Quarterly Report on Inflation

May 2003

Prepared by the Economics Department of the Magyar Nemzeti Bank

István Hamecz, Managing Director

Published by the Magyar Nemzeti Bank

Krisztina Antalffy, Director of Communications

1850 Budapest, Szabadság tér 8–9.

www.mnb.hu

ISSN 1419-2926

The new Act on the Magyar Nemzeti Bank, enacted by Parliament and effective as of 13 July 2001, defines the primary objective of the Bank as the achievement and maintenance of price stability. Using an inflation targeting system, the Bank seeks to attain price stability by implementing a gradual, but firm disinflation programme over the course of several years.

In order to provide the public with clear insight into the operation of central bank policies and enhance transparency, the Bank publishes the 'Quarterly Report on Inflation', covering recent and prospective developments in inflation and evaluating the macroeconomic developments determining inflation. This publication summarises the projections and deliberations that underlie the decisions of the Monetary Council.

The Monetary Council, the supreme decision making body of the Magyar Nemzeti Bank, carries out a comprehensive review of the expected development of inflation once every three months, in order to establish the monetary conditions that are consistent with achieving the inflation target. The first section of the publication is the Statement of the Monetary Council, containing its current assessment of economic perspectives and the grounds for its decisions. This is followed by an analysis prepared by the Economics Department on the outlook for inflation and the main underlying macroeconomic developments. The expected path and uncertainty of the exogenous factors used in the projection reflect the opinion of the Monetary Council.

CONTENTS

STATEMENT BY THE MONETARY COUNCIL 7

SUMMARY TABLE OF PROJECTIONS 9

MNB FORECASTS VERSUS OTHER PROJECTIONS 10

I. INFLATION 11

PREVIOUS INFLATION PROJECTION VERSUS CURRENT INFLATION 13
Data versus the previous projection 13
Assessment of the developments 15
INFLATION PROJECTION 17
Short term projection 17
Long term projection 17
Uncertainty surrounding the central projection 21

II. ECONOMIC ACTIVITY 23

DEMAND 25
External demand 26
Fiscal stance 27
Household consumption, savings and fixed investment 30
Corporate investment 34
Inventory investment 36
External trade 36
External balance 38

OUTPUT 40

III. LABOUR MARKET AND COMPETITIVENESS 45

LABOUR USAGE 49
LABOUR RESERVES AND TIGHTNESS 51
WAGE INFLATION 53
UNIT LABOUR COSTS AND COMPETITIVENESS 55

IV. MONETARY DEVELOPMENTS 59

INTERNATIONAL ECONOMIC ENVIRONMENT AND RISK PERCEPTION 61
SHORT-TERM INTEREST RATE AND EXCHANGE RATE DEVELOPMENTS 64
CAPITAL FLOWS 68
LONG-TERM YIELDS AND INFLATION EXPECTATIONS 71

V. SPECIAL TOPICS 75

TAX AND REGULATION APPROXIMATION MEASURES AFFECTING INFLATION 77
REVISIONS TO THE FORECAST OF EXTERNAL DEMAND 79

STATEMENT BY THE MONETARY COUNCIL

At its meeting on 12 May 2003, the Monetary Council discussed and approved for publication the May 2003 issue of the *Quarterly Report on Inflation*. The Council made the following assessment of developments in inflation.

Better inflation outlook for 2004; the projections are closer to the inflation target.

Previous measures to tighten monetary policy have stimulated goods markets to adjust their pricing behaviour to the lower inflation environment, as reflected in a sharp decline in core inflation seen in the past few months. The Monetary Council judges that, over the next eighteen months, the economy will continue to adjust.

The MNB's central inflation projection for end-2004 has been revised down to 3.9%, which is closer to the inflation target of 3.5%, relevant for monetary policy decisions. There is greater likelihood of a lower oil price than that underlying the inflation projection, which, in turn, adds to the downside risk to the central inflation projection.

Wage growth and fiscal policy continue to present upside risks to the inflation outlook

Nevertheless, the slow adjustment by wages to lower inflation and the moderate pace at which fiscal policy is contracting demand continue to present significant upside risks to inflation.

Factors enhancing and weakening the disinflation process in 2003

Disinflation has continued in 2003, especially in respect of the prices of goods and services influenced by monetary policy. Buoyant consumption growth continues to be a source of inflationary pressure, due partly to a number of fiscal measures passed in 2002 and partly to rapid growth in real wages. However, during the rest of the year, factors exogenous to monetary policy are expected to put downward pressure on inflation. As concerns developments in the foreign and domestic markets, the fall in oil prices and the strengthening of the euro against the dollar as well as the change in regulated prices, respectively, are likely to give further momentum to disinflation. The Bank’s annual inflation projection for December 2003 is around 4.6%.

Slow wage adjustment

Private sector wage growth has continued to moderate at a slower-than-expected pace. Hindering labour market adjustment, government sector wages have been rising robustly, due to last year's measures. In addition, employment in the public sector has risen by more than 4%. Firms adjust to the brisk increase in labour costs by reducing their demand for labour, which, in turn, results in higher unemployment. Faster wage adjustment would help the corporate sector to improve profitability and maintain competitiveness as well as the economy to register higher growth.

Continued robust growth in domestic demand slows disinflation

Hungary's GDP is expected to grow by 3.5% both in 2003 and 2004. This can be attributed to the fact that there continue to be no signs of a fast recovery of global business conditions. Consequently, growth in exports and investment demand will likely remain modest. In addition to cost-push inflation caused by fast wage growth, the continued rapid rise in domestic demand is also acting to slow down disinflation. As a positive effect of households' favourable income position, consumption is expected to increase by around 7% in 2003 and by around 5% in 2004, followed by last year's expansion of more than 10%.

Only further fiscal adjustment can help return to the path envisaged in the Medium-Term Economic Policy Programme

Despite the measures to improve the balance, the contractionary impact of fiscal policy on demand will likely be significantly lower than planned in 2003, and is expected to amount to 0.5% of GDP. Given the current situation, fiscal policy will likely be able to offset this year's delay in the process of implementing the Government's Medium-Term Economic Policy Programme only partially in 2004. Unless further substantial actions to improve the balance are taken, general go-

vernment will be able to reduce growth in aggregate demand by 1.3% of GDP in 2004, on the basis of the foreseeable macroeconomic developments. A departure from the original fiscal path would hamper any correction of last year's unfavourable economic policy mix, i.e. tight monetary and lax fiscal policies.

Successful stabilisation after speculation on the appreciation of the forint

During the one-and-a-half months following the revaluation speculation of 15–16 January, the main motive of the official interest rate decisions was to return to the normal course of business and stabilise monetary conditions. The efforts proved successful – through a more proactive presence on the foreign exchange market, the Bank had managed to ensure that the bulk of the speculative capital left the Hungarian banking system without jeopardising the stability of the exchange rate and the financial system. The forint has stayed around HUF/EUR 245 since early February. The yield curve, too, has been stable since the restoration of the standard width of the Bank's overnight interest rate corridor on 24 February.

