QUARTERLY REPORT ON INFLATION

1998
November

The "Quarterly Report on Inflation" is a new initiative of the National Bank of Hungary. The objective of the Quarterly is to regularly provide the public with a view on the current and expected path of inflation and also about how the central bank evaluates the macroeconomic environment which determines inflation. By doing so, it is hoped that a much wider public than before will be aware of the objectives of monetary policy and the central bank's measures will be easier to follow and to understand.

In addition to giving a detailed account of the economic and financial interrelations determining the future path of inflation, regarded to be relevant by the central bank, this first issue of the publication devotes space to the presentation of the methods of analysis and the inflationary developments of the past few years. In future issues, we will present and analyse the topical events of the given period.

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Contents

Summary

Inflationary developments have been favourable in 1998: year-on-year inflation declined from 18.5% in December 1997 to 12.3% in October 1998. This reduction in the inflation rate exceeds the central bank's end-1997 inflation forecast of 13.5–14% for 1998. Domestic financial and macroeconomic developments affecting the inflation rate were broadly in line with previous projections; a large part of the lower-than-expected inflation rate can be attributed to lower world prices.

The National Bank of Hungary (NBH) sees three factors which are predominantly important in determining inflation. The development of aggregate demand and supply is the most important factor for sustainable disinflation. The second factor is inflationary expectations, which play a significant role both in producers' pricing behaviour and in nominal wage negotiations. The third component is imported inflation, which is the sum of foreign inflation and the nominal depreciation of the Forint. These three components determine the trend of inflation. The inflation rate can, of course, be influenced by ad hoc factors as well, such as tax changes or supply shocks causing one-off shifts in the price level. The National Bank of Hungary believes that the significance of rapid relative price changes and structural adjustments - which were major determinants of the inflation process earlier – decreased as the transition to a market economy ended.

Sustainable disinflation is possible only through the cooperation of fiscal and monetary policies. The maintenance of the preannounced crawling peg exchange rate regime influences the pricing behaviour and inflationary expectations of market participants, and the gradual reduction in the monthly devaluation rate confirms the credibility of the monetary authorities' inflation forecast. The central bank has an effect on aggregate demand as well, by changing monetary conditions the NBH aims to prevent a discrepancy between the growth of aggregate demand and supply. Although given the current advanced level of capital account liberalisation, the central bank's interest rate and exchange rate decisions cannot be independent from each other. By determining the domestic interest rate and the nominal exchange rate the NBH strives to develop and maintain monetary conditions that do not jeopardise the external balance, either from the side of competitiveness or of the savings-investment balance. Central bank decisions affect aggregate demand only indirectly and with a lag, and in the current exchange rate regime international capital market developments also limit the NBH's ability to influence domestic interest rates. Therefore, the efficient control of aggregate demand can be achieved only through the cooperation of fiscal and monetary poli-

In 1998 inflationary expectations had a favourable impact on the disinflation process. In recent years, both inflationary expectations and actual inflation came closer to official inflation forecasts. This year's higher-than-expected decline in inflation reduces next years' infla-

tionary inertia as well because of the occasionally implicit backward indexations. The favourable turn in inflationary expectations is also reflected in the reduction of the stable 20–21% nominal wage growth of recent years. This is especially true of the manufacturing and the retail sector (16.8% and 15.4% in the third quarter).

Imported inflation had a favourable impact on the change in the domestic price level. The inflation rate of Hungary's most important trading partners decreased and so did the world price of food, energy and certain commodities. These factors led to a decline of approximately 2 percentage points in the domestic inflation rate. However, the knock-on effect of cost reduction due to imported inflation was only partial in relation to domestic prices. Market agents do not seem to fully build cost changes that are regarded as temporary into their prices; positive and negative changes are smoothed out at the expense of their actual profit margins. Therefore, no change in the trend of domestic inflation is expected, even in the case of an upward turn of world prices. Moreover, the remaining cost-increasing effect of imported inflation too will be mitigated by the reduction in the growth rate of other cost elements, e.g. of wages and interest expenses, due to a weakening of inflationary inertia.

Ad hoc factors had no significant influence on the domestic price level in the first three quarters of 1998. This is reflected by the fact that core inflation was basically the same as the change in the consumer price level, core inflation fell from 18.2% to 12.5% between December 1997 and October 1998.

The growth of potential GDP accelerated in 1998 as a result of the new production capacities created by the previous years' investments. This made the significant reduction in inflation possible, even under the condition of dynamically expanding demand. Despite the preceding period's substantial aggregate supply expansion, free capacities (which could be utilised without creating inflationary pressures in case of a rise in domestic demand) are scarce in the Hungarian economy. In manufacturing the average capacity utilisation has not been so high in the past nine years, and the share of enterprises reporting scarce capacities has been the biggest for the last few years.

The unemployment rate has fallen well below the European average; it was only 7.9% on average in the first three quarters of 1998. Certain regions and sectors of the economy are experiencing labour shortages. The probability of potential labour shortages is further increased by the fact that two-thirds of the unemployed have been jobless for a long period and/or they have low skill levels, which makes it difficult for them to find work even in times of economic boom. Therefore, the government has to help their re-entry with an active employment policy.

Coupled with high capacity utilisation, all components of aggregate demand increased dynamically in the recent period. Consumption, the largest component of aggregate demand, grew by 3.5% in the first half of 1998 after a 2.6% rise in 1997. Consumption has tracked the faster growth of real income, while both the total household savings and the operational financial savings ratio have been stable since the beginning of 1995.

As far as fixed business investment is concerned, not only the significant 13.3% real growth in the first half of the year is notable, but also the spreading of growth over different industry and enterprise categories as well. The share of investment was considerable in the services sector, which significantly limits inflationary tendencies through stronger competition and rising productivity. This also indicates, however, that the previously extraordinarily high export growth rates, which were due to the instalment of new export capacities, may decline.

Despite the Asian and Russian crises, the external demand for Hungarian goods and services was above expectations in the first half of the year, the export of goods and services being 23.6% higher in real terms than in the same period of 1997. Certain sectors were hit seriously by the decline in exports to Russia, and for certain goods the competitive pressure from South East Asian companies due to devaluation can be felt.

When projections about future GDP growth are made, it has to be taken into account that the volatility in international capital markets and lower growth prospects for the world economy can reduce the growth of domestic demand as well. At the same time, due to the change in the international environment, the current account balance has to meet stricter requirements. The reason for this is that for international investors the current account balance is one of the most important indicators of the health of the economy. Thus, it furthers the country's long-term growth by preserving its positive image. Another non-negligible factor is that the financing of the current account deficit became more expensive because of the liquidity shortages in international capital markets.

Based on its projections about aggregate demand and supply, the NBH believes that coordinated decisions through monetary and fiscal policies are needed to control aggregate demand in order to maintain economic stability and to further reduce inflation. These decisions should ensure that GDP grows around its long-term trend and demand growth maintains the favourable composition of the past few years, which were characterised by an improving external balance and a moderate expansion of domestic demand. Although the most important factor for a lower-than-expected growth for next year is the decline in foreign demand for domestic goods, in this case the stimulation of domestic demand by fiscal or monetary measures can be implemented only with caution, since the composition of foreign and domestic demand is different. Higher domestic demand would only partially absorb the excess supply of exporters, whereas it would generate further import demand, thus resulting in an increase of the trade deficit. This is especially true of former exports to Russia. If these goods cannot be sold to other markets, or only at a very low price, then this should be considered a sectoral shock, to be treated with the appropriate tools of structural policy. Taking all the above considerations into account, the NBH believes that the stimulation of aggregate demand either by monetary or fiscal policy is not desirable and should be avoided even if inflationary pressures remain subdued.

In order to maintain external balance and to control inflationary pressures due to a dynamically growing domestic demand, the central bank's interest rate policy aims at stimulating domestic savings. International capital market volatility led to a significant increase in the interest rate premium on Forint-denominated investments, therefore the maintenance of the preannounced exchange rate path requires higher real interest rates. As in the past period since the introduction of the crawling peg regime in 1995, the NBH does not assign an aggressive disinflationary role to the exchange rate per se in the future. The exchange rate path is determined evaluating the differences in domestic and foreign inflation and the expected difference in the growth rate of productivity. The significance of the exchange rate path lies in its credibility and sustainability, thus the expected depreciation is built-in within pricing behaviour, reducing the inertia of inflationary expectations and enabling monetary authorities to set a lower goal for inflation.

Future inflation may be negatively affected by the temporary weakening of the Forint within the intervention band due to increased uncertainty in international capital markets. While a long-lasting weakness of the exchange rate would undoubtedly pass through into the

domestic prices, increased volatility of the exchange rate alone is not likely to have significant inflationary effects due to changes in pricing behaviour in the previous years. The experience of the last two years indicates that exchange rate risk which could be hedged and/or regarded as temporary was not built-in within domestic prices.

The modernisation of Hungarian financial institutions and the change in transactional and savings opportunities is so fast that the change in the velocity of money (the stability of which is questionable even in developed economies) is hard to forecast. Therefore monetary aggregates cannot be used as intermediate targets in the formulation of monetary policy. At the same time, the change in monetary aggregates may contain important information regarding future developments in aggregate demand, therefore the NBH closely follows developments in monetary and credit aggregates. The growth of the narrow monetary aggregate (M1) accelerated last year; the annual real growth rate of M1 peaked at 10% in June and falling thereafter it was 4.6% in real terms in October. This was partially due to the fact that the opportunity cost of M1 components (which mostly serve transactional purposes) declined because of lower inflation, but a prolonged fast rise in transactional money demand is a warning sign for monetary policy.

In the first part of this report the most important characteristics of this year's inflation process are presented. The second part describes monetary developments and the most important decisions of the monetary authority. The third part analyses aggregate demand, supply and equilibrium factors which are important determinants of inflation and relevant in the conduct of monetary policy. At the end of the report a detailed analysis of capital market developments is presented. The report was based mainly on data from the first eight months of the year, therefore the consequences of the international financial crisis starting in August are not analysed here in full detail, and only references are made if the crisis had a significant influence on Hungarian economic developments.

Main macroeconomic indicators

	1996				1997				1998	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
	Growth rate over the same period of the preceding year (%)									
GDP	0.7	0.5	1.1	2.8	1.8	4.4	5.3	5.3	4.9	5.3
of this: domestic absorption	–4.8	–2.7	2.3	6.6	3.3	4.8	3.5	4.8	4.4	8.1
– total consumption	–4.2	–2.7	–1.7	–3.0	0.6	2.2	3.0	3.3	2.6	4.0
= household consumption	–3.6	–2.7	–1.9	–2.5	0.6	2.5	3.4	3.3	2.7	4.2
– total investment	–7.8	–2.6	14.7	30.7	16.0	13.9	4.8	7.7	12.0	21.0
= fixed investment	0.5	–4.8	4.7	16.6	5.5	15.3	14.2	6.0	7.6	13.3
exports (GDP)	14.8	14.2	4.4	2.0	20.5	24.4	29.0	29.0	28.3	19.4
imports (GDP)	–2.4	5.0	7.8	12.2	23.4	25.5	25.4	26.7	25.5	24.9
Real effective exchange rate index*										
PPI-based	1.0	–5.0	–4.4	–6.0	–8.2	–5.5	–4.6	–2.0	0.6	2.5
Based on unit labour cost (based on GDP)	19.3	11.5	6.4	4.7	–2.9	–0.4	2.6	–0.9	1.1	2.5
Based on unit labour cost (gross based)	15.7	8.9	4.9	6.0	–0.2	2.7	6.8	4.3	7.4	10.0
Deficit and debt					*As a percentage of GDP*					
General government balance (accrual accounting)	–3.0	–6.1	–0.2	–3.4	–5.8	–3.7	–4.7	–5.1	–9.8	–0.5
Primary balance of general government	3.6	2.8	4.8	5.1	4.1	3.2	1.4	3.7	–0.2	4.4
					USD billion					
Current account	–0.8	–0.1	–0.2	–0.6	–0.5	–0.3	0.1	–0.3	–0.4	–0.5
Foreign direct investment	0.5	0.3	0.6	0.6	0.5	0.3	0.3	0.6	0.3	0.5
Savings ratio** (%)	10.8	11.3	11.7	11.9	9.5	10.2	11.4	13.6	9.2	9.7
Unemployment rate*** (%)	10.3	10.1	10.1	9.8	9.4	9.1	8.7	8.3	8.3	8.0
Gross average earnings**** (Growth rate over the same period of the preceding year (%))	18.1	21.7	18.7	22.1	25.7	21.1	19.5	20.5	21.2	19.2
Net average earnings in real terms**** (Growth rate over the same period of the preceding year (%))	–8.6	–3.9	–4.7	–1.6	7.2	5.5	3.2	4.2	3.2	3.3

* Growth rate over the same period of the preceding year, positive number indicates real depreciation.
** Net financial savings of households as a percentage of total household income (net cash savings also include the exchange rate gains).
*** Based on the CSO labour market survey in accordance with the terms used in international practice (ILO), unemployed as percentage of the active population; seasonally adjusted data.
**** Number of full-time employees in the public sector and businesses employing more than 10 people.

Main monetary indicators

	1996				1997				1998		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Consumer price inflation (yoy)*	25.6	23.6	22.2	19.8	18.8	18.7	18.0	18.4	16.4	14.2	12.5
Producer price inflation (yoy)*	23.2	21.5	20.4	20.1	21.8	19.4	19.7	19.5	13.5	11.6	10.4
	*Growth rate of monetary aggregates (yoy)**										
M0	13.2	10.8	12.6	14.6	16.7	17.3	18.6	15.8	17.9	17.5	15.7
M3	21.6	23.6	23.0	22.5	18.5	17.5	18.1	19.1	19.1	18.8	17.5
M4	25.2	26.8	27.1	26.5	26.9	26.3	26.4	26.3	27.3	24.6	22.6
	Real growth rate of credit aggregates to the private sector (yoy)										
Corporate, foreign + domestic	–4.3	–4.2	–2.8	6.3	7.9	12.5	14.7	7.3	8.6	6.8	7.4
Corporate, domestic	–15.3	–13.4	–8.4	7.9	20.5	30.5	28.8	20.5	13.9	12.1	13.3
Households	–28.5	–26.6	–25.3	–24.0	–23.9	–20.9	–14.7	–14.1	–7.3	–1.7	6.7
	*Interest rates (%)**										
Reverse repo 1 month	25.0	24.0	23.25	22.25	21.5	20.75	20.25	19.75	18,875	18.0	18.0
3-month discount T-bill	24.1	23.9	22.7	22.2	20.8	20.0	19.4	19.4	18.7	17.3	19.1
12-month discount T-bill	24.5	25.0	22.9	21.5	20.1	19.8	19.7	19.2	18.7	17.3	19.0
5-year government bond	–	25.4	22.9	21.5	16.7	17.4	18.1	17.9	18.4	16.6	16.2
BUX	2,447	3,288	3,572	4,134	5,414	6,795	7,693	7,999	8,656	7,805	4,571
Interest premium (bsp)*	450	440	340	360	376	338	257	459	363	363	674
	Conversion demand for Forint										
Conversion USD million	1,271	545	1,423	852	471	1,235	1,427	294	2,448	929	.
Net increase in foreign liabilities of credit institutions** USD million	–24	–1,092	291	75	186	50	7	57	929	253	.
Corporate borrowing*** USD million	5	78	164	453	–60	5	210	215	–56	87	.

* End of period.
** Excluding privatisation revenue.
*** Including shareholders' loans.

I. The evolution of inflation

Over the first ten months of 1998, the annual rate of inflation declined from 18.4% to 12.3%. The decrease in the consumer price inflation evolved as a result of opposing effects in domestic conditions. In the recent past, factors independent of domestic economic conditions also had a favourable impact on domestic price developments.

In agreement with the Government, the National Bank of Hungary (with a view to macroeconomic indicators and money market developments) modified in several steps the rate of crawl, which determines the monthly depreciation of the Forint. While in 1997 the Forint was devalued *by 14.7% against the currency basket, in October of this year, the rate of annual devaluation was no more than 11.1%*. The actors of the economy regarded the modification of the exchange rate course as credible and sustainable, hence in setting their prices they took into account the reduction in the rate of devaluation and thereby also of imported inflation. Owing to the changes in cross rates, the annual depreciation of the trade weighted exchange rate was larger in October than in the previous December, hence *effective import costs did not decrease as a consequence of the change in the exchange rate in the first ten months of the year.* Nevertheless, economic actors regarded these effects as transitory whereby, similarly to the preceding year, the effects of cross rate changes were not incorporated in domestic prices. *Monetary policy primarily contained inflation through setting the trend of exchange rate and influencing inflationary expectations.*

Among the **domestic factors** influencing price developments, recovering demand appeared as a factor that could potentially fuel inflation. Both *the private sector and general government increased their consumption and investment activity.* The inflationary impact of this, however, was moderated by the fact that increased demand appeared partly for tradable goods where, owing to import competition, the possibilities for price increases were limited. In the case of non-tradables, the continuous expansion of capacities moderated price increases, yet the *rise in private services prices exceeded that of tradables by 4.4 percentage points.*

Beyond its demand impact, the government has a direct influence on the consumer price index through regulated prices. This year, the rise in **regulated prices** exceeded the price increases of both traded products and private services, yet in comparison to the preceding year, the difference between these price growth rates decreased by more than 5%, which *by itself reduced the rate of inflation by 1%. The previously described evolution of regulated prices,* through the decline in the costs of production, contributed to the lower inflation rate in other product groups, too.

The moderate **cost side inflationary pressure** evolved as a result of opposing processes. In the national economy as a whole, *real wages increased by 3.7% on average.* Wage inflation was highest (at nearly 22%) in the service sectors not including retail trade, which was reflected also in above-average price increases. *Wage inflation in manufacturing and retail trade decreased considerably relative to the preceding year.* The impact of the growth of real wages upon profitability was alleviated in part by a more efficient employment of labour as a result of the investment projects of earlier years. Cost side inflationary pressure was further restrained by the *reduction in the world market prices of food, energy and various raw materials.* As a result of all these factors, the rate of inflation also declined remarkably in the case of products which are not directly disciplined by the nominal exchange rate.

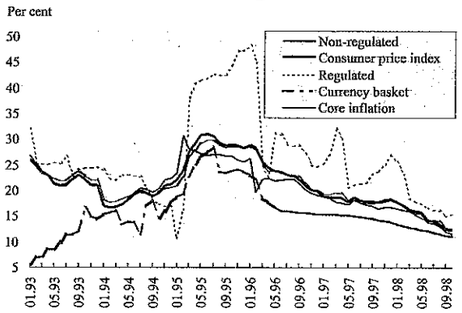
In the recent period, several changes that can be regarded as transitory also contributed to the slowdown in inflation; these primarily influenced relative prices and the domestic price level, not the dynamics of the increase of prices. The NBH did not loosen its grip on domestic monetary conditions in spite of the rapid decline in inflation so that should world market price tendencies be reversed, this policy would prevent the development of a cost-price spiral. Another specific feature of the Hungarian inflationary process is that, due partly to institutional and partly to behavioural factors, there is a high degree of inertia in the development of prices. The acceleration of inflation reduction arising from exogenous reasons may result in a decline in the inertia inherent in price development, whereby, as a result of changing expectations, the faster than expected **reduction in the consumer price index may lead to a faster rate of decline in inflation in the long run as well.**

The rate of price increases relative to the same month of the preceding year

Per cent

	Weight in the consumer price index	December 1997	October 1998
Consumer price index	100.0	18.4	12.3
Tradables net of food and petrol	33.3	13.7	11.6
Food	27.6	20.0	9.7
Regulated prices	16.5	26.8	15.5
Private services	17.7	18.7	15.4
Motor fuel	4.9	14.7	8.4
Core inflation[1]	91.0	18.2	12.5
Devaluation of the nominal effective exchange rate	–	11.2	16.7
Announced nominal devaluation of the forint	–	13.9	11.1

Development of the market and regulated components of the consumer price index*

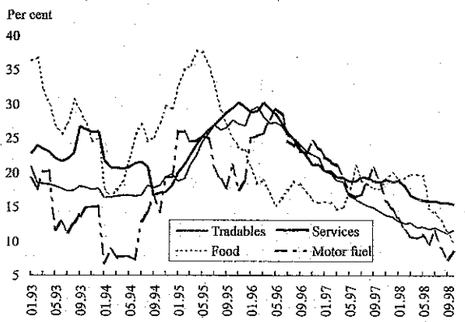


* Growth rate relative to the same month of the preceding year. Market prices: changes in the prices of industrial products and private services. Currency basket: changes in the market exchange rate of the forint against the basket of currencies.

1 Components of the changes in consumer prices

The ultimate objective of the NBH in influencing domestic prices can be achieved most directly through the announcement of the nominal exchange rate path. *The gradual reduction in the rate of devaluation ensures the convergence of the domestic rate of inflation with that of Hungary's commercial partners.* The disciplining effect of the exchange rate course on price increases is asserted to different degrees in the various product groups, depending on the extent to which the given product is forced to take foreign competition into account. In order to illustrate the anti-inflationary efficiency of the nominal exchange rate, we break down the price developments of the components of the consumer basket to those arising from changes in the exchange rate course and those beyond this. *The exchange rate course may be regarded as an instrument efficiently supporting sustainable disinflation if price developments in the individual*

Changes in market prices*



* Growth rate relative to the same month of the preceding year.

[1] Since July the NBH has been measuring the underlying increase in prices by a new core inflation index. This index excludes from the consumer price index the effects of price changes in seasonal food (eggs, potatoes, vegetables, fruit), solid and liquid fuel (coal, briquette, coking coal, firewood, heating oil) and gasoline. The core inflation index calculated in this way covers 91% of the original consumer price index.

product groups do not deviate from the nominal exchange rate course to an extent which would call for the modification of the exchange rate course in the future owing to excessive real appreciation of the forint.

The development of domestic prices may be influenced by non-recurrent factors over which monetary policy has no influence, such as the introduction or abolition of import tariffs or changes in tax rates. To filter out such effects, the price development of individual product groups were compared, in addition to the rate of devaluation, to changes in the prices of traded goods as well.

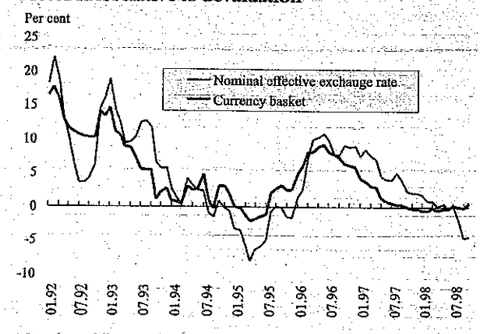
1.1 Tradable goods

The nominal exchange rate chosen as the intermediate objective of monetary policy has the most direct influence on the prices of tradable products. This category includes consumer articles of industrial origin (changes in the prices of food will be separately discussed) which, for the sake of simplicity, will be referred to as industrial products. We assumed that their supply is practically infinitely elastic, hence an increase in demand may lead to price increases only through the effects of marking to market. Price development is, however, also influenced by the fact that the consumer price of these products also contains services whose pricing – that is, the commercial margin – is determined by the supply and demand relations of commercial services. This product group represents 38.2% of the basket, which is used for the consumer prices index. Of this gasoline accounts for 4.9%. Its price evolved differently from that of other products in 1998, hence below we examine the product group without petrol.

As presented by the figure below, the relationship between annual price growth rates and the development of the nominal exchange rate changes from time to time. Under the adjustable fixed exchange rate regime applied until March 1995, expectations of devaluation continuously eroded its nominal anchor role. About 1–1.5 years were needed for the inflationary shock of March 1995 to peter out, and since the end of 1996 the prices of tradables and the nominal exchange rate have been moving closely together. From this period onwards, the nominal exchange rate can be regarded as a nominal anchor that efficiently disciplines the price development of industrial products. **In 1997 and in the period in 1998 under review, the prices of tradables followed the nominal exchange rate.** Owing to the decline in the price levels of Hungary's most important trading partners, with this product category imported inflation rose at a rate below that of devaluation in 1998, which has been reflected in the prices of industrial products, which rose at a rate less than the rate of devaluation of the forint.

