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Hungary: Financial System Stability Assessment Update, including a Report on the Observance of Standards and Codes on Insurance Regulation

This update to the Financial System Stability Assessment on **Hungary** was prepared by a staff team of the International Monetary Fund and the World Bank as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on **June 15, 2005**. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of **Hungary** or the Executive Board of the IMF.

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HUNGARY

Financial System Stability Assessment Update

Prepared by the Monetary and Financial Systems and European Departments

Approved by Stefan Ingves and Susan Schadler

May 18, 2005

This Financial System Stability Assessment (FSSA) Update is based on the work of the joint IMF/World Bank Financial Sector Assessment Program (FSAP) mission that visited Budapest from February 24 to March 8, 2005.

The FSAP team comprised Roberto Rocha (Mission leader, World Bank), Mark O'Brien (Deputy mission leader, MFD), Paul Ashin, Vassili Prokopenko, Kiyotaka Sasaki, Roland Straub (all IMF/MFD), Giuseppe Lombardo (IMF/LEG), Loic Chiquier, David Goldstein, Gregorio Impavido, Craig Thorburn (all World Bank), Dirk Merckx (Public Prosecutor, Belgium), Kirsten Nordbø Steinberg (KreditTilsynet, Norway), Ronald McDonald (ex-UK Financial Services Authority), and Elena Mekhova (administrative assistant, World Bank). The mission received excellent cooperation and support from the authorities. The main findings of the FSAP update are:

- Financial intermediation in Hungary has continued to deepen. The expansion of bank lending at higher interest margins has resulted in a sharp increase in bank profitability.
- Although financial soundness indicators show that the banking system has evolved well overall, potential risks have emerged which should be carefully monitored and appropriately addressed. In particular, the rapid growth of unhedged foreign currency borrowing by households and SMEs has increased the indirect exposure of the Hungarian banks to a substantial depreciation of the forint
- Nonbank financial institutions remain relatively small and are not currently a source of systemic vulnerability. However, there are efficiency issues that need to be addressed, especially in the private pension system.
- The regulatory and supervisory framework has been strengthened since the 2000 FSAP, and progress has been made in implementing risk-based integrated supervision.

The main authors of this report are Mark O'Brien, Vassili Prokopenko, and Roland Straub.

FSAPs are designed to assess the stability of the financial system as a whole and not that of individual institutions. They have been developed to help countries identify and remedy weaknesses in their financial sector structure, thereby enhancing their resilience to macroeconomic shocks and cross-border contagion. FSAPs do not cover risks that are specific to individual institutions such as asset quality, operational or legal risks, or fraud.

Contents **Page**

GLOSSARY

AKK	Government Debt Management Agency
AML/CFT	Anti Money Laundering and Combating the Financing of Terrorism
APRC	Annual Percentage Rate Charges
BCE	Budapest Commodities Exchange
BCP	Basel Core Principles for Effective Banking Supervision
BSE	Budapest Stock Exchange
CAR	Capital Adequacy Ratio
CEE	Central and Eastern Europe
CPSIPS	Core Principles for Systemically Important Payment Systems
DIF	Deposit Insurance Fund
EU	European Union
FDI	Foreign Direct Investments
FSC	Financial Stability Committee
FSSA	Financial System Stability Assessment
FSAP	Financial Sector Assessment Program
GDP	Gross Domestic Product
HFSA	Hungarian Financial Supervisory Authority
HUF	Hungarian Forint
IAIS	International Association of Insurance Supervisors
IGS	Interbank Giro System
IOSCO	International Organization of Securities Commissions
ISPs	Investment Service Providers
KELER	Hungarian Securities Settlement System
LGD	Loss Given Default
LOLR	Lender of Last Resort
MNB	Magyar Nemzeti Bank (The Central Bank of Hungary)
MOF	Ministry of Finance
NBFIs	Nonbank Financial Institutions
NPAs	Non Performing Assets
NPLs	Non Performing Loans
OECD	Organization for Economic Cooperation and Development
RTGS	Real Time Gross Settlement
ROSC	Report on Observance of Standards and Codes
RWA	Risk-Weighted Assets
SMEs	Small and Medium Sized-Enterprises
SRO	Self-Regulatory Organization
VIBER	Large Value Payment System

EXECUTIVE SUMMARY

Financial intermediation in Hungary has continued to deepen since the 2000 FSAP. This is reflected in the overall growth of the financial system, its greater diversification, and the significant expansion of lending to previously under-served sectors, such as households and small- and medium sized-enterprises (SMEs). Even after the expansion, however, the financial sector remains small as a percentage of GDP by developed country standards.

While financial soundness indicators for the banking system have evolved well overall, potential risks have emerged that should be carefully monitored and appropriately addressed. Bank profits have risen sharply, as the growing loans to households and SMEs have generally been at high margins. The rapid loan growth may, however, give rise in due course to an increase in non-performing loans. In particular, foreign currency denominated loans to unhedged borrowers—primarily households—have increased at an impressive pace (albeit from a low base). This has raised the banks' exposure to credit risk arising from borrowers' exchange rate risks. Also, some banks' exposures to interest rate risks have increased in the last few years as generous mortgage subsidies led to strong growth in mortgage loans, and an associated introduction of mortgage bonds with relatively long durations.

The nonbank financial sector, while growing, remains relatively small and is not currently a source of systemic vulnerability. Steps can be taken to further encourage the development of the sector, including through addressing some significant efficiency issues in the private pension system. Current pension contribution collection arrangements result in high costs for employers and pension funds. The fee structure and the rates of return of pension funds are not transparent and readily comparable. Finally, the framework for the payout phase may potentially lead to vulnerabilities in the future.

Good progress has been achieved in implementing the recommendations of the 2000 FSAP regarding the regulatory and supervisory framework, although room for improvement remains in several specific areas. The supervisory capacity of the Hungarian Financial Supervisory Authority (HFSA) has developed well and steps have been taken towards fully consolidated and risk-based supervision. However, further steps are needed and the role of the Ministry of Finance (MOF) in overseeing the HFSA could be clarified, so as to remove any doubts that could arise about the autonomy of the HFSA. Also, while the collateral regime in Hungary seems to be working reasonably well, the insolvency regime needs reform. Despite being strengthened, some important gaps still remain in the legislative framework for the anti-money laundering (AML) regime.

Box 1 summarizes the main recommendations to strengthen financial sector stability stemming from the FSAP update. More technical recommendations are discussed in the main body of this report and in the standards assessments. The status of the main recommendations made during the 2000 FSAP is presented in Appendix I.

Box 1. Hungary: Key FSAP Recommendations

1. Short-term

Banking sector

- Pursue efforts to increase the awareness of consumers and other bank borrowers of the risks inherent in unhedged foreign currency borrowing.
- Ensure that the credit risks arising from unhedged foreign currency denominated loans are accurately assessed by banks and appropriately provisioned.

Legal and Regulatory framework

- Proceed with the plans to strengthen the bankruptcy regime.

2. Medium term

Banking Sector

- Continue to develop macroprudential surveillance processes and outputs, including a macroeconomic stress testing model.

Legal and Regulatory framework

- Further extend the risk-based supervision of banks to include supervision of consolidated banking groups.
- Provide additional clarity regarding the extent of oversight of the HFSA by the Ministry of Finance.

Insurance Companies

- Conduct an in-depth assessment of internal controls of insurance companies as a step in the move to risk-based on-site supervision.

Pension Funds

- Encourage the establishment of a single provider of pension contribution collection services.
- Ensure that the fee structure and the rates of return of pension funds are transparent and comparable.
- Review the framework for the payout phase with a view to expanding the menu of pension benefits.

Capital Markets

- Develop the legal framework to facilitate financial market instruments commonly used in public-private partnerships and municipal finance.
- Make the regulatory framework for venture capital fund managers more flexible.

I. BACKGROUND

A. Summary of the 2000 FSAP Findings

1. **The conclusions of the 2000 FSAP, which were echoed in a 2002 FSSA follow-up exercise, were very positive, reflecting Hungary's pioneering reform efforts among Central and Eastern European countries**.[1] The FSAP praised the speed and the depth of the financial sector reforms implemented in the 1990s. These pioneering reforms included comprehensive programs of bank and enterprise restructuring and privatization, a systemic pension reform that involved the creation of a mandatory private pillar, and the creation of an integrated financial supervisory agency. The FSAP noted that all segments of the financial sector had been restructured and privatized, resulting in a substantial participation of reputable foreign investors, and that the regulatory framework had been significantly harmonized with EU legislation. The FSAP concluded that banks and enterprises were stable and resilient to shocks.

2. **At the same time, the 2000 FSAP also identified a number of issues that needed to be addressed by the authorities in order to ensure the stable growth of financial institutions and markets**. These included several specific issues in the regulatory and supervisory framework for financial institutions, the financial sector infrastructure, and macroeconomic policies. Recommendations were made in each of these areas, and all of them have been subsequently addressed or taken into account by the authorities. Appendix I summarizes the current status of the main recommendations from the 2000 FSAP.

B. Recent Structural Developments in the Financial Sector

3. **The Hungarian financial sector has grown steadily since the 2000 FSAP and has become more diversified**. As shown in Figure 1 and Table 1, total assets of financial institutions grew from about 80 percent of GDP in 2000 to more than 100 percent of GDP in 2004, although this ratio is still low by developed country standards.[2] Nonbank financial institutions (NBFIs) have been growing more rapidly than banks and so gaining market share. There has also been some consolidation of various segments of the financial sector which is expected to continue, albeit at a slow pace.[3] The majority of large financial institutions are subsidiaries of major foreign financial groups. As a result, the consolidation

[1] The 2000 FSAP for Hungary was part of the twelve country FSAP pilot, for which FSSAs could not be published. A follow-up was undertaken in 2002, to update the analysis and findings. See *Hungary—Financial System Stability Assessment—Follow-Up* (SM/02/131).

[2] Bank credit alone averaged 115 percent of GDP in the Euro area countries as at end-2004.

[3] The most significant change has been the reduction in the number of savings cooperatives. The number of banks, pension funds, and investment companies has also decreased somewhat, but the number of insurance companies and financial enterprises has increased.

of Hungarian subsidiaries in the future is as likely to be due to developments with their parents internationally as to developments in Hungary.

4. **Despite a rapid growth in NBFIs, this sector remains relatively small and does not presently raise systemic stability issues**. While losing market share, the banks remain the dominant institutions, with 69 percent of financial system assets as of end-December 2004. Financial enterprises, whose assets have grown rapidly—from 3 percent of GDP in 2000 to 8 percent of GDP in 2004—are generally bank subsidiaries funded by their parent banks.[4] The financial stability assessment presented in this report is therefore focused on banks and their counterparties.

II. Sources of Potential Risk to Financial Stability

A. Macroeconomic Environment

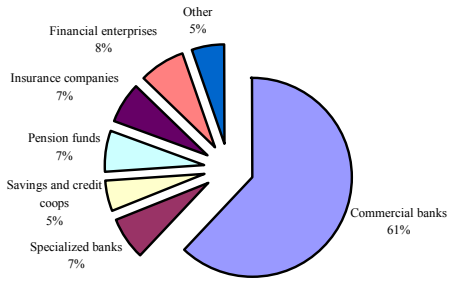
5. **As discussed in the accompanying Staff Report, the Hungarian economy has performed well in recent years, but fiscal developments are a source of concern**. Real GDP is estimated to have increased by 4 percent in 2004, up from 3 percent in 2003, reflecting stronger domestic demand; and CPI inflation remains moderate. However, fiscal deficits and wage rises have contributed to a large current account deficit, and to periods of exchange rate and interest rate volatility. Delays in reducing the budget deficit would pose a risk to financial stability.

6. **The open nature of the Hungarian economy means that international (particularly euro area) economic and financial developments are also important as potential risk factors**. Since 2001, large current account deficits (estimated at 9 percent of GDP in 2003 and 2004) have been financed chiefly by borrowing, exposing Hungary to an increase in global interest rates or an increase in risk aversion by foreign investors, and thereby increasing the risk of volatility in the forint exchange rate or interest rates. Differentials between Hungarian and the euro interest rates, although they have narrowed recently due to a steady reduction in Hungary's policy rates, have led to an increase in unhedged foreign currency borrowing, especially by households and SMEs. A potential slowdown in EU growth (especially in Germany, Hungary's most important trading partner) could also be a source of vulnerability.