Budapest, 12 May 2003

The Magyar Nemzeti Bank
The Monetary Council

Summary table of projections

Percentage changes on a year earlier unless otherwise indicated

	2001	2002	2003		2004	
	Actual data		Projection			
			February Report	**Current Report**	February Report	**Current Report**
CPI						
December	6.8	4.8	5.2	**4.6**	4.0	**3.9**
Annual average	9.2	5.3	5.2	**4.5**	4.6	**4.1**
Economic growth						
External demand	1.6	–0.8	3.9	2.6–**3.7**–4.5	4.8	3.0–**4.6**–6.1
Manufacturing value added	1.6	0.5[1]	3.5	2.0–**3.3**–4.5	4.2	2.5–**4.4**–6.0
Household consumption[2]	5.7	10.2	6.6	5.2–**6.6**–7.4	4.1	3.5–**5.0**–6.5
Gross fixed capital formation	3.5	5.8	3.4	2.5–**4.0**–5.0	3.1	2.0–**4.3**–6.0
Domestic absorption	1.9	5.1	4.3	4.4–**4.9**–5.4	3.3	3.6–**4.3**–5.0
Exports	8.8	3.8	4.0[3]	1.8–**3.4**–5.0	7.0[3]	4.0–**6.7**–9.5
Imports	6.1	6.1	5.2[3]	3.3–**5.3**–7.3	6.5[3]	4.4–**7.4**–10.4
GDP	3.8	3.3	3.5	3.2–**3.4**–3.6	3.6	3.2–**3.6**–4.0
Current account deficit						
As a percentage of GDP	3.4	4.0	5.0[4]	4.7–**5.1**–5.5	4.6[4]	4.6–**5.1**–5.6
EUR billions	2.0	2.8	3.7[4]	3.6–**3.9**–4.2	3.6[4]	3.8–**4.2**–4.6
Fiscal stance						
Demand impact	1.8	4.3	(–0.9)	(–1.0)–**(–0.5)**–0.2	(–2.4)	(–2.5)–**(–1.3)**–0.0
Labour market (private sector)[5]						
Wage inflation	14,6	12,8	7,8	7,9 – **8,8** – 9,7	5,4	5,3 – **6,5** – 7,7
Employment	1,1	(–0,2)	(–0,1)	(–0,9)–**(–0,4)**–0,1	0,1	(–1,0)–**(–0,2)**–0,6
ULC based real exchange rate in manufacturing[6]						
Annual average	8,6	11,3	(–0,1)	1,5 – **1,0** – 0,5	(–1,1)	(–1,0) –**(–1,7)**–(–2,4)
Q4	14,5	8,9	(–4,5)	(–2,8)–**(–3,3)**–(–3,8)	0,2	0,0 –**(–0,7)**–(–1,4)

The central projection is marked in bold, surrounded by the lower and upper limits of the projection. There is a 60 per cent probability that the value of the variable falls within the range defined by these limits.

[1] *Adjusted series in 2002 Q3-Q4.*

[2] *Household consumption expenditure.*

[3] *With the effect of the change in statistical methodology removed, see Section II. page 36.*

[4] *With the effect of the change in statistical methodology removed, see Section II. page 38.*

[5] *Average for manufacturing and services.*

[6] *Positive values denote appreciation and negative values denote depreciation.*

MNB forecasts versus other projections

	2003	2004
CPI (December, per cent)		
MNB*	**4.6**	**3.9**
Reuters poll (April 2003)	4.9	4.1
CPI (annual average, per cent)		
MNB*	**4.5**	**4.1**
Consensus Economics (March 2003)**	5.1	4.4
European Commission (April 2003)	5.0	4.5
IMF (April 2003)	5.3	4.8
OECD (April 2003)	5.2	4.6
Reuters poll (April 2003)	4.8	4.3
GDP (annual growth rate, per cent)		
MNB*	**3.4**	**3.6**
Consensus Economics (March 2003)**	3.6	4.1
European Commission(April 2003)	3.7	4.1
IMF (April 2003)	3.6	3.9
OECD (April 2003)	3.1	3.7
Reuters poll (April 2003)	3.6	4.1
Current account deficit (EUR billions)		
MNB*	**3.9**	**4.2**
Consensus Economics (March 2003)**	3.7	3.9
Reuters poll (April 2003)	3.3	3.8
Current account deficit (as a per cent of GDP)***		
MNB*	**5.1**	**5.1**
European Commission (April 2003)	4.4	3.5
IMF (April 2003)	4.8	4.6
OECD (April 2003)	4.5	3.8

* *MNB forecasts are conditional on certain policy variables (forint exchange rate, interest rate, fiscal policy) and some exogenous variables (dollar/euro exchange rate, oil prices) and thus cannot be directly compared to other forecasts.*

** *Consensus Economics' forecasts are from the 'Eastern Europe Consensus Forecasts' survey.*

*** *Current account figures are calculated in USD. The average 2002 EUR/USD cross rate was used as the rate of conversion.*

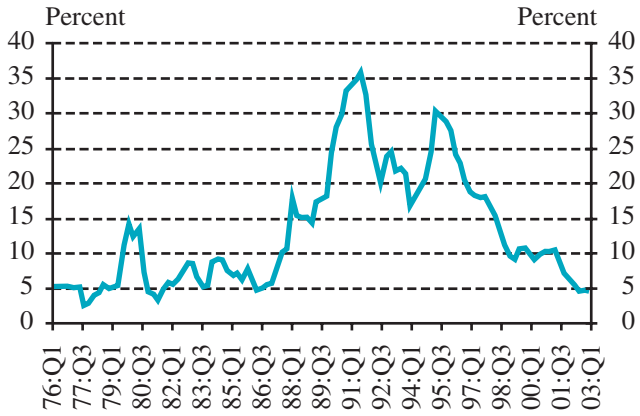
I. Inflation

PREVIOUS INFLATION PROJECTION VERSUS CURRENT INFLATION

Inflation in 2003 Q1 amounted to 4.6%, following a rate of 4.8% at end-2002, which was in line with the inflation target set by the MNB two years ago. This rate of 4.6% was very low, considering the historically high inflation environment of the Hungarian economy. Since the early 1980s the consumer price index (CPI) has never fallen consistently below 5% in Hungary.

First quarter inflation figures were lower than projected in the MNB's February Report. This unexpectedly rapid progress in disinflation can be ascribed to the development of prices influenced by monetary policy, while the overall effect of exogenous developments beyond the control of monetary policy (e.g. oil prices) was neutral.

Chart I-1 **Hungarian inflation rates, 1976–2003 (Percentage changes on a year earlier)**



Compared, however, to inflation rates in the ten EU accession countries, prices increased at a fast pace, exceeded currently in only three of these countries[1] *(see chart I-2)*.

In assessing the data for 2003 Q1, one must be careful in respect of two factors in particular, as the end-of-quarter data show a somewhat different picture than the data from the previous two months.

On the other hand, *at the same time* the price indices of items most affected by monetary policy, which are instrumental in assessing longer-term inflation developments, also fell. This implies that the first-quarter data should by no means be swept aside as noise or regarded as independent of monetary policy. As these items-tradables, market services and processed food-are crucial to the core inflation indicator, the following analysis focuses primarily on core inflation.

Data versus the previous projection

In 2003 Q1, inflation fell by 0.2 percentage points. This decline can be primarily accounted for by the surprisingly low rates of inflation in tradables and market services prices. As a result, core inflation fell by 0.7 percentage points during the quarter, dropping at a substantially higher rate than the total CPI.

Developments during the quarter indicate that core inflation fell particularly quickly in January in a month-on-month comparison, while in the remaining two months, price changes gradually returned to rates typical in 2002.

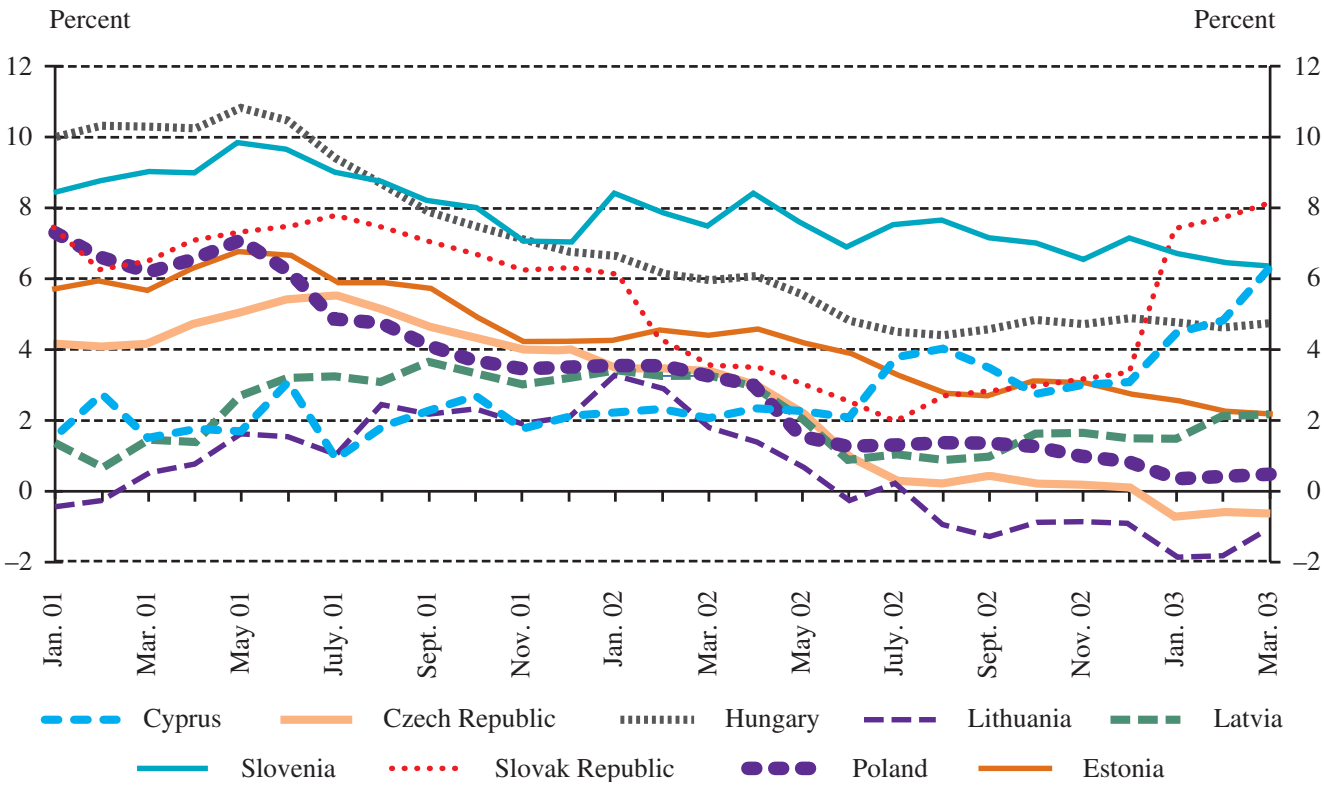
The low index in January was essentially associated with declines in market services and processed food inflation rates. By contrast, in February tradables prices accounted for the low level of core inflation. It should be noted that while the monthly indices for *durable* goods have reflected deflation ever since the widening of the exchange rate band, this development also appeared in the *entire* tradables group in February.

