QUARTERLY REPORT ON INFLATION

1999
March

radical change. 1998 was a successful year as regards Hungary's economic performance and this coincided with Hungarian affiliate enterprises arriving at their mature stage of operation, with their profitability rising at the same time. This latter in itself would have led to increased net income transfer abroad in the current account compared to 1997. However, the economic crisis originating in Russia is likely to have had its effect as well.

Net current transfers in the second half of 1998 were a bit lower than in the same period of 1997, but taking into account the whole year they hardly changed.

The deficit of the current account in the third quarter of 1998 (at the slump of the Russian crisis) was mainly financed by the NBH through a decrease in international reserves. This period was also characterised by significant net government securities sales by foreign investors. The shrinking of credit institutions' foreign position generated an additional demand for foreign currency which more than offset the broadening of the corporate sector's foreign position. Thus the private sector's foreign position improved, which was principally reflected in the increase of short-term deposits of credit institutions held by non-resident banks, and a reduction in the stock of loans. Net equity purchases of foreign investors virtually reached zero contemporaneously, but this is to be evaluated against other contaminated countries' experience, from where net equity sales by foreigners were reported. Net foreign direct investment inflow was also reduced in the third quarter, which can partly be attributed to higher outward direct investment by resident enterprises.

The fourth quarter brought changes. With pressures on the forint easing considerably, the NBH's interventions supporting the national currency could have been stopped, and with international financial markets calming down, the central bank was able to issue debt and fill international reserves up to secure levels. Simultaneously, foreign investors returned to government securities markets and effected significant net purchases of Hungarian government papers. The main source of financing, however, was again non-debt-generating flows – i.e. direct investment and portfolio equity investments. Nevertheless it should be kept in mind, that intercompany loans have reached quite a significant share among direct investment inflows. Thus relatively more mobile components are gaining space in capital inflows. As the private sector's confidence in the forint quite rapidly resumed, outflows turned to inflows on the debt-flows channel of the commercial banks and the corporate sector as well.

Financing of the current account

USD million

	Q3 1997	Q4 1997	1997	Q3 1998	Q4 1998	1998
1. NBH and government	−621	−1,314	−2,467	649	243	−458
Debt flows	−435	−933	−2,637	−557	821	339
– o/w government securities	49	−241	159	−790	460	869
International reserves	−186	−381	170	1,206	−578	−797
2. Private sector	280	953	1,382	−526	376	882
Debt flows	158	267	411	−527	84	374
Portfolio equity flows	122	686	971	1	291	508
3. Net foreign direct investment	332	598	1,653	169	424	1,453
Equity investment	284	640	1,526	161	246	947
Intercompany loans	48	−43	128	8	178	506
4. Capital account and NEO	−68	58	413	139	−82	421
Total financing (1+2+3+4)	−77	295	981	432	961	2,298

creased corporate profits in an unanticipated manner through both a decline in (real) wage costs and a temporary real exchange rate depreciation. In 1997 economic agents underestimated the rate of GDP growth, which is reflected in the month-by-month decrease in the net financing requirement of the corporate sector. Paradoxically, the improving net financing capacity of enterprises was significantly supported by a parallel deterioration in the state budget, as under given investment decisions the additional spending by the budget have landed in the corporate sector. 1998 partly was a year of correction. Growing investment demand well increased the net financing requirement of enterprises.

Taking a look at the general government's net financing requirement we can see that in both 1997 and 1998 this figure exhibited a decline of 1.2% of GDP.

The increase in private households' net financing capacity simultaneously with the decline in the general government's and the corporate sector's net financing position led to a 2.3% (of GDP) rise in total net external financing requirement. The increase in government's net financing requirement could have caused a deterioration of the current account already in 1997, but this was offset by the temporary decrease (due to the higher than expected GDP growth) in the corporate sector's financing requirement. In 1998 however, in accord with the expected developments of the business cycle, enterprises made a correction by increasing their financing requirement which was only partly balanced by the decrease in households' financing capacity (which in fact can be attributed to temporary phenomena). The decline in external equilibrium could have only been avoided by an improvement in the government's financing position which could have compensated for the autonomous fall in the private sector's position. However, on the contrary, the government's financing positions also worsened.

2 The current account and its financing

According to balance of payments statistics, in the third quarter of 1998 approximately $450 million, while in the fourth quarter more than $950 million deficit was generated in the current account. Balance of payments figures point to the worsening balance on goods and services flows as the main source of the growing current account deficit compared to the same periods in 1997. This reflects a decline in the balance of real transactions which began already in 1997, but which, partly to the time lag between shipments and payments, appeared in the balance of payments data only in 1998.

Besides that, the decline can be traced back to an increase in net income transfers to non-residents. Income on non-debt-generating investments (especially on foreign direct investments) increased sharply, which was not offset by a minor decline in income on debt-generating investments. Although the figure that represents profit repatriation on the part of foreign direct investors more than doubled in 1998 compared to the preceding year, this increase does not mean that foreign direct investors' treatment of their Hungarian affiliate enterprises exhibited a

Main components of the current account

USD million

	Q3 1997	Q4 1997	1997	Q3 1998	Q4 1998	1998
1. Goods, net	−346	−429	−1,734	−687	−739	−2,121
Credit (Export)	4,775	5,482	19,637	4,944	6,021	20,749
Debit (Import)	5,121	5,912	21,371	5,630	6,761	22,870
2. Services	464	218	1,177	328	55	678
Travel, net	539	339	1,428	515	254	1,298
Other services, net	−75	−121	−251	−187	−199	−621
3. Income	−418	−354	−1,421	−372	−555	−1,872
Income on debt, net	−280	−178	−942	−204	−183	−911
Income on non-debt	−138	−176	−478	−168	−371	−961
4. Current transfer	376	270	996	299	278	1,018
Current account balance (1+2+3+4)	77	−296	−981	−432	−961	−2,298

The "Quarterly Report on Inflation" is a publication of the National Bank of Hungary, which aims to inform the public on a regular basis about recent and expected developments in inflation, as well as about the central bank's assessment of the macroeconomic process determining inflation. The aim is for the goals of monetary policy to reach a wider public than before, such that the central bank's actions become easier to follow and interpret. This publication focuses essentially on the description and analysis of current developments of a given period. The economic and financial concepts and relationships determining future developments in inflation and considered relevant by the central bank were presented in our first issue,[1] hence their detailed description is not given here.

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V. External equilibrium

1 Net savings position

The current account is the difference between an economy's gross savings and gross domestic investment. The savings-investment balance, however, defines a "theoretical" current account that is different from the one compiled on the basis of balance of payments statistics.[1]

The *savings-investment position of the whole economy* is computed as the sum of individual positions of resident economic agents (general government, the corporate sector and private households). In contrast to our previous report and other earlier NBH publications, the positions of economic agents are now given in operational terms so their interrelations with real economic decisions are easier to interpret. While earlier the compensation for inflationary depreciation on net financial wealth was recorded as both income and saving, from now on it is only interest revenues in excess of inflationary compensation is regarded as income and saving.

The difference between GDP and disposable income expanded further in 1998 as a consequence of increased profit repatriation[2] on the part of foreign owned enterprises.

The financing capacity of private **households** in 1998 increased by 0.5% of GDP. This is not to be attributed to changes in households' propensity to consume/save, but instead to two temporary factors. Pension reform itself increased households' savings by 0.3% of GDP. The remaining amount reflects a reduction in households' investments, which can be tied to the reintroduction of a tax refund on housing investments effective from January 1999. Making a correction for these two factors it turns out that in fact private households' financing capacity exhibited a minor decline.

The financing requirement of the **corporate sector** developed in line with the cyclical position of the economy. Investment expenditures increased in excess of profits, which increased external financing requirements. The stabilisation measures in 1995 caused a slowdown in GDP growth, though they in-

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[1] The difference between the published and the theoretical current account is due to the fact that the Hungarian balance of payments statistics still uses the cash-flow approach, i.e. it does not record transactions between residents and non-residents which do not involve actual payments, while it records flows that in fact (at least in economic terms) should be labelled revaluations. In addition, some difference is to be attributed to time lags between real transactions and concurrent payments.

[2] Repatriated profits are on accrual basis in the table above, meaning that they are recorded not in the year of actual repatriation, but in the year when they were generated. The figure applying to 1998 is an NBH estimate on the basis of after-tax profit of foreign owned enterprises.

Net financing requirement and the current account deficit as a percentage of GDP

	1995	1996	1997	1998
Current account	-5.3	-3.7	-2.1	-4.9
Net external financing requirement	-2.9	-2.7	-2.5	-4.8

Operational savings and investment by sectors as a percentage of GDP*

	1995	1996	1997	1998
GDP	100.0	100.0	100.0	100.0
+net income transfers	-4.1	-3.6	-4.2	-4.3
+unrequited transfers	2.5	2.0	2.2	2.1
Disposable income	98.4	98.4	98.0	97.8
– private households	74.1	73.2	71.0	71.2
– general government	13.9	15.5	14.6	13.4
– corporate sector	10.4	9.8	12.4	13.3
Final consumption	77.4	74.3	72.7	72.9
– private consumption	66.3	64.1	62.6	62.7
– public consumption	11.0	10.2	10.1	10.1
Gross savings**	21.1	24.2	25.3	25.0
– private household savings	7.8	9.1	8.4	8.5
– public savings	2.9	5.3	4.5	3.2
– corporate savings	10.4	9.8	12.4	13.3
Net capital transfers				
– private households	0.7	0.8	0.5	0.3
– general government	-1.5	-1.2	-1.4	-1.5
– corporate sector	0.8	0.4	0.9	1.3
Investment	23.9	26.8	27.8	29.8
– private households	4.9	5.0	4.8	4.0
– general government	3.5	3.4	3.5	3.3
– corporate sector	15.5	18.4	19.5	22.3
Net savings	-2.9	-2.7	-2.5	-4.8
– private household savings	3.6	4.9	4.2	4.7
– public savings	-2.1	0.7	-0.4	-1.6
– corporate savings	-4.4	-8.3	-6.3	-7.8

Notes: Due to rounding, the sum of sub-entries may differ from the grand total. Data are from CSO (facts until 1995) and NBH (estimates).
* Data are approximately on an accrual basis. Savings do not include revaluations on stocks of households' deposits and loans due to exchange rate changes. In the general government's balance (deficit according to GFS methodology less privatisation receipts) interest expenditures are on an accrual basis.
** Gross savings = disposable income (including the given year's amortisation) less final consumption. Disposable income comprises the given year's gross domestic product plus net income and unrequited transfers (according to balance of payments statistics) vis-à-vis non-residents.
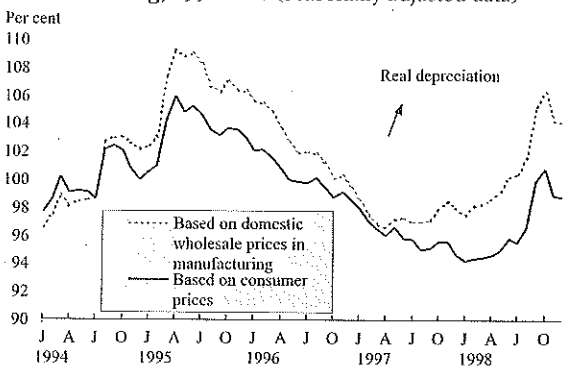
Average capacity utilisation in manufacturing*

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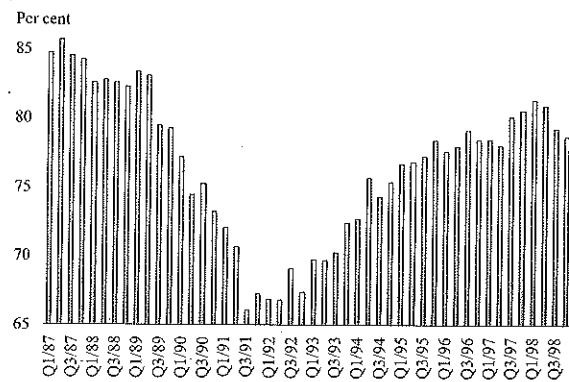
* Seasonally adjusted data. Source of basic data is Kopint-Datorg.

Share of firms with a shortage of capacities in manufacturing
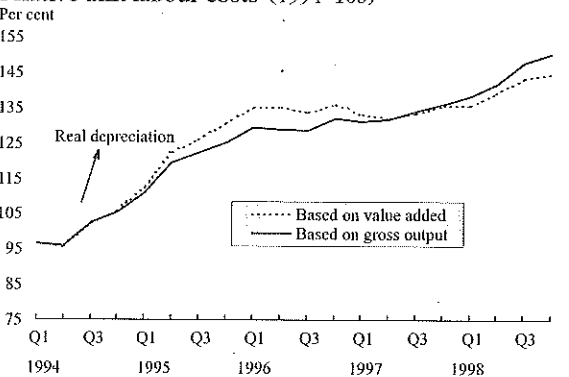
Per cent
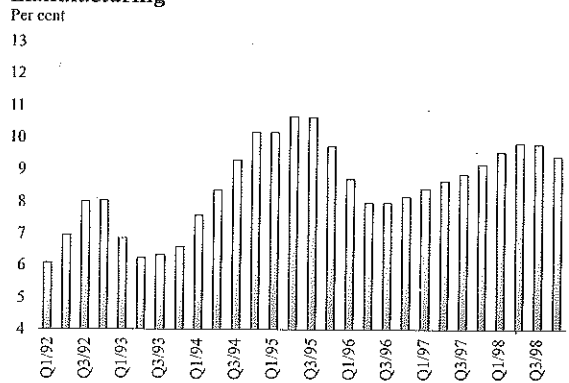
* Seasonally adjusted data. Source: Kopint-Datorg.

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

Per cent

Real effective exchange rates of the forint based on relative unit labour costs (1994=100)

Per cent

2 Capacity utilisation

The second half of 1998 saw a decline in the average capacity utilisation in manufacturing. There were two factors behind this. First, investment and employment data reveal that there had been a significant rise in productive capacity. Second, parts of the manufacturing sector were badly hit by the crisis in Russia.

While the average level of capacity utilisation slightly declined, the share of firms with capacity shortages did not change much. This implies that it was not the firms hit by the Russian crisis that originally had a shortage of capacities. Moreover, a significant number of firms still reporting capacity shortages also implies that they expect both the general and the investment boom to continue.

3 Competitiveness

In the second half of 1998 the real depreciation of the forint continued and accelerated. The CPI-based and the domestic-manufacturing-sales-prices-based real effective exchange rate index of the forint depreciated by 3.3% and 6.3% respectively. Unit-labour-cost-based real exchange rate indices based on gross output and value added in manufacturing showed a depreciation of 10% and 6.5% respectively.

In assessing competitiveness one has to take into consideration that the market position of selected export sectors has changed as well. These special sectors suffered substantial losses in their market shares and profitability, though the competitiveness of the export sector did not worsen on an aggregate level. The real depreciation of the forint ameliorated the negative profitability impact of declining world prices in sectors which became more exposed to third market competition, namely metallurgy and the chemical industry. With the help of depreciation these sectors were able to accommodate to lower world prices with a smaller loss of their profitability. The depreciation has also alleviated the negative effects of the Russian crisis in special sectors which now face the necessary need for changing their direction of trade.

While the real depreciation helped handling the above-mentioned structural problems, this was not the main aspect which the National Bank of Hungary considered in determining its targeted nominal exchange rate path. Due to the fact that aggregate profitability in the corporate sector as a whole and especially in the export sector improved further, competitiveness questions solely would not have implied real devaluation. The exports of sectors at the level of low-processing were subdued. However, this decline was in accordance with the deceleration of world demand and the position of these sectors did not deteriorate relative to their main competitors.

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tutes a 3.8% real growth for the last quarter and 3.6% for the whole year. The *wage inflation* index net of composition effects shows slightly higher earnings growth.

The increasing employment share of manufacturing, characterised by a high and rising share of blue-collar workforce, implies that the *share of blue-collar employees had started rising* in the private sector and the whole economy by the end of 1998. This is why our wage inflation index shows an earnings growth above the index of the average wage increase.

Following the large gap in 1995, *public sector* wage inflation not only reached the level of the private sector, but in 1997–98 it was above it. Our latest data suggest that this relatively strong public sector earnings growth has not become a permanent feature.

Like private sector wage growth, it seems to follow the declining trend of inflation. However, the surprisingly low public sector earnings growth experienced in the last quarter of 1998 is partly due to *one-off factors*. Decomposing earnings into regular versus irregular (bonus) components we see that a nominal fall in the irregular component explains the *low growth rate of the total, especially in the education, health and social work sectors*. This also explains the relatively high public sector wage inflation during the first half of 1998 – part of the irregular component usually paid at the end of the year was already paid out earlier in 1998.