The developments of 1997 provide additional information about pricing behaviour. In that year, changes in industrial product prices followed the announced rate of devaluation much more closely than the nominal effective exchange rate, that is, in spite of its significant weight in the currency structure of foreign trade, the weakening of the German mark – and thereby the reduction in import costs calculated in forint terms – had no influence on the development of industrial product prices. In 1998 this process was reversed, and the strengthening of the D-mark

Annual price increase of goods without food and motor fuel relative to devaluation*



* Growth rate difference relative to the same month of the preceding year.

relative to the dollar did not constitute a price-increasing factor either. It seems **that economic agents relate their prices to the announced rate of devaluation and regard changes in cross rates as transitory, hence not incorporating them in their prices.** This pricing behaviour is consistent with the fact that prices are altered relatively rarely, once or twice a year, so within such a time span, the announced rate of devaluation is the best point to adjust to. Moreover, the movement of individual currencies relative to the basket can also be hedged against at relatively little cost. The phenomenon may also be attributed to the fact that resident distributors, exploiting the imperfections of the market, price their products to the local market.

1.2 Food prices

Food represents 27.6% of the consumer basket. A major portion of this category still enjoys considerable protection through customs, nevertheless, the demand-supply relations evolving in the world market have a significant impact through export prices on the domestic sales price of a number of raw materials for food processing. The prices of seasonal products are determined mainly by domestic demand. *As the volatility in food prices can be attributed primarily to supply side shocks, prices frequently differ from both the nominal exchange rate and changes in the prices of industrial products.*

In the first quarter food prices hindered the decline in the rate of inflation; in contrast, in the second and third quarters changes in both world market food prices and the prices of seasonal products contributed to a decrease in the consumer price index, reducing it directly by about 1.5%.

1.3 Regulated prices

The so-called regulated prices represent a significant, 16.5% share in the consumer basket. In this group changes in demand do not exert direct inflationary pressure, as cost considerations primarily govern price setting.

The increase in regulated prices decreased substantially relative to 1997: *whereas in that year the growth in regulated prices exceeded the rate of devaluation by over 13%, in 1998 this margin shrank to 5%.*

The reduction in the rate of price increases can be attributed first and foremost to the lower increase in energy prices. Owing to the significant decrease in world market energy prices, energy prices were left unchanged at two successive quarterly review dates. In spite of this, however, the profitability of natural gas distributors did not deteriorate. The situation is different in relation to electricity, as the price formula in this case is related to the average costs of domestic electricity production. Hydrocarbon based power plants only account for a quarter of production capacities. In contrast, in order to create revenue for the Nuclear Financial Fund, nuclear energy became more expensive. Because of this, it became necessary to increase prices by 8% in the third quarter in this area, the effect of which has already appeared in the inflation indicators since September.

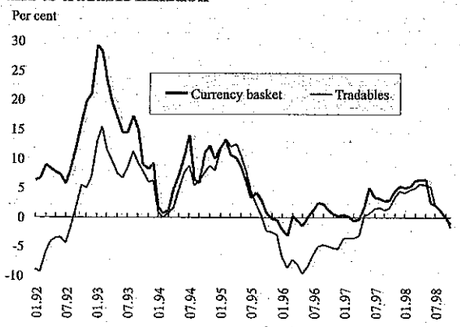
Over the past few years, the rise in regulated prices regularly exceeded the inflation rate measured in other product groups.

Annual growth in producer prices*

	Germany	Austria	France	Great Britain	USA
December 1996	–0.3	1.1	–3.1	1.6	2.5
December 1997	1.1	0.6	0.7	1.0	–1.6
June 1998	–0.1	0.0	–0.7	1.0	–1.9

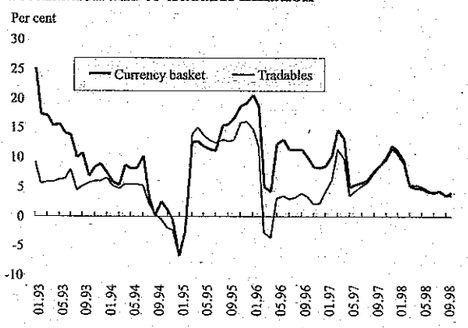
* Growth rate relative to the same month of the preceding year (%).

Annual growth of food prices relative to devaluation and to tradable inflation*



* Growth rate differential relative to the same month in the preceding year.

Annual increase of regulated prices relative to devaluation and to tradable inflation*



* Growth rate differential relative to the same month of the preceding year.

This higher rate reflected not only an increase in current costs: a gradual price adjustment was also needed primarily because the prices of these services generally did not cover the costs of the capital required for their production. With the end to this period of adjustment, we expect a much closer correlation in the future in the changes of regulated prices and other products with a beneficial impact on overall inflation.

1.4 Services

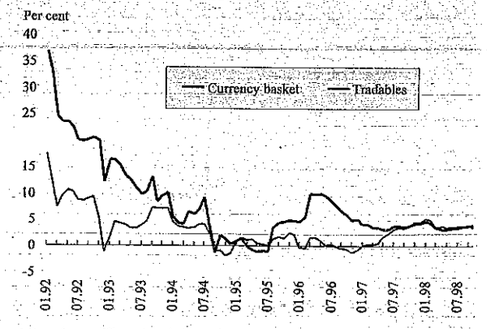
The fourth component of consumption (17.7%) is services, where in most cases direct foreign competition does not discipline price developments. Consequently, growth in demand may lead to price increases. The evolving higher profitability may be maintained as long as new capacities being implemented do not increase the supply of the service. As the price elasticity of supply is much lower than in the case of industrial products, growth in wage costs is much more rapidly followed by increases in prices.

Before 1995, the price increases of services exceeded both the depreciation of the forint and the changes in industrial product prices. From the beginning of 1995, the prices of services and industrial products changed at nearly the same rate for two-and-a-half years. **Since domestic demand has expanded, the difference between price developments of services and tradable goods has increased again, moving at around 4 percentage points on average in the course of the past year.**

During the catch-up process, we expect that the tendency experienced in the last few years, which exhibits higher productivity growth in Hungarian tradables sector than in services sector, will persist. As a result of this difference in productivity improvements, the unit labour cost of services will gradually increase relative to industrial products. As a lasting difference between the profitability of the two sectors cannot be sustained in the long term, wage increases in the services sector will give rise to higher price increases. Over the past two years, the difference in the growth rates of services and industrial product prices probably exceeded slightly the rate which could be attributed to different productivity improvements. A possible explanation is the inflationary effect of increased domestic demand.

The analysis of the price developments of the different consumer basket components reveals that the crawling peg regime has proved to be an **efficient anti-inflationary instrument in the recent period.** Moreover, the gradual reduction of the crawl proved to be credible and changed the price setting behaviour of market participants. The difference in market prices by product groups did not deviate significantly from that explained by differences in productivity improvements. As will be presented in detail in the remaining part of this report, the **unit-labour-cost based real exchange rate index remained stable throughout the period.** Another proof of the exchange rate mechanism as a disciplinary device is that the nominal wage growth rate, formerly registered at around 20–21% seems to be breaking in the manufacturing sector. Owners of businesses did not give way to wage increases in excess of that based on productivity improvements, which would have deteriorated their profitability and competitiveness.

Annual price increase in services relative to devaluation and tradable inflation*



* Growth rate differential relative to the same month of the preceding year.

2 Other prices

2.1 Domestic and export sales prices of manufacturing

In September 1998 the annual growth rate of domestic sales prices in manufacturing was 6.8%, which was lower than the devaluation of the forint during the period under consideration.

In 1993–94 domestic sales prices and the nominal effective exchange rate index as well as the exchange rate index against the currency basket rose virtually at the same rate. Following the devaluation in March 1995, nominal exchange rates increased at a higher rate than prices in manufacturing and the real exchange rate based on domestic sales prices in manufacturing depreciated. This was partly due to price-stickiness and partly to the possible pricing-to-market effect evoked by a decline in domestic demand. From the beginning of 1996 a reverse process took place: prices rose faster than the exchange rate, as a result of which the transitory real depreciation was adjusted. Another reason for the discrepancy appearing in 1996 and 1997 could be high energy price rises and the effects of import surcharge.

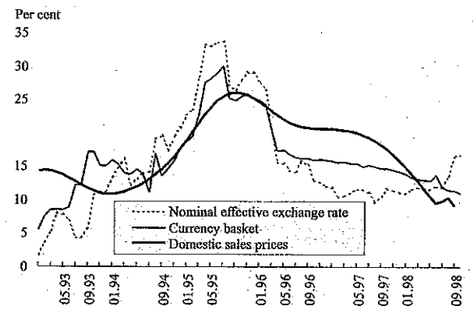
Export sales prices in manufacturing industry rose by 12.6% in September 1998 in comparison to the same month in 1997.

It could be observed that, until the beginning of 1994, the growth rate of export prices was over 10% higher than that of the nominal effective exchange rate index and a nearly identical rate in the rise of export prices and the nominal exchange rate characterised only the second half of 1994 and the first half of 1995. Growth in export sales prices again exceeded that of devaluation of the forint from the second half of 1995. In the last quarter, however, this difference seemed to be evaporating again.

The differences between domestic and export sales prices could largely be explained by the impact of composition. As industrial statistics calculate export price indexes on the basis of export weights of the period two years before, in every period in which substantial structural changes take place within the export sector, the export price index also reflects the impact of changes in product structure. In 1997, the expansion of machinery exports constituted just such a structural change.

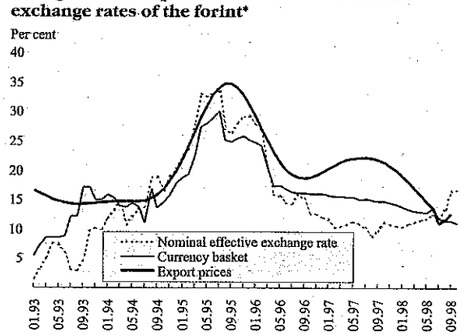
Owing to the statistical distortions referred to, an analysis of the ratio of export prices and domestic sales prices would be more informative. Examining identical products, the two price indexes should not differ in perfectly competitive markets. If, however, there are additional transaction costs to price changes and/or exporters' price-to-market, such differences can be observed. As more disaggregated price indices are not available, it is difficult to detect to what extent sectoral domestic and export sales price indices reflect an identical product composition. The figure below shows an unambiguous trend in the period prior to 1995. As it is hardly believable that in the case of identical products export prices grew in a stable manner until 1995 at a rate about 20% in excess of that of domestic sales prices (this would have meant a significant difference regarding the profitability of exports relative domestic sales), the phenomenon can presumably be attributed to the fact that different products were sold, that is it may reflect the impact of different quality and product composition.

Changes in the domestic sales prices and of the exchange rate index*



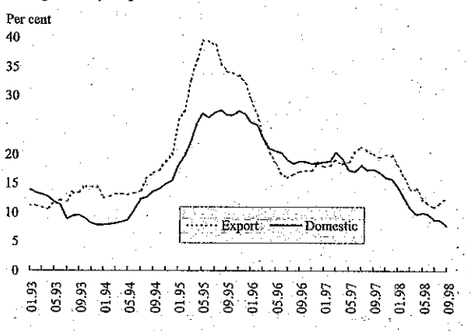
* Growth rate relative to the same month of the preceding year.

Changes in the export unit value indices and the exchange rates of the forint*



* Growth rate relative to the same month of the preceding year.

Changes in the domestic and export sales price indices of the manufacturing sector*
(weighted by export structure)



* Growth rate relative to the same month of the preceding year.

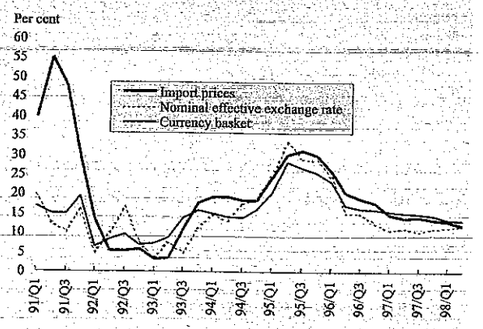
Since the introduction of the exchange regime in 1995, the trend has broken. The current exchange rate regime – to the extent that it is credible – is neutral with respect to ex ante tradable price competitiveness. Hence manufacturers in the tradables sector calculate with the same price increases for both their domestic and export sales. This, of course, does not mean ex post price competitiveness neutrality. Exchange rate changes, which differ from that expected, may divert domestic and export prices. The newly evolving increasing trend in the ratio of export/domestic price[2] since 1996 can hardly be explained by unexpected exchange rate effects. It is possible that the impact of different product structures continues to be relevant.

2.2 Import prices

Import prices (the so-called import unit value index according to customs statistics) have been moving closely in line with the various exchange rate indexes since the 1995 stabilisation, as revealed by the figure presenting the relationship between import prices and the nominal effective exchange rate index, and the exchange rate index against the basket of currencies. This relationship was also basically stable from 1993 prior to the implementation of the crawling peg regime. Before this, however, the correlation had been much less unambiguous, due presumably to rapid price liberalisation following the outset of the transition, changes in quality and the structure of imports[3] and the impact of increasing demand for imported products. Before 1996, import prices had converged mainly with the nominal effective exchange rate changes but, as the figure reveals, presumably a change took place in 1996 with respect to the pricing behaviour of importers, as import prices showed a stronger correlation with the index against the currency basket. With the consolidation and gain in credibility regarding the crawling peg exchange rate regime, importers have been applying forward-looking pricing in accordance with the rate of the crawl.

In the period 1995–98, import price changes slightly exceeded changes in the nominal exchange rate and the exchange rate against the currency basket but, as seen in the figure, the difference has never exceeded 5% since 1995. In the first quarter of 1998, the seasonally adjusted import unit value index rose by 13.8%, the nominal effective exchange rate index calculated with bilateral import weights by 11.5% relative to the first quarter of 1997, while the forint depreciated by 13.4% against the currency basket. From this we may conclude that the relationship between import prices and the nominal effective exchange rate is fairly vigorous, imported inflation making its effects felt within a relatively short period of time.[4]

Changes in import price and exchange rate indices*



* Growth rate relative to the same quarter of the preceding year.

[2] In spite of the trend again unfolding in the data, domestic and export price changes correlate only contemporaneously, which supports our forward-looking pricing hypothesis.

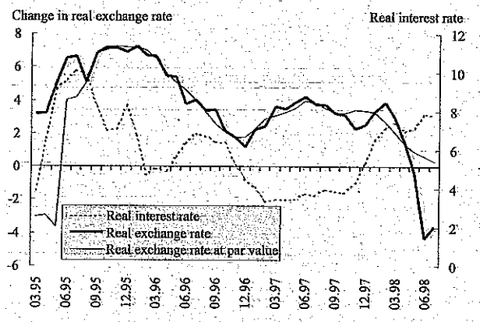
[3] Import unit value indices, as they measure not the price but a value per some kind of a combined product unit, may be easily distorted by changes in product composition and quality.

[4] According to our estimates, the effect of changes in the nominal effective exchange rate no longer play a role in import prices after 3-4 quarters; the exchange rate ripples on into import prices over a relatively short period. Performing the estimates also for the index against the currency basket, we obtained similar results.

II. Monetary policy

In the first ten months of 1998, the conduct of Hungarian monetary policy was heavily influenced by several developments leading to the increase of potential domestic inflationary pressure, namely, capacity utilisation has been on the rise along with economic expansion and the acceleration of domestic demand, and in certain segments of the labour market resource constraints have arisen. In spite of this, CPI inflation declined substantially. This, however, can be attributed to lower world market prices on the one hand, and lower growth of regulated prices on the other. In order to curb domestic inflationary pressures, the National Bank of Hungary (NBH) has followed a cautious interest rate policy. **The real interest rate rose to over 6 per cent on the three-month maturity, which is most relevant for credit expansion and savings decisions**. Being cautious in interest rate decisions, the NBH reduced its leading interest rates only along with the actual decline of inflation.

Changes in monetary conditions
(real exchange rate changes – short term real interest rate)

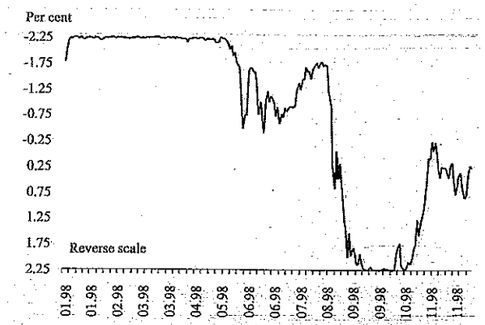


The short term real interest rate was calculated based on the annualised 3-month Treasury bill and the contemporeneous 3-month trend inflation. The real exchange rate was calculated as the quotient of the nominal exchange rate (currency basket composition) and the trend inflation; based on this the 3-month annualised real appreciation was obtained. Positive values of the real exchange rate on the graph indicate appreciation. Two different measures of the real exchange rate are given, one calculated using the market exchange rate, and the other calculation based on the assumption that the exchange rate stays at the central parity of the band. These indices do not correspond to the real exchange rate indices reported in the section on competitiveness, since these are short-term indices and ignore the effects of foreign inflation and cross exchange rate changes.

Besides the real interest rate, the real exchange rate has great relevance on the development of monetary conditions, since it serves as a basis for assessing the extent the exchange rate contributes to disinflation. *In the first ten months of 1998, the preannounced path of the exchange was modified two times.* From June 15th the NBH – in agreement with the government – reduced the monthly rate of devaluation to 0.8%, and in August another decision to cut the monthly devaluation rate was taken, this time to 0.7% coming into effect on October 1st. Compared to October of 1997, the depreciation of the central parity was 11.1% against the currency basket of 30% US dollar and 70% German mark. As far as depreciation against the currency basket calculated using market exchange rates is concerned, this amounted to 15.8%. The nominal effective exchange rate index showed a depreciation of 16.6% in the same period.

Despite the two reductions in the rate of devaluation, the annual real appreciation based on consumer price indices has been declining since March. These developments indicate that while both the interest rate policy and the exchange rate contributed substantially to the disinflation process in the

Exchange rate changes within the intervention band



Interest rate decisions of the National Bank of Hungary

In effect from	Interest rates on active repo		Deposit rates			Interest rate on supplementary repo
	O/N	1 week	O/N	1 week	1 month	O/N
01.01.1998	25.250	25.250	14.50	19.250	19.750	35.00
06.02.1998	25.000	25.000		19.000	19.500	
02.03.1998	24.750	24.750		18.750	19.250	
23.03.1998	24.375	24.375		18.375	18.875	
14.04.1998	24.125	24.125		18.125	18.625	
25.05.1998	23.875	23.875		17.875	18.375	
15.06.1998	23.500	23.500		17.500	18.000	
10.07.1998	23.000	23.000				
03.08.1998	22.500	22.500		16.500	17.000	
15.08.1998	20.500		13.50			
22.09.1998	21.500		14.50		18.000	28.00
11.11.1998	21.000				17.750	
24.11.1998	20.750		14.25		17.500	

first months of the year, from April the significant disinflationary effect of the exchange rate has slowed down. The real exchange rate index based on the parity exchange rate, which ignores exchange rate changes within the band, indicates a significant decline in real appreciation, while the index based on market exchange rates shows a depreciation of the real exchange rate.

Domestic monetary conditions consistent with the disinflation process were accompanied by the following developments in the foreign exchange market, which is influenced by changes in foreign interest rates and the risk premium:

1. Between January and April, capital inflow was significant, forcing the NBH to actively intervene at the stronger edge of the exchange rate band.

2. In May and June, uncertainty surrounding the general elections brought about a temporary weakening of the forint, but the exchange rate was never weaker than the central parity.

3. From July, along with the general flight from emerging markets, the forint depreciated substantially, reaching the weaker edge of the intervention band.

Due to the policy of sterilised intervention, the volatility of capital flows has not affected the monetary aggregates substantially.

Changes in the instruments of the National Bank of Hungary

There have been several important changes in the instruments of the NBH throughout 1998, and as a result they have further converged with the instruments used by EU central banks.

Since April 1998, the NBH no longer sets the interest rate on the one-year maturity, and on April 24th a bi-weekly tender for one-year central bank bills was introduced. Before April 1998, the NBH set the interest rate on the two maturities at the same time, and as a result the relationship between the two interest rates informed market participants about expected future developments in the one-month deposit rate. Due to the interest rate setting on two maturities, it was difficult for the central bank to send unambiguous signals regarding its interest rate policy. As a consequence of this decision, a short-term interest rate – the one-month deposit rate – has become the target interest rate of the NBH in accordance with the practice of central banks in developed economies.

The elimination of the one-week deposit facility on August 15th was also in accordance with the central bank's intention to be more able to send unambiguous signals to market participants with less instruments and thus to increase the effectiveness of the transmission mechanism. Along with the one-week deposit rate, the rarely used one-week active repo was abandoned as well.

In August 1998, the central bank decided to extend the maintenance period for required reserves from two weeks to one month, taking effect in September. The longer maintenance period enables commercial banks to react more sensitively to changes in short-term interest rates, and the management of the liquidity effect of tax payments becomes easier as well.

1 Developments in monetary conditions

In the first four months of 1998 substantial capital inflows were induced by declining German and American interest rates (the two currencies making up the currency basket), and by declining risk premium on investments in emerging markets. Both developments increased the attractiveness of forint investments among money market investors. Speculation about the real appreciation (widening of the intervention band) of the Hungarian currency also significantly increased demand for forint in this period. This was based on the fast improving macroeconomic indicators of the Hungarian economy in 1997.

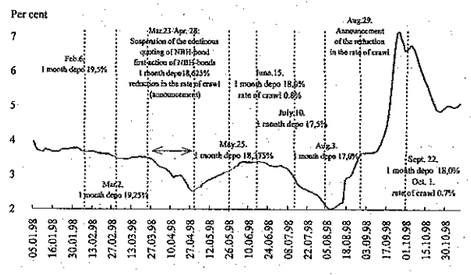
- Although neither the Federal Reserve nor the Bundesbank changed their main interest rates, yields on market instruments denominated in US dollars and German marks declined. In the background of this drop in yields was the message from the Bundesbank that it would not hasten (short-term) interest rate convergence between Euro-zone economies.
- The decline of the risk premium on forint investments was partly due to the Hungarian economy's improving performance and partly to favourable changes in the general perception of emerging market investments. The first few months of 1998 were characterised by a decline of uncertainty about emerging markets and by increased attention to emerging economies with relatively good fundamentals, which resulted in declining risk premiums.

During the first four months of 1998, the forint traded almost continuously at the stronger edge of the intervention band, the central bank purchasing $3.3 billion (Ft 771 billion) in the domestic foreign exchange market up to the end of April. In this period, the bulk of the capital inflow was due to portfolio investments, mostly purchases of government securities by foreign investors. The demand for forints was increased by net future selling of foreign exchange, which was shown in the divergence of commercial banks' on and off balance sheet positions. Foreign direct investment exceeding the current account deficit also contributed to capital inflow and intervention. Of the intervention of $3.3 billion, $1 billion cannot be explained by the interest rate premium on forint investments, by the current account deficit and by foreign direct investment, hence this amount can most likely be attributed to exchange rate speculation.

Intervention ceased at the end of April, since yields on forint investments came in line with the interest rate premium expected by foreign investors. Exchange rate speculation ended when the NBH confirmed that it would not change the width of the crawling band and announced a reduction of the monthly rate of devaluation by 0.1%. Along with the decline in inflation, the NBH reduced the leading interest rates in several steps from March, which resulted in a significant drop of 200–250 basis points in forint investment yields up to June. The prospects of extra profit for investors expecting a change in the exchange rate system were reduced by the introduction of tenders on the one-year NBH bills.

The second period beginning in May with the general elections was characterised by rising expected premium on

Interest rate premium on 3-month benchmark government securities, 1997–98



Note: Interest premium: the excess yield on the 3 month discount T-bill above the rate of pre-announced devaluation and foreign interest rates (devaluation rate modified at the date of official announcement of a change in the crawl).