Alcohol and tobacco price inflation, covered by the core indicator but also significantly influenced by tax regulations, accelerated during the quarter, while inflation in goods and services exogenous to monetary policy remained flat. The reasons for the rise in motor fuel and tobacco prices seen at the start of the year included high oil prices and the delayed impact of an earlier rise in excise duties (in September 2002), respectively.

A comparison of the Bank's February forecast with actual figures for 2003 Q1 yields a similar picture.

[1] These three countries are Slovenia, Slovakia and Cyprus. However, in the latter two countries, this higher rate of inflation is associated with one-off taxation and regulatory measures (such as regulated price increases early this year in Slovakia and a tax rise in Cyprus also early in the year) and can be viewed as temporary. In 2002, inflation in these two countries was lower than in Hungary.

Chart I-2 Inflation in Hungary and other accession countries, 2001–2003



One important implication is that the actual CPI is 0.3 percentage points lower than the projection, due primarily to an error in forecasting core inflation *(see table I-1)*.

The figures in the table also show that the difference between actual figures and the February projection was due to other factors than any significant differences between the actual and assumed values of the applied explanatory variables. It is important to note that unit labour costs turned out to be lower than projected, despite higher-than-expected nominal wage growth. This implies that the difference could be attributed to developments reflecting some gradual nominal adjustment to the disinflation environment *(see table I-2)*.

Chart I-3 CPI and core inflation (Annualised monthly indices)

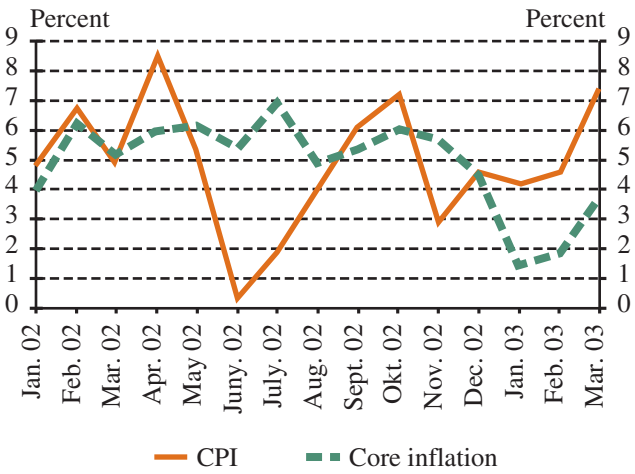


Chart I-4 Inflation of the prices of the key components of core inflation (Annualised monthly indices)

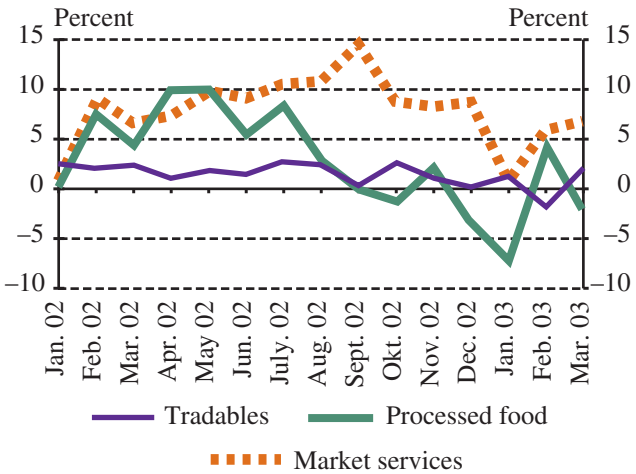


Table I-1 **Projection in February versus actual data**

	Weight %	Actual	February projection	Difference	Effect of the difference on CPI*
		Percentage change on a year earlier		Percentage points	
Foodstuffs	18.8	1.6	1.9	0.3	0.06
unprocessed	6.3	–0.8	–1.7	–0.9	–0.06
processed	12.5	2.7	3.6	0.9	0.11
Tradables	26.6	1.4	1.9	0.5	0.14
Market services	19.1	8.5	9.0	0.5	0.10
Market-priced energy	1.5	6.5	5.3	–1.2	–0.02
Motor fuels	4.7	14.4	12.3	–2.1	–0.10
Alcohol and tobacco	9.8	10.5	9.7	–0.8	–0.07
Regulated prices	19.4	3.0	3.6	0.6	0.11
CPI	**100.0**	**4.6**	**4.9**	**0.3**	**0.27**
Core inflation	**68.1**	**5.0**	**5.3**	**0.3**	**0.31**

** Due to rounding sums do not add up precisely*

Table I-2 **Assumptions and forecasts of the February projection and actual data for 2003 Q1**

	February projection	Actual*
Gross private sector wage growth	10.1%	10.3%**
Unit labour cost (ULC)	5.5%	5.2%**
Household consumption expenditure	7.4%	8.3%**
Forint/euro exchange rate	245 HUF/EUR	243.63 HUF/EUR
Dollar/euro exchange rate	1.062 USD/EUR	1.073 USD/EUR
Brent oil price	31.2 dollar/barrel	31.4 dollar/barrel
Imported inflation ***	1.1%	0.6%

* *MNB estimate*
** *Estimate based on actual data for 2002 Q4.*
*** *Annualised monthly growth rates.*

The short-term forecasts of the February *Report* for core inflation in 2003 Q1 also used methods relying on the inertia of developments. International experience suggests that such methods perform better in the short term than structural approaches.

Since the February *Report*, the Bank has further widened the range of methods used for short term forecasting. Thus, in addition to the inertia of the process to be forecast, statistically estimated relationships with other factors are also taken into account. One major advantage of this improvement is that these methods usually perform better with respect to predicting turning points in the short run.

The difference between the projection for core inflation published in the February *Report* and the actual outcome was exceptionally large, which might have been the consequence of the inadequacy of previous models used to prepare the short-term projections. However, analyses have shown that, if the Bank had possessed in February the full range of methods currently being used, the actual outcome would still have been missed by the same magnitude as the published forecast[2].

In respect of items not covered by core inflation, the forecasting errors cancel out. Motor fuel prices rose primarily due to high oil prices, while the price of pork fell more sharply than forecast.

The lower-than-projected index for regulated prices is accounted for by lower-than-expected increases in the price of electricity and telephone charges.

Assessment of the developments

There is greater-than-usual uncertainty about what the first-quarter developments imply for the future. This

[2] It is worth noting that the forecast error of the so-called VAR (vector autoregression) model introduced in this forecasting round was 0.3 percentage points in the first quarter of 2003. The model has not produced forecast errors of this magnitude since the widening of the exchange rate band.

uncertainty stems from two sources. First, the data fail to convey an unequivocal message. Second, there is a wide range of possible explanations.

The uncertainty about the data arises from the fact that while the quarterly rates reflect a clear decline in core inflation, the monthly breakdown suggests that this is primarily due to the surprise drop in core inflation in January, whereas the February and March indices show an upward trend. Nevertheless, the tradables price index was at its lowest in February, and even showed some evidence of deflation.