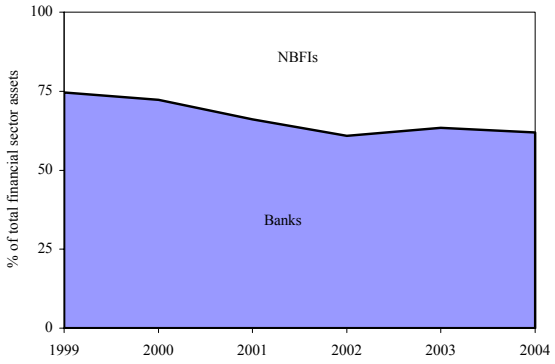
[4] Financial enterprises are predominantly involved in financing households' car purchases and car leasing (more than 70 percent of the total portfolio as of mid-2004). Much of their lending is in Euros, reflecting that most cars are imported from Europe and priced in Euros. Financial enterprises are supervised by the HFSA but the supervisory requirements are somewhat less stringent, reflecting that these enterprises are not permitted to take deposits. These enterprises are generally owned by banks and financed by the parent in the same currencies in which enterprise lends. The risks arising from the lending appear to be managed by the parent banks on a consolidated basis.

Figure 1. Hungary: Features of the Financial Sector

Banks form the core of the financial sector…

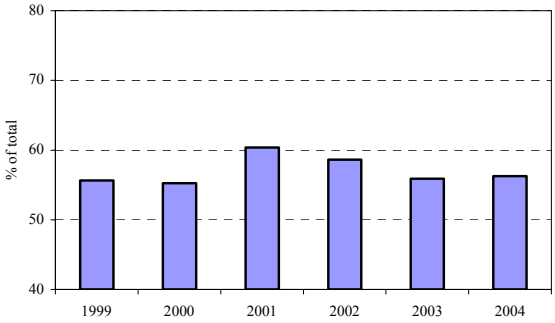


…but the share of NBFIs is growing more rapidly



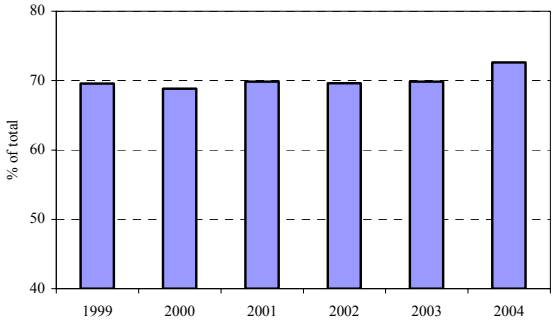
5 banks account for more than half of assets…

Share of 5 largest banks (assets)

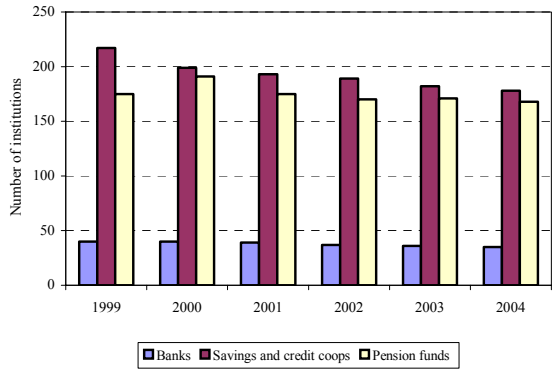


…and even for a larger share in terms of deposits

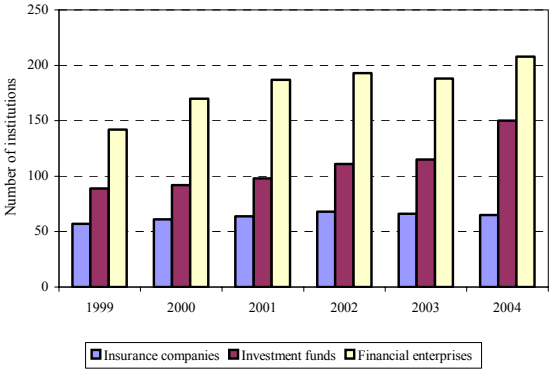
Share of 5 largest banks (household deposits)



Some consolidation has taken place…



…but not across all financial institutions



Sources: HFSA and MNB.

Table 1. Structure of the Financial Sector

	2000	2001	2002	2003	2004
Assets (in billions of forints)					
All financial institutions	10,949.0	12,544.0	14,677.0	18,439.5	21,519.1
Commercial banks	7,910.4	8,290.3	8,936.6	11,694.3	13,392.8
Specialized banks	219.4	753.9	1,262.9	1,166.4	1,533.6
Savings and credit coops	532.5	638.0	779.1	923.4	1,064.4
Pension & health funds	404.8	582.0	781.5	1,010.4	1,338.2
Mandatory	175.6	283.1	413.1	561.4	803.5
Voluntary	229.2	298.9	368.4	449.0	534.7
Insurance companies	725.8	862.2	1,037.3	1,209.7	1,414.9
Investment funds	553.0	696.8	943.0	1,084.8	1,066.8
Investment companies	173.1	156.6	95.4	89.7	71.2
Financial enterprises	430.0	564.2	841.2	1,260.8	1,637.2
Assets (in percent of total)					
All financial institutions	100.0	100.0	100.0	100.0	100.0
Commercial banks	72.2	66.1	60.9	63.4	62.2
Specialized banks	2.0	6.0	8.6	6.3	7.1
Savings and credit coops	4.9	5.1	5.3	5.0	4.9
Pension & health funds	3.7	4.6	5.3	5.5	6.2
Mandatory	1.6	2.3	2.8	3.0	3.7
Voluntary	2.1	2.4	2.5	2.4	2.5
Insurance companies	6.6	6.9	7.1	6.6	6.6
Investment funds	5.1	5.6	6.4	5.9	5.0
Investment companies	1.6	1.2	0.6	0.5	0.3
Financial enterprises	3.9	4.5	5.7	6.8	7.6
Number of financial institutions					
Commercial banks	29	28	26	31	30
Specialized banks	11	11	11	5	5
Savings and credit coops	199	193	189	182	178
Pension & health funds	191	175	170	171	168
Mandatory	25	22	19	18	18
Voluntary	166	153	151	153	151
Insurance companies	61	64	68	66	65
Investment funds	92	98	111	115	148
Investment companies	48	37	25	24	17
Financial enterprises	170	187	193	188	208
Memorandum item:					
Assets of all financial institutions (in % of GDP)	83.1	84.5	87.7	99.3	106.4

Source: HFSA.

B. Major Counterparties of Hungarian Banks

7. **Since 2000, there have been significant changes in the relative importance of banks' counterparties as well as in the nature of risk exposures to different counterparties**. Key trends are discussed below and illustrated in Figure 2 and Table 2.

Household sector

8. **Household debt levels have grown rapidly in recent years and could create problems for banks if the debt servicing capacity of households was eroded, for example by a sharp increase in unemployment**. Household loans have grown from 10 percent to 27 percent of the total stock of bank loans between 2000 and 2004, and to an estimated 37 percent of total banking sector loans, when consolidating the household loans extended through banks' financial enterprise subsidiaries. In 2002–03, the increase in bank lending to households was largely driven by a take-off in mortgage loans, stimulated by the mortgage interest subsidy program (Box 2). More recently both mortgage and consumer loans have expanded rapidly. The Magyar Nemzeti Bank (MNB) reports that higher income households have until now been the main borrowers, however over time competitive pressures are likely to lead to more bank lending to lower income households.[5]

9. **Rapid growth in foreign currency lending to households has increased the vulnerability of banks**. Although the share of foreign currency loans to households still remains relatively small (less than 15 percent of total household loans, as of December 2004), it has been growing very rapidly. The main driving factors appear to be the winding back of subsidies on forint mortgages and the resulting increased spread between effective nominal interest rates on forint loans and interest rates on foreign currency loans. The availability of foreign currency funds in the form of loans from foreign parent banks has also contributed.[6] Of significant concern, there seems to be some lack of awareness by borrowers of the exchange rate risks, despite the steps that have been taken by the authorities to publicize these risks.[7] Although the growth rate in these loans may slow, the credit and macroeconomic risks they entail means that they warrant continued close monitoring by the authorities.

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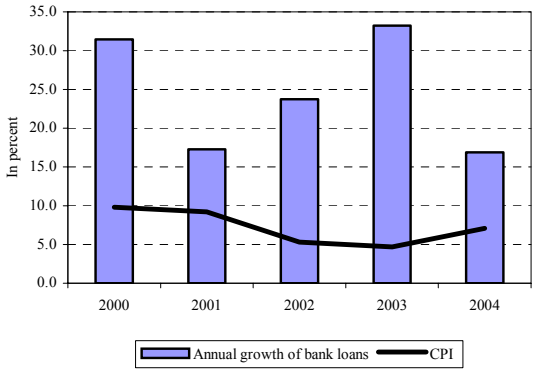
[5] MNB's *Report on Financial Stability*, December 2004.

[6] The only large Hungarian bank without a major foreign bank parent has been relatively uninvolved in the growth of the foreign currency mortgage market, highlighting the role of financing availability.

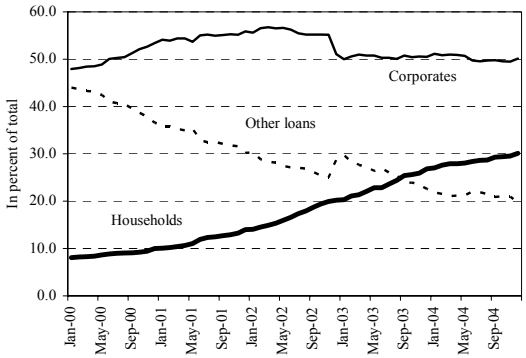
[7] From January 2005, banks are required to specify the risks to which the borrowers are exposed in the contracts for mortgage loans in foreign currency. Also from January 2005, banks are required to disclose their annual percentage rate charges (APRC) on foreign currency loans, which has improved transparency and comparability for borrowers as all related fees are included in the calculation of the APRC. Information on foreign currency risks for consumers has also been included on the HFSA's web page.

Figure 2. Hungary: Lending Activity of the Banks

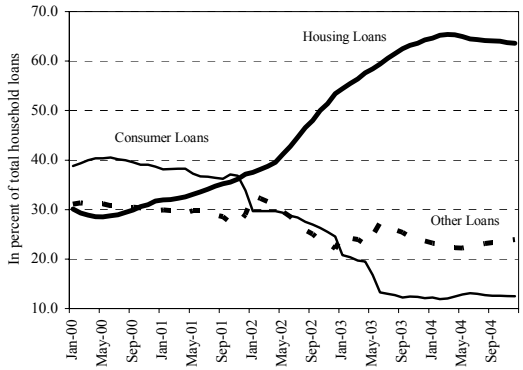
Bank loans have been growing rapidly…



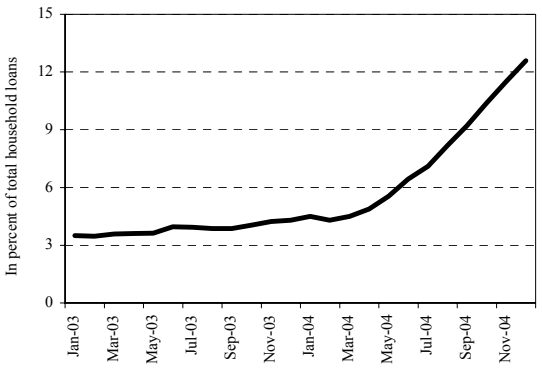
…and have shifted towards households



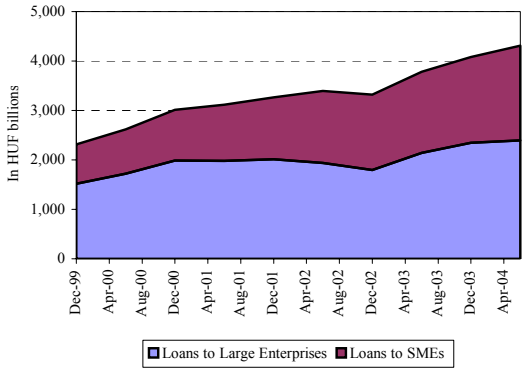
Household loans have shifted towards mortgages…



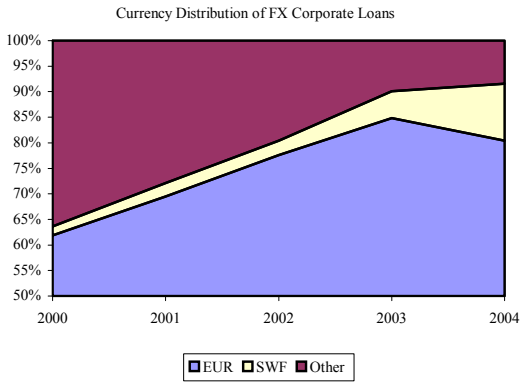
…and are often denominated in foreign currency



Corporate loans have shifted towards SMEs…



…and are increasingly popular in Swiss francs



Source: MNB.