Components of the demand for forints*

Ft billions

	1997	1998 Q1	1998 Q2	1998 VII–VIII	1998 I–VIII
A) Intervention	877.6	540.4	204.1	–17.4	744.5
a) Foreign exchange purchases of the NBH in the interbank foreign exchange market	642.0	511.2	196.4	–17.4	707.6
b) Purchases of the NBH from the budget	235.6	29.2	7.7	0.0	36.9
Sources of intervention (I...VIII)	877.6	540.4	204.1	–17.4	744.5
I. Current account balance corrected with the net foreign interest payments of the NBH (1 + 2)	–40.8	–24.8	–90.5	–1.5	–148.7
1 Current account balance	–177.9	–79.4	–112.8	–11.7	–228.5
2 Net foreign interest payments of the NBH	137.0	54.6	22.3	10.2	79.8
II. Foreign direct investment	308.8	68.4	114.5	26.0	213.8
III. Intervention due to commercial banks	–5.9	–3.5	–9.6	–22.8	–28.6
IV. Derivatives	160.6	200.7	87.5	–61.0	160
V. Conversion of domestic foreign exchange deposits	10.0	12.9	11.4	7.2	16.3
VI. Net portfolio investments (1 + 2)	334.9	280.8	95.7	–6.9	491.3
1 Government securities	22.7	129.8	121.9	–77.2	308.3
2 Stocks	312.2	151.0	–26.1	70.3	182.9
VII. Borrowing by Hungarian corporations denominated in foreign exchange (1 + 2) = (a + b)	87.8	–2.9	–18.0	33.4	12.6
1 Domestic	37.1	12.7	41.5	24.5	62.7
2 Foreign	50.7	–15.6	–59.5	8.9	–50.1
a) Maturity up to one year	–12.5	–11.6	2.5	2.1	5.4
b) Maturity over one year	100.3	8.7	–20.5	31.3	7.2
VIII. Capital transfers	22.1	8.9	13.0	8.2	27.9
B) Interest rate sensitive (III+IV+V+VI/1+VII)	275.2	337.0	193.2	–120.4	486.6
C) Short-term interest rate sensitive (B–V–VII/b)	165.0	315.4	202.3	–158.8	445.1

* The methodology of this table can be follow in the NBH working paper 97/3.

The monetary base*

Ft billions

	1997 Q4	1998 Q1	1998 Q2	1998 Q3	Change in 1998
I. Monetary base (II + V)	**992.0**	**995.3**	**1,052.9**	**1,115.5**	**123.5**
Currency in circulation	621.3	601.0	643.3	706.1	84.8
Reserves	370.7	394.3	409.6	409.4	38.7
II. Net forint assets (b + c + d – a)	**400.5**	**–83.9**	**–258.5**	**244.0**	**–156.5**
a) Sterilisation instruments	540.1	1,083.1	1,070.1	572	31.9
b) Credit to financial institutions	180.6	167.0	154.7	186.5	5.9
c) Net claims on the government	639.0	660.7	525.8	576.8	–62.2
Out of which current account of the government (–)	119.5	63.8	200.4	122.5	3.0
government securities (+)	464.8	445.3	441.3	440.8	–24.0
other (+)	293.7	279.2	284.9	258.5	–35.2
d) other	121.0	171.5	131.1	52.7	–68.3
III. Net foreign exchange assets	**591.5**	**1,079.2**	**1,311.4**	**871.5**	**280.0**
Net foreign	–662.0	–357.5	–238.9	–540.3	121.7
Reserves	2,166.5	2,472.2	2,315.5	2,147.2	–19.3
Foreign debt	2,828.5	2,829.7	2,554.4	2,687.5	–141.0
Net domestic	1,253.5	1,436.7	1,550.3	1,411.8	158.3
Credit	1,915.6	1,951.8	2,027.4	2,137.9	222.3
Deposit	662.1	515.1	477.1	726.1	64.0

* End of period.

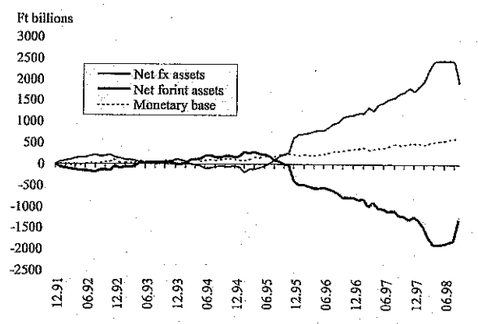
forint investments and a steady weakening of the forint within the intervention band. *In this period, the rise of the expected premium can mostly be attributed to the general elections,* the departure of the exchange rate from the stronger edge of the band and the nose-dive of stock prices in May indicated higher uncertainty about Hungary compared to other economies in the same investment category. *Forint yields, however, kept pace with the rise in the expected risk premium,* therefore there was no outflow of interest rate sensitive capital in May and June despite the lack of foreign exchange intervention.

From the end of July, however, the reasons for the weakening of the forint within the intervention band have to be found somewhere else. *Contagion resulting from the Russian currency crisis and the liquidity squeeze in international capital markets induced an outflow of capital from Hungary,* which necessitated intervention to defend the exchange rate several times. However, *neither the outflow of interest rate and exchange rate sensitive capital nor the fall of share prices were justified by the fundamentals of Hungary's economy.* Coupled with balanced economic growth, the decline in inflation was notable, the budget and current account deficits did not justify the rise in the risk premium of forint investments, this rise can only be explained by the dominance of foreign investors and the behaviour of large institutional investors.

Due to the sterilisation policy of the preceding period, high foreign exchange reserves of the central bank made it possible that the net capital outflow did not endanger the credibility of the exchange rate system. Since in this beginning phase of the crisis the capital outflow was prompted mostly by forced liquidation of foreign investors, an extremely high interest rate premium would have been necessary to attract foreign capital, which would have affected the domestic economy unfavourably. Therefore, the NBH decided to allow the foreign exchange reserves to decline temporarily. In order to stabilise the demand for the Hungarian currency, the NBH increased the foreign exchange yields of forint investments by reducing the monthly rate of devaluation, moreover, the leading interest rates were raised by 100 basis points on 22 September. The modification of the exchange rate path was in line with the decline of inflation, and the interest rate rise reduced potential inflationary pressures due to exchange rate depreciation within the intervention band. Positive conclusions can be drawn from the August figures for interest and exchange rate sensitive capital flows as far as the credibility of the crawling band is concerned. Foreign investors reduced their government securities holdings by Ft 137.9 billion in August. The total interest and exchange rate sensitive capital outflow, however, was significantly lower. After the July setback, the former process whereby commercial banks' increased long forint positions in their balance sheet and the sales of forint futures revived. This means that even in August there were agents who were willing to purchase several tens of billion forints in derivative markets at basically the same implicit interest rates as before. It is likely that, based on the August figures, there are markets agents who believe in the strengthening of the forint from the weaker edge of the intervention band, and their behaviour limits the further weakening of the Hungarian currency.

Due to the sterilisation policy of the NBH, neither the substantial intervention in the first four months of the year nor the decline in foreign exchange reserves had any influence on the growth of the monetary base. In the past three years, the central bank was successful in preventing capital inflows resulting in a rapid growth of monetary aggregates. Most of the capital inflow ended up in the sterilisation instruments of the central bank and did not take part in the financing of the economy. The growth in the stock of sterilisation instruments halted in May 1998, and this stock declined substantially in August-September at the time of capital outflow. Consequently, foreign exchange sales by the central bank did not lead to a liquidity squeeze in the economy, the commercial banks replaced the declining liquidity by reducing their assets with the NBH, and only the mismatch of expiration dates resulted in temporary liquidity shortages which was reflected in the increased volatility of overnight interbank rates.

The monetary base and its components*



* Cumulative figures, December 1991 = 0.

2 Interest rate transmission and inflationary expectations

2.1 Money market and commercial bank interest rates

Consumption and investment decisions of market agents are affected by domestic interest rates, therefore the central bank has an influence on aggregate demand through interest rates. The central bank has a direct influence only on money market rates, but even in this market it does not set the interest rate on every maturity. At the long end of the yield curve, developments that cannot be directly influenced by the NBH such as general confidence in economic policy, expectations about the exchange rate of the forint and developments in international capital markets affect interest rates. Interest rates that are most relevant for the real economy are the deposit and lending rates offered by commercial banks. Due to uncertainty about the future path of inflation, the bulk of financial savings and credits are in short-term or floating-rate instruments in Hungary. Hence, they are influenced by short-term money market rates that serve as marginal investment and funding costs for commercial banks. Moreover, credit risk and the competition between commercial banks have an impact on interest rates which affects decisions of market agents in the real economy.

Until the end of March 1998, the NBH set the interest rate on both the one-month and one-year maturity thereby determining the slope of the yield curve up to one year. Yields in the secondary market and interbank rates followed the rates set by the NBH on the one-month and one-year maturities, and other short-term interest rates declined slowly reflecting expectations about the decrease of one-month deposit rates of the NBH.

After the NBH had suspended setting the one-year rate, the slope of the yield curve up to the one-year maturity became more negative since market players expected the NBH to decrease its leading interest rates faster. As commercial banks modified their former (excessive) expectations about the path of interest rates, *a period of interest rate correction began in June.* In this period the central bank reduced the one-month deposit rate in several steps, long-term yields, however, did not follow the changes in

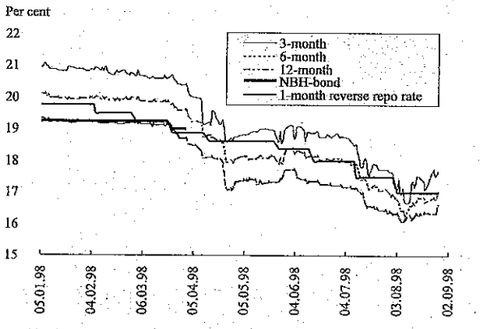
Domestic interest rates in 1998*

Per cent

	1997	Q1	Q2	Q3
3-month T-bill	19.36	18.65	17.33	19.06
12-month T-bill	19.20	18.70	17.32	18.96
Short-term corporate lending rate	20.800	20.30	18.80	18.10
Long-term corporate lending rate	21.70	21.30	19.40	20.30
Short-term household deposit rate	16.20	15.80	15.00	14.50
Long-term household deposit rate	16.60	15.70	14.70	14.30

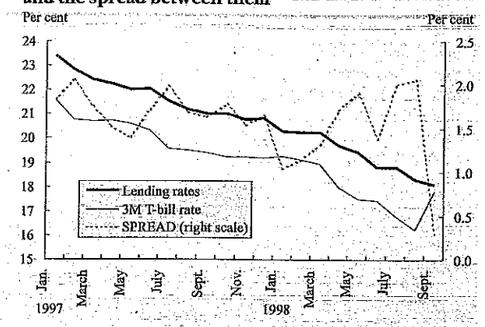
* End of period.

Short-term yields: Estimated zero-coupon yields on 3, 6 and 12-month maturities*

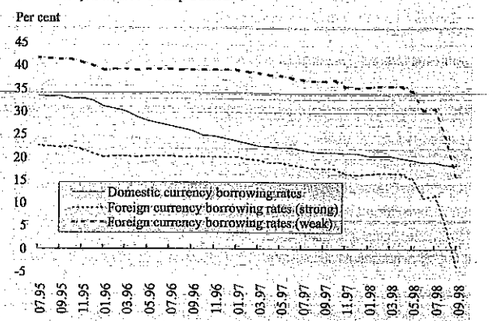


* Yields of all maturities are annualised using compound interest.

Short-term lending rates, 3-month T-bill yields and the spread between them

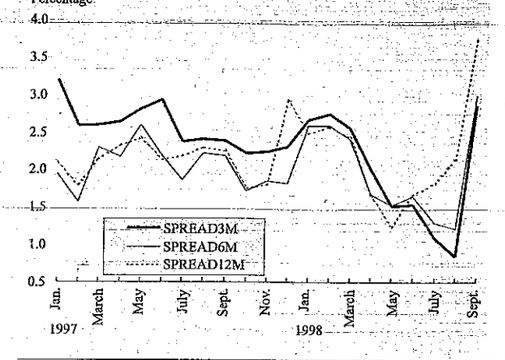


Forint and foreign exchange denominated lending rates for the business sector
(currency basket composition)*



* Interest rates on foreign exchange denominated loans are calculated using the prevailing currency basket composition (LIBOR+100 basis points). The band for foreign exchange denominated loans shows minimum and maximum interest rates businesses would have to pay if the exchange rate moved to the strong as well as the weak edge of the 4.5%-wide band by the expiration of the loan.

Spreads between yields on government securities and household deposit rates
Percentage



the leading central bank rate. Nevertheless, *the interest rate cut of 50 basis points on July 10th and again on August 3rd came as a surprise, and the fall of short-term interest rates indicated the revival of market agents' expectations about further interest rate cuts. In the past two years, short-term commercial bank lending rates have followed the changes in market interest rates with quite a short, 0-2-month lag.* The decline of the spread between lending rates and 3-month market rates has been basically continuous along with the fall of inflation. In the first half of 1998, however, the reduction of lending rates for businesses was somewhat less than that of the corresponding market rates; there was a clear break in the spread. *The rise in the spread between lending and market rates* can mostly be attributed to the increasing default risk. The default risk is usually counter-cyclical, therefore its current rise is not due to macroeconomic factors but to increased lending to small and medium-sized enterprises by commercial banks. As the market for the best customers became satiated, commercial banks began to expand their lending activities to other customers, mostly small and medium-sized enterprises that were formerly deemed to be too risky.

Demand for commercial bank lending, thus the price for forint denominated loans, is heavily influenced by the price of financing alternatives. The next graph compares actual forint lending rates with interest rates on 3-month foreign exchange denominated loans that are calculated taking into account the composition of the currency basket and potential movements between the stronger and weaker edge of the intervention band. The most favourable case for borrowers occurs when the forint is at the stronger edge of the intervention band at the time of repayment, in this case they pay minimum interest. Borrowers pay maximum interest when the forint is at the weaker edge of the band at repayment. The graph shows that from the beginning of 1995 the interest premium on forint loans was significant compared to the most favourable interest rate on foreign exchange denominated loans. Since the exchange rate of the forint has been mostly at the stronger edge of the band, the high interest premium encouraged Hungarian corporations to borrow in foreign exchange. By 1997, this premium decreased substantially, and the probability of forint loans being ex post more favourable became higher. *In 1997 and the first half of 1998, the interest rate spread between forint and foreign exchange denominated loans did not induce businesses to take out foreign exchange loans.* As a result, the last two years were characterised by the repayment of foreign debt and by the rise in net forint debt in the corporate sector. The growth of net forint denominated financing took the form of a substantial decline in forint denominated claims as opposed to a significant credit expansion in the first half of 1998. Exchange rate developments in the fall of 1998 indicate that the Hungarian corporate sector was right in its assessment about the expected yield and risk of foreign exchange denominated indebtedness.

In the first half of 1998, the reduction of household deposit rates was less than that of market rates. Between March and May deposit rates offered by commercial banks did not follow the significant decline in market rates. Part of the reason for this was the interest rate smoothing behaviour of commercial banks. Increasing competition for household savings is likely to be another reason for *the decrease of interest rate spreads.*

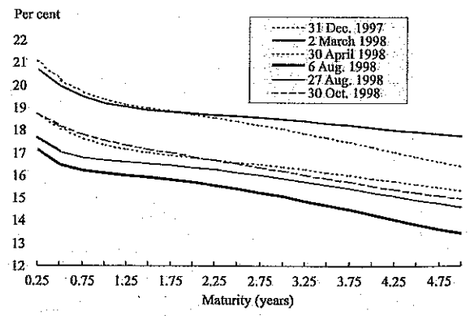
2.2 The yield curve and inflation expectations

From January to the end of August the zero-coupon yield curve had shifted downwards by approximately 400 basis points, without any significant change in the slope. The size of the downward shift was roughly the same as the decrease in inflation since the beginning of the year. The shift of the yield curve occurred in two major steps. From the beginning of March to mid-April yields on each horizon decreased by 180-200 basis points. This was followed by a calm period lasting from the end of April to the beginning of June. Between the beginning of July and that of August another 100–180 basis point downward shift took place, during which long yields dropped somewhat less than short yields. Therefore the yield curve became slightly less steep. Beginning with mid-August, yields started to increase on all horizons, which was related to the increased uncertainty in international money and capital markets arising from the Russian crisis.

From the evolution of long bond yields one can get a picture of how the market's expectation of future monetary policy[1] has evolved. Assuming constant long-term real interest rates and risk premia, this can be used to plot how long-term inflation expectations changed during the examined period. However, the interpretation of changes of the Hungarian yield curve in 1998 has become more complex since in this period the weight of foreign investors in the T-bond market has increased significantly.[2] Foreigners tend to price forint-denominated bonds on the basis of the following variables: their foreign currency-denominated required real rate, expected foreign inflation, expected nominal depreciation of the forint and the risk premium arising from the uncertainty of the future exchange rate. Domestic investors on the other hand consider their forint-denominated real rate and expected domestic inflation. If the forint is expected to appreciate in real terms, foreign currency-denominated real returns on forint investments are higher than forint-denominated real returns. Unless the devaluation risk premium offsets this expected excess return, foreigners are willing to pay a higher price for forint-denominated T-bonds than domestic investors.[3]

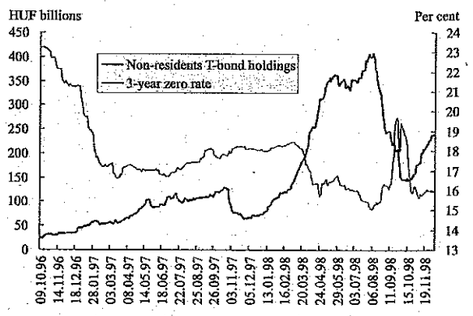
In such a situation it is hard to decide whether a change in long bond yields happened because of a change in expected domestic inflation, in expected depreciation or in the devaluation risk premium. To decide which of these possible factors dominated the change, one may want to look at changes in the stock of domestic T-bonds held by foreigners. Available data on this stock is somewhat limited though, since we only have a daily time series on the part of this stock that is directly owned by foreigners and registered at the central clearing house (KELER). The true stock is

Zero coupon yield curves*



* Yields of all maturities are annualised using compound interest.

Registered T-bond holdings of non-residents and the 3-year zero-coupon rate

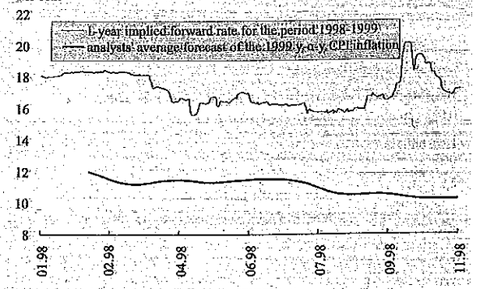


[1] The implied forward rates derived from the zero-coupon yield curve do not necessarily coincide with the market's expected future interest rates (only if the so-called Expectations Hypothesis holds). However, less restrictive assumptions are enough to establish a relationship between changes in implied forward rates and changes in expected future interest rates.

[2] By the end of May registered T-bond holdings of foreigners reached Ft 350 bn, roughly 35% of the total stock of marketable T-bonds.

[3] This may not be true if required real rates abroad are higher than in Hungary. Required real rates are difficult to measure unless a liquid market of real (i.e. index-linked) bonds exist. However, one can plausibly assume that less developed countries on average have higher real interest rates because of lower capital/labour ratios. Thus the implicit assumption above of equal required real rates home and abroad is in fact a conservative assumption.

1-year implied forward rate for the period 1998–99 and the average market forecast of the end-1999 y-o-y CPI inflation



probably larger since the former measure does not include indirect ownership via resident branches of foreign banks and investment banks.

We have used the changes in the registered stock in the interpretation of changes in long bond yields according to a simple rule: if changes in long yields coincided with significant opposite movements in the T-bond stock owned by foreigners, then we concluded that factors affecting foreign expected returns (i.e. the expected depreciation of the forint, the devaluation risk premium and expected foreign inflation) may have changed. On the other hand, if the stock did not change significantly or moved to the same direction as long bond yields, our conclusion was that the movement in long bond yield stemmed mainly from changes in the variables domestic investors are concerned about, i.e. primarily by inflation expectations (assuming constant real rates).

According to this simple rule, the first downward shift of the yield curve in March–April was due to an increased demand for Treasury bonds from foreign investors, which implies that it was an expected nominal appreciation of the forint which was the primary cause of the shift and not a decrease in expected long-term inflation. At this time of the year guesses appeared in the press about the possible widening (or a final abolition) of the crawling band in the near future and a subsequent appreciation of the forint. Although the expected appreciation of the forint did not occur, the 200 basis point drop in yields meant that (foreign) investors who bought their T-bonds in time made significant profits. They also seemed to expect a further decrease in yields, since the foreign-owned stock did not decrease after the yield drop ended.

In the second downward shift of the yield curve in July–August on the other hand, the decrease in inflation expectations of domestic investors played a significant role. In this period there was only a small increase in the T-bond stock owned by foreigners.

A survey of inflation and interest rate forecasts by macro analysts[4] also suggests that the March-April downward shift of the yield curve was primarily a result of a change in exchange rate expectations and less that of a change in inflation expectations, while the July–August the situation was the reverse. The inflation forecast survey result in August[5] also shows that the increase in yields starting in mid-August was mainly a result of an increase in the devaluation risk premium required by foreign investors and/or an increase in expected depreciation of the forint.

One factor contributing to the decrease in inflation expectations in August could have been the lower-than-expected monthly inflation rates in June and July. Monetary policy steps may also have influenced the movements in market interest rates. In the earlier part of the year, the NBH interest rate policy followed the movements of market rates, changes in the reverse repo rate did not seem to have significant effects on market rates.

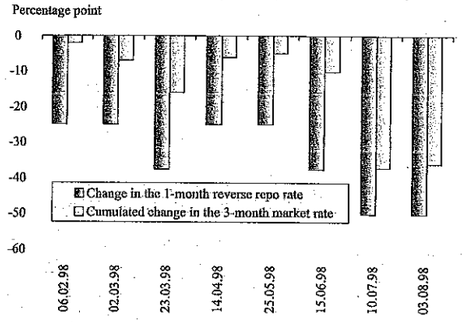
[4] The "average market forecast" is the trimmed mean of forecasts given by macro analysts of 15–20 banks and investment banks, published monthly by Reuters ("Reuters poll of forecasters").

[5] Reuters published the inflation forecasts on August 19, while the increase in yields and the decrease in the stock of T-bonds owned by foreigner started on August 10.

However, the unusual size (50 basis points as opposed to usually 25 basis points earlier) of the 10 July and 3 August cuts of the reverse repo rate surprised the market and did have a significant effect on market rates. At the same time the forint weakened, which signalled that the NBH no longer felt it necessary to tighten monetary conditions up to the limit given by the crawling band. The market took this message as a sign of increased optimism from the NBH regarding the path of future inflation on a 2–3 year horizon. The message was judged credible by the market and inflation expectations adjusted accordingly, causing a downward shift in the yield curve.

Beginning with mid-August yields on every horizon started to increase. According to our simple rule outlined above, this was due to the increase in the devaluation risk premium and/or an increase in expected depreciation of the forint, since the increase in yields coincided with a quick shrinking of the stock of T-bonds owned by foreigners (the period August 11–31 the stock decreased from approx. Ft 400 billion to Ft 270 billion). The unfolding of the Russian crisis and the global loss of confidence in emerging markets, of course, were key contributors to these yield movements.

Change in the 1-month reverse repo rate and the cumulated change of the 3-month market rate on the day of the repo rate change and the next two days



3 Developments in monetary aggregates

In the first nine months of 1998, both the narrow and the wider monetary aggregates increased in real terms. The growth rate of M1 – comprising cash and demand deposits – exceeded the inflation rate by 4.6 per cent at the end of October.