This may have been due to the very strong exchange rate in 2002 Q4 and early 2003, which stimulated retailers to replenish inventories at low cost and sell out in the course of February. If so, then this is clearly a one-off effect, and will not lower inflation of tradables prices over the longer term, in contrast to the exchange rate pass-through arising from steady appreciation.

The main problem is that while low core inflation reflects that the goods market may be starting to adjust to the low inflation environment, there is no such clear evidence of adjustment by the labour market.

Slow wage adjustment will increase the real economic costs of disinflation, because if nominal wages continue to rise faster than prices, profitability will decline, leaving firms with no other way to adjust but to cut their workforce. This in turn will reduce output: in other words, low inflation will entail high real economic costs. As nominal wage growth was high during the first three months, it cannot be ruled out that the low inflation seen early in the year is the first symptom of the process outlined above.

On the other hand, data on consumer spending in 2003 Q1 reflect stronger demand-pull inflation, further exacerbated by the fact that the significant fiscal expansion in 2002 is only expected to be followed by a moderate cut in expenditures this year.

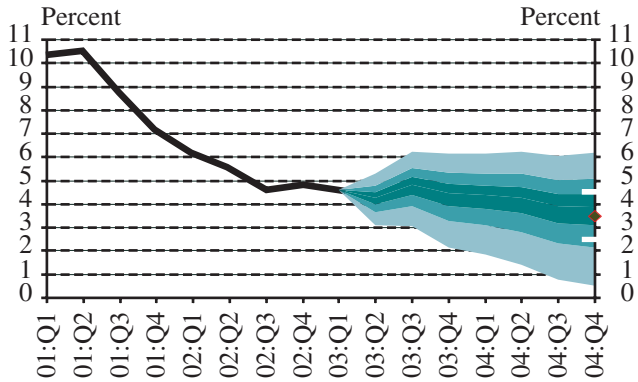
Thus, by allowing multiple interpretations, developments in inflation in 2003 Q1, although definitely favourable, introduce significant uncertainty into the Bank's projections.

INFLATION PROJECTION

Inflation in 2003 Q1 was substantially lower than expected by the Bank. As noted in the previous section, even the Bank's best available methods would have failed to foresee the low price index measured in the previous quarter. The MNB believes that progress in disinflation will increasingly have an indirect impact at the level of the whole economy, and thus enhance the sustainability of the lower level of inflation which has been achieved.

Hence, the surprise disinflation experienced over the past three months has also resulted in a lower year-end inflation projection. On the other hand, there are higher risks to the projection than previously. All in all, the inflation projections for December 2003 and 2004 are 4.6% and 3.9%, respectively, both lower than estimated in the previous Report. This points to a broadly stagnating rate of inflation in the second half of this year, followed by a gradual decline in inflation next year.

Chart I-5 **Fan chart of the inflation projection***
(Percentage changes on a year earlier)



** The fan chart shows the probability distribution of the outcomes around the central projection. The entire coloured area covers 90% of all probabilities. The central band covers 30% of the distribution, and contains the central projection (as the mode); outer bands cover 15% probability each. The point for end-2004 and the marks above and below represent the inflation target value (3.5%) and the upper and lower limits of the ±1% tolerance interval.*

Short term projection

The Bank's short-term projection for next-quarter CPI is 4.3%. This is partly due to a further decline in the expected growth rate of prices of goods and services relevant for monetary policy. Most of the decline, however, will be due to a projected fall in the price of motor fuels and a number of unprocessed food products. However, this rapid disinflation is expected to be interrupted at the end of the quarter. One of the factors behind this is that prices of unprocessed foodstuffs are not expected to fall as sharply as at the beginning of last summer. Second, most of the May rise in natural gas prices will appear in the price index in June.

Long term projection

The Bank's inflation projection for December 2003 is 4.6%, which is 0.6 percentage points lower than in the February *Report*. The 3.9% price index projected for December 2004 has been revised down by 0.1 percentage point only.

All in all, disinflation continues gradually over the next 18 months or so, due primarily to a slow, steady decline in inflation relevant for monetary policy. It should be noted that from now on the Bank will not publish price indices for the individual components of core inflation (processed food, tradables, non-tradables, alcoholic drinks and tobacco), but only for core inflation as a whole and the items not included in that indicator *(see table I-3)*.

The difference between the current and February projections for December 2003 is primarily due to the drop in motor fuel prices due to lower oil prices and declining inflation in goods and services covered by core inflation.

While the main factor in the difference between the projections for December 2004 is the fall in motor fuel prices, the components of core inflation exert upward pressure. This is because the aggregate disinflation observed in early 2003, which was somewhat sooner than expected, is projected to slow down in the course of 2004, due to fiscal policy's weaker-than-assumed restriction and large increases in private sector wages. Nevertheless, in the current projection, prices for regulated goods and services increase in both years at a lower rate than previously expected. By contrast, unprocessed food prices may increase at a slightly faster pace than assumed, simultaneously with an increase in downside risk *(see table I-4)*.

Table I-3 Central projection for the CPI

	Weight	Fact	Projection								
		2003	2003				2004				
	%	I.	II.	III.	IV.	Dec.	I.	II.	III.	IV.	Dec.
Core inflation projection	68.1	5.0	4.6	4.4	4.1	4.1	4.3	4.1	3.9	3.8	3.8
Unprocessed food	6.3	–0.8	0.7	8.7	7.8	8.5	6.5	5.6	5.4	5.2	5.2
Motor fuels and market-priced energy	6.2	12.5	3.4	–1.4	–1.5	–1.1	–5.5	0.3	1.4	1.4	1.3
Regulated prices	19.4	3.0	4.5	7.1	6.6	6.5	7.2	5.6	4.3	4.6	4.6
CPI	**100.0**	**4.6**	**4.3**	**4.8**	**4.5**	**4.6**	**4.4**	**4.2**	**3.9**	**3.9**	**3.9**
Annual average			4.5				4.1				

Table I-4 Difference between the current projection and the February projection (Percentage points)

	Difference in absolute terms		Contribution by component to difference in CPI*	
	Dec. 2003.	Dec. 2004.	Dec. 2003.	Dec. 2004.
Core inflation projection	–0.4	0.1	–0.22	0.09
Unprocessed food	1.9	0.5	0.13	0.03
Motor fuels and market-priced energy	–7.4	–1.7	–0.45	–0.11
Regulated prices	–0.8	–0.7	–0.14	–0.13
CPI	**–0.6**	**–0.1**	**–0.64**	**–0.12**

** The incidental difference between total CPI and the sum of its components is due to rounding error.*

The forecast assumes that, although the sustained nominal appreciation of the forint was the initial phase in disinflation, this process will exert its full impact via indirect effects over the course of several years. In the wake of appreciation following the widening of the exchange rate band in May 2001, import prices fell in forint terms, which soon led to slower inflation or even deflation in the price of internationally traded goods. In addition, there was also a general decline in the inflation of domestic tradables prices competing with imported goods.

