter are more likely to have the desired rate of diversification at the group level. This is also reflected in banks' increasing awareness of the importance of managing risk at the group level.

Financial enterprises' leasing and credit operations are associated with cars, freight and utility vehicles to a 70-80% extent and real property to a roughly 10% extent, with the remainder linked to financing other assets. The large exposure limit does not relate to credit extension by financial corporations. MNB does not see this as a problem since firms engaged primarily in vehicle financing deal predominantly with a great number of small customers. Thus, the credit operations of financial enterprises need to be scrutinised only when there is excessive growth in exposures associated with one particular business line or security type within a banking group. Relatively high leasing fees and lending rates provide sufficient security against necessary losses in value and the leased object serves as sufficient collateral for the loan.

The loss in value accounting of financial corporations in the period to June 2002 is nine times as high as the amount they can deduct from the tax base. The loss in value recorded by non-bank-affiliated companies would be higher if they were also bound

by the legal regulation pertaining to credit institutions. By contrast, loss in value recorded by bank-affiliated companies is in line with the legal regulations on credit institutions. Last year, this theoretical difference also existed with regard to bank-owned corporations' accounting for loss-in-value. Note that as the liabilities of non-bank financial corporations also include a large proportion of bank loans, inadequate loss-in-value accounting entails indirect banking risk.

In an ideal situation, banks would treat their financial corporations as if they were special subsidiaries. Most large banks already do so. Product creation, credit rating and loss-in-value accounting should be in harmony with parent bank standards. Although there are currently no binding regulations only recommendations relating to group risk management, banks are becoming increasingly aware of its importance.

III. 3. Profitability and stability of the corporate sector

The following section deals with the state of privately-owned, non-financial corporations (hereinafter referred to as the corporate sector or non-financial companies) in 2001 with regard to profitability, leverage and liquidity, all of which are factors instrumental in financial stability.[46] In short, corporate sector stability deteriorated in terms of all three indicators in 2001. Nevertheless, this worsening was not exceptional compared with performances in the past few years. 2001 witnessed two landmark changes in the economic environment, with a downturn in activity within the European Union, Hungary's main trading partner, and considerable strengthening of the forint in the wake of the widening of the exchange rate band. Certain indicators suggest that the 2001 deterioration in corporate sector stability was more differentiated than in previous years, with a more pronounced decline in industries producing tradable goods.

Profitability

A simple 'natural' measure of change in profitability is the number, or more precisely, share of loss-making firms. This indicator remained unchanged in 2001 at 40%. By contrast, the aggregate losses-to-profits ratio increased from 35% in 2000 to 39% in 2001.

Measures of performance derived from companies' financial statements give a more detailed picture. The key indicators of the profitability of non-financial companies relate operating income to assets or sales revenues:

ROA (Return on Assets) = Operating profit / Total Assets[47]
PROFIT MARGIN_OPERATING = Operating profit / Net sales revenues

In addition to the above indicators, it is useful to calculate another indicator which is able to capture changes in a company's financing structure and funding cost (for

[46] A company is viewed as private if the combined ownership share of central government and local authorities does not exceed 50%.

[47] The denominator is derived as the year-end value of assets rather than as an annual average. The level of the indicators calculated should not be used as reference; the analysis rather focuses on annual changes.

example borrowing rates) as well as extraordinary income, in addition to measuring the profitability of normal operations:

PROFIT MARGIN_PRE-TAX = Profit before taxes / Net sales revenues

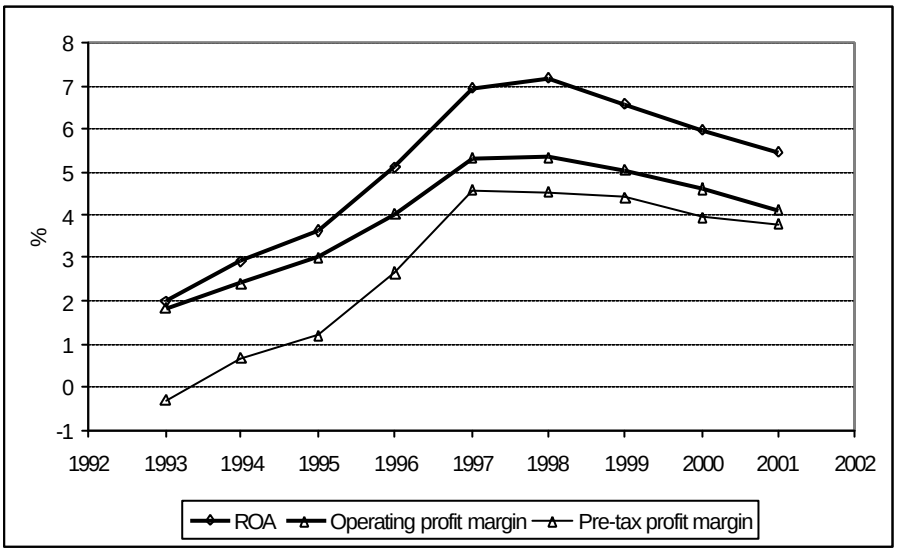
This measure seems to have special importance as the appreciation of the forint in 2001 could have had an impact on companies' financial and extraordinary income, reducing the costs of their foreign currency borrowing.

Aggregate changes in the measures of profitability are examined using a longer time series (starting from 1993), while the industry-level analysis focuses on the change from the year 2000.

Aggregate profitability

In 2001, non-financial companies' aggregate profitability at the operating level slightly worsened for the third consecutive year. The fall was of roughly the same degree in all three years. In a comparison of several years, despite the poorer performances in 2000 and 2001, aggregate profitability of operations did not depart dramatically from the level in 1997, which followed several years of steady growth.

Chart III-4Indicators of profitability within the sector of non-financial corporations, 1993-2001

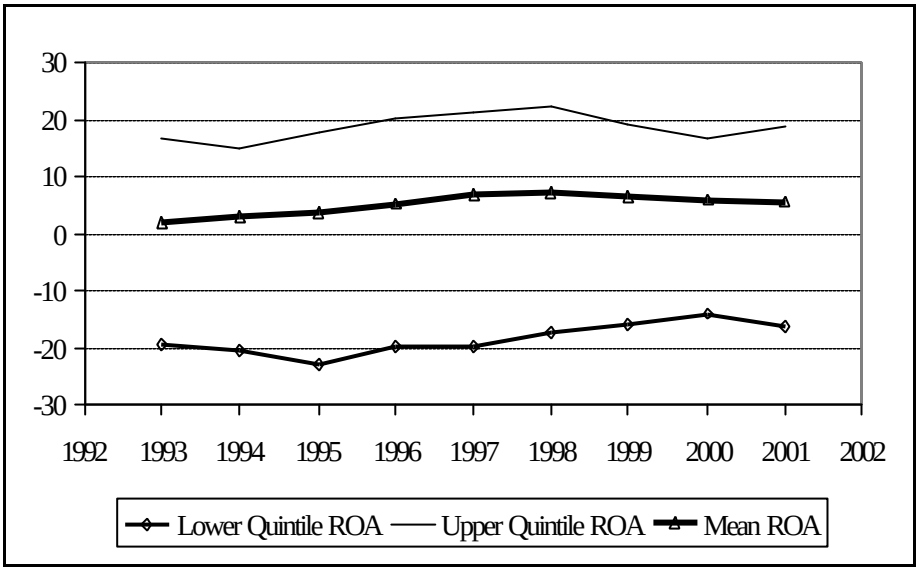


In 2001, the profit margin derived using profit before taxes decreased by a slightly smaller degree than that derived using operating profit. This can be attributed to the fact that financial and extraordinary results developed more favourably than operating profit. However, they were not sufficiently large to offset the weaker profitability at the operating level.

Another key measure of stability in addition to aggregate profitability shows whether the situation of poorly-performing companies has worsened faster than average. This question can be answered by evaluating the distribution of the profitability indicators of individual companies. Such an evaluation reveals that the distribution becomes flatter in 2001, which is a sign of greater dispersion in profitability than in previous years. In particular, the profitability of the worst-performing lower quintile of companies worsened more than the average. This is a rather unfortunate development in contrast to previous years, when companies with the poorest financial performance were in fact catching up year by year to the average rate. Nevertheless, there is no

cause for serious concern, as the measures of profitability in the lower quintile of companies did not fall below levels in 1999, and remained better than in the period from 1993 to 1998.

Chart III-5 Lower and upper quintiles of the corporate sector's profitability (ROA) distribution



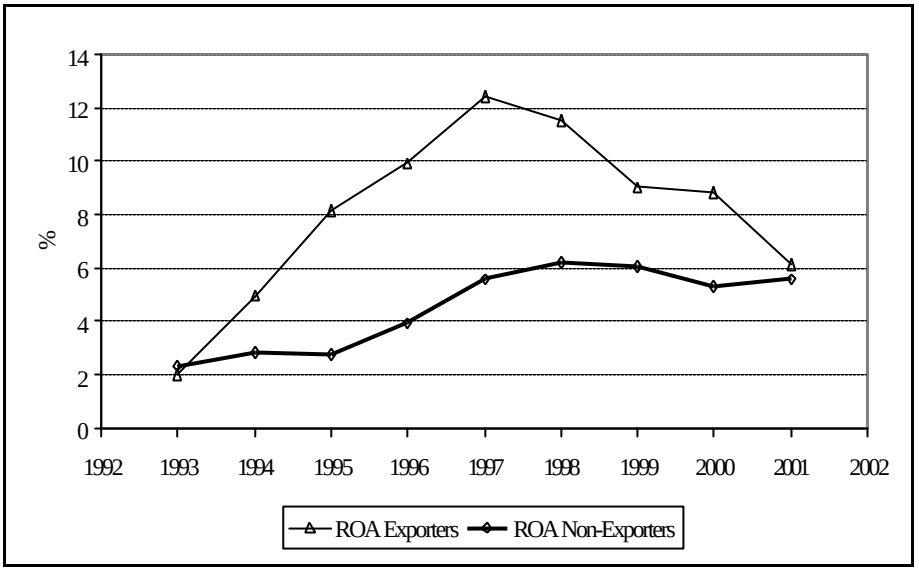
Another noteworthy phenomenon is that the 20% of the companies with the most profitable operations were able to improve their performance while average profitability declined, although this group had also followed the average trend after 1994. This reflects stronger differentiation within the corporate sector in 2001. One of the landmark changes in 2001 was the widening of the exchange rate band, and the ensuing sharp appreciation of the forint. It follows that the growing differentiation within corporate profitability must be due to different degrees of exchange rate exposure. This is also supported by the findings of a study of company performance, assessing separately companies with substantial export sales revenues[48] and those catering essentially to the domestic market.

Profitability of exporters and non-exporters

Clearly, exporters were more profitable than non-exporters during nearly the entire reviewed period. This was especially the case during the years after the crawling peg was adopted in 1995. The profitability gap between the two groups narrowed for the first time in 1998-99, presumably as a consequence of the Russian crisis. The decline in exporters' profitability in 2001 was nearly as strong as at the time of the Russian crisis. As, however, the appreciation of the forint last year coincided with the economic slowdown within the EU and related weaker demand for Hungarian exports, it is not possible to separate the impact on exporter profitability of these two factors.

[48] This category comprises companies that obtain over 20% of their sales revenues from exports.

Chart III-6 Return on Assets ratios for exporters and non-exporters, 1993-2001



The opposing trends in the profitability of the two groups in 2001 is worth evaluating in the context of changes in the structure of costs, as such an evaluation may shed light on how an appreciation of the forint might affect profitability.

Table III-10 Changes in the profit and different cost categories of exporters and non-exporters

Change (2001/2000)	Net sales revenues	Operating profit	Materials	Other costs	Labour
Exporters	1.19	0.79	1.24	0.95	1.21
Non-exporters	1.08	1.19	1.04	1.21	1.11

Table III-11 Changes in the operating profit and costs as percentage of revenues, exporters vs. non-exporters

Change (%point)	Operating profit	Materials	Other costs	Labour
Exporters	-2	3	-1	0
Non-exporters	0	0	0	0

The first outstanding fact is that the cost structure of non-exporters remained virtually unchanged in 2001, i.e. cost elements such as materials, wages and other costs remained at the level for the previous year as a proportion of sales revenues.

By contrast, the structure of costs incurred by exporters underwent significant change. The question is what role the appreciation of the forint played in this development. Supposing that the stronger forint is one of the factors to blame for weaker exporter profitability, it should be reflected in an increase of forint-denominated cost elements as a proportion of sales revenues. Such elements of costs include labour and materials-related costs referring not literally to spending on materials but for example to services purchased, as well as other costs. At the same time, due to the high share of imports within manufacturing, a great portion of materials costs may be denominated in foreign currency. This implies that the appreciation of the forint cannot cause a significant worsening of profitability considerably via this particular cost element.

As opposed to the presumed effects of appreciation, the actual figures suggest a slightly different picture. As exporters did not incur increased costs of labour as a proportion of sales revenues in 2001, an increase in labour costs did not worsen profitability of operations. By contrast, materials costs increased by 2 percentage points relative to sales revenues, and the broader materials category, also including purchased services, caused a 3-percentage-point drop in exporter profitability in 2001.

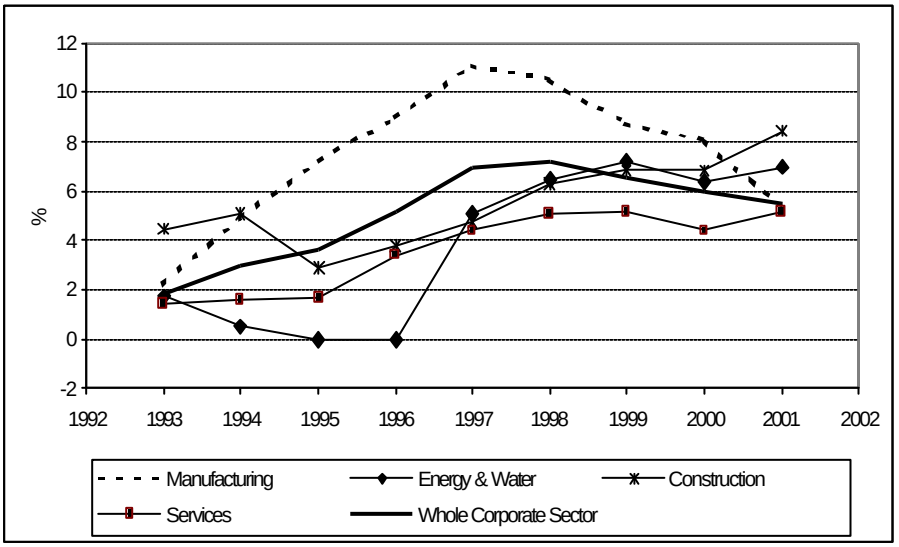
By contrast, thanks to a drop in other costs incurred by exporter firms as a proportion of sales revenues, the operating profit margin fell only by approximately 2 percentage points.

The drop in exporters' operating profit margin was offset by a 1-percentage-point improvement in their net financial revenues. As corporate forint lending rates did not decrease significantly in 2001, the factor behind the improvement must have been the drop in the forint value of interest payable on exporters' sizeable foreign-currency debt. This is also substantiated by the fact that the financial income of non-exporters (who are less likely to have large foreign currency debt) did not have an impact on their profit margin in 2001.

Profitability of individual industries

Data on individual industries reveal a qualitative difference within largely similar aggregate losses in profitability between 2000 and 2001.[49] While in 2000 each major branch performed more poorly, in 2001 only manufacturing experienced a decline, while the other key industries increased their profits. Nevertheless, due to the extent of weakening of manufacturing performance and the large weight of the branch in total output, the corporate sector continued to fall in profitability in 2001.

Chart III-7 Return on Assets for individual industries, 1993-2001



In 2000, all services except trade decreased profitability markedly. This weaker performance was especially visible with regard to *Transport, storage and telecommunications*, presumably as a result of the exceptionally high global price

[49] *Agriculture* and *Mining*, which are not included in the chart, account for merely 5% of the total non-financial corporate sector.

level for oil in 2000. The high oil price also fed through to *Electricity, gas, steam and water supply.*

The service sector earned higher profits in 2001, presumably due to an upsurge in household income and consumer spending. *Accommodation and catering* were among the exceptions, as they reduced profitability by half, due presumably to the adverse effect on international travel of the terrorist attacks against the US on 11 September 2001, as well as the appreciation of the forint.

Electricity, gas, steam and water supply and *Construction* also performed better. The improvement of the former was probably due to the stabilisation of oil prices and that of the latter to the government's housing policy measures and the launch of certain infrastructure projects.

The operating profitability of *Manufacturing* fell slightly in 2000 and sharply (by about 25%) in 2001. This poor performance in manufacturing accounts for the drop in the profitability of the corporate sector as a whole in 2001. In view of the large weight of this branch within the total business sector, the MNB has also examined which manufacturing branches suffered most of the losses and what cost elements contributed to this decline.[50]

Manufacturing profitability

Manufacturing data reveal that, despite a 21% rise in sales revenues, the industry failed to increase its profits in 2001. Operating results in nominal terms fell by one quarter relative to 2000. Of the branches with a large weight, electrical machinery and instruments, vehicles and metal processing experienced an exceptionally large drop in operating results, and coke and refined petroleum products even posted a loss on operations in 2001.

By contrast, the paper and chemical industries managed to earn higher profits, due primarily to a drop in materials costs as a proportion of sales revenues (see below). As the raw material requirement of these industries is met predominantly from imports, the positive impact of the stronger forint might well have been another key contributory factor.

Remarkably, nearly each branch enjoyed a rapid rise in export sales revenues in forint terms despite the appreciation of the forint. Vehicle manufacturing, with the second highest weight within exports, is an exception, with exports remaining virtually flat in forint terms. This is no surprise in view of the fact that vehicles manufacture is one of the most cyclical industries throughout the world.

[50] 50% in 2000.

Table III-12 Change in revenues and operating profits of different branches in Manufacturing, 2001/2000

	Weight in manufacturing sales revenues, 2001	**Operating profit**	Net sales revenues, total	Export sales revenues
04 Manufacturing		**0.75**	**1.21**	**1.23**
056 Food	0.17	1.11	1.26	1.18
06 Textiles and textile products	0.03	1.07	1.14	1.19
07 Leather products and footwear	0.01	1.06	1.18	1.14
08 Wood products, excluding furniture	0.01	0.68	1.11	1.09
09 Manufacture of paper, publishing, printing	0.05	1.63	1.17	1.23
10 Coke, refined petroleum products, nuclear fuel	0.10	-2.50	1.36	0.99
11 Chemicals and chemical products	0.06	1.22	1.08	1.06
12 Rubber and plastic	0.04	1.26	1.18	1.18
13 Other non-metallic minerals	0.03	1.19	1.15	1.18
14 Basic metals, fabricated metal products	0.08	0.80	1.07	1.10
15 Machinery and equipment	0.04	0.94	1.13	1.12
16 Electrical machinery and instruments	0.25	0.25	1.41	1.56
17 Road vehicles	0.12	0.76	1.00	0.99
18 Manufacturing not included elsewhere	0.01	0.72	1.08	1.01

An analysis of the change in different types of costs relative to net sales rather than simple growth rates of these costs may reveal which types of costs in which branches contributed to the deterioration in manufacturing profitability (see Table III-2).

Table III-13 Contribution of cost elements and other items as a proportion of sales revenues to changes in profit margins (2001-2000, percentage points)*

Change (% point)	Costs, materials	Costs, labour	Other costs	Other receipts	Capitalised value of own performance	**Profit from operations**
04 Manufacturing	**1**	**0**	**-3**	**-1**	**-1**	**-2**
Manufacturing, excluding food and coke	***-1***	***0***	***1***	***-1***	***-1***	***-2***
056 Food	8	1	-8	-2	0	-1
06 Textiles and textile products	0	-1	0	1	0	0
07 Leather products and footwear	-1	-1	0	0	1	0
08 Wood products, excluding furniture	0	-2	0	1	-1	-2
09 Manufacture of paper, publishing, printing	3	-1	0	0	-1	2
10 Coke, refined petroleum products, nuclear fuel	9	2	-15	-2	-2	-8
11 Chemicals and chemical products	3	-1	1	-1	0	1
12 Rubber and plastic	2	-1	0	0	0	0
13 Other non-metallic minerals	-1	0	-1	1	1	0
14 Basic metals, fabricated metal products	1	-1	0	0	-1	-1
15 Machinery and equipment	0	-1	0	0	0	-1
16 Electrical machinery and instruments	-3	1	2	-2	-1	-4
17 Road vehicles	-1	-1	0	0	0	-2
18 Manufacturing not included elsewhere	1	-2	0	1	-1	-1

* Due to rounding, changes in the individual entries do not always add up to change in operating profit as a proportion of sales revenues.

Labour costs as a proportion of sales revenues remained unchanged within manufacturing as a whole between 2000 and 2001, not contributing to the poorer observed profitability. The weight of labour costs did not change uniformly across the

individual branches, with most branches registering a slight rise, offset by a drop in a few large branches.

Material costs as a proportion of sales decreased in most branches, even at an exceptional rate with regard to food, refined petroleum products, paper and chemicals. However, the positive impact of the development was offset at the level of the manufacturing industry as a whole by exceptionally high rises in the cost of materials incurred by one single branch, *Electrical machinery and instruments*, accounting for a high share within manufacturing. To make things worse, the 46% increase in materials-related costs incurred by the manufacturers of electrical machinery was strongly concentrated, as a handful of electromechanical firms sharply increased output (by 41%) and related investment.

Of the cost elements determining aggregate operating result within manufacturing, other costs rose by an exceptionally high rate of 3 percentage points. This increase was, however, due primarily to changes in accounting rules of excise tax on food and petroleum products.[51] This is why the MNB also provides an evaluation of aggregate change in manufacturing costs excluding these two branches. This does not alter operating results as a proportion of sales revenues but slightly improves manufacturing profitability via the channel of other costs.

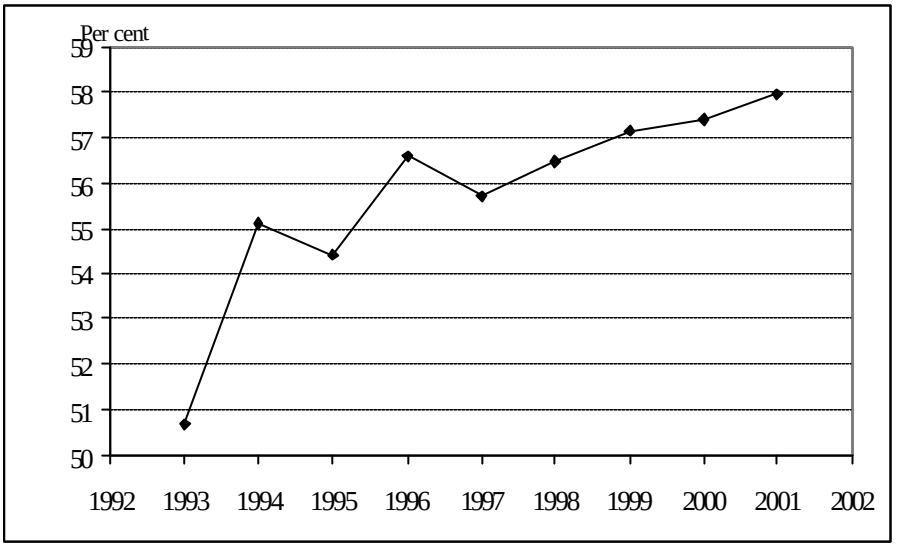
A drop in two items, other revenues and the capitalised value of own performance as a proportion of sales revenues, reduced the operating profit margin within manufacturing by one percentage point each in 2001. These items normally play a minor role in corporate profitability. The latter item is suitable for economic analysis as it reflects change in output inventories. This change suggests that manufacturers made adjustments by reducing the ratio of output inventories to production, prompted by weaker external demand and worsening sales prospects.

[51] Before 2001, excise duties had been calculated on a net basis, i.e. they were not stated either within sales revenues or within costs. From 2001, however, excise duties have been stated within sales revenues as well as other costs. As another technical change from 2001, petroleum refining companies are required even by Hungarian accounting rules to state provisions for future environmental liabilities within other costs at the time of origination. These accounting changes explain 8 and 15 percentage points of the increase in other costs incurred by the food industry and petroleum refining, respectively.