On the other hand, the fall in the irregular component at the end of 1998 implies higher earnings growth later, i.e. in the first months of 1999.

We have already discussed the underlying factors behind the sectoral differences in wage inflation developments in our 1998 November inflation report. Wage inflation in the expanding *manufacturing sector* continued to decline, reaching 17% relative to the same period in 1997 by the end of last year. Again, we observe different developments in the retail sector and in the other sub-sectors of the services sector.

The *fierce competition among retailers* and the easy substitutability of retail employees implies a rapid adjustment of *retail sector* wage inflation to the falling rate of inflation. Wage inflation is still much above the average in the *private services sector excluding retail*, as these services face a tighter labour market. Even our latest data shows no sign of nominal adjustment in this sector, which may imply that *bottlenecks have already emerged*. Although employment expansion in 1998 was based on growth in manufacturing employment, in the long run we expect to see expansion in private sector services. Labour shortages revealed by our figures imply inflationary pressures. Unless there is an increase in the size of the relevant labour pool, we do not expect nominal adjustment in this sector in the long run either.

All in all, most sectors of the economy show no sign of nominal inertia in wages. We expect these favourable trends to continue in 1999 as well, earnings growth in most sectors will adjust to the declining rate of inflation.

Although monetary policy is ineffective against the wage inflation permanently stuck at high levels in some private services sectors, but shrinking the size of public sector employment (the weight of which is dominant in the case of white-collar workforce) and enhancing the effectiveness of general education would help by creating the needed labour reserves.

Development of wage inflation by industry

Per cent

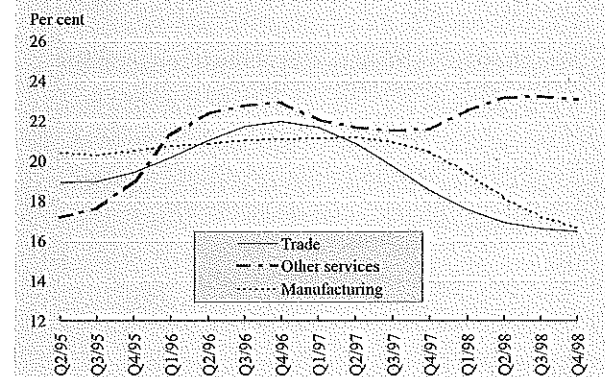|	Q4	Q1	Q2	Q3	Q4	Q1–4
	1997		1998			1998
Agriculture, fishing forestry	17.1	16.8	16.6	16.4	16.1	16.5
Mining	32.0	23.6	10.6	5.1	5.9	11.3
Manufacturing	20.5	19.4	18.1	17.2	16.6	17.8
Electricity, gas, heat and water supply	21.3	20.8	19.9	18.7	17.7	19.3
Construction	20.9	18.9	16.8	15.1	14.1	16.2
Retail, maintenance of road vehicles, repairs	18.5	17.6	16.9	16.6	16.5	16.9
Accommodation services, catering	14.2	13.9	13.3	13.0	12.6	13.2
Transportation, storage and telecommunications	21.9	21.7	21.5	21.4	21.3	21.4
Financial activities and supplementary services	27.2	26.7	26.1	25.6	25.2	25.9
Real estate and business services	21.3	26.8	30.9	32.0	31.9	30.4
Public administration and social security	18.4	17.9	17.8	18.0	18.2	18.0
Education	27.3	26.4	23.8	19.6	15.9	21.4
Health and social care	19.7	20.6	19.5	15.4	9.4	16.2
Other communal, social and personal services	16.3	16.6	16.5	15.7	14.3	15.8
National economy total	20.8	20.3	19.4	18.2	17.0	18.7

* Seasonally adjusted data, NBH calculation.

Wage inflation in the private and in the public sector*

Per cent
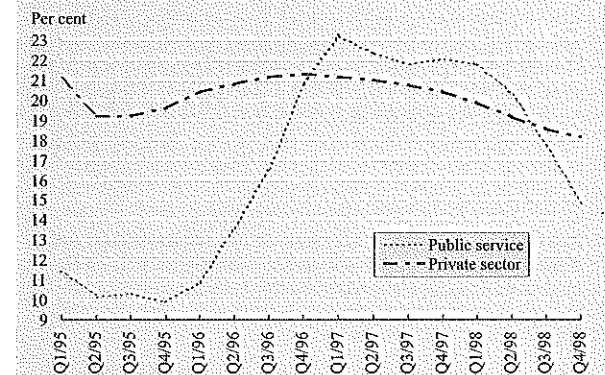
* The private sector consists of the following branches: agriculture, fishing, forestry, mining, manufacturing, electricity, gas, heat and water supply, construction, retail sector, repair and maintenance services, accommodation services, catering, transportation, storage, post and telecommunications, 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
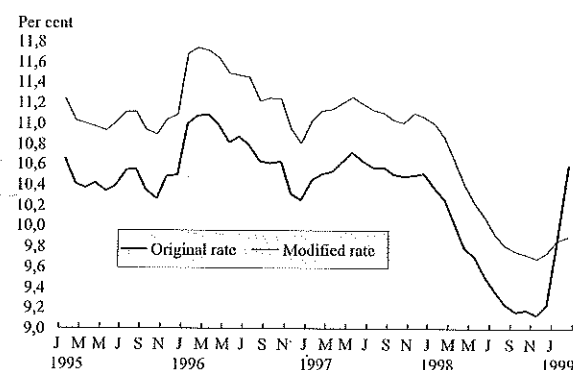

Per cent

* Seasonally adjusted data. The "Other private services" sector consists of private services excluding retail and maintenance, i.e. the aggregate of accommodation services, catering, transportation, storage and telecommunications, financial activities, real estate and business services.

Summary

Inflation continued to decline in the second half of 1998, the rate of inflation for the previous twelve months fell from 18.4% at the end of 1997 to 10.3% by the end of 1998 and to 9.4% by February 1999. The extent of this reduction exceeded the prognosis of the National Bank of Hungary prepared at the end of 1997, according to which the inflation rate was forecast to reach 13.5–14% by December 1998. The faster than expected disinflation can be attributed mostly to a decline of imported inflation, but the reduction in the growth rate of non-tradable prices also played an important role.

Lower depreciation of the forint and the decline in import prices calculated on a foreign exchange basis also contributed to the decrease of **imported inflation**.

The pre-announced rate of devaluation was modified twice in 1998. As a result the annual depreciation of the forint against the currency basket decreased to 10.3%, which is 3.7 percentage points lower than the 1997 figure. Despite a larger fluctuation in the intervention band during recent months, the exchange rate has proved to be an efficient nominal anchor, prices of tradable goods and services following imported inflation.

Inflation rates in Hungary's most important trading partners declined further in 1998, and as far as prices for industrial products are considered, several countries experienced deflation. The decrease in the world prices for food, fuel and certain commodities also had a favourable impact on the domestic price level. All in all, favourable changes in foreign prices led to a 3 percentage point decline in domestic inflation. The extent of reduction in the inflation rate was substantial even apart from these imported, one-time factors. As a result of domestic developments the growth rate of prices declined by 5 percentage points.

Reduction in the rate of inflation is also significant in those areas where the disciplinary power of the nominal exchange rate is less efficient. Expanding domestic demand contributed to the fact that inflation exceeded the depreciation of the forint by 4 percentage points in the **non-regulated services sector**. However, the difference in the growth rate of prices did not widen further, indicating that the supply of these services kept pace with the expansion of demand. Moderate growth of **regulated prices** also had a favourable impact on inflation.

The disinflation process was also supported by a lower growth of **production costs**. Real wages grew by 3.5% on average in 1998. Considering improvements in productivity, this real wage growth made further gains in corporate profitability possible on the aggregate level. Cost inflationary pressures were further mitigated by lower world prices for food and several commodities.

The scope of monetary policy is significantly restrained by the fact that **inflationary expectations** adjust to last year's fall of inflation, which substantially exceeded earlier forecasts, only with a lag. The slower adjustment of inflationary expectations can be observed in the development of nominal wages and certain services' prices. The annual growth of gross average income (18.3%) exceeded the upper limit (16%) of the band agreed by the interest Reconciliation Council, which (due to the unexpected extent of disinflation) resulted in a higher than planned real increase, contributing to the expansion of domestic demand, especially for services.

The aforementioned mechanism – a (nominal and real) wage growth exceeding the rate corresponding to the inflation target – is the greatest hazard to further disinflation. Namely, increased

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What lies behind the recent rise in the claimant count unemployment figure?

There are two definitions of the unemployment rate, often confused by the public. In this Report we use the standardised ILO unemployment rate published by the CSO, but many analysts focus on the figure based on the number of people *registered as unemployed* with the local unemployment offices (usually named the claimant count, but we will refer to it as the registered unemployment figure). It is very difficult to analyse the development of the registered unemployment rate for two reasons. First, it is based on not the number of "real" jobseekers without a job, but on the number of people registered by the offices. Survey data reveal that these two do not always overlap: Approximately half of those registered with the offices are not unemployed, but employed or not in the labour force according to the ILO definition. So the registered unemployment figure is partly determined by changes in its administrative background, the *rules of unemployment benefits eligibility*, etc. Secondly, the definition of the registered unemployment rate is such that it is based on the active population published annually in the Labour Accounts, not on the current active populations. So the denominator of the registered unemployment rate changes once a year (in January), while its numerator changes month by month, which makes interpretation difficult.

Recently the registered rate showed an unemployment trend different from that revealed by the CSO figure. While the latter shows a steady decline in unemployment, the *registered unemployment rate jumped from 8.8% in November 1998 to 10.3% by this January*. In what follows, we show that this apparent rise in unemployment is mainly due to methodological problems. First, registered unemployment, like most economic data series, contains short run *cyclical (seasonal) movements* – independent of any trend, the number of those registered as unemployed in Hungary has always increased during autumn and fallen during the first months of the year. This seasonal pattern explains nearly two-thirds of the apparent 1.5% rise in the registered unemployment rate. Secondly, there was a *change in the methodology behind the denominator* of the registered unemployment rate effective *from January 1999*. Previously, people on child care leave had been included in the number of the active population (as employed). From January 1999, this stock of on average 250,000 people per year is excluded from the active category and counted as being outside the labour force (economically inactive). But the methodological change was not applied to the previous data, so the shrinking denominator increased the registered unemployment ratio this January only. Hence the new figure cannot be compared with the earlier ones. To ensure their comparability, we have recalculated the registered unemployment rate for 1993-98 by excluding those on child-care leave from the active population. The figure below shows the development of the re-based and seasonally adjusted registered ratio and the published (not corrected) but seasonally adjusted ratio as well. These data reveal that the correct figure for November 1998 was 9.7%, and the rise to 9.9% by this January implies that the apparent 1.5% jump was *in fact only 0.2%*.

The published vs. the methodologically consistent registered unemployment rate*

Per cent

* Seasonally adjusted data series.

1.3 Earnings growth

Relative to the same period of 1997, in the last quarter of 1998 gross nominal wages rose at an average rate of 15.5%, implying an average growth rate of 18.3% for 1998 as a whole. This consti-

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nominal rigidity raises the costs of disinflation. If higher nominal wage growth is accompanied with a lower than expected inflation rate, then higher real wage growth can lead to the deterioration of the current account. Higher than intended real wage growth can harm corporate profitability as well, which can be accommodated by companies only by reducing output and employment. Therefore, in order to reduce the costs of disinflation, monetary authorities scheduled only a moderate decline in inflation for 1999 accompanied by a reduction in the rate of devaluation in small steps.

Future developments in disinflation will be determined by the relationship between imported inflation and domestic demand as well as supply. Within domestic demand components, public sector demand deserves special attention.

The decline of inflation is expected to continue in Hungary's most important trading partner countries. However, as far as commodity prices are concerned, they are not expected to change as radically as in the past period. Demand and supply changes determining the prices of these goods are likely to remain stable, the growth of the world economy is slowing down, thus only a slow turnaround is anticipated at most. In 1999 **imported inflation** is again expected to have a favourable impact on domestic prices.

Among the **domestic factors** of the disinflation process, the expansion of aggregate demand exceeding production capacities should be pointed out. Due to new capacities resulting from last years' investment, the growth of potential GDP accelerated in 1998. However, the expansion of domestic demand was even faster, which led to the deterioration of the current account.

Fixed investment has been the most dynamically increasing component of **domestic demand**.[1] The dynamic expansion of investment experienced in the first three quarters of 1998 slowed down in the last quarter of the year. The decline in the growth rate, however, was mainly caused by the temporary postponement of housing investment by households, which was accompanied by a significant cut in public investment spending in the second half of the year.

A smaller fall in the growth rate of investment demand was observable in the corporate sector as well, which can be attributed to the increased uncertainty following the international capital market crisis and to the loss of market share of firms exporting to Russia. Based on the favourable profit prospects of the corporate sector as a whole, a further expansion of domestic demand and the expected increase of consumer demand in western Europe, further growth of corporate investment is expected for 1999, which will be accompanied by a growth of household investment. The growth of consumer demand also accelerated in 1998 compared to the previous year. According to our estimates the annual growth of household consumption was 4.5%, which exceeded the expansion of real income. Nevertheless, there was an increase in household financial savings. However, this can be partly attributed to the fact that household investment fell by 10% in real terms. The growth in consumer demand was particularly strong in the durables category, while the growth rate of current consumption including the demand for services was much slower, around 2.5%. As there was a demand reallocation in favour of tradable goods, the effect of consumption growth on inflation was moderate, the expansion of demand exceeding domestic capacities leading to a deterioration of the current account.

Income growth in 1998 and 1999 is less polarised compared to the previous years and it is observable in social groups with a high propensity to consume. Therefore household propensity to save is expected to decline on the aggregate level. This expectation is reinforced by the fact that – corrected for the temporary effect of housing investment – the propensity to save already decreased somewhat in 1998.

It is of vital importance for further disinflation that the effect of expansion in public sector demand, which started in 1997, continued to strengthen last year: the primary surplus (the balance of the budget excluding interest payments) declined further by approximately 1.4% of GDP (to

[1] The annual and quarterly GDP calculations in the report are estimates of the National Bank of Hungary and may not correspond to data published officially by the Central Statistical Office.

IV. Supply side factors

1 The labour market

In the last quarters of 1998 the favourable labour market developments became stronger thus more apparent. The *activity ratio was steadily rising*. It climbed up to 51.8% by the end of 1998, implying an average rate of 51.7% for the whole year, which is close to the 1997 figure. Moreover, it is very promising that it is the decline in unemployment and the rise in employment that has been driving the activity ratio upwards. We should be aware of the fact that *demographic developments* also move the activity ratio – changes in the age structure of the population alone will significantly *increase* the activity ratio in the coming years.

1.1 Employment

According to the CSO household survey data, last year employment increased by 0.7%. *The ratio of the employed to the population aged* 15–74 years also increased to just over 47.9%, a figure last seen early in 1995.

The CSO institutional survey collects data for enterprises with over five employees and public sector institutions. These data reveal 0.7% employment growth for the last quarter of 1998, meaning a 0.4% average growth rate for the whole year. At the sectoral level the 1998 data show *strong employment growth in manufacturing* (1.5%) including especially *machine* (6.1%) and *basic metals* (4.9%) manufacturing. In services, we see larger employment increases in financial activities and supplementary services (2.3%). Public sector employment did not change significantly, but its public administration, defence and social security subsector showed a surprisingly high employment growth (3.2%). According to our information, this is mainly due to new hiring in *public security, law and order,* and also to the substitution of drafted by professional soldiers in defence.

1.2 Unemployment

The unemployment rate had fallen to 7.5% by the last quarter of 1998, implying an average of 7.8% for the whole year.

As we discussed in our first Report on Inflation (November 1998), *labour market shortages* (or bottlenecks) may emerge when there is an insufficient labour pool in a growing economy. Our latest data show no change in the situation since then – the unemployment rates for the short-term unemployed or those with a higher education continue to fluctuate around the frictional level.

Development of employment*

Thousands
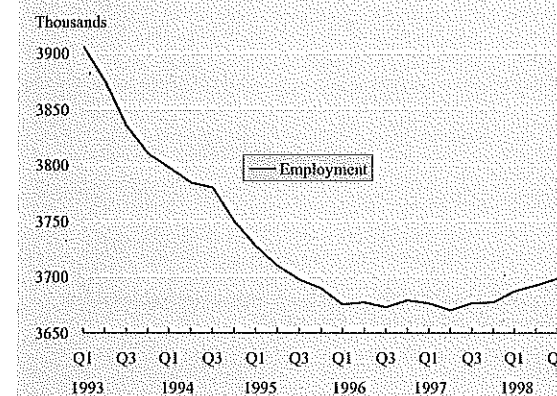
* Seasonally adjusted series based on the CSO publication Munkaerőpiaci jellemzők (Labour Market Characteristics) in a comparable structure.