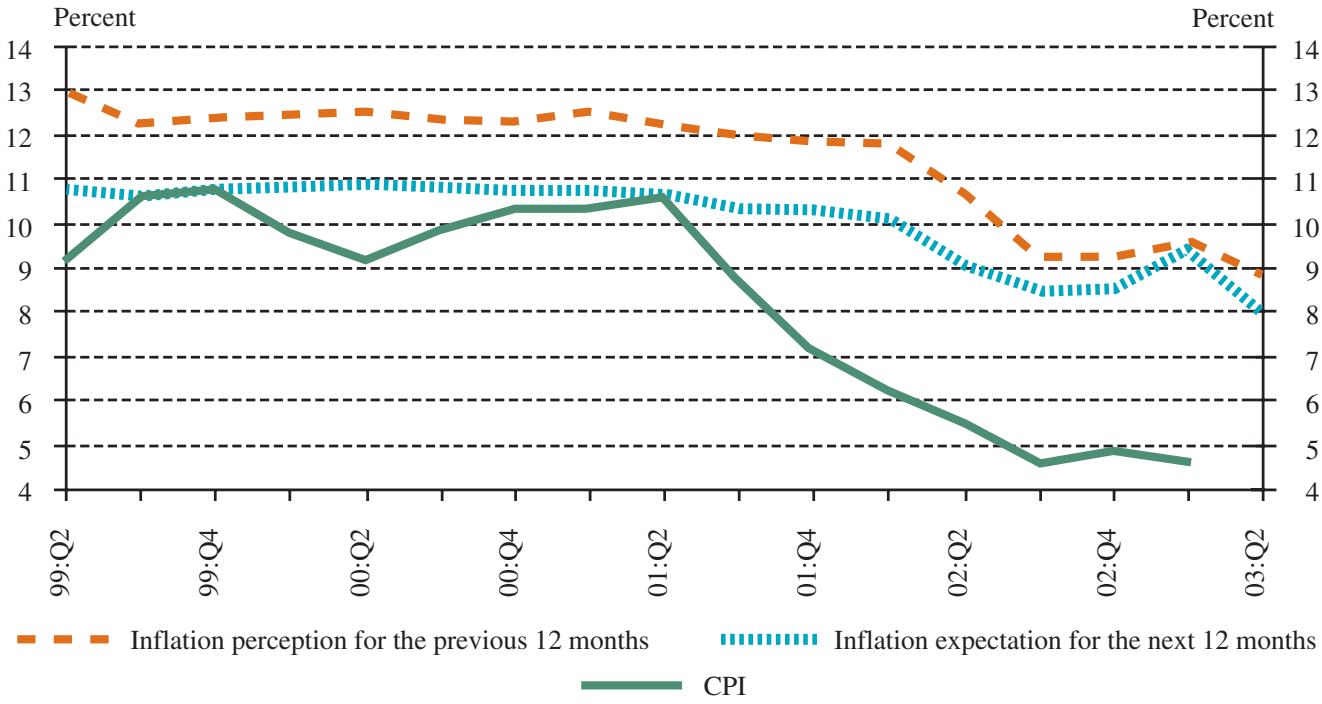
The lower-than-projected CPI in the past quarter and the TÁRKI survey of firms' inflation expectations indicate that the second phase of disinflation, in which firms begin to adjust in the goods market at the whole-economy level has begun to be reflected in consumer prices. This is because the progress in disinflation up to now may also influence firms' pricing behaviour by lowering their inflation expectations *(see chart I-6)*.

Furthermore, the slowdown in sales price inflation has occurred simultaneously with a visible but slow decline in wage inflation, leading to a narrowing of corporate profit margins. Agents must adjust to the lower inflation environment by reducing their real wage costs or increasing their productivity. The Bank expects this adjustment to pick up pace in the labour market next year.

In sum, while the disinflation process last year and the year before was governed by the appreciation of the real exchange rate, there was only moderate adjustment in terms of domestic real economic developments, wages and expectations. The Bank's expectation is that the real exchange rate will contribute to disinflation to an ever lesser extent from this year on.[3] At the same time, as a consequence of adjustment by domestic agents, the emerging low inflation environment may become sustainable, becoming the engine of further disinflation.

[3] See M. Z. Jakab and M. A. Kovács: Explaining Exchange Rate Pass-through in Hungary: Simulations with the NIGEM model, MNB Working Papers 2003/5; and *Quarterly Report on Inflation*, February 2003 (see http://www.mnb.hu/)

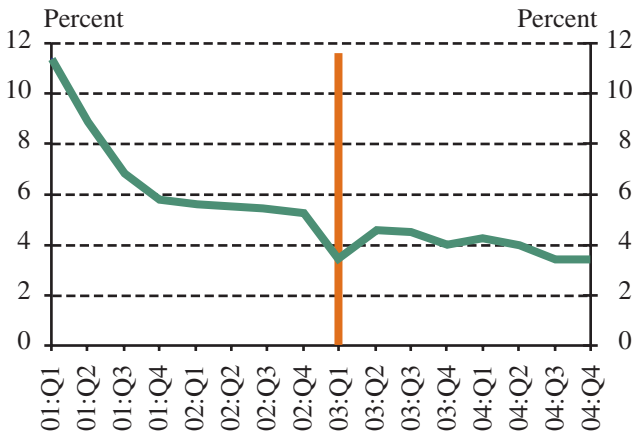
Chart I-6 Inflation expectations of firms (TÁRKI survey)
(Percentage changes on a year earlier)



As a consequence, the Bank views most of the disinflation-induced change in the price level of items mainly influenced by monetary policy in 2003 Q1 as permanent. On the other hand, such a sharp acceleration in disinflation can be only temporary. This implies that core inflation in 2004 may decline at a lower rate than projected in the February Report, because in 2004 the fiscal impact on demand and private sector wage growth may exceed the previous assumption *(see chart I-7)*.

The numerical assumptions underlying the central projection have changed relative to the February projection. The oil price assumption is approximately 20 percent lower than in February and thus puts downward pressure on inflation, mainly over the short term. Furthermore, the assumptions for the US dollar/euro exchange rate and imported tradables inflation have also been revised downward, while the projection for household consumption and private sector wages exert upward pressure on inflation, mainly over the long term *(see table I-5)*.

Chart I-7 Core inflation forecast (Annualised quarterly growth rates)



In line with the previous approach, the Monetary Council has decided to use a constant oil price assumption underlying the central projection. In other words, the average of the prices observed in April 2003 is projected over the full forecast horizon. By contrast, alternative oil price scenarios (derived from futures prices and the March 2003 Consensus Economics survey) indicate higher oil prices this year and lower prices next year. The two alternative paths would result in marginally higher inflation at the end of this year and a 0.3-percentage-point lower rate at the end of next year, relative to the central projection *(see chart I-8)*.

Regulated prices would increase at a lower rate than assumed in the February Report, primarily because of the planned household compensation for the rise in gas prices.

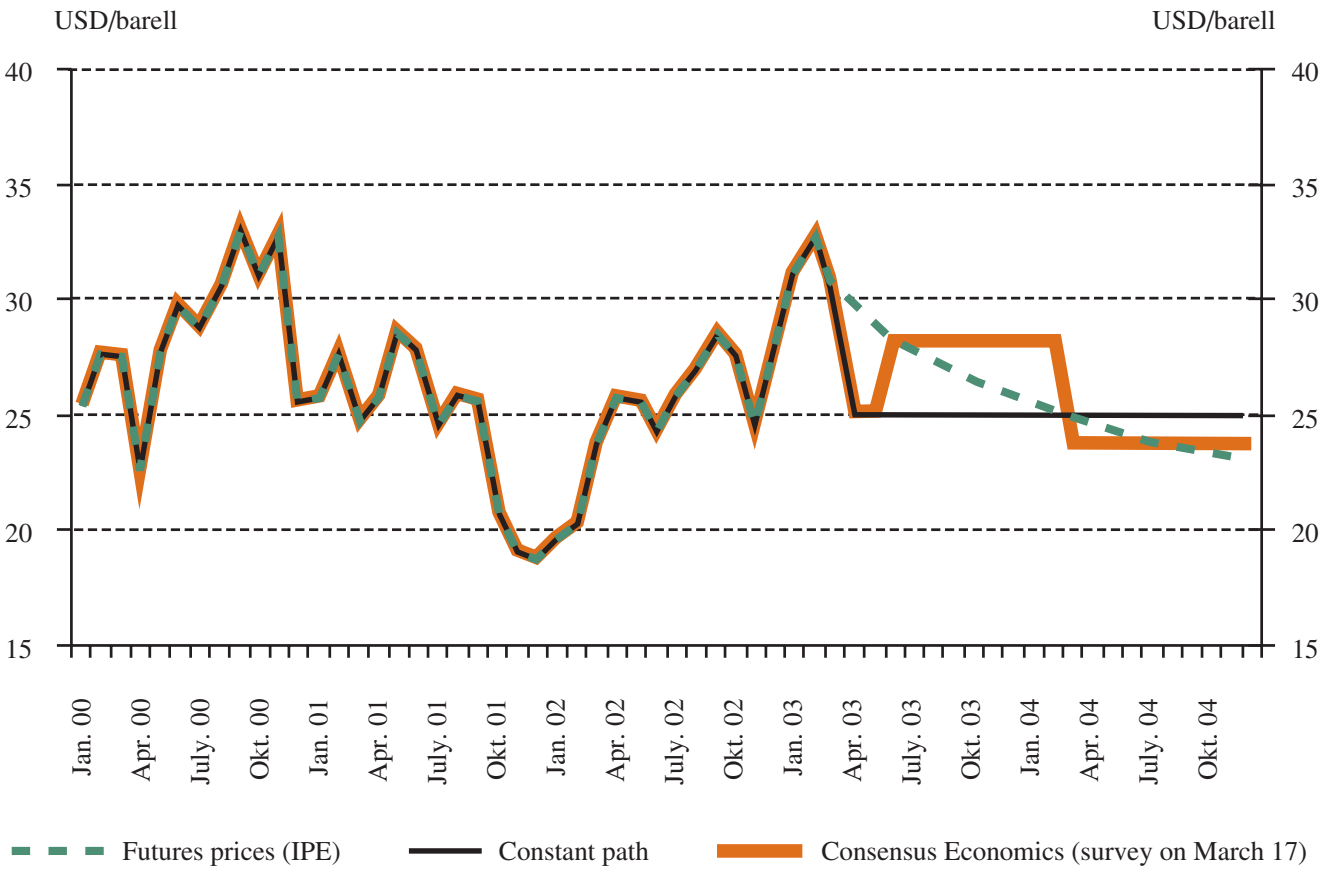
It should be noted that the Bank's projection also takes account of the impact on inflation of a number of mandatory taxation and regulatory measures associated