Leverage

Corporate sector leverage, defined as the ratio of debt to total assets, continued to increase in 2001, for the third consecutive year, at a low pace of 0.5%. Needless to say, this also increased risk, although the Hungarian corporate leverage still falls short of the average for developed countries.[52]

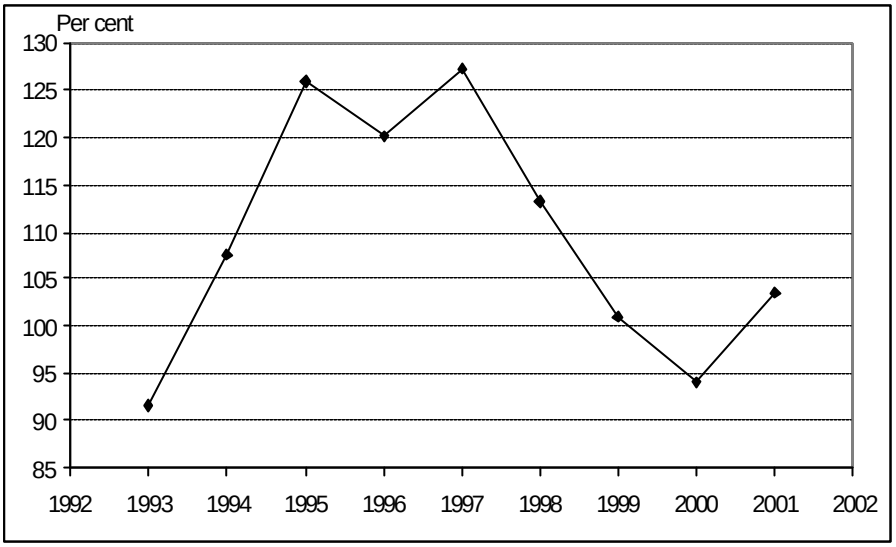
Chart III-8 Distribution of companies according to ROA showing the upper and lower quintiles



From the point of view of financial stability, it seems worthwhile to examine the leverage of companies with poor performance. The average leverage of the least profitable 20% of companies (in ROA terms) is much higher than that of the corporate sector as a whole. This does not mean, however, that bank lending to this group is stronger than that to better performing companies. Indeed, high leverage is due to shrinking equity as a result of often several years of loss-making operations. After a gradual decrease during the period between 1998 and 2000 leverage in the least profitable group of the corporate sector started to edge higher in 2001. Although this is an adverse development from the point of view of stability, even after the renewed rise the ratio remained far short of the peak values measured in the period of 1995 to 1997.

[52] For a detailed comparison, see the May 2001 issue of the *Report on Financial Stability*.

Chart III-9 Average debt/total assets ratio of the least profitable 20% of non-financial corporations, 1993-2001



Liquidity

In assessing the liquidity position of companies, we used two measures of liquidity.

Interest coverage = Operating profits[53] / Annual interest payments
Liquidity ratio[54] = Current assets / Current liabilities

Interest coverage indicates the financial strength of a company in meeting its interest payments from its operating profit. The size of the interest coverage is influenced by changes in profitability, the level of corporate interest rates and the level of gearing.

The liquidity ratio captures how far liquid assets[55] can meet short-term liabilities. As the interest coverage ratio compares flow data and the liquidity ratio compares balance sheet data, they might lead to different conclusions. This is why a company's liquidity should not be measured in terms of a single indicator.

[53] Operating profit = profit before taxes less extraordinary profit

[54] Short-term liabilities comprise short-term loans, short-term credit, liabilities arising from the supply of goods and services, liabilities to owners, other short-term liabilities.

[55] Liquid assets = Inventories + Claims + Securities + Cash

Chart III-10 Aggregate interest coverage and liquidity ratio of the corporate sector

In 2001, both indicators signalled slight deterioration relative to the previous year, but liquidity did not significantly diverge from its relatively high level seen in 1997 and 1998.

Table III-11**Error! Reference source not found.** and Table III-12 clearly reveal that the development of profitability was a crucial factor behind changes in the interest coverage. From 1994, companies had to meet lower interest payments, consistent with the permanent fall in corporate lending rates. This boosted aggregate corporate liquidity despite the increase in the level of gearing. The improvement was, however, interrupted by a downturn in profitability in 1999.

Like the interest coverage, the liquidity ratio does not indicate any significant worsening in corporate profitability in 2000 or, more importantly, 2001, remaining at roughly the level for 1999.

An analysis of the liquidity position of individual industries provides a more detailed picture, which is consistent with changes in profitability. This analysis suggests that a key factor in the decline of aggregate profitability was the deterioration in manufacturing liquidity to the level seen in 1996. The electricity industry was also less liquid, but the worsening was not as severe as that in manufacturing and the ratio did not fall below the level for 1999 (see Chart III-13). Construction, agriculture and the service sector continued to improve in terms of liquidity at a slow pace. Agriculture should reach a level which enables it to meet the interest payments from its ordinary profit in 2001.

Despite the fact that the aggregate liquidity position of the sector is far from being worrisome, that of companies with the poorest performance is a genuine cause for concern in the context of financial stability (see Chart III-14). With a negative interest coverage throughout the reviewed period, companies included within the lower quintile of the liquidity distribution were only able to meet their interest payments by using up their wealth. In addition, with a liquidity ratio of 60 per cent, the current assets of these companies would be sufficient to meet hardly more than half of their short-term liabilities.

Chart III-11Components of the interest coverage ratio and the operating profits as a proportion of total assets, 1993-2001

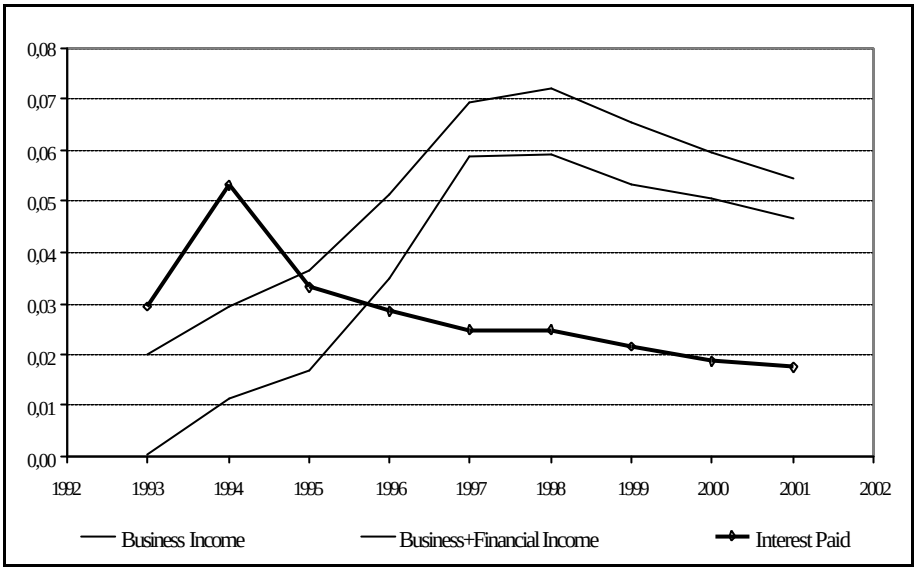


Chart III-12 Weighted average of short-term corporate bank lending rates, 1995-2001

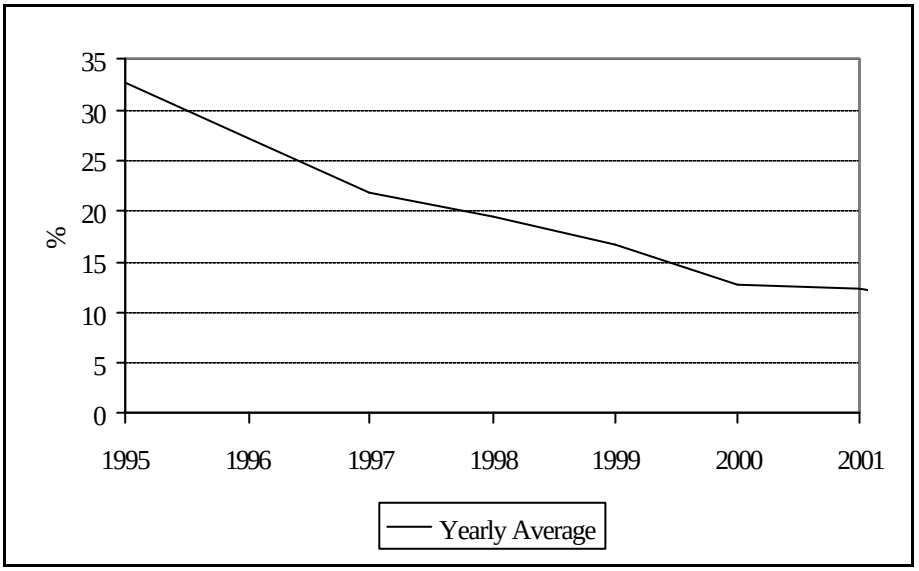


Chart III-13 Interest coverage for individual industries

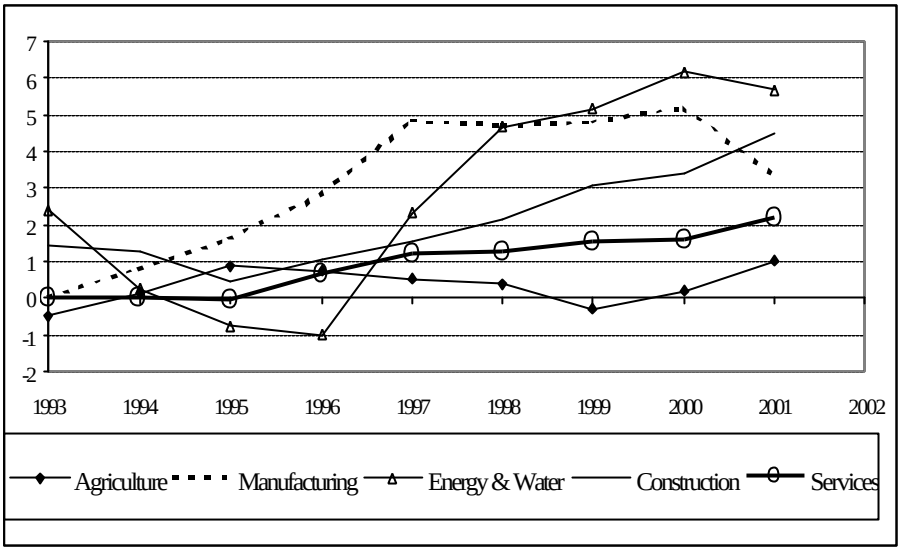
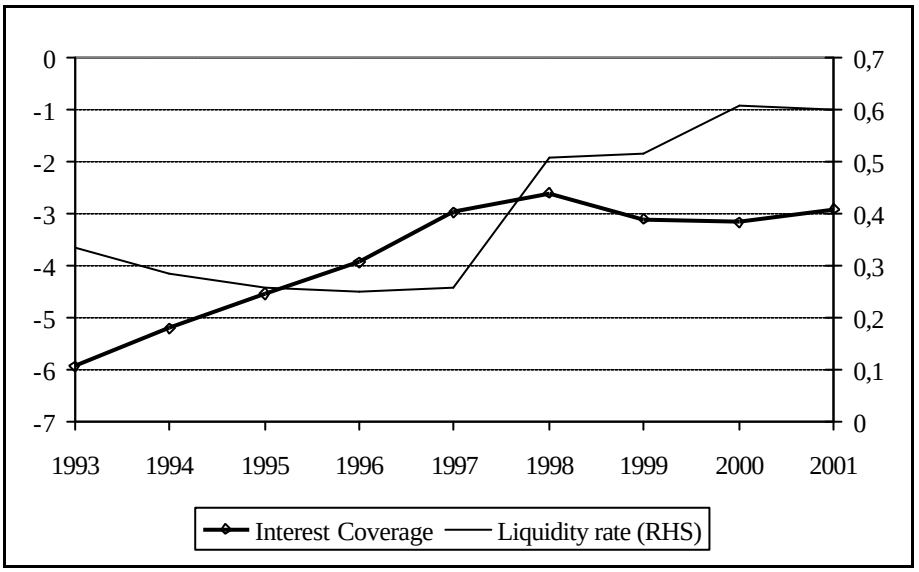


Chart III-14 Lower quintiles of the distribution of the interest coverage and liquidity ratios, 1993-2001



IV Articles

IV-1 The relationship between current account deficit and financial stability

by Balázs Világi

1. Introduction

Economic policy makers in small, open economies, and particularly emerging-market countries, typically pay special attention to the behaviour of the current account balance. The reason behind this is that, irrespective of their exact definition, financial crises are closely related to a country's relatively large current account deficit. This paper examines to what extent and under what conditions this rationale is legitimate, and whether it bears any relevance for Hungary now, in the near future and the period following accession to Economic and Monetary Union.

The paper by Edwards (2001), which presents the results of an analysis of more than 120 countries and covers a 25-year period, focuses on the relationship between current account deficits and financial crises. According to its findings, if the question is asked whether a large current account deficit *almost certainly* leads to a financial crisis, the answers is *no*. If, however, the question is asked more restrictively, i.e. whether there are *costs* of sustaining a large current account deficit in the broad sense, the answer is *yes*. The paper states that few countries are able to sustain large current account deficits. In the overwhelming majority of countries the current account deficit fell, either as an effect of economic policy intervention or as a result of financial crises. The author examined the welfare costs associated with the reversal of capital flows and the fall in current account deficit in the countries in question – in the vast majority of the cases, all this led to a *decline* in fixed investment and a *reduction* in GDP growth. Finally, he demonstrated that a *large deficit increased the likelihood* of financial crises.

Consequently, the empirical investigations appear to support the view that, apart from exceptional cases, excessive current account deficits may carry risks. However, in order to be able to derive the lessons from this evidence for Hungary, we have to analyse more thoroughly in what way current account deficits become a potential source of danger.

Above all, it should be made clear what is meant by the expression ‘financial crisis’ in this paper. Three cases should be distinguished in this respect. These are only separated perfectly in theoryλ in practice, some combination of the three can be observed. However, in order to better understand the processes, it may be useful to introduce the following classification:

- A *debt crisis* means that, if a country's foreign lenders judge that developments currently occurring in the country's economic fundamentals will continue in the future, then the country will become insolvent. These situations do not necessarily lead to bankruptcy, but generally economic policy must take recourse to austerity measures, in order to prevent bankruptcy.

- A *currency crisis* occurs if a country's national currency comes under a *speculative attack*. As a consequence of the attack, economic policy must give up the previously set nominal exchange rate target and devalue the national currency or let it depreciate, given that protecting its value would be associated with high costs which it could not endure.
- A *banking crisis* means that the domestic financial intermediary system collapses, or, at least, its normal operations become exposed to danger.

Debt crises and currency crises are also collectively referred to as 'current account crises', as in both cases the current account deficit and the inflow of foreign capital decline dramatically.

The relationship between high current account deficits and debt crises is fairly obvious. A lasting and large current account deficit may lead to an increase in a country's debt of such magnitude that it undermines investors' confidence in the country's ability to service its existing debt. The Latin-American crises of the 1970s and 1980s are typical examples of this. Those crises generally involved high fiscal deficits, and often the usual remedy prescribed by the IMF was fiscal retrenchment and currency devaluation. Fiscal restriction and devaluation attempted to reduce the current account deficit and thus to arrest the further build-up of such debts by boosting savings and by improving competitiveness, respectively. For more details on this, see Feldstein (2002).

However, the occurrence of a current account crisis is not necessarily linked to insolvency. The major source of currency crises is that investors begin to subscribe to the view that the *costs* of protecting the currency would soon grow *intolerably high* for the central bank, therefore, they start switching into foreign currency which, as a *self-perpetuating process*, increases the costs of defending the currency for the central bank until, ultimately, it *lets* the exchange rate float.

If a central bank defends a fixed or narrow-band exchange rate regime by interventions, a high current account deficit may contribute to a fall in central bank reserves to a low level, where it is forced to abandon the exchange rate target. However, a given exchange rate target need not only be protected by interventions, but by interest rate increases as well, although there is a limit to any series of rate increases, given the possibility of an excessively tight monetary policy leading to recession. Therefore, the market can launch a speculative attack, if it perceives that the macroeconomic costs of protecting the exchange rate would be too high, for example, if market participants feel that the interest rate increase, required for defending the exchange rate, would lead to a slowdown in growth of an extent that would be unacceptable for economic policy. In such cases, the current account plays a less obvious role. It may happen, for example, that self-perpetuating aspects rather than fundamental factors dominate the emergence of a speculative attack. In such cases, a variety of reasons may influence expectations in order for the crisis to break out. One such factor which pushes expectations towards igniting a crisis is a large current account deficit. (In this paper, I shall not attempt to review the various sub-cases. The comprehensive papers by Árvai and Vincze (1998, 2000) are highly recommended for those with a deeper interest in the subject.)

In addition to the possible causes of a speculative attack and the associated current account crisis, there are other important issues to address as well, such as the impact of the crisis on the real economy. In developed countries, speculative attacks often do

not lead to a decline in performance; indeed, a more lax monetary policy, coupled with currency devaluation, may even stimulate economic activity. By contrast, speculative attacks frequently lead to serious recessions in emerging-market countries. According to Calvo and Reinhardt (1999), one of the major reasons for this is that capital outflow is often accompanied by a *bank crisis*.

Agénor (2000) maintains that there is a two-way causal link between bank crises and currency crises. In a currency crisis, the monetary base shrinks due to the fall in central bank reserves, which leads to a contraction of the supply of credit and the insolvency of some debtors. In the opposite direction, the relationship works as follows: if the economy is facing an impending banking crisis, the central bank will try to prevent it by providing additional liquidity. However, the resulting loosening of monetary policy may undermine the credibility of the exchange rate targets and lead to speculative attacks.[56]

The next section examines the factors that have determined developments in Hungary's current account since 1990 and analyses other factors influencing deficit financing. Section 3 tries to draw lessons as to whether expected developments in the current account carry risks to stability.

2. Short- and long-term developments in the current account

One factor that has shaped the development of the current account balance over the long term is that the ratio of per capita physical and human capital is lower in Hungary than in more developed countries. Therefore, the return on capital is higher, which, in turn, encourages investors from more developed countries to invest part of their income in Hungary. Naturally, this leads to a current account deficit. This process will last as long as Hungary continues to approximate to developed countries' per capita capital and GDP. Accordingly, Hungary's current account deficit will be *desirable* and is expected to be *lasting*.

In an ideal world, free from uncertainties and characterised by perfect and symmetric information, the principle noted above, i.e. the equilibration of returns on capital, would exclusively define the path of current account balance. In contrast, in reality the current account deficit is smaller than the ideal, as lenders do not allow a given country's debt to rise above a certain level, due to uncertainty and fragmented information. To a varying degree from country to country, and depending on the circumstances, there is a level of debt at which investors perceive that future repayment of this debt is unrealistic given the country's economic potential, and therefore they are no longer willing to finance the country in question, which leads to insolvency.

From the perspective of debt crises, long-term developments in the current account balance are the decisive factor. And, as we will see later on, from the perspective of a country being able to service its debt burden, the dominant factors are the rate of GDP growth and the rate of return on debt. Precisely for this reason, from the perspective of avoiding debt crises, i.e. the *long-term sustainability* of the current account balance, it

[56] The situation caused by a combination of a current account crisis and a bank crisis can be further aggravated, if the authorities erroneously react to the crises by fiscal retrenchment, as the government involved did during the Asian crises of 1997, as a result of the inaccurate evaluation by the IMF. For more details, see Feldstein (2002).

is the dynamic of the balance of payments that is relevant, while the exact structure and method of financing the deficits play a secondary role – these are only important to the extent that they influence the average return on the aggregate debt burden. However, cyclical movements in the current account balance are also of interest, as expectations related to the long-term developments in the current account balance are the functions of short-term variations in the balance.

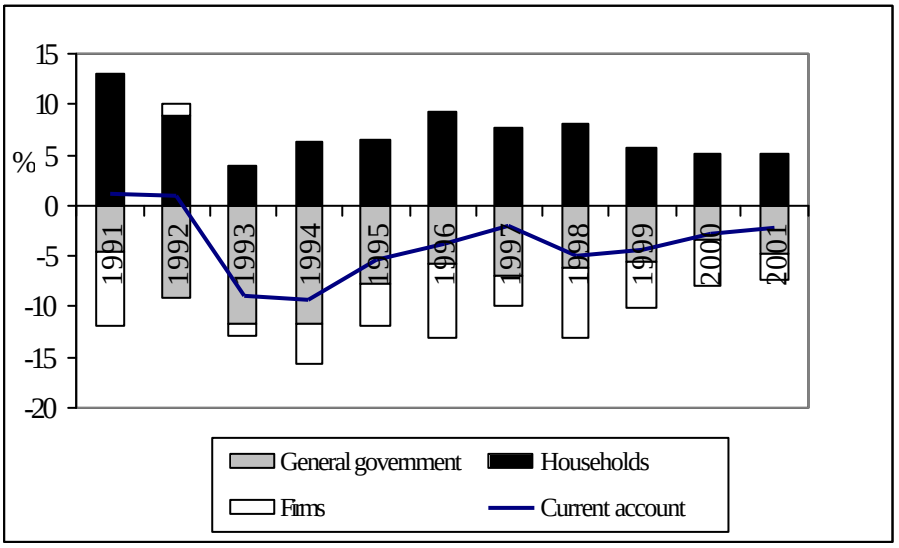
Not only the size of the deficit, but the question of how it is financed, is important from the perspective of the occurrence of currency crises. From the perspective of the development of a currency crisis, the cyclical position of the current account balance must be examined in its interrelationship with financing.

The following sections analyse the developments in the Hungarian current account balance after the change of political regimes, in the context of the savings-investment balance and financing.

Factors determining cyclical developments in the current account balance

The cyclical developments in Hungary's current account balance can basically be explained with the following exogenous factors: developments in non-residents' demand for exports, non-residents' willingness to supply capital, developments in the prices of key basic materials and supply shocks. In addition, economic policy exerts a major influence on developments in the current account balance via general government spending and monetary policy. It is useful to divide into two parts developments in the Hungarian current account balance after the political regime change – the period between 1990 and the stabilisation in 1995 can be interpreted basically in the light of the transformation shocks accompanying the regime change. Since 1995, developments in the Hungarian current account balance can be explained with 'normal' economic and political cycles.

Chart 1 Savings-investment balance of the major sectors as a proportion of GDP



The period between 1990–95 can be described with two exogenous shocks – first, with the massive *transitional* supply shock caused by the regime change, as a

significant portion of the physical and human capital stock was rendered worthless and useless in the conditions of the market economy. Second, the inflow of foreign direct investment starting after consolidation of the institutions of the market economy induced a *lasting* positive productivity shock. As an effect of the initial negative supply shock and the associated pessimistic expectations, investment activity initially fell. Consequently, the current account registered a surplus up to 1992. Influenced by the positive shock linked to the inflow of foreign direct investment, the savings-investment ratio began rising from 1993. The more optimistic outlook and increasing incomes encouraged consumption. In addition to all these, spending by the central budget increased in 1993–94. This was only partially ascribable to the political cycle – the large deficit was owing to a great extent to structural causes which, in turn, were closely linked to the transformation crisis, i.e. management of the unemployment problem and high interest burdens. As a result, the current account registered a slight surplus up to 1992, then a markedly high deficit in 1993–94. As this deficit rested on excessive consumption rather than investment, serious doubts emerged in respect of its sustainability.

In the period 1995–2001, developments in the current account balance were shaped primarily by the changes in general government balance linked to the political cycles and by external business activity. The large surprise nominal devaluation and the accompanying real depreciation played a role in the economic stabilisation of 1995. However, within the framework of the crawling-peg exchange rate regime the MNB attempted to pursue a cautious monetary policy which reduced real effects to a minimum, even at the cost of slower disinflation. (Band widening in 2001 and the introduction of the inflation targeting system brought a change in this respect – currently, disinflation enjoys priority.)

From 1995 to 1997, the current account deficit fell gradually, then it began rising again in 1998. Subsequently, between 1999–2001, the balance was on an improving trend again, only to see a massive deterioration in 2002. This was partly attributable to the fiscal policy conduct determined by the political cycle, which was also a strong factor influencing consumption by liquidity-constrained households, given the massive dependence of their income and consumption on government transfers. Fixed investment activity was fairly volatile in the period 1995–97, as there were major uncertainties surrounding the sustainability of the export-driven economic upturn. Here, the lower volume of fixed investment in 1997 definitely played a major role, as it offset the effects of the general government balance, which was deteriorating as fiscal policy grew more and more lax with the parliamentary elections drawing nearer. After 1998, the volume of fixed investment was lower than in the previous cycle, due partly to the unfavourable global economic outlook and partly to the production capacities installed in the period up to 1998. This counterbalanced the process whereby consumption grew at an unchanged rate while the economy grew more slowly, as the effects of the incipient pick-up in consumer credit and the rise in basic material prices in 1999.