Table 2. Financial Soundness Indicators for the Banking Sector
(end of period, in percent unless otherwise indicated)

	2000	2001	2002	2003	2004
Capital adequacy					
Regulatory capital to risk-weighted assets	13.7	13.9	13.0	11.8	11.2
Capital (net worth) to assets	8.3	8.5	8.7	8.3	8.9
Asset composition and quality					
Annual growth of bank loans	31.5	17.3	23.7	33.2	16.9
Sectoral distribution of bank loans (in % of total)					
Corporates	70.6	65.3	53.7	49.5	48.4
o/w in foreign currency	n.a.	22.3	18.9	20.2	21.6
Households	10.0	14.1	19.3	24.3	27.0
o/w in foreign currency	n.a.	0.4	0.8	1.2	3.9
Other loans	19.4	20.7	27.0	26.2	24.6
o/w in foreign currency	n.a.	14.3	16.9	18.3	17.4
Financial institutions	n.a.	7.1	9.7	11.6	12.5
Central government	n.a.	1.1	5.0	1.5	1.1
Nonresidents	n.a.	8.8	6.9	6.5	4.5
Other	n.a.	3.7	5.4	6.6	6.5
Denomination of FX loans to corporates					
EUR	61.9	69.5	77.6	84.8	80.4
USD	35.6	27.8	19.3	9.8	8.3
CHF	1.7	2.6	2.8	5.3	11.2
Other	0.7	0.2	0.3	0.1	0.1
NPLs to gross loans	3.0	2.7	2.9	2.6	2.7
Provisions to NPLs	57.0	42.6	50.8	47.3	51.1
NPLs net of provisions to capital	n.a.	7.3	10.0	10.7	9.5
Earnings and profitability					
ROA (after tax)	1.1	1.4	1.4	1.5	2.0
ROE (after tax)	13.5	17.7	16.2	19.5	25.2
Net interest income to gross income	68.6	67.9	68.1	65.5	85.8
Noninterest expenses to gross income	65.2	61.8	60.4	56.4	50.2
Personnel expenses to noninterest expenses	39.6	41.2	42.9	43.4	45.7
Trading and fee income to total income	30.0	31.2	30.4	31.4	32.8
Spread between loan and deposit rates	3.8	4.0	4.0	3.7	3.6
Liquidity					
Liquid assets to total assets	31.3	29.9	24.3	19.5	21.1
Liquid assets to short term liabilities	n.a.	43.4	35.9	30.9	35.5
Loans to deposits	74.7	77.0	84.6	99.7	103.7
FX liabilities to total liabilities	n.a.	32.5	26.6	31.5	31.3
Sensitivity to market risk					
Net open position in FX to capital	-0.4	6.9	2.0	2.1	5.7

Source*:* MNB.

Box 2. Housing Subsidies, Mortgage Developments, and Stability Implications

The introduction of housing finance subsidies in 2001 propelled the take off in residential mortgage lending. The stock of housing loans increased from an equivalent of 2 percent of GDP in 2001 to 9 percent in 2004. The housing subsidy reduced costs for households both through direct interest rate subsidies and also interest deductibility for tax purposes. The pace of mortgage lending has decelerated in 2004, due to the reduction in subsidies in 2003 because of their high fiscal costs (by 2003, the fiscal cost of housing subsidies had increased to 1 percent of GDP). Nevertheless, the subsidies still represent a significant proportion of current mortgage interest rates.

Despite the significant increase in mortgage lending, there is no evidence of a housing price bubble. Between 2000 and 2003, there was a steady increase in house prices stimulated partly by housing shortages, economic growth and the government subsidy scheme. During the past two years, house prices adjusted for inflation have reportedly been stable.

The housing subsidy program has been complex and variable, leading to some inefficiencies. Subsidies have contributed to a fragmentation and concentration in credit markets, as the three mortgage banks that channel the interest rate subsidies tend to work with specific commercial banks. The subsidy scheme has also contributed to a wider interest margin and solid profitability for all banks, not just the mortgage banks (although these effects are hard to quantify). Furthermore, there are reports that the scheme may have stimulated broader consumption (the absence of a major housing price boom indirectly supports this conclusion).

The recent tightening of the subsidy scheme has increased competition in mortgage lending, and has also increased risk management challenges. Competition is lowering bank margins, and the banks have also started raising loan-to-value ceilings, and commercializing a broader range of mortgage products. The reduced subsidies expose more mortgage loans to variations of interest rates. Moreover, banks are competing now more aggressively to distribute foreign exchange denominated mortgage loans.

Stimulated by the growth in mortgage loans, the mortgage bond market has also grown rapidly. To receive the mortgage subsidy, the mortgages must be channeled through a mortgage bank. By the end of 2004, the stock of mortgage bonds issued by the three mortgage banks—often to commercial banks—to finance their activities was around 6 percent of GDP.

The growth in mortgage loans and the associated growth in mortgage bonds have both increased the exposure of banks to interest rate risk. Larger holdings of mortgage bonds or direct issuance of mortgage loans by *commercial banks* have contributed to a longer duration of assets of these banks compared to the duration of their liabilities, hence exposing them to the risk of an interest rate increase. On the other hand, the duration of assets of *mortgage banks* has become lower than the duration of these banks' liabilities, due to a higher duration of mortgage bonds compared to the duration of mortgage loans, hence exposing these banks to a risk of an interest rate decline.

Banks are limiting the credit risks arising from mortgages. The typical mortgage loan amounts are low (more than half of loans are below HUF 5 million, or EUR 20,000), and the initial loan-to-value ratios are also quite low on average (between 40 and 50 percent). Mortgage foreclosure seems quite efficient. As a result, the share of non-performing mortgage loans is currently less than 1 percent.

Corporate sector

10. **The debt-to-equity ratio of Hungarian non-financial enterprises has remained stable in recent years**. Many large Hungarian corporates have multinational owners and meet their borrowing requirements with FDI or loans from banks abroad. As a result, loans by Hungarian banks to the corporate sector overall have been growing more slowly than loans to households, and corporate lending has been shifting towards SMEs.

11. **While the share of foreign currency lending to corporates has remained stable the proportion of Swiss franc-based loans increased substantially, reflecting lower nominal Swiss franc interest rates**. While the majority of foreign currency corporate loans are still denominated in euros, loans in Swiss francs stood at 11.2 percent of the total stock of corporate loans in foreign currency in December 2004, up from less than 2 percent in 2000. Transactions denominated in the Swiss franc account for a very small share in the total Hungarian exports or imports (less than 1 percent in 2003), meaning that the natural hedges for these loans are limited, so that credit risks may be higher.

International exposures

12. **Hungarian banks are increasingly exposed to external developments and risks through a growing reliance on foreign funding**. The share of deposits on the liability side of banks' balance sheets has been falling in recent years, while the share of foreign currency borrowings from nonresidents has been growing. Mitigating these risks, the funding is largely from foreign parent banks, and thus would be expected to be relatively stable.

III. Strengths and Vulnerabilities: Institutions and Markets

A. Banks

Performance

13. **The banking system appears sound, as indicated by the high average capital adequacy ratio (CAR), strong profits, and the low levels of nonperforming loans** (Table 2). The average CAR has declined somewhat in recent years but remains above 11 percent. Profitability of banks has improved dramatically, as indicated by the increase in the average return on equity from 14 percent in 2000 to more than 25 percent in 2004. The sharp increase in profits resulted from the growth in lending to households and SMEs at wide margins, as reflected by an increase in the share of net interest income in gross income.[8] The increase in

[8] The high level of banks' current profits, and the large contribution to them resulting from the mortgage subsidies were factors behind the introduction of a new income tax regime for banks from 2005. Banks now have the option of paying either an 8 percentage point higher corporate tax rate—24 percent as compared with the 16 percent that applies to other businesses—or a 6 percent tax on net interest income. While differential income tax rates for different sectors will be distortionary if maintained, especially as the impact of the subsidies on banks' profits will decline over time, the tax regime does not currently have systemic vulnerability implications.

lending has not led to any significant increase in the share of nonperforming loans (NPLs), which remain below 3 percent of banks' loan portfolios. NPLs may, however, be expected to rise over time, as the ongoing rapid expansion in lending may lead to some reduction in the average credit quality

14. **Banks will be subject to increasing pressures in the future, due to a more competitive environment**. Interest margins are also expected to decline as inflation and interest rates converge to EU levels. The expected decrease in margins will put pressures on the banks to address their still relatively high operating costs; the average ratio of operating costs to assets in Hungary is still high at 3 percent, twice the EU average. Although banks have started to address this issue, progress has been slow in part reflecting the cushion provided by the high current profitability in the sector.[9]

15. **The continued rapid expansion of unhedged foreign currency loans may become a problem, should there be either a significant depreciation of the forint or an increase in the interest rates on foreign currency loans**. The authorities have been focusing their attention on these evolving risks in the banking system and the appropriate supervisory responses.[10] As already noted, significant steps have been taken to strengthen consumer awareness through regulatory amendments. Nevertheless, more could be done to highlight foreign exchange risks to borrowers. For example, it could be required that loan applicants are provided with information on the scale of possible increases in mortgage payments under an unfavorable exchange rate scenario. Furthermore, the HFSA may wish to review whether banks are accurately assessing the credit risks arising from these loans, and whether they are appropriately provisioned.

16. **Efforts should be made to strengthen the insolvency regime in Hungary**. The 2000 FSAP noted several flaws in the collateral regime. Seizure of collateral via the court system is still time consuming, but methods of seizure outside the court system (e.g., by inclusion of clauses detailing the rights of the lender in the event of default) have been developed, and the collateral regime now seems to be working reasonably well. However, the same is not the case for the insolvency regime. The reorganization track remains dysfunctional, with no court-led reorganizations recorded in recent years, and creditor rights under liquidation remain weak. As a result, the liquidation process remains time consuming and recovery rates low. These deficiencies will continue to inhibit loans to corporates. The Ministry of Justice has drafted a concept paper to guide a planned insolvency reform that seems to address most of the weaknesses in the bankruptcy framework, and a timetable for the reform process is currently being established. In order to help refine the proposals in the concept paper, the authorities could consider requesting an assessment of the current insolvency framework by the World Bank.

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[9] High operating costs also partly reflect restructuring—e.g., reorganization and staff reduction in several banks has meant increased costs in the form of severance payments—and the establishment of branch networks.

[10] See, for example, the June 2004 edition of the MNB's *Report on Financial Stability.*

Stress tests

17. **The broad finding of the stress tests is that the majority of Hungarian banks could withstand substantial market or credit shocks without getting into difficulties, although several banks—including a few large ones—appear to be vulnerable to interest rate and/or credit risks** (Appendix II).[11] The most significant risk for the banks would seem to result from the credit risk implications of a substantial depreciation in the forint, for example due to a worsening fiscal situation or an external shock. Banks' direct foreign exchange positions are matched, so that the direct effects of an exchange rate shock would be negligible. Further, household debt levels are not excessive and, as noted in Box 2, loan-to-value ratios for many unhedged foreign currency mortgage loans are generally low—on the order of 40-50 percent. Nevertheless, a significant exchange rate depreciation would mean that unhedged foreign currency borrowers would find it more difficult to repay. Such a shock would also be expected to have a more general macroeconomic impact as increased debt servicing costs for households would lower disposable incomes.