Development of the unemployment rate*

Per cent
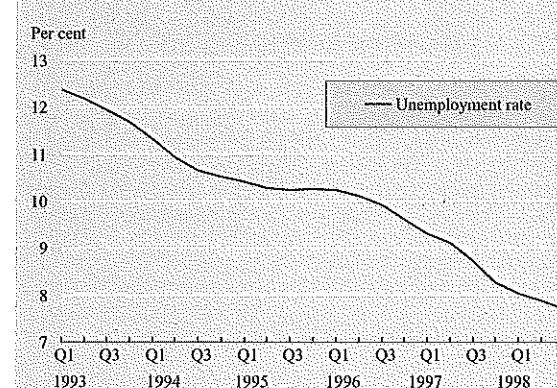
* Seasonally adjusted series; unemployment according to the ILO definition in a comparable structure.

Total exports and exports excluding the CIS region
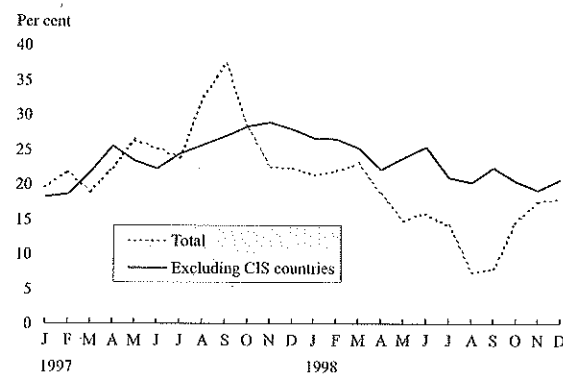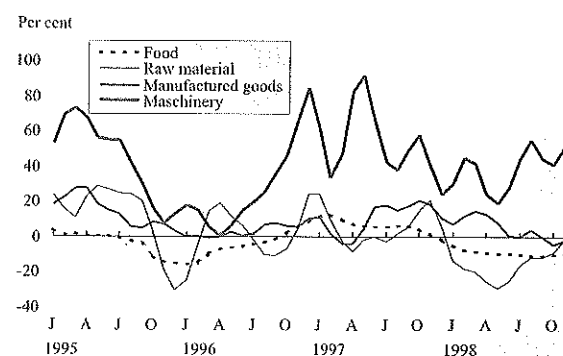(Annualised monthly growth rates)

Per cent

Export trend of foods, commodities and processed goods
(According to SITC 5 commodity groups)

Per cent

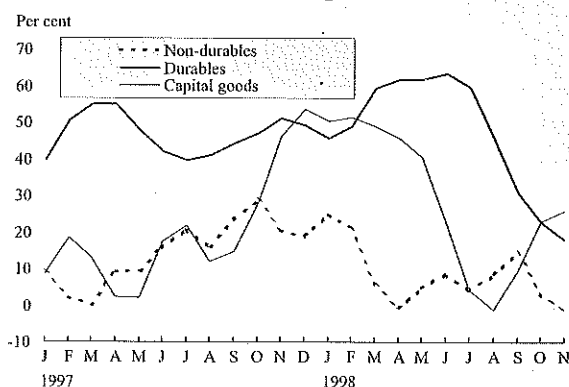**Annualised growth rate of imports**

Per cent

of durables and capital goods drives the cycle and the role of non-durables and intermediate inputs is much smaller. The opposite movement of short term indices of durables and capital goods can lead to ambivalent conclusion about the state of the business cycle. The decrease in the growth rate of durables indicates a downturn in the cycle. On the other hand, according to the accelerating investment import dynamics, the turning point of the cycle is not yet due.

In 1998 the breakdown of imports by trading partners changed substantially. Asian imports increased much faster than the total (45.4%). During this period the share of imports from this region increased by 2 percentage points to 12.1%. This Asian expansion was supported by the real depreciation of the currencies of the countries concerned. A considerable amount of the import increase involved machinery and equipment. The demand for these is more determined by the domestic business cycle than by the price of these products. As there are only a few close Hungarian substitutes for these products, changes in relative prices changed the country structure of imports, rather than increasing the total.

1.6%). This decline was coupled with significantly increasing transfers, while the share of public investment fell to the level of the adjustment years due to a substantial decrease in the second half of the year. At the same time budget revenues were reduced by measures to mitigate the tax burden and by further tariff cuts, which also contributed to the expansion of aggregate demand by increasing the discretionary income of the private sector.

In 1998, as in previous years, the growth rate of **foreign demand** exceeded that of the domestic component of aggregate demand. Although export growth was lower than the 29.9% rate of 1997, the 22.1% growth rate was still high. Export dynamics were regionally different. While payment difficulties in Russia resulted in a significant fall in turnover, exports to developed countries continued to grow rapidly. Overall lower export growth can be partially attributed to the fact that the slowdown of growth in the world economy restrained sales opportunities for less processed products.

As far as trade with Russia is concerned, exports seem to be stabilising at the current level after the substantial fall following the financial crisis. However, no significant expansion of exports can be expected in this region. Future export demand depends mainly on growth prospects in western Europe. The growth rate of GDP is forecast to decline in Hungary's main export markets, but consumption demand, which is more relevant for export prospects, is expected to increase further.

Although there was a considerable expansion in **domestic supply** due to strong investment activity in the previous years, there are no substantial free **capacities** in the Hungarian economy. In manufacturing industry, both the average capacity utilisation and the share of enterprises struggling with scarce capacities have stabilised at a high level, despite the fact that certain firms in this sector were sensitively hit by the Russian crisis. The effect of demand growth on inflation is mitigated by the fact that in the last two years a considerable share of investment was implemented in the services sector, which will curb attempts to increase prices due to stronger competition and rising productivity.

The rate of unemployment fell well below the European average: according to the labour market survey of the Central Statistical Office, the annual average rate was 7.8%. The labour reserve of the Hungarian economy is larger than that, as the activity rate falls behind the typical European rate. Helping the workforce that left the labour supply during the years of economic transition to re-enter the **labour market,** however, requires active labour market measures. In the labour market, short supply is expected especially in the category of white-collar workers, which is reflected by the fact that in the services sector excluding commerce (where the share of white-collar workers is the highest) wage inflation exceeded the average rate of 18.7% (amounting to 23%). Due to the scarcity of highly-qualified workforce, high wage growth may spill over to other sectors and branches as well. This effect, however, is mitigated by the tendency of growing demand for blue-collar workforce in manufacturing industry and commerce.

The worsening of the **external balance** in 1998 can be attributed to lower export demand due to the Russian crisis and the expansion of domestic absorption exceeding free capacities. The deterioration of the trade balance starting in the second quarter came to a halt around the end of the year, and primarily as a result of increased exports to western Europe, the growth rate of exports exceeded that of imports. Forecasts of export growth, however, are uncertain because of the danger of further slowing of economic growth in western Europe. The increasing financing needs of the public and business sectors were responsible for last year's current account worsening of 2.3% of GDP ($1.3 billion) to the same extent. Due to the expected growth in the private sector's financing need, a further worsening of the current account is anticipated. In view of the business cycle, a further growth in the financing need of businesses is expected in 1999, albeit at a lower rate than in 1998. As far as households are concerned, the higher than planned real wage growth and the expected decline in the propensity to save are the factors that may have a negative impact on the current account.

Based on anticipated developments in demand and supply, the reduction of the **imbalance requires** coordinated action by monetary and fiscal authorities to influence demand. These measures are expected to harmonise the expansion of domestic demand and potential GDP. As the first and important step towards this goal, the government decreased public spending by 0.5% of GDP.

Changes in domestic **monetary conditions** have also been leading to the reduction of domestic demand. The real depreciation of the forint experienced recently increased the profitability of exporting firms ceteris paribus, and it encouraged the consumption of domestic products by raising the relative prices of imported goods. At the same time, real interest rates rose as well, which is expected to reduce corporate sector investment demand.

Although **monetary conditions changed as required by domestic macroeconomic developments in the past period,** it must be taken into account when evaluating monetary policy that the restrictive changes in monetary conditions were primarily induced by changes in the behaviour of money and capital markets. In the last two years, substantial exchange rate depreciation was experienced by several countries which compete with Hungarian exports in third markets, and investors were not able to accurately assess the direct and indirect effects of the Russian crisis on the Hungarian economy. Due to uncertainty concerning foreign trade developments, investors held the opinion that a weaker forint is more reasonable in this situation. Although domestic inflation declined following the Russian crisis, the exchange rate departed from the stronger edge of the intervention band for a longer period of time, despite higher real interest rates.

In a crawling exchange rate system, the level of the domestic interest rate is determined by the announced devaluation rate, the expected intra-band change of the exchange rate, foreign interest rates and by the required risk premium. The general mistrust in emerging markets after the Russian crisis induced a long-lasting increase in the risk premium required by investors. **The significant increase in domestic real interest rates** was the result of the real depreciation of the forint and the higher risk premium.

In the period following the outbreak of the Russian crisis monetary policy was aimed at curbing the rise in interest rates not justifiable by domestic fundamentals. The decline of liquidity in the economy resulting from capital outflow was replaced by withdrawing central bank deposits which were accumulated earlier (at the time of the sterilisation of capital inflow). Although the central bank cannot permanently divert the domestic interest rate from interest rates required by money markets to preserve the credibility of the exchange rate, it was able to curb the rise in interest rates caused by the panic reaction of markets. By sterilising the liquidity effect of the capital outflows, the central bank was able to prevent a drastic credit crunch that would have had serious consequences for the economy. Money supply (M0) increased along with economic growth, while even with relatively high real interest rates domestic credit continued to growth.

The macroeconomic imbalance was due to the acceleration of domestic demand and not to a deterioration in export competitiveness. The real depreciation of the forint may bring about a temporary inflationary loss. This effect, however, is mitigated by the long-term advantages of preserving the credibility of the exchange rate band. Nevertheless, the announced exchange rate path is in line with inflation prognosis declared in the economic programme.

✧ ✧ ✧

In the first part of the report the main characteristics of inflationary developments of the recent period are described, then the most important factors influencing the inflationary path are presented. The second part gives an account of monetary developments and of important measures of monetary policy. There follows an analysis of supply-demand factors as well as of equilibrium factors which determine inflationary developments and monetary policy actions.

imports. After August the growth rate of exports reached that of the imports and in a few months it was even higher. As a consequence, from the third quarter the trade balance started to stabilise.[10]

The slowdown in exports in the first half of the year was caused by the continuous and substantial decrease of exports to the CIS region. The growth rate of exports to other regions also declined during the year, but the annual increase still exceeded 20%. It is worth noting that exports to the CIS region declined already in the first half of the year, before the Russian crisis had started. This can be considered evidence for the fact, that Hungarian exporters to some extent had already foreseen the financial problems in Russia before the crisis began. The crisis in August-September was just a last impulse for the export decline. Overall exports to Russia in 1998 were $308 million less than in 1997.

Analysing the evolution of exports by commodity groups, the acceleration of turnover can be attributed to a large extent to increased machinery exports. The transitory decline in export dynamics in the second quarter of the year was caused by a decline in bus exports. In the second half of the year, as a result of the increasing demand for durables in the EU markets, automobile exports increased sharply. The excess revenue from automobile exports balanced the effect of the Russian crisis.

Among other commodity groups export of food, semi-finished goods and energy declined substantially, while processed goods stagnated. In the processed goods category chemicals decreased, the wood, paper and plastic industries stagnated, while the export of textiles increased. The declining exports in light industries, commodities, and food can be explained to large extent by increased third market competition due to the Asian crisis, and the effect of the Russian crisis.

The increase in imports in 1998 was a consequence of the increased domestic absorption, i.e. the strengthened investment activity and the increased demand for durable goods.[11] Parallel to the acceleration of domestic consumption, the most dynamic increase in import demand was seen with durables, although in the second half of the year this decreased substantially. The growth rate of investment goods imports decreased temporarily in the second and third quarter of the year, increasing thereafter in the last quarter. On the other hand, the growth rate of consumption of non-durables and other products was substantially lower than that of durables.

In the case of imports observations reinforce the conclusion drawn in international business cycle literature that the volatility

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[10] The volume indices showed to some extent a different picture than the value indices. This difference can be explained by the improvement in the terms of trade and movements in international prices. In the first three quarters the volume of exports and imports increased by 25.9% and 27.7% respectively. The dynamics of export volume declined in the second half of the year, after a dynamic first half. (At the same time, the value data for the second half indicated strengthening export activity.) In assessing the volume data one should take into account that they are calculated from unit value indices which are distortive in cases of marked changes in quality and product structure. That is why we think that analysing value data is more reliable, especially in a transition economy. We have done the analysis in both USD and ECU. As the different denomination of trade did not gave qualitatively different results, as a matter of convention we publish the US dollar value data.

[11] The categorisation of imports for durables, non-durables and investment goods was accomplished at the NBH, based on the HS 4 digit data.
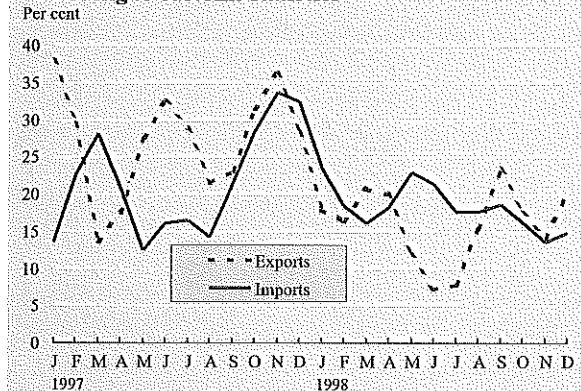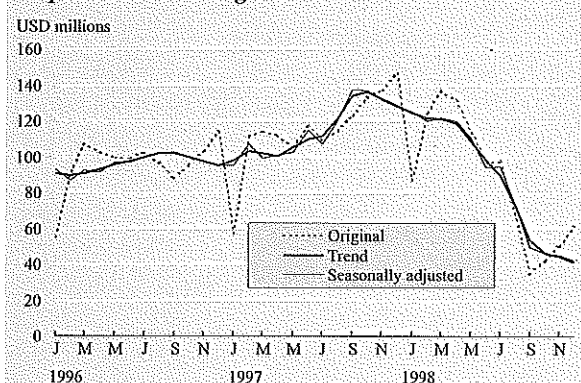
Developments in the service balance
USD millions
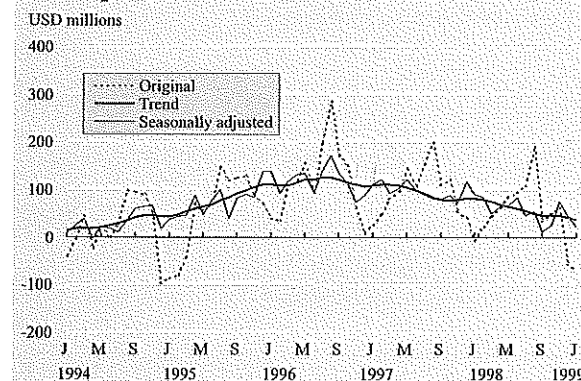
Trade balance
USD millions
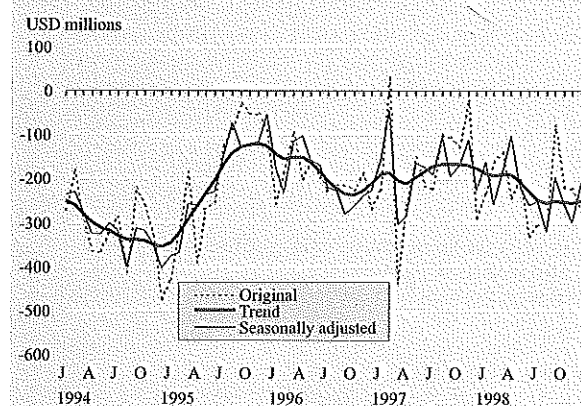
Annualised growth rates of exports and imports according to customs statistics
Per cent

Exports to the CIS region
USD millions

level hides some significant structural changes, in particular the decline of public consumption in favour of transfers. The main factor behind the growing transfers was an increase of transfers to households (0.6% of GDP). This was caused by the system of pension indexation,[7] since pensions were determined by the wage increase of the previous year.[8] Within public consumption, the weight of purchasing goods and services fell, while that of wages remained unchanged.

4 Foreign demand

The main short-term determinants of foreign trade were slow-down in the euro zone, enduring crisis in Russia, and increasing demand on the domestic markets.

GDP growth in the main Hungarian export markets has decreased. This deceleration was observable mainly as a result of a slow-down in export and investment activity in the Euro region that caused aggregate import demand to decrease as well. However, the behaviour of the components of private consumption showed a markedly different picture, the growth rate of sales in retail trade and automobiles accelerated in the second half of 1998. This helped Hungarian exports to recover as a large part of these are consumption goods.