As noted earlier, the current account balance as a proportion of GDP fluctuated between 0.9%–9.5% in the period 1990–95. By contrast, it has moved between –2.1%–5.2 % in the subsequent period (taking into account the estimates for 2002 as well), with the consequence that the cyclical effect has been clearly waning. This is mainly explained by the fact that large shocks, similar to that caused by the regime change, have not affected the Hungarian economy, and external economic shocks and fluctuations in fixed investment activity, being the most volatile component of GDP,

have not by themselves induced as large movements in the current account balance as were seen in the five years following the regime change. Provided that fiscal policy is able to contain the budget deficit within reasonable limits in the coming years, which the country will be expected to accomplish after accession to the EU in any case, fluctuations in the current account balance will not be higher than in the pre-1995 period.

The question may be asked as to what factors could prevent the current consumption boom from leading to an excessive rise in the current account deficit. First, one long-term consequence of Hungary joining the EU will definitely be a restrictive fiscal policy, which may influence the consumption path positively. Second, with a prudent, well-regulated financial intermediary system the economy's self-adjusting ability will naturally predominate – deterioration in the current account balance, caused by an exaggerated consumption boom, will increase the costs of foreign funding, which, in turn, will reduce consumption.

If the shocks affecting Hungary and the European Union, its major trading partner, are broadly synchronised, this may lower further the amplitude of the current account cycle. For example, provided that the EU is hit by a positive productivity shock, this will boost the demand for Hungarian exports. Conversely, if Hungary is hit simultaneously by a similar shock, then this increase in Hungarian import demand and the change in the current account balance will be marginal. The role of political cycles will lessen due to the narrower room for manoeuvre in fiscal policy after Hungary has joined the EU and EMU, as monetary policy will be unified and emerging-country capital market shocks will have no significant effect on Hungary. Consequently, the current account balance will be influenced cyclically by consumption and productivity shocks. The higher the integration of the Hungarian and the European economies, the lower the likelihood of asymmetric productivity shocks. The paper by the Economics Department staff of the MNB, edited by Csajbók and Csermely (2002), emphasises that 70% of Hungarian exports was directed to euro-area countries, while the structure of the Hungarian economy was little different from those of the EU member states in 2000 – in respect of contribution to GDP, every economic sector registered values between the highest and lowest euro-area countries.

Financing current account deficits

The previous section explained the cyclical movements in the savings-investment balance and, through this, variations in the current account balance using standard macroeconomic instruments. This section analyses factors affecting the financing structure on the other side of the balance of payments.

Chart 2 Current account deficit and its financing (EUR billion)

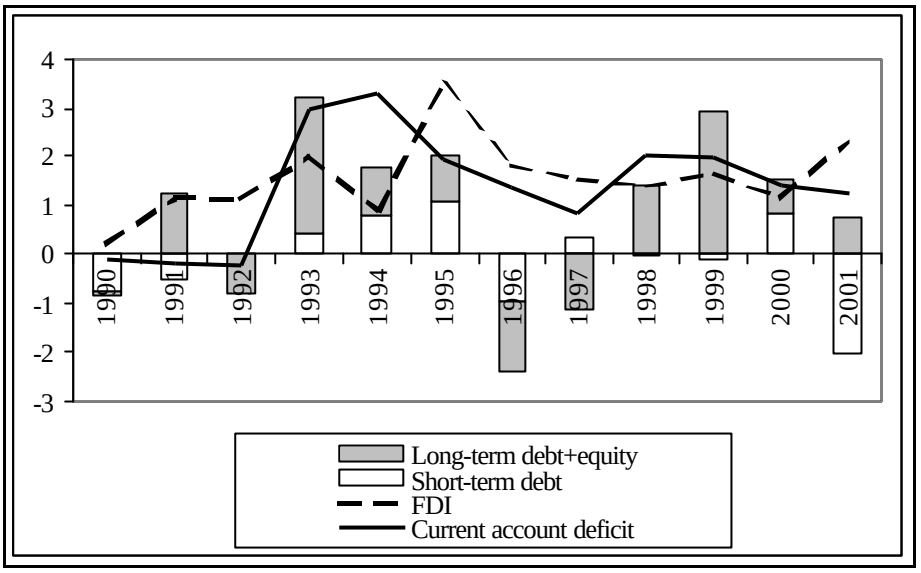


Chart 2 plots developments in financing the current account deficit in the period between 1990 and 2001. The Chart clearly illustrates that, since the political regime change, *foreign direct investment* (FDI) has been one of the key components of financing the current account deficit. This amounted to approximately 3% of GDP on average during the previous 12 years. Given the importance of FDI since the regime change, it may be useful to survey the views in economic literature about the role of FDI and its determinant factors.

Hausmann and Fernandez-Arias (2000a) demonstrated an important empirical relationship between the level of economic development and the role FDI plays. In addition, they attempted to explain this relationship by economic theory.

The authors examined the problem in two steps – they measured the effect of the level of a country's economic development on total capital flows, then they quantified the effect of development on the percentage share of FDI within total capital flows. They found that the volume of capital flows is the largest in the case of developed countries, followed by the emerging markets of Asia, Eastern Europe and Latin-America, with the lowest levels registered by the low-income regions of Asia and Africa. Consequently, the more developed a region, the higher the volume of capital flows between countries. However, the authors also demonstrated that the percentage share of FDI within total capital flows was inversely proportional to the level of development.

The authors explained the inverse relationship between the relative weight of FDI and the level of development using the theory of *transaction costs.* Accordingly, the operations of markets and those of various organisations, including companies, have their costs. Whether the market will co-ordinate activities in a specific area of business transactions or it will be carried out within some sort of corporate organisation, will be decided by the environment in which transaction costs are lower.

Relating this to FDI implies the following: if transaction costs are high on a given country's financial market, which characterises underdeveloped economies, then it may be more advantageous from the perspective of investors to internalise investment transactions instead of letting the market carry them out. As financial markets are efficient in developed countries and operate with low transaction costs, it is useful to

rely on the market in investing capital among developed countries. By contrast, in the case of a less developed country, it is perhaps more useful to eliminate the local financial markets and finance economic activity with corporate expansion plans and intra-company capital flows. Let us look at a practical example. One typical imperfection of emerging-country financial markets is the phenomenon known as the *original sin*. This refers to a type of incomplete markets in which it is impossible to borrow from abroad in the given country's national currency and, moreover, borrowing domestically is limited to the short term. Naturally, this may cause a serious problem, due to exchange rate volatility and the maturity mismatch. However, this can be avoided by a foreign investor establishing a subsidiary in the given emerging country and financing it through the parent company, which operates in a country where the phenomenon of original sin does not exist in the financial markets.

The degree to which FDI is volatile relative to other forms of investment and how stable its behaviour is during financial crises are key issues from the perspective of financial stability. For a naive thinker, FDI is some sort of a special investment embodied in physical goods which is impossible to mobilise at times of financial distress. In reality, however, there is no such sharp distinction between FDI and other foreign investments, the difference being rather in the varying degrees. This is expressed by a statistical convention for calculating FDI, according to which a foreign investment can only be viewed as FDI if the investor acquires more than 10% of the shares of a company. Just because investors are not withdrawing their FDI in a given period, this does not mean that they are not withdrawing capital from the country in other ways. This is also important to note from the perspective of the relationship between financial stability and FDI. For example, borrowing by the foreign owner of a company short-term domestically and investing the funds abroad is not a withdrawal of FDI, although the owner has actually withdrawn capital from the country.

In addition to a number of factors, Hausmann and Fernandez-Arias (2000b) examined how the various forms of foreign direct investment influenced the likelihood of financial crises. According to their results, the ratio of FDI to total investments in developed countries does not influence significantly the likelihood of financial crises occurring. By contrast, in the case of developing countries, the results partially indicated that the percentage share of FDI reduced the likelihood of financial crises. Lipsey (2001), examining the role FDI played in the Latin-American crisis of 1982, the Mexican crisis of 1994 and the East Asian crises of 1997, reinforced this view. According to his results, FDI showed higher stability than other forms of investment during the three crises.

To sum up, a high ratio of foreign direct investment is a sign that financial markets are operating inadequately. For this reason in particular, FDI plays an important role from the perspective of emerging countries, as it allows for raising foreign funds to which these countries otherwise would not have access because of the inadequate co-ordination of markets. Although FDI is by far not an investment vehicle which holders are unable to withdraw form the target country, the empirical examinations showed that it behaves in a more stable manner than other investments during financial crises.

As was mentioned earlier, FDI played a key role in financing the current account deficit in Hungary as well (see Chart 2). As can be seen, often it was capable of financing the entire current account deficit and was also less volatile than other components of deficit financing. In 1991, with the strengthening of the institutions of

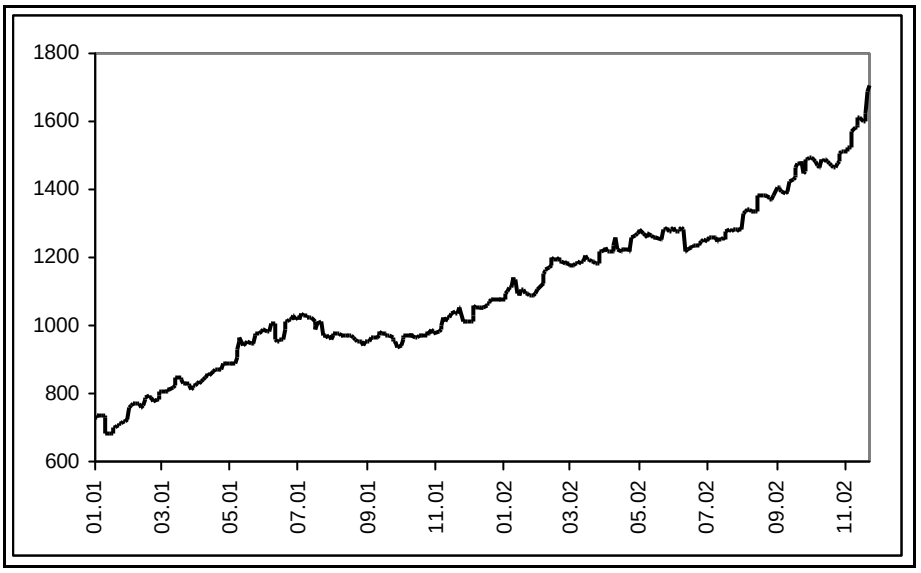
the market economy, the inflow of FDI became dominant for the first time. In 1994, certain privatisation projects were postponed on account of political considerations. In 1995, in contrast, the volume of centrally controlled privatisation increased again. This explained the high volatility of FDI in the two years examined. Apart from this episode which was induced by economic policy, the inflow of FDI showed a high degree of stability between 1993–99, amounting to 3% of GDP on average. In 2000, FDI inflow continued to be around the average, but, due to a surge in FDI abroad, net FDI fell; and, in 2001, a sudden jump in inter-company loans caused FDI to increase again.

Should we expect the stable percentage share of FDI financing to remain over the long term? Based on the above discussion, I believe that the development of the Hungarian economy, and the financial markets in particular, will entail a devaluation of the role of FDI. However, it is difficult to predict exactly how fast or slow this process will be. Nevertheless, as mentioned earlier, one of the largest problems facing emerging-country financial markets is the difficulty in borrowing long term in the national currency abroad. This problem, however, will naturally cease to exist after accession to the euro area, which is expected in 2007. Moreover, it is currently observable that the Hungarian market appears to have made a shift from the state typically characterised by the 'original sin' – a part of Hungarian government securities, in the amount of some EUR 6 billion, has been issued in forint; and large companies are issuing more and more of their debt in the national currency. This, in turn, suggests that there will be less and less need for FDI financing in the Hungarian market in the future. But this likely decline in the importance of FDI does not necessarily endanger financial stability, given that it is the result of the development of the financial institutional system.

The other dominant item in current account deficit financing which has developed fairly evenly is purchases of government securities by non-residents. These represented an inflow of capital equivalent to 1%–2% of GDP in the last 4 years. The rest of financing items, such as short- and long-term debt and shareholdings not categorised into FDI, are much more volatile (see Chart 2). It is difficult to find a general rule in respect of the distribution of the partial items among short- and long-term debt, and shares as well as other factors. For example, in the period 1993–99 short-term debt was a less volatile part of current account deficit financing than shares; however, in 2000 and 2001 it was net short-term debt which was the most volatile component.

One important event of the recent past has been non-residents' increasing purchases of Hungarian government securities (see Chart 3). These have been motivated by the country's expected accession to the Economic and Monetary Union in 2007, as, following the accession, Hungarian government securities yields will only be higher by a slight margin of risk premium than those on EU member states' government securities. And this now may seem worth arbitraging beforehand. The hurdles to accession to the EU now appear to have been removed after the Irish referendum, and the market is confident that the economic convergence criteria will be met on the deadline. Therefore, news of high fiscal and current account deficits has not yet interrupted this process. Provided that, through prudent fiscal policies, economic policy is able to sustain these positive expectations in the future, then this trend will continue in the government securities market, and it will be a stable component of current account deficit financing.

Chart 3 Non-residents' share of total government securities holdings



3. The current account and financial stability

Long-term sustainability of the current account deficit

This sub-section relies on Chapter 2 of the book by Obstfeld and Rogoff (1996) as well as on the paper by Calvo and Végh (1999). The relationship between foreign debt as a proportion of GDP, and the current account deficit and goods trade surplus is provided by the following equation:

$$(1+g)d_t-d_{t-1}=cad_t=-tbs_t + r_{t-1}d_{t-1},, \quad (1)$$

where d_t is a country's debt as a proportion of GDP, g the rate of GDP growth, cad_t is the current account deficit as a proportion of GDP, tbs_t is the goods trade surplus as a proportion of GDP, r_t is the return on debt and t is the time index representing years.

The path of the current account deficit is considered as sustainable if it leads to a level of debt the burdens on which are reasonably expected to be serviceable given the expected performance of the economy. The burden on an existing debt can be quantified as follows: Let us assume that a given debt as a proportion of GDP has been stabilised. Then, given that debt as a proportion of GDP implies that $d_t-d_{t-1}=0$, therefore from equation (1) it follows that

$$tbs=(r-g)d, \quad (2),$$

where the absence of the time indices suggests that, in our assumption, variables remain constant from the next time period onwards.

Using equation (2), we can define the future burden on a country's foreign debt and liabilities. The equation expresses how high a country's goods trade surplus would be at a given rate of return r and growth rate g, if, in a given moment, the country's foreign debt as a proportion of GDP equals d, provided that the size of liabilities stabilised in the future. This indicates the quantity of goods and services expressed as a proportion of GDP a country should give up to non-residents year by year. Naturally, it does not happen in reality that the economy stabilises from a given

moment and both the debt-to-GDP ratio and the goods trade surplus remain constant. However, if we want to capture the burden on foreign liabilities using a single number in a given moment, then this abstraction does make sense.

Equation (2) shows that the higher the rate of economic growth and the lower the return on debts, the lower the future burden on debt will be. In order to be able to use equation (2) in practice, we have to find a viable index measure of return *r*. Obstfeld and Rogoff (1996) argue that the interest rate on a risk-free bond cannot be considered an adequate discount factor, as it does not adequately capture uncertainties in economic growth. Instead, they consider the long-term average of equity returns an appropriate proxy, which can be assumed to be approximately 8%.

Employing this relationship we can understand the importance of the rule of thumb co-ordinating investors' behaviour – it is observable particularly in emerging countries that investors do not allow the country's debt-to-GDP ratio to rise above 80%. Assuming a 8% discount factor and a 4% economic growth implies, on the basis of a 80% stable debt-to-GDP ratio according to equation (2), that the debtor country has to register a 3.2% goods trade surplus for an infinitely long time, i.e. it has to give up 3.2% of its GDP to non-residents each year. In the case of a private individual, this does not seem to be an incredibly high measure in the case of a mortgage loan. But in a sovereign country, where creditors are not necessarily capable of enforcing their rights, in practice they are all the less willing to let the debt burden rise above this measure by orders of magnitude.

Naturally, the 80% rule of thumb cannot be of absolute relevance, as a one-dimensional index number is not suitable for capturing a complex issue in its entirety. Two factors are worth mentioning which can influence investors' views on the degree to which claims are recoverable favourably and, therefore, make it possible to tolerate debt-to-GDP ratios higher than 80%. First, the higher the portion of debt that can be linked to private companies and the lower the portion of government debt, the higher the capacity to repay debt, as future revenues of governments often depend on political factors and, in addition, the state being a sovereign entity exposes investors to extra risks. Second, if the composition of debt is such that it contains a high portion of equity investments, and particularly FDI, it can influence investor behaviour favourably, as in this case investors have a stronger control over business activities providing a guarantee for repayment. This is not an insignificant issue to consider in the case of emerging countries.

Let us apply all these to Hungary. At the end of 2001, Hungary had a foreign liabilities-to-GDP ratio of approximately 56%, net debt accounting for 12%, and equities and FDI for 44%. The rate of GDP growth has fluctuated between 3.2% and 5.2% in the period since 1997 and, as real growth will likely slow due to the decline in the return on capital, I approximate long-term, trend growth in GDP at 4%, a somewhat more pessimistic assumption, instead of the average of the figures mentioned. I have considered two scenarios for developments in the current account balance. In the first, I have calculated with the average for the period 1995–2002, with a 3.85% current account deficit-to-GDP ratio. Under the second, pessimistic scenario, I have extrapolated a 5.2% deficit expected for this year. Using formula (1), it can be shown that, under the first scenario, the foreign liabilities-to-GDP ratio would approximate the critical 80% level in 20 years – it would rise to 78% in the period, the burden of which would be a 3.1% constant goods trade surplus. The pessimistic scenario represents the hypothetical possibility that neither economic policy nor the

self-governing mechanisms of the economy can enforce a reduction in the current level of current account deficit. Even in this unlikely case, 10 years would be required to reach the critical level of foreign liabilities-to-GDP ratio.

To illustrate the point, let us compare these results with the situation in 1994, judged as unsustainable by both the market and economic policy. Let us assume that Hungary would have been able to sustain its 9.5% deficit-to-GDP ratio. In addition, let us take into consideration that Hungary's country risk premium was some 200 basis points higher at that time than currently and, therefore, we fix the discount rate at 10%. Further, let us extrapolate the rate of GDP growth, which was around 3% at that time. The foreign liabilities-to-GDP ratio was some 60%. (However, FDI accounted for a much lower share – net debt was around 45%, compared with below 20% today.) If these parameters had remained, then the foreign liabilities-to-GDP ratio would have increased to 81.8% in 3 years, the burden on which would have been a 5.7% constant goods trade surplus.
Taking into account that currently the structure of debt is more favourable than it was in 1994, and that Hungarian fiscal policy will be confined after accession to the EU, there is not nearly a situation carrying the threat of being unsustainable as the one existed eight years ago.

Risks carried by currency crises

There is no proven method of predicting speculative attacks. Explanation for this is that developments in short-term expectations are a key factor in the occurrence of currency crises, which economics has no efficient tool to forecast. Especially for this reason, this section provides both qualitative and quantitative arguments.

The first peculiarity to consider from the perspective of assessing the current Hungarian situation is the exchange rate regime. Although in the current wide-band exchange rate regime, movements in the exchange rate are subordinated to achieving the inflation target, i.e. the priority of monetary policy, it may be subordinated temporarily to stability considerations and the exchange rate may be allowed to move on its own. Owing to this, the system is more flexible than the crawling-peg devaluation regime, which is beneficial from the perspective of avoiding speculative attacks.

Another important feature of the current Hungarian situation is that today Hungary's accession to the European Union in 2004 is almost certain and there is a likelihood of the country joining the Monetary Union towards 2007. This timetable defines the major direction of Hungarian economic policy conduct, and thereby economic policy will become more predictable and transparent. The positive outcome of the Irish referendum appears to have dispelled doubts related to the ability of the Union to admit the candidates.

The likely accessions to the EU and EMU are primarily stabilising factors, as, provided that Hungarian economic policy intends to meet the criterion of balanced budget as stipulated in the *Stability and Growth Pact*, then there will be a need to gradually tighten the current lax fiscal stance.

In the light of recent developments, it is possible that the *Stability and Growth Pact* will have to be reformed. But, as a monetary union cannot operate without its member countries co-ordinating fiscal policy, therefore, despite the current conflicts, it is quite possible that some sort of an arrangement will discipline the individual member

countries' fiscal policy over the long term. This suggests that, independent of short-term events, Hungarian monetary policy will also be forced to shift its course.

This will likely have a stabilising effect on the Hungarian economy. It has been observable for about a year that investors do not treat Hungary as if it belonged to the group of emerging countries. News from those countries have only a marginal impact on the exchange rate.

This is a very favourable position, as, anticipating the medium-term advantages of adoption of the euro by the country, the market attributes a lower-than-usual importance to negative events, such as the record fiscal and current account deficits. These favourable expectations help to maintain the exchange rate at a level required by disinflation, which, as a self-perpetuating process, can assist the country in joining Economic and Monetary Union as soon as possible.

However, the fact that Hungary has now been moved from the emerging market category to the league of accession countries does not rule out its currency being affected by a speculative attack. The ERM crisis of 1992 affected large, developed European economies; and it was mainly developed countries that fell victim to the mini crisis of 1995.

I cannot state that Hungary is certainly exposed to a classic currency crisis, but adverse speculative movements could slow the country's nominal convergence and increase its costs. That is to say, if the current unfavourable developments in fiscal policy and the current account balance continue, then it cannot be ruled out that expectations turn around. The consequence of this would be that, for example, disinflation required to join EMU could only be implemented at much higher costs and, in the most extreme scenario, could not be implemented at all. This scenario would not necessarily materialise as a classic currency crisis, but they would be similar in that, due to the negative expectations, it would be too costly to maintain the exchange rate path required by disinflation. This would then confirm expectations in retrospect.

In the circumstances, one of economic policy's most important tasks is that it should not squander the current confidence won in exchange for short-term benefits, as the markets' current positive expectations help to find the optimal way of meeting the medium-term objectives.

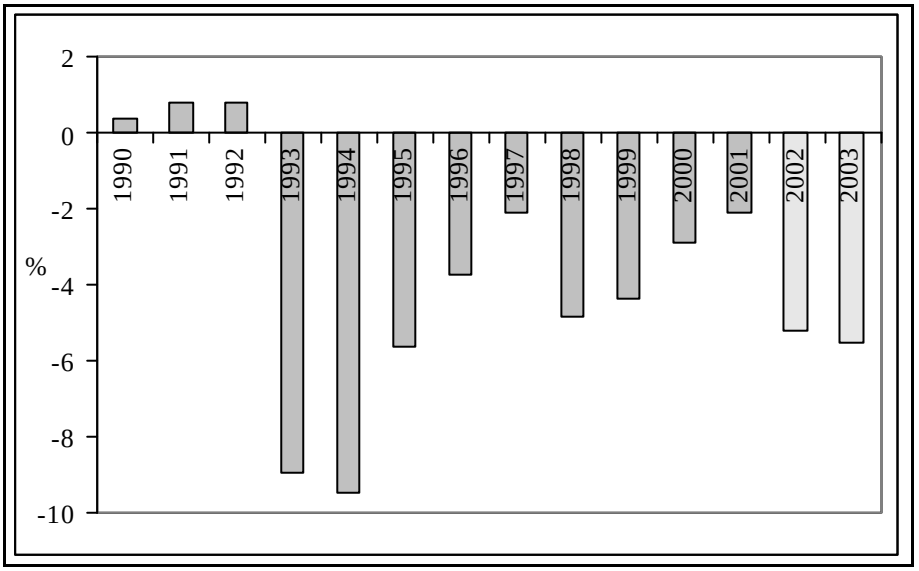
In respect of the above discussion, it was the current account deficit that was primarily a factor influencing expectations negatively. Hungary will have to join ERM2 two years prior to accession to Monetary Union, which will require an exchange rate management with a narrower band than the current regime. This implies that it will not necessarily be enough to influence exchange rate movements using interest rate policy – the authorities may have the need to intervene. However, the current account deficit may become an important issue, as, in the event that it cannot be financed appropriately, it may reduce the central bank's foreign exchange reserves.