Developments in the M1 aggregate indicate the economy's transaction demand, and its fast growth is likely to be attributed to a rise in the growth rate of domestic demand and consumption and to the higher economic growth rate than in the first half of the year.

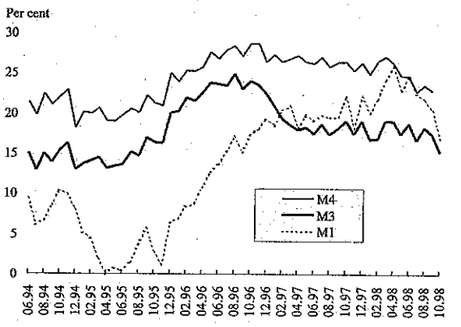
Household demand deposits have been growing at the highest rate; since the spring of 1996 their growth rate has been over 10 per cent in real terms.

As far as the M3 and M4 monetary aggregates are concerned, their growth rate has been declining slowly. These wider monetary aggregates indicate developments in savings, and the reduction in their growth rate is in accordance with the decline of inflation and interest rates. In other words, *the lower growth rates are not attributed to a change in the private sector's savings behaviour, but to the fact that the roll-over of the previous stock (plus yields) leads to a lower growth rate due to the decrease of interest rates.*

Non-bank investments have continued to be attractive as savings alternatives to bank deposits, therefore the discrepancy between the growth rates of M4 and M3 persists. Meanwhile, the ownership structure of non-bank securities in the M4 monetary aggregate has changed substantially. Investment funds have increased their government securities holdings by Ft 50 billion, while the claim on the government by insurance companies did not change in nominal terms.

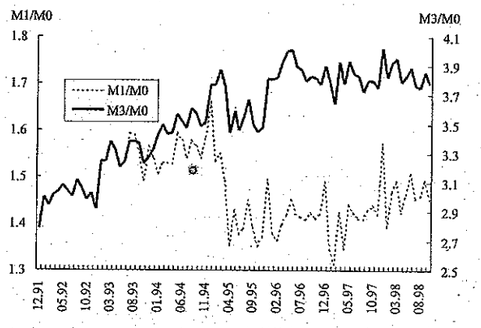
The annual growth rate of government securities held by households has continued to exceed 40%. The growth of govern-

Growth rate of monetary aggregates*

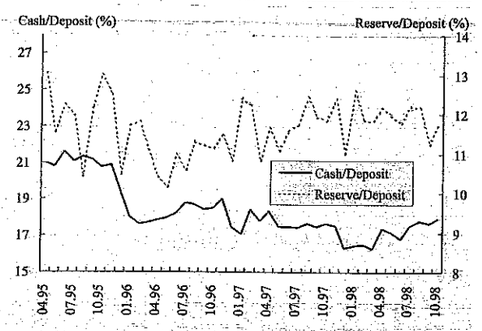


* Compared to the same month of the previous year.

Money multipliers



Factors influencing the money multiplier



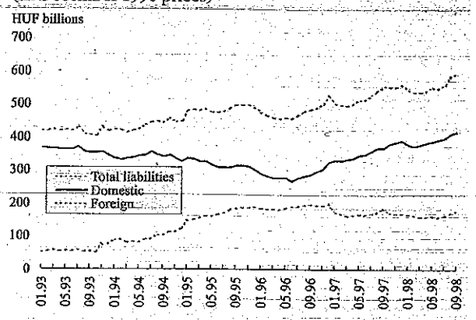
Net change in the position of different sectors of the economy with the banking system

HUF billion

	1997					1998			
	Q1	Q2	Q3	Q4	Q1–Q4	Q1	Q2	Q3	Q1–Q3
Public sector, net*	13.4	56.1	–29.0	–87.3	–46.8	26.0	44.3	–278.2	–207.9
Corporate sector, net	–182.8	–44.0	–45.6	–10.9	–283.4	–142.6	–64.1	–115.2	–321.9
Credit	–90.7	–112.4	–110.7	–161.7	–475.5	–53.4	–127.6	–114.2	–295.2
Deposits+cash+securities**	–92.1	68.4	65.1	150.7	192.1	–89.2	63.5	–1.0	–26.7
Households, net***	64.8	81.1	122.3	137.1	405.3	58.7	78.6	170.8	308.1
Credit	11.5	–4.1	–8.7	–8.3	–9.6	9.5	–22.8	–16.4	–29.7
Deposits+cash+securities	53.3	85.2	131.0	145.4	414.9	49.2	101.4	187.2	337.8
Foreign, net*	149.1	–98.1	–124.1	–147.2	–220.3	–120.3	–74.0	141.3	–53.0
Other items, net	–44.5	5.0	76.4	108.4	145.2	178.2	15.2	81.2	274.7

* Including the State Privatisation Agency.
** Reduced by the technical cash holdings of the Hungarian Postal Service.
*** With estimated accrued interest.
* At current exchange rate.
Note: Foreign exchange denominated items are converted to forints, therefore they show the combined effect of transactions and revaluations.

Corporate loans in real terms
(At December 1990 prices)



ment securities in the hands of the corporate sector has been dynamic, although this year the growth rate reduced significantly compared to last year's 60%.

In the first half of the year, the money multipliers M1/M0 and M3/M0 were fairly stable. The M3/M0 multiplier reflecting the banking system's money creation has changed only to a small extent (apart from seasonal fluctuations) since the second half of 1996.

The innovation in the banking system is indicated by the significant growth in the share of liquid deposits at the expense of cash. Some liquid bank deposits, however, decreased in real terms. This can be partly attributed to institutional and regulatory features of the Hungarian financial system. Despite commercial bank efforts to maintain their profitability by higher fee revenues, the high required reserve ratio (and high operative costs arising from branch expansion) limits the narrowing of the spread between corporate lending and deposit rates if prudent credit risk assessment is to be maintained. The money creation ability of the banking system is also limited by tax regulations which encourage disintermediation by tax deferrals on non-bank investments.

All in all, the effects of financial innovation increasing the multiplier and of disintermediation decreasing it offset each other, therefore the cash/deposit ratio has not increased recently. The reserves/deposit ratio, the other factor affecting the money multiplier, stabilised at 12%, due to unchanged reserve requirement regulations.

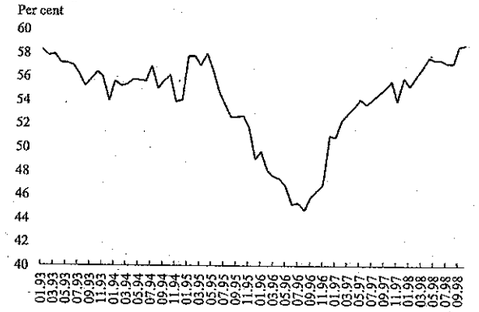
The most notable developments in the assets of the banking system are the credit expansion to the private sector and the steady decline of claims on the government up to August 1998. The banking system's credit expansion to the private sector is due to the increased demand for loans on the part of enterprises. As far as household loans are concerned, the decline in the stock of real estate loans and the growth in consumer loans offset each other.

The high growth rate of domestic corporate lending can be attributed to two factors. On the one hand, the net credit demand of businesses has been rising due to cyclical factors. At the same time, there has been a restructuring process within the stock of credit, *Hungarian businesses have been repaying their direct borrowing from abroad and replacing it by borrowing from domestic banks.* In July the annual growth rate of liabilities was 7% in real terms. In the same period, liabilities to the banking system did not change in real terms. The net position of enterprises, however, did not deteriorate by the amount of the rise in liabilities, as their government securities holdings have increased by Ft 80 billion since the beginning of the year. In the first half of 1998, domestic credit expansion was 12% in real terms coupled with a decline in foreign liabilities. The share of foreign exchange denominated loans has increased again in domestic lending. If, however, both the domestic and foreign lending to the corporate sector are considered, the share of forint denominated loans has further increased.

Similar to other countries implementing financial liberalisation, the Hungarian financial system is characterised by a higher growth in domestic credit than the growth of the M3 monetary aggregate. The increasing demand for credit by enterprises has been fulfilled mostly by the reduction in claims on the government, the proportion of lending to residents (private sector + net government without the central bank) to domestic savings has not changed significantly recently.

Commercial banks increased their net foreign liabilities, but these funds were used to finance the growth in claims on the central bank. Foreign borrowing of commercial banks encouraged the growth of domestic corporate lending by improving the maturity structure of liabilities.

The ratio of commercial bank loans to deposits of the private sector



III. Components of aggregate demand

Compared to the same period in 1997, real GDP increased by 5.3% in the second quarter of 1998. Although there was a slight, transitory decline in the growth rate in the first three months, GDP growth speeded up in the second quarter.

Significant modifications took place in the structure of demand over the past half-year. A new important phenomenon is that **the rate of expansion in domestic absorption exceeded GDP growth during the first half of 1998.**

The stock of inventories in the economy increased significantly in the second quarter, which contributed 1.6% to the growth in domestic absorption.[1] If we assume that this growth in inventories was transitory only and the stocks were to be exported shortly, GDP growth and changes in domestic absorption would be closer to one another, yet domestic absorption would still show a slightly higher growth rate.

In the second quarter, an acceleration of growth can be observed in every domestic component of aggregate demand. The fastest growth was registered in **fixed capital formation**. Net of the items that can be regarded as transitory, the stock of inventories in the national economy also increased significantly in comparison to the same period of the preceding year. Detailed data are only available for the first quarter, which show that the increase in inventories was mainly due to the accumulation of finished products. Involuntary increase in the level of inventories may foreshadow a slowdown in growth in the long run.

There was also a change in the development of foreign trade. **Exports continue to be the most dynamically expanding component of aggregate demand, albeit the growth rate of exports (in a GDP structure) declined slightly in the second quarter when compared to the figures for 1997.** During the same period, the import growth rate declined at a lower rate owing to the expansion of domestic demand.

Annual growth rates of GDP and its components*

Per cent

	1997	First quarter, 1998	Second quarter, 1998	Second quarter, 1998**	First half, 1998
GDP	4.4	4.9	5.3	5.3	5.1
Total consumption	2.4	2.6	4.0	4.0	3.3
Household consumption	2.6	2.7	4.2	4.2	3.5
Public consumption	1.1	1.6	3.0	3.0	2.3
Gross capital formation	9.1	12.0	21.0	14.2	13.3
Fixed capital formation	9.7	7.6	13.3	13.3	11.2
Total domestic absorption	4.2	4.4	8.1	6.5	5.5
Exports	26.8	28.3	19.4	22.6	25.3
Imports	25.9	25.5	24.9	24.9	25.2

* The GDP calculations used in the report are NBH estimates, which may differ from the data officially published by the CSO. Quarterly GDP calculations have been prepared in Hungary for only a short period of time, hence they involved a great deal of uncertainty and the methodology applied is continuously changing and developing. Quarterly data from the CSO are available relatively late, hence the NBH uses its own estimates for the time being, which are consistent with the analyses of the NBH regarding the income positions of individual income holders.
** Assuming that the transitory increase in inventories will be exported later.

1 Household consumption

Changes in income and wealth and expectations concerning their future development fundamentally determine household consumption/savings decisions. While transitory fluctuations in income generally have no impact on the development of current consumption, changes that promise to be permanent may influence households' propensity to consume. Changes in the wealth of households may also have an impact on the development of consumption. Wealth is influenced not only by current savings, but the volatility of the exchange rate and the fluctuations of the stock market, and real estate prices may also give rise to significant changes. As a result, the wealth/income ratio is modified and the equilibrium can be re-established through changes in current savings.

[1] In calculating GDP for the second quarter without the events regarded as transitory we assumed that the annual growth in the stock of real inventory was 20%, as in the first quarter. The actual figures indicate a real growth of 70% for the year. We assumed that the difference was exported, hence the growth rate of aggregate GDP did not change.

The increase in real income, which began at the end of 1996, continued in 1998. Relative to the same period of the preceding year, real income increased by 3.7% in the first half of 1998. The growth rate speeded up from quarter to quarter. Relative to earlier years, the structure of real incomes has changed and even the real value of social benefits has risen (in particular social benefits in cash, mainly pensions).

That is to say, income growth affected wide strata of the public, in particular those with a higher propensity to consume (low income groups, pensioners).

For the time being, it seems that changes in the wealth of households and the expansion of the credit facilities offered by the financial sector have not yet influenced their propensity to save.

Both **current savings and the household financial savings rate have fluctuated around a stable level since early 1995.** Although the savings rate showed a decline over the last two quarters, it is still around the same level as in the past four years, so it doesn't yet indicate any change in the behaviour of households.

The amount of the net financial wealth of households has increased continuously over the past one-and-a-half years relative to trend income. Growth was caused by the more rapid expansion of gross financial assets.

The ratio of household credits relative to permanent income did not change; transitory increases in credits arose from taking out loans collateralized against securities related to major privatisation transactions, which were executed through the stock exchange.

Increase in real wealth can be attributed primarily to current savings. Although the share of stocks and institutional investment have continuously risen within the financial wealth of households, and stock prices had increased substantially up to May 1998, only a real yield of at most 2-3% could be realised on a representative household portfolio, even without the stock exchange crisis in August.[2]

On that basis, it can be stated that the increase in the wealth/income ratio can be regarded as a shift in the intention of the public towards an equilibrium position. Because of this, we do not expect an adjustment that would result in a decline in current savings.

The stock exchange crash in August reduced the financial wealth of households by about Ft 150 billion, representing nearly 3% of gross wealth. Although the preceding stock exchange boom did not influence the current savings of households

[2] This was calculated by deducting net savings from changes in household financial wealth, then we estimated changes in the unit net asset value of the household portfolio similarly to the evaluation of yields of investment funds.

Annual growth rates of household income and consumption

Per cent

	1997	First quarter, 1998	Second quarter, 1998	First half, 1998
Household income	2.1	3.3	4.1	3.7
Household consumption	2.6	2.7	4.2	3.5

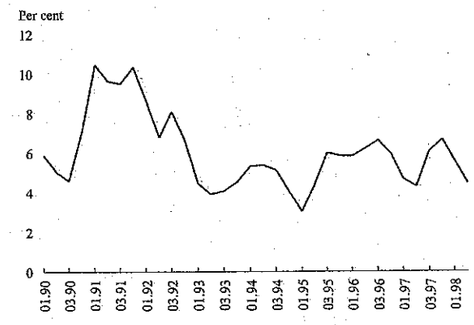
Changes in savings rates

Per cent

	1995	1996	1997	First quarter, 1998	Second quarter, 1998
Financial savings rate*	8.4	10.6	10.1	9.3	8.9
Gross savings rate**	13.9	16.6	16.4	16.5	16.0
Operational financial savings rate***	4.9	6.6	5.7	5.6	4.8

* (financial savings – revaluations)/total household income.
** (financial savings + household investments – capital transfer)/total household income.
*** (financial savings – revaluation – compensation for inflation in interest payments)/total household income – compensation for inflation in interest payments.

Operational household financial savings rate*



* Besides all revaluations, household savings and incomes are also adjusted by the share of interest payments that is being paid as a compensation for inflation.

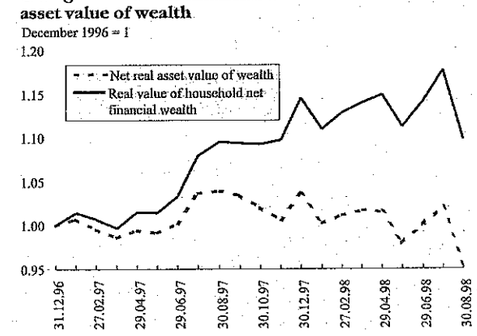
Financial assets* as a percentage of trend income**

Per cent

	Net wealth/trend income	Credits/trend income
1996 Q4	48.7	5.9
1997 Q1	48.2	5.3
1997 Q2	49.5	5.2
1997 Q3	51.4	5.3
1997 Q4	53.5	5.9
1998 Q1	52.9	5.5
1998 Q2	54.0	5.4

* This financial asset category contains the estimated revaluation effect of shares. Asset and credit values at the end of period.
** The trend of seasonally adjusted, annualised quarterly household income.

Changes in real net financial wealth and in real net asset value of wealth



Composition of financial wealth of households as a percentage of gross wealth

Per cent

	Jan. 1995	Dec. 1995	Dec. 1996	Dec. 1997	Sept. 1998
Cash	**19.0**	**17.3**	**15.1**	**12.9**	**12.9**
Bank deposits and certificates of deposits	47.3	44.0	46.3	43.3	42.4
Foreign exchange	16.7	20.0	16.3	13.6	13.6
Bank securities	0.9	0.9	0.9	0.9	0.6
Banking sector total	**64.9**	**64.8**	**63.6**	**57.8**	**56.6**
Government securities	5.5	6.8	6.6	10.6	12.2
Shares	5.2	4.9	5.3	7.9	6.2
Securities market total	**10.7**	**11.7**	**13.0**	**18.5**	**18.5**
Investment funds	1.8	1.8	2.7	5.4	5.5
Life insurance	2.8	3.2	4.2	4.0	4.0
Voluntary pension funds	0.6	0.7	0.8	1.4	2.5
Institutional investments total	**5.2**	**5.7**	**7.6**	**10.8**	**12.0**
Other (housing savings and corporate bonds)	0.2	0.5	0.7	0.6	0.6
Gross wealth	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Household credit	21.7	15.6	10.9	10.0	9.3

Investment by branches of the economy

	Distribution at current prices 1997, %	Volume index, %	
		1997	First half of 1998
Agriculture, hunting and forestry, fishing	3.7	116.3	98.8
Mining	0.3	99.1	97.2
Manufacturing	23.2	108.7	118.0
Electricity, gas, steam and water supply	6.4	97.5	132.4
Construction	1.7	87.6	113.5
Wholesale and retail trade; repair of motor vehicles, motorcycles, and personal and household goods	6.6	90.8	108.8
Hotels and restaurants	0.9	129.2	126.6
Transport, storage and communications	19.1	127.9	114.1
Financial intermediation	2.8	90.9	126.6
Real estate, renting and business activities	23.2	101.9	91.9
Public administration and defence; compulsory social security	3.3	118.0	144.9
Education	2.0	100.0	94.1
Health and social work	2.3	104.7	112.4
Other community, social and personal service activities	4.5	126.7	105.3
Total	**100.0**	**108.0**	**110.6**

Changes in general government deficit

HUF billion

	First half	Preliminary	First half	Estimate
	1997		1998	
1. Central budget balance	**–165.0**	**–338.4**	**–195.1**	**–427.0**
Of this:				
2. Primary balance (net of NBH)	149.3	344.9	123.4	197.0
3. Interest balance	–332.1	–660.5	–370.7	–686.0
4. Balance of NBH allocation and payment	17.8	–22.8	52.2	62.0
5. Balance of extrabudgetary funds	10.6	7.8	17.4	–0.5
6. Social security balance	–34.3	–51.0	–53.5	–22.1
7. Balance of local authorities	16.7	–25.3	13.7	–14.2
8. General government balance	**–172.0**	**–406.9**	**–217.5**	**–463.8**
9. Of this, primary balance (net of NBH)	133.5	260.4	98.6	173.8

through the wealth effect, presumably consumption and current savings would react asymmetrically to the decrease in wealth: the decline may have a consumption-reducing effect.

2 Investment

The volume of fixed capital formation increased at an accelerating rate in 1998, by 13.3% in the second quarter of the year compared to the same period in 1997.

A good return on capital, a high level of capacity utilisation and favourable prospects concerning the business cycle continued to have a stimulating effect on the willingness of firms to invest. In contrast, household investment was characterised by restraint in the first half of 1998. Presumably, this unwillingness to invest is only a transitory feature; the wait-and-see attitude can be attributed to the reintroduction in 1999 of a VAT refund in relation to housing construction.

Government investment also expanded in the first half of the year, primarily in relation to the development of infrastructure.

The available data points to a spreading of investment activity among the agents of the economy. The expansion of investment in the manufacturing sector has continued and the reconstruction of the electricity industry has begun as well. *In 1997, approximately 40% of investment projects were aimed at broadening the range of service activities in the private sector.*[3]

The enhanced popularity of the services sector can also be observed in the case of businesses founded with foreign direct investment. In 1997, 48% of the newly founded companies involving a foreign stake were active in private sector services. This figure went up to 70% in the first half of 1998. Presumably, significant new investment has considerably improved productivity in the field of services.

3 The fiscal stance

As in 1997, the fiscal impact has been increasing in 1998. This can be observed in the figures for the half-year, which have been evolving more or less in proportion to time lapsed.

The change in the primary balance, which tends to be the most important indicator of the fiscal stance, overestimates the fiscal impact due to the pension reform launched in 1998, as the deterioration in the budget arising from the reform is offset by private savings. In order to filter out this distortion, the change in the primary balance has to be adjusted with the effect of the pension reform.

The primary position of general government can be regarded as sustainable from the viewpoint of state debt. Under the current conditions, a structural primary surplus of 1.5% of GDP is required to stabilise the debt ratio; the part above this would reduce state debt. Hence, problems of sustainability can-

[3] Although housing construction is taken into account in the real estate sector, it does not imply any expansion in production capacities. Net of this, about 40% of investment was realised in the private services sector. This, however, still contains the investment in infrastructure financed by the budget, which is implemented by investors belonging to the given sector.

not be perceived in the short term and the state debt will decline further. The difficulty is that should the economy slow down significantly, a deterioration in the primary balance may appear simultaneously with a reversal of the favourable impact of economic growth on state debt as expressed in terms of GDP for reasons of changes in the trade cycle, hence an above-average primary surplus is needed in periods characterised by rapid growth.[4]

The positions of the individual subsystems have regularly evolved differently from the estimates within total general government deficit. The higher-than-expected economic growth in 1998 (as in 1997) enables the better-than-expected position of the central budget to offset the additional deficits of social security (attributable to structural reasons) and local authorities (facilitated by ample liquidity).

Based on the figures for the half-year (which are available only in part), **the real value of primary expenditure and revenue is no longer declining** in 1998 in contrast to the preceding years (as well as in contrast to the original ideas in the case of revenue); moreover, that of expenditure will begin to increase slightly. A significant structural rearrangement is taking place within expenditure. According to plans, primary expenditure would have increased by about 4% over the year in real terms, which envisaged first and foremost an increase in volume investment and the wage bill. In the case of investment, however, the 1997 base turned out to be much higher than expected. Hence the 1998 increment (whose performance on the basis of the figures for the half-year will also be above the estimate) will constitute a real value growth of only about 2%. *At the same time, the nominal increase in the level of earnings may well exceed the estimate.* The 18–19% per capita increases in remuneration and, provided that it is implemented, the 1.5% reduction in the labour force will result in a 16.5% expansion (2% in real terms) in the wage bill. The planned redundancies are focused on the local authorities, while a 1% increase in staff was envisaged in central public administration, which represents a lower weight.

Household transfers have been growing significantly (by about 7–8%) in real terms. (This will continue to take place primarily because of the regime of determining the amount of pensions as, under declining inflation, pensions follow the higher nominal wage increase of the preceding year.) Overall, in 1998 a rearrangement opposite to that of the preceding year can be expected within general government expenditure, that is, this time the share of household transfers will grow to the debit of investment and the purchase of goods and services.

Changes in the central budget

The deficit in the central budget amounted to Ft 195.1 billion in the first half of the year, while its primary surplus reached Ft 123.4 billion. The figures for the first half of the year indicate that a substantial surplus can be expected in tax revenue, while a minor

[4] The Stability and Growth Pact of the European Council emphasizes the same point: EU Member States should adhere to the objective of sound budgetary positions close to balance or in surplus to be able to deal with normal cyclical fluctuations while keeping the government deficit within the reference value of 3% of GDP.