After a decline in Russian relations due to the crisis, exports seem to be stabilising, but we cannot expect recovery in the future here.

Increasing domestic demand projects a further increase in the imports of consumption and investment goods.

According to the national account statistics, in 1998 the dynamics of both export and import volumes decreased, the annual growth rates being 16.9% and 23.2% respectively.

In the following analysis of foreign trade we deviate from the use of annual indices. These indices cannot capture quick changes in the dynamics of the series, that is why we base our analysis on annualised short term indices, which reflect changes from the previous period.[9]

The service balance continuously deteriorated during 1998, the surplus being $500 million less than in the previous year. The revenues, contrary to the increase in previous years, stagnated, while the expenses increased continuously. The slow down on the service exports bore a strong relation to the Russian crisis, which moderated revenues from transportation, insurance and especially tourism. The increase in the service imports was consistent with current phase of the business cycle.

Concerning goods alone, both exports and imports increased substantially during 1998, while the custom statistics trade balance deteriorated by $567 million. The trend of the trade balance was stagnating in the first quarter, but it deteriorated in the second quarter. In this period, according to the annualised short term indices, the growth rate of exports was 5–10% lower than

Main macroeconomic indicators of the EURO region
(Percentage change on a year earlier)

Per cent

	GDP	Domestic absorption	Private consumption	Public consumption	Gross investment	Exports	Imports	New car registrations	Retail trade sales
1995	2.2	1.9	1.9	0.1	3.3	8.1	7.5	0.3	2.0
1996	1.6	1.1	1.9	1.7	0.5	4.6	3.2	6.6	1.1
1997	2.5	2.0	1.5	0.2	-1.9	10.2	9.0	3.9	0.9
1997 Q3	2.8	2.1	1.3	0.3	1.7	13.0	11.7	6.0	0.9
1997 Q4	3.2	2.6	2.0	-0.5	2.7	11.4	10.4	11.2	2.2
1998 Q1	3.8	4.0	2.6	0.3	5.2	11.1	12.2	12.6	2.7
1998 Q2	2.5	2.7	2.2	0.4	1.5	7.3	8.4	3.3	1.8
1998 Q3	2.4	2.9	2.6	-0.2	1.9	3.6	5.2	7.5	3.0

Source: European Central Bank, Monthly Bulletin, January 1999.

[7] The system was changed in 1999.

[8] The rate of inflation and wage increase has declined significantly since 1997.

[9] The short term indices were calculated from the trend of seasonally adjusted dollar values. For the sake of comparison with long term indices (which we used earlier) monthly changes are annualised. These indices capture the dynamics which would take place if the monthly movements endured for a year.

Main macroeconomic indicators

	1996 Q1	Q2	Q3	Q4	1997 Q1	Q2	Q3	Q4	1998 Q1	Q2	Q3	Q4
	Growth rate (at constant prices) — Change over the same period of the previous year (%)											
GDP*	0.7	0.5	1.1	2.8	2.3	4.6	5.5	5.5	4.7	5.1	5.6	4.7
of this: domestic absorption	-4.8	-2.7	2.3	6.6	4.1	4.5	3.5	5.2	3.9	9.1	10.9	8.0
– total consumption	-4.6	-3.1	-0.5	-3.4	1.2	3.4	2.9	2.3	2.9	4.1	4.4	6.5
= household consumption	-4.1	-3.1	-0.5	-3.0	1.2	3.7	3.1	2.2	2.9	4.1	4.4	6.9
– total investment	-5.9	-1.3	11.2	31.6	17.0	8.3	5.3	10.4	8.0	25.7	28.7	10.6
= fixed investment	-2.3	-8.1	4.8	20.3	4.1	14.1	13.5	5.2	7.0	12.5	17.7	7.8
export (GDP)	14.8	14.2	4.4	2.0	19.0	24.5	28.8	27.5	28.8	17.5	11.4	13.1
import (GDP)	-2.4	5.0	7.8	12.2	22.6	24.4	24.5	25.4	25.2	25.6	22.7	20.0
Real effective exchange rate index**												
On producer price basis	1.0	-5.0	-4.4	-6.0	-8.2	-5.5	-4.6	-2.0	0.6	2.4	5.2	7.1
On unit labour cost basis (on value added basis)	20.3	10.5	6.1	4.3	-1.4	-1.9	-0.2	-0.3	1.8	5.0	7.5	6.6
On unit labour cost basis (on gross output basis)	16.6	8.0	5.2	5.3	1.3	2.1	4.3	3.2	5.5	7.7	10.2	10.5
Deficit — % of GDP												
Balance of the budget (cash flow basis)***	-1.6	-5.6	-1.1	-3.7	-5.3	-3.8	-3.0	-6.7	-7.2	-2.9	-4.0	-4.8
Primary balance of the budget***	7.5	1.7	4.0	4.3	4.5	3.3	4.2	0.9	2.4	1.6	2.2	0.4
	in billion USD											
Current account	-0.8	-0.1	-0.2	-0.6	-0.5	-0.3	0.1	-0.3	-0.4	-0.5	-0.4	-1.0
Foreign direct investment	0.5	0.3	0.6	0.6	0.5	0.3	0.3	0.6	0.3	0.5	0.2	0.4
Savings rate**** (%)	9.9	10.7	11.1	11.1	8.4	9.1	10.7	12.6	8.8	11.6	11.7	10.0
Unemployment rate+ (%)	10.2	10.1	9.9	9.6	9.3	9.1	8.7	8.3	8.0	7.9	7.7	7.5
Gross average income per capita++ (growth rate over thesame period of the previous year, %)	18.1	21.7	18.7	22.1	25.7	21.4	21.2	21.1	21.2	19.2	18.1	15.5
Net average income per capita in real terms++ (growth rate over thesame period of the previous year, %)	-8.6	-3.9	-4.7	-1.6	6.4	4.7	4.2	5.0	3.2	3.3	4.2	4.2

* The annual and quarterly GDP calculations in the report are estimates of the National Bank of Hungary and may not correspond to data published officially by the Central Statistical Office.
** Positive figures indicate real depreciation; nominal exchange rate indices are calculated with market exchange rates from 1995; deflators refer to manufacturing industry.
*** Estimated values, as there are no appropriate quarterly data for municipalities.
**** Net financial savings of households as a percentage of total household income. (Net financial savings do not include the sum of revaluations due to exchange rate changes and to other factors.)
+ Based on the labour market survey of the Central Statistical Office, according to ILO standards, unemployed as a percentage of the active population, seasonally adjusted data.
++ Full-time employees in the public sector and at businesses employing more than ten persons.

Main monetary indicators

	1996 Q1	Q2	Q3	Q4	1997 Q1	Q2	Q3	Q4	1998 Q1	Q2	Q3	Q4
	Change over the same period of the previous year (%)											
Inflation (Consumer price index)*	25.6	23.6	22.2	19.8	18.8	18.7	18.0	18.4	16.4	14.2	12.5	10.3
Producer price index*	23.2	21.5	20.4	20.1	21.8	19.4	19.7	19.5	13.5	11.6	10.4	7.1
Devaluation rate of the forint's central parity*	21.5	17.1	15.9	15.5	15.4	15.2	14.8	14.2	13.3	12.5	11.6	10.9
	Real growth of monetary aggregates* Change over the same period of the previous year (%)											
M0	-7.5	-11.1	-8.0	-0.1	-0.2	0.3	0.9	-2.5	1.8	3.2	3.7	6.1
M1	-13.5	-8.1	-5.8	-0.3	1.7	0.4	1.3	9.8	6.7	9.1	8.0	6.9
M3	-3.2	0.0	0.7	2.2	-0.2	-1.0	0.0	1.0	2.3	4.0	4.6	4.7
M4	-0.2	3.3	5.1	7.4	6.4	6.5	6.7	5.8	8.6	9.2	9.8	10.0
	Real growth of credit aggregates* Change over the same period of the previous year (%)											
Corporate sector foreign + domestic	-11.3	-11.2	-10.2	1.6	5.5	7.4	9.4	6.7	8.2	8.5	9.1	11.3
Corporate sector domestic	-15.2	-13.3	-8.2	8.0	19.2	24.1	23.1	17.0	14.2	15.1	15.2	6.7
Household	-26.5	-25.3	-24.7	-23.3	-23.7	-20.5	-14.7	-14.0	-11.4	-2.4	2.5	0.2
	Interest rates (%)*											
Reverse repo one month	25.0	24.0	23.25	22.25	21.5	20.75	20.25	19.75	18.875	18.0	18.0	16.75
90-day Treasury bill	24.13	23.94	22.73	22.24	20.76	20.02	19.41	19.28	18.8	17.34	19.27	16.21
12-month Treasury bill	24.53	24.96	22.86	21.46	20.07	19.77	19.67	19.01	19.13	17.33	17.4	16.08
3-year Treasury bond	–	25.44	22.99	21.47	16.73	17.42	18.08	17.97	18.36	16.56	16.23	14.8
Budapest Stock Exchange Index (BUX)	2447	3288	3572	4134	5414	6795	7693	7999	8656	7805	4571	6308
Interest rate premium (bsp)**	450	440	340	360	376	338	257	459	363	363	674	533
	Conversion forint demand											
Conversion USD million	1265	540	1314	872	471	799	1816	330	2448	929	-2307	-208
Net foreign borrowing of the banking sector*** — USD million	-23	-228	-139	-361	186	50	37	150	928	254	-708	-190
Net corporate borrowing of the corporate sector*** — USD million	5	78	164	453	-60	5	210	215	-56	87	128	431

* End of period.
** Interest rate premium: Excess yield on 3-month T-bill investment over the devaluation rate and foreign interest rates. The actual devaluation rate was modified with the official announcement of the change in the rate.
*** Excluding privatisation revenues.
**** Including owner credit.

I. Development of inflation

By December 1998, the year-on-year inflation rate had declined to 10.3%, which is an 8.1 percentage point improvement compared to the 18.4% rate of December 1997. Annual average inflation decreased somewhat less, after the 18.3% inflation rate in 1997, 1998 experienced a 14.3% rise in consumer prices. In 1999 the decline of inflation has continued and one-digit CPI inflation was achieved.

The growth rate of prices declined for all components of the consumer basket. Reflecting developments in world prices, the increase in food and fuel prices was significantly smaller than core inflation, which indicates the trend of the inflationary process. The highest inflation rate was experienced for services and regulated prices, which are not directly disciplined by the nominal exchange rate. Inflation rates in Hungary's most important trading partner countries fell further in 1998, having a favourable effect on domestic prices through the decline of imported inflation.

The Ministry of Finance forecasts an inflation rate of 9% for the end of 1999, thus the rate of decline in inflation will be significantly lower this year than last year. Favourable tendencies in world prices are expected to continue. However, the expected high nominal growth of domestic demand will slow down the decline of inflation.

Monetary policy affects domestic prices by setting the long-term path of the exchange rate and by influencing inflationary expectations. On 1 October and 1 January monetary authorities reduced the monthly rate of devaluation taking into consideration macroeconomic indicators and developments in money and capital markets. While in 1998 the forint depreciated by 10.8% against the currency basket, the monthly devaluation rate of 0.6% in effect since 1 January 1999 yields an annual depreciation of 7.4%, as long as there are no further changes in the pre-announced rate during the course of the year. In contrast with the policy of the previous years which allowed for a real appreciation of 2–3% (calculated on a CPI basis), last year the nominal depreciation of the forint corresponded to the rise in consumer prices.

The modification in the path of the real exchange rate was not justified by domestic economic developments.

Growth rate of prices compared to the same month of the previous year

Per cent

	Weight in the consumer price index	Dec. 1997	Sept. 1998	Dec. 1998	Feb. 1999
Consumer price index	100.0	18.4	12.5	10.3	9.4
Industrial products	33.3	13.5	11.2	11.3	10.1
Fuel	4.9	14.7	7.4	5.1	6.3
Food	27.6	20.0	11.3	6.1	4.1
Regulated prices	16.5	26.8	15.1	13.1	13.3
Services	17.7	18.7	15.6	14.7	13.3
Core inflation[1]	91.0	18.2	12.9	10.8	9.7
Devaluation of the nominal effective exchange rate	–	11.2	16.6	13.9	10.9
Pre-announced nominal devaluation rate of the forint	–	13.9	11.3	10.5	9.9

[1] The NBH has measured price increases by a new index since July. This index cleans the consumer price index of the effect of changes in prices of seasonal produce (egg, potato, vegetables, fruit), solid and liquid fuel (coal, coke, fire-wood), as well as of petrol. The core inflation index calculated this way covers 91% of the original consumer price index.

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ing 1996–97, which diminished the stock of inventories to a suboptimal level, and the intended ratio of inventories to sales was partially restored in 1998.

In contrast, we can observe the opposite scenario in the textile industry. Here the ratio of stock of inventories to sales has been decreasing for four years, which indicates pessimistic expectations concerning sales. In case of the *food processing* industry, the long lasting increase of the *ratio of inventories* to sales is connected to the unintentional increase in the level of agricultural inventories.

3 The fiscal stance

The demand effect of general government was similar to that of in 1997. The change of the primary surplus (after adjustment for the revenue loss caused by the pension reform)[2] contributed to the growth of domestic demand by 1.2 % of GDP. The primary surplus of general government was 1.6 % of GDP in 1998.[3] Gross debt as a percentage of GDP still declined, mainly because of rapid economic growth and cyclical and non-structural components of primary surplus (e.g. revenues from repayments), however the structural primary surplus declined to the level which is sufficient only to stabilise the long run debt/GDP ratio.

According to preliminary data, the deterioration in the primary position of general government was caused by a bigger decrease in primary revenues than in primary expenditures (2–2.2% and 0.8–1% of GDP, respectively)

Capital revenues were lower than in 1997, by 0.7 % of GDP.[4] Among current revenues there was a sharp drop (0.6% of GDP) in customs revenue[5] (due to Hungary's international obligations to reduce tariffs). Other measures aimed at reducing the tax burden and the pension reform also reduced revenues (by 0.2% and 0.3% of GDP, respectively). Collected fines and surcharges decreased by 0.2 % of GDP.

The reduction in primary expenditures was concentrated on capital spending, mainly investments[6] and housing subsidies. Current expenditures, which are supposed to be more structural, remained at the same level (i.e. ratio to GDP). This unchanged

Development of the ratio of input stock of inventories relative to sales*

Per cent

* The ratio was constructed by dividing the closing stock of inventories of the given quarter by the average of sales of those months, which make up that particular quarter. The data used for the calculations were seasonally adjusted.

[2] In 1998 a new multi-pillar pension system, including a fully-funded privately-managed second pillar was established. The government balance was deteriorated by the decrease in the contributions of the old pay-as-you-go system. However, it had no fiscal impact because the savings of the new fully-funded pillar automatically financed it. The loss of the contribution to the first (pay-as-you-go) pillar was 0.3% of GDP in 1998.
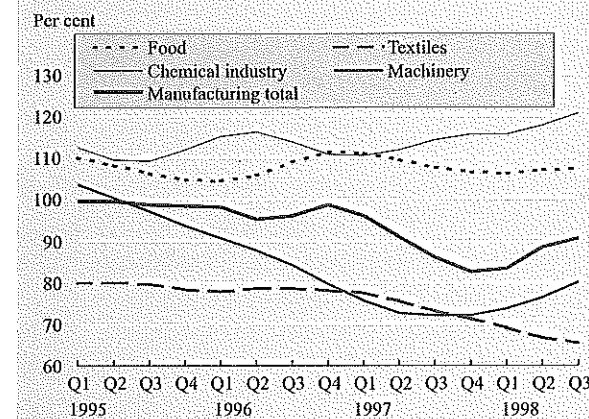[3] For local authorities only projections are available yet. Our figures differ from the official ones because of methodological differences. We classify the sale of securities as revenue from privatisation. Therefore, primary deficit of the Social Security, which excludes privatisation revenue, was higher by Ft 10 billion (0.1% of GDP). The deficit figures above also excludes extraordinary expenditures, such as capital transfers to cover losses of two banks (Ft 170 billion for Postabank and MFB) and to the ÁPV Rt (state holding company). These expenditures had no effect on demand and the structural level of primary surplus required to reduce the debt/GDP ratio.
[4] Repayments were lower and local authorities had fewer real assets to sell.
[5] The import surcharge was abolished in 1997, so its full-year impact affected the revenues of 1998.
[6] The investment/GDP ratio (after the high level in 1997) decreased to levels prevailing during the 1995–96 fiscal adjustment.