As a rule of thumb in addressing the issue of current account deficit financing, large FDI and equity financing is the best choice for avoiding speculative attacks. Long-term debt represents slightly higher risks. Finally, short-term debt carries the highest risk in terms of the threat of currency crises. The study by Rodrik and Velasco (1999) appears to reinforce this view, finding a robust relationship between crises and the *gross short-term foreign debt-to-reserves* ratio. The authors examined a sample covering 32 emerging countries in the period 1988–1998. According to their findings,

a *high short-term debt-to-reserves ratio* is neither a necessary nor a sufficient condition for financial crises, but it is observable that the ratio is twice as high during crisis periods relative to is usual level – it is 1.49 vs. 0.76 in the case of bank loans and 1.59 vs. 0.71 in the case of other loans. However, the outstandingly high *short-term debt-to-reserves ratio* does not simply contribute to the likelihood of crises occurring – the authors also demonstrated that crises would tend to have serious consequences for the real economy, if the ratio was high. The case of Korea is a good example, where the ratio was 325% at the time of the 1997 crisis which had grave consequences, while it was 143% during the 1980 crisis which caused a less serious recession.

In the case of Hungary, it was last in 1990 that the ratio took an extremely high value – it has since been fluctuating in a range of 30%–56%. This is well below the 100% mark considered as the critical level. The statement, therefore, may be risked that the current high level of reserves is sufficient from the perspective of stability. It should be noted that there exist other indicators with similar content. However, I will not discuss them in detail,[57] as they do not make much difference in terms of quality.

Chart 4 Current account balance -to-GDP ratio (actual and forecast)



[57] In this paper, short-term debt includes money market instruments and financial derivatives as well. A similar indicator can be calculated by adding the amount of shares held by non-residents. This represents total capital that can be withdrawn in the short term. Another possible indicator is M0/reserves. The Guidotti indicator is also a popular gauge. This shows the ratio of reserves to total short-term debt servicing. Based on the indicators discussed here, the level of Hungarian reserves can be regarded as safe. The MNB formulates its strategy for the optimum level of reserves by taking account of these indicators.

Chart 5 Net foreign liabilities as a proportion of GDP

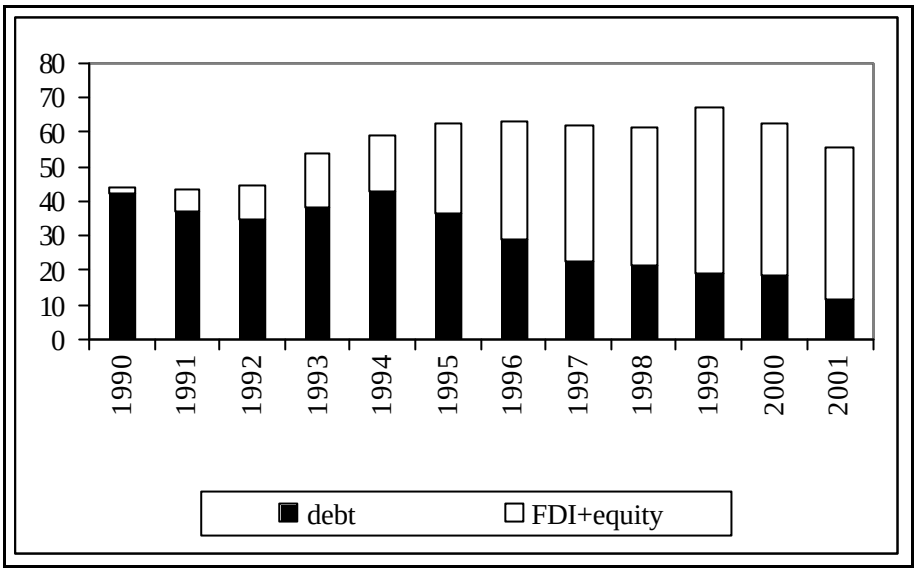


Chart 6 Real GDP growth (actual and forecast)

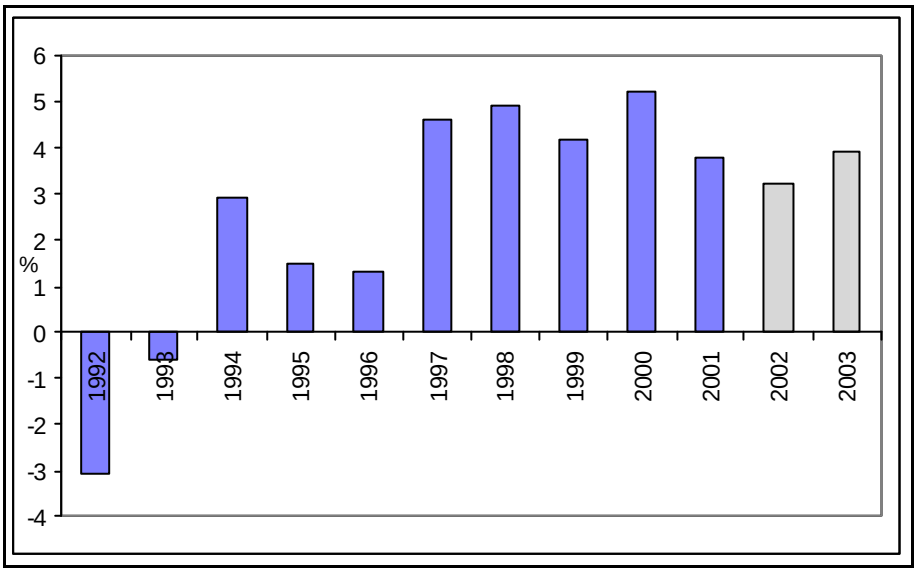
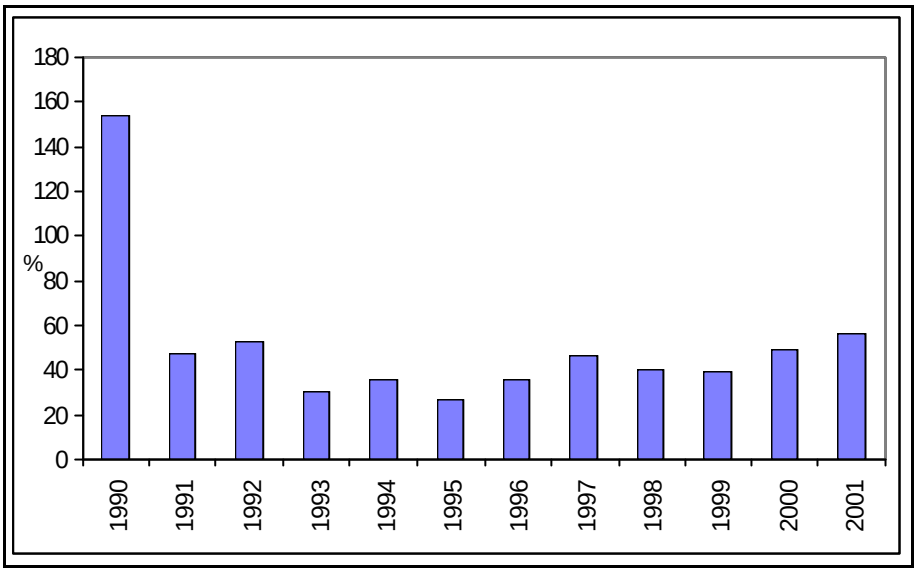


Chart 7 Gross short-term debt-to-reserves ratio



4. Conclusion

In this paper, I have analysed the relationship between the current account deficit and different kinds of financial crises. A lasting, large current account deficit leads to excessive foreign debt, which in turn may result in a debt crisis. If the central bank intends on maintaining a given exchange rate target through a relatively high current account deficit and the fall in reserves or through generating adverse expectations, it may contribute to the emergence of speculative attacks and a currency crisis. Typically, these tend to cause very serious real economic and welfare losses when they are associated with banking crises.

Hungary will likely abandon its national currency and join Economic and Monetary Union in 2007. From that date, the possibility of a speculative attack hitting the country will be ruled out. In principle, a debt crisis may even affect the country after accession. But, taking into account Hungary's current indebtedness, its economic outlook and that the community regulations will oblige the country to conduct prudent fiscal policy after accession, the likelihood of a debt crisis occurring can be eliminated.

Until joining EMU, speculative attacks on the Hungarian currency cannot be ruled out in principle. These are not only related to the size of current account deficit, but to the method of financing it and other factors as well. The probability of asymmetric shocks affecting the country and leading to a current account deficit and a negative change in the financing structure of such magnitudes that could trigger a currency crisis is low. The current relatively flexible exchange rate mechanism of the forint helps to avoid such a situation. In addition, the Hungarian banking sector is adequately regulated, with a major part of banks in highly liquid foreign institutions. Another positive factor from the perspective of stability is that economic agents' expectations are positively influenced by Hungary's ever nearer and ever more likely accession to the EU and EMU.

References

Agénor, Pierre-Richard, 2000, *The economics of adjustment and growth*, Academic Press.

Árvai, Zsófia and János Vincze, 1998, Currency vulnerability: financial crises in the 90s, MNB Working Paper 1/1998.

Árvai, Zsófia and János Vincze, 2000, Financial crises in transition countries: models and facts, MNB Working Paper 6/2000.

Calvo, Guillermo and Carmen M. Reinhardt, 1999, When capital inflows come to a sudden stop: consequences and policy options, University of Maryland, http://www.bsos.umd.edu/econ/ciecalvo.htm.

Calvo, Guillermo and Carmen M. Reinhardt, 2000, Fear of floating, NBER Working Paper 7993, http://www.nber.org/papers/w7993.

Calvo, Guillermo and Carlos A. Végh, 1999, Inflation stabilization and BOP crises in developing economies, in *Handbook of Macroeconomics*, eds. J.B. Taylor and M. Woodford, Elsevier Science B.V.

Collins, Sean, Francisco Nadal de Simone and David Hargreaves, 1998, The current account balance: an analysis of the issues, Reserve Bank of New Zealand: Bulletin vol 61. No. 1.

Csajbók, Attila and Ágnes Csermely (eds.), 2002, Adopting the euro in Hungary: expected costs, benefits and timing, MNB Occasional Paper No. 24.

Eichengreen, Barry and Ricardo Hausmann, 1999, Exchange rates and financial fragility, NBER Working Paper 7418, http://www.nber.org/papers/w7418.

Edwards, Sebastian, 2001, Does the current account matter?, NBER Working Paper 8275, http://www.nber.org/papers/w8275.

Feldstein, Martin, 2002, Economic and financial crises in emerging market economies: overview of prevention and management, NBER Working Paper 8837, http://www.nber.org/papers/w8837.

Hausmann, Ricardo and Eduardo Fernández-Arias, 2000a, Foreign direct investment: good cholesterol?, Inter-American Development Bank Working Paper 417.

Hausmann, Ricardo and Eduardo Fernández-Arias, 2000b, Foreign direct investment: good cholesterol?, Inter-American Development Bank.

Lipsey, Robert E., 2001, Foreign direct investors in three financial crises, NBER Working Paper 8084, http://www.nber.org/papers/w8084.

Rodrik, Dani and Andrés Velasco, 1999, Short-term capital flows NBER Working Paper 7364, http://www.nber.org/papers/w7364.

Obstfeld, Maurice and Kenneth Rogoff, 1996, *Foundations of International Macroeconomics*, MIT Press.

IV.2 The housing market and financial stability in the light of EU accession

by Gergely Kiss

While the construction industry and the real estate market are long-established parts of Hungarian economy, in the past real estate market processes and changes in real estate prices were of no consequence in terms of financial stability. This is no longer the case. As the weight of financial mediation increases, formerly isolated markets merge and the importance of stable market segments grows. It is vital that the central bank analyse the real estate market and identify potential sources of danger if it is to explore the risks in the entire financial system.

The real estate market is constituted of distinct market segments (e.g. residential, business, commercial, etc.). Our analysis first focuses on **describing the housing market**. Over the past two years, the housing market in Hungary has undergone a fundamental transformation, with the most rapid changes occurring in the segment of housing construction funded by loans.

The main findings of our analysis are as follows. **The level of economic development is closely related to residential property prices** in Hungary. Hungarian residential property prices will be able to catch up with those in the EU member states at the rate of real convergence. In a stable and predictable economic environment where inflation is low, **the financial sector and housing markets have close ties.**

Following introduction of the system of subsidised interest rates in 2001, rates on real estate loans fell to the level of euro interest rates. **Low rates** lead to **increased lending**, which means over the medium term that **residential property prices are unlikely to jump due to falling interest rates**, when the euro is introduced. **The unrealistic income expectations** of households and the resulting increase in demand may pose **risk to stability** in the housing market in the short run. This also holds true in respect of **the limited availability of external funds for** an ever-increasing **demand for loans** in the long run.

The first part of this study briefly outlines the characteristics of dwellings as a property asset and discusses a few related theories. It also sums up international experience, paying special attention to EU member states. The second part examines trends and tendencies in Hungary in terms of the possible consequences of EU and EMU accession.

Residential property prices: theoretical issues and international experience

Economically speaking, a dwelling is a highly peculiar good. It can be regarded as **home,** but at the same time, it is also **a piece of property**, and hence a possible form of investment. When we think of it as home, the "yield" that it provides to the consumer is the usefulness that a dwelling has. As a type of investment, dwellings, like shares, earn actual yields through renting and changes in prices.

By economic classification, housing goods are the paragon of non-tradable goods. The most important characteristic is immobility. Further important physical characteristics are durability and an extremely **long life cycle,** which make flats and houses suitable

for serving as **collateral**. Using them as collateral reduces lending risks resulting from asymmetric information between the lender and the borrower. Flats and houses, as collateral for securing loans, establish a connection between the housing market and financial markets. Changes in the value of the collateral may affect the stability of the entire system of financial institutions. Therefore, monitoring price changes is highly justified.

Housing constitutes a dominant part of **the assets** held by households in most countries. In developed economies, the purchase of flats and houses can be financed not only by private funds, but also by loans. As a result, there is **a credit portfolio** of a considerable size which is related to the flats and houses owned as property by households. As we will see in the following, there is a strong correlation between the residential and lending market.

Relying on Poterba's study (1984), when establishing residential property prices, we may adopt the starting point that flats and houses earn their owners financial yields. Prevailing interest rates in a given economy as well as income from rent and price changes establish residential property prices. As far as the housing market in Hungary is concerned, this approach does not, however, seem to be expedient, as for the time being Hungary, unlike developed economies, has no market of rental housing. The majority (90 percent) of dwellings are owner-occupied. Another practical problem is the lack of reliable data on market-priced rents.

The price of flats and houses can also be based on **the equilibrium between supply and demand** on the housing market. As housing construction is rather time-consuming, supply in the short run is inflexible, due to physical constraints. Therefore, differentiation should be made between short-term and long-term equilibrium. **In the short run**, **demand**l with a nearly vertical supply functionλ establishes residential property prices. When purchase can be financed by loans, in addition to residential property prices, the income expectations of the individual households, nominal interest rates and purchase-related transaction costs (e.g. property transfer fees) establish demand as well.

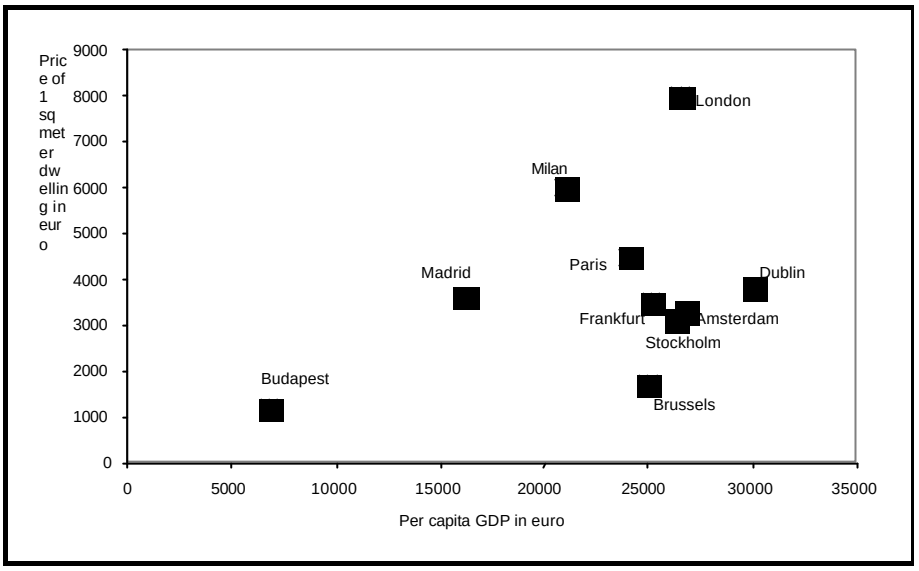
In the long run, supply depends on the availability of resources, and supply adjustment is also possible. Given the scarcity of resources (e.g. land, building materials, etc.), price proportion between houses and any standard good in the consumer basket remains unvaried. As a result, the slope of the supply function remains positive in the long run as well. **An upswing in the economy** and in the number of standard goods will also **drive up the price of houses**.

One of the ECB's very first studies, by Iacoviello (2000), is aimed at describing the changes in residential property prices as well as the effects of monetary policy. Having studied the six largest EU member states (Germany, France, Italy, Spain, Great Britain and Sweden) during the two decades prior to the creation of EMU, the study concluded that (real and inflation-filtered) **residential property prices and GDP moved closely together.** Over the long run, real residential property prices tend to rise almost parallel with the growth of GDP in the EU.

Nominal GDP is almost identical in EU member states and in large cities, downtown residential property prices average around EUR 3,000-4,000 per square metre. There is obvious interdependence between income levels and residential property prices. Differing residential property prices can be accounted for on the level of macro-economy, but there may also develop substantial **regional differences** between the

individual countries. The price of a London flat would buy one of the same size in Paris and another in Frankfurt simultaneously. Obviously, it is not lower German or French incomes or higher interest rates relative to those in Great Britain which cause the difference. Differences in property transfer tax, other taxes and transaction costs can explain the difference. Comparing the price of a Budapest flat in a good location [HUF 250-300,000 i.e. EUR 1,000-1,200 per square metre] with EU prices reveals that the proportions **reflect** the over three-fold difference in nominal GDP. Thus, in Hungary residential property prices are in line with GDP, and correspond to European ratios.

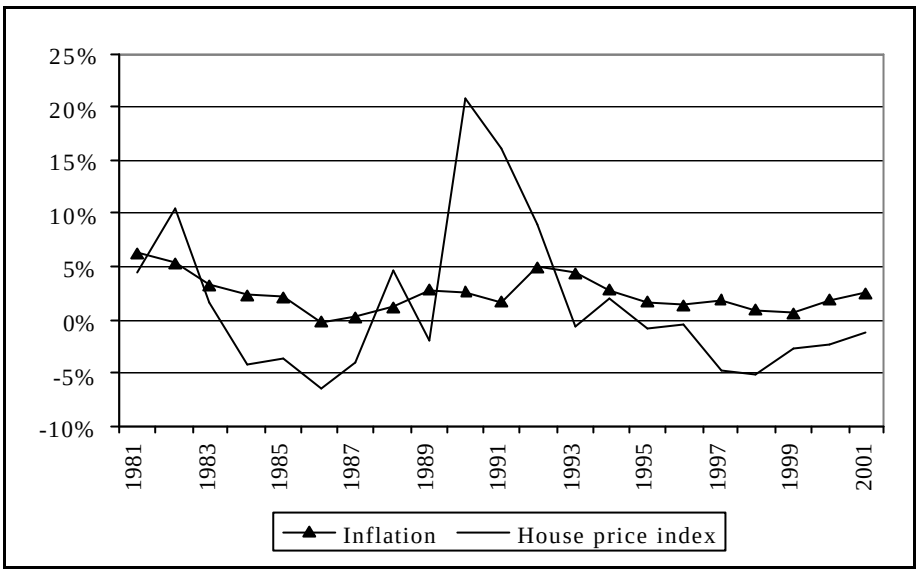
Chart 1 Residential property prices and GDP in Hungary and the EU



Source: Eurostat, Economist

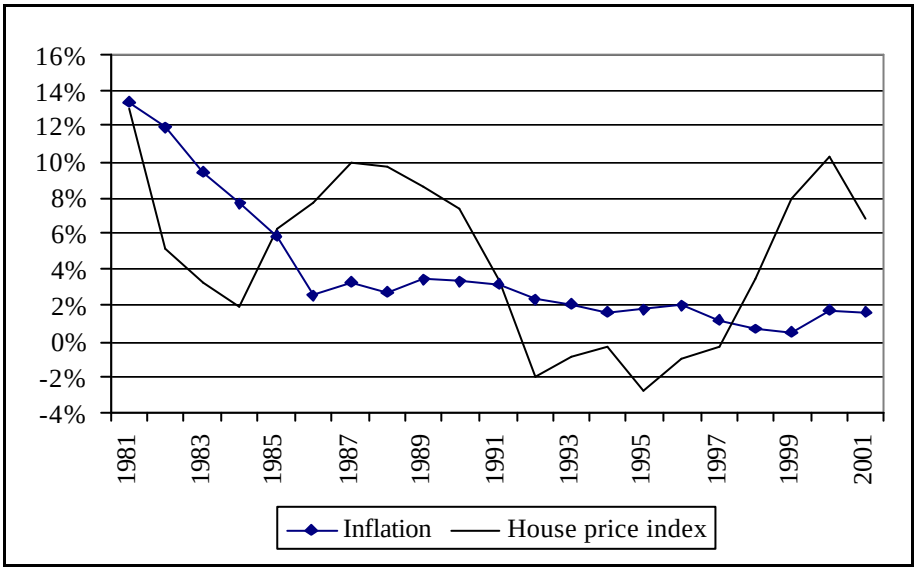
As far as **short-term processes** are concerned, international examples suggest that the movements of residential property prices are more hectic than those seen in consumer prices which are intended to be stabilised by monetary policy. In the following, the economic reasoning for **the greater volatility** of residential property prices is presented.

Chart 2 Residential property prices and inflation
(Germany, 1981-2001)



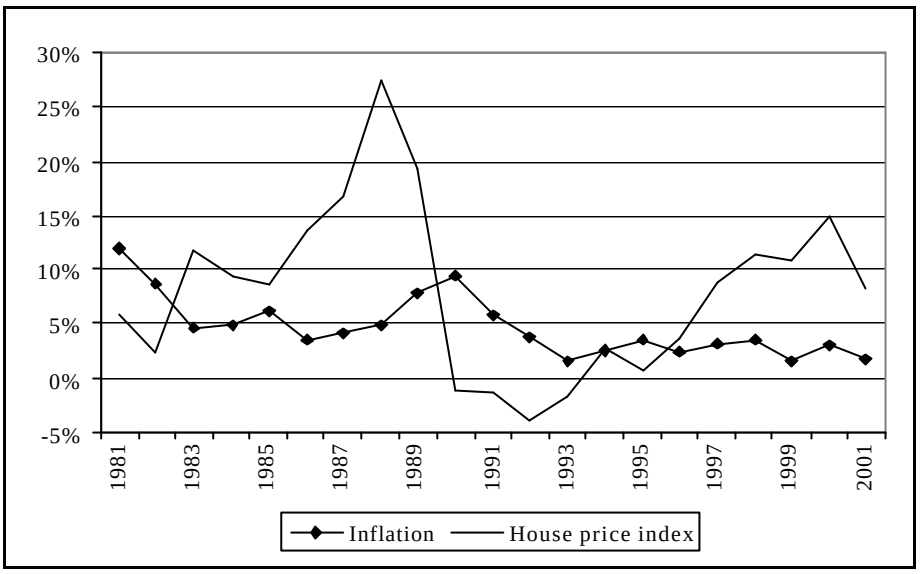
Source: BIS (based on country data)

Chart 3 Residential property prices and inflation
(France, 1981-2001)



Source: BIS (based on country data)

Chart 4 Residential property prices and inflation
(Great Britain, 1981-2001)



Source: BIS (based on country data)

In a micro-economic framework it is easy to see why residential property prices fluctuate and overshoot in the short run. Owing to inflexible supply, an upsurge in demand induces an increase in prices, which only disappears over the longer run when supply increases. As the flexibility of the supply function increases in the longer run, new equilibrium is established on the market at a price level that is more moderate than the initial price increases. Changes in transaction costs and economic cycles may also lead to **fluctuations in demand**.

Transaction costs influence not only the level, but also the volatility of residential property prices. When transaction costs are high, market players do not respond to minor changes in residential property prices. Bearing in mind legal fees and the costs of moving, no one will move into a new home just because its price has gone down by 1-2 percent.

Economic cycles provide a further explanation for fluctuations in residential demand and prices. While monetary policy responds to economic cycles, in advanced economies there is another response in addition to this. When houses are purchased, one of the most important considerations is the ratio of instalments relative to income expectations. In rallying economies when unemployment is low and real wages are on the increase, consumers are optimistic concerning expected future income. Demand for loan increases, as instalments are not expected to present a great burden. As a result, residential demand increases, which leads to rising prices owing to rigid supply. Economic slowdowns reverse these processes. Uncertainty about the future depresses residential demand, which in turn leads to lower residential property prices.