Changes in general government deficit
(As a percentage of GDP)

Per cent

	First half	Preliminary	First half	Estimate
	1997		1998	
1. Central budget balance	**–2.0**	**–4.0**	**–1.9**	**–4.2**
2. Primary balance (net of NBH)	1.8	4.1	1.2	1.9
3. Interest balance	–4.0	–7.9	–3.7	–6.8
4. Balance of NBH allocation and payment	0.2	–0.3	0.5	0.6
5. Balance of extra-budgetary funds	0.1	0.1	0.2	0.0
6. Social security balance	–0.4	–0.6	–0.5	–0.2
7. Balance of local authorities	0.2	–0.3	0.1	–0.1
8. General government balance	**–2.0**	**–4.8**	**–2.1**	**–4.6**
9. Of this, primary balance (net of NBH)	1.6	3.1	1.0	1.7

The demand impact of general government*
(As a percentage of GDP)

Per cent

	1995	1996	1997	1998	1998**	1999**
			Budgeted	Estimate	Expected	Forecast
Change in the primary balance adjusted for the effect of the pension reform	–4.3	–2.7	1.2	1.2	0.9	–0.5

* The + sign means increasing, the - sign decreasing demand effect.
** NBH estimate.

surplus expenditure is probable in fact only in the case of the consumer price subsidy. A **significant excess can be seen with the expenditure of the budgetary institutions;** this, however, does not influence the budget deficit as **its source is the surplus in the revenue of these institutions** (partially from transfers arising from other subsystems of general government and partly from revenues realised in the course of operation). Based on the seasonality of the preceding year, a surplus of Ft 55–60 billion relative to the estimate arose in the case of their own revenues over the first half of the year, but this increase declined somewhat in the months thereafter.

The data for the first half of the year indicate a surplus revenue from taxes in excess of Ft 100 billion already over the first half of the year in comparison to the estimate (based on the usual seasonality), which is in line with-higher-than expected economic growth. In the case of VAT, this means nearly Ft 40 billion, in the case of consumption tax Ft 16–18 billion, for PIT Ft 20 billion, for corporate tax Ft 10 billion and for customs duties approximately Ft 15 billion.

The position of the local authorities at the end of the first half of the year

Only preliminary information is available on the financial management of local authorities in the first half of the year. Based on preliminary data it seems that their result for the first half of the year shows a small surplus net of privatisation revenue, similarly to the same period of 1997.

Under revenue, there was a highly dynamic growth in their own revenues appearing primarily in the non tax revenue of institutions belonging to the municipalities, as well as under local taxes and levies. The amount of allocations from the central budget increased at a rate higher than a year before. This enabled an expansion in excess of the estimate virtually under every expenditure item, particularly in the case of the purchase of goods and services, investment and wage-type expenditure.

It is expected that privatisation revenue, which represented a significant in previous years, will provide only lesser financing this year. Under this heading, local authorities realised only about half of that of the preceding half-year in the first half of 1998. Nevertheless, the deposit and securities portfolios of the local authorities remained high and they also supplemented their funds with investment credits.

Social security funds

The budget approved by Parliament contained a deficit of Ft 22.1 billion for the Health Insurance Fund. The deficit of the two funds at the end of the first half of the year amounted to Ft 53.5 billion; of this, Ft 26.1 billion was incurred by the Health Insurance Fund. (A year earlier, the deficit in the funds was Ft 33.8 billion.) If the central budget recompensed Social Security for the loss of contribution payments owing to those transferring to the private pension funds not in a lump sum at the end of the year but at the moment when it occurred, the central budget would have had to transfer about Ft 8.6 billion to the Pension Insurance Fund by the end of June. Taking this into account, the comparable deficit of the funds would be Ft 44.9 billion.

The following factors were responsible for the evolution of a **deficit higher than the estimate:**

- Revenue from contribution payments, which determine total revenue, fell short of the amount that would have been proportionate to time lapsed. This also affects employer's contributions with the contradiction that earnings increased at a rate above the estimate. Health care and sickness benefit contributions also turned out to be lower. At the end of June the amount of contribution payments collected from the amount outstanding was no more than 29% of that planned for the year.
- Similarly to the preceding years, in the case of expenditure, the subsidies for medicines and medical aids, as well as disability pension payments for those below the retirement age increased faster than what would have been proportionate to time lapsed.

Changes in central budget debt

The gross debt of the central budget expressed in terms of GDP decreased considerably, from 71.5% at the end of 1996 to 63.5% by the end of 1997, mainly as a result of putting the primary surplus of the budget and the proceeds of privatisation to debt repayment. At current prices, debt amounted to Ft 5,757.9 billion at the end of June 1998, which, at comparative end-1997 prices, corresponded to a decline of 1.4%.

The net financing requirement of the budgetary sector was covered by an increase in domestic forint debt, while foreign exchange debt decreased.

Throughout the period, net government paper market issue grew evenly, totalling Ft 339.0 billion over the first six months of 1998. This was higher than the net financing requirement of the budgetary sector at Ft 250.2 billion in the first half of the year.

The surplus was put towards repayment of the debt outstanding against the NBH and the repayment of a loan taken over from the Hungarian State Railways (MÁV) outstanding against domestic credit institutions and valued at Ft 16.3 billion. For a transitory period, the balance of the treasury account (KESZ) also increased.

The direct foreign exchange debt of the central budget decreased by Ft 36.8 billion by June 1998. This decrease was a result of net loan repayment effected in the course of the half-year and the combined effect of losses on devaluation and changes in cross rates.

In addition to the repayment of a part of the foreign exchange credits kept with the NBH and the repayment of the debt related to the Bős-Nagymaros investment project, the prepayment of some World Bank loans also contributed to the decrease in foreign exchange debt.

The early repayment of World Bank loans affected the loans related to those various World Bank programmes (energy rationalisation, traffic, power plant reconstruction, telecommunications and human resource development) which have already been completed.

Prepayment was justified by the fact that the renewal of the stock of the credits concerned under current market conditions enabled the budget to decrease its future interest expenditure.

Gross debt of the central budget*
(End of period)

HUF billion

	Fact				Preliminary
	1994	1995	1996	1997	1st half 1998
NBH credit financing the deficit	434.9	422.7	377.6	275.0	253.7
Government bonds financing the deficit	465.2	574.1	726.0	1,024.0	1,230.2
Treasury bills	315.1	417.0	684.4	902.1	1,030.7
1. Debt financing the deficit	**1,215.2**	**1,413.8**	**1,788.1**	**2,201.1**	**2,514.6**
As a percentage of GDP	**27.8**	**25.2**	**25.9**	**26.0**	–
2. Other credit	**306.9**	**341.9**	**252.2**	**227.7**	**215.6**
Of this: NBH (SDI)	298.5	292.1	233.3	227.7	215.6
3. Other government bonds	**552.9**	**630.4**	**1,037.3**	**740.0**	**735.3**
Treasury government bond	76.0	72.4	68.8	65.2	63.5
Housing Fund Coverage Bond	19.0	17.1	15.2	13.3	13.3
Purchase of rouble claims	48.3	48.3	48.3	39.9	37.7
Loan consolidation government bond	332.7	338.7	347.7	261.8	261.8
Other government bond	17.8	22.8	18.9	26.6	25.8
Conversion of devaluation debt	59.1	131.1	538.4	333.2	333.2
4. Total forint debt (net of devaluation debt)	**2,075.0**	**2,386.1**	**3,077.6**	**3,168.8**	**3,465.5**
As a percentage of GDP	**47.5**	**42.5**	**44.6**	**37.5**	–
5. Forint devaluation, domestic foreign	**1,440.0**	**2,023.3**	**1,563.3**	**1,886.7**	**2,010.8**
Exchange debt as a percentage of GDP	33.0	36.0	22.7	22.3	–
6. Total domestic debt (4+5)	**3,515.1**	**4,409.4**	**4,640.9**	**5,055.5**	**5,476.3**
As a percentage of GDP	**80.5**	**78.5**	**67.3**	**59.8**	–
7. External debt of the budget	**236.5**	**324.1**	**291.5**	**315.3**	**281.6**
As a percentage of GDP	5,4	5,8	4,2	3,7	–
8. Total debt (6+7)	**3,751.6**	**4,733.5**	**4,932.4**	**5,370.8**	**5,757.9**
As a percentage of GDP	**85.9**	**84.3**	**71.5**	**63.5**	–
At end-1997 constant prices	**6,827.3**	**6,714.1**	**5,840.0**	**5,370.8**	**5,297.1**

* Based on the second quarter 1998 report of the State Debt Management Centre of the Hungarian State Treasury.

Breakdown of foreign trade by direction of trade

Per cent

	Exports		Imports	
	1997	1998*	1997	1998*
Advanced countries	**77.5**	**78.9**	**72.7**	**74.8**
EU15	71.2	71.8	62.8	63.8
Germany	37.3	36.6	27.0	27.7
Austria	11.4	10.5	10.6	9.7
Italy	6.1	5.8	7.3	7.5
East and Central European countries	**19.2**	**17.4**	**18.6**	**15.7**
Russia	5.1	4.0	9.2	7.0
CEEC-4	5.9	5.2	4.6	4.5
Other	**3.4**	**3.7**	**8.7**	**9.5**
Total	100.0	100.0	100.0	100.0

Source: Ministry for Economic Affairs
* January–August preliminary data.

Expected changes in the GDP growth of Hungary's major export partners in 1998–99

Per cent

	Based on 1998 spring prospects	Based on 1998 September prospects
1998	2.6	2.1
1999	2.8	2.0

Sources for GDP growth data:
1998 spring data: IMF World Economic Outlook, May 1998 Central European Quarterly, I/98.
September 1998: IMF World Economic Outlook, 1998, Sept., Deutsche Bank Research: Economic & Financial Outlook, September 1998 data: IMF World Economic Outlook, Sept 1998, Deutsche Bank Research: Economic & Financial Outlook, September 14, 1998 Eastern Europe Monitor, September 1998 (Romania), WIIV June 1998 (Ukraine)

Growth in foreign trade

Per cent

	First quarter 1998	Second quarter 1998	First half 1998
GDP structured exports	28.3	19.4	23.6
GDP structured imports	25.5	24.9	25.2
Product exports	32.8	26.4	29.5
Product imports	27.0	26.8	27.4

The details of services

USD million

	First half 1997	Fist half 1998	Change USD million
Construction services, credit	19.9	31.1	11.2
Construction services, debit	30.4	44.9	14.5
Construction services, net	–10.5	–13.8	–3.3
Merchanting and other trade-related, credit	139.8	258.7	118.9
Merchanting and other trade-related, debit	69.0	198.0	129.0
Merchanting and other trade-related services, net	70.7	60.7	–10.0
Transportation services, credit	243.9	329.8	85.9
Transportation services, debit	225.8	213.4	–12.4
Transportation services, net	18.1	116.4	98.2
Travel credit	1,108.9	1,082.3	–26.6
Travel debit	558.2	552.4	–5.8
Travel, net	550.7	529.9	–20.8
Business services, credit	203.7	90.9	–112.8
Business services, debit	196.6	172.8	–23.8
Business services, net	7.1	–81.9	–89.0
Technical and cultural services, credit	652.1	452.0	–200.1
Technical and cultural services, debit	783.6	761.0	–22.6
Technical and cultural services, net	–131.5	–309.0	–177.5
Government services, credit	22.2	19.6	–2.5
Government services, debit	31.3	27.1	–4.2
Government services, net	–9.1	–7.4	1.7
Services total, credit	**2,390.5**	**2,264.6**	**–126.0**
Services total, debit	**1,894.9**	**1,969.6**	**74.6**
Services total, net	**495.6**	**295.0**	**–200.6**

4 External demand

The process of European integration is fundamentally determining the development of Hungary's foreign trade. More intensive cooperation in production and division of labour is evolving between Hungary and the European Union member countries, new production capacities are being built and the country is becoming much more open. Growth arising from the process of integration provides the trend-like component in the development of exports and imports. In addition, factors related to the trade cycle also influence the shaping of foreign trade. The business-cycle positions of Hungary's main trading partners (Germany, Italy and Austria) greatly determine the country's export opportunities. The growth potential of these main trading partners cannot be divorced from the business-cycle in other European countries, as their external economic relations are focused within the EU. Imports are closely related to changes in domestic demand, albeit that with the enhanced openness of the country changes in domestic and external demand are increasingly synchronised.

Vigorous growth can be seen in a number of countries of the European Union, such as the United Kingdom, Denmark, Finland, Ireland, the Netherlands and Norway. However, Hungary's most important trading partners experienced only moderate growth in the recent period. Germany's business-cycle situation is particularly sensitively affected by declining export opportunities, as to date the engine of growth was primarily the expansion of foreign demand, rapidly growing Asian exports offsetting moderate European sales. The deepening of the Russian crisis also foreshadows **less favourable prospects for growth.** Because of this, the OECD adjusted its former, more optimistic estimates on growth downward by 0.5–1% for most European countries. **Enhanced competition by third countries** and the dumping of relatively cheap Asian products also effect Hungary's export opportunities to the European Union.

As a result of the process of integration and the west European boom, the past two years were characterised by dynamic growth in Hungary's exports. **After the outstandingly high growth in the preceding years, the rate of GDP structured export expansion declined in the second quarter of 1998, which was not followed by a similar change in imports.** This change in difference between GDP structured export and import growth rates can be attributed to a decisive extent to a decline in the export of services but, in the second quarter of 1998, the growth rate of product exports also decreased.

Revenue from net exports of services declined by $200 million in comparison to the first half of 1997. At the same time, imports of services evolved similarly to last year. There was no change in the revenue from tourism, growing receipts on transportation, while revenue from technical, cultural and business services declined considerably.

The momentum in the growth of product exports slowed down in the last quarter. This weaker performance is partly due to *a decline in revenue from food exports*. Low world market prices decreased the revenue calculated in dollar terms, although the volume of quantities delivered did not drop. The Russian crisis may give rise to a substantial fall in the volume of food exports, since Russia's share in total food industry exports was 17% in the first half of the year, while its share in the exports of processed food products was 31%.

Export growth was also restrained by developments in the *export of raw materials,* albeit it is also true that the share of this commodity group within Hungary's total exports is no more than 3%. Earlier, it was the external demand for raw materials and semi-finished products which moved closest together with the west European business cycle.

Now, the export boom failed to take place owing to the cheap prices of the South East Asian competition. In contrast to food exports, in this case it was not only revenue but also the volume delivered which declined. Increased domestic demand absorbed only a part of the base materials left over from exports. In this field, the growth rate of industrial output also fell back in parallel with the decline in exports (for instance, with the manufacture of chemical base materials).

The export of articles with a relatively high degree of processing (machinery and processed goods), which represent by far the greater part of Hungary's exports, is generally based on cooperation agreements.

Hence in this field, only a considerable decline in all-European consumer demand could give rise to a decrease. The decline in growth rates that could also be observed in this group of products can be regarded as a very natural phenomenon owing to the exceedingly fast, virtually explosive growth of the previous period.

Rapid export growth, strong investment demand and the increase in domestic demand in the recent period equally induced a growth of imports; relative to the same period of the preceding year, the volume increase of total imports was 27.4%. Within this, the import of machinery and of materials required for current production rose by 26%, that of consumer goods by 20%.[5]

A transitory factor giving an additional boost to imports was the importation of cheap Asian base materials, machinery and processed goods.

Changes in the volume of exports
(Relative to the same period of the preceding year)

Per cent

	Food, beverages, tobacco	Raw materials	Energy	Processed goods	Machinery, equipment	Total
1998 Q1	26.6	–0.6	–11.1	16.4	55.9	32.8
1998 Q2*	5.2	–6.0	7.5	17.4	41.5	26.3
1998 H1	15.9	–3.3	–1.8	16.9	48.7	29.5

* The CSO provides its calculations only for a unit value index for the period lapsed since the beginning of the year and does not provide a quarterly breakdown. Hence we can only give volume changes for the first quarter and for the half-year, the figure for the second quarter is an estimate.

Changes in the dollar value of exports
(Relative to the same period of the preceding year)

Per cent

	Food, beverages, tobacco	Raw materials	Energy	Processed goods	Machinery, equipment	Total	Total net of food
1998 Q1	13.8	2.3	–18.9	12.1	53.3	27.9	29.9
1998 Q2	–4.2	–5.6	–4.0	11.4	35.2	19.4	22.6
1998 H1	4.3	–1.7	–12.1	11.8	43.3	23.4	26.0
Distribution, 1997	12.9	3.8	2.7	35.5	45.1	100.0	87.1

Changes in the volume of imports
(Relative to the same period of the preceding year)

Per cent

	Food, beverages, tobacco	Raw materials	Energy	Processed goods	Machinery, equipment	Total
1998 Q1	14.5	22.6	8.1	19.4	39.7	27.0
1998 Q2*	19.6	22.2	5.6	17.3	41.5	26.8
1998 H1	25.9	19.7	–1.1	20.3	43.1	27.4

* The CSO provides its calculations only for a unit value index for the period lapsed since the beginning of the year and does not provide a quarterly breakdown. Hence we can only give volume changes for the first quarter and for the half-year, the figure for the second quarter is an estimate.

Changes in the dollar value of imports
(Relative to the same period of the preceding year)

Per cent

	Food, beverages, tobacco	Raw materials	Energy	Processed goods	Machinery, equipment	Total	Total net of energy
1998 Q1	30.3	17.4	–25.7	17.7	42.0	22.0	28.8
1998 Q2	12.6	22.5	–12.5	13.5	34.7	19.9	23.3
1998 H1	21.1	19.9	–19.7	15.5	38.0	20.9	25.8
Distribution, 1997	4.2	3.3	9.7	41.0	41.8	100.0	90.3

Growth of imports from South East Asian countries

	Hong Kong	Indonesia	Korea	Malaysia	Philippines	Singapore	Thailand	Total
	Imports, USD million							
First half 1997	27.5	24.3	85.8	56.1	10.5	63.3	78.0	344.6
	Imports, USD million							
First half 1998	36.0	35.5	116.1	73.9	24.9	130.1	64.3	480.9
Growth rate (%)	131.1	146.2	136.9	131.7	236.5	205.5	82.4	139.6
Food, beverages, tobacco	131.1	94.7	4.8	120.0	140.6	12.3	184.1	–
Raw materials	12.0	152.3	1,263.6	103.0	1,200.0	96.2	254.3	–
Processed goods	113.0	115.1	120.8	125.0	89.1	291.7	98.0	–
Machinery, equipment	149.9	331.4	141.8	137.9	261.1	185.2	73.2	–

[5] NBH estimate.

IV. Supply side factors

1 The labour market

Based on the available data, the most important development in the labour market over the first three quarters of the year was *the slowdown and possible end of the declining trend in the activity ratio observed in recent years*: the 51% in the first half of 1997 was followed by a figure of 50.8% in the same period of 1998. Beyond the stabilisation of the ratio of the economically active, another promising phenomenon has been that, within this, the ratio of the employed increased and that of the jobless declined.

1.1 Employment

Growth in employment, which began in 1997 continued over the first three quarters of 1998, rising by 0.5% in the economy overall.[1] The data reveal that the improvement was 1.7% in the case of small businesses employing less than 10 people, but the growth rate reached 6% in the case of enterprises working with 21–50 employees. Employment overall increased by 0.1% in the case of businesses employing more than 10 people and throughout the budgetary organisations.

As the CSO had not published comparable data in a sectoral breakdown following its change of methodology for the total number of employees, at the time of writing we are able to monitor sectoral changes only in the case of organisations with more than 10 employees.

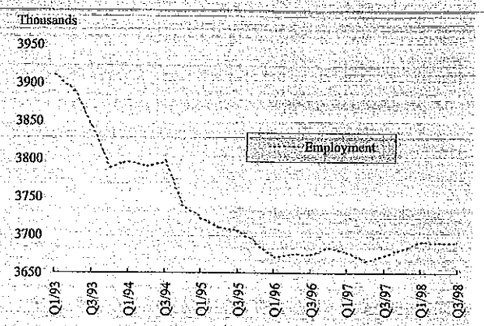
The rise in the headcount was the fastest in industry (1%), in particular in manufacturing (2.1%) and in machine manufacturing (7.6%). The public services sector taken in the broad sense also increased the number of its employees by 0.9%. The headcount of the services sector, which can be regarded as belonging to the private sector overall declined by 0.5%, but the spread in between subsectors was significant.

1.2 Unemployment

Unemployment continued to decline and reached 7.6% in the third quarter of the year. Albeit the total number of jobless is still 302,800 nation-wide, only a portion of this can be regarded as the actual labour pool for firms.

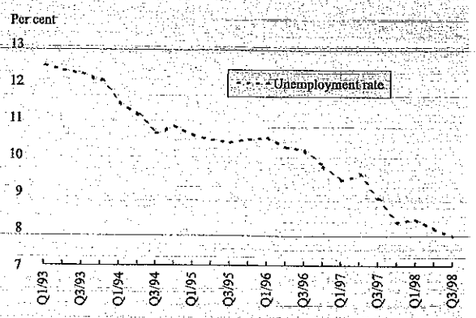
[1] Based on the CSO publication *Főbb munkaügyi folyamatok* (Main labour market developments). Owing to methodological changes, only the most important indicators are available in a comparative structure from 1998.

Development of employment *



* Seasonally adjusted data based on the CSO publication (Labour Force Survey) in a comparable structure.

Development of the unemployment rate*



* Seasonally adjusted data; unemployment according to the ILO definition in a comparable structure.

Unemployment and inflation

The labour market situation influences economic growth and inflation via two channels. The jobless serve as a labour pool for companies that expand their output on the one hand and it restrains tendencies to increase wages on the other hand. The strength of the second impact depends on whether employers and those already with a job regard the jobless as close substitutes of employees. If not, even this "medium-high" level of unemployment would not restrain excess wage increases. Consequently, the risk cannot be excluded that (i) although wage costs are relatively low in regions characterised by higher rates of unemployment, they would still not be sufficiently attractive to induce faster economic growth, and that (ii) in the dynamically growing regions companies restrained by a shortage of labour may have to suffer wage increases in excess of productivity improvements or else they would have to restrain their output expansion.

Labour market developments indicate that within the unemployed we can identify groups of people who cannot be regarded as close substitutes of current employees. Hence they do not actually contribute to the relevant labour reserves. The unemployed can be grouped in accordance with the period of time spent without a job or according to their educational attainment or level of skill. Grouping by period spent without a job is warranted by the findings of labour market research, according to which the presence of long-term unemployed weakens the relationship between the local unemployment ratio and wages.

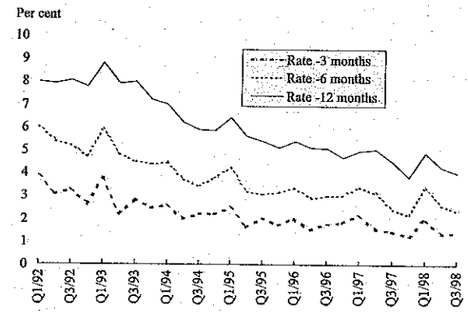
The human capital of the long-term unemployed who have been without a job for half a year or more has presumably eroded to some extent, social contacts facilitating finding work having become looser. The intensity of job search also declines with time, for instance because of the "outside" opportunity created by the income replacement subsidy scheme.

In the case of those without a job for at most six months the unemployment rate sank to a level below 3%, in the case of those unemployed for at most 12 months, the rate has been fluctuating at around 4%.

This means that as far as the labour reserve is concerned, the effective unemployment rate may be near to the level of frictional unemployment even at the aggregate level. At local level, in the advanced regions, the recovery has already absorbed most of the short-term unemployed, which deteriorated the composition of the jobless, hence here we may expect the emergence of labour shortages.

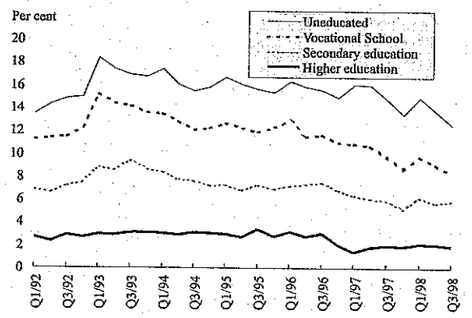
With respect to those with a higher level of schooling, the unemployment rate has been declining at the fastest rate for those having vocational and those with secondary school education. The unemployment rate of graduates continues to be around 2%. This indicates that future economic growth may be limited by the shortage of a qualified labour pool, which is likely to lead to wage increases or bottlenecks leading to restrained output.