18. **Large interest rate movements could also have a significant impact on several banks, particularly those most heavily involved in mortgage financing.** The sensitivity to interest rate changes differs significantly between the banks. While for the majority of banks the duration of assets is higher than the duration of liabilities – thus making them vulnerable to an increase in interest rates – for a few banks the duration of liabilities is higher than the duration of assets (this is the case for the mortgage banks which have a relatively longer liability duration due to their issuance of mortgage bonds). The interest rate risks are likely to be smaller than the stress tests suggest because banks are reportedly able to insulate themselves from interest rate risk to a degree through delaying interest rate adjustments on assets or liabilities.

B. Nonbank Financial Institutions

19. **The nonbank sector has been growing steadily, however it remains relatively small and is not currently a source of systemic vulnerability**. Steps can be taken to further encourage development, especially in the private pension system. The further development of the domestic capital markets would support the growth of the insurance and pension sectors, especially in the period prior to Hungary joining the Euro.

Insurance companies

20. **The Hungarian insurance sector is developing progressively, and is comparable to those of other countries in the region.** Total premium has grown steadily, reaching 3 percent of GDP in 2003, consistent with other CEE countries. Since 2000, the insurance sector has grown more modestly than in the 1990s, averaging 0.6 percent per annum in real terms. The non-life sector has grown at a reasonable annual average real rate of 4.4 percent

[11] For the time being, banks' high profitability will also help in absorbing the impact of any shock.

since 2000, due in part to the rapid growth in consumer and housing loans and the accompanied insurances. The life insurance sector grew much more slowly on average, as it suffered a mild contraction in 2001 due to the consumer response to adverse investment returns for unit-linked life insurance business. Since 2001, the life insurance sector has experienced a recovery.

21. **The performance of the industry has been reasonable overall, as indicated by sound reserving practices, adequate capital levels, and profitability at satisfactory and steadily increasing levels (6.4 percent of premium in 2003)**.[12] The portfolio composition of insurers is conservative by comparison with their counterparts in the OECD and the EU, being weighted heavily toward fixed income assets, especially government securities. This outcome is a result of a number of factors, including the investment policies imposed by the foreign parents of local companies and the lack of a wider supply of alternative instruments.

Pension funds

22. **The private pension system is still small but is expected to grow more rapidly in the coming years**. The sector does not constitute a source of financial vulnerability at present, as pension funds do not have fixed liabilities and capital at risk in the accumulation phase. However, potential imbalances could emerge in the payout phase, and there are also efficiency issues that need to be examined and addressed (Box 3).

23. **The return performance of the system has been somewhat disappointing but is expected to improve in the future.** The annual average net rate of return over the period 1998–2003 was about 10.7 percent. This is higher than average inflation but lower than average wage growth in the same period—8.6 and 12.7 percent, respectively. This moderate performance is partly explained by the very high share of government bonds in pension fund portfolios, amounting to about 75 percent in the period 1998–2003, and to unusually high wage growth over the period. Long-run returns are expected to be higher, but the extent of the increase will depend on the development of alternative domestic financial instruments.[13]

[12] The steadily rising trend in profits was little affected by the contraction in the life insurance industry in 2001.

[13] The very conservative portfolio composition of pension funds is not due to portfolio restrictions or other regulations, but to other causes, such as the macroeconomic environment, the conservative investment culture of asset managers and the lack of alternative instruments. Only a few restrictions appear to be binding or close to binding, e.g., the 10 percent limit on mortgage bonds.

Box 3. Hungary: Further Development of the Pension System

A number of issues should be addressed in order to ensure sound development of the Hungarian private pension system. The existing institutional arrangements for the collection of pension contributions are the main current concern, though the payout phase framework also needs to be overhauled:

Absence of a single provider of pension contribution collection services
The absence of a single revenue collection agency is the most important inefficiency in the current system. The authorities should consider promoting a single revenue collection agency, which would: reduce the costs currently borne by employers and make them more transparent; reduce the costs that associations incur in reconciling money with information; and eliminate the incentive for employers to register new employees with specific associations. A single provider would need to be regulated like a utility monopoly, to avoid monopoly pricing and to ensure safety and continuity of services.

Default choice for new members
The current default choice procedure for new members to pension funds favors those funds organized on a regional basis, which tend to be the higher cost funds. Changing the default choice to the lowest cost funds in any given period could increase competition and thereby efficiency. An alternative, but less effective, measure would require providing new entrants with information on standardized fee and return comparisons.

Inadequate governance framework
The governance framework does not promote the alignment of incentives between members and management. Due to weak rules on conflict of interest and transactions with related parties, boards of pension funds are typically dominated by their sponsors. When the sponsor is related to a financial group, the pension association is typically charged higher management fees.

Nontransparent and noncomparable fee structure
The fee structure is not transparent which complicates comparison of performance across pension funds. Members may not be able to understand that asset management fees are charged on assets and operating fees are charged on contributions. Moreover, members do not have easy access to information providing comparisons of standardized and easy-to-interpret indicators. The annual report sent to members provides information on the individual fund but not on the industry, and such information is not presented in the form of simple indicators.

Nontransparent and noncomparable rates of return
The rates of return are not readily comparable. Pension funds are required to divide member contributions in three separate reserves and rates of return are calculated only on one of them. Custodians are required to evaluate assets on a daily basis but this information is not currently used for the calculation of rates of return. Performance across different asset managers is impaired by the lack of rules on rebalancing benchmarks.

Deficiencies in the payout phase framework
The menu of retirement products is limited to fixed annuities indexed to wages and prices, which restricts choice for retirees with different needs and degrees of risk aversion. Currently, longevity and investment risk are borne entirely by the pension provider, and the indexation formula compounds the investment risk by making benefit obligations grow at higher and more uncertain rates. The menu of benefits should be expanded to include phased withdrawals and other types of annuities, with the longevity and investment risks shared between the pension funds and the annuitant pool. Fixed annuities should only be provided by insurance companies subject to proper investment and capital regulations.

C. Capital Markets

24. **Hungarian capital markets have grown and diversified since 2000, but in some areas they remain relatively thin**. Traded government debt grew from 30 percent of GDP in 2000 to 44 percent at the end of 2004, while its duration increased from 1.1 years to 2.2 years as 12- and 15-year issues were introduced. The Budapest Stock Exchange (BSE) market capitalization has recovered to 26 percent of GDP, after a drop to 18 percent in 2002. Mortgage bonds have been introduced, with their outstanding stock having reached 6 percent of GDP, and derivatives trading has expanded, chiefly in futures. However, market liquidity for government securities has generally decreased. Turnover on the BSE was also relatively low in 2004, with a turnover to market capitalization ratio of 50 percent. Further, corporate and municipal debt is nearly nonexistent, with an outstanding stock of only 0.1 percent of GDP.

25. **The regulatory and institutional framework has been strengthened.** The secondary government securities market now has limited information disclosure daily through the Government Debt Management Agency (AKK) website. Financial statement disclosure for publicly traded companies has been increased from yearly to twice-yearly, and the Capital Market Act is expected to be further changed in July 2005 to harmonize with EU standards.

26. **Further modification of the regulatory framework would support capital market development.** A legal framework for financial market instruments commonly used in public-private partnerships and municipal finance should be developed. The Venture Capital Act places requirements on fund investors to pay in capital before investments have been identified and strictly limits the flexibility of fund managers regarding the timing of their investments and design of investment structures. These requirements could be modified so as to provide more flexibility, while still providing for appropriate governance requirements and consumer protection.

IV. Strengths and Vulnerabilities: the Financial Stability Policy Framework

A. The Regulatory and Supervisory Framework

27. **A number of actions have been taken to strengthen the regulatory and supervisory framework since the 2000 FSAP**. These included the issuance by the HFSA of a range of regulations and recommendations to market participants, some of which were driven by the need to implement relevant EU directives. A memorandum of understanding has been signed between the HFSA, the Ministry of Finance (MOF) and the MNB, to ensure exchange of information necessary to their respective roles, subject to confidentiality requirements.

28. **The HFSA has made considerable progress towards achieving its objective of following a risk-based approach to supervision across all sectors**. In practice, this has proved harder than expected partly because supervisory techniques were (and still are) much

more highly developed in some sectors than in others and partly because inherent business risks differ between sectors. The greatest progress with risk-based methods has been made in the supervision of banks and securities companies. Nevertheless, the risk assessment system for banks could be further improved by relying less on historic financial data and more at risks to banks' future earnings and capital levels.

29. **Overall, the regulatory and supervisory framework compares well with the relevant international standards**. In particular, an assessment of insurance supervision against the International Association of Insurance Supervisors (IAIS) Insurance Core Principles shows a high level of observance.[14] Factual updates of both the Basel Core Principles for Effective Banking Supervision (BCP) and the International Organization of Securities Commissions (IOSCO) Objectives and Principles of Securities Regulation also point to improvements in supervisory capacity (Annex I). There has also been improvement in the transparency of the regulatory and supervisory framework (Box 4).

30. **However, a few gaps in the current supervisory systems remain and should be addressed**. In particular, the HFSA still has no power to issue binding regulations, and the risk assessments of consolidated banking groups should be strengthened. As noted in Box 4, the role of the MOF in overseeing the HFSA could be clarified, so as to remove any doubts that could arise about the autonomy of the HFSA. The governance of the HFSA could also be revised to produce a more efficient division of responsibilities between supervisory board and executive management consistent with the normal objectives of two tier corporate governance.[15]

B. Systemic Liquidity Management

31. **The 2000 FSAP team found that Hungary's systemic liquidity framework contained the essential elements for effective liquidity management.** Since then, several further improvements have been made. The extended opening hours of the large-value payment system (VIBER) have improved daily liquidity management by the banks (Annex I). The legal framework has also been strengthened by removing the legal uncertainties that had existed regarding pledges, thereby mitigating the risk involved in repo contracts. This was an important step towards further deepening the domestic money market.

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[14] A full IAIS assessment was undertaken as part of the FSAP update both because the framework for insurance supervision in Hungary has changed since 2000 and also because the Insurance Core Principles have themselves been modified.

[15] In place of a single executive president, the April 2004 amendments to the HFSA Act introduced a two-tier system of governance comprising a supervisory board and an executive management. However, the conventional corporate model has not been adopted. In particular, the supervisory board has not been made responsible for appointing and removing the executive management, power in this area having been given to the Prime Minister.

Box 4. Hungary: Developments in the Transparency of Monetary and Financial Policies

Monetary policy transparency

Monetary transparency and accountability have strengthened since the previous FSAP. Profit transfers from the MNB to the budget no longer include unrealized foreign exchange revaluation gains. Since late 2004, the minutes of the Monetary Council of the MNB's rate-setting meetings have been published, with a three week delay. The chart package which is provided to the Council members for the rate setting meetings is also shortly to be published, although some accompanying analytical documents will not be.

However, the recent amendments to the MNB Act which increased the accountability of the MNB also have the potential to complicate its governance framework. Under the revised Act, the reporting to the Parliament by the MNB on its activities has become more formalized. At the same time, the size of the MNB's Monetary Council was expanded to a maximum of 13 members with the addition of four new non-executive director positions, making the Council one of the largest of its type in the world. Unlike the situation with the existing non-executive directors, who are presented for nomination to the President by the MNB Governor with the agreement of the Prime Minister, the new members are nominated by the Prime Minister and only the opinion but not the agreement of the Governor is required. It might also have been preferable to stagger the new appointments so as to ensure continuity of experience and independence from political cycles.