The level of the development of the financial system has a fundamental impact on the operation of the housing market. In the following, we will examine the conditions under which the system of financial mediation can take part in financing the housing market effectively.

The starting point of the analysis of consumer behaviour is that households aim to optimise their consumption during their entire **life-cycles**. In economies with a developed financial system, consumption is influenced not only by current incomes, but also by the availability of loans. In order for consumption to be smoothed, **demand for loans** is especially justified in the case of long-life, significant assets of high value. For the majority of households, flats and houses are the most valuable of all assets. Housing loans to finance purchases should have long maturity, as servicing large debts from current income takes a long time. However, the utility of dwellings is also quite long.

One of the most important tasks of the banking system is **transforming the maturity** of funds and loans. In well-functioning financial markets, long maturity loans are available even if there are no savers who wish to deposit their capital for a similarly long maturity. Maturity transformation is of great relevance to housing loans with necessarily long maturity.

Banks are willing to conclude long-term contracts and perform maturity transformation only in a stable, reliable economic environment. **Inflation uncertainty** poses the greatest financial risk in the case of long-term processes. It is extremely important for lenders and borrowers alike to be able to foresee, with a relatively high degree of certainty, the trajectory of steadily low inflation and nominal interest rates.

Similarly to maturity, interest rates are another specification of loans. Nominal rates can be broken down into **real rates**, **risk premiums**[58] and **inflation compensation**. Real rates in developed economies are rather stable and fluctuate only in a narrow domain. Housing finance, as was mentioned in the introduction, poses little risk owing to the requirement of collateralised property. Thus, the risk premium is sufficiently low and stable. The majority of nominal rate fluctuations are induced by inflation. High inflation can change both the cash flow and the duration of a given loan. The practical ramifications of this phenomenon are easy to understand through the example of continuous debt service. Owing to inflation-generated high nominal rates, the borrower has to repay a certain amount of the principal in the early period of repayment as well as compensate the lender for the inflationary losses of his principal. As the relevant loan is repaid from current income, instalment cannot exceed a certain proportion of this. High inflation means that no loans amounting to several years worth of income are available, and that the financial system is consequently unable to contribute to financing the housing market.

Who bears interest risk and resultant uncertainty concerning changes in income depends on the type of interest. In the case of **fixed-rate** loans, overall interest-rate risk is borne by the lender, as the present value of fixed cash flow is nominally determined by the discount factor. In the case of **variable-rate** loans, the full extent of interest rate risk is run by the borrower, as the amounts of instalments are determined by the prevailing short-term rate. Consequently, in the worst-case scenario, instalments may amount to an increasingly high proportion of current income.

The ECB study cited above also elaborates on why residential property prices actually respond to **monetary policy interest rate measures**. The point is made that residential purchase is long-term investment, a decision unlikely to be motivated by short-term considerations. Long-term rates do not necessarily move together with

[58] Surcharge relative to risk-free yields on government securities.

short-term ones, either. Nonetheless, mortgage rates are tied to short-term rates in a great number of countries, as lenders would take higher risks with long-term fixed-rate interest periods. Variable rates are more efficient in terms of the interest transmission mechanism of monetary policy as changes in real interest rates make themselves felt faster on the market and central banks can influence borrowers' interest expenses as well.

The experience of the convergence countries

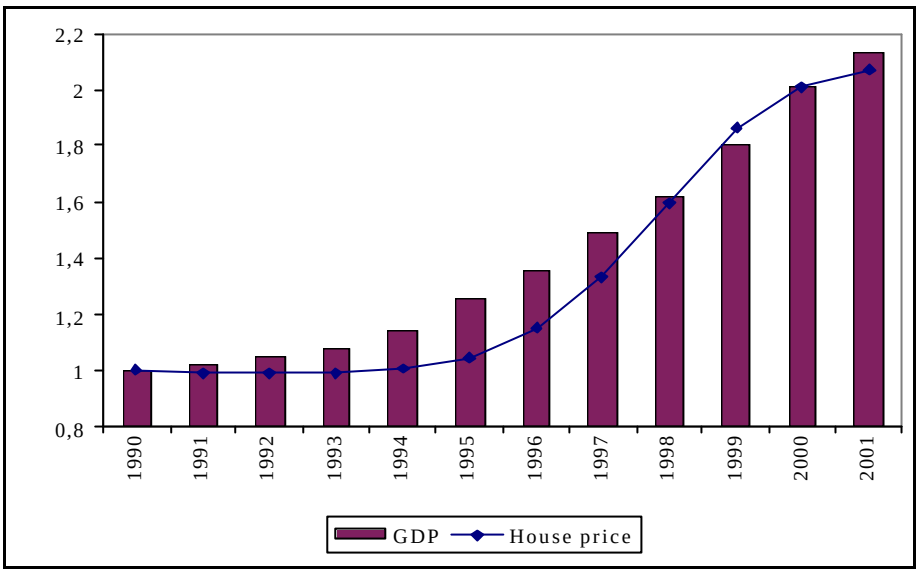
With impending accession to the EU and to EMU, in particular, the housing market-related experience of EU member states can also serve as a yardstick for future processes in Hungary. Analysing EMU accession-related experience is of utmost importance, and the examples of small converging countries, such as Ireland and Portugal, can be particularly instructive. Relying on the research conducted by the respective central banks of Ireland and Portugal, we describe the extent to which convergence characterised residential property prices as well as the effects which uniform monetary policy has had on the housing market in convergence economies since its introduction in 1999.

Box 1: Ireland

Concurrently with extremely rapid economic growth, residential property prices **in Ireland** in the 1990s also soared, causing considerable worries among economic policy-makers. Between 1995 and 2001 residential property prices rose at an annual average rate of 15 percent, more than **doubling** in six years. Inflation averaged 3 percent during this period, with economic growth at 9 percent.

Prior to Ireland's EMU accession, Kenny (1998), relying on Irish data available since 1975, performed econometric calculations. He concluded that, in line with what was experienced in the six major EU member states, increasing income had a beneficial impact, whereas residential property prices and interest rates exerted an unfavourable effect on residential demand. Any unit change in **income** induced an identical amount of **increase** in **residential demand**.

Chart 5 Real residential property prices and GDP in Ireland
(1990=1)



Source: BIS

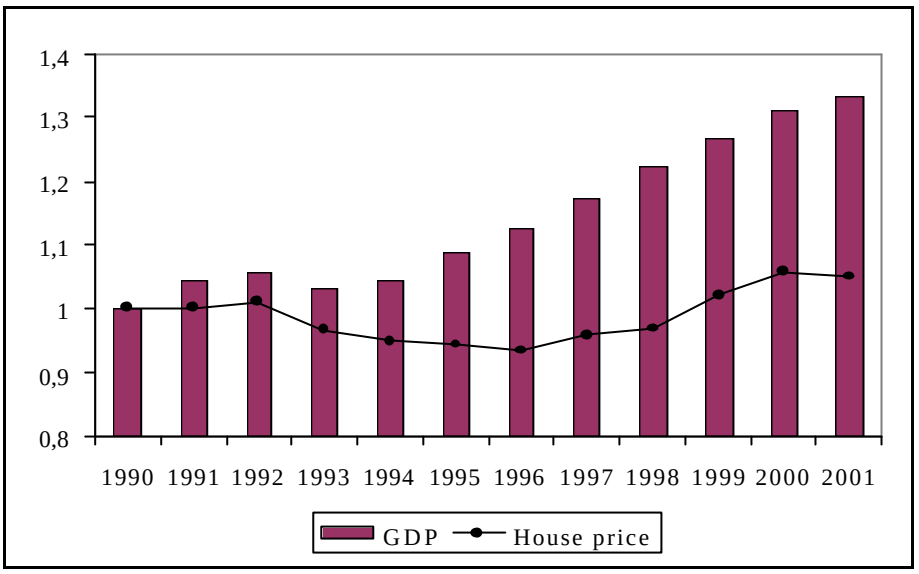
The model reveals that between 1994 and early 1997 the stock of dwellings had fallen below equilibrium level, owing to a dynamic increase in income and a decrease in nominal rates resulting from EMU convergence. In order for the **equilibrium level** to be regained, either the stock of dwellings should increase, or residential property prices should grow, or both. For economic reasons, residential property prices did indeed keep increasing after 1997.

Box 2: Portugal

The Portuguese economy was gradually catching up to EU average over the past years and successfully met the convergence criteria of EMU accession. In particular, a successful disinflation policy was instrumental in lowering credit interest rates. At the same time, as a result of a uniform interest rate level, earlier high real rates fell significantly, too, in the months running up to the accession. From a Hungarian perspective, an extremely rapid increase in the size of **the housing loan** portfolio, generated by the easing of liquidity constraints, was an important development on the housing market.

Despite convergence, both GDP and real residential property prices grew more modestly in Portugal than in Ireland in the 1990s. Owing to increased demand boosted by easing borrowing conditions, real residential property prices climbed discernibly between 1998 and 2000, when interest rates plummeted. However, real prices followed the expansion in GDP less closely and were more stable in Portugal than in Ireland. The reasons for this included liquidity constraints originating from high inflation and a moderate increase in income in the first half of the decade.

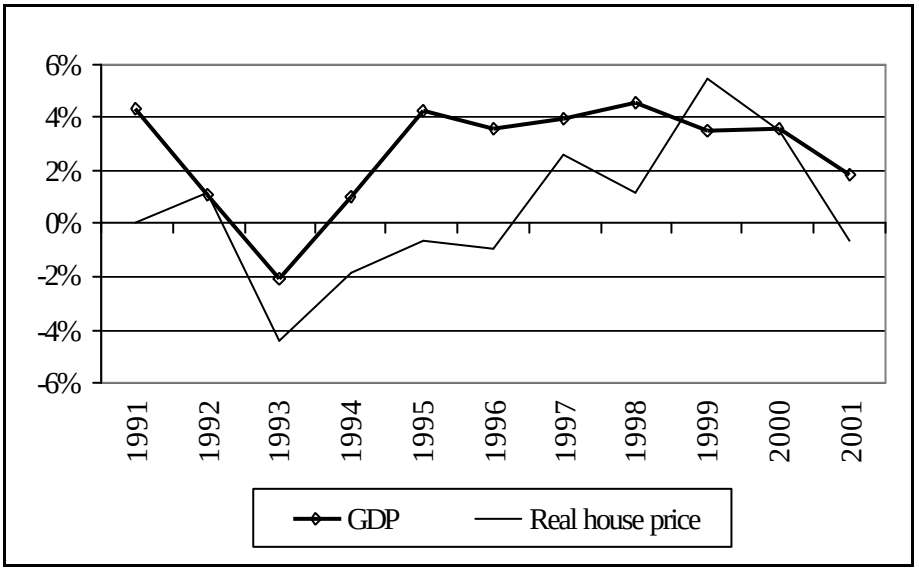
Chart 6 Real residential property prices and GDP in Portugal
(1990=1**)**



Source: Banco de Portugal

The low interest rates for loans established a relationship between housing demand and income expectations. As a result, residential property prices in Portugal have been moving together with **economic cycles** since mid-1990s. According to Banco de Portugal (1999), changes in residential demand based on income expectations are reflected in prices.

Chart 7 Growth rate of the GDP and real residential property prices

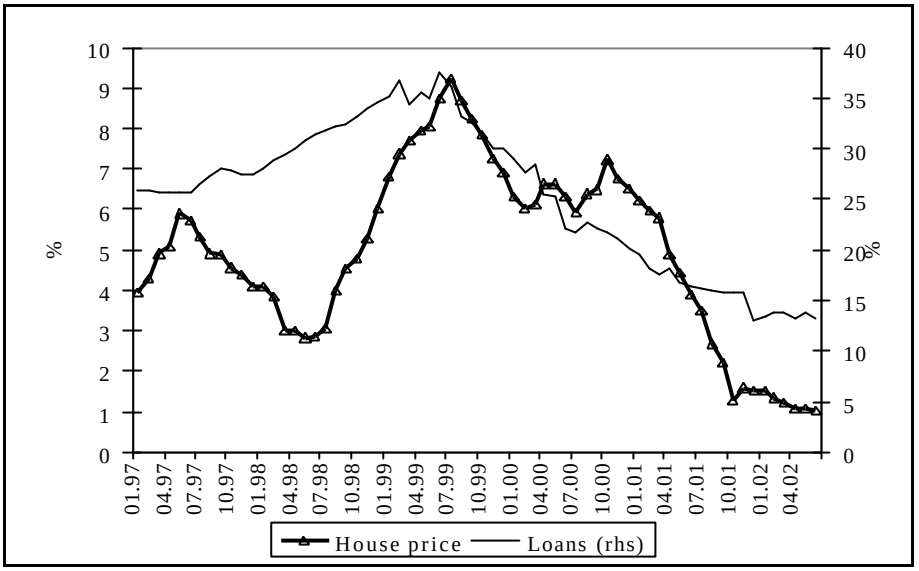


Source: Banco de Portugal

Boosted by EMU accession, residential lending, already steadily increasing in the 1990s, gained additional momentum, reaching an annual all-time high of 35 percent in June 1999. The lending market has also reflected economic cycle-related fluctuations in residential property prices over the past years. Record prices coincided with peak lending periods. The same occurred in the case of plunging nominal residential property prices and strongly declining demand for residential loans.

Chart 8 Annual growth rate of residential property prices and housing loans in Portugal

(1997-2002)



Source: Banco de Portugal

As a result of an unsustainable volume of lending, the household sector in Portugal became one of **the most heavily indebted** in the EU in a short time. Loan portfolio accounted for 39 and 96 percent of disposable income in 1995 and 2001, respectively. With the macro-economic environment deteriorating, residential lending began slowing down markedly in 2000. The current 13-percent annual increase in the size of the housing loan portfolio is hardly one-third of what it was in 1999. Yet, it still exceeds the growth rate of nominal GDP, which means that the size of the housing loan portfolio continues to grow as a ratio of GDP. The interest expenditures of the household sector in 2001 amounted to 6 percent of disposable income. This ratio has grown by one percentage point in each of the last two years. Though the origination of new loans may have slowed down, paying interest on the existing ones represents an **increasing burden**. As well as a temporary increase in euro interest rates in 2000, the economic slowdown also added substantially to this burden.

The Portuguese example unambiguously illustrates the potential risks that large loan portfolios pose to banking systems in a deteriorating economic environment. Even if the origination of new loans is slower than it used to be, **the current loan portfolio** also places an increasing burden on households. When income changes are unfavourable in the entire economy (e.g. stagnating/declining real wages, increasing unemployment), repayment is an increasing burden, leaving a potentially high incidence of default or bankruptcy in its wake.

Housing market in Hungary

In this section, we provide an overview of the housing market in Hungary and the potential changes in the current processes related to Hungary's future EU and EMU accession, in light of its potential impact on financial stability. As was illustrated by international examples, residential property prices are fundamentally determined by the income of households as well as interest rates on loans. We choose these two

factors as our starting point in the case of the housing market in Hungary as well, emphasising the fact that the most significant changes in the past years have been those in lending following the easing of liquidity constraints.

Changes in residential lending

The loan portfolio of households practically ceased to exist in the early 1990s owing to cuts in government subsidies, high inflation and the dismal economic outlook. As a result, **there were no housing loans available for households**, which, in turn, meant that only those could construct or buy homes who had the necessary funds to do so.

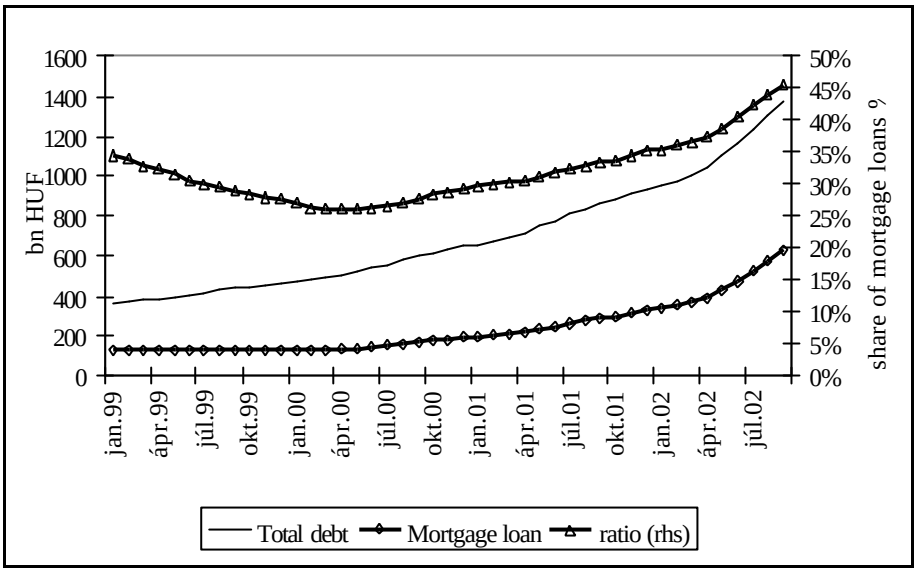
A new scheme of government subsidy which allocated substantial funds for subsidising interest on residential loans was introduced in 2000 as part of what was called the *Széchenyi Plan*. Pursuant to a Government Decree (12/2001), passed in January 2001 and amended numerous times since then, there are two types of government interest rate subsidies: (1) Interest on **mortgage bond -funded housing loans** is subsidised, and such subsidised interest is granted to issuers of mortgage securities. The indirect consequence of this subsidy is that the interest burden on borrowers is reduced. (2) Provided that borrowers meet somewhat stricter criteria, housing loans originated by any credit institution can be complemented with what is called **supplementary interest subsidy**. The objective of either type of subsidy is to relieve interest burden on borrowers considerably. Since the introduction of the scheme, the circle of those eligible for subsidy as well as the amount of subsidy have been steadily widened and raised, respectively, through the amendments passed.

The effect of government subsidy perfectly fits in the theoretical framework described so far. **A considerable decrease in interest on loans** (with APRC currently standing at 4-6 percent) enables borrowers to apply for large loans with reasonable monthly instalments.[59] Whether low interest rates are the result of market processes or substantial government subsidies is of no importance to borrowers.

The greatest changes in the housing market over the past couple of years have been those due to **housing loans**. Owing to an upswing in demand for consumer loans, the proportion of housing loans had been decreasing steadily within a very small total loan portfolio until the late 1990s. 2001 was a milestone in lending: the size of the housing loan portfolio started to grow rapidly from a previously very low level. As a result, the size of the household loan portfolio has been increasing steadily since then, along with the weight of residential loans within the entire loan portfolio.

[59] Given a loan with 10-year maturity and a monthly instalment of HUF 50,000, the amount of loans that can be granted is HUF 4.7, 3.1 and 2.1 million at an interest rate of 5, 15 and 25 percent, respectively.

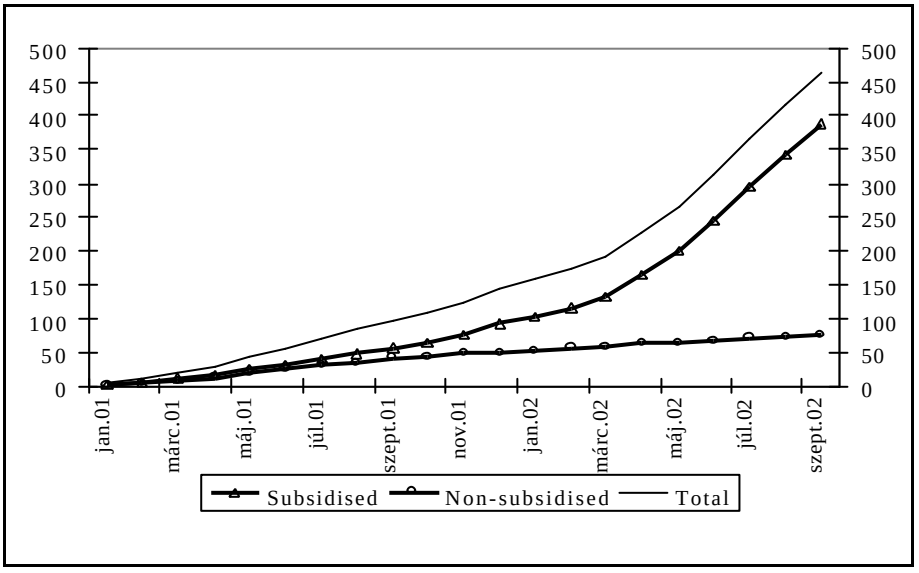
Chart 9 Housing loans and entire loan portfolio of households (1997-2002)



Source: MNB

The volume of **residential lending** is increasing by the month. Such rapid increase can be ascribed exclusively to subsidised loans crowding out market-priced ones. The summer of 2002 already saw a monthly average of HUF 50 billion in terms of credit line agreements for subsidised loans. As a result, the operational saving position characterising the household sector in the earlier years turned into a virtually neutral position in the first nine months of the year.

Chart 10 Cumulated origination of residential loans since 2001 (in billion HUF)



Source: Téglás Szövetség, commissioned by GKM

The new types of housing loans whose terms (maturity and interest) are completely different from those of earlier, dominantly consumer, loans is transforming the risk perception of the entire loan portfolio. In September 2002, property loans accounted for 46 percent of the entire 1,380-billion-forint loan portfolio. Since January 2001, subsidised loans have been accounting for close to one-third of the entire portfolio. Though nearly doubling in size in the past two years, the entire loan portfolio as a

proportion of all disposable income is a mere 12 percent, compared to 60-80 percent common in EMU. The most marked difference between consumer loans and the new generation of housing loans is **interest burden**. Unlike consumer loans whose APRC stands at 25 percent, market-priced mortgage loans are offered at 15. Currently standing at approximately 5 percent, the APRC of subsidised loans is even more favourable. The ultimate point is that it takes a residential loan five times the size of a consumer loan to equal the interest burden of consumer loans. It follows that, given easier and readier availability of housing loans, the **interest burden** on households **increases** significantly **more slowly**.

Price and quantitative changes

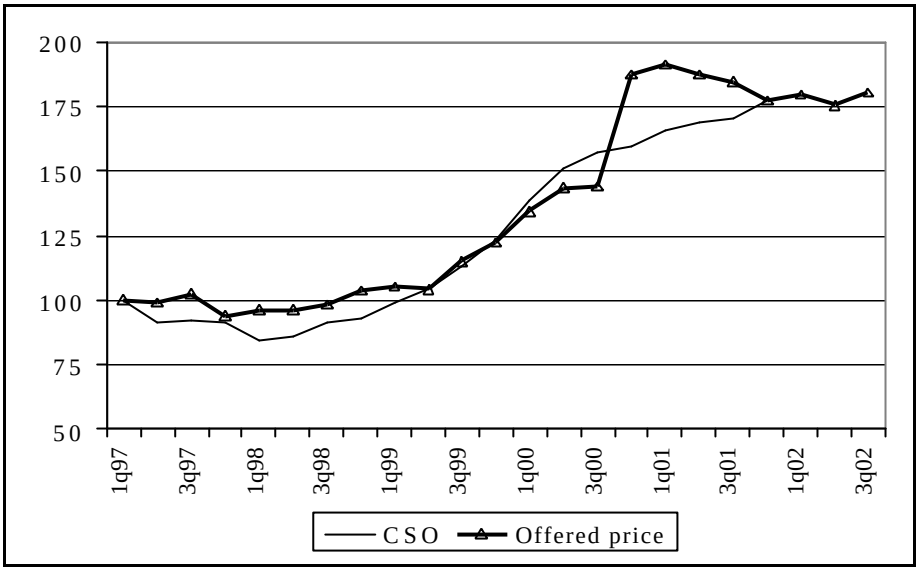
Several studies published by the MNB, e.g. by Zsoldos (1997) and Valkovszky (2000), respectively, were conducted in the 1990s on the savings patterns of households as well as the housing market. Based on these studies, a reliable, clear-cut description can be provided of the transformation that the housing market underwent between the beginning of the transition and the introduction of the new housing policy. According to the studies, in the 1990s the housing market can be characterised with **hectic changes in** real **residential property prices** as well as a slow increase in the stock of dwellings. Economic uncertainty revalued non-cash savings (e.g. real estate, foreign currency) immediately prior to the transition. As the economy started improving and inflation expectations subsided, the privatisation of municipal dwellings from 1992 led to a drop in prices on the housing market. Both 1999 and 2000 witnessed dramatic rises in prices: real residential property prices in Budapest nearly doubled within two years.

Budapest **price indices**[60] reveal that by year-end 2000 the rapid increase in **residential property prices** had come to a halt. Real residential property prices, adjusted for inflation, have been **stagnating** in the capital for two years now. Despite such stagnation, prices are significantly higher today than in 1997, i.e. compared to the consumer basket, a flat would cost 75 percent more today than in 1997.