Investment by branches of the economy

	Distribution at current prices 1997	Distribution at current prices 1998	Volume index 1997	Volume index 1998
Agriculture, hunting and forestry, fishing	3.6	3.7	16.3	11.6
Mining	0.3	0.3	6.2	7.6
Manufacturing	23.2	26.0	9.0	23.2
Electricity, gas, steam and water supply	6.7	7.2	3.2	17.3
Construction	1.7	1.9	−10.7	20.2
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	6.4	7.1	−11.4	23.0
Hotels and restaurants	1.0	1.0	31.5	13.7
Transport, storage and communications	18.9	18.9	27.3	9.7
Financial intermediation	2.5	3.4	−16.3	47.7
Real estate, renting, business activities and housing investment	22.6	18.0	−0.2	−12.0
Public administration and defence; compulsory social security	3.9	3.6	38.5	1.9
Education	2.1	1.8	7.2	−5.0
Health and social work	2.5	2.5	17.9	8.1
Other community, social and personal service activities	4.5	4.7	25.7	17.1
Total	100.0	100.0	8.5	10.2

Development of the ratio of output stock of inventories relative to sales*

* The ratio was constructed by dividing the closing stock of inventories of the given quarter by the average of sales of those months, which make up that particular quarter. The data used for the calculations were seasonally adjusted.

The corporate sector was very anxious to invest in 1998 – the rate of growth of their investments compared to the previous year reached 20%. However, on account of the unfavourable circumstances in the world economy (the Russian crisis and moderate business activity in western Europe) the rate of expansion of firms' investments slowed down during the last three months of the year.

Prospects concerning the *business* cycle still remained promising for the majority of enterprises, since besides strong domestic demand, there was also a great boost in the sales of consumer goods in western Europe. As a consequence, we expect to see robust investment activity this year as well, although the rate of growth might not reach that of 1998. This hypothesis is backed by the development of machinery and equipment import, which accelerated again rapidly after the slow down of August and September.

The *public investment* growth exceeded 4%, though the dynamics of the government's investment activity was quite different in the two halves of the year. While it continued to expand quickly during the first six months, in the second half the public investments declined even in nominal terms.

The annual growth rate of the *investment of households* decreased by around 10% compared to 1997. This contraction cannot be explained by cyclical factors, since, according to retail statistics, the demand for consumer durables rose by 30%. The unwillingness to invest is presumably only a transitory feature, since the reintroduction of a VAT refund on housing expenditures motivated people to postpone their construction plans. Consequently, we expect household investment to expand in 1999.

Examining investment in the branches of the economy, the 12% decline of real estate, renting and business activities is remarkable. If we adjusted for the 25% decrease of housing investment, we would observe some growth with the rest of the components of this branch.

The dynamic development of the manufacturing sector continued in 1998, in particular machinery and equipment saw a remarkable growth.

In 1998, as in 1997, approximately 40% of investment projects were aimed at broadening the range of service sector. Particularly impressive is the development of financial intermediation, since after a 16% decline in 1997, its annual growth rate rose to 47.7% in 1998.

2.2 Inventories

The accumulation of inventories was one of the most important factors of aggregate demand during the last two years. Detailed data on inventories are only available for the manufacturing sector, so we will examine only this segment below.

The development of inventories in the manufacturing branches is dominated by the machinery and equipment sector. In 1998, the *stock of output inventories* (semi-finished and finished products) and the stock of input inventories (fuel and raw materials) continuously increased in the machinery sector. The more intensive accumulation in inventories is in line with the evolution of *sales*. There was an unanticipated boom in sales dur-

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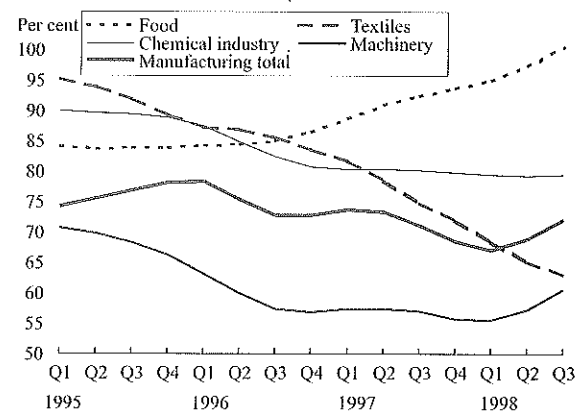
Changes in the behaviour of money and capital market agents due to the international financial crisis did not allow the slope of the exchange rate path to decline further.[2]

As far as domestic factors influencing inflation are concerned, dynamic domestic demand potentially increases inflation. Along with the growth of private consumption and investment demand, public sector demand also increased in 1998, which resulted in a growth of domestic demand higher than the expansion of production capacities.

Rising domestic demand led primarily to the deterioration of the trade balance, thus price increases were restrained by import competition.

As far as non-tradable goods are concerned, new capacities resulting from last years' investments partly mitigated the inflationary effects of expanding demand, but the growth rate of non-tradable prices was still 4% higher than that of tradable goods prices.

In addition to public sector demand, the government directly influences CPI inflation through regulated prices. While in the second month of 1998 inflation in the regulated price category was 23.2%, this rate was only 13.3% in February 1999, which reduced the total inflation rate by 2% in itself and also contributed to lower inflation in other categories through lower production costs.

This favourable effect was due to the lower growth of fuel prices, regulated prices of services increasing significantly more than average inflation.

The moderate cost inflationary pressure was a result of contradictory developments. In the final quarter of 1998 real wages rose by 3.8% on average in the economy as a whole, which, taking improvements in productivity into consideration, also made possible modest improvements in corporate profitability.

It was a positive development that wage inflation decreased substantially in manufacturing industry and commerce compared to 1997 (manufacturing industry Q4 1997: 22.7%, Q4 1998: 16.6%). In the services sector excluding commerce, where the share of white-collar workers (the category in shortest supply) is the highest, wage inflation has stabilised at a high level (Q4 1998: 23%). Due to the scarcity of highly-qualified workforce, high wage growth may spill over to other sectors and branches.
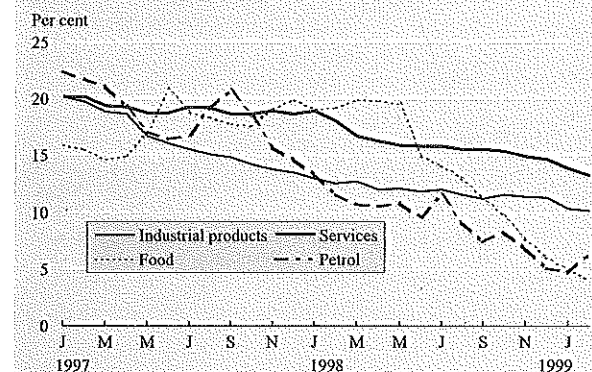
The effect of real wage growth on profitability was partly mitigated by the increasing efficiency of human resource utilisation resulting from investment in the previous years, but in the other services sector higher real wage growth also led to higher than average inflation. Cost inflationary pressure was further reduced by declining world prices of food, energy and other commodities. As a result of all these factors, the growth rate of prices decreased even for those products that are not directly disciplined by the nominal exchange rate.

Developments in regulated and market determined components of the consumer price index*
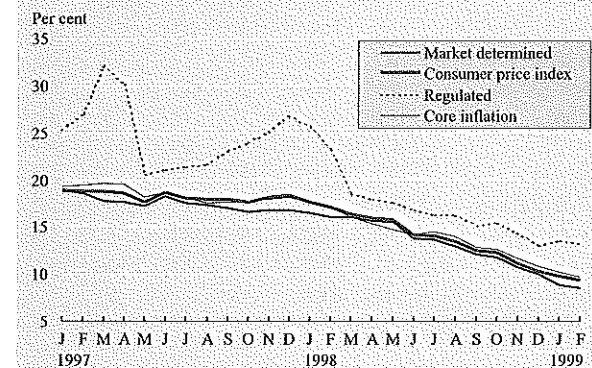
* Growth rate compared to the same month of the previous year; market determined prices: changes in the prices of industrial products and market services.

Development of non-regulated prices*

* Growth rate compared to the same month of the previous year.

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[2] Factors determining the exchange rate path are analysed in Chapter 2, which describes monetary developments.

1 Imported inflation

CPI inflation in Hungary's most important trading partners decreased further in 1998. This was mostly due to declining world prices of commodities and energy, which was the consequence of falling demand resulting from the southeast Asian and Russian crises, as well as of the rising supply from countries forced to increase their export revenues.

In addition to the international developments, domestic cost factors influencing the price level also contributed to low inflation in developed economies. In the European Union high unemployment accompanied by moderate economic growth restricted wage demands, and strict fiscal policy determined by the convergence criteria also supported low inflation.

In the United States, in addition to low imported inflation, the strong dollar and moderate growth of wage costs resulting from significant productivity gains contributed to low inflation. Thus, by the end of the year CPI inflation reached its lowest value of the past 35 years in both the United States and the euro region, while in recession-struck Japan prices were falling in the second half of 1998.

By keeping import prices under control, moderate inflation in developed economies contributed to continuing disinflation in most east European countries in 1998. In Poland, in addition to low imported inflation, the slowing expansion of domestic demand and decreasing wage inflation supported the disinflation process.

In the Czech Republic, due to favourable external conditions and strict fiscal and monetary policies since the 1997 currency crisis as well as the more than 2% decline in GDP, both producer and consumer price inflation declined by more than 3 percentage points. Despite the slowly starting structural reforms and the change in the fixed exchange rate system during the year, consumer prices in the Slovak Republic rose by only 8%.

Due to declining inflation in Hungary's most important trading partner countries, imported inflation decreased by more than the rate of devaluation. In the third quarter of 1998 the import unit value index rose by 9.8% compared to the third quarter of 1997.

If the reduction in foreign prices is also taken into consideration and the effective foreign price is defined as the product of the devaluation rate and foreign manufacturing prices, the change in import prices was even lower than this indicator. Changes in the terms of trade also contributed to the decline of imported inflation.

2 Components of the change in consumer prices

The nominal exchange rate – as the intermediate target of monetary policy – exerts its strongest effect on the price of tradable goods which we call **manufactured goods** for the sake of simplicity. The disciplinary power of the exchange rate system is reflected by the fact that the *price of manufactured goods has followed the nominal exchange rate in the last two years. Eco-*

Changes in world prices 1997–98
(annual percentage change, December/December)

	1997	1998
	World prices in US dollars	
Food	–5.3	–13.7
Oil	–28.1	–29.4
Commodities without fuel	–6.5	–13.7

Source: IMF IFS.

Growth of consumer prices in 1996–98
(annual percentage change)

	1996		1997		1998	
	Producer	Consumer	Producer	Consumer	Producer	Consumer
	price changes		price changes		price changes	
USA	2.8	3.3	–0.6	1.8	–3.2	1.6
Japan	–0.4	0.6	1.3	2.1	–2.0	0.6
Germany	0.2	1.4	1.0	1.9	–1.2	0.5
Czech Republic	4.4	8.6	5.7	10.0	2.2	6.8
Poland	11.2	18.5	11.5	13.2	5.8	8.6
Hungary	20.1	19.8	19.5	18.4	7.9	10.3
Slovakia	4.7	5.4	4.4	6.4	..	8.0
OECD total	8.2	4.7	2.7	4.3	0.7	2.0
EU–15	0.2	2.2	1.4	2.1	–1.7	1.4
G–7	1.1	2.4	0.3	1.9	–0.9	1.3

Source: IMF World Economic Outlook, 1998 Dec.
EBRD Transition Report, 1998.
OECD Main Economic Indicators, 1999 Feb.

Changes in foreign trade unit value indices and in different exchange rate indices
(same period of last year=100)

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sources temporary into financial assets. Taking into consideration the effect of the pension reform, the operational gross savings rate (which includes household investments and financial savings) declined somewhat in 1998.

Although we cannot obtain disaggregated data on household consumption from the national accounts, we can still conclude from retail statistics that the expansion of consumer durables constituted the most important part of consumption growth with an annual increase of 30%. On the other hand, expenditure on current consumption reached only an annual growth rate of about 2.5%, which lags considerably behind the rate of expansion of disposable income. This phenomenon may be an indication of the great polarisation of the financial wealth of Hungarian households. In a country with a well developed credit market, current consumption moves together with permanent income, while expenditure on investments and consumer durables are financed through credits and financial savings. We can infer from the data above, that the expenditure on consumer durables was mainly financed from current disposable income, which may reveal that a great part of the Hungarian households are liquidity constrained. Consumer credits were not available for these people due to the underdevelopment of consumer credit markets, and at the same time they were not able to mobilise any financial savings either. As a consequence, they spent the majority of their additional disposable income on durables. The others, who are not liquidity constrained, increased their consumption by a lower rate than the expansion of their disposable income, which resulted in the expansion of their financial savings.

The hypothesis formulated in the previous paragraph about well-to-do families having increased their savings is supported by the evolution of households' financial wealth. Despite the stock market crashes of the second and third quarter, which significantly diminished the financial wealth of the household sector,[1] people made an effort to offset the losses by increasing their financial savings. This might be an indication of a suboptimal ratio of financial wealth relative to disposable income.

We can conclude from the discussion above that the future income distribution between the liquidity constrained and the creditworthy households will play a major role in determining the evolution of the savings rate and thus the ratio of consumption relative to disposable income.

2 Investment

2.1 Fixed capital formation

The annual growth rate of fixed capital formation reached 17.7% in the third quarter of 1998, which meant a further speed up of investment activity compared to the first half of the year. During the last quarter, the growth rate slowed down considerably, to an annual rate of 7.8%.

Changes in the financial wealth of households as a percentage of disposable income

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[1] Due to the stock market crashes which took place in the second and third quarter of 1998, the market value of the share portfolio of households declined by Ft 22.5 billion and Ft 147.2 billion respectively. On the other hand, the recovery of the stock exchange during the last quarter of the year increased the market value of shares owned by households by Ft 107.7 billion.
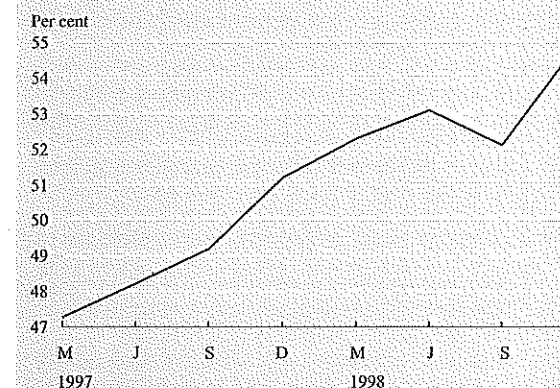
III. Components of aggregate demand

Annual growth rates of GDP and its components*

	1997	Q1	Q2	Q3	Q4	1998
			1998			
GDP	4.6	4.7	5.1	5.6	4.7	5.0
Total consumption	2.5	2.9	4.1	4.4	6.5	4.4
Household consumption	2.6	2.9	4.1	4.4	6.9	4.5
Public consumption	1.8	3.0	4.3	4.5	3.7	4.0
Gross capital formation	9.7	8.0	25.7	28.7	10.6	17.5
Fixed capital formation	8.8	7.0	12.5	17.7	7.8	11.0
Total domestic absorption	4.4	3.9	9.1	10.9	8.0	8.1
Exports	26.4	28.8	17.5	11.4	13.1	16.9
Imports	25.5	25.2	25.6	22.7	20.0	23.2

* 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. Therefore they involve a great deal of uncertainty and the methodology applied is continuously 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.

Changes in *operational* household savings rates**
As a percentage of the disposable income of households

	1996	1997	1998
Operational *gross*** savings rate	12.4	12.0	12.0
Operational *financial* savings rate	6.6	6.0	6.8

* When calculating the *operational* savings rate, the compensation for inflation paid as part of interest income is deducted from both financial savings and disposable income.
** Gross savings = financial savings + household investments.

Annual growth rates of household income, consumption and investment
Changes compared to the preceding year

	1996	1997	1998
Household income	-0.1	1.9	4.2
Household consumption	-2.7	2.5	4.5
Household investment	2.0	-0.3	-10.0

According to our estimates, the Hungarian economy grew by 5% in 1998. The rate of growth accelerated during Q1–Q3, while it declined somewhat in the last quarter. The rate of expansion in domestic absorption exceeded the growth of GDP, which contributed to the deterioration of Hungary's external position.

Although the rate of expansion for the export of goods and services declined compared to 1997, it still could be considered the most important component of aggregate demand with its increase of around 17%. Considering the domestic factors of aggregate demand, fixed capital formation had an annual growth of 11%, and the stock of inventories increased by a considerable amount as well. Household consumption grew by 4.5% in 1998, 2 percentage point higher than in the previous year. Its dynamics was intensifying during the second half, especially in the fourth quarter of the year. As a result of the significant growth of domestic absorption, the demand for imported goods increased by a considerable extent.