Financial policy transparency

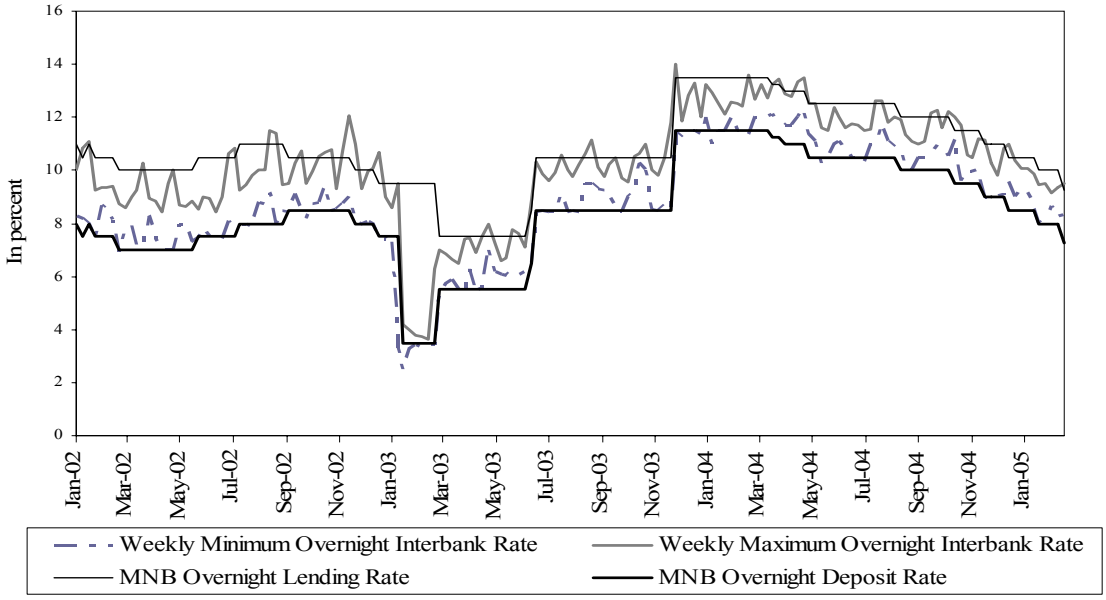
Transparency in the supervisory and regulatory process has also improved significantly. Consultation by the HFSA and the MOF on legislative change has become a very positive feature, recognized by market participants. More recent efforts by the HFSA to expand consultation to include stakeholders in seminars and consultative working groups, as well as through the wider circulation of documents in a timely fashion, have been positively received.

The accountability framework could be further clarified. Amendments to the HFSA Act in April 2004 strengthened the accountability of the HFSA and its oversight by the Ministry of Finance—this oversight role stems from the requirement that the Ministry protect the financial equilibrium of the national economy, which arises in turn from its responsibility for economic policy. The amendments to the HFSA Act included providing the Ministry with the power to regularly monitor the HFSA's operations and to order the chairman of the supervisory board of the HFSA "to eliminate the existing discrepancies, if any" (Section 14 of Act XXII of 2004), without specifying the conditions under which these powers may be invoked. The meaning of "discrepancies" in this context does not seem as clear as it might. Although there is no evidence that this increased oversight role of the MOF has led to any interference in the HFSA's operational autonomy to date, and the HFSA remains forbidden by law from accepting instructions from any other person, a formal clarification of the modalities of the MOF's involvement, either via an amendment to the Act or a supporting document such as an Memorandum of Understanding, could enhance policy effectiveness and transparency.

32. **The interbank market has continued to deepen and grow, although the changes in the legal framework have yet to result in a greater share of repos**. As banks become more familiar with them, it is expected that repos will increase at the expense of unsecured interbank transactions due to their lower risk. Day-to-day liquidity forecasting and government debt management could be improved through strengthened exchange of information between the AKK and the Treasury on developments in primary revenues and expenditures.

33. **The growth in turnover in the unsecured interbank market has resulted in the less frequent use of the central bank's overnight deposit facility by the banks**. Market rates have generally remained within the band set by the MNB's overnight lending and deposit rates (Figure 3).[16] While the recent trends in lending and deposits have led to some reduction in banking system liquidity, it remains comfortable (Table 2). The average loan to deposit ratio has also risen sharply over the period, reflecting in part the increase in foreign currency denominated loans, but it is still not excessive.

Figure 3. Hungary: Developments in Interest Rates



Source: MNB.

C. Safety Nets and Crisis Management Framework

34. **The deposit insurance scheme is well designed and managed**. Depositor confidence has recently been strengthened by greater transparency of the Deposit Insurance Fund (DIF), which upgraded the interactive deposit insurance calculator on its website. In addition, the DIF's website now enables depositors to track progress in processing a deposit insurance claim. With the entry of Hungary to the EU in May 2004, the coverage limit of the DIF was raised to HUF 6.5 million, which is slightly higher than the €20,000 equivalent minimum requirement in the EU. Amounts in excess of HUF 1 million are covered only to 90 percent, to ensure that these depositors bear some risk.

[16] The sharp drop in rates in January 2003 resulted from speculation aimed at strengthening the forint, which led to excess liquidity in the system. As a result, a quantity restriction was imposed on access to the central bank's two-week deposit facility resulting in increased demand for overnight central bank deposits and a temporary undershooting of the central bank overnight deposit rate by the corresponding interbank rate.

35. **The Financial Stability Committee (FSC) is responsible for coordinating the crisis management framework**. Established by the HFSA, the MNB, and the Ministry of Finance in September 2004, the FSC has an objective to promote financial system stability and to ensure a better coordination in areas where these agencies are all involved, including any possible crisis situations. The DIF is not a member of the Committee, however the three members of the Committee have representation in the governing body of the DIF.

D. AML/CFT Issues

36. **The Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) assessment undertaken in conjunction with the FSAP update showed that the AML regime has been significantly strengthened in recent years, but some important gaps still remain in the legislative framework**.[17] The most significant step has been the passage of the revised AML Act in 2003. With this, the legislative framework for AML is in place and has been extended to nonfinancial businesses and professions. Financial institutions' compliance with AML requirements is well-supervised, and they are well aware of their legal obligations. The authorities should now turn their attention to implementation issues. The authorities have indicated their intention to address these issues in the context of the 3rd E.U. anti-money laundering directive, which is in the final stages of preparation in Brussels.

[17] The summary ROSC for the AML/CFT assessment will be issued separately.

SUMMARY ASSESSMENTS AND FACTUAL UPDATES OF OBSERVANCE OF SELECTED FINANCIAL SECTOR STANDARDS AND CODES

This annex contains a summary assessment of observance of the International Association of Insurance Supervisors (IAIS) Insurance Core Principles and factual updates of the Basel Core Principles for Effective Banking Supervision (BCP), the International Organization of Securities Commissions (IOSCO) Objectives and Principles of Securities Regulation, and the Core Principles for Systemically Important Payment Systems (CPSIPS) assessments.

The detailed assessment of observance of the IAIS Insurance Core Principles was undertaken by Kirsten Nordbø Steinberg (KreditTilsynet, Norway) and Craig Thorburn (World Bank). The assessment was based on the authorities' answers to questionnaires and work during the FSAP update mission. The factual update of the BCP assessment was conducted by Mark O'Brien (IMF-MFD). Factual updates of the IOSCO and CPSIPS assessments were conducted by Roland Straub (IMF-MFD).

The assessment and updates were based on several sources including:

- a self-assessment of the IAIS Insurance Core Principles by the HFSA;
- reviews of relevant legislation, decrees, regulations, policy statements and other documentation;
- detailed interviews with the supervisory authorities;
- meetings with other relevant authorities and independent bodies; and
- meetings with financial sector firms and associations, including insurance companies, banks, securities firms and financial enterprises

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I. SUMMARY ASSESSMENT

IAIS INSURANCE CORE PRINCIPLES

Main findings

37. There is a high level of observance of the Insurance Core Principles (ICP) in Hungary. The complete rewrite of the law and regulation since the 2000 FSAP, along with the operational establishment of the HFSA, has contributed substantially to this situation. The authorities are significantly engaged in EU and broader international associations in the insurance sector, and are well informed and represented in deliberations at this level.

38. The HFSA has made good early progress in the introduction of risk based supervision. Nevertheless, the supervisory framework could nevertheless be enhanced in several areas, including through strengthening the assessment of internal controls and corporate governance at insurers. Market participants report varying levels of sophistication and capacity with respect to risk management and internal controls, suggesting that a move to a risk based approach for on site work will need to be progressive rather than radical. Off-site analysis, having advanced well, can be further developed through a deepening of the market analysis process and ongoing refinement of the risk rating system. The HFSA should be empowered to place conditions on licenses and on approvals given under the Insurance Law. Some enhancement of fit and proper oversight is also recommended as a result of the Core Principles assessment.

Conditions for effective insurance supervision

39. Hungary meets the conditions necessary for effective insurance supervision.

The supervisory system

40. The principle objectives of insurance supervision are clearly defined, and the HFSA conducts its functions in a transparent and accountable manner. While the HFSA has a range of supervisory and enforcement powers it does not have the power to issue binding regulations as it is a public administrative body below the level of a government ministry. The HFSA can and does, however, issue resolutions and guidelines. In cases of disputes regarding such resolutions, the courts have ruled in favor of the HFSA, which has enhanced their role. Industry participants recognize that these resolutions and guidelines provide relevant detail and seek to avoid sanctions, further supporting the role of the guidelines.

The supervised entity

41. When assessing the operations of an applicant for license under the Insurance Act, the HFSA should have the possibility to set additional prudential requirements. Recognizing that international practice continues to develop, the corporate governance framework for insurers needs to be strengthened to cover all types of insurers to ensure compliance with international corporate governance standards, and to take account of the relationships between the different governing bodies of an insurer and to clarify their roles and responsibilities. The bicameral governance structure in Hungary, similar to that in Germany and Austria, has presented challenges when interpreting international standards. That said, other similar jurisdictions have made some reforms to enhance the role of the supervisory board toward the intent of international standards, and these are yet to be reflected in full in Hungary. Establishing a regulation on internal control for insurers would also ensure a greater awareness and more consistent application of control systems for all insurers.

Ongoing supervision

42. Hungary meets most ongoing supervision requirements. Market analyses undertaken by the HFSA could be enhanced by considering wider environmental elements of a forward looking nature.

Prudential requirements

43. The implementation and enforcement of a risk-based supervisory methodology will require further developments in risk management procedures, both in the insurers and the supervisory authority. Although progress in the control structures within firms has been made, it is not currently at a level that would enable the supervisory authority to adopt a solely risk-based, on site process. The HFSA could develop a recommendation or guidance on risk management and internal control in the area of investments, as well as further

developing its supervisory practices in this area. Also, when and if insurers start using derivatives, increased supervisory attention will need to be focused on this area.

44. Hungarian capital adequacy requirements are based on EU directives and Hungarian insurers are aware of developments concerning the solvency margin regime in the EU—the Solvency II project. The HFSA must ensure that it has a sufficient supply of the necessary skills to cope with these developments.

Markets and consumers

45. Insurance supervision in Hungary meets the requirements for information disclosure towards the market, insurance intermediaries and consumer protection. The HFSA also requires that insurers and intermediaries take the necessary measures to prevent, detect and remedy insurance fraud.

Anti-money laundering, combating the financing of terrorism

46. The 2003 Act on the Prevention of Money Laundering contains a list of activities falling under the scope of the Act, including insurance, and provides rules for preventing money laundering and combating the financing of terrorism. The HFSA has also issued a recommendation to promote the prevention of terrorism financing and money laundering. Further efforts should be made to improve the capabilities of financial institutions to detect transactions related to money laundering and terrorism financing.