[60]Owing to the abundance of architectural approaches and the diversity of geographical locations, calculating an average dwelling price is more difficult than calculating the trading price of shares. As the high number of transactions in Budapest may help to tackle the problems resulting from heterogeneity, in the following, we only examine residential prices in Budapest. In addition to CSO (Central Statistical Office) data based on those provided by property transfer tax, excise and duty offices, average offer prices available via the website of Ingatlanpiac (www.ingatlanpiac.net) that process residential ads are also included.

Chart 11 Increase in residential property prices in Budapest

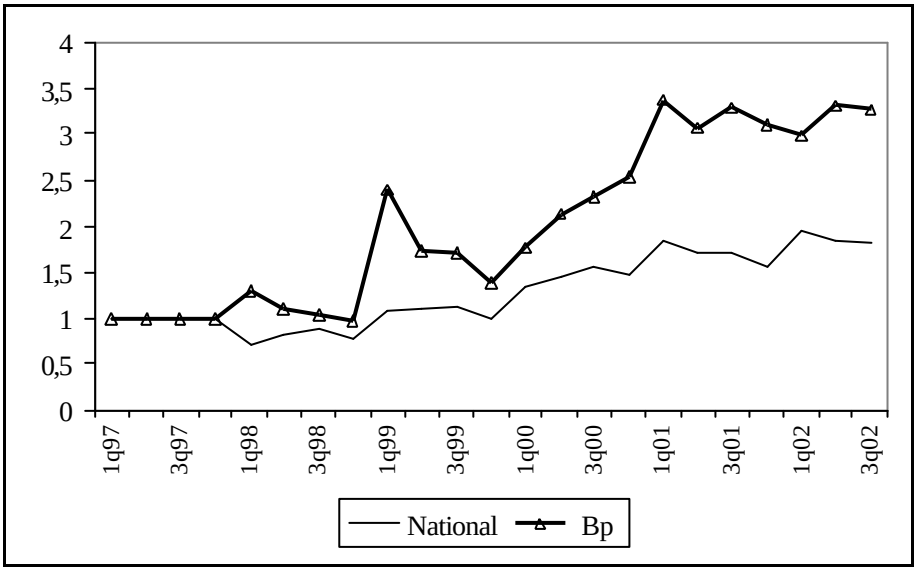
(Real prices 1997=100)



Source: CSO, Ingatlanpiac

It is worth comparing changes in prices to the volume of housing construction. As construction is a time-consuming process, the number of **construction permits** is an indicator of residential supply. Therefore, quantitative changes appear on the time series of construction permits. The differences between national and Budapest data compared to the ones in 1997 are easy to discern. Since 2000 the number of construction permits has grown faster in Budapest than on the national level. Owing to the new system of government subsidies, the number of construction permits in Budapest is three times higher than what it was in 1997, and has doubled at the national level.

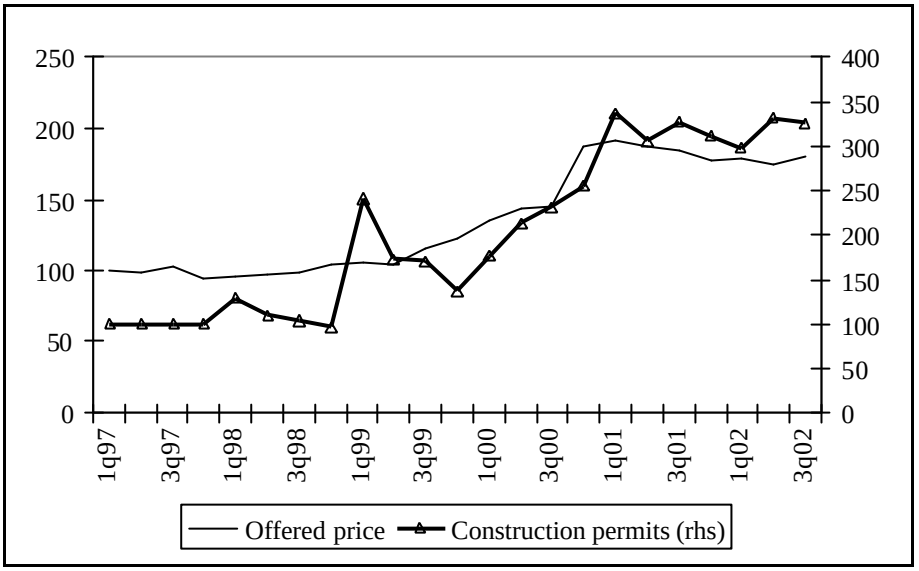
Chart 12 Number of construction permits on the national level and in Budapest (1997=1)



Source: CSO

Data for Budapest reveal that a rapid rise in prices in 1999 and 2000 coincided with a similarly rapid increase in the number of construction permits. A permanently high level of **supply entails stagnating prices**. The efficiency of the housing market is clearly proven by the fact that following supply adjustment there is currently no substantial price pressure on the market.

Chart 13 Price index and construction permits in Budapest (1997=100)



Source: CSO, Ingatlanpiac

In summary, the new system of residential subsidies introduced in 2001 has made **residential loans affordable** as well as available for households, thereby boosting residential construction. With supply and demand on the increase, **a new equilibrium** of residential property prices has emerged, which is by far higher than it used to be. However, there is no dichotomy between price rises and supply.

The impact of EU and EMU accession on the housing market

Now let us examine the developments that Hungary's **EU and EMU accession** will trigger as well as the potential risks inherent in these changes.

As we have seen, currently, both residential property prices and GDP lag well behind the EU average (Figure 1.). In line with international experience, we expect **a parallel increase in both real residential property prices and GDP** in the long run. As GDP in Hungary catches up to the EU average, so will residential property prices approximate such average. Concomitantly with several decades of convergence, residential property prices and economic cycles will move together more closely owing to the enhanced role of loans.

In particular, borrowing moves together with the cyclic fluctuation of disposable income. Even if the origination of new loans slows down during a possible recession, given the large size of the loan portfolio, existing loans already place an increasingly heavy burden on households owing to unemployment and deteriorating real income positions. Protracted recession may also cause serious problems on the level of the banking system in terms of loan repayment. For the time being, the **risk involved in fluctuating income is rather modest**. On the one hand, compared to incomes, the size of the loan portfolio and the proportion of repayment and interest payment are

small. On the other, given Hungary's real convergence trajectory, the likelihood of protracted recession and a resulting permanent decrease in incomes is very low.

Convergence criteria (interest rates, exchange rate, inflation and fiscal position), which are prerequisites for EMU accession, will determine the future path of the **interest rate**. The shape of the yield curve of the forint suggests that the market expects nominal interest rates to decrease steadily. As a result of the current scheme of government subsidies, we have already reached the level of the eurozone in the area of mortgage interest rates. Hence, interest on loans is unlikely to change significantly in the years to come. Thus, **no dramatic drop in interest rates generating a jump** in residential demand and, as a result, in **prices** is expected in residential lending in the future.

Given the current system of subsidies, the household sector carries practically **no interest rate risk** in residential lending. It follows from effective regulations that a fixed-rate credit facility of five years' maturity is the most favourable to both lenders and borrowers, as interest risk is borne by the central budget. This is favourable in terms of stability, as interest risk is virtually negligible. It is, however, less effective in terms of monetary policy, since neither monetary policy measures nor changes in real interest rates exert a real impact on the behavioural patterns of households.

In terms of financial stability, it is vital that substantiated, sound projections on the long-term **growth of the loan portfolio** be provided. The starting point is high nominal rates and a virtually zero loan portfolio, a fact that held true for 2000. The ultimate objective is to achieve proportions similar to those in EU member states, i.e. low nominal rates and a loan portfolio amounting to a considerable part (60-80 percent) of the incomes available. Until EMU accession **the speed of transition** between the old and new equilibrium is limited.

Although banking systems have the ability to perform maturity transformation on their respective balance sheets to a certain extent, it is worth examining the actors that can provide adequately **long-maturity funds** on financial markets. Obviously, from among institutional investors, it is life insurance companies and pension funds that seek long-term investment. As well as Hungarian actors, foreign ones, urged by the envisaged exploitation of yield convergence prior to EMU accession, take an interest in long-term HUF investment as well. These actors can only be enticed into financing the housing market through the issuance of mortgage securities. However, unless HUF savers can meet the demand for low-interest loans, another risk, viz. **exchange rate risk** will appear in residential lending because of **external borrowing**.

Owing to the exchange rate risks involved, external funding complementing domestic savings can only be drawn on to a limited extent. Thus, as well as a given volume of domestic loan supply, an **external barrier**, too, determines the growth rate of long-term loans. With respect to the stability of monetary mediation, it is essential that economic policy should closely scrutinise the risks inherent in external funding.

Unsubstantiated income expectations on the part of households may pose considerable risk **in the short run**. If, given the current low rates of interest, households are over-optimistic about their future incomes, either because they envisage a permanent income growth, such as the extremely rapid growth seen this year, or because they expect a jump in incomes following EU accession, due to heightened demand based on expectations, a bubble in residential property prices may develop. The danger caused by the development and subsequent bursting of a housing

market bubble cannot be contained. A housing loan portfolio whose quality is marred by such development and bursting may amplify the negative effects that influence the entire economy through the system of financial mediation.

We can conclude that, as regards financial risk, until Hungary joins the EMU, the most significant **tension** in residential lending is and will be caused by the limits of external funding. Any lending in excess of HUF savings inevitably entails **exchange rate risk**, which, if such lending assumes a dominant role, may endanger the entire system of residential lending. Unduly optimistic **income expectations** and resultant excess demand funded through loans carry substantial risk not only for the housing market, but also for financial mediation. **Fluctuating** household **incomes** represent a lesser risk. **Interest rate risk**, often cropping up in other countries, is virtually negligible. The current interest subsidy schemes guarantee low interest rates so much so that even changes in short-term rates would be unable to roll over an increased burden onto households, given the current long-term, dominantly 5-year, fixed-rate interest periods.

References

Banco de Portugal (1999) Prices in the housing market and the business cycle, Economic Bulletin, June 1999

Iacoviello M. (2000) House prices and the macroeconomy in Europe: results from a structural VAR analysis, ECB Working paper no. 18

Kenny, G. (1998) The housing market and the macroeconomy: evidence from Ireland, Central Bank of Ireland Technical paper

Poterba, J. (1984) Tax subsidies to owner-occupied housing: an asset market approach, Quarterly Journal of Economics, November 1984

Valkovszky, S. (2000) A magyar lakáspiac helyzete (Housing market in Hungary), MNB Working Paper, 2000/3

Zsoldos, I. (1997) A lakosság megtakarítási és portfólió döntései Magyarországon 1980-96 (Savings and portfolio-related decisions of households in Hungary 1980-1996), MNB Working Paper, 1997/4

IV.3 The risks and institutional structure of housing finance

by Mrs. Erzsébet Vas-Nagy

The rapid growth of housing finance in Hungary over the past couple of years justifies a detailed study of the risks involved. It is safe to assume that state subsidies have affected the development of housing finance and its institutional structure considerably. Owing to these substantial state subsidies, the up-swing that housing finance has enjoyed has been faster than the development of risk management systems, which may lead to a marked increase in credit risk. Liquidity risk, too, can only be decreased gradually through involving a growing number of long-term funds, as institutional investors' presence is becoming increasingly pronounced, with a simultaneous reduction in capital market rates.

The first part of the study provides insight into the international trends discernible in the development of the institutional structure of housing finance and also enumerates the strengths and weaknesses of each type of the institutions. It then goes on to describe the related processes in Hungary, highlighting the characteristics and development potential of each type of the institutions. Finally, the risks inherent in housing finance in Hungary are discussed.

International overview

Housing finance funds include bank deposits, loan-linked savings, bonds which are either secured by mortgage loans (mortgage securities), or which are unsecured obligations of the relevant issuing institution (bank bonds) as well as premiums accumulated by life insurance companies and pension schemes. The most recently introduced instrument is the pass-through security which passes the cash flow and mortgage loan risks through to the investor. In general, households can directly invest in a wide range of securities serving as housing finance funds; however, investment funds, insurance policies and pension funds are commoner vehicles of their investment. Pension funds are the fastest growing form of funds, due in part to increased emphasis on expanding privately funded pension schemes.

Major institutions include depository institutions, whose activities may be diversified (e.g. commercial banks, mutual co-operative banks and state-owned savings banks) or specialised (e.g. building societies and the contract savings for housing). Mortgage banks, too, are specialised credit institutions, which do not, however, take deposits. Instead, they almost exclusively issue secured bonds in order to raise funds. Life insurance companies may lend the premiums they accumulate directly for housing as well. All are portfolio lenders in the sense that they hold the loans on balance sheet and carry out risk management.

In many developed countries, at a time when long-term funds were still unavailable for housing finance, institutions with a housing finance profile,[61] and often government-backed, were established. However, at a later stage of development, when commercial banks had become dominant actors in the housing market, their importance declined. In late 1998, commercial banks held a nearly 40% market share in the EU mortgage market; the corresponding figures for mortgage banks, savings banks and mutual co-operative banks were 20%, 11-12% and 8-9%, in that order; both specialised deposit taking institutions and insurance companies had an approximately 5% market share.[62] In emerging and developing countries specialised institutions are still being set up in order to create a mortgage market.

Specialised mortgage institutions that sell the loans that they have granted, in either their original form or as securitised loans to other institutions or directly to investors are rather widespread in economies with a market-based financial system. However, they are still uncommon in bank-dominated economies. In the US, for example, such institutions provide about 60% of mortgage origination. Second-tier specialised institutions known as conduits purchase loans from a number of lenders and issue mortgage pass-through securities. Other specialised institutions known as liquidity facilities provide loans to portfolio lenders funded through issuance of unsecured debt. Such second-tier specialised institutions mainly operate in economies with a market-based financial system.

Securitisation has been slow to take off in developed, bank-based economies in Europe for numerous reasons. Firstly, mortgage-lending institutions have ample capital and need not sell loans for balance sheet management purposes. Secondly, retail funds are, for the time being, cheaper than wholesale ones. Thirdly, unlike in the US, there are no second-tier specialised institutions (indirectly) backed by the government. Fourthly, owing to infrequent issuances and the existence of non-standardised instruments, there is a lack of liquidity in the market. Nevertheless, a peculiar combination of mortgage bonds and pass-through securities has been gaining ground for some time; such combination means that loans with Loan to Value (LTV) of up to 60% are funded by mortgage bonds and the portion over 60% are funded with Mortgage Backed Securities (MBS).

Emerging and transitional economies do not meet the pre-requisites for securitisation, such as a mature primary market, adequate legal and regulatory infrastructure and a developed capital market. Therefore, this study does not deal with the secondary market system of housing finance in detail.

Commercial banks – deposit financed, diversified portfolio lenders

Housing finance did not use to be included in the ordinary activities of commercial banks, for they were concerned about the liquidity risk inherent in funding long-term loans with short-term deposits. Their focus rather was on financing business and maintenance of cash flow and payment systems. Recently, however, they have become major actors in numerous countries in this segment of the market as well (Chart 1). While commercial banks have suffered a loss of traditional business finance (e.g. the issuance of corporate bonds) due to the development of capital markets, they

[61] In the early 1980s mainstream housing finance institutions included savings and loans in the US, and building societies in the UK.

[62] Source: Lea [2000].

now view real estate-backed housing loans as attractive assets because of their low credit risks and the perceived ability to cross-sell other products as well. The Bank for International Settlement's risk-based capital guidelines accord residential mortgage loans a 50 percent capital risk weight, which further increases their attractiveness. Furthermore, the development of the capital market (e.g. the issuance of bonds by banks, etc.) and more sophisticated risk management technologies have combined to reduce liquidity risk. The declining significance of specialised institutions has also led to the increase in the market share of commercial banks. In part owing to capital raising problems that stem from their ownership structure, mutual co-operative banks (e.g. building societies in the UK) in a number of countries have converted *en masse* into shareholder-owned banks and merged into commercial banks.[63] The new banking law in the US that took effect in late 1999 eliminated the regulatory barriers of universalisation, which underscores the global trend away from specialisation. In France and Spain, as a result of deregulation and reduction in preferences accorded, through regulatory measures, to mortgage banks, the market share of commercial banks has risen. Finally, it should be noted that the importance of commercial banks in housing finance is often understated in the official data, since many specialised institutions are owned or controlled by such banks.[64]

Strengths: All countries already have commercial banks, eliminating the need to create or support new type of institutions. Owing to their better diversification potential, they can reduce risk more effectively than specialised institutions. Also, liquidity risk can be diminished through the issuance of bonds. In addition, a bank with a variety of products has the ability to cross-sell to its customers. Deposits are cheaper funds than wholesale funds in countries other than those with advanced capital markets. This advantage no longer exists in the US and has been substantially eroded in the UK as well. With the European capital market becoming increasingly unified and effective following the introduction of the single currency, such advantage is likely to cease to exist in the member states of the EMU as well.

Weaknesses: As commercial banks lack focus housing finance, they are bound to be less effective in marketing and managing the special risk involved in mortgage lending. Liquidity risk limits the types of mortgage and the proportion of assets they hold in the form of housing loans.[65] They mostly grant variable rate loans, thereby transferring interest rate risk to customers. They are "fair weather" lenders.[66]

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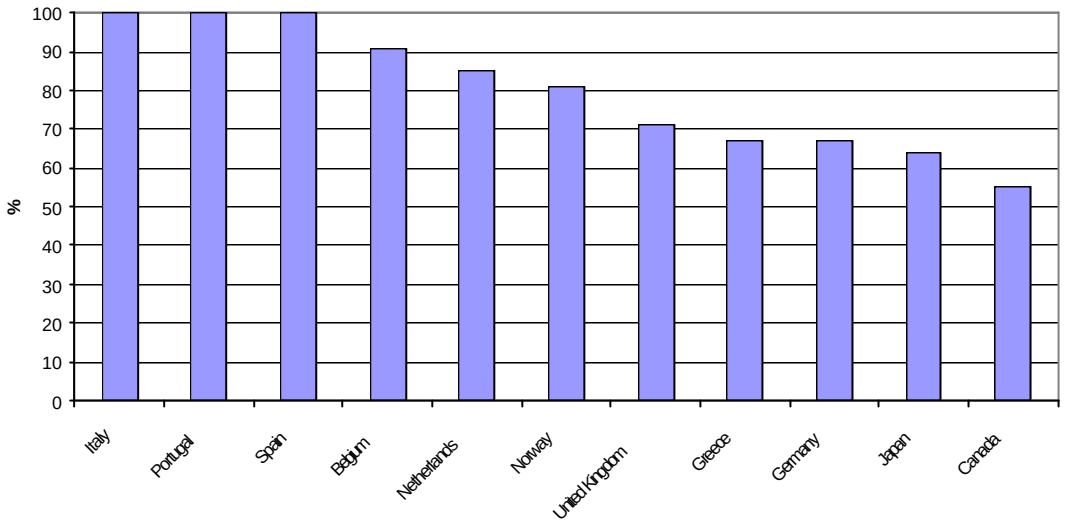
[63] In the UK, the market share of commercial banks had risen from 30 percent in the early 1990s to 70 percent by 1998. A similar process was seen in Australia and South Africa.

[64] The majority of large mortgage companies are owned by commercial banks in the US. Similarly, numerous mortgage banks and contract savings for housing institutions in Germany are owned or controlled either by commercial banks or savings banks.

[65] In developed countries mortgage loans account for 20-40 percent of all the assets held by commercial banks.

[66] However, their ability to time the market is suspect. Mortgage lending through the property price bubble has played a major role in banking crises in Europe, the US and Japan.

Chart 1 The dominance of diversified portfolio lenders in the individual countries (1999), with their respective market shares in the entire portfolio of housing loans



Source: Maclennan [1999], cited by Bozsik [2002]; and Lea [2000]

Mutual co-operative banks - deposit financed, diversified portfolio lenders

While in some European countries the co-operative banking sector has a considerable market share, in others a definite decline is being experienced. Co-operative banks have not been left unaffected, either, by the consolidation process involving commercial banks in developed countries: marked centralisation tendencies are making themselves felt. The number of co-operative banks has plunged over the past years owing to mergers involving many small-size institutions, integration and alliances have become stronger. Streamlining integration (e.g. the concentration of back office activities, the joint development and use of new products and distribution channels, etc.) further strengthens the national and international position of co-operative banks. The process of consolidation on a basically national level will continue. At the same time, however, the presence of larger co-operative banking groups in international markets (though alliances and acquisitions) will be more and more acutely felt. In order to be able to secure the funds needed for the implementation of their ambitious plans, the apex banks of the larger co-operative banking groups are appearing in the capital market. This means the utilisation of more modern elements of capital in addition to the existing co-operative ownership structure and in part the abandonment of mutuality as the basic principle of co-operative banks. Many large co-operative banking groups in Europe have good ratings thanks to their strong and stable financial position, their substantial weight in the banking system of the individual countries and efficient mechanisms of the mutual support systems (cross-guarantee). They have strong capital bases and a high quality portfolio. Though their profitability is not exceptional, it is less volatile than that of commercial banks in general. The strengths and weaknesses listed in the section on

commercial banks also hold true for tightly integrated co-operative banking groups. In Central and Eastern Europe, except for Hungary, only Poland has a co-operative banking sector worthy of mention; however, its weight in the banking system is small (below 5%).

Mortgage banks – bond-financed, specialised portfolio lenders

Mortgage lending is financed through mortgage bonds issued by banks. Bondholders are given preferential rights to mortgage bond-funded loans, the mortgages that back loans as well as the assets of the relevant issuer in the event of institution failure. Lending, the issuance of mortgage bonds and issuing credit institutions are tightly controlled. There is no state subsidy.[67] Mortgage bonds are dominantly long-term, fixed-rate securities,[68] whose issuance depends on demand for long-term securities from institutional investors. The type of mortgage securities depends on the amount to be issued, since the costs involved (e.g. marketing, rating, etc.) increase along the spectrum ranging from private placement to public issue as well as from domestic to international offering. Naturally, in the case of private offering limited liquidity resulting from the relative small amount will inevitably lead to more aggressive pricing. The share of mortgage bonds in the overall capital market of the EU amounts to 17%.

Strengths: Strict, conservative legal regulations governing lending, issuing bonds and the operation of issuing credit institutions, a high level of property registry and the transparency of specialised mortgage banks render investment in mortgage bonds extremely safe.[69] This is corroborated by the fact that there have been no mortgage bond defaults over the past one hundred years, and that, in general, mortgage bonds have become popular regardless of the lack of state subsidy. As the focus of mortgage banks has been on one single area, they should enhance effectiveness in terms of marketing and mortgage lending-related risk management. Owing to the characteristics of the funds they use, they can offer long-term, fixed-rate or long duration credit.

Weaknesses: This system requires the laying down of special regulations and the establishment of an institutional infrastructure, which leads to costly duplication when the owner is, for example, a commercial bank. Owing to the high volatility of real estate prices, mortgage banks, unable to diversify, may carry increased risk. They have no direct cross-selling opportunities, though they may market the products of their respective owner banks.

The strengths of the commercial bank model and those of mortgage bank model can be combined, provided that the issuance of mortgage bonds is not restricted to mortgage banks and that commercial banks, too, are authorised to issue them. The main issue is whether a diversified commercial bank or a specialised mortgage bank is a lower risk institution. This, however, varies from institution to institution and from

[67] In an effort to rebuild the market following World War II, interest on mortgage securities was tax exempt, and the bonds issued by regional banks had government guarantee in Germany.