Unemployment rates by duration of unemployment*



* Seasonally not adjusted data. From 1998: Q1 on they cannot be directly compared to those of the preceding period. In calculating the rates, the long-term unemployed (with durations over 3, 6 and 12 months, respectively) have been omitted from the categories of both the unemployed and the labour force used as the denominator.

Unemployment rates by education*



* Seasonally not adjusted data, from 1998: Q1 on they cannot be directly compared to those of the preceding period. In calculating the rates, only those unemployed and employed people with the exact educational levels above were included as unemployed or employed. Hence our rates measure the ratio of unemployment to the labour force within these educational categories.

Development of wage inflation by industry

Per cent

	Fourth quarter	First quarter	Second quarter	Third quarte
	1997	1998		
Agriculture, fishing, forestry	20.2	19.9	19.0	13.7
Mining	33.6	23.9	9.0	3.8
Manufacturing	22.7	20.5	17.0	16.8
Electricity, gas, heat and water supply	19.1	22.5	19.6	18.7
Construction	22.0	17.3	16.0	15.8
Retail, maintenance of road vehicles, repairs	18.5	17.9	16.4	15.4
Accommodation services, catering	16.6	17.2	14.6	11.6
Transportation, storage and telecommunications	18.6	18.2	22.7	17.8
Financial activities and supplementary services	27.8	27.0	23.9	26.6
Real estate and business services	21.7	30.6	28.6	27.2
Public administration and social security	21.0	14.2	20.2	19.9
Education	19.5	26.0	20.6	21.3
Health and social care	16.5	23.0	19.5	18.7
Other communal, social and personal services	13.4	21.9	16.4	19.0
National economy total	20.3	20.7	19.1	18.7

1.3 Earnings growth

Relative to the same period of 1997, in the first three quarters of 1998 gross nominal wages rose at an average rate of 19.5% constituting a 3.7% real growth. The wage inflation index net of composition effects shows the same nominal growth.

Wage inflation – average wage increase

In contrast to our earlier analyses, the focus of the study of the labour market situation is now the so-called wage inflation index rather than changes in average wages. Part of the wage changes measured by the average wages arises from the fact that employment is shifting towards areas that can be characterised by higher school qualifications, skills or productivity, hence higher wages. This component of the wage increase presumably covers wage increases founded upon an improvement in productivity and is largely outside the scope of economic policy in a market economy. Therefore, similarly to the practice of a number of advanced countries, *we have filtered out the impact of composition changes on average wages and identify the moving (same period last year type) weighted chain index (Laspeyres index) as our wage inflation index.*

This index (of the quarter/same quarter of the preceding year type) calculates wage inflation projected to a constant labour force insofar as it nets out the effects of changes in the ratios of blue-collar/white-collar labour within the sector as well as the effects of changes in the distribution of employment by branches of the national economy.

At the level of the national economy, the wage inflation index has shown an increase similar to that in the average wage since early 1996, but significant differences can be found at the sectoral level. In the public services sector and in the sectors outside the retail sector the share of white-collar labour has been increasing within employment, while in manufacturing the ratio of physical labourers has risen. Accordingly, the index measuring changes in the average wage was higher in the public services sector and in the services sectors than the index for wage inflation and it was lower in manufacturing.

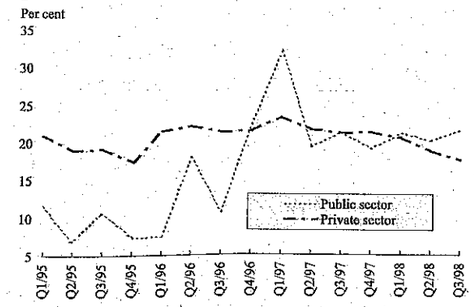
Earnings growth and inflation

The development of earnings growth influences, via several channels, the extent to which economic policy objectives can be achieved. Wages are one of the components of household income and thereby of aggregate demand (approximately half of total income arises from earned income) and are also a decisive component of production costs. Depending on supply-side competition, a more rapid increase in wage costs may result in an increase in product prices or else it may reduce the profitability of an undertaking. In the case of sectors competing in foreign markets, wage increases are generally not followed by an increase in prices. If higher wage costs cannot be offset by an improvement in the efficiency of production, the result is a deterioration in the competitiveness of domestic manufacturers. In contrast, in areas which do not compete in external markets (primarily in the case of private sector services), wage increases are generally followed by a rise in prices, as in this field there is little opportunity for improving the efficiency of labour and the price elasticity of supply (i.e. that of additional capacities or new entry) is also generally lower. There are areas where changes in product prices and wages are not directly related, e.g. in the circle of products subject to price controls prices do not necessarily move together with production costs. In these areas, more rapid wage increases will fuel the inflationary pressure primarily through increasing the demand impact of the public sector deficit.

The discrepancy between changes in wages in the private and in the public sectors was significant in 1995 and 1996 as a result of the fiscal adjustment and its correction thereafter. From early 1997, the wage inflation index of the two areas have been moving closely together. In 1998, **the growth rate of nominal wages, which was around 21% over the past two years in the manufacturing sector (which has increased employment to the highest extent), seems to be declining rapidly**. We have observed different developments in wages in the retail sector and in the other subsectors of the services sector. While **wage increases have been outstandingly high in the private services sector excluding retail,** it has been the significant investment projects of the recent period and the appearance of the retail chains increasing market competition in the **retail sector** which has efficiently restrained wage increases within that sector. The new, more efficient firms restrain wage increases in order to increase their market share. Units employing unchanged technology have been able to keep their costs at a competitive level only by keeping wage increases low.

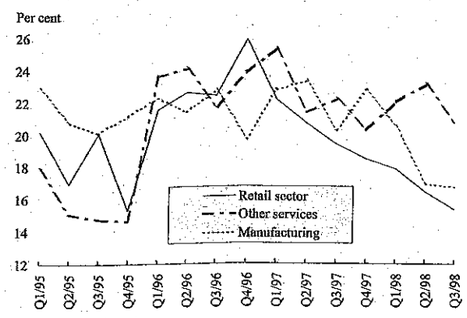
All in all, we do not expect the inflationary pressure coming from earnings growth to become stronger on the basis of the nominal wage increases in 1998. The wage growth rates in manufacturing and the retail sector have not broken away from the basis of productivity improvement, while higher wage increases took place in the public services sector and in other private services. An interpretation of this situation is that the **crawling band nominal devaluation system efficiently put the brakes on wage increases in manufacturing,** the owners of businesses did not give way to wage increases that would deteriorate their profitability or competitiveness. The magnitude of wage inflation has gradually converged in the individual sectors of the economy over the past two years. It is probable that this convergence will continue so that the nominal growth rate of wages will also decline in other services. This decline may be impeded by the fact that the share of physical labourers is substantially lower in the other services sector, hence this sector must satisfy its labour requirement from a considerably tighter labour market.

Wage inflation in the private and in the public sector*



* Private-sector consists of the following branches: agriculture, fishing, forestry, mining, manufacturing, electricity, gas, heat and water supply, construction, retail sector, repair and maintenance services, accommodation services, catering, transportation, storage, post and telecommunications, financial activities and supplementary services, real estate transactions and business services.
Public service sectors are public administration and social security, education, health and social care where the majority of employees are either public employees or civil servants.

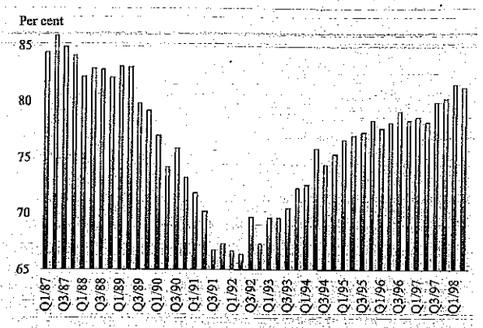
Wage inflation in manufacturing, the retail sector and the sector of other private services



2 *Capacity utilisation*

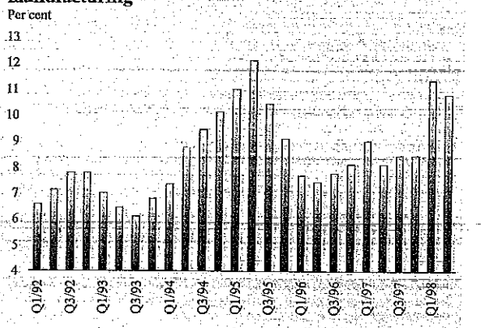
Monitoring capacities in Hungary do not extend back for a long time. Presumably, during the period of rapid structural transformation of the economy, the normal (non-inflationary) level of under-utilised capacities was higher. It is difficult to draw

Average capacity utilisation in manufacturing*



* Seasonally adjusted data. Source of basic data is Kopint-Datorg.

Share of firms with a shortage of capacities in manufacturing



Source: Kopint-Datorg.

reliable conclusions from changes in capacity utilisation indicators as changes in the aggregated level indicators do not reveal to what extent the composition of superfluous capacities meets growth in demand. Yet with the rise in capacity utilisation, there is a greater likelihood that demand growth will overtake the superfluous capacities so that bottlenecks arise which may generate inflationary pressure in the economy.

Statistics concerning the development of capacities are only available for manufacturing. Here, however, the shortage of capacities does not automatically generate inflationary pressure, as the appearance of bottlenecks is manifested in changes in exports. One factor which would directly drive prices upwards would be a shortage of capacities in the non-tradable goods sectors; however, we have no information on their development. In this latter area, the likelihood of the development of bottlenecks is reduced by the fact that half the 1997 investment projects were implemented in the private services sector.

According to the business surveys of Kopint-Datorg, the capacity utilisation of manufacturing firms was above 80% after further improvements and in spite of the exceedingly active investment activity and significant expansion of employment over the past few years. Simultaneously, more and *more companies indicate that their capacities are short in comparison with expected orders.* It is primarily companies in the subsectors of other manufacturing, metallurgy and metalworking that are dissatisfied with the quality of available capacities, but about 10% of companies in machine manufacturing also qualify their capacities as obsolete.

An increase in the utilisation of productive capacities in manufacturing (both technical and human capacities) is also confirmed by empirical research among the largest firms in the sector.[2] In 1997 average utilisation was estimated at 78–82%, in 1998 at 80–84%.

The results of the survey reveal that the difference which could still be perceived among the various groups of companies in 1997 has levelled out: whereas last year capacity utilisation of companies with mixed ownership or dominant foreign ownership was significantly higher than the others, this year these differences declined or even disappeared.

All in all, the capacity utilisation indicators make probable a further rapid expansion in investment and employment in manufacturing.

According to the Kopint-Datorg business survey, the utilisation of construction capacities is more favourable than in the similar period of any of the preceding years. Nearly three quarters of the firms regard their own technical conditions as commensurate with the demand expected over the coming 12 months, including in terms of standards.

16% of these companies forecast superfluous capacities (in contrast to 14% and 20% in July of the preceding two years) and 11% expect capacity shortages (in contrast to 11% and 16%, respectively).

[2] A legnagyobb feldolgozóipari cégek helyzete és kilátásai (The position and prospects of the largest companies in manufacturing) – 1998 Tárki Konjunktúra Teszt 1998/3.

3 Competitiveness

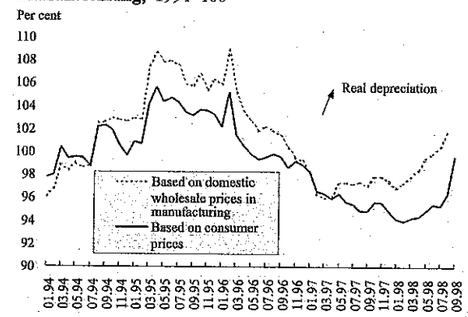
In the first half of 1998, the competitiveness of the Hungarian economy showed an improving tendency based on the various real exchange rates, only the consumer price based index indicated a slight real appreciation relative to the same period of the preceding year (of approximately 2% from January until July). This presumably falls into the limit justified by the difference in productivity between the tradable sector and the nontradable sector,[3] and it is also worthwhile noting that the dynamics also point towards real devaluation in this case. The indicator based on the domestic wholesale price index of the manufacturing sector, showed a 2% real depreciation in the first part of the year, and the improving dynamic seems to be speeding up in the latter part of the sample.

The real depreciation reflected in the real exchange rate is mostly attributable to the fact that changes in cross rates offset the impact of the decline in the rate of devaluation, so the devaluation of the trade weighted nominal exchange rate index was similar to the figure for last year, while at the same time, the decline in domestic inflation exceeded the decline in the rate of inflation among Hungary's most important trading partners.

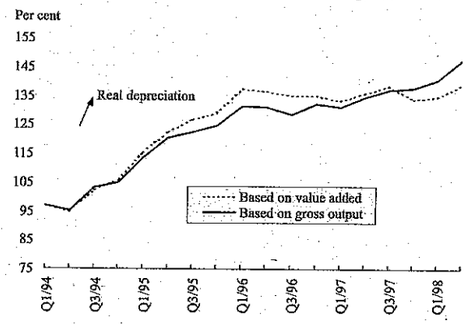
According to our estimates, there was a significant, 7% difference between the growth rates of gross output and of value added in manufacturing industry, which calls for prudence in the evaluation of the nearly 9% real devaluation of the **unit labour cost based real exchange rate** calculated on the basis of gross output. It is also remarkable that the **index based on added value, which began to deteriorate at the end of last year, has also been improving by nearly 2% over the first half of the year.**

When evaluating the market positions of Hungarian manufacturers, it is necessary to take into account that from the autumn of 1997, the Asian, then from the end of August 1998, the Russian crises exerted an unfavourable impact on external market developments and also on the competitiveness of Hungarian products, which are not reflected by real exchange rate indicators.

Real effective exchange rates of the forint based on consumer prices and domestic wholesale prices in manufacturing, 1994=100



Real effective exchange rates of the forint based on relative unit labor costs in manufacturing, 1994=100



3.1 The impact of the Asian crisis

As far as Hungary's direct exports are concerned, this crisis region has a relatively minor role to play. The more developed South East Asian countries, even when taken together with China, represent less than 1% in Hungary's total exports. Their role in imports is more significant. The economies in crises repre-

[3] The equilibrium real appreciation – using a not very precise definition – is the degree which leaves competitiveness unchanged. There is some empirical evidence for this phenomenon in the convergence process of developing countries to the more developed economies. Real appreciation is inevitable if the process is associated with higher productivity increase in the tradables sector than in the nontradables sector relative to the more developed trading partners. This is so because in this case – as differences in wage dynamics are substantially smaller than in productivity dynamics between the two sectors – nontradable producers should increase their relative price to sustain the same level of profitability as in the tradables sector. The increase of nontradable/tradable prices, together with the assumption that purchasing power parity (PPP) more or less holds for the tradables sector, involves a real appreciation process during which profitability is unchanged. The so-called Balassa Samuelson effect seems to be also relevant for Hungary.

Bilateral relations of the more developed Asian countries with Hungary

Per cent

1997 percentage share in Hungary's	The 5 countries in crisis*	China	Rest of Asia**	Total
Exports	0.33	0.08	0.28	0.70
Imports	2.49	1.36	1.98	5.83

Source: OECD
* Korea, Malaysia, the Philippines, Thailand, Indonesia
** China, Taiwan, Hong Kong, Singapore

Share of the more developed Asian countries in the exports of the developed countries

Per cent

	The 5 countries in crisis*	China	Rest of Asia**	Total
EU	6.5	2.3	6.4	15.2
USA	8.4	1.9	7.9	18.2
Japan	19.6	5.3	17.5	42.4

Source: OECD
* Korea, Malaysia, the Philippines, Thailand, Indonesia
** China, Taiwan, Hong Kong, Singapore

Share of the more developed Asian countries in the imports of the developed countries

Per cent

	The 5 countries in crisis*	China	Rest of Asia**	Total
EU	6.5	4.5	6.1	17.1
USA	8.6	6.7	7.6	22.9
Japan	16.5	11.6	7.1	35.2

Source: OECD
* Korea, Malaysia, the Philippines, Thailand, Indonesia
** China, Taiwan, Hong Kong, Singapore

The significance of the individual regions for export market competition for Hungarian manufacturing

Per cent

Developed countries	Asia net of Japan	Central Europe*	Other countries
84.1	7.3	4.9	3.7

* Czech Republic, Croatia, Poland, Slovakia, Slovenia.

Share in EU import

Per cent

	Russia	Russia and the Ukraine
1997	1.6	1.7

sent a 2.5% share in Hungary's imports and together with China and the more developed Asian countries, this share goes up to nearly 6%. As even this magnitude is not very large, the direct effects of the Asian crisis have not been particularly significant for the Hungarian economy.

The analysis must not stop at direct effects, however. A significant number of the South East Asian countries have very close relations with the markets of developed countries, which are of major importance for Hungary. The share of countries whose currencies devalued drastically (by 30–40%) take a share of over 6% in the imports of the EU and, taking China and the other South East Asian countries into account as well, they represent nearly 20%. These calculations indicate that although Hungary's bilateral relations with these countries are negligible, they are important competitors in external markets, as they are decisive factors in the imports of the advanced countries.

Hungarian products compete against Asian products at about 7% in the global market.[4] This estimate also contains other exporter Asian countries (not including the Middle East), in addition to the Asian countries analysed so far; hence it may be slightly distorted. As, however, it is the countries reviewed above which unambiguously determine foreign trade in this region, the estimate cannot be far from reality. The above calculations therefore underline that it is worthwhile paying attention to developments in this region. Albeit that the countries in crisis, whose currencies significantly devaluated constitute only a portion of this group, their competitive advantage generated through devaluation[5] may still have a considerable influence on the export sales opportunities of Hungarian products. The probability of this is all the greater the closer Hungarian and South East Asian products are as substitutes. As the countries in crisis basically export manufacturing products and over 80% of Hungary's exports comprise manufactured goods and machinery, the impact of the crisis on competitiveness is not negligible.

3.2 The impact of the Russian crisis

The possible negative impact of the Russian crisis on competitiveness will be more of a direct nature. The share of the Russian economy or taken in a broader sense of the CIS countries[6] is minimal in the imports of the European Union.

This means that Hungarian products compete very little against Russian products in the important external markets. Moreover, Hungarian export articles cannot really substitute for Russian exports, as the latter consists mainly of petroleum, natural gas and other raw materials. However, the weight of bilateral relations is much more significant than in the previous case. Russian exports account for nearly 10% of Hungary's imports, though its share in exports is significantly lower.

[4] The calculation was prepared by weighting the market structure of the above regions with the Hungarian export structure.
[5] Nominal devaluation does not constitute a competitive advantage of the same magnitude, as the impact of the exchange rate significantly ripples on to domestic prices and costs. The empirical evidence suggests that the greater the change in the nominal exchange rate, the more a 1% change in the exchange rate ripples on into domestic prices.
[6] Apart from Russia and the Ukraine, EU trade relations with the CIS countries are minimal.

As approximately 75% of Hungary's imports from Russia consists of energy and raw materials (these are the fundamental export products of the Russian economy priced in dollars), it is unlikely that the position of the Russian economy or currency would have any major influence on the Hungarian imports from this region. The category of manufactured goods, accounting for another 20% of imports from Russia, to a decisive extent contains articles of a relatively low degree of processing, 63% consists of various non-ferrous metals.

If the Russian crisis is here to stay for some time, it may give rise to more serious problems in Hungarian export sales. In contrast to Russia's export products, about 55% of Hungary's exports to Russia is made up of machinery (vehicles: buses, cars) and manufactured goods (pharmaceutical, electric articles) which, in view of the fact that the vast majority of them are consumer durables, react very flexibly to changes in the condition of the economy. Although the income elasticity of food, which accounts for about a third of Hungary's exports to Russia, is relatively much lower than that of consumer durables, the crisis of the Russian financial system may, in practice, significantly hinder any sales there. The problem is aggravated by the fact that presumably, the domestic value added of the Hungarian export products (food, buses) is relatively high, hence this is not merely intermediary trade. Consequently, the prolongation of the Russian crisis may cause direct damage to the Hungarian economy.

The weight of Russia and the CIS countries in Hungary's foreign trade

Per cent

1997 percentage share in Hungary's	CIS	Russia
Exports	7.2	5.0
Imports	11.3	9.6

Changes in the product structure of Hungarian foreign trade with Russia

Per cent

	Import structure		Export structure	
	1995	1997	1995	1997
Food, beverages, tobacco	0.2	0.2	47.1	36.6
Raw materials	5.9	5.1	3.7	8.6
Energy	63.6	69.5	0.4	0.3
Processed goods	22.3	19.8	23.9	29.9
Machinery	8.1	5.3	24.9	24.6
Total	100.0	100.0	100.0	100.0

V. External equilibrium

1 Net savings position

The net savings position is the most important indicator of the sustainability of economic growth, of changes in macroeconomic equilibrium.

In GDP accounts, the net savings position is also referred to as the current account position. We call attention to the fact that in the case of GDP calculations, the measurement of foreign trade uses more or less the accrual approach, while the balance of payments presents data using the cash flow approach. The statistical source of data is also partially different: with respect to the trade in products, GDP uses the data of customs statistics, while the balance of payments, the data of commercial bank statistics. It follows that there may be differences between the two indicators beyond the errors of measurement arising from time lags and other statistical reasons.

The expansion of economic growth and the more rapid increase in domestic absorption were concomitant with a deterioration in the net savings position in proportion to GDP. While the share of gross national savings in GDP did not change in comparison to the first half of 1997, **the foreign funding requirement of the real economy rose by 1.7%, owing to growing accumulation expenditure**. Changes in the generation of GDP, incomes and investment expenditure show significant as well as different seasonal fluctuations, and the interim indicators expressed in terms of GDP do not properly reflect changes in the country's net financing capacity.

Taking seasonality into account, the 5% deficit expressed in terms of GDP measured on the basis of current incomes and expenditure of the first half of the year corresponds to a net foreign funding requirement of around 3%, which exceeds last year's 1.5% at an annual level.

The growth in external funding requirement can be traced back to three factors**: there was an increase in profit repatriation by non-residents, while the net savings of both the corporate sector and general government declined.**

Disposable income expressed in terms of GDP decreased relative to the same period of the preceding year. This is due to the growth in the payment of interest abroad and in repatriated dividends in the private sector. The outflow of dividend-type incomes substantially exceeded that in the former period. The increase in the net income transfer shows an increase in the foreign debts of the private sector and also reflects a normal process expected as a result of the foreign direct investment of earlier years.

The decline in the net savings of the private sector and of general government contributed to the deterioration in the current account by approximately the same extent.

Within the private sector, households and the corporate sector demonstrated different behaviours.

Savings and investment rates as a percentage of GDP*
(At current prices)

Per cent

	First half 1995	First half 1996	First half 1997	First half 1998
Gross domestic product	**100.0**	**100.0**	**100.0**	**100.0**
+net income transfers	-4.4	-3.8	-3.1	-4.5
+unrequited transfers	2.7	2.3	1.7	2.1
Disposable income	**98.3**	**98.5**	**98.6**	**97.6**
–households	83.0	83.1	81.5	81.1
–general government	7.8	9.7	12.0	10.5
–businesses	7.4	5.6	5.0	6.0
Final consumption	**84.1**	**80.8**	**79.8**	**79.0**
–household consumption	71.8	69.4	68.4	67.9
–communal consumption	12.4	11.5	11.4	11.2
Gross savings	**14.1**	**17.7**	**18.7**	**18.5**
–household savings	11.2	13.8	13.1	13.2
–general government savings	-4.5	-1.7	0.6	-0.7
–corporate savings	7.4	5.6	5.0	6.0
Net capital transfer				
–households	0.7	0.5	0.2	-0.1
–general government	-1.5	-1.2	-1.3	-0.9
–corporate sector	0.8	0.6	1.2	1.0
Investments	**21.3**	**20.6**	**22.0**	**23.5**
–investments by households	6.1	5.8	6.1	5.7
–investments by general government	2.1	2.3	3.0	3.0
–corporate investment and inventory accumulation	13.0	12.5	12.9	14.8
Net savings	**-7.1**	**-2.9**	**-3.3**	**-5.0**
–household savings	5.8	8.5	7.1	7.4
–general government savings	-8.2	-5.2	-3.7	-4.6
–corporate savings	-4.8	-6.2	-6.7	-7.8

* Changes in corporate financing capacities were calculated from the profit and loss account based on the residue principle. Owing to seasonal fluctuations, the absolute magnitude of the figures given in the table cannot be interpreted, the processes are reflected by the shift relative to the preceding half-year.