Table 3. Recommended Actions in the Area of Insurance Supervision

Reference Principle	*Recommended Action*
The supervisory system *CP 2–5*	The HFSA has a range of supervisory and enforcement powers, but does not have the full range of regulatory powers and consideration should be given to rectifying this to the extent possible in the Hungarian constitutional framework. To make public resolutions an instrument for better industry understanding of the supervisory regulations and their enforcement, these resolutions could include the reasoning for the resolution, within the confidentiality requirements of the law Agreement on a protocol for exchange of information with relevant non-EU insurance supervisors would complete the coverage of necessary arrangements in this area.
The supervisory system *CP 6–10*	When assessing the operations of an applicant for an insurance license, the HFSA should have the possibility to set additional prudential requirements or other conditions related to the authorization. The legislation related to fitness and propriety could be further strengthened to include an obligation to report any changes in the fitness and propriety of owners, members of the supervisory board and management board, executive officers and other senior managers to the HFSA. The fit and proper requirements could also be amended to apply equally to all executive officers of all insurers, including the external auditor. The corporate governance framework should be further developed to cover all different

	types of insurers and to ensure compliance with international corporate governance standards. The corporate governance framework also needs to be elaborated to take account of the relationship between the different governing bodies of the insurer and to clarify their roles and responsibilities. Establishing a regulation on internal control for insurers would strengthen, standardize, and clarify the requirements for control within the insurers, and serve to ensure a greater awareness and more consistent application of control systems for all insurers.
On-going supervision *CP 11–17*	Market analyses could be deepened to consider wider environmental elements in a more forward-looking way. The methodology for off-site monitoring and analysis should be elaborated to include indicators for detecting deteriorating conditions in individual insurers vis-à-vis prudential benchmarks The supervisory authority should continue developing the on-site supervisory methodology towards more risk based supervision, taking into account the level of development in risk management and internal controls in the insurers.
Prudential requirements *CP 18–23*	Implementing and enforcing a risk based supervisory methodology will require further developments in the risk management procedures and practices both in the insurers and in the supervisory authority. An inherent part of the development from a compliance oriented approach towards risk based supervision would be including a review of strategies and policies for underwriting and reinsurance. The HFSA could develop a recommendation or guidance on risk management and internal control in the area of investments. This should aim at strengthening the key functionaries' responsibility in the area of management and control of investments. The HFSA would also need to develop further the supervision in this area The HFSA has not issued any recommendation in the area of derivatives. When and if insurers start using derivatives this would be an area for supervisory attention Hungarian insurers are aware of developments concerning the solvency margin regime in the EU – the Solvency II project. Whereas the final outcome cannot yet be certain, it will very likely allow the introduction of internal models in the setting of the capital buffer, affecting liability valuation, asset liability matching and the calculation of the buffer itself. These developments will pose a significant challenge to supervisors in general. The HFSA must ensure that it has a sufficient supply of the necessary skills to cope with these developments.
Markets and consumers *CP 24–27*	In the future the authority may consider establishing a specialized body resolving disputes on financial contracts that can make binding resolutions.
Anti-money laundering & combating the financing of terrorism *CP 28*	Further efforts should be made to improve the capabilities of financial institutions to detect transactions related to money laundering and terrorism financing. A clear legal basis for the obligation to report suspicious transactions relating to the financing of terrorism should be established.

Authorities' responses

47. The Authorities thanked the FSAP team for the assessment and were in broad agreement with its findings, including that the supervisory framework could be enhanced in some areas. Most of these areas had also been identified in the self assessment which the HFSA undertook in the lead-up to the FSAP update and several development projects are underway at the HFSA targeted at addressing these. The HFSA has also been working on further developing its methods in risk-based supervision and has made significant steps forward as regards the approach for on-site inspections.

Main findings

48. As to setting additional requirements or conditions to the licenses, such a solution seems to be inappropriate. This would be inconsistent with the fundamental principles of domestic (Hungarian) law. While the licensing of an insurer is carried on in two phases (foundation and operation license), the HFSA has the possibility to come to an arrangement with the company in connection with any further requirement of its future operation during the licensing process, or otherwise to refuse the application. Issuing a "conditional license" is against the spirit of the legislation on insurance.

49. The Hungarian Authorities regard the qualitative requirements (corporate governance, internal controls) for the insurers important, however, the comprehensive standards in this field have just begun to be developed at EU level. The new solvency regulation (Solvency II project of the EU) will result in detailed rules and supervisory methods and create the European "best practice". For this reason fundamental changes in this field can only be expected after the implementation of the prospective EU legislation.

The supervised entity

50. While accepting the need to strengthen the corporate governance framework for insurers, extending the corporate governance structure also to non-profit mutuals seems to be infeasible in Hungary. Most mutuals are very small agricultural associations having neither human, nor financial resources to meet the requirements of corporate governance.

Prudential requirements

51. The HFSA is aware of the need for further developments in the risk management procedures, however, this is significantly dependent on the future findings and requirements of the Solvency II project.

Recommended Actions

a) *The supervisory system CP 6–10*: see remarks above under **Main findings** and **The supervised entity**;

b) *Prudential requirements CP18–23:* see remarks above regarding the Solvency II project.

II. Factual Updates

A. Basel Core Principles for Effective Banking Supervision

Summary of FSAP conclusions

52. An assessment of Hungary's observance of the Basel Core Principles for Effective Banking Supervision (BCP) was carried out by the FSAP mission in 2000 and updated in the context of the FSSA follow-up exercise in February 2002. The assessment found that the regulatory framework for banking and the banking supervision function of the HFSA was largely compliant with the BCP, and that a significant effort had been made by the authorities to enhance both the quality of the regulatory framework and the functioning of the HFSA. In particular, changes to the legal framework had been made in 2000 to support supervision, and to require reporting on a consolidated basis. The assessors noted that the Hungarian authorities were fully committed to the goal of achieving full compliance with all BCPs.

53. The earlier assessments identified areas of less than full compliance that may present risks to the stability of the Hungarian financial system. These were: (a) the lack of regulatory powers, which may limit the ability of the supervisor to address, through new rules and regulation, evolving risks in a timely and adequate manner; (b) a need to build more comprehensive requirements for risk management, more rigorous rules on connected lending and on large exposures; (c) the need for further focus and appropriate supporting rules addressing the nature and quality of board governance and oversight; and (d) the need for adequate discretion with regard to remedial actions, so that these could be used more flexibly.

54. The Hungarian Authorities were in broad agreement with the 2000 assessment and the 2002 update. They stressed that the new Credit Institutions Act marked significant progress towards compliance with EU requirements and international standards. While they agreed that some further steps need to be taken in most of the areas highlighted in the BCP assessment, they also felt that the rules on connected lending and on large exposures were already sufficiently robust, noting that both were in their view consistent with requirements under relevant EU directives.

Factual update of material recent developments

55. A number of actions have been taken to strengthen the regulatory and supervisory framework for banking since the BCP assessment, including the issuance of a range of regulations and recommendations and the introduction of increased flexibility for the HFSA when taking remedial actions. Amendments were also made to the HFSA Act in April 2004 which aim to strengthen the HFSA's accountability. However, the oversight role of the Ministry of Finance (MOF) in this strengthened accountability framework could be better

clarified, so as to avoid any suggestion that the autonomy of the HFSA may have been weakened. The Authority still does not have the power to issue binding regulations.

56. Looking forward, the HFSA is reviewing how to best integrate supervision of similar risks by different types of financial institution. The ultimate goal will be to produce overall rules on supervisory procedures in the financial system, while taking into account the different types of financial institution and activity that require differing supervision.

Objectives, Autonomy, Powers and Resources (CP 1)

57. The MOF has the responsibility for monitoring the activities of the HFSA. Under the 2004 revisions to the HFSA Act, a quarterly report must now be provided to the MOF, supplementing the already existing Annual report. A quarterly report was already being prepared (and still is) but this focuses more on a factual reporting of recent trends and excludes certain internal information, for example information on budgetary issues. This shorter quarterly report is also submitted to relevant Parliamentary Committees and is published, which both increases the HFSA's accountability and provides them with a vehicle for deepening public discussion and analysis of supervisory issues. The HFSA also now publishes all of its resolutions relating to individual cases or institutions, together with the reasoning for the resolution (confidential information relating to individual institutions is deleted). The HFSA has also recently prepared a mission statement.

58. Since January 2005, the HFSA has been provided with increased budgetary independence. While the Authority remains part of the government budgetary framework, the HFSA President can allocate resources, within the rules on budgetary issues, as he sees fit. Unbudgeted surpluses can now be used to create reserves rather than being contributed to the government budget, thus budgetary independence is also strengthened for the longer term. Certain revenues (e.g., from fines) are retained by the HFSA for specified uses.

59. The revisions to the HFSA Act also included changes to the structure of the HFSA. Previously, the President of the HFSA had both management and supervisory responsibility. The revisions resulted in the creation of a five member Board of Supervision, with the President as Chairman, with overall supervisory responsibility. In addition, a new position of Director General was created, reporting to the Board, and with day-to-day management responsibility. While the President continues to be appointed by the Parliament, on the recommendation of the Prime Minister, and can only be dismissed by the Parliament, the General Director is both appointed and can be dismissed by the Prime Minister. Other members of the new Supervisory Board are appointed and can be dismissed by the President of the Republic, on the recommendation of the Prime Minister (the opinion of the HFSA President is also sought).[18] Under the revised HFSA Act, the salary of the HFSA President was capped at 60 percent of the salary of the President of the MNB.

[18] See SM/04/148 for a more detailed description of these changes and a discussion of their potential implications for the autonomy of the HFSA.

60. Termination of the President under the revised procedures is only permitted under well specified and strict conditions. However, one effect of the coming into force of the revisions to the Act was that the position of HFSA President was considered as being a new position so that a new appointment was required.

61. Reflecting the current constitutional framework in Hungary, the HFSA still does not have the power to issue binding regulations. While the guidelines and recommendations that the HFSA does issue are not binding, the HFSA incorporates these guidelines in its on-site inspections. While required regulations have always been issued by the MOF, this can be time consuming. There was an attempt to incorporate the power for the HFSA to issue regulations in the 2004 revision to the Act, however this was not successful.

Prudential Regulation and Requirements (CPs 6–15)

62. The 2000 BCP assessment noted the need for a greater focus on the nature and quality of board governance and oversight for banks. The banking law already required that a bank's board should nominate one director with responsibility for ensuring the bank's compliance with reporting requirements for consolidated supervision. However, the precise responsibilities of this director were not clearly specified in law or regulation and this has now been done.

63. The HFSA has issued a substantial number of clarifying guidelines to banks since 2000, including in areas such as market risk and internal controls. The 2000 BCP assessment also noted the need for more comprehensive requirements for risk management, more rigorous rules on connected lending and on large exposures. While the authorities agreed in 2000 as regards the need to strengthen risk management, and steps have been made in this direction, they did not agree that the rules on connected lending and large exposures needed strengthening. They were comfortable that the rules in place were adequate, and noted that they are consistent with EU requirements. Thus no change has been made in these regulations although the HFSA has issued guidelines on credit risk management.

Information Requirements (CP 21)

64. A memorandum of understanding has been signed between the HFSA, the MOF and the MNB, to ensure exchange of necessary information, subject to confidentiality requirements. A tri-partite committee of the HFSA, the MOF and the MNB—the Financial Stability Committee—has also been created to coordinate activities in a range of areas of joint interest, e.g., as regards assessing the changes to the insolvency framework in Hungary in order to improve the functioning of the financial sector.

Formal Powers of Supervisors (CP 22)

65. Increased discretion with regard to remedial actions, so that these can be used more flexibly, has been achieved as part of the recent changes to the HFSA Act. Further, the Act previously indicated that certain actions could only be taken if regulatory capital fell below

prescribed norms for either 60 or 90 days. These time periods were clearly excessive, especially in cases where a bank was in financial difficulty, and they have been deleted.

B. IOSCO Objectives and Principles of Securities Regulation

Summary of FSAP conclusions

66. An assessment of Hungary's observance of the International Organization of Securities Commissions (IOSCO) Objectives and Principles of Securities Regulation was carried out by the FSAP mission in 2000 and updated in the context of the FSSA update in February 2002. The assessment found that Hungary's securities regulatory regime conformed in most material respects with the principles, and pointed to the need for improvements in the adequacy of staff resources and in the coordination of the HFSA and Self Regulatory Organizations (SROs) in the area of sanctioning. In addition, the assessment encouraged the authorities to make further steps in the implementation and enforcement of international principles and suggested stricter reporting standards for Investment service providers (ISPs).