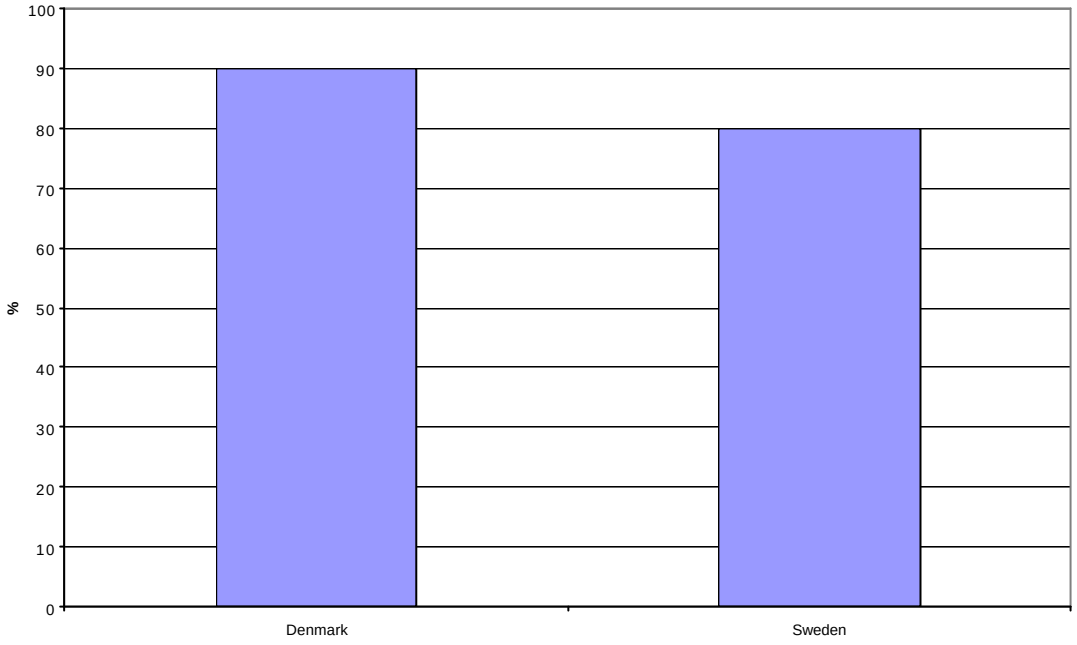
[68] In Germany and Sweden, the bond maturity is shorter than the mortgage maturity (typically 1-10 and 1-5 years, respectively). The maturity of the bonds issued is in line with the fixed rate period of the loans. Bond maturity in Denmark is either 20 or 30 years.

[69] Mortgage bonds represent 10 percent risk weight in most EU countries. The corresponding figure for Ireland, Italy, Norway, Portugal, Sweden and the UK is 20 percent.

country to country. In Germany, only mortgage banks are authorised to issue mortgage bonds; however, one of the largest mortgage banks there argues that this privilege should be done away with, since the mortgage loans and the real estate collateral of such which back the mortgage bonds are more important than issuers. Mortgage banks in Denmark and Sweden also have an exclusive right of issuing bonds. Mortgage bonds in Denmark are pass-through securities. In Sweden, there is no pooling of assets, thus the total assets of the issuing institution secure payments to investors. Commercial banks in Spain are also authorised to issue mortgage bonds. In France, as a result of a new law passed in 1999 an interesting compromise emerged: financial institutions are authorised to establish virtual subsidiaries whose sole activity is issuing mortgage bonds. The origination and servicing of the loans remain with the relevant financial institution. In this case, the loans securing mortgage bonds remain separate and transparent, while the costs of setting up and running a separate institution can be reduced. Mortgage bank legislation in Poland and the Czech Republic is based on the German model. The original regulations were later amended in the Czech Republic, as a result of which mortgage banks are no longer the sole issuers of mortgage bonds.

The aggregate market share of 25, dominantly commercial bank-owned mortgage banks in Germany is 13 percent. That of 3 commercial banks whose authorisations to issue mortgage bonds predates the entering into effect of the present regulations is 7 percent. Though the mortgage banks have lost retail loan market share, they remain the largest lenders to state and local governments and for commercial real estate. The Danish bond market is one of the largest and most liquid in the world (95 percent of the Danish GNP in 1998). Mortgage bonds account for 60 percent of the bond market, while the market share of the government bonds is only 34 percent. There are 9 authorised issuers with 3 institutions accounting for 75 percent of the origination market. In Sweden, mortgage bonds constitute approximately 40 percent of the total bond market. There are 5 large mortgage banks, with 4 of them owned by commercial banks and 1 by the government. In Holland, the mortgage banks ran into liquidity difficulties in 1982 and were merged with commercial banks or insurance companies. In Italy, specialised banks were eliminated in 1995 and the mortgage banks were merged with commercial banks. In Poland, legislation authorising the creation of mortgage banks was passed in 1997. In 1999, one bank was granted a mortgage bank licence. Eight further institutions have applied for licences – with most applicants involving joint ventures between Polish commercial and German mortgage banks. Currently, 3 mortgage banks are operating, with a 1-2-percent housing loan market share and a small-size portfolio of the mortgage bonds issued. In the Czech Republic, 8 mortgage banks are operational. Of them, one is authorised to issue special mortgage securities. The size of the portfolio of the mortgage bonds issued is the largest here within the entire Central and Eastern Europe.

Chart 2 Dominance of mortgage banks in certain countries (1999), with their respective market shares in the entire portfolio of housing loans



Source: Maclennan [1999], cited by Bozsik [2002]

Contract savings institutions - portfolio lenders offering subsidised, highly special loan-linked savings

This system involves a contract on the part of a household to save an agreed amount over a prescribed period in return for a commitment on the part of the financial institution to provide a loan at pre-specified terms for the purchase or renovation of owner-occupied housing. It is typically characterised by fixed, below-market rates on savings and subsequent loans. Governments subsidise savings accumulation with lump sum grants and/or tax relief. However, heavy penalty is imposed for an early withdrawal of the savings. The size of the loan is based on the size of the savings.[70] On completion of the savings period, the household has the right to call a loan without its having to go through the customary underwriting procedure to receive the loan funds. At its heart, CSH (Contact Savings for Housing) is a mutual system, which depends on a continuous influx of new savers to provide the funds to satisfy the loan commitments made to earlier savers.

Strengths: The CSH system has the ability to create a pool of long-term funds dedicated to housing. In many developing and transition economies, such funds are lacking. Furthermore, unlike commercial banks, CSH institutions are not "fair weather" lenders. The subsidy and the guarantee of a loan at completion of the savings contract provides an incentive for savings and may increase the aggregate

[70] In Germany, for example, it is 1.5 times the savings sum including interest and subsidy.

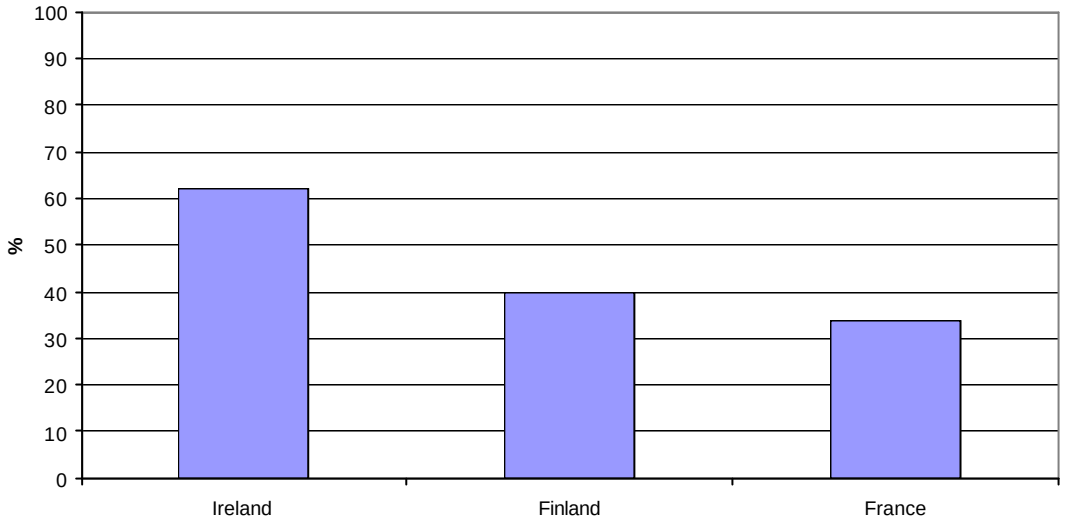
savings rate somewhat. Risks to lenders are lower under this scheme as the borrower's creditworthiness has been proven during the long savings period. This benefit has been diminished with the development of credit bureaux and credit ratings. Savings and the state subsidy help the borrower build a larger down-payment, which further reduces the risks to lenders.

Weaknesses: The CSH systems require the creation of special regulations, and, in the case of "closed systems", creation of new types of financial structures. They are strongly dependent on state subsidy, and an unfavourable development in subsidies may reduce the ability of the system to fulfil commitments to provide loans.[71] The weakness of the systems as a means of housing subsidy is that the subsidy is not targeted by income or housing need. Thus, such systems can be excessively costly if they reward non-borrowing households (i.e. those who leave their funds in for a certain period of time and withdraw them without taking a housing loan, thus retaining the subsidy).

A closed system of loan-linked savings is in place in Austria and Germany. Loans are originated by independent institutions. The time of such origination depends on the availability of funds. This special closed system is almost completely isolated from capital markets. The original French system was also closed. It was modified in 1970 into an "open" system, wherein universal banking institutions offer savings and loan contracts. Loans are immediately available. The purpose of transformation was to create a group of savers who would be willing to leave their savings in the CSH system without exercising their loan rights. The "free funds" thus generated could be used to fund other types of housing loans. The system was introduced in the Czech Republic and Slovakia in 1993 and 1992, respectively. State subsidy accounted for 1-1.5 percent of the central budget; however, it did not contribute to housing finance significantly. Experience shows that it was the households that would have applied for housing loans anyway that channelled their respective savings into this more lucrative form of savings. In Poland, the system was introduced in 1995. It relies on a tax reduction for its subsidy, which restricts eligibility to those households that pay a meaningful amount of tax. The 1997 Act provided the legal basis for establishing a closed system of contract savings for housing institutions modelled after the German counterpart. However, the system has never been implemented. There have been attempts to modify the system that has been in place since 1995 (in particular to replace the tax subsidy with lump sum grants).

[71] Consequently, subsidies have been gradually reduced in both France and Germany. On occasion they have been raised in order to ensure stability. Thus, the popularity of the system has not fallen markedly over the years. However, a reduction of the subsidy in Slovakia in 1998 led to a sharp reduction in the volume of new savings.

Chart 3 Dominance of specialised institutions in certain countries (1999), with their respective market share in the entire portfolio of housing loans



Source: Maclennan [1999], cited by Bozsik [2002]

In general, the most appropriate models are those that are sustainable (i.e. effective and stable) on economic fundamentals without having to depend on state subsidy to a large extent,[72] *as the housing finance market is too large to be funded by the government. Evidence suggests that the most efficient method*[73] *has been the UK building society system, in part to its reliance on the discretionary adjustable rate mortgage, which transfers interest rate risk to customers. This was, however, exactly what led to considerable instability when interest rates rose sharply in the late 1980s. Though the US secondary market system achieved greater operational efficiency, it did include a degree of implicit government guarantee for large secondary institutions. Furthermore, the system is highly stable as it is able to allocate the funding risk posed by long-term, fixed-rate mortgage loans that can be repaid without incurring massive early repayment costs. The Danish and German models have also proven to be relatively stable and effective, which is, however, partly due to the fact that the risk of possible reduction in interest rates is borne by customers through the preclusion of early repayment. Finally, it can be stated that it is the countries (the US, the UK and the Scandinavian countries) where loans are mostly funded by issuing securities that have the most advanced system of housing finance and that can offer the longest maturity loans.*

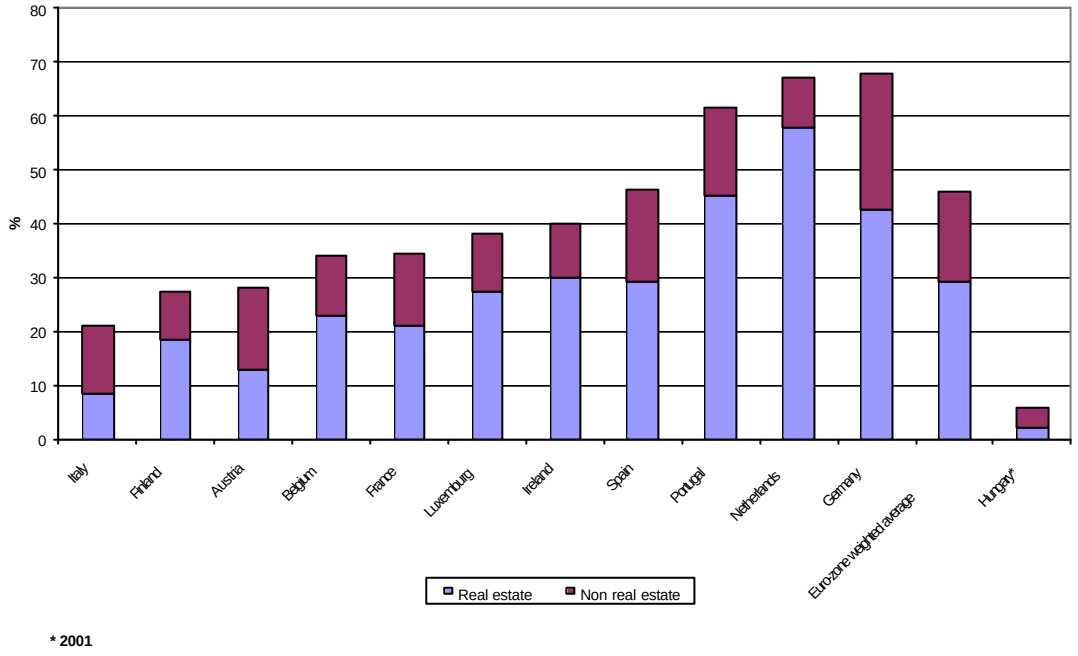
[72] For a detailed description, see Diamond and Lea [1992a] and Lea [2000].

[73] The lower the risk premium-adjusted spread between mortgage and funding yields is, the more efficient financial intermediation is.

Tendencies in Hungary

In an international comparison, the share of domestic mortgage-type housing loans (hereinafter referred to as 'housing loans') as a percentage of GDP is very low (2.5 percent at year-end 2001). So is the proportion of housing loans within the asset structure of credit institutions (6.8 percent in September 2002). At the same time, the rate of owner occupied homes is high (approximately 90 percent). International experience shows that the more advanced a given economy is, the higher the rate of rented housing and mortgage loans/GDP is. Therefore, concurrently with the development of Hungarian economy, an increase in both mortgage lending and the stock of rented housing in Hungary is expected in the future. Hardly over 10 percent of real estate in Hungary is mortgaged. The corresponding figure for developed European countries is 40-80 percent, which corroborates the fact that there is ample room for mortgage lending in Hungary.

Chart 4 Households' bank loans as a percentage of GDP (2000)



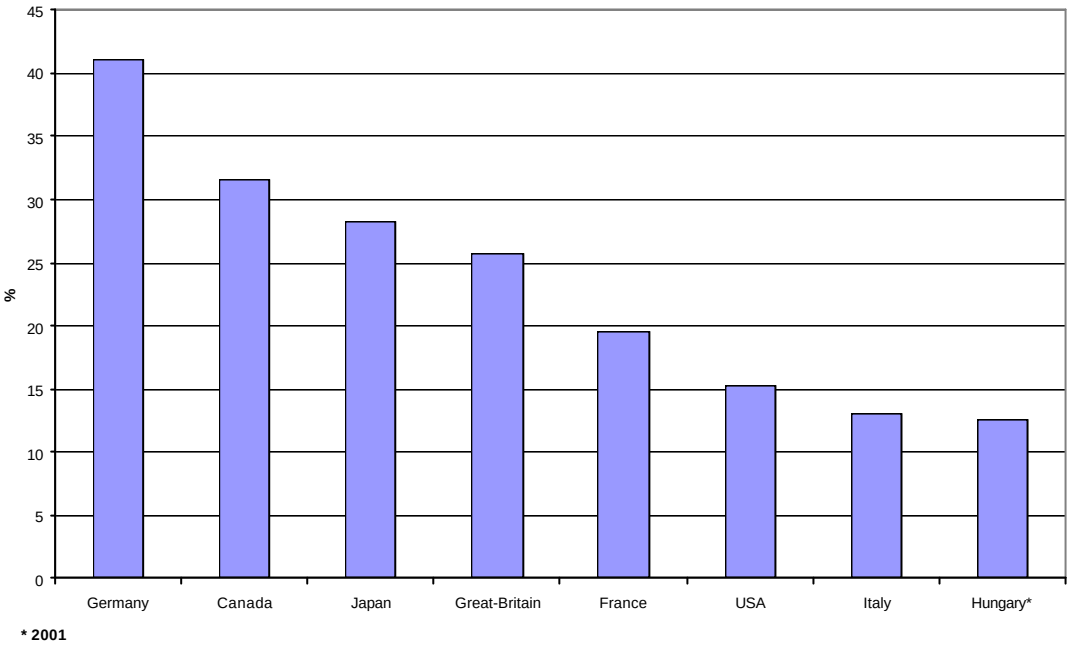
*** 2001**

Source: ECB, cited by Banco de Espana Annual Report, Year 2000, p.116 and MNB.

One of the underlying reasons why housing finance is underdeveloped in Hungary is the weak debt taking capacity of households. Despite the small size of the credit portfolio, the difference between the domestic and international ratio of financial liabilities / financial assets (12.5 percent in Hungary in 2001), is much lower. Lower debt taking capacity is fundamentally the consequence of the differences in living standard and the lower level of disposable income of Hungarian households. Debt taking capacity is further eroded by the exceptionally high proportion of real estate assets within the wealth of Hungarian households, which is partly the result of the willingness on the part of the households to invest in real estate. Unfavourable stock exchange developments have also undermined the traditionally low risk taking

willingness of households in Hungary. The fact that a large number of flats owned former by the municipalities could be purchased for a mere fraction of the prevailing market price has also led to a relatively high real estate asset volume of households with a low level of indebtedness.

Chart 5 Financial liabilities of households as a percentage of their financial assets (2000)



Source: OECD, MNB

The current low volume of housing finance can also be explained by the fact that the size of the housing loan portfolio was dwindling before 1999. Parallel with raising the old type subsidised loan's interest rate to the market level, a partial release of debts and prepayments *en masse* exceeded the granting of new mortgage loans for years. The changeover from a centrally planned economy to a market economy with the resulting soaring inflation as well as the restrictive economic policy measures adopted in 1995 reduced the real income of households considerably, which, coupled with high interest rates, curbed demand for housing loans.

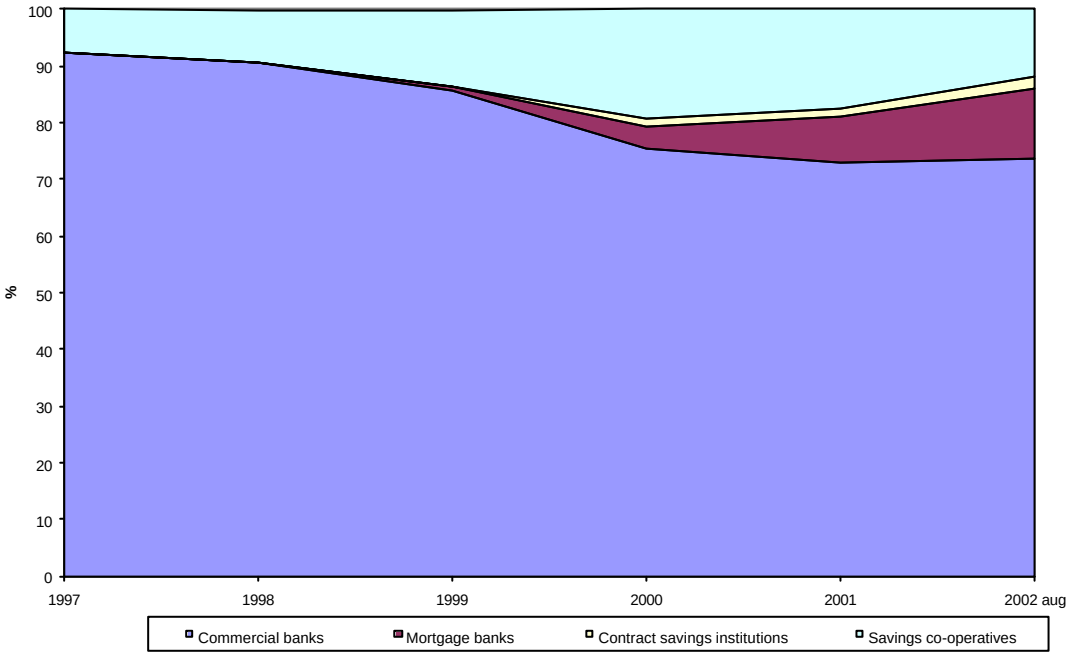
On the supply side, the retail lending market share of the biggest retail bank within the one-tier banking system only shrank very slowly with the arrival of the two-tier system. Newly established or privatised commercial banks first focussed on corporate lending, which required a less extensive network of branch offices and less investment and apparently involved less risk. As a result, there was no considerable competition or supply in the market of retail lending for a long period of time.

With the saturation of the corporate market, a shift in the focus of the banking activity towards the retail market first manifested itself in the market of consumer and other loans. Adequate legal and market infrastructure for mortgage lending was missing; thus consumer and other loans posed less risk, since shorter maturity and lower amount of individual loans placed less burden on households. These shorter maturity

loans were also favourable in terms of the liquidity risk that banks assumed. The improved income expectations of households and impatience generated by delayed consumption in earlier periods led to a marked increase in demand for loans in this segment of the market as well.

Following the creation of the basic legal infrastructure for mortgage lending, due to the steady enlargement of a new scheme of housing subsidy introduced by the government in early 2000[74] and the introduction of the institution of independent liens in 2001,[75] the housing loan portfolio has grown in size over the past two years.[76] Simultaneously, there has been an increase in the market share of the mortgage banks and a decline in that of the savings co-operatives. A shift in the focus of banks towards the housing finance market was reflected in a significant drop in the real interest rates of newly originated market-priced housing loans in 1999. A further significant fall in the first half of year 2000 was the outcome of the competition generated by subsidised loans. Despite the fact that the expansion of housing loans started only two years ago with increasingly fierce competition accompanying it, concentration is still rather high in this segment of the market.

Chart 6 Market share of the individual institution-types in housing finance



[74] The most far-reaching changes include the elimination of age limit of the borrower and of the maximum size of the dwelling to be purchased or built, originally set as the pre-requisite of applying for subsidised loans, as well as the extension of liability-side subsidy to include loans for used flats.

[75] Further regulatory changes that may have contributed considerably to the take-off in mortgage lending include the following: (1) The mortgage lien of the relevant credit institution can be recorded in land registry books without the approval of a representative of the state. This means that if an application for subsidised loan is submitted, restraint on alienation of property recorded earlier owing to another type of subsidy no longer represents an impediment. (2) Provided that the lender has concluded a prior agreement with the borrower, it is entitled, in the case of default, to dispose of the relevant property without a court ruling or a foreclosure procedure.

[76] It would be interesting to find out, to what extent the size of the housing loan portfolio would grow with a significantly lower level of government subsidies, given the current legal regulations governing

Commercial banks

The main actors of the housing loan market in Hungary are commercial banks. Earlier there were no specialised subsidised institutions for housing finance. Lending for housing used to be concentrated at a few retail banks. As banks, owned mainly by foreign professional investors, shifted their focus to the retail market, and a new scheme of government subsidies was introduced, strong competition in the market of housing loans began, with a resultant sharp increase in credit portfolios.[77] Simultaneously, maturity transformation carried out by commercial banks accelerated, as mainly short-maturity retail deposits were used to boost long-maturity housing loans. In order to reduce liquidity risks, some banks have recently begun issuing long-maturity securities (predominantly bonds). Though, for the time being, the proportion of such securities within liabilities is small (1-2%), it is expected to increase in line with international trends. Obtaining refinancing loans from mortgage banks based on independent liens provides an exceptional opportunity for commercial banks to attract long-maturity funds.[78] Banks generally offer their respective housing loans at favourable rates, though 5-year fixed rate period is common in the case of liability-side subsidised housing loans, whose volume has been extremely dynamic owing to state subsidy.

Savings co-operatives

Savings co-operatives experienced serious market share losses in 2002, which can be attributed to the fact that they have been unable to become involved in the most dynamically developing credit line, i.e. liability-side subsidised lending based on independent liens. In their current structure, savings co-operatives in Hungary bear considerable risk, as in many respects less stringent regulations apply to them than to commercial banks; furthermore, they have a few characteristics that significantly increase moral hazard.[79]

As far as the real estate loan portfolio of savings co-operatives is concerned, the market value of the coverage backing loans for housing in small communities in certain regions of the country is presumably very low (there is no liquid real estate market.) In addition, based on the number and regional breakdown of the construction permits issued, a declining volume of housing construction can be prognosticated in the countryside. In the case of default on housing loans in small settlements, the marketability of the relevant collateral is dubious. At the same time, declining housing construction volumes in the provinces may also increase risk posed by the fact that in the case of savings co-operatives there has been a clear shifting towards the cities in

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mortgage lending. In Poland, for example, the mortgage lending market has grown rapidly over recent years even without substantial state subsidies.