1 Household consumption

The total expenditure of households rose at a slower rate than their disposable income, which resulted in a significant increase of the operational financial savings rate compared to 1997.

It should be mentioned that an important institutional change took place during 1998, which had a direct effect on household savings. As of January 1998, a pension reform has been implemented in Hungary, as a result of which a significant percentage of former social security contributions is being paid to private pension funds. These new flow of funds are being accounted for both in the compilation of household disposable income and in the calculation of financial savings, which was not the case formerly. In order to make a comparable analysis of the savings behaviour of households, one has to take institutional changes into account. According to our estimates, more than Ft 25 billions were directed into private pension funds, which produced a 0.3 percentage point higher savings rate.

The total expenditure of households expanded at a slower pace than the 3.8% annual growth rate of disposable income. This phenomenon was achieved through a 4.5% increase of consumption and a 10% decline in household investment compared to the preceding year. The contraction in household investments can mainly be explained by the promised introduction of VAT refunds on housing expenditures in 1999, which gave incentives to postpone housing investment projects and place housing re-

nomic agents price their products based on the preannounced devaluation rate; cross exchange rate fluctuations are considered as temporary and they are not built in the prices. As prices are reviewed only from time to time, the temporary weakening of the forint at the time of the Russian crisis was not built into the prices of manufactured goods. However, increasing uncertainty concerning future developments in the exchange rate is reflected by the fact that in the last quarter of 1998 the growth rate of prices exceeded the depreciation of the forint by nearly 0.5%.

The temporarily higher growth rate is still consistent with the exchange rate path, but it is an indication of expectations about the exchange rate moving away from the stronger edge of the intervention band.

The higher than expected decline in inflation can mostly be attributed to the change in **food prices,** which comprise 27.6% of the consumer basket. Prices in this category are dominated by two types of food: seasonal, mostly domestically traded produce and internationally traded food products which are subject to heavy competition in foreign markets. In domestic markets both types enjoy significant tariff protection. However, supply-demand conditions in the world market also influence domestic food prices through export prices. Prices of seasonal food products had a favourable effect on the total inflation rate in 1998. World prices for tradable food products declined substantially following the drastic fall of Russian demand, and this decline was followed by domestic prices as well. Domestic food prices follow world prices denominated in dollars.

Therefore changes in EUR/USD cross exchange rates also influence domestic prices. This was positive for producers when the dollar was strong (1996–97), as revenues calculated in currency basket composition were rising despite the decrease of prices calculated in dollars. However, it had an extraordinarily negative effect in 1998 when the dollar weakened along with a further decline in world prices.

The rate of inflation decreased substantially in the **categories of products with regulated prices and services:** *in December 1997 the 26.8% rise of regulated prices exceeded the devaluation rate by 8.4 percentage points, and with the 13.3% inflation rate in February 1999 this discrepancy shrank to 3.4 percentage points.*

Products with regulated prices can be divided into two groups: household energy as well as products and services with regulated prices. In recent years price increases in the energy categories have exceeded the inflation rate. This permanently higher inflation rate reflected not only the growth of current costs, there was also a price correction, which was necessary as prices for these services formerly did not cover the cost of capital required for their production. Following the correction period, price regulation yields a significantly higher correlation between the nominal exchange rate and energy prices.

The control of price setting by firms with dominant market share is the other important element of price regulation. The task of the regulatory agency in this respect is to prevent the abuse of market power, thereby encouraging the efficient operation of these firms. If the goal of encouraging firms to place greater emphasis on forward-looking inflation in their price setting behaviour can be achieved, then price regulation can actively contribute to the disinflation process. So far this goal has not been

Annual inflation of goods (excluding food and fuel) compared to the devaluation of the forint*

Per cent

···· Against the nominal effective exchange rate
— Against the currency basket
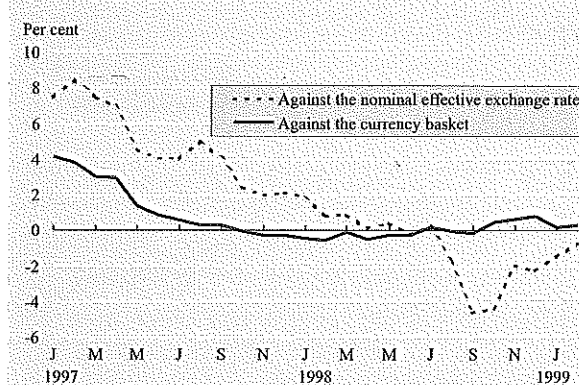
* Difference in the growth rate relative to the same month of the previous year.

**Hungarian food price level calculated in US dollars and currency basket composition***

Per cent

— In currency basket composition
— In US dollars
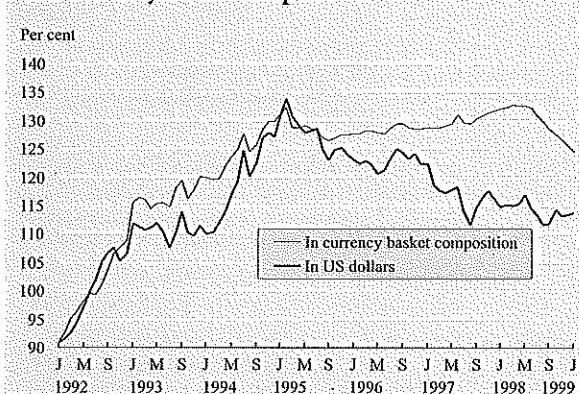
* Average of 1992 = 100.

Annual inflation of products with regulated prices compared to the devaluation of the forint and to industrial products*

Per cent

— Against the currency basket
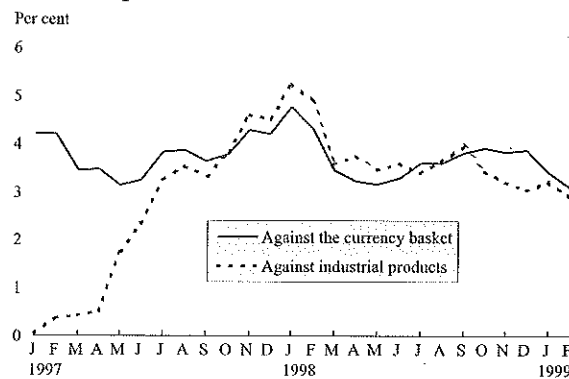······ Against industrial products
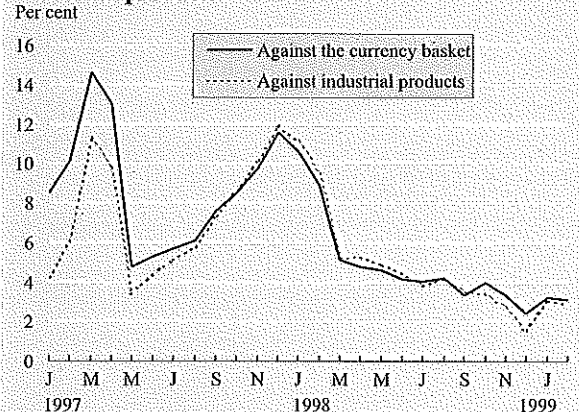
* Difference in the growth rate relative to the same month of the previous year.

Annual growth rate of energy prices, as well as of prices of products and services under regulation relative to the devaluation of the forint*

Per cent
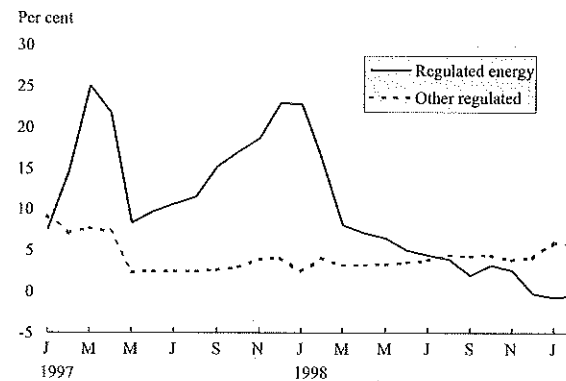
* Difference in the growth rate relative to the same month of the previous year.

Annual inflation of non-regulated services compared to the devaluation of the forint and to tradable industrial products*

Per cent

* Difference in the growth rate relative to the same month of the previous year.

achieved. The growth rate of regulated prices exceeded the CPI inflation rate and by increasing the costs of other industries, they substantially hinder further disinflation.

While in the long run the difference between the inflationary dynamics of industrial products and market services can be explained by the discrepancy in their productivity growth, in the short run demand and supply conditions influence the relative price of services. The expansion of domestic demand led to a 4 percentage point higher inflation for non-regulated services than for industrial products. The difference in the growth rate of services and manufacturing prices has not increased further since 1997 due to the fact that the significant expansion of service capacities offset the inflationary effect of faster demand growth. New investments are likely to have improved productivity in the services sector as well.

tailed their claims on the central bank parallel to the increase in the share of government papers in their portfolio.

Compared to previous years, the expansion of credit to the **household sector** is visible. However, the contribution of household credits to the growth of banking assets can only be marginal because their share in total assets is negligible.

Following a decline in 1995, net corporate demand for bank loans stabilised in 1996. Because of favourable profits, the increased investment activity of the corporate sector did not lead to an accelerating growth of corporate debt, since investments were partly financed by financial assets accumulated earlier. This trend continued in 1998, leaving the real value of net corporate borrowing unchanged compared to the average of the two previous years. However, as a result of the temporary scarcity of domestic commercial bank funds and the change in the relative price of foreign loans, the share of the latter in total corporate borrowing increased again in the second half of 1998, after one-and-a-half years of low values. For enterprises which are risk-neutral in foreign currencies, foreign loans meant a cheaper source of financing than forint-denominated borrowing, since domestic interest rates contained an increased devaluation risk premium.

**Composition of the money demand and the credit portfolio**

HUF billion

	1 Jan.	31 March	30 June	30 Sept.	31 Dec.
			1998		
			Liabilities		
Banknotes and coins	562.6	551.7	587.7	640.6	666.6
Household deposits	2,166.4	2,205.6	2261	2,388.3	2,597.9
– HUF	1,643.6	1,668.8	1,700.9	1,787.7	1,982.3
– foreign exchange	522.8	536.8	560.1	600.6	615.6
Enterprise deposits	962.9	881.8	943.1	945.9	1,032.1
– HUF	729.6	654.8	709.2	713.9	802.8
– foreign exchange	233.3	227.0	233.9	232.0	229.3
Deposits of local authorities and non- profit institutions	207.5	210.1	190.7	212.3	229.4
Other deposits	69.7	48.1	65.0	53.1	71.2
Bonds and savings notes	37.3	35.5	32.9	31.8	28.9
M3	4,006.4	3,932.8	4,080.4	4,272.0	4,626.1
			Assets		
Credit to households	311.9	302.2	324.8	341.1	355.2
Credit to the public sector	3,493.8	3,454.6	3,386.1	3,701.0	3,894.9
Credit to enterprises	1,706.6	1756	1,880.2	1,993.1	1,983.7
Credit to other institutions	66.2	63.6	73.2	92.8	94.5
Domestic credit stock	5,578.5	5,576.4	5,664.3	6,128.0	6,328.3
Other domestic assets, net	–444.9	–636.7	–651.0	–781.8	–700.7
Foreign, net	–1,127.2	–1,006.9	–932.9	–1,074.2	–1,001.5

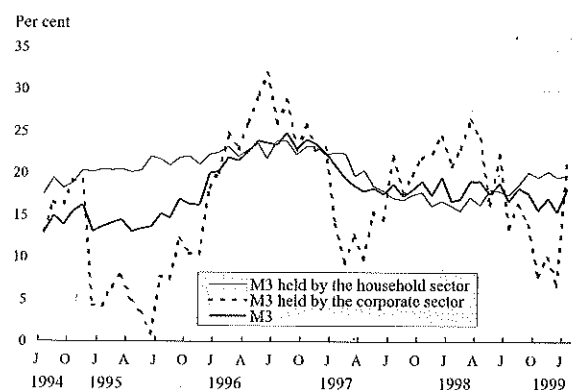**Net enterprise credit disbursed by the domestic and foreign banking sector***

HUF billion
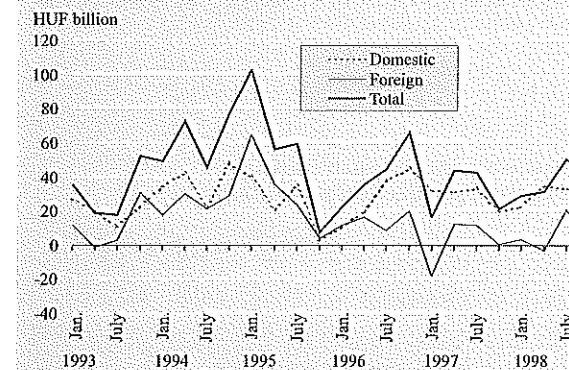
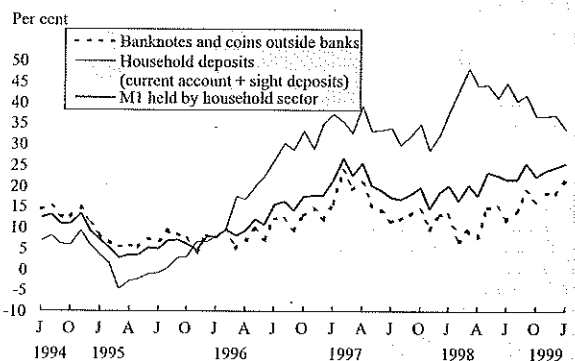* At 1992 prices, deflated by CPI. Seasonally adjusted.

Development of monetary aggregates
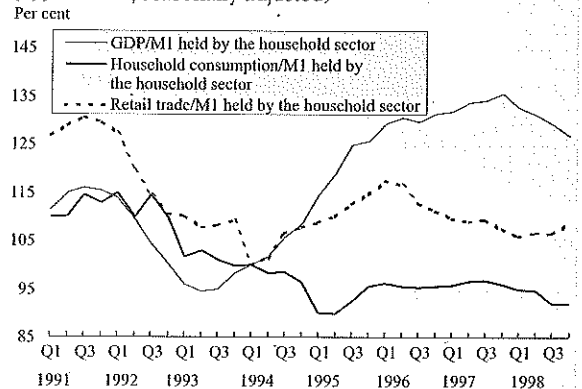(monthly real growth rates, year-on-year)

Per cent
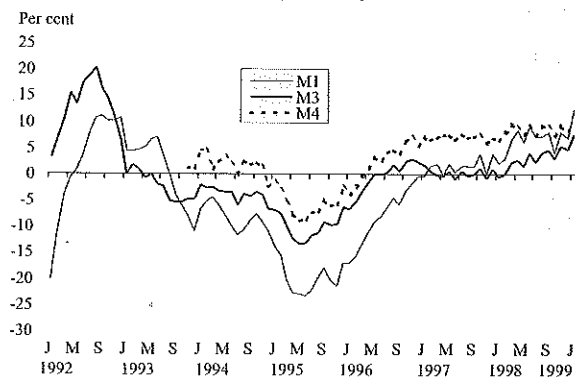
Composition of the M3 monetary aggregate
(monthly nominal growth rates, year-on-year)

Per cent

Composition of the M1 monetary aggregate held by the household sector

Per cent

Velocity of transaction money
(1994 H1 = 1, seasonally adjusted)
Per cent

5 Monetary aggregates

The growth rates of both the narrow (M1) and the broader (M3 and M4) monetary aggregates exceeded that of the consumer price index in 1998 as economic activity rose. Financial portfolio rebalancing and higher transaction money demand give an explanation for the faster real money growth.

The popularity of non-bank financial instruments experienced during the 1996–98 period reversed to the benefit of banking deposits. The reallocation of financial portolios started off because of the increased uncertainty in the capital markets and the convergence of expected investment yields offered by banking and non-banking institutions. The narrowing difference between M3 and M4 growth rates also reflects this portfolio shift.

The recent high growth rate of the broader M3 monetary aggregate was driven by the expansion of household assets, as the growth of corporate deposits was rather moderate. Expanding household savings and portfolio rebalancing contribute to the high growth rate of fixed term deposits held by the household sector.

The transactional part of the narrow M1 monetary aggregate is held by the household sector. Our research suggests that there is only simultaneity between the cash component of the M1 money demand and household consumption, and moreover that the evolution of sight and current deposits has at most a predicting power for 1-2 months ahead. Taking into account the recent slow down of the velocity of money there is no evidence for a further future acceleration of household consumption.

The high M1 growth rate can partly be explained by the evolution of the liquidity premium, which decreased as inflation slowed down. In the case of sight and current household deposits, which expanded at the fastest pace, probably portfolio rebalancing played an important role as well. Portfolio rebalancing by the household sector could have been driven by the shrinking difference between interest rates of sight deposits and other less liquid assets.