The disposable income of households rose at a rate lower than GDP. Relative to disposable income, the shares of consumption and gross savings did not change. Owing to the decline in household investment, the net savings of the household sector in terms of GDP increased, but this can be attributed primarily to transitory factors, such as the introduction in 1999 of the VAT refund opportunity in relation to housing construction.

The behaviour of the corporate sector is consistent with the current phase of the trade cycle. In spite of improving profitability, a degree of prudence and wait-and-see attitude could be observed on the part of businesses in 1997, as a result of which their net savings increased at a moderate rate. In 1998, companies presumably modified their growth expectations in an optimistic manner. As investment activities are generally influenced not by the actual but by the expected profit prospects, an improvement in economic prospects speeded up their investment activities. The level of inventories, which increased over the first half of the year, also contributed to the involuntary decrease in the net savings of businesses. **As the sudden growth in accumulation could not be followed by a similar increase in current incomes, the net savings of the corporate sector decreased by 1.1% of GDP.**

The net savings of general government decreased significantly, by 0.9% of GDP. Taking into account the fact that the investments of general government did not increase in terms of GDP and its capital transfers also decreased in the meantime, general government increased its current expenditures to an extent greater than the acceleration of its revenue, the growth of which can be attributed to cyclical reasons arising from the recovery.

2 External financing

According to balance of payment statistics, the deficit in the current account amounted to Ft 192 billion ($905 million) in the first half of the year.

The increased deficit in the current account was not covered by non-debt creating capital inflow (foreign direct investment inflow net of intercompany loans and the portfolio investment of non-residents in equity securities through the stock exchange) in the first half of the year. This, however, was not concomitant with an increase in net foreign exchange debt, as the portfolio investment flowing in to forint denominated government bonds substantially exceeded the part of the current account deficit above non-debt creating financing.

Of the non debt-creating capital items , the inflow of foreign direct investment was of a similar magnitude as last year, while the direct investment of residents abroad increased. Portfolio investments in equity securities increased by $215 million, of which privatisation revenue accounted for $166 million. Apart from this item, equity security purchases by non-residents fluctuated vigorously – over the first four months' capital inflow occurred, while in May and June capital outflow was observed.

The NBH and the Government net repayment amounted to $1.2 billion in credit turnover denominated in foreign exchange.

The most important items of the current account based on balance of payment statistics

USD million

	First half 1996	First half 1997	First half 1998
Goods, net	**-659**	**-960**	**-695**
Exports	7,818	9,379	9,784
Imports	8,477	10,339	10,479
Services total, net	**562**	**492**	**309**
Investment income, net	-816	-645	-959
Of this: related to debt	-697	-483	-541
Of this: related to non–debt	-119	-163	-418
Current transfers, net	**513**	**358**	**440**
Current account balance	**-934**	**-763**	**-905**

Financing the current account

USD million

	Jan.–June 1997	Jan.–June 1998	Change in USD million
National Bank of Hungary	–864	–2,316	–1,452
– Portfolio investment, net	–909	42	951
– Other investment, net	–692	–933	–240
– Change in international reserves,*	737	–1,425	–2,163
Government	331	965	633
– Portfolio investment, balance	335	1,199	864
– Other investment, net	–4	–235	–231
Credit institutions	236	1,183	946
– Portfolio investment, net	–49	–32	17
o/w equity securities, net	*–1*	*–10*	*–10*
– Other investment, net	285	1,214	929
Enterprises and other sectors	–88	–150	–62
– Portfolio investment, net	–80	203	123
o/w equity securities, net	*164*	*226*	*63*
– Other investment, net	–168	–353	–185
Direct investment, net	724	860	136
– In Hungary, net	832	951	119
– equity capital, net	*709*	*694*	*–14*
– intercompany loans, net	*123*	*257*	*133*
– Abroad, net	–108	–91	18
– equity capital, net	*–108*	*–154*	*–46*
– intercompany loans, net	*–1*	*63*	*64*
Capital account	41	104	63
Specified financing	**381**	**645**	**265**
Net errors and omissions	382	259	–122
Financing total	**763**	**905**	**142**
Current account deficit	**763**	**905**	**142**

* (+) = decrease, (–) = increase.

Debt and claims denominated in foreign exchange

USD billion

	1997	June 1998	Change
Gross external debt	**21.7**	**21.1**	**–0.6**
Portfolio liabilities	10.0	9.9	–0.1
– Medium and long-term	9.4	9.2	–0.3
– Short-term	0.6	0.8	0.2
Other liabilities	11.7	11.2	–0.5
– Medium and long-term	8.4	7.1	–1.3
– Short-term	3.3	4.1	0.8
Gross external assets	**12.4**	**13.7**	**1.3**
International reserves	8.4	9.6	1.2
Portfolio assets	0.1	0.2	0.0
– Medium and long-term	0.1	0.1	0.0
– Short-term	0.1	0.1	0.0
Other assets	3.8	3.9	0.1
– Medium and long-term	1.3	1.4	0.1
– Short-term	2.6	2.6	0.0
Net external debt	**9.3**	**7.3**	**–1.9**

External debt by main debtors

	1997		June 1998		Change	
	USD bn	%	USD bn	%	USD bn	%
Gross debt*	**21.7**	**100.0**	**21.1**	**100.0**	**–0.6**	**–**
NBH and government	13.4	61.9	12.1	57.2	–1.4	–4.7
– NBH	11.8	54.3	10.7	51.0	–1.0	–3.4
– Government	1.6	7.5	1.3	6.2	–0.3	–1.3
Private sector	8.3	38.1	9.0	42.8	0.8	4.7
– Credit institutions	4.5	20.9	5.5	26.2	1.0	5.3
– Enterprises and other sectors	3.7	17.2	3.5	16.6	–0.2	–0.6
Net debt**	**9.3**	**100.0**	**7.3**	**100.0**	**–1.9**	**–**
NBH and government	4.4	47.1	1.9	25.3	–2.5	–21.7
– NBH	3.3	35.8	1.1	14.6	–2.3	–21.3
– Government	1.0	11.2	0.8	10.8	–0.3	–0.5
Private sector	4.9	52.9	5.5	74.7	0.6	21.7
– Credit institutions	2.0	22.0	3.1	41.6	1.0	19.6
– Enterprises and other sectors	2.9	30.9	2.4	33.1	–0.4	2.1

* Only in convertible currencies.
** Denominated in foreign currencies, excluding intercompany loans.

An identical magnitude of inflow, that is, $1.2 billion, was drawn in through the market of forint denominated government bonds.

The **net borrowing of the private sector** amounted to $850 million. The net capital outflow of the corporate sector was $350 million The $1.2 billion drawn in by credit institutions arose as a result of a decline in claims against non-residents to an amount of $200 million and net borrowing of $1 billion. Of the borrowing, $800 million involved short-term funds. The role of net errors and omissions (NEO) in financing declined further (to $260 million).

As a result of all this, international reserves increased by $1.2 billion over the first half of the year.

Changes in external debt denominated in foreign currencies

In the first half of 1998, the reduction in foreign exchange debt outstanding against non-residents continued, albeit at a rate lower than that observed in earlier periods. Gross external foreign exchange debt was $0.6 billion lower than at the end of 1997. As claims against non-residents increased by $1.3 billion, first and foremost owing to the increase in international reserves, net external foreign exchange debt decreased by $1.9 billion and reached its lowest value for the past two decades at $7.3 billion.

The tendency that a growing portion of the external foreign exchange debt burdens the private sector has continued in the period under study. Three quarters of the net external foreign exchange debt affected the banking and the corporate sectors. (This was a result not only of an increase in fund-raising by the private sector abroad but, first and foremost, of the net repayments by the NBH and the Government and, in the case of the NBH, of increasing international reserve.) The books of the NBH and the Government still carry 57% of gross external foreign exchange debt. It is remarkable that, in actual fact, it has been only the external position of credit institutions which has been deteriorating, in contrast that of the corporate sector has been improving significantly.

VI. Capital markets

1 Primary and secondary market of government securities

1.1 Net and gross primary issuance

Over the first six months of 1998, the net financing requirement of the budget amounted to Ft 250.2 billion. During this period the total redemption of government securities and debt instruments was Ft 768.4 billion, of which Ft 505.6 billion was discount T-bills, Ft 114.1 billion interest-bearing T-bills, Ft 128.5 billion T-bonds, Ft 11.1 billion domestic credits and Ft 5.5 billion foreign currency-denominated credits. In the first half of the year, gross forint-denominated primary issuance was Ft 1087.2 billion, the greater part of which (Ft 553.7 billion) consisted of discount T-bills, while interest bearing T-bills and T-bonds amounted to Ft 194.6 billion and Ft 338.9 billion, respectively. Net primary issuance in the first half of 1998 amounted to Ft 339.0 billion and it increased evenly throughout the period.

In the first half of 1998, net primary issuance of T-bonds increased by 71% compared to the same period of 1997 and it exceeded that of interest bearing T-bills by 59%. The net issuance of discount T-bills remained at the level of the same period of the preceding year. The rise in net bond issuance was partly a consequence of lower-than-planned T-bond repurchases in the first half of the year and partly due to a deliberate policy aimed at lengthening the average maturity of government debt.

The Ft 338.9 billion gross issuance of T-bonds in the first half of 1998 was nearly one-and-a-half times the amount of that issued in the second half of 1997. Thus the share of government bonds in total gross primary issuance rose from 24.4% in the second half of 1997 to 31.2%, yet it still did not reach the proportion of the first half of 1997. This dynamic growth may be regarded as an adjustment for the relatively low share of T-bonds in the second half of 1997, which was related to the rise in long-term yields in that period.

In May 1998 a new instrument, the index-linked government bond was issued in Hungary. This new instrument is capital-indexed as opposed to previously issued coupon-indexed bonds. Investor interest has not been particularly strong for this 7-year government bond, the principal of which is indexed to CPI inflation. The main reason for this is that in Hungary the annuity market has evolved only in the recent past and insurance institutions are still in a period of capital accumulation. *The central bank sees the significance of the index-linked T-bond in the fact that this instrument contributes to improving the credibility*

Gross primary issuance of government securities

	1st half 1997		2nd half 1997		1st half 1998	
	Ft bn	%	Ft bn	%	Ft bn	%
T-bonds	315.66	33.08	229.55	24.44	338.91	31.17
Discount T-bills	528.36	55.36	571.86	60.90	553.65	50.93
Interest-bearing T-bills	110.35	11.56	137.65	14.66	194.6	17.93
Total	954.37	100.00	939.06	100.00	1,087.18	100.00

Net primary issuance of government securities

	1st half 1997		2nd half 1997		1st half 1998	
	Ft bn	%	Ft bn	%	Ft bn	%
T-bonds	131.85	57.97	99.59	50.10	210.42	62.07
Discount T-bills	48.32	21.25	30.24	15.22	48.03	14.17
Interest-bearing T-bills	47.25	20.78	68.95	34.68	80.57	23.77
Total	227.42	100.00	198.78	100.00	339.02	100.00

of the anti-inflationary monetary policy (as higher inflation would make this source of financing more expensive) and the development of the bond's price in the secondary market may give some information about investors' expectations regarding future inflation.

Among the shares of investors buying primary T-bond issues in the first half of the year, that of primary dealers (72.8%) and credit institutions (17.8%) were the largest. The high share of primary dealers is a result of their purchase obligation, set at 2% of total issuance per half year in their contracts with the Government Debt Management Agency (GDMA). The GDMA continued to place a part of the new issuance on its own account, in order to provide government securities for the retail selling network of the Hungarian State Treasury and to satisfy the liquidity requirements of the primary dealer system.

In order to increase secondary market liquidity, the GDMA has been applying a new issuing technique since the beginning of 1998, the essence of which is to increase the series issued. The consequence of this issuing strategy may be that upon the maturity of the government bonds, a large amount of redemption will be due and payable all at the same time. Large maturities constitute renewal risk and may add to the volatility of market prices through significant fluctuations in money market liquidity. This effect can be reduced if debt management develops a prudentially regulated system for the early repurchase of government securities. In the course of repurchasing, the issuer buys the government securities from market agents on several occasions in smaller packages during the months before maturity so that they can be swapped against the then newly issued government securities. In this way, the government securities issued originally in large amounts will mature in several instalments causing only minor disturbances in the government securities market and constituting only a moderate risk for both investor and issuer. The repurchase operation is to take place during the five months prior to maturity with the participation of primary dealers. In the first six months of 1998, government bonds not yet due were repurchased to an amount of Ft 18.5 billion. Investors made use of the instrument of selling before maturity to an extent lower than expected by the GDMA, which led to a transitory increase in net government securities issuance. This lower-than-expected use may be attributed to the fact that the full-scale regulation of the conditions of repurchases had not been effected until June 1998.

In the first half of 1998, Ft 553.7 billion worth of discount T-bills were issued, a 4% nominal increase relative to the amount issued during the same period of 1997. The share of discount T-bills in total gross primary issuance was 51%. In the maturity composition a bigger weight has been put on T-bills with maturities exceeding three months, the sale of which exceeded 74% of total discount T-bill issuance. Over the first six months of 1998, the share in total discount T-bill issuance of 3-month T-bills was 22%, that of 6-month T-bills nearly 36% and the 12-month bills more than 38%. The structure of issuing discount T-bills was altered from the middle of 1998: the last auction of 1-month discount T-bills was held on 30 June, from then on the GDMA ceased to issue this paper.

Treasury bills sold directly to the public represented 18% of total primary issuance, which amounts to a nearly 7 percentage point increase in their share relative to the first half of 1997.

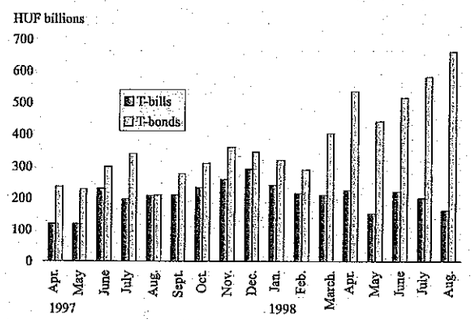
A new 3-year government security, the so-called treasury savings bond, sold directly to the public was introduced at the end of June 1998. This instrument aims at longer-term household savings; its interest payment is due in a lump sum together with the principal upon redemption.

1.2 Secondary market turnover

A dynamic broadening of the secondary market of government securities could be observed in the first half of 1997. A picture on the development in secondary market turnover can be obtained from Budapest Stock Exchange (BSE) trading data and the records of KELER on OTC trading. The figure below shows the changes in turnover in these two segments of the secondary market (by single counting in both markets).

It can be seen that, *while trading in discount T-bills somewhat declined, that in T-bonds, which can also be bought by non-residents, increased spectacularly.* The first significant increase in turnover was registered in March-April due primarily to a keen propensity to purchase on the part of non-resident investors. The outstandingly high turnover in August can be attributed to sales by these same non-resident investors, triggered by the Russian crisis and the world-wide loss of confidence in emerging markets.

Secondary market turnover of Hungarian government securities BSE (Budapest Stock Exchange) + KELER OTC (Central Clearing House)



2 *Stock market*

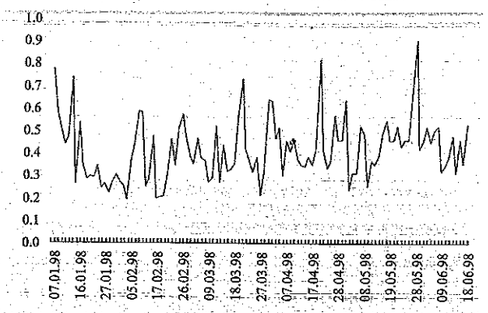
In the first half of the year, the BSE witnessed hectic fluctuations. The BUX index reached its maximum at 9016 points on 23 April, which meant an annual yield of 40.7% (39% in dollar terms) relative to 1 January. In the last week of April and the first two weeks of May, the index floated downwards. Then with a nose-dive crush it reached its minimum in the first half of the year on 28 May at 7049 points, which was 11.8% (16.6% in dollar terms) below the closing in 1997.

Over the first six months of the year, trading amounted to HUF 1568 billion ($74 billion) by single accounting; average daily turnover of shares was about two-and-a-half times the average for 1997 during this period. This figure in itself may, however, be misleading. Owing to the rise in prices and the introduction of MATÁV, BSE capitalisation increased dramatically in 1997, that is, the improvement in the liquidity of the stock exchange was substantially lower than its increase in trading. The BSE is by far the most liquid stock exchange in east-central Europe and, in this respect, it does not lag behind even the most advanced Anglo-American markets. Over the first half of the year, about 60% of total turnover in central European shares was administered at the BSE in spite of the fact that Budapest's share in capitalisation is "no more" than 33%. (Even that is well above Hungary's share in east-central Europe's GDP.) As there were substantially fewer new introductions than in 1997, capitalisation moved very well together with stock exchange prices and the same applies to daily turnover measured in Hungarian forints, as liquidity proved to be white noise over the first half of the year (a good number of days with outstanding high turnover relative to

Indicators of share trading on the Budapest Stock Exchange

	1995	1996	1997	1998 H1
Turnover (single accounting, HUF billion)	43.7	2,45.3	1,436.4	1,568.0
Number of stock market transactions	60,851	153,937	478,236	454,490
Average number of daily transactions	244.4	620.7	1,936.2	3,725.0
Average daily turnover in shares (HUF million)	175.3	988.9	5,15.2	12,852.0
Turnover per transaction (single accounting, HUF million)	0.7	1.6	3.0	3.5
Number of trading days	249	248	247	122
Stock market capitalisation at the end of the period, (HUF billion)	327.8	8,52.5	3,058.4	3,255.1

Stock exchange liquidity (daily turnover as a per cent of capitalisation)



the capitalisation illustrated in the figure was related to single transactions largely concerning a privatisation block).

In contrast to Warsaw, in January the usual start-of-year boom failed to materialise at the BSE. Growth relative to early January is, however misleading: *Whereas the Warsaw index approached its pre-Asian-crisis level after growing for two months only by March, as a result of portfolio rearrangements in November-December, the BUX had reached its pre-crash level already by the end of December.* That is to say, the BUX's weaker performance in the first quarter relative to Poland is not due to a loss of confidence on the part of portfolio investors in Hungary, but to the fact that as a direct reaction following the Asian turmoil, they increased the weight of Hungary as "a safe heaven" in their east-central European portfolios, which declined overall in absolute terms, but which made Hungary strongly overweight relative to its share in capitalisation.

According to analysts, Poland is one or two years behind in company restructuring. The explosive profitability increase generated by micro-level reforms in Hungary in the course of 1996-97 is appearing in Poland in 1997–98. Moreover, blue chip stock exchange privatisation projects (for instance, the telecommunications company) are expected to take place in Poland in 1998, which has significantly contributed to boosting the stock exchange also in Hungary. All this means that based on the expected EPS growth, Polish shares, which remained at a low level after the crash, were regarded as undervalued. In contrast, according to expert opinion, the BSE was adequately valued in view of the fundamentals of Hungarian companies and the expected risk premium: the romantic 'wild eastern' period of the annual doubling of the stock exchange index came to an end.

The more passive attitude on the part of resident and non-resident investors was also reflected in trading data. In January and February, average daily turnover was well below that of December when the portfolio rearrangement in favour of Hungary took place. The market value of trading decreased so that prices increased somewhat, that is, market liquidity was considerably lower (by about 17% in February) than in December.

In the second quarter, the international environment relevant for the Hungarian stock market deteriorated significantly in relation to the Russian crisis, which could not be offset by company profits which continued to show a very sound picture. This was also reflected in the risk premium for emerging markets. In comparison with yields on American government bonds regarded as risk free, it can be established that *the risk premium for emerging markets increased from the beginning of April according to all likelihood in relation to the Russian crisis and the prolonged Asian problems.*

Econometric tests also demonstrate that the development of the BUX broke away from the range attributable to the emerging market risk premium in a dramatic manner between the middle of May and July. Due to the elections, country-specific risks independent of the other emerging markets also had to be calculated in the case of Hungary, although analysts regarded it as exceedingly improbable that as a result of the elections, a government would be formed whose expected activity could result in a deterioration of the future competitiveness and profitability of BSE companies. At the same time, the risk premium relevant for investors was significantly increased by the fact that transitory concerns arose concerning the stability of the government coalition about to enter into office and concerning the consistency of future economic policy. Unfortunately, none of the Hungarian dollar bonds have a liquid secondary market ensuring a transparent price development with the help of which a country-specific risk could be measured, yet a number of signs indicate that this was not negligible.

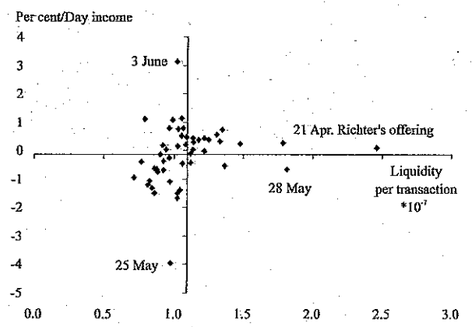
The question frequently arises as to what part non-resident institutions and Hungarian small investors had in the end-of-the-May price fluctuations. As the greater part of trading has been generated by non-resident institutions, the relatively greater role of Hungarian small investors can be assumed in those days when liquidity was below the average and the average amount of the contract per transaction was low. *In the period between 30 April and 15 June, no empirical interrelations can be demonstrated between changes in the index and trading and liquidity, and the data concerning the average amount of contracts do not indicate significant differences between the behaviour of small and institutional investors.*[1] When interpreting data on the average contract amount, circumspection is recommended, as brokerages frequently administer orders from small investors in a single "comprised" bloc, hence these indicators tend to overestimate the size of the average transaction.

Nevertheless, the direction of changes in this indicator (assuming that the expected value of this "blocking distortion" is constant) provides information on the relative activity of small investors.

From the beginning of August, it was quite clearly the international financial environment, first and foremost the Russian crisis, which had a predominant impact on the Hungarian capital market. Although the Russian central bank was able to hold off the speculative attack until the middle of August at the price of drastic measures, the fundamental reasons which evoked that attack remained unchanged: an unsustainable budget, structural and public finance reforms omitted and the sustained nose-dive in the price of hydrocarbons, considered as the main Russian export item.

Similarly to pre-crisis Southeast Asia, uncovered dollar short positions accumulated in the Russian banking sector. Moreover, owing to insufficiently stringent bank supervision and the intertwining between banks and large companies, the credit portfolio of the Russian banking sector has also been of very low quality. Owing to this, the collapse of the rouble brought the majority of Russian banks into a situation verging upon insolvency. Quite visibly, the Russian general government moved along an unsustainable path and when, owing to the international financial environment and the collapse of the banking sector, the domestic capital market no longer enabled the roll over of state debt, a moratorium on debt and partial non-repayment[2] became inevitable.

Liquidity per contract and daily returns



[1] Liquidity per contract was defined in terms of the proportion of capitalisation traded in the course of an average transaction, which filters out the distortions caused by price changes from the average contract amount.

[2] In relation to the moratorium, Russian government bonds and treasury bills were swapped against papers of a market value substantially lower than that of the original, that is to say, the Russian state repays only a fraction of its actual debt. The significant credit rating institutions reacted to this measure by drastically lowering Russia's rating.

Several direct fundamental channels of infection regarding the spread of the financial crisis can be envisaged. Analysis of the situation in Hungary leads to the conclusion with respect to all aspects that these fundamental channels do not point to a serious economic recession in Hungary.