Table I-5 **Assumptions underlying the central projection**

	February 2003 projection		Current projection		Difference	
	2003	2004	2003	2004	2003	2004
HUF/EUR exchange rate	245.0		245.6[1]		+0.2%	
USD/EUR exchange rate (in cents)	106.2		108.5[1]		+2.2%	
Brent oil price (USD/barrel)	31.2		25.0[1]		-19.9%	
Imported tradables inflation (%)[3]	1.1	1.1	1.0	1.0	-0.1[2]	-0.1[2]
Private sector wage inflation (%)	7.8	5.4	8.8	6.5	+1.0[2]	+1.1[2]
Growth in household consumption expenditure (%)[4]	6.6	4.1	6.6	5.0	0.0[2]	+0.9[2]

[1] *April 2003 average.*
[2] *Percentage points.*
[3] *Average annualised monthly growth rates. Euro area-11 industrial goods inflation. Source: Eurostat NewCronos code: igoodsxe.*
[4] *Annual average.*

Chart I-8 **Alternative oil price assumptions**



with Hungary's accession to the European Union. These specific measures will raise the price index by roughly 0.5–0.6 percentage points in 2003 and 0.2–0.5 percentage points in 2004.[4]

Uncertainty surrounding the central projection

The probability distribution of the central projection has been estimated based on the Bank's historical forecasting errors and the uncertainties perceived by the Monetary Council *(see table I-6)*. These risks include developments in wages, oil prices and the fiscal stance. There is an approximately 30% probability that inflation will be lower or higher than the target at end-2004 (3.5% ±1%) The balance of risks to the central inflation projection is on the downside in both 2003 and 2004.

According to the assessment of the Monetary Council, the risks to the central wage projection are balanced. The assumption of constant oil prices (25 USD/barrel) on the other hand constitutes a downside risk to the inflation outlook in 2003 and 2004.

In 2004, the extent of fiscal policy's impact on demand will be a source of symmetrical uncertainty. According to the Bank's calculations this may equally increase or reduce the rate of inflation in December 2004 by 0.1 percentage point. The impact of the various fiscal scenarios on inflation will, however, unfold over the course of several years.

Table I-6 **Bounds of the bands in the fan chart (Changes on a year earlier)**

	90% lower	60% lower	30% lower	Central path (mode)	30% upper	60% upper	90% upper
2003 Q2	3.1	3.7	4.0	4.3	4.5	4.8	5.3
2003 Q3	3.1	3.9	4.4	4.8	5.1	5.5	6.2
2003 Q4	2.1	3.3	3.9	4.5	4.9	5.3	6.2
2004 Q1	1.9	3.1	3.8	4.4	4.8	5.3	6.2
2004 Q2	1.4	2.8	3.6	4.3	4.7	5.3	6.2
2004 Q3	0.8	2.3	3.2	3.9	4.4	5.0	6.1
2004 Q4	0.5	2.2	3.1	3.9	4.4	5.1	6.2

[4] See Chapter V, Tax and regulation approximation measures affecting inflation.

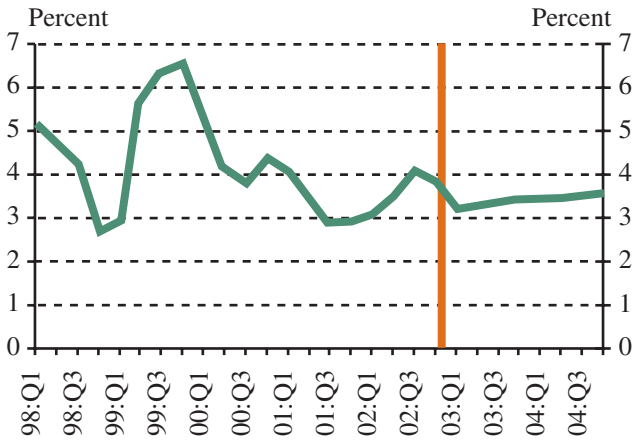
II. Economic activity

DEMAND

The Bank expects the rate of economic growth to be 3.4% this year and 3.6% next year. Thus, the average growth rate in 2003–2004 will be similar to that of the previous two years.

On balance, the Bank's current view of domestic economic performance in 2003 has remained virtually unchanged since the February *Report*. This is the consequence of a number of offsetting developments. Fiscal restriction is anticipated to be smaller both in 2003 and 2004, which would alone encourage faster economic growth. The uncertainty surrounding the Bank's current forecast of a pick-up in external demand has increased. This, in turn, has slightly reduced the forecasts for corporate sector performance and exports in the two years considered.[5] Based on actual data for recent months, the negative effect of the currency's real appreciation on economic growth has been revised up relative to the previous forecast.

Chart II-1 **Quarterly GDP growth (Annualised percentage changes on previous quarter)**



In view of new information, fiscal policy's contractionary impact on demand is expected to be lower this year. With respect to 2004, the Bank has departed from the assumptions based on the Government's Medium-Term Economic Programme (PEP). The contractionary impact is currently estimated to be 1.3% of GDP, in contrast with 2.4% in the previous *Report*.

The most recent data on external demand appear to reinforce the earlier assumption that the bottom of the current cycle may have been passed. Nevertheless, there is considerable uncertainty, and the Bank continues to expect slow recovery in the period ahead.

In the labour market, modest adjustment in private sector wages has recently been seen; however, wages in the general government sector, and the number of employees in particular, surpassed the Bank's expectations by a large margin. Consequently, the Bank maintains its forecast of slower growth than in 2002, but nevertheless strong growth in household consumption in 2003.

In terms of the underlying trends in the labour market, the uncertainties engendered by higher unemployment are likely to be a factor reducing households' propensity to consume. This effect was already reflected in movements in the household confidence index in the early months of the year.

In 2002 Q4, the decline in corporate fixed investment activity came to a halt. The forecast for fixed capital formation reflects the divergent developments in external business cycle conditions and fiscal policy. In the current projection, corporate fixed investment picks up, in tandem with growth in external demand. Following last year's salient outturn, the rate of growth of household fixed investment will likely be lower in 2003 and stabilise in 2004. Public sector fixed investment activity is also expected to slow down gradually, consistent with the assumed fiscal path *(see table II-1)*.

According to the Bank's foreign trade forecast, in 2003 export of goods is expected to be heavily influenced by the delayed negative effects of the real appreciation towards end-2002. In contrast to merchandise trade, the appreciation effect was already reflected in travel in 2002. Consequently, Hungary's travel revenue is not expected to shrink further, provided that the international climate improves. The growth rate of imports exceeded that of exports in the previous quarters. This

[5] The Bank's forecast for exports in 2003 appear to be significantly lower than in the February Report. The reason for this, however, is the recent methodological change, which will be discussed in more detail in Section 2. External trade

Table II-1 **Sectoral breakdown of fixed investments (Annual percentage changes)**

	Weight**	2001	2002	2003	2004
	%*	Estimation		Projection	
Corporate sector	57	1.0	(–2.3)	(–1)– 3	3–8
General government	19	(–6.9)	21.7	4–10	(–1)–8
Households	24	21.4	18.3	6–10	(–1)–5
Investments	**100**	**3.2**	**5.9**	**2.5–5.0**	**2.0–6.0**

* *Investment data, which may differ from those on gross fixed capital formation see Manual to Hungarian Economics Statistic.*
** *Includes all government spending on motorway construction, for 2002 MNB calculation*

trend is expected to continue over the short term. On the longer horizon, however, the wedge between export and import growth is likely to narrow, accompanied by a pick-up in external demand.