Supervisory framework and factual update of material recent developments

67. With respect to the capital markets, the HFSA has supervisory authority over the Budapest Stock Exchange (BSE), the Budapest Commodities Exchange (BCE), securities intermediaries, and investment fund managers. The HFSA also has, following the new Capital Markets Act of December 2001, full responsibility—alongside the BSE and the BCE—with regard to market conduct and sanctioning powers over market participants.

68. The HFSA's supervisory responsibilities over the securities sector are guided by the Act CXXIV of 1999 on the HFSA and its amendments made through the 2001 Capital Markets Act (Act CXX). The Act replaced most provisions of the Act CXI of 1996 on the Floating of Securities, Investment Services; the Act XXXIX of 1994 on the Commodities Exchange and transactions effected on the Commodities Exchange; and the Act LXIII of 1991 on Investment Funds.

69. In 2003, the BSE became—using the authorization contained in Art. 424 of the Capital Market Act—a shareholder company. The majority shareholders of the BSE are the Vienna Stock Exchange and the HVB Bank Hungary. In the same year, the BCE was also transformed into a shareholder company. A merger of BSE and BCE is planned by the end of 2005.

70. The following list juxtaposes the material developments in securities regulation and the main areas for improvement identified by the IOSCO ROSC prepared during the previous FSAP:

(i) *Principles relating to regulator (CPs 1–5)*. As recommended in the previous FSAP, the HFSA made efforts to improve its capacity to perform its functions and exercise its powers. The authorities increased the number of staff and completed the

development of a Comprehensive Information Technology System within the institution, replacing the former segregated IT systems used by the predecessor organization. The lack of ability to issue binding regulation remains, but the ability to retain budgetary surpluses, as recommended in the 2000 FSAP, has been ensured.

(ii) *Principles of self-regulation (CPs 6–7).* The 2000 FSAP recommended improvements in the coordination of the HFSA and SROs in the area of sanctioning. In the event, there does not seem to have been a perceivable problem in this area. There is a shared competence in this field between the HFSA and the SROs. The SROs sanction market participants according to their contract, while any major offense of the standards is reported to the HFSA. The HFSA is in regular contact with these institutions and has to approve their internal rules. Concerning the oversight of the SROs, the previous FSAP recommended that detailed operational inspections should take place not less than once per year. This has not been implemented yet as the HFSA performs on-site examinations only every two years.

(iii) *Principles for the enforcement of securities regulation (CPs 8–10).* The legislative changes in 2003 opened the possibility for the HFSA to conduct reviews according to its own inspection plan taking the typical risk associated with the activities of the inspected organization into account. This enhanced the overall effectiveness of supervisory work. The frequency of mandatory comprehensive inspections remains two years. The obligation to conduct on-site inspections was removed from the act.

(iv) *Principles for cooperation in regulation (CPs 11–13)*. As the reporting requirements of ISPs are updated annually, there have been several changes introduced in the last couple of years. The cooperation with foreign counterparts has deepened in recent years. The HFSA has also concluded a bilateral Memorandum of Understanding (MOU) with Belgium, Bulgaria, Cyprus, Greece, the Netherlands, and the Slovak Republic. The HFSA joined the IOSCO multilateral MOU in 2003.

(v) *Principles for issuers (CPs 14–16)*. There has been no evidence of problems with compliance with accounting and auditing standards, an issue raised as a possible problem in the 2000 FSAP. The implementation of the Directive on Prospectuses, subject to an approval by the parliament, will be effective from July 2005. The purpose of the Directive is to harmonize requirements for the drafting, approval and distribution of the prospectus to be published when securities are offered to the public and/or admitted to trading on a regulated market situated or operating within the EU.

(vi) *Principles for the secondary market (CPs 25–30)*. The 2000 FSAP argued for improvements in the detection and enforcement capabilities of the HFSA given the limited surveillance activities by the BSE. There have been significant improvements in this area. The Market Conduct Oversight Department now monitors and investigates market abuse and insider trading activities. If wrong doing is determined, the HFSA imposes a fine and where appropriate transfers the case to the police.

C. Core Principles for Systemically Important Payments and Settlement Systems

Summary of FSAP conclusions

71. An assessment of Hungary's observance of the Core Principles for Systemically Important Payments and Settlement Systems (CPSIPS) was carried out by the FSAP mission in 2000 and updated in the context of the FSSA update in February 2002. The assessment identified three systemically important payment and settlement systems. The large-value payment system VIBER, the retail payment system IGS (Interbank Giro System) and the securities settlement system KELER complied in most material respects with the implementation of the principles. The core findings pointed, however, to the need for improvements in the legal underpinning of multilateral netting and the collateral regime to ensure a well-founded legal basis. The report also identified possible inefficiencies arising from the interdependence of the opening hours of the VIBER and IGS.

Factual update of material recent development

72. The distribution of payments between the VIBER and the IGS system is partly dependent on their functions and partly on the free choice of users. These two payment systems are closely linked. Bulk payments are processed overnight in the IGS using the daily initial liquidity information on a batch-by-batch basis and settlement is carried out in the MNB's accounting system before VIBER opens. No optimization features are available yet to minimize the amount of rejected batches, an issue raised in the 2000 FSAP. However, since 2003, to mitigate the operating risk of IGS, late payments are allowed to be settled in a special second run during the next day. The 2000 FSAP also raised concerns that in the run up to EMU, when opening hours of VIBER will be brought in line with that of TARGET, the processing window of IGS will narrow substantially. Although the opening hours of the VIBER have been extended by 2 hours, the VIBER and TARGET system have not been synchronized yet. There seems to be currently no need from a business perspective and the synchronization would additionally force the participating banks to run an additional shift. There are plans to reorganize the Hungarian retail payment system, but details are not available yet.

73. With effect from the beginning of 2003, the Capital Market Act has been amended *inter alia* in order to establish oversight competence for the MNB in the area of securities clearing and settlement systems. The MNB Act, with effect from May 1, 2004, provides the legal basis and gives explicit competence for the MNB to oversee securities clearing and settlement systems. The MNB also concluded a Memorandum of Understanding with the HFSA for cooperation with respect to its oversight function. In 2004, the MNB reduced its share in GIRO Rt. (the operator of IGS) from 15 percent to 7.5 percent. The long-term objective is to sell its remaining shares, as following EU Accession, the retail payment system will likely become subject to competition.

74. The 2000 FSAP identified the lack of a sound legal basis for multilateral netting as a remaining challenge to the system. The adoption of the settlement finality act in 2003, which

became effective on May 1, 2004, removed this legal uncertainty. In 2001, the Act on the MNB removed the credit risks that existed for the MNB due to the legal uncertainties surrounding pledges. From May 1, 2004, similar conditions apply to interbank money market transactions.

75. KELER acts as a central counterparty for spot market transactions on the BSE and the derivatives transactions on BSE and BCE. A three-level guarantee system is in place, consisting of individual collateral (initial and variation margins), collective guarantee funds and KELER's own capital. There is an automated securities lending system combined with buy-in procedures. Credit facility is granted against liquid securities posted as collateral (in the form of repos). KELER is the sole provider of inter-institutional clearing and settlement services in Hungary and operates three settlement systems for securities. The RTGS-system settles trades in the OTC market and monetary policy operations of the MNB, the issuing of government papers and block trades on the BSE. For spot transactions on the BSE two multilateral-net settlement systems are used. The settlement system for government securities has a rolling settlement cycle of two days (SC-T+2). The project for shortening of the settlement cycle of other listed securities from T+5 to T+3 was completed in 2003.

76. KELER has onsite backup facilities. An emergency plan was tested and implemented in the third quarter of 2003, while the remote disaster recovery facility was put into operation in the second half of 2004.

77. As of January 1, 2004, KELER was transformed into a specialized credit institution subject to supervision by the HFSA. Provisions in the Capital Market Act entrust MNB with oversight responsibilities with regard to securities clearing and settlement systems (in particular, business rules, risk management and operational reliability). Following a recommendation from the ECB, the authorities plan to separate the central securities depository and the clearing house functions of KELER in the near future.

STATUS OF THE MAIN RECOMMENDATIONS OF THE 2000 FSAP

Recommendations	Status
I. Regulatory and Supervisory Framework	
Enhance the autonomy of the newly established unified supervisory agency, strengthen supervision of securities markets, and enforce supervisory actions	Changes to the legal framework in 2004 improved accountability of the HFSA but the oversight role of the Ministry of Finance could be better clarified.
Focus more on supervision of risk control and systems rather than compliance with formal prescriptions. Provide deeper supervision of financial conglomerates.	On-going. HFSA is increasingly focused on risk based supervision and supervision of conglomerates. The legal framework is being harmonized with EU Directives.
Ensure that proper entry and exit policies are in place to guide the expected process of financial consolidation	Entry and exit policies seem to work reasonably well.
II. Financial Sector Infrastructure	
Improve the legal infrastructure for bank lending	The insolvency regime remains weak and creates risks for creditors.
Facilitate access of SMEs to financial services (e.g., by improving accounting practices, creating a credit information system, revising the Venture Capital Act)	SMEs are rapidly gaining access to financial services. Overall bank lending to the private sector is now shifting towards SMEs.
Accelerate the development of the housing finance market (e.g. by stimulating competition, rationalizing subsidies)	Housing finance market was boosted by the introduction of the subsidy scheme in 2001. Amendments in 2003 reduced the attractiveness of this subsidy but housing loans, especially in foreign currency, continue to grow rapidly.
Stimulate the municipal finance market (e.g., by setting central debt registry for all subnational debts and collateral pledged, creating a municipal finance information system)	On-going.
III. Macroeconomic Policies	
Continue the cautious macroeconomic policies conducted in recent years to reduce the likelihood of shocks and contagion	Despite solid growth and strong fundamentals, fiscal under-performance in recent years creates some uncertainty in the macroeconomic outlook
Consider liberalizing capital outflows at a faster pace than planned	Capital account was largely liberalized in mid-2001, in conjunction with other changes to the exchange regime and the monetary policy framework.

STRESS TESTS: OVERVIEW OF THE SHOCKS AND RESULTS

78. **The stress tests conducted during the FSAP follow-up were designed jointly by the MNB and the FSAP team, and performed by the MNB staff**. The stress tests were based on the methodology developed by the MNB following the 2000 FSAP (Box 5 provides an overview of the stress testing framework used by the MNB). Using the data as of end-December 2004, the tests were conducted individually for thirty-two commercial and specialized banks, which together account for around 95 percent of the total banking assets in Hungary. Due to the legal requirement on bank secrecy, the results were shared with the FSAP team in consolidated form.

79. **The stress tests included sensitivity analysis of the banking sector exposure to interest rate, exchange rate, and credit risks separately, as well as two macroeconomic scenarios involving a combination of shocks**.[19] The sizes of the various shocks used in the stress testing exercise was chosen based on both historical and hypothetical changes in the shocked key variables. One macroeconomic scenario was based on an assumption of a worsening fiscal situation, with a resulting increase in the interest rate, exchange rate depreciation, and indirect effects of depreciation on credit quality; another scenario assumed an external shock (e.g., a slowdown in the GDP growth in the EU area), leading to a depreciation of the forint, a decrease in the interest rates, and a deterioration in the quality of all banking loans.

80. **The results of the tests can be summarized as follows** (Tables 4, 5, and 6):

- ***Credit risk potentially has a relatively large and widespread impact on banks***. An increase in nonperforming assets by 2 standard deviations (which has a slightly stronger impact than doubling the current level of non-performing assets (NPAs)) would lead to aggregate losses for the banking system amounting to 15.2 percent of Tier I capital, and the CAR of nine banks would fall below 8 percent. While these banks account for around 40 percent of the banking system, the CARs for the large majority of them would still remain above 7 percent.