- **Loss of export markets and price competition in third markets.** As expounded in detail in the part addressing the external economy, these developments sensitively affect certain sectors, but do not break the overall export dynamism.

Systemic risk in the system of financial institutions. If the banks are strongly exposed to Russia, the losses accumulated in the banking sector may ripple on to the domestic financial markets through the administration of credits and then on to the other sectors of the economy. Fortunately, the Hungarian banking sector has a sufficiently strong capital base: if all of the otherwise not too significant Russian credit portfolio was written off to zero, the regulatory capital of the banks would still remain of a reassuring magnitude. A substantial portion of the Russian loans was extended under the guarantee of Eximbank or MEHIB, whereby the risk is borne not by the banks but the budget. The implicit growth in state debt arising from this amounts to approximately HUF 26 billion.

- When analysing fundamentals, indirect effects must also be taken into account. The driving engine of Hungarian growth has been exports to the European Union, consisting to a remarkable extent of consumer durables for which demand is strongly cyclical. This means that should growth in the EU slow down owing to the Russian crisis or any other factor, that may have unfavourable consequences for Hungary. Apart from the losses arising in the banking sector, the exposure of the EU to Russia is minimal. At the same time, the prolongation of the problems in Southeast Asia, the recession in Japan and the loss of growth momentum in the United States mean that Europe's economic environment and hence its growth prospects have become less promising.

Nevertheless, there is no doubt that the reasons for the crash should be sought partly in investors' way of thinking and in the institutional specialities. There are two generally accepted explanations concerning the psychological channel of infection.

The first channel is that foreign investors treated the central European countries on the same footing as Russia, though they are in a much more advanced phase of transition. Owing to this, **the Russian crisis increased Hungary's risk premium,** that is (based on the discounted cash-flow model) **it reduced the equilibrium price of shares** and increased the level of yields expected from government papers. The crisis of confidence rippling over from Russia and the liquidity shortage observed in the international capital markets led to the commencement of a capital outflow even from the most advanced central European countries. This pushed the exchange rate of the forint to the weak edge of the band and forced the central bank to intervene. The other possible explanation takes the fact into consideration that the central European portfolio investments were created largely not by final savers or primary institutions managing their portfolios (the large Anglo-American investment and pension funds) but through the intermediation of a set of institutions specialised in central Europe or the "emerging markets".[3] In such an institutional environment, if primary investors decide to withdraw capital owing to changes in their risk preferences or their view of the emerging markets, the intermediary institutions must liquidate a part of their portfolios. As Budapest has been the most liquid market of the region as mentioned before, it was possible to implement significant forced sales in the easiest manner. In contrast, in Moscow the major crashes of August took place under the conditions of negligible daily turnover of $1-2 million and non-transparent price developments (on the BSE, average daily trading is above $50 million). This means that a Russian share portfolio is virtually impossible to suddenly liquidate even at the cost of substantial price loss,[4] that is, the institutions were forced to sell in central Europe in spite of the fact that they were well aware of the fundamental differences.

These two effects influenced the stock exchange not only directly but also through expectations concerning the exchange rate of the forint. According to information obtained from market agents, the vast majority of non-resident portfolio investors maintain uncovered forint positions partly owing to the still existing regulatory constraints in this area. Current regulations applicable to capital flows do not enable non-residents to open forint forward positions. Naturally, this constraint can be upheld only in the case of futures contracts quoted on the BSE or the BCE, but not with respect to OTC swaps or NDF contracts concluded in London. Nevertheless it seems that a good many portfolio investors were not hedged against the exchange rate risk of the forint. This can be attributable largely to the fact that the constraint doubtless raises the transaction costs of the hedging operations and the strong credibility of the exchange rate regime did not justify undertaking such transaction costs. So long as the expectation that the forint would permanently move along the strong edge of the band was general, this did not give rise to any increase in risk. At the same time, since May the forint has fluctuated largely inside the band, sometimes in a rather volatile manner and, in the course of August and September, it stuck to the weak edge of the band and several interventions were needed to protect it. *If investors are not fully risk-free, the fact of fluctuation within the band justifies a risk premium (that is, reduces the equilibrium share price) even if the credibility of the band itself is not questioned.*

[3] "Home bias", that is, the irrationally high weight of the domestic capital market in a portfolio continues to strongly characterise the significant Anglo-American institutions to this day. Their exposure to emerging markets (generally below 5%) does not make it economical for them to maintain separate departments of analysts. Hence there is good justification to maintain region-specific funds.

[4] In the days of the big boom of 1997, trading in Moscow was much higher, frequently above $100 million. At the time of the crash, however, Russian resident institutional and private investors resorted partly to capital flight themselves and partly (namely, the banks) were unable to enter the market due to the deterioration in their financial position, which meant that the price inflexibility of demand declined to the extent that it was impossible to sell papers in practice at any price.

According to the opinion of most analysts, which we also share, the boom of the past two years was not a bubble, it was warranted by improved corporate profits and by the macroeconomic environment. At the same time, there may be a backlash. A capital market collapse of such a degree may have negative macro-economic effects which economic policy must take into account:

- Since the middle of August, households lost 3–4% of their net financial assets. This may lead to a decline in consumption demand through the wealth impact.
- Systemic risk may appear in the capital market. Several securities firms have become insolvent, the position of others was shaken, and in some cases loss of confidence on the part of investors was perceptible. Through their investment undertakings, commercial banks may also be effected, which may give rise to credit shrinkage. All this may deteriorate the efficiency of capital allocation, which in the long term may restrain growth.
- Companies may be frightened off from public share issues, which may prevent them in developing the desirable leverage.
- If portfolio inflow plays a significant role in financing the current account deficit, a unfriendly international capital market environment may lead to a depletion of reserves and the questioning of the credibility of the exchange rate regime.
- The yield increase induced by the growing risk premium may make the financing of the state debt more expensive even in the domestic capital market.

Based on the available information, we may conclude that the crash genuinely has non-desirable effects on growth prospects and the stability of the exchange rate regime. These problems, however, can be managed with a prudential, conservative budget and circumspect monetary policy.

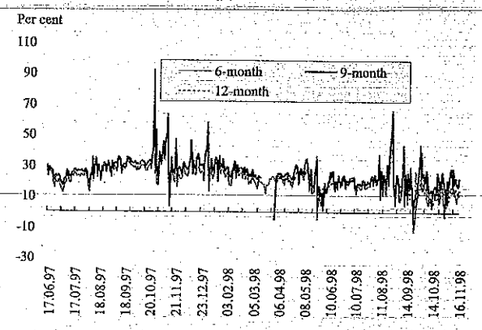
3 Derivative markets

3.1 The BUX futures market at the BSE

In the futures section of the BSE, futures BUX trading maintained its earlier predominance in the first half of 1998: it moved from 64% in the last quarter of 1997 to 58% over the first quarter this year and to 73% in the second quarter. As a result of the uncertainties evolving in the wake of the Russian crisis, these ratios sank to 44% in August and to 24% in September. The most popular maturities continue to be December this year and December next year. They make up a part frequently in excess of two thirds of the total forward BUX trading and contracts; other maturities in general cannot be regarded as being of sufficient liquidity.

The figure illustrates the development of futures BUX prices relative to spot prices. It can be seen that due dates further away contained an implicit interest rate in excess of 10% in the greater part of the reporting period over and above the spot index value, although rates declined somewhat relative to the earlier period. In the greater part of the period of the year to date, futures prices

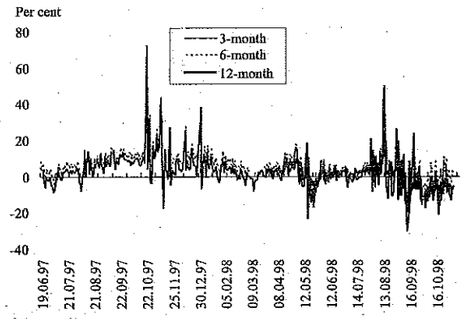
BUX futures premia over the spot BUX index



changed to a lesser extent relative to spot prices; hence futures premia declined when the spot market increased and vice-versa. Forward stock exchange prices largely reacted in an extreme manner; plummeting prices in excess of the spot market reaction frequently resulted in negative implicit rates.

The figure shows the market situation necessary for opening futures arbitrage positions popular among institutional investors. The futures premia above the risk-free yield still frequently reached levels at which it was worthwhile to open such positions.[5]

Spreads of BUX futures premia over T-bill yields of corresponding maturities



Note to the figures above: As BUX futures contracts have a fixed expiry date, the maturity of the implied interest rate becomes shorter as the expiry gets closer. Therefore, when calculating the implied interest premium, the implied interest rates should be compared to market rates of shortening maturities. Alternatively, we may construct a fixed-horizon (for instance, 6-month) BUX "forward" using a linear interpolation between two BUX futures corresponding to two successive expiries. In the case of the 6-month artificial BUX "forward", these two expiries are always the second and third of those currently alive, in the case of the 9-month, the third and the fourth, and so on. The fixed-horizon BUX "forward" time series constructed in this way can then be compared with yields of 6- and 9-month T-bills.

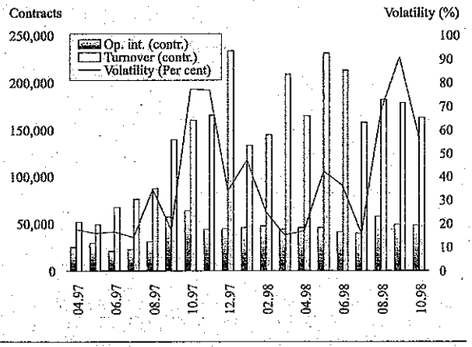
The formula used to construct the 6-month fixed-horizon BUX "forward":

$$BUX(6m) = BUX(T2) + [BUX(T3) - BUX(T2)]\left(\frac{182 - (T2 - t_o)}{91}\right)$$

where t_0 is today, T_i is the date of the ith expiry traded at t_0 and $BUX(T_i)$ is the value of the BUX futures of this expiry.

The figure illustrates BUX futures turnover, open interests in BUX futures in contracts and the changes in spot index volatility.[6] It can be seen that the month of December continues to have the highest turnover (just as December maturities are the most liquid), but the months indicating the other end of quarters are also outstanding. The months in which prices plummeted to a large extent (such as May or October and November last year) were also characterised by keen trading. Neither the May, nor the

Turnover and open interests of future BUX contracts and volatility of spot BUX index



[5] The heart of this strategy was discussed in the 1997 Annual Report of the NBH (pp66–68)

[6] Volatility (the index shows the variability of prices) is interpreted as the normal difference (standard deviation) of the annualised value of daily percentage price changes. It follows from this very definition that volatility is not sensitive to the direction of price movements only to their extent. The volatility of price indicates how risky an instrument is, and in parallel with this, what its potential profitability is. A higher value represents a higher risk and potential yield than a lower one. As derivative financial instruments are used first and foremost to manage risk, their market is appropriately discussed together with financial risks. The simplest method of this is to take the volatility of financial products as the base. The aggregate picture shows very little directly about risks existing at the level of individual agents, for this latter also depends on the composition of individual portfolios and balances. With the help of derivatives, individual actors may reduce market risks from their own point of view but they may also increase such risks.

August decline resulted in any major decrease in the open transaction portfolio in contrast to the situation in November 1997. Over the first seven months of 1998, the open transaction portfolio was stable, hence the growth in trading did not represent closing of positions or net opening of positions relative to the preceding year. This year volatility was most of the time higher than last year, which would have warranted the building up of a larger open transaction portfolio particularly because savings continuously flowed into shares and the institutional investors which invest in them. It is possible that owing to the greater global stock market insecurities resulting form the Asian, then from August on the Russian crises, speculators' demand was missing from the forward markets. This is also supported by the fact that the multiple correction of share prices and their nose-dive in August exhausted the financial possibilities of many investors. Owing to their financial difficulties, commissioners of the supervision have to be appointed to some securities traders and this step may also be taken soon in the case of others. Some traders have already gone bankrupt, partly because they were able to survive the October-November crashes of last year only with great difficulties.

The share of forward index trading in the total of the stock market is similar to that of the advanced markets. The ratio of the market value of open positions to spot market capitalisation was 1.5% at the BSE in December 1997. By way of comparison, this ratio did not exceed 1% in the case of the FTSE 100 and the Swiss market index, and 2.9% in the case of DAX.[7] In the case of the BSE, this can be explained by the fact that the domestic institutional investors who can profitably exploit arbitrage possibilities for the time being possess only a small share of the stocks in BSE's total capitalisation. The majority of shares were held by non-resident institutional investors until the nose-dive in prices took place in August and September. They, however, obviously did not make use of the opportunities offered by the index futures market.

Individual forward share contracts at the BSE

In July, the BSE introduced individual futures trading for three shares (MOL, MATÁV and TVK) which became popular right in the very first days. Prices soon approached the levels established in the index futures market, which illustrates that, in contrast to expectations, they became popular not so much amongst small investors but primarily institutional investors. This is attributable to the fact that it proved to be cheaper and more flexible in implementing the futures arbitrage strategy if the spot BUX index portfolio was not exactly reproduced but only approached by selecting the most important papers. This means that the less liquid index papers are omitted from the representative portfolio, which reduces the costs of the strategy both in terms of cash and time, and it can still follow changes in the index with a fair accuracy. Although imperfect substitution involves a potential risk, its extent is practically negligible.

[7] Source: BSE Monthly Report, December 1997 and BIS International Banking and Financial Market Developments, Basle, May 1998, p. 28 .

3.2 Foreign exchange futures markets: BCE and BSE

In both exchanges, the German mark and the US dollar are the most popular futures currencies. The value of the open interest in German marks at the BSE rose from HUF 31 billion at the end of last year to HUF 87 billion by June and then plummeted to HUF 14 billion by September. That of the dollar rose from HUF 13 billion to HUF 35 billion by June, then fell to HUF 4.8 billion. For both currencies, the decline in the open positions took place largely in September: August stocks were still relatively close to the value at the end of the half-year.

This means that uncertainties in the foreign exchange and the capital markets prompted market agents to close their positions. Turnover calculated at market value did not increase in the first half of the year, moreover, there was some decline in the case of the dollar. If the devaluation of the forint relative to these two currencies is also taken into account, the market value of turnover increased even less in real terms.

The quarterly turnover in the German mark rose from HUF 122 billion at the end of last year to HUF154 billion by the first quarter of this year, sinking to HUF 133 billion by the end of the second quarter, while the same figures for the dollar were HUF 92 billion, HUF 81 billion and HUF 71 billion, respectively. The third quarter brought about an increase in turnover for both currencies: trading in the German mark amounted to HUF 350 billion, that in the dollar to HUF 171 billion which, as we have seen, covers the closing of position in net terms. It holds for both currencies that trading increased particularly in September.

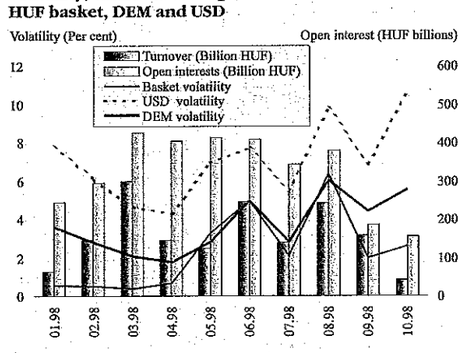
The German mark traded on the BSE to a value of Ft 202 billion in the second quarter, the US dollar HUF 118 billion, which accounted for nearly 60% of the combined German mark and dollar turnover of the two exchanges for both currencies. In the third quarter, more than 60% of trading was registered at the BSE. Trading on the BCE declined also in nominal terms by the third quarter: HUF 185 billion in DEM and Ft 98 billion in USD contracts were traded.

The volume of open interests also declined at the BCE in the third quarter. These ratios indicate that the BSE, starting out from a much lower share than that of the BCE, overtook the latter.

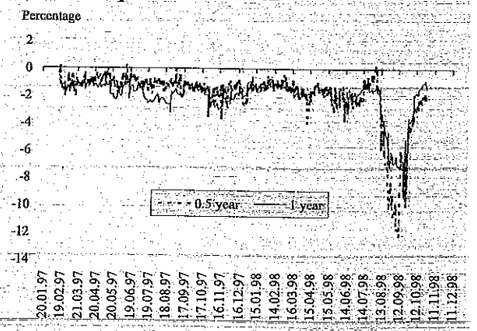
The above figure indicates that both turnover and volume of open interests reach their highest values in the end-of-quarter months. The volatility of the official foreign exchange basket of the forint was lower in the period under study than that of the two currencies making it up separately. Volatility always increased whenever a more vigorous decline took place in the stock exchange, which is typical in the relations between the stock exchange prices and exchange rates of emerging markets. At the same time, there is no obvious and unambiguous relationship between volatility and futures activity. This is partly attributable to the fact that futures activity in the foreign exchange futures markets serves not simply hedging purposes, but is also aimed at profiting from the differences between the interest rates on forint denominated assets and that of those denominated in foreign exchange. This is also influenced by the yield premia on financial instruments issued in forint terms.

Another explanation could be that a large number of market agents simply do not hedge their foreign exchange risk. For in-

Volatility, turnover and open interests of the official HUF basket, DEM and USD

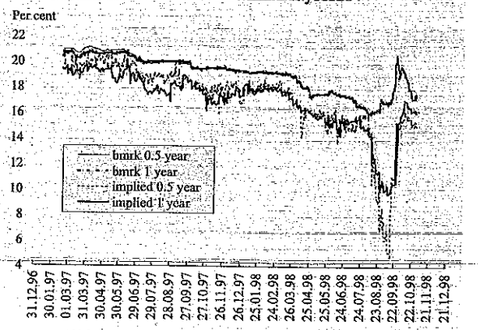


Deviation of futures basket prices from covered interest rate parities on the BCE



Note: The implied interest rate is calculated from covered interest parity using the USD and DEM contract settlement prices (combined according to the the currency basket) of the foreign exchange futures market expiring closest to the given (half-year or one-year) maturity and USD and DEM euromarket interest rates. The half-year and one-year benchmark forint yields were deducted from the calculated implied rates; the figure shows the differences obtained this way.

Implied interest rates of futures basket prices on BCE and short term benchmark yields



stance, one of the commonly held reasons for the severity of the Asian crisis is the insufficient extent to which market players used the markets for hedging against foreign exchange rate risk. This also indicates that **economic policy and market agents are both interested in the development of foreign exchange markets.** As the forint was traded close to the strong edge of the band following the introduction of the crawling band foreign exchange regime in March 1995, until the Russian crisis (apart from short periods), the possibility of devaluation within the band was insufficiently incorporated in the expectations of market agents.

Some of them opened positions at exchange rates which would cause severe losses if the forint's exchange rate moved away towards the weaker edge more significantly even within the band. The devaluation of the forint within the band around the time of the Russian crises was not reflected in settlement prices.

The reason for this is presumably that the exchange rate was manipulated in order to avoid the realisation of losses. The figures below show that exchange rates deviated from the level expected on the basis of standard covered interest rate parity theory, according to which they developed practically until the second half of August and to which they returned in the second half of September.

Futures prices must evolve around the so-called covered interest rate parity owing to the arbitrage activity of market agents. A 1–2% deviation from that can be explained by transaction costs.

The figure shows the deviation of implied futures rates relative to the foreign exchange basket calculated at interest rate parity. The figure below shows the deviation from risk-free market rates.

The behaviour of market agents is explained by the fact that in certain cases traders did not examine the financial backing of their clients with due care, whereby a part of these losses burdens the brokerage firms, aggravating their losses suffered on transactions concluded for their own accounts.

Drawing the lessons from these events, both exchanges set up a settlement price committee with a mandate to ensure fairness in price development. It was partly due to this that futures rates returned to that warranted by interest rate parity as seen in both figures from the end of September.

Last but not least, the OTC market, of which we have no more recent information other than stock data at the end of last year available at nominal value, also offers opportunities to hedge against exchange rate risks.

These movements, in addition to not being visible to monetary policy, are difficult to interpret from the point of view of aggregate risks for methodological reasons. Some, as it is becoming visible from the experiences of the Asian crisis, aim to provide and widen the range of opportunities to invest for final investors and financial institutions in spite of the existing prudential regulations and capital controls. Because of this, the central bank will make additional efforts in reporting and methodology to facilitate analysis of the OTC derivative market. As part of this, it participated in a survey co-ordinated by BIS this spring and summer, whose results will be soon published upon completion of processing.

4 *Institutional investors*

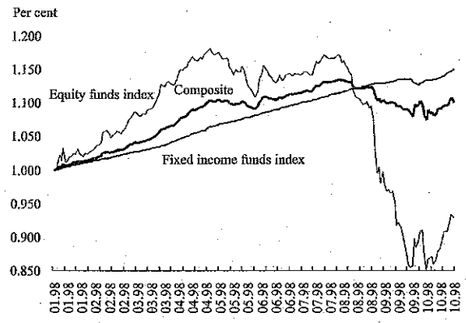
In 1998, dynamic growth in the open-ended investment funds continued. In the first half of the year, a substantial amount of capital flowed into investment funds and their share also increased in the financial wealth of households.[8] Generally accepted benchmarks have not yet evolved for the evaluation of the yield on the funds, therefore, we constructed a composite share and a bond fund index for our own use.[9]

The performance of investment funds naturally show a close correlation with developments in the securities market. At the same time, as a result of professional portfolio management and the use of hedging operations, investments funds survived the end of summer crisis relatively well; the expected development of asset value per unit, was substantially more promising than that of the relevant combinations of the BUX or MAX. Thanks to this, investment funds did not lose the confidence of their investors and in spite of the crisis, the decline in the number of investment units, that is, the net withdrawal of savings from the investment funds was negligible (less than 4%). Moreover, in the last week of August, there was some inflow of savings. It can be established that investment funds constitute one of the most up-to-date elements of the household portfolio from the viewpoint of yield-risk combination, flexibility as well as transaction costs. Hence it is likely that they will continue to gain ground even in a less favourable tax environment.

Life insurance seems to be a much more saturated market. The investment portfolio of insurance companies has been growing at a rate much below that of investment funds and the weight of the insurance premium reserve in the financial wealth of households has essentially been stagnant. The transaction costs related to life insurance have been spectacularly high. This, however, was offset by a tax reduction possibility substantially more favourable than available with any other form of savings. Insurers continue to pursue an excessively conservative investment policy, their portfolios tend to avoid risks much more than what would be permitted by prudential regulations. In several cases, this is due to the business policy of the non-resident owner. It should also be noted that the growth in the insurance portfolio over the past one-and-a-half years was due largely to unit linked products which, as far as their economic content is concerned, are combinations of a risk life insurance and an investment fund; their categorisation as life insurance enables tax arbitrage.

According to the preliminary data for the first quarter received from the supervision authority, 27 private pension funds are licensed. The number of fund members was about 840,000 at the end of June, the membership fee actually paid up amounted to HUF 10.6 billion. About 81% of those entering such funds are below the age of 41. The membership fees paid up also include the amounts paid by the employers of the members as supplemen-

Investment funds indexes



[8] According to the information available to us, the non-household assets (owned by municipalities, companies, etc.) managed by investment funds are also highly significant (in an order of magnitude of Ft 80 billion).

[9] The composition of the sample: OTP Optima, Budapest I., CA Kötvény, Hunnia Kötvény, Postabank Hozamgarancia bond funds, Budapest Növekedési, CA Részvény, OTP Paletta share funds, the composite index shows this plus the Budapest II. And the CA Devizakötvény funds. The indexes show the development of asset value per unit weighted with daily asset value.

tary fee as well as supplementary membership fees paid by the members themselves. According to the data of the first quarter, of the HUF 2.3 billion received, HUF 38 million was membership fees paid belatedly.

Declared membership fees which employers fail to pay to the funds amounted to HUF 292 million.

The supervision authority, however, has no legal instruments to take action against employers for their failure to pay membership fees.

Currently, there are still problems with the reporting system – the data disclosed by the funds and by the employers are not reliable.

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