All in all, the Bank's projection for economic growth has remained virtually unchanged. The Bank's projection of 3.4% for 2003 is roughly consistent with that of other public forecasters, such as international institutions and market analysts. By contrast, the projected 3.6% GDP growth in 2004 is lower than predicted by most forecasters. Even though the details on which the forecasts are based are rarely published, the difference is presumably due to the MNB's lower forecast for fixed capital formation *(see table II-2)*.

Table II-2 **Growth in GDP and its components (Percentage changes on a year earlier)**

	Actual data		Forecast	
	2001	2002	2003	2004
Household consumption	5.3	8.8	6.3	4.4
Household consumption expenditure	5.7	10.2	6.6	5.0
Social transfers in kind	3.8	3.0	4.7	1.9
Public consumption	*4.9*	*1.5*	*1.5*	*2.0*
Gross fixed capital formation	3.5	5.8	4.0	4.3
'Final domestic sales'*	4.8	7.3	5.3	4.2
Domestic absorption	1.9	5.1	4.9	4.3
Exports	8.8	3.8	3.4	6.7
Imports	6.1	6.1	5.3	7.4
GDP	**3.8**	**3.3**	**3.4**	**3.6**

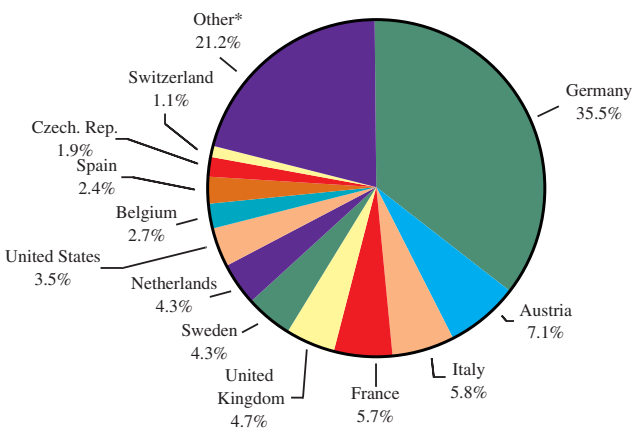
* *Final domestic sales = household consumption + public consumption + gross fixed capital formation.*

External demand

For Hungary as a small, open economy, changes in external economic activity, and in foreign demand for Hungarian exports in particular, are of great significance.

Whereas developments in external economic activity can be characterised using several indicators, foreign demand for Hungarian exports can be captured best by developments in imports of the country's major trading partners. By virtue of the share they account for within Hungarian exports (and the reliability of their data reporting), the effective external demand indicator takes into account import data of 12 countries covering some 80% of Hungarian goods exports.

Chart II-2 **Shares of major trading partners in Hungarian exports**



* *Economies not explicitly analysed, due to their individual shares within Hungarian goods trade and weak data availability, for example, Russia, Romania, Poland, Asian economies, etc.*

Developments in external demand have recently been shaped by the global economic recession and the factors hindering the recovery from recession, for example, terrorist attacks and international conflicts. In this unstable environment, the Bank has often been forced to revise its forecasts for external demand in general and for the timing of the cyclical turnaround in particular. However, past revisions of the forecasts have not been larger than those of forecasts by other institutions.[6]

Based on 2002 data, treated as final for the purposes of the analysis, external demand bottomed out in the early months of last year, and is currently in its upward phase. However, the rate of this upturn looks unstable, showing large deviations across countries. Looking at Hungary's most important trading partners, import growth in Germany, though hindered by weak domestic demand, grew unexpectedly strongly in 2002 H2, while imports by Austria declined throughout the major part of the year, despite a pick-up in domestic demand.

The price of crude oil, which rose sharply due to the uncertainties preceding the outbreak of the war in Iraq (and the Venezuelan crisis), was the dominant factor influencing external demand in 2003 Q1. European confidence indices remained on a downward trend in the early part of the year–available data for goods trade and output in January-February are evidence of a rather weak recovery. Although the fall in oil prices, caused by the end of the Iraq conflict, may help this recovery pick up some speed, it will probably only gather strong momentum after the expected modest outturns in Q1–Q2. For this reason, the Bank expects annual average growth in external demand in 2003 to be broadly in line with, or slightly weaker than, its previous forecast.

In 2004, the rate of growth of external demand is expected to stabilise at around 5%, consistent with the forecast in the previous Report. Accordingly, the current forecast for annual average growth in external demand is almost identical to the February forecast *(see table II-3, II-4 and chart II-3)*.

Fiscal stance

In the Bank's current forecast, the contractionary impact of general government on demand amounts to around 0.5% of GDP in 2003, lower than previously anticipated.[7] This reduction in the estimated size of fiscal restriction will likely be caused by autonomous factors, for example, higher local government expenditure and open-ended expenditure, rather than by fiscal policy measures.

Table II-3 Projections for imports of Hungary's main trading partners*

	2003		2004	
	Recent	**Prev.**	**Recent**	**Prev.**
MNB	**3.7**	3.9	**4.6**	4.8
European Comm.	**3.9**	5.9	**6.4**	7.1
IMF	**4.4**	5.7	**6.3**	n.a.
OECD	**4.1**	5.5	**6.8**	7.6

* *Data are average annual growth rates in per cent. Individual country forecasts are weighted according to partners' shares in Hungary's export structure.*

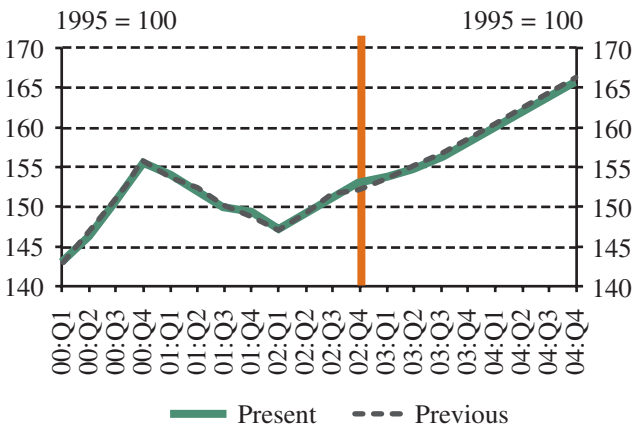
European Commission: Economic Forecasts (April 2003/November 2002)
OECD: Economic Outlook (April 2003/November 2002)
IMF: World Economic Outlook (April 2003/September 2002)

Table II-4 Implicit projections for GDP-growth of Hungary's main trading partners*

	2003		2004	
	Recent	**Prev.**	**Recent**	**Prev.**
MNB	**1.1**	1.3	**2.1**	2.3
European Comm.	**1.0**	1.7	**2.2**	2.5
OECD	**1.1**	1.8	**2.2**	2.7
IMF	**1.0**	2.2	**2.2**	–

* *See notes to previous table.*

Chart II-3 Current and previous projections for external demand* (1995 = 100)



* *Weighted volume of imports of Hungary's main trading partners.*

[6] See Chapter V, Revisions to the forecast of external demand for more details.
[7] It is the fiscal demand effect that matters from the perspective of short-term developments in inflation, economic growth and external balance, which the Bank estimates using the annual change in the corrected SNA primary balance of general government, introduced in 1998 for analytical purposes. For methodological issues, see *Manual to Hungarian Economics Statistics.*

The Bank has prepared a forecast for 2004, instead of using the previous technical assumption derived directly from the PEP path. If fiscal policy does not take further measures to improve the balance, above and beyond those taken this year, the contractionary impact on demand will amount to 1.3% of GDP, on the basis of foreseeable macroeconomic developments. On the whole, the cumulative impact on demand of general government will be an increase of 2.5% in 2002–2004.

In 2003 and 2004, the contractionary impact on demand will be determined by various effects. Items affecting household disposable income will grow faster than GDP, due to the measures already legislated. On the other hand, spending on other items, for example, fixed investment, will be curtailed.