- ***While the exposure to foreign interest rate risk is low for all Hungarian banks, a few banks appear to be increasingly vulnerable to a large forint interest rate shock***. This vulnerability can be attributed to a mismatch between the duration of assets and the duration of liabilities in several banks that are involved in household mortgage lending, which has been growing rapidly. The nature of this mismatch is, however, not identical across the banks. While for the majority of banks the duration of assets is substantially higher than the duration of liabilities, for the mortgage banks (who issue mortgage bonds with a longer duration than the duration of their loans) the

[19] No stress tests were performed for equity price risk as the exposure of Hungarian banks to this type of risk is negligible (as of end-December 2004, private sector securities accounted on average for less than 3 percent of the banking sector assets).

- opposite is true. Thus, based on end-2004 data, it is estimated that a parallel upward shift in the forint yield curve by 500 basis points could result in the CARs for two banks, accounting for around 30 percent of the banking system, falling below 8 percent. On the other hand, a parallel downward shift of the same magnitude could result in the CARs for 5 banks, accounting for around 24 percent falling below 8 percent.[20]

- ***It is important to note that the interest rate exposure of Hungarian banks may be smaller than the results of the stress test would suggest***. Research by the authorities has shown that the banks are in a position to delay interest rate adjustments to some degree, at least on loans to and deposits from households, and thus insulate themselves from interest rate risk to a degree.[21] Further, the current very high levels of profits provides banks with a buffer to absorb the impact of any shock, although increasing competition should mean that this buffer becomes smaller over time. Nevertheless, the increasing sensitivity of the banking system to interest rate risk emphasizes the need for an ongoing stable macro-policy mix.

- ***Direct losses arising from exchange rate shocks are negligible for all banks***. A 40 percent shift in the exchange rate of the forint would lead to direct losses equal to only 2.6 percent of Tier I capital on average for the banking system.

81. **Credit risk is also the major factor in the relatively high losses that banks would register under the macroeconomic stress tests**. Some small banks would even suffer losses of over 100 percent of their Tier I capital. However, the impact of the assumed shocks under the stress tests for credit risk—including the impact of a depreciation in the forint on the performance of unhedged foreign currency loans—represents only a rough approximation of possible deterioration in credit quality. The ongoing evolution of the financial system means that there is a lack of adequate time-series data, which in turn has prevented the construction of a robust model capturing the relationship between macroeconomic variables, borrowers' solvency, and banking losses. The MNB has recently started developing such a model (Box 5) however the stress tests reported here are consequently based on assumed risk magnitudes. These tests also ignore the buffer that the current high profitability of the banks provides them to absorb the impact of any shock. The tests should therefore be viewed only as indicative of how the banking sector might be affected by adverse credit shocks.

82. **A comparison of the stress test results based on the end-December 2004 data with the ones based on the data for the previous years highlights the increase in**

[20] The balance sheet information used in these tests should reflect any hedging of interest rate risks that has been undertaken by the banks.

[21] See the December 2004 issue of the MNB's *Report on Financial Stability*.

sensitivity of Hungarian banks to interest rate risk (Table 6).[22] Table 6 also indicates a reduced sensitivity of the banking system to other risks over the 2000–04 period. The exposure to exchange rate risk and credit risk both dropped significantly over 2000–03. There was a modest rise in 2004.

[22] The results of stress tests presented in Table 6 may differ from the results presented in Table 4 due to a difference in the definition of bank losses. While Table 4 considers the losses on a net basis for the whole banking sector, Table 6 considers the gross losses, which means that gains that some banks may incur as a result of interest rate or exchange rate shocks are not included in the summary result.

Box 5. Stress Testing Framework of the MNB

In 2000, the MNB instituted a stress testing framework for the Hungarian banking system. The framework was initially designed based on that used by the 2000 FSAP team, and the methodology and results of the stress tests were first published in the February 2001 issue of the MNB's *Report on Financial Stability*. Since then, the MNB has substantially refined its stress testing framework, with an aim of better capturing and measuring the risk exposures of banks. Key changes to this framework have included: (i) use of a broader variety of stress testing scenarios, including hypothetical scenarios in modeling changes in risk factors, with an assessment of the effects of changes in market risk factors in the opposite directions; (ii) inclusion of the banking book in the stress test for interest rate shock; (iii) calculation of the exposure to foreign currency risk by major currencies, instead of the aggregate exposure; (iv) abandonment of the sensitivity stress tests for credit risk, either due to the loss of relevance of the used assumptions (the case of an assumption of a 50 percent shift of risk-weighted assets into loans), or because of the simplicity and *ad hoc* methodology (the case of an assumed increase in NPLs by 100 percent or by two standards deviations); and (v) abandonment of the correlated stress tests using Monte Carlo simulations, due to the unreliability of this model related to the lack of sufficient time-series data.

Currently, the MNB is designing a new methodology to assess the exposure of banks to credit risk. The intention is to develop a framework for implementation of macroeconomic stress tests based on models capturing the relationship between macroeconomic variables, borrowers' solvency, and the banking sector's losses. There are plans to combine different approaches, including a direct modeling of the relationship between some macroeconomic variables and banking credit losses as well as a modeling of default probabilities of non-financial companies either by relying on individual companies' accounting information, or using market data. The availability of data has been a major impediment for this work: time-series data are short, the full business cycle is not covered, ratings of large enterprises are absent, only a few companies are listed on the stock exchange, etc. It still remains a major burden but the MNB hopes that it is now in a better position to get meaningful results.

In addition, the MNB has recently started a dialogue with the banking community on the longer term plan to use a "bottom-up" approach in implementing the stress tests as a complement to the currently used "top-down" approach. Some Hungarian banks already have their own internal models to assess the exposure to different risks, especially market risks. In the future, the MNB intends to rely more on banks in calculating the effects of given changes in the risk factors on the portfolios of individual institutions.

Table 4. Hungary: Summary Results of the Stress Tests (I)
(based on the data of December 31, 2004)

Test	Size of shock	Impact on Tier I Capital (in percent of Tier I Capital)		
		aggregate	best	worst
Interest rate risk				
HUF	Parallel upward shift in the yield curve by 500 bp	-5.6	228.8	-58.3
	Parallel downward shift in the yield curve by 500 bp	5.6	58.3	-228.8
EUR	Parallel upward shift in the yield curve by 200 bp	-0.3	3.3	-7.8
	Parallel downward shift in the yield curve by 200 bp	0.3	7.8	-3.3
USD	Parallel upward shift in the yield curve by 200 bp	-0.1	0.7	-0.7
	Parallel downward shift in the yield curve by 200 bp	0.1	0.7	-0.7
CHF	Parallel upward shift in the yield curve by 200 bp	-0.1	0.1	-1.6
	Parallel downward shift in the yield curve by 200 bp	0.1	1.6	-0.1
Exchange rate risk 1/				
HUF	Appreciation by 40 percent	-2.6	9.7	-14.3
	Depreciation by 40 percent	2.7	14.3	-9.7
EUR	Appreciation by 15 percent	-0.2	3.6	-2.9
	Depreciation by 15 percent	0.3	2.9	-3.6
USD	Appreciation by 15 percent	0.0	2.4	-3.2
	Depreciation by 15 percent	0.0	3.2	-2.4
CHF	Appreciation by 15 percent	0.0	2.4	-0.2
	Depreciation by 15 percent	0.0	0.2	-2.4
Credit risk				
	Increase in NPAs by 2 standard deviations 2/	-15.2	0.0	-98.5
	Increase in NPAs by 100 percent	-14.5	0.0	-42.6
Macroeconomic scenarios				
	Scenario 1 3/	-14.5	88.5	-103.1
	Scenario 2 4/	-14.5	10.4	-104.3
Memorandum item:				
Baseline Tier I Capital ratio (in percent of RWA)		11.5	72.6	6.0

1/ For each exchange rate shock simulation, other currency cross rates were held constant.
2/ Standard deviation is calculated using the data for the last seven years.
3/ Scenario 1 assumes a simultaneous depreciation of the forint by 30 percent, a parallel upward shift in the forint yield curve by 200 basis points, and a deterioration in the quality of 30 percent of unhedged foreign currency loans (LGD is 50 percent).
4/ Scenario 2 assumes a simultaneous depreciation of the forint by 10 percent, a parallel downward shift in the forint yield curve by 100 basis points, and a deterioration in the quality of 5 percent of all loans (LGD is 50 percent).

Table 5. Hungary: Summary Results of the Stress Tests (II)

(based on the data of December 31, 2004)

Test	Size of shock	Results															
		Number of banks according to the CAR								Market share of banks according to the CAR (in percent)							
		< 6%	6-7%	7-8%	8-9%	9-10%	10-11%	11-12%	> 12%	< 6%	6-7%	7-8%	8-9%	9-10%	10-11%	11-12%	> 12%
Baseline (before shocks)		0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
Interest rate risk																	
HUF	Parallel upward shift in the yield curve by 500 bp	1	0	1	3	2	3	2	20	20.5	0.0	9.8	18.3	7.9	12.3	4.1	27.1
	Parallel downward shift in the yield curve by 500 bp	3	1	1	0	2	3	4	18	16.0	0.6	7.5	0.0	10.2	10.7	21.3	33.7
EUR	Parallel upward shift in the yield curve by 200 bp	0	0	1	3	2	7	1	18	0.0	0.0	7.5	23.0	1.7	51.1	2.8	13.8
	Parallel downward shift in the yield curve by 200 bp	0	0	0	3	4	5	2	18	0.0	0.0	0.0	23.0	20.0	38.9	4.2	13.8
USD	Parallel upward shift in the yield curve by 200 bp	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
	Parallel downward shift in the yield curve by 200 bp	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
CHF	Parallel upward shift in the yield curve by 200 bp	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
	Parallel downward shift in the yield curve by 200 bp	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
*Exchange rate risk*1/																	
HUF	Appreciation by 40 percent	0	0	0	4	3	5	2	18	0.0	0.0	0.0	30.5	22.2	29.3	4.2	13.8
	Depreciation by 40 percent	0	0	0	4	3	4	3	18	0.0	0.0	0.0	30.5	7.9	23.1	24.7	13.8
EUR	Appreciation by 15 percent	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
	Depreciation by 15 percent	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
USD	Appreciation by 15 percent	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
	Depreciation by 15 percent	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
CHF	Appreciation by 15 percent	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
	Depreciation by 15 percent	0	0	0	4	2	6	2	18	0.0	0.0	0.0	30.5	1.7	49.7	4.2	13.8
Credit risk																	
	Increase in NPAs by 2 standard deviations 2/	2	1	6	1	4	2	2	14	1.7	10.8	30.3	6.0	35.0	3.2	2.8	10.2
	Increase in NPAs by 100 percent	1	1	4	2	6	1	2	15	0.4	7.5	29.3	7.3	39.3	2.8	3.1	10.3
Macroeconomic scenarios																	
	Scenario 1 3/	2	2	3	2	2	1	1	19	1.7	17.3	37.4	15.3	2.8	2.9	0.4	22.2
	Scenario 2 4/	3	1	3	2	4	2	1	16	16.0	7.5	11.5	17.0	13.7	20.9	0.6	12.8

1/ For each exchange rate shock simulation, other currency cross rates were held constant.
2/ Standard deviation is calculated using the data for the last seven years.
3/ Scenario 1 assumes a simultaneous depreciation of the forint by 30 percent, a parallel upward shift in the forint yield curve by 200 basis points, and a deterioration in the quality of 30 percent of unhedged foreign currency loans (LGD is 50 percent).
4/ Scenario 2 assumes a simultaneous depreciation of the forint by 10 percent, a parallel downward shift in the forint yield curve by 100 basis points, and a deterioration in the quality of 5 percent of all loans (LGD is 50 percent).

Table 6. Hungary: Evolution of the Selected Stress Tests Results, 2000–04
(Losses in Percent of Tier I Capital)

Type of shock	2000	2001	2002	2003	2004
Parallel upward shift in the forint yield curve by 500 bp 1/	4.7	5.4	9.6	10.8	24.3
Depreciation of the forint by 40 percent 1/	4.3	10.2	7.3	2.8	3.8
Increase in NPAs by 2 standard deviations 2/	31.1	19.2	13.9	14.6	15.2

1/ Losses are defined as gross losses (gains that some banks may incur as a result of interest rate or exchange rate shocks are not included in the calculation).
2/ Standard deviation is calculated using the data for the seven years preceding the year of the shock.