The popularity of sight and current deposits can also be attributed to the fact that attached services, especially those related to card operations were expanding rapidly.

Developments in the assets of the banking system including the National Bank of Hungary (NBH) showed a significant structural change in the credit composition during the second half of 1998.

The decreasing tendency in the claims on **foreigners** was the result of two different factors which worked in opposite directions. The position of the banking sector against foreigners improved as commercial banks reduced their exposure by closing their on balance sheet open positions. Nevertheless, the net foreign position deteriorated as at the same time foreign exchange reserves of the National Bank decreased.

The public sector's position against the banking sector deteriorated significantly when both foreigners and domestic residents reduced their government paper holdings, which increased the assets of commercial banks to a large extent. On the other hand, this portfolio rebalancing did not imply a reduction of the credit supply to the private sector. Commercial banks cur-

II. Monetary policy

1 Developments of monetary conditions

A favourable trend in the inflation process, increasing external imbalances and changes in the international financial environment decisively influenced the conduct of monetary policy in the second half of 1998.

Favourable advances in the inflation process made the reduction of the crawl feasible, despite the turbulent international environment.

The government in accordance with the National Bank decreased the rate of crawl to 0.7% and 0.6% effective from 1 September and 1 January 1999, respectively. As the fall in inflation was higher than expected, a real effective depreciation of the forint took place which was reinforced by the movement of the Deutsche Mark (Euro)/US Dollar rate.

On the grounds of competitiveness the evolution of the profitability of the export sector would have not justified a real depreciation. The real exchange rate path was mainly determined by the changing sentiment of financial markets.

A number of countries whose exports compete with Hungarian goods in third markets devalued their currencies in 1997–98. Moreover, investors could not exactly evaluate the direct and indirect effects of the Russian crisis on the Hungarian economy. Due to the uncertainties regarding the expected trade performance, investors considered a more devalued level of exchange rate to be realistic.
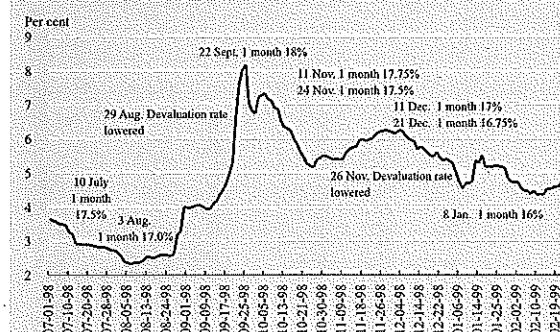
Despite the fall in inflation in the period following the Russian crisis, the forint remained in the middle of the intervention band even with the higher real interest rates. Consequently, despite the two crawl cuts that have been implemented since the outbreak of the Russian crisis, the forint depreciated in real effective terms.

Another factor which influenced the setting of the exchange path was the sticky adjustment of inflationary expectations to the rapid decrease of the level of inflation. Even in the third quarter of 1998 both the Ministry of Finance and private sector macro analysts expected a double-digit inflation for 1999.
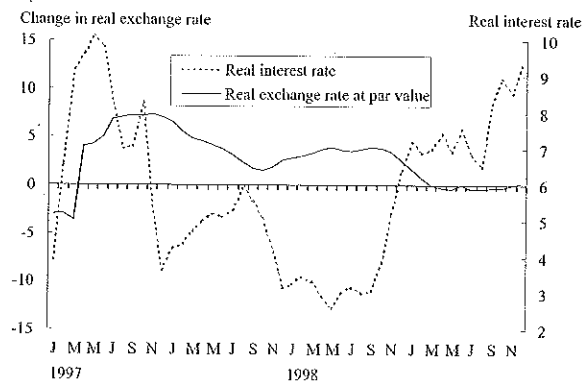
This resulted in demand for higher nominal wage increases and contributed to higher price increases in the field of regulated services.

The ensuing price and wage rigidities could have endangered the credibility of the nominal path of the economy. The temporary rise in the inflationary inertia justified only a gradual reduction of the rate of devaluation. As the international financial envi-
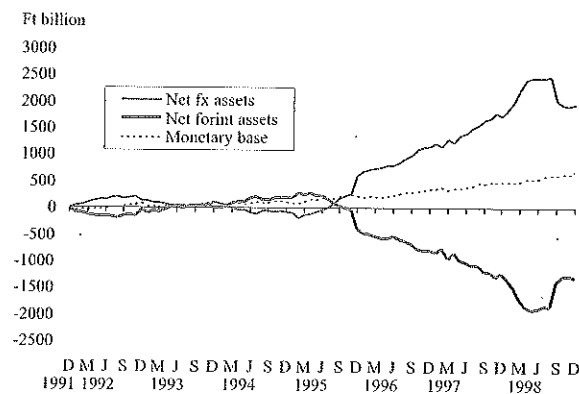
Premium on the 3-month treasury bill

Per cent

Monetary conditions

Change in real exchange rate   Real interest rate

— Real interest rate
— Real exchange rate at par value

J M M J S N J M M J S N J M M J S N J M M J S N
1997   1998

Monetary base and its components*

Ft billion

— Net fx assets
— Net forint assets
····· Monetary base

D M J S D M J S D M J S D M J S D M J S D M J S D
1991 1992 1993 1994 1995 1996 1997 1998

* ,The figure contains cumulated value, December 1991 = 100.

ronment was effected by crises, the risk premium[1] on the HUF assets increased sharply, became more volatile and finally stabilised around 500 basis points towards the end of the year. This level of premium exceeded the pre-crisis equilibrium by around 150–200 basis points. The increase can be attributed mostly to the events on the international capital markets, yet from the last quarter of 1998 fundamental considerations have played an increasingly important role. The Russian crisis and the slowing growth of European countries, together with the dynamically growing domestic absorption, projected a deterioration of the current account.

The interest rate policy, which was consistent with the exchange rate path and the required risk premia, resulted in high real interest rates despite the policy of the National Bank to use sterilisation instruments to compensate for the loss of liquidity due to the financial crisis. The augmentation of real interest rates is partly attributable to the increased risk premium on forint assets. This was reinforced by the temporary real depreciation of the forint which is in contrast to the real appreciation characteristic of the previous periods. The two factors together contributed to an increase of real interest rates of around 400 basis points.

Ex post real interest rates calculated from 3-month T-bill yields and CPI inflations during the same 3-month period. The real exchange rate shown here is not equivalent to that used later in the Report to measure competitiveness. It shows ex post nominal depreciation in the next 3 months divided by ex post CPI inflation in the same period.

In the period following the outbreak of the Russian crisis the National Bank tried to mitigate the interest rate jump unjustified by domestic economic fundamentals. Sterilisation policy supplemented the liquidity disappearing from the economy due to capital flight. As a result, the growth of the **monetary base** was smooth last year and therefore the economy could avoid a quick crunch of credit supply with its potentially serious consequences for the real economy. Stricter monetary conditions resulted in a higher real interest rates on credit facilities offered by commercial banks. On the deposit side, a similar increase did not take place since shaken investor confidence in non-bank assets provided an incentive for a portfolio reallocation in favour of bank assets even with lower real interest rates. Demand for money increased in accordance with declining inflation and económic growth. However, higher interest rates led to a shift in credit demanded toward external borrowing.

2 Exchange rate and interest rate developments

After the outbreak of the Russian crisis monetary policy was guided by the intention to minimise the real effects of the crisis while preserving the credibility of the exchange band. The National Bank endeavoured to use verbal intervention in order to direct the attention of market participants to the fact that economic fundamentals of the country did not justify speculation against the forint. The cautious sterilisation policy conducted

[1] The yield of the 90-day treasury bill over the pre-announced devaluation rate and the average foreign interest rates weighted according to the composition of the basket. In the present crawling band exchange rate regime, the risk premium is a composition of three elements which compensate for possible losses arising from default, surprise devaluation from the band and devaluation within the band.

rate expectations. At that time short-run expectations about the future course of the 1-year interest rate were more cautious than in the period preceding the crisis, but for the longer run market participants seemed to expect a more dynamic decrease. In December yields dropped significantly, implying a 200–250 basis point decrease of interest rate expectations on all horizons. This raises the question as to whether the downward shift of the yield curve was due to a further decline in the depreciation risk premium of the forint or a decrease in inflation expectations.

In this respect the exact timing of the December yield drop is quite important, since it occurred right after the announcement of the November CPI inflation statistics (in the 5 days following the announcement, the yield curve shifted down by approximately 130 basis points). During these few days, neither the stock of T-bonds owned by foreigners grew very rapidly nor global investor attitude towards emerging markets changed positively.[5] These facts suggest that the surprisingly low November inflation statistics encouraged market participants to lower their expected path of inflation by 150-200 basis points. This can be seen from the monthly survey of market forecasters,[6] although they seemed a bit more cautious – the December poll showed them reducing their forecast for December 1999 year-on-year CPI inflation by 102 basis points on average to 9.0%.

Until 12 January, implied forwards up to the 3-year horizon decreased by another 100–150 basis points. This downward shift took only two days (5–6 January). On these days there were no domestic data or news releases that would potentially influence yields, and the T-bond stock owned by foreigners did not increase either.

The announcement of the December (again, lower-than-expected) CPI inflation data on 11 January was not followed by a decrease in long bond yields in a similar fashion as in December. However, the assessment of this is rather difficult, since the Brazilian crisis became fully-fledged during those days. The forint could not avoid this new wave of emerging market confidence crisis; the depreciation risk premium increased, the currency weakened within the band and yields increased significantly.
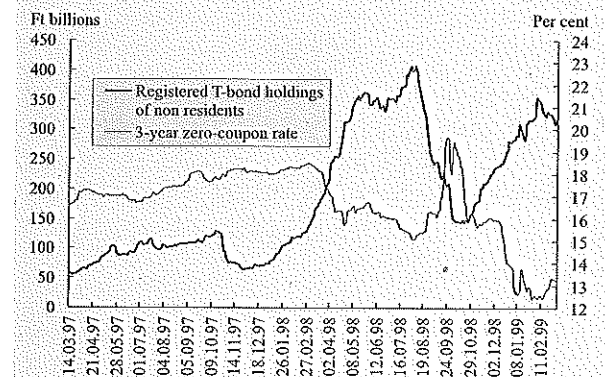
The impact of the Brazilian crisis on the Hungarian debt market lasted only for a week. By 22 January, implied forward rates were back at their pre-crisis levels. In the next three weeks longer-run interest rate expectations stabilised. Beginning in mid-February, a number of market analysts published reports on the Hungarian economy emphasising some worrying trends. In particular, they focused on the larger-than-expected 1998 current account deficit and the adverse figures of the January budget deficit.

As a result, yields on all maturities started to increase. The implied forward curve shifted up by 100 basis points by the beginning of March. Inflation expectations increased slightly as well – in the 17 February poll, market analysts' forecast of the end-1999 year-on-year CPI inflation stood at 9.3%, 0.3% up from their January forecast.

[5] The spread of J. P. Morgan's EMBI (Emerging Market Bond Index) over US T-bond yields in fact slightly *increased* in this period.
[6] Compiled by Reuters.

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

Ft billions   Per cent

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

1-year implied forward curves

Per cent

— 24 July 1998   — 24 Nov. 1998
····· 23 Dec. 1998   ···· 12 Jan. 1999
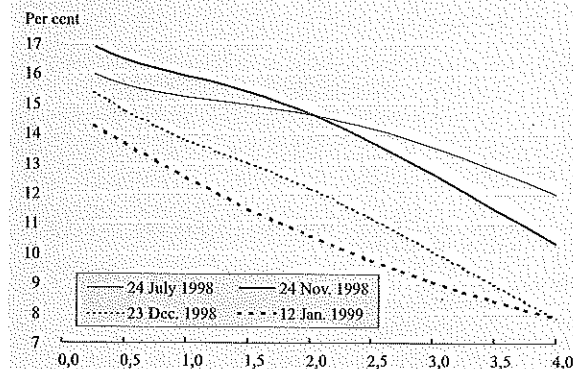
1-year implied forward rate for the period 1998–99 and the average market of the end-1999 yoy CPI inflation*

Per cent

— 1-year implied forward rate for the period 1998–1999
— The average market of the end-1999 yoy CPI inflation
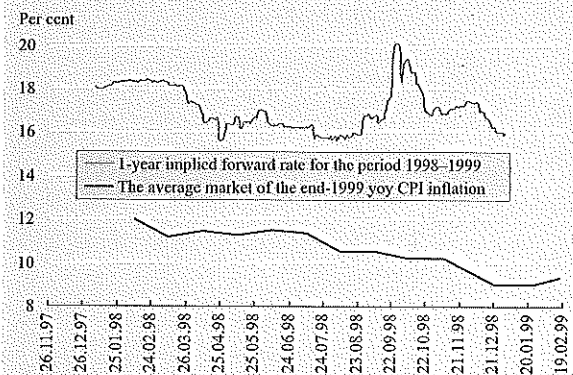
* Based on the 'Reuters poll of forecasters'.

The monetary base

	1997 Q4	1998 Q1	1998 Q2	1998 Q3	1998 Q4	1998 Total	1998 Change in 1998
I. Monetary base (II + III)	994.4	0.8	57.7	62.5	45.5	1,160.9	166.5
Currency in circulation	621.3	–20.3	42.3	62.8	29.9	736.0	114.7
Reserves	373.1	21.1	15.4	–0.3	15.6	424.9	51.8
II. Net forint assets (b + c + d – a)	410.2	–491.5	–173.4	502.0	94.8	342.1	–68.1
a) Sterilisation instruments*	537.7	449.6	82.9	–498.1	–46.7	525.4	–12.3
b) Credit to financial institutions**	169.5	–2.5	–12.3	31.8	–19.4	167.1	–2.4
c) Net claims on the government	757.5	–0.4	–128.4	54.3	35.4	718.4	–39.1
Out of which: KESZ (–)	119.5	–55.7	136.6	–77.9	–89.4	33.1	–86.4
government securities (+)	464.8	–19.5	–4	–0.5	–63.9	376.9	–87.9
other (+)	412.2	–36.6	12.2	–23.1	9.9	374.6	–37.6
d) Other	20.9	–39.0	50.2	–82.2	32.1	–18.0	–38.9
III. Net foreign exchange assets	584.2	492.3	231.1	–439.5	–49.3	818.8	234.6
Net foreign	–662.0	304.5	118.6	–301.4	28.4	–501.9	160.1
Reserves	1,910.3	321.5	83.7	–168.3	112.8	2,260.0	349.7
Foreign debt	–2,572.3	17.0	–34.9	133.1	74.4	–2,761.9	189.6
Net domestic	1,246.2	187.8	112.5	–138.1	–87.7	1,320.7	74.5
Credit	1,911.4	40.4	75.6	110.5	–0.3	2,137.6	226.2
Deposit	665.2	–147.4	–36.9	248.6	87.4	816.9	151.7

* NBH deposit + NBH bond.
** Loans to commercial banks + rediscounted bills + active repo.