[77] Still falling well behind the figures (20-40 percent) of advanced countries, the proportion of housing loans in the respective asset portfolios of domestic commercial banks rose from 1.6 percent in 1999 to 5.4 percent as of September 2002.

[78] For a detailed description of the facility, see Vincze [2002] and the sections below. It should be noted, however, that, if mortgage bonds serving as funds of refinance are subscribed by commercial banks, which is sometimes the case, there is no improvement whatsoever in maturity harmonisation.

[79] For details, see Report on Financial Stability published in August 2000.

lending without establishing an appropriate risk management system. The tendencies characterising the advanced co-operative banking sectors (e.g. centralisation, attraction of long-maturity funds from capital markets, etc.) are unlikely to appear in Hungary for quite a while, owing to lenient regulations governing savings co-operatives.

Mortgage banks

Another method that commercial banks can adopt to reduce liquidity risk is setting up mortgage banks. Currently, there are two mortgage banks owned by domestic commercial banks. One started operating in 1999, (initially focussing primarily on businesses, while also targeting households), the other in 2002.[80] Yet another method is selling mortgage loans. The state-owned domestic mortgage Bank FHB (Land Credit and Mortgage Bank Ltd.) founded in 1998 put up such a construction: commercial banks used their own funds to originate up to 99 percent of the amount of the individual loans, which were purchased by FHB within 30 days. But, through asset restructuring and involving additional funds, commercial banks and savings co-operatives continued to keep the credit that they had originated with the ultimate goal of preserving and increasing their respective market shares and earning higher profits. As an outcome of regulatory changes, the institution of independent liens was introduced in 2001. Mortgage-secured credit remains on the balance sheet of the individual banks, which sell the independent lien collateralising the relevant credit to a mortgage bank that issues mortgage securities.[81] In return, such mortgage bank grants them below-market refinance funds. The banks then repurchase independent liens at the rate of the repayments effected by customers, thereby repaying refinance loans. Independent liens in the possession of mortgage banks secure the mortgage securities issued. Refinance poses little risk to both mortgage banks and those investing in mortgage securities, since, pursuant to the relevant statutory rules, in the case of commercial banks' default, mortgage banks shall be entitled to lien-backed mortgage loans. Considering the official time for statutory assignment, the size of actual risk, which can be further reduced through diversification, equals a one-month instalment. Early repayment may pose a serious problem, as commercial banks are not entitled to prohibit customers from effecting such repayment. However, in order that the interests of those investing in mortgage securities can be protected, mortgage banks are entitled either to contractually stipulate the preclusion of early repayment or to impose severe penalty for such payment, thereby restricting it. The latter also holds good for counterparty commercial banks; i.e. they can price the risk of early repayment and pass it through to customers as costs. An even more serious problem may be posed by the limits that the Act on Credit Institutions and Financial

[80] For lack of an appropriate regulatory environment, there were no mortgage banks in Hungary prior to that period.

[81] The characteristics of mortgage securities and the requirements of their issuance are stipulated by the amended Act on Mortgage and Credit Institutions and Mortgage Securities (1997), which relied on direct finance common in Germany. Mortgage securities can only be issued by mortgage banks, and the issuance of such securities is authorised and supervised by the State Supervisory Authority for Banks. Mortgage loans can be originated only if real estate collateral is available and an independent lien has been entered into Land Registry books. (Land registry offices must record such liens as an immediate priority within 8 days.) There are statutory regulations governing the proportionality of claims and restrictions on investment as well. In the event of bankruptcy, investors holding mortgage securities also have statutory preferential rights to the assets of the relevant issuer if collateral proves to be inadequate.

Enterprises imposes on assuming large risks. Due to such limits and the small size of mortgage banks' regulatory capital, their ability to refinance is strongly restricted. No mortgage securities based on independent lien have been issued abroad; thus international securities markets have not assessed the risk that they represent, either.

Regarding the demand side of the domestic issue of mortgage securities, the absorption capacity of the market is rather limited. One reason for that is that institutional investors must observe regulatory limits on both similar type of investments and investments of the same issuer. Nevertheless, a prospective increase in the size of their respective portfolios will also result in an increase in the absolute value of such limits. The other reason is the intense competition stimulated by government securities, whose competitive advantage derives from their high liquidity as a result of their large numbers, on the one hand, and from well-established (both primary and secondary) channels of distribution, on the other. Raising the interest of households in mortgage securities is especially time-consuming and incurs heavy marketing costs.[82] The foregoing considered, mortgage securities stand to be relatively highly priced, and it may be safe to assume that there will be a shift towards foreign issuance.

For reasons of economies of scale , the number of mortgage banks is very unlikely to grow considerably in such a small country like Hungary. Therefore, care should be taken with the potential privatisation of the only and as yet state-owned mortgage bank in Hungary. In the interest of sustained competition in the market of housing finance, it is important to maintain an unbiased refinancing relationship with the commercial banks that do not have their own mortgage bank.

As far as the issuance-related privilege of commercial banks is concerned, in our opinion it is undesirable that commercial banks should be granted the right to issue mortgage securities in the near future. Transparency is of primary importance, as enormous expansion of housing loans will inevitably increase risk. Also, issuances by a few specialised banks are much easier to monitor and control. Given the size of the domestic market, increasing market liquidity is of the utmost importance. Such liquidity could be better increased if uniform mortgage securities are issued by a limited number of mortgage banks than if a large number of less standardised and more diverse instruments appeared in the market.

Contract savings institutions

Prior to the 1997-1998 foundation of four contract savings institutions in Hungary, there used to exist an open system of savings-linked subsidised housing finance ("savings deposits for the young" offered by commercial banks). Owing to a merger, there are only 3 contract savings institutions today. One is owned by a Hungarian commercial bank, the other two are 50-percent foreign owned (German and Austrian owners planning to merge). The government grants subsidies up to 30 percent, but maximum HUF 36,000 of the amount placed as a deposit. Such subsidies can be granted only if the interest rate of the housing loan to be obtained on completion of the pre-savings period does not exceed 10 percent. The recent system of subsidised mortgage loans has, however, eclipsed this scheme as the amount of the loans granted by contract savings institutions is very small; moreover, subsidised mortgage loans at

[82] The aggregate value of Hungarian mortgage securities amounted to a mere 0.5 percent of that of government bonds at year-end 2001. For details, see Vincze [2002].

an interest rate of 3-6 percent are available without completing a pre-savings period. The fact that borrowers of subsidised mortgage loans are entitled to reduce their respective taxes by 40 percent of their monthly instalments, but a maximum of HUF 240,000 annually, further diminishes the appeal of the contract savings scheme. Effective from 1 January 2003, the amount of state subsidy for the contract savings scheme will be twice the present amount (an annual sum of HUF 72,000). However, even the optimum amount of loans (HUF 2.8 million per person after a 8-year pre-savings period) thus raised is low compared to the price of an average flat, though with such amount of funds, a young couple may be able to afford to purchase their first (small-sized) flat.

As pre-savings-linked loans are inherently less risky (prospective borrowers prove their creditworthiness for a number of years in succession), the importance of contract savings institutions should be heightened, a target that seems to be realistic for the following reasons: (1) In the first four years of the operation of contract savings institutions, emphasis is on savings owing to the characteristics of the facility that they offer. Lending ensues at a later stage. (2) The disadvantages originating from the present forms of subsidising other type of housing loans are likely to decrease in number. (At present, various proposals are being prepared.) (3) As soon as the structural adjustment process of Hungarian households is completed, their income position improves and consumer impatience eases up, savings will increase as well. However, in order for contract savings institutions to develop significantly, it is vital that the aggregate optimum amount of contract savings plus state subsidy and the loan available should cover mainly the price of the accommodation in question even if house prices are likely to rise in medium term.

Finally, insurance companies should be mentioned. Though since January 2001 they have been authorised to originate mortgage loans, they have not added to competition for the time being. The reason for this is that current regulation put stringent limits on the maximum size of their respective mortgage loan portfolios (5 percent of their accumulated premiums). In the years to come, however, their cheap long-term funds earmarked for originating mortgage loans will rise parallel with an upswing in the number of life insurance policies.

Banking risks

The existence of well-developed **credit reference providers** is indispensable for diminishing the probability of default on loans. Credit bureaux in EU member states were, in most cases, established jointly by market players with interest in lending, but there are also profit-oriented private enterprises as well as firms set up by government authorities. Credit reference providers focus on a single business line (retail or corporate), which is justified by the fact that the scope, structure and processing of data on natural persons are different from those of legal entities. Lately, there have emerged multinational scoring companies providing top-level services.[83] Their customers usually include credit institutions, credit card and leasing companies, trade

[83] As well as providing basic services (e.g. collection, provision, storage for a set period of time and regular update of data required for lending), they also use scoring programmes to map risks and help find debtors avoiding lenders. On private customers' request, they issue certificates of creditworthiness, thereby expediting the process of borrowing.

and telecom companies, which originate consumer loans or provide cash for natural persons. The international association of European credit reference providers (ACCIS) provides the necessary framework for shared access to information and for common representation of interests. It is currently tackling the following issues: data protection, upgrading the system of cross-border credit reference services and data supply, drafting Consumer Loans Directives and regulations governing cross-border financial services.

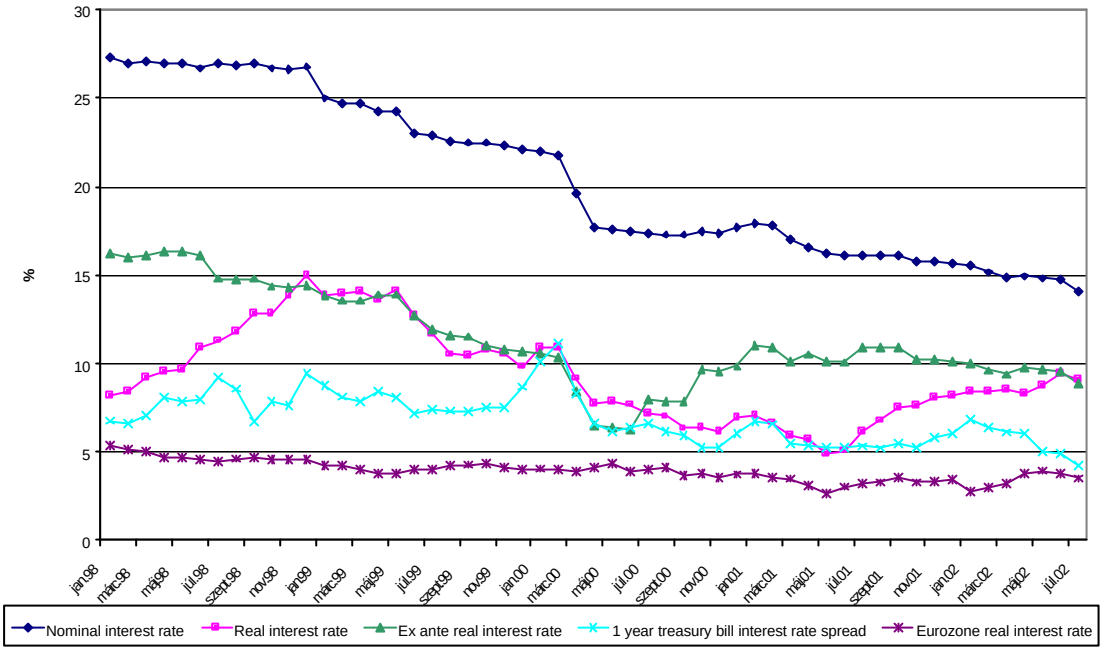
There are a number of legal environment-related reasons why cutting-edge scoring services are still missing in Hungary. Given the growing risk posed by the steadily increasing size of credit portfolios, this issue must be addressed. Accession to the systems of international credit reference services necessitated by the prospective spread of cross-border financial services will be feasible only if high-level services are available in Hungary as well. At present, in Hungary there are two companies providing credit reference services. The scope of data gathered is narrow and, owing to current regulations, credit bureaux can only have records on such persons that have failed to service their respective debts. Therefore, these data are too scant for creditworthiness to be assessed. In addition, what is available is often unreliable. Magyar Nemzeti Bank is taking an active part in facilitating the development of the system of credit bureaux as well as the changes in regulations needed for such development. Thus, we can anticipate marked progress in this area.

As a rule, in the case of credit portfolios starting from a low basis and experiencing a fast take-off, the **quality of** the banks' individual **portfolios** does not show any sign of deterioration as both late payments and defaults occur a few years after the origination of loans. The take-off of domestic retail lending only started a few years ago, so credit risk is presumably higher than what current proportions of loan losses suggest (2.27 percent at year-end 2001).

Since a drop two years ago caused by competition due to subsidised credit facilities, the **spread** between the rates of newly originated market-priced construction loans and risk-free market yields has been around 5-6 percent, with a slight decrease in the past half year. Compared to 10-11 percent in 2001, the real interest rate of construction loans computed, in accordance with the generally adopted pricing practices of banks, on the basis of forward looking inflation has declined somewhat. By contrast, concurrent real interest rate, which is of greater interest to households, has risen considerably over the past year.[84] The last massive widening in the conditions of the housing subsidy system is reflected both in lower real interest rates on market-priced loans and more modest interest rate spread by mid-2002. Real interest rates on unsubsidised housing loans in Hungary are twice the rates in the euro zone. Credit risk premiums, high liquidity risk, insufficient operation efficiency and great demand for loans account for the relatively wide spread between credit and fund rates. While high rates may come in handy for covering potential losses, they place heavy extra burdens on the households, which increases the credit risks facing banks.

[84] The continuation of disinflation, following a temporary halt, has led to significant differences and diverging trends in real interest rates based on concurrent and forward-looking inflation since the second half of 2000.

Chart 7 Rates on market-priced housing loans



In terms of bank credit risks, subsidised housing loans are beneficial, for the extremely low rates, 3 to 6 percent depending on the type of subsidy, place less burden on households. At the same time, banking spreads are adequately high when interest rate subsidy is received by banks. However, **the lag between the reception of liability-side interest rate subsidy and the granting of subsidised loans** poses serious risks to commercial banks. Under this subsidy scheme, commercial banks are allowed to extend credit at a maximum rate of 6 percent. However, they are only eligible for interest rate subsidy based on the issuance of mortgage securities when they transfer independent liens on credit packages to the relevant mortgage bank. This takes several months, in part, owing to the fact that the IT systems of banks are not sophisticated enough. The situation is further aggravated by the unpreparedness of the official system of land registration and the protracted nature of the registration process in Hungary. Mortgage banks are only allowed to receive liens registered by land registry offices. Owing to time lags, in the case of the most dynamically growing credit portfolios, the margin between credit and liabilities is extremely low, or even negative, for months on end, which is bound to lead to heavy losses. At present, there is a volume of refinancing loans received from mortgage banks of less than HUF 20 billion vis-à-vis a portfolio of liability-side subsidised mortgage loans of over HUF 200 billion. Time lags cause profitability concerns and pose liquidity risk, too.

As mortgage lending does not have a long track record, and the consequences of a real estate price bubble (e.g. the extent of fall in prices, deterioration of bank portfolios, etc.) are still unknown in Hungary, it is hard to estimate a safe magnitude of **real estate coverage**. Also, households in Hungary have relatively poor debt taking capacity. As a result, default on loans and resulting foreclosure are likely to be more frequent occurrences here than in developed countries. Given the foregoing, more stringent criteria (e.g. a lower loan-to-value ratio) should be applied. The current average LTV ratio is 30-40 percent, which lags far behind the 60-80-percent EU average. With competition gathering momentum, an increasingly high number of

banks are likely to extend credit up to an increasingly high LTV. The related law stipulates that in the case of housing loans financed through mortgage bond issuance, loans might be as high as maximum 70 percent of the collateral value of the property. This means an average 60 percent of property value, which seems to be a safe enough upper limit. Though an unforeseen temporary drop in property prices may lead to hitches, price bubble-related risk is unlikely to rise substantially in the medium term, owing to the likely property-value appreciation effects of the EU accession. However, the fact that only a few banks have a property price database further increases risk.

International experience shows that **the main causes of decrease in debt taking capacity** include higher debt service burdens generated by rising interest rates, loss of job and divorce. Lately, the rate of unemployment has slightly increased in Hungary, but so has that of employment and active earners. Also, the divorce rate is rather high. A survey involving banks with a considerable market share in the housing market reveals that the additional causes of increase in the number of bad loans are the following: chronic diseases; increase in the number of children; overestimation of financial potential (e.g. an exaggerated appetite for credit, high indebtedness, etc.); predilection for frequent changes;[85] third party foreclosure; fraud; erroneous assessment of future construction costs in the case of construction loans; natural disasters, owing to high accidental damage excess; retirement; pending tax liabilities as a result of whitening black and/or grey money.

The probability of default on loans depends on the borrower's age, marital status, income situation, employment status, etc. Therefore, with credit portfolios on the increase, banks will have to employ increasingly sophisticated systems of risk analysis and management.[86] A survey including 8 banks with an overall 85-percent market share in housing loans reveals **that banks in Hungary fail to monitor their respective portfolios on the basis of additional factors influencing credit risk**. Only 3 banks provided data on the composition by the borrower's age of their respective portfolios. One provided data on composition by marital status, income situation and employment status.[87] State subsidy enables low-income households to apply for substantial long-term loans as well. However, even a slight decline in their financial position may lead to default payment or, in a worst case scenario, bankruptcy. Urged by the competition generated by subsidised loans, banks may also be easing the terms on their market-priced credit, which might lead to a poorer quality of clientele.

Generally, default on loan is more likely in the case of **property loans for investment purposes** than in the case of property loans for first-home purchase. Given that the current housing subsidy programme does not discriminate between the two intentions, the proportion of non-first-home-purchase loans (loans for investment purposes in order that profit can be earned from subsidy) is likely to grow. This also increases risk, even though exercising liens is apparently faster and more simple in the case of such loans. The fact that none of the banks in the survey monitors their respective portfolios in this regard is thought-provoking.

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[85] Less mobile debtors with few changes of job and residence are the most reliable.

[86] The latest capital adequacy principles (Basel II.) also underpin this prediction.

[87] It should be noted that not even the banks that did provide occasional data at our request monitor their respective portfolios on the basis of the specified criteria that influence risk.

Credit risk is lower when the prospective borrower already has a **credit history** file kept with the relevant bank. Such credit history generally is also to the borrower's advantage by application for loan. Currently, such consideration is of no major importance in Hungary as banks are basically aiming at gaining the largest possible share of the expanding housing loan market.

The likelihood of default on housing loans as well as on household loans in general is also affected by **the social, informational and legal costs of default**. As far as social costs are concerned, compared to developed countries, Hungary still does not have high moral standards attached to debt servicing: failure to discharge debt does not entail social exclusion. Owing to underdeveloped credit reference service in Hungary, informational costs are negligible. As regards legal costs, Hungary now has an adequate legal and regulatory infrastructure.[88] Considerably expediting the exercise of a lien on collateralised property, the 2001 amendment to the act on mortgages provides for the possibility that, in the case of default on payment, collateralised property can be sold without a court ruling or foreclosure procedure. Prior to this legal act, the legal risk of mortgage lending was rather high, as foreclosure procedure is lengthy in Hungary. Generally, collateralised property is auctioned as inhabited property, which will result in lesser collateral value. If inhabitants refuse to move out after the property has changed hands, it is time-consuming and involves further legal risks. The law stipulates that, in the case of non-administrative auction sales, 70 percent of the collateralised property in question be the minimum sales price, which adds extra difficulty to foreclosure, forces credit institutions to take (much slower) official procedures and renders debt recovery dubious. Concerning mortgage registration, it should be noted that official time is still very long (especially in Budapest), practice lacks consistency and sales contract-related fraud is becoming a frequent occurrence. Such problems combine to slow down lending considerably.

When lending risks are described, it is risks posed by default on payment that are almost exclusively profiled, despite the fact that **risks of early repayment** are also considerable. Dormancy may lead to massive losses in terms of unearned interest and other types of revenues. This is especially true for long-term fixed-rate loans or loans with long duration when market rates fall. In the case of loans funded by mortgage securities, mortgage banks are allowed to preclude early repayment or prevent such payment by imposing a heavy penalty, which commercial banks can transfer to their customers.[89] As an ever-widening circle of customers is becoming eligible for subsidy, transforming (effecting early repayment of) market-priced loans into subsidised ones seems to stand to reason. It should also be noted that exercising a mortgage lien in the case of default payment qualifies as early repayment even if the relevant mortgage secures the entire loan, i.e. no credit losses are incurred. The reason for that is that banks are deprived of the revenues due for the remaining maturity period.

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[88] However, according to the banks included in the survey, the wording of Government Decree 12/2001 on housing subsidy is often ambiguous, which may pose risks.

[89] A consumer loan directive guarantees the right to early repayment in EU member states. Credit facility agreements must stipulate this right in some member states. In others, it is up to the relevant contracting parties what to stipulate in such agreements. In Austria and Germany, the preclusion of early repayment is only valid for 10 years, which is heavily criticised by consumer protection organisations. The likely outcome is that preclusion will be replaced with heavy bank charges. Such charges are common means of preventing early repayment.

Credit risk in Hungary is further increased by the lack of uniform approach to property insurance. Nor is there co-operation between insurance companies and banks concerning this issue, despite the fact that the existence of adequate property insurance is an indispensable guarantee of mortgage-secured loans.

Our survey of the market of housing loans has revealed that massive state subsidy considerably influences the development of lending and institutional structure. Commercial banks will remain the main lenders in the future. Mortgage banks and, to a lesser degree, contract savings for housing will also be involved in lending. Commercial banks owned dominantly by foreign professional investors have the ability to establish sophisticated risk management systems by developing their IT infrastructure. Care should be taken with the potential privatisation of the state-owned mortgage bank in Hungary in order that an unbiased refinancing relationship be maintained with commercial banks. From the aspect of a safe and highly liquid market of mortgage securities, it is rather undesirable that commercial banks be granted the right to issue mortgage securities in the near future. With the market of mortgage securities developing and institutional investors increasingly present, liquidity risk will decrease as long-maturity funds increase and capital market rates fall. The development of credit reference services as well as legal and regulatory infrastructure is key to reducing credit risk. Prospective low inflation and interest rates as well as the accumulation of long maturity and relatively fixed-rate funds may provide for the possibility of market-priced, steadily low and fixed-rate mortgage loans, thereby increasing the stability of the system without state subsidy.[90] However, if, owing to substantial state subsidy, the take-off of lending is faster than the development and establishment of risk management infrastructure, such lending may pose serious risks.

[90] In Spain, for instance, the size of the mortgage loan portfolio vis-à-vis GDP grew at an annual rate of 5 percent in the 1990s, with interest rates falling from 16 to 6 percent.

References

Árvai Zsófia (2002): A banki közvetítés mélysége, *Közgazdasági Szemle 2002 július-augusztus*

Árvai – Menczel (2000): A magyar háztartások megtakarításai 1995 és 2000 között, *MNB Füzetek 2000/8*

Bozsik Sándor (2002): A lakáshitelezés és egyes makroökonómiai változók kapcsolata nemzetközi összehasonlításban, *Hitelintézeti Szemle 2002/3*

Carling – Jacobson - Roszbach (1998): Duration of consumer loans and bank lending policy: dormancy versus default risk, *Working Paper Series in Economics and Finance No. 280*

Árvai - Dávid - Vincze (2002): Hitelinformációs rendszerek, *Hitelintézeti Szemle 2002/5*

Deng – Quigley - Order (1995): Mortgage default and low downpayment loans: the costs of public subsidy, *NBER Working Paper 5184, July*

Jennings – Gill (2000): Portuguese Residential Mortgage Market Study, *FITCH IBCA European Structured Finance Special Report*

Michael Lea (2000): Global models for funding housing: What is the best model for Poland, *The Urban Institute 2002 February*

Viktória Múcková (2000): Mortgages in Europe, *Institute of Monetary and Financial Studies Bratislava 2002, National Bank of Slovakia*

Szalay György (2002): A lakás- és jelzálogpiac helyzete és fejlodési irányai, *MNB kézirat*

Vincze Judit (2002): A jelzáloglevelek piaci helyzete és fejlodési irányai, *Hitelintézeti Szemle 2002/3*

Webster – Morán – Vanpoperinghe - Sirven (1999): Spanish Mortgage Default Model, *FITCH IBCA European Structured Finance Special Report*

An assortment of articles from various Hungarian dailies, magazines and journals (e.g. Bank & Tozsde, Figyelo, Világgazdaság, Napi Gazdaság, Népszava, etc.)

The official website of the Central Office for Statistics

The Internet (e.g. daily online services, e.g. ingatlanbefektetés, origo - üzleti negyed, etc.)

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