Short-term corporate credit rates, household deposit rates and the 3-month T-bill yield
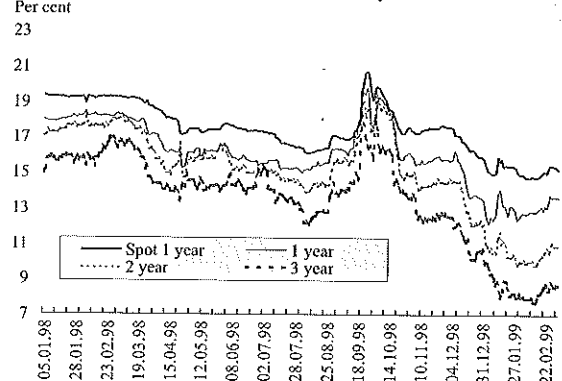
Per cent

Legend: Short-term corporate credit rates / The 3-month T-bill yield / Household deposit rates
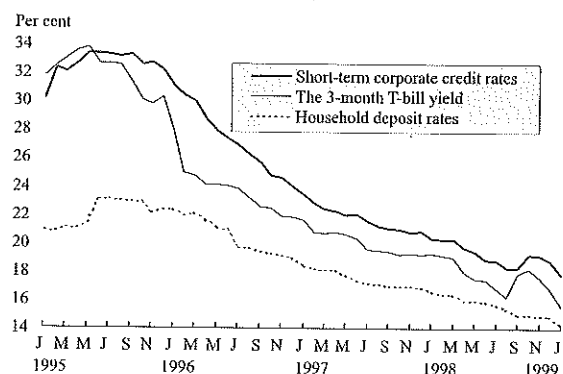
Short-term corporate credit rates, 3-month T-bill yields and the spread between them

Per cent

Legend: Weighted average / 3-month T-bill yields / The spread between them
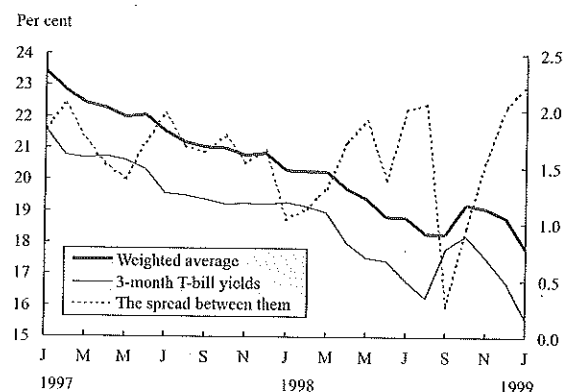
Spreads between yields on government securities and household deposit rates

Percentage

Legend: SPREAD3M / SPREAD6M / SPREAD12M
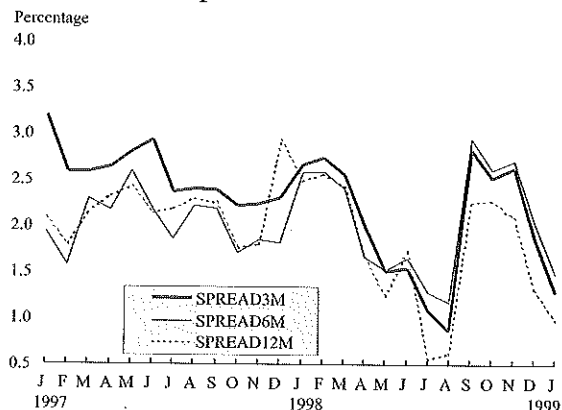
Spot 1-year zero-coupon rate and implied 1-year forward rates starting in 1, 2 and 3 years

Per cent

Legend: Spot 1 year / 2 year / 1 year / 3 year

ticipants failed to ascribe proper significance to the indicators predicting a deterioration of external balances. Unfavourable current account developments became evident for market participants in February. Country-specific risk premium increased as well as market yields, and the forint moved away from the strong edge of the band.

3 Commercial bank rates

Interest rates on commercial bank loans and deposits followed the downward trend of market rates in 1998. However, the continuous decrease since 1996 in the spread between short-term corporate lending rates and short-term T-bill yields has come to an end. Moreover, the spread increased at the beginning of 1998. This increase was due to a change in the composition of corporate borrowers; the proportion of those companies which have no or limited access to foreign loans has increased within the borrower pool. During the August–September crisis bank lending rates followed the increase in market rates with a time lag. Thus, in September and October the spread shrank, but by November it had reached its pre-crisis level.

Household deposit rates did not decrease in line with the significant drop of T-bill rates which started in March and which resulted in a 100–150 basis point shrink in the spread between them.

The causes of this were the usual slow adjustment of the banking sector to T-bill yield drops, the still increasing competition for market share among banks and the strengthening threat from alternative financial market instruments aiming at household savings.

After the start of the Russian crisis, deposit rates did not follow the increase in market rates either. As a result, the spread between them increased to the 250–300 basis point level that had prevailed at the beginning of 1998. This can be explained again by cautious adjustment, but an increasingly important factor was that, due to the downturn of investor confidence in financial instruments outside the banking sector, households re-arranged their portfolios in favour of instruments offered by commercial banks.

4 The yield curve and inflation expectations

The information content of the yield curve, regarding expected future interest rates and inflation, decreased significantly after the Russian crisis had unfolded in August and had turned into a global loss of confidence in emerging markets. The sharp increase of yields of all maturities in September had very little to do with inflation expectations.

They were rather a consequence of the temporary increase in the depreciation risk premium of the forint. This is supported by the evolution of the stock of forint-denominated T-bonds owned by non-residents.

By mid-November yields had stabilised and it made sense again to look at implied forward curves in order to assess interest

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during the period of capital inflow enabled the National Bank to sterilise the capital outflow as well. Based on the good fundamentals of the country the NBH considered the jump of risk premium to be a temporary rather than a permanent phenomenon. In view of the high level of liquid reserves, temporary capital outflow could be tolerated. As real interest rates were increasing owing to the decline in inflation, a further rise in interest rates was deemed unnecessary. The interest rate premium was raised through a cut in the rate of devaluation, which was justified by the trend of the real exchange rate. Nevertheless, by the end of September in order to reinforce the credibility of the exchange rate band, raising official interest rates became imminent. Due to the general crisis of confidence affecting emerging markets after the eruption of the Russian crisis, the forint weakened to the edge of the fluctuation band and monetary policy intervention became unavoidable in September.[2] Intervention can be explained by the capital outflow only to a minor extent. Essentially it was the forced portfolio reallocation of domestic market participants which obliged the Central Bank to purchase forints.

Contagion of the Russian crisis and the lack of liquidity in international financial markets affected the risk premium on forint assets to an extent where the pre-crisis level of bond yields were regarded to be insufficient. As a result, a wave of selling emerged among foreign investors in the government bond market. In August and September the stock of government bonds held by foreigners decreased by Ft 250 billion. Capital withdrawal occurred on the equity market as well, but its magnitude was well below the previous estimates of market participants. It could have been around Ft 50–70 billion.[3] The overwhelming amount of capital outflow took place before the first Central Bank intervention. Demand for foreign currency arising from government bond selling by foreign investors was covered by the reduction of the net FX assets of commercial banks. In sharp contrast to other central European countries, a significant jump in government bond yields occurred only around the middle of September. The explanation of this phenomenon is that commercial banks considered the government securities to be close substitutes of Central Bank deposits, so the reduction of the stock of deposits could restrain the increase of bond yields. In the second half of September the outflow of capital slowed down to a considerable extent. Despite this, the National Bank was compelled to intervene and on 22 September it raised its leading rates by 100 basis points. In this period no relevant new information was revealed that could have altered substantially the behaviour of foreign investors or the country-specific risk premium. In addition to the outflow of portfolio capital, the lasting weakness of the forint within the band and the Central Bank intervention that became necessary to a certain extent can be accounted for by a change in the behaviour of the domestic banking system and institutional investors. As is demonstrated in the table presenting the breakdown of the sources of conversion, out of Central bank intervention of Ft 508 billion in the third quarter, Ft 406 billion is attributable to these factors. (The sum of lines III and IV.)

[2] The effect of the Russian crisis on the Hungarian capital markets and monetary policy was discussed in detail in the previous issue of the Inflation Report.
[3] Information provided by the depository house on the changes of foreign holdings of Hungarian equities at face value is unreliable due to the significant price and composition effect. The extent of capital outflow can be estimated based on the evaluation of the behaviour of potential domestic purchasers.

Position of the forint within the fluctuation band

Per cent — Reverse scale
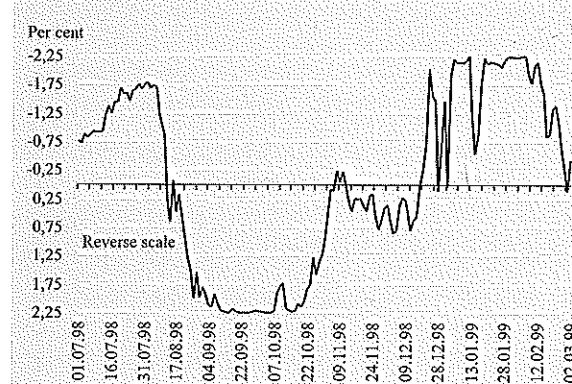
Components of the demand for forints

Ft billions

	1997	H1 1998	Q3 1998	Q4 1998	Total 1998
A) Conversion	877.6	744.5	-508.3	-44.9	191.3
a) Foreign exchange purchases of the NBH in the interbank foreign exchange market	642.0	707.6	-508.3	-45.2	154.2
b) Purchases of the NBH from the budget	235.6	36.9	0.0	0.2	37.1
Sources of conversion (I...VIII)	877.6	744.5	-508.3	-44.9	191.3
I. Current account corrected corrected with the net foreign interest payments of the NBH (1 + 2)	-40.8	-115.3	-76.3	-191.8	-383.5
1 Current account	-177.9	-192.2	-94.7	-208.6	-495.5
2 Net foreign interest payments of the NBH	137.0	76.9	18.4	16.8	112.0
II. Foreign direct investment	308.8	182.9	37.0	91.9	311.8
III. Conversion due to commercial banks	-5.9	-13.0	-46.6	-13.3	-72.9
IV. Effect of derivatives	160.6	288.2	-369.3	-125.3	-206.4
V. Intervention due to conversion of domestic foreign exchange deposits	10.0	16.2	4.1	-12.2	8.0
VI. Net portfolio investments (1 + 2)	334.9	384.6	-103.7	139.2	420.1
1 Government securities	22.7	251.6	-157.4	100.1	194.4
2. Equities*	312.2	133.0	53.6	39.1	225.7
VII. FX borrowing by Hungarian enterprises (1 + 2) = (a + b)	87.8	-20.9	28.7	65.7	73.5
1 Domestic	37.1	54.1	-6.4	6.1	53.8
2 Foreign	50.7	-75.1	35.1	59.6	19.7
a) Maturity up to one year	-12.5	-9.1	1.8	55.5	48.2
b) Maturity over one year	100.3	-11.9	26.9	10.2	25.3
VIII. Capital transfers	22.1	21.9	17.9	0.8	40.6
B) Interest rate sensitive (III+IV+V+VI/1+VII)	275.2	522.1	-540.5	15.0	-3.4
C) Short-term interest rate sensitive (B–V–VII/b)	165.0	517.8	-571.4	17.0	-36.7

* Conversion due to the change of the total open position of commercial banks, which is equal to that part of the balance sheet open position of commercial banks, that is not hedged by derivative contracts.
** The conversion effects of the change in forex derivative contracts.

The effect of derivative FX markets and portfolio reallocation of commercial banks on the demand for Forints.

In the period preceding the Russian crisis, open FX positions in the balance sheets of commercial banks were predominantly hedged by off-balance-sheet items, listed as well as OTC derivative products. On the stock exchange the group of market participants called "basket speculators" provided the supply of FX futures. As the forint yield contained a premium over covered interest rate parity, the "basket speculators" could realise a profit by selling FX futures in the composition of the currency basket. Based on the behaviour of the exchange rate, the threat of depreciation within the band was not regarded as credible in the pre-crisis period. Consequently, the equilibrium of futures prices emerged at a level where, due to the high leverage of the futures positions, even a relatively small, within-band depreciation could involved considerable losses for the speculators.

In the first period after the weakening of the forint a group of market participants tried to delay the realisation of losses by manipulating the settlement prices of the exchanges. They expected the forint to return to the strong edge of the band before the settlement date in the middle of September. Had this happened, the futures positions could have been profitable ex post, the speculators would have had only a temporary margin requirement in the crisis period. However, as the management of counter party risk was insufficient among many brokerage houses, it was not clear cut that the firms would be able to recover the margin claims or in the case of closing the positions, the realised losses. This created an incentive for settlement price manipulation through collusive behaviour.

As the settlement date was approaching, it seemed to be increasingly evident that the losses would have to be realised. Moreover, as price manipulation threatens their basic functions, both exchanges undertook steps to keep it at bay. Uncertainty concerning the future movement of the exchange rate decreased the desirability of basket futures positions from a risk-return point of view. Worse still, one can safely assume that many speculators faced a liquidity constraint because of the previous losses. As a result, the supply of FX futures collapsed and the positions that were settled or liquidated were not renewed. Turnover and open positions in the derivative exchanges decreased continuously during the autumn. Due to the lack of supply the derivative market temporarily ceased to function as an instrument of risk management.[4]

The law on credit institutions limits the unhedged open positions of commercial banks. In the first days of September it became impossible to hedge balance sheet open positions with off balance sheet items, using either OTC or listed futures. Consequently commercial banks could reduce their unhedged open position to a desired level only on the spot market, which created a significant increase in the demand for foreign exchange. As the attitude of international capital markets remained rather unenthusiastic, and the current account turned out to be relatively unfavourable the National Bank prevailed to be the only market participant able to increase the supply of foreign exchange in order to keep the equilibrium exchange rate inside the pre-announced band. Commercial banks financed the foreign exchange purchases by reducing their short term central bank deposits. The banking system improved its net foreign exchange position mainly through building up FX deposits held at the central bank and to a smaller extent by reducing short-term foreign liabilities. This means that most of the foreign exchange that the National Bank sold during the intervention ended up in the FX accounts of commercial banks at the NBH and had negligible connection with the capital outflows.

[4] Brokerage houses which play a major role on the OTC derivatives market also obviously lost in relation to their ability to absorb risk.

In spite of signals by the Central Bank, market participants failed to recognise that the effective capital outflow and the loss of reserves is much smaller than the intervention on the foreign exchange market. For this reason the National Bank was compelled to raise interest rates at the end of September. The main reason for this step was to demonstrate the determination of the Central Bank to maintain the exchange rate band even if it imposes costs on the economy. The signal of the monetary authority on maintaining the exchange rate regime by providing the proper yield level provided a stimulus for the supply of foreign exchange on the spot as well as futures markets. As significant capital outflow did not accompany the portfolio reallocation of money market participants, instead of stimulating the supply of foreign exchange on the spot market by an aggressively raising interest rates, the National Bank decided to let the stock of open futures positions abate. In the following months this policy resulted in a depreciated exchange rate, but also a smoother movement of real interest rates.

The assessment of the situation by the money markets drifted even further away from those of the Central Bank after the interest rate rise on 22 September. The increase of yields at every segment of the yield curve far exceeded the extent of the monetary policy measure, a phenomenon indicating decreasing credibility of the exchange rate regime. The increase in short-term interest rates is connected with the settlement of the September futures contract on 16 September. However, the jump in long bond yields can be explained only by the increasing exchange rate risk premium.

In the second half of the autumn the international financial environment improved. Investors started to increasingly differentiate among the emerging market countries with different macroeconomic fundamentals, which resulted in a falling country-specific risk premium. Additionally, as the crisis mood of September abated, the risk premium compensating for the concerns regarding the viability of the exchange rate regime became unjustified. Decreasing risk premium and improving inflationary outlook encouraged capital inflow and enabled the National Bank to gradually reduce its official interest rates. Nevertheless, as the continuing contraction of derivative markets induced considerable demand for foreign exchange throughout the autumn, the forint fluctuated within the intervention band. Intervention at the strong edge of the band did not occur until the end of the year. In the last months of the year a higher current account deficit also contributed to the weaker position of the forint within the band.
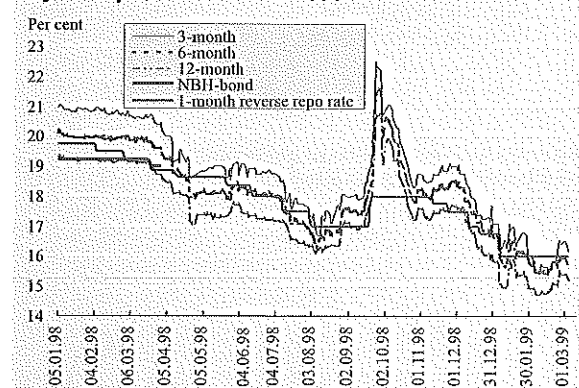
Concerns about the problems in Brazil temporarily raised the emerging market risk premium in January. Contagion this time proved to be considerably milder and shorter than during the Russian crisis. Meanwhile, announcements of favourable inflation data generated expectations of parallel cuts in the crawl and interest rates. Consequently, foreign demand for Hungarian government bonds increased and the resulting capital inflow prompted intervention at the strong edge of the fluctuation band in the second half of January.

Official interest rates did not follow the fall in market yields at the turn of January and February. The difference between the market expectations concerning interest rates and the intentions of the Central Bank can be attributed to the fact that market par-

Total open interest of basket currency futures on the BSE and BCE, USD
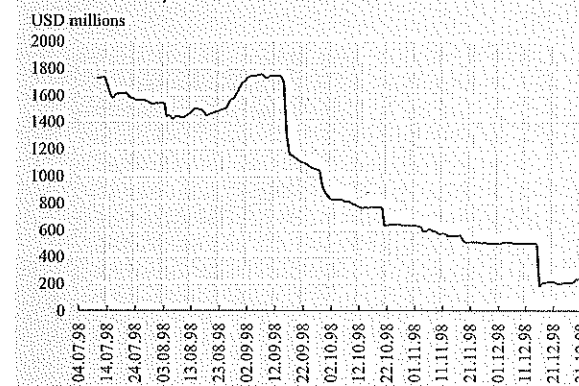
Short-term yields: estimated zero-coupon yields on 3-, 6- and 12-month horizons 5 January 1998 – 4 March 1999

Zero-coupon yield curves