Table II-5 **Expansionary impact of general government on demand (As a per cent of GDP)**

	2002	2003	2004
	Preliminary	Central Projection	
Dir. impact on demand*	4.3%	–0.5%	–1.3%

* *Change in corrected SNA primary balance adjusted for the effect of pension reform. The (+) sign denotes a fiscal expansion of demand, and the (–) sign denotes a contraction. For more details, see Manual to Hungarian Economics Statistics.*

The current and previous central projections for 2003 are rules-based and conditional forecasts. This means that in the range where the Government's measures were expected to have full impact, the Bank only took into account information available in legal instruments. However, where there is no full government control over the developments, the Bank prepares its own forecast. Accordingly, the Bank forecasts developments in tax revenue and expenditure on old-age pensions on the basis of its own macroeconomic projections and the estimated effects of government measures, while it forecasts autonomous fiscal developments, such as the behaviour of local authorities and institutions, and uses of open-ended subsidies, on the basis of observable trends *(see table II-6)*.

The Bank has revised down its 2003 forecast for the contractionary impact on demand on the basis of new information becoming available to date, due principally to autonomous fiscal developments which the central government is unable to fully control, for example, in the areas of pharmaceuticals and housing subsidies, local government wages and fixed investment. Here, the Bank's rules-based forecast for expenditure overruns has proven low compared with the published local authority budgets and actual data for the first quarter of the year which have become available in the meantime. Consequently, the Bank's forecast of expenditure overruns has been raised by 0.7% of GDP.

Based on current information, the measures taken by fiscal policy in the course of the year will only have a modest estimated impact on demand. The updated macroeconomic forecasts (including, for example, a higher wage increase) also have an impact on the estimates of taxes and pensions, decreasing the deficit by 0.1% of GDP.

There continues to be a wide, broadly symmetrical range of uncertainty around the central projection for the contractionary impact on demand in 2003. In addition to the usual uncertainties arising from macroeconomic developments, numerous measures have been taken in the area of taxes, the impact of which can only be estimated, and this causes difficulties in forecasting tax revenue. Adding to these problems, for the majority of local authorities (mainly the smaller ones) and the majority of budgetary units, the Bank's rules-based forecast does not expect excess expenditure funded from indebtedness and uses of appropriations carried forward. It is still unknown whether the Government will implement any measure to reduce the deficit in the course of the year and how large its actual effect (not offset by uses of appropriations carried forward or indebtedness) will be *(see table II-7)*.

The Bank's current forecast for 2004 has been prepared in lack of information about the budget. Consequently, it has complemented the available legal information

Table II-6 **Difference between the current forecast and those of the February Report (As a per cent of GDP)**

	(1)	(2)	(2)–(1)
	Change in SNA deficit		Change in demand effect
	2002 Preliminary	2003 Forecast	
Effect of higher nominal GDP	–0.2	–0.2	0.0
Incorporation of actual data on road construction	0.2	n.a.	–0.2
Update of forecast	n.a.	+0.6	+0.6
Total change	**0.0**	**+0.4**	**+0.4**

with estimates, which project the Government's past, observable behaviour into the future. From this perspective, the fiscal austerity exercised in drafting the 2003 Budget, and the aggregate of autonomous fiscal developments partly offsetting it, such as the behaviour of local authorities and institutions, and uses of open-ended subsidies, have been taken as a basis.

The central government has determinations for 2004 on both the revenue and expenditure sides. Taking this and fiscal policy's possible room for manoeuvre as a basis, the contractionary impact of fiscal policy may amount to 1.3% of GDP in 2004.

A neutral case in which *revenue* grows broadly in line with nominal GDP could be taken as the starting point. The measures already taken (for example, customs duties and taxes will fall by 1.1% as a proportion of GDP) have in part used up this additional revenue from nominal growth in GDP; and the balance of EU contributions and transfers can only slightly improve this.

The full-year effect of decisions taken on *expenditures* in the course of this year (wages and widows' pension), the automatic measures (indexation of pensions), and other measures (partial payment of 13th month pensions) are determined up to some 1.1% of GDP.

As concerns wage expenditures, the Bank assumes as a minimum case that their real growth will not exceed half of real growth in GDP. In the case of other, non-determined expenditures (for example, non-wage and non-pension items), additional amounts of around 0.8% of GDP can be saved or re-channelled for wage payment. Within the range of expenditures on fixed investment, corporate subsidies and goods and services, quasi-determinations, such as expenditures on infrastructure, defence and agricultural subsidies, affected by the curtailment of appropriations, require further re-channelling.

In assessing the possible effects on the macroeconomic variables of extreme values arising from uncertainties,

Table II-7 **Risks in the central projection for the 2003 demand impact (As a per cent of GDP)**

Higher contractionary impact		**Lower contractionary impact**	
Higher tax revenue	0.1	Lower tax revenue	0.1
Delays in local authority fixed investment programmes	0.1	Pick-up in broadly defined public sector fixed investment	0.2
Reform of subsidy schemes (for example, pharmaceuticals, housing)	0.1	Excess expenditures by local authorities, institutions	0.2
Freezes on estimates and carry-forwards	0.2	Claims due to child-care benefit	0.2
Total difference from the central projection under extreme scenario	0.5	Total difference from the central projection under extreme scenario	0.7
Demand impact under extreme scenario	**–1.0**	**Demand impact under extreme scenario**	**+0.2**

Table II-8 **Risks in the central projection for the 2004 demand impact (As a per cent of GDP)**

Higher contractionary impact		**Lower contractionary impact**	
Macroeconomic developments	0.3	Macroeconomic developments	0.4
More restrictive discretionary measures and/or lower offsetting effects by autonomous fiscal developments	0.3	Less restrictive discretionary measures and/or higher offsetting effects by autonomous fiscal developments	0.6
Temporarily lower contractionary impact in 2003	0.6	Temporarily higher contractionary impact in 2003	0.3
Total difference from central projection under extreme scenario	*1.2*	*Total difference from central projection under extreme scenario*	*1.3*
Demand impact under extreme scenario	**–2.5**	**Demand impact under extreme scenario**	**0.0**

the Bank has considered that, apart from the revenue impact resulting from the difference between macroeconomic developments, the contractionary impact may be higher or lower by 0.9% of GDP. Presumably, the larger part of this difference would affect capital expenditures and the smaller part current expenditures and revenue. According to previous model simulations, on the assumption of this structure, one half the difference of the demand impact from the central projection would be reflected in the increase/decrease in GDP and the other half in the increase/decrease in the current account deficit.[8] The impact on inflation would be much lower, not even amounting to 0.1 percentage point in the year under review.

As concerns the effects on demand, the items affecting household disposable income and developments in broadly defined government fixed investment within aggregate fixed investment should be treated separately.

The Bank has revised up its forecast for general government sector wages in 2003 relative to the previous *Report*. In the current forecast, the annual average increase in employment is 0.8%, up from 0.2%, and the increase in average wages is 18.6%, up from 17.6%. One reason for the revision to the forecast is that wages in the first two months suggests that payments have been carried forward from 2002 which may be built into wages. The other reason is that additional measures have been taken, such as the reclassification of administrators into civil servants, and earlier decisions, for example, on the minimum wage of civil servants, prompting the Bank to update its estimate.

In addition, employment in general government increased by 1.5% in 2002, following several years of decline. This increase picked up speed from September, and the workforce was 4.4% larger in December compared to the previous year. Employment also increased in education, health care and public administration. In the first two months of 2003, the rate of increase slowed down to 4.1%. In the Bank's forecast, employment undergoes a gradual adjustment. Otherwise, the general government wage bill sector may even rise by 18–22%.

Wages in the general government sector are forecast to increase by around 9% in 2004. This takes into account the full-year effect of the wage increase in the course of this year, similarly to the forecast in the previous *Report,* and assumes that wages will be raised by a half of GDP in real terms in 2004, in addition to the effects of the previous year's wage increase.

Transfers to households in cash are expected to increase by 8.4% nominally in 2003. This, based on actual data for the previous period, is some 0.6 percentage points higher than the previous forecast. As in the February *Report,* new measures affecting pensioners (for example, a gradual increase in the 13th month pension and in widows' pension) and rising unemployment benefits on account of an increase in unemployment have been taken into account, in addition to the full-year effects.[9]

The volume of broadly defined government fixed investment is expected to rise by around 4%–10% in 2003, according to the CSO's recording of national accounts. The curtailment in investment spending can be observed less in the accruals based accounting method and is likely to be partly offset by local authorities' 0.2% higher investment spending as a proportion of GDP. The larger part of the latter effect will be reflected in the CSO's accounts for 2004. By that time, however, this year's curtailment will also be reflected. Although the increase in fixed investment volume in 2004 is currently very uncertain, it is nevertheless expected to be around 4%.

Household consumption, savings and fixed investment

Household consumption expenditure grew by an unprecedented amount in 2002, due mainly to the large increases in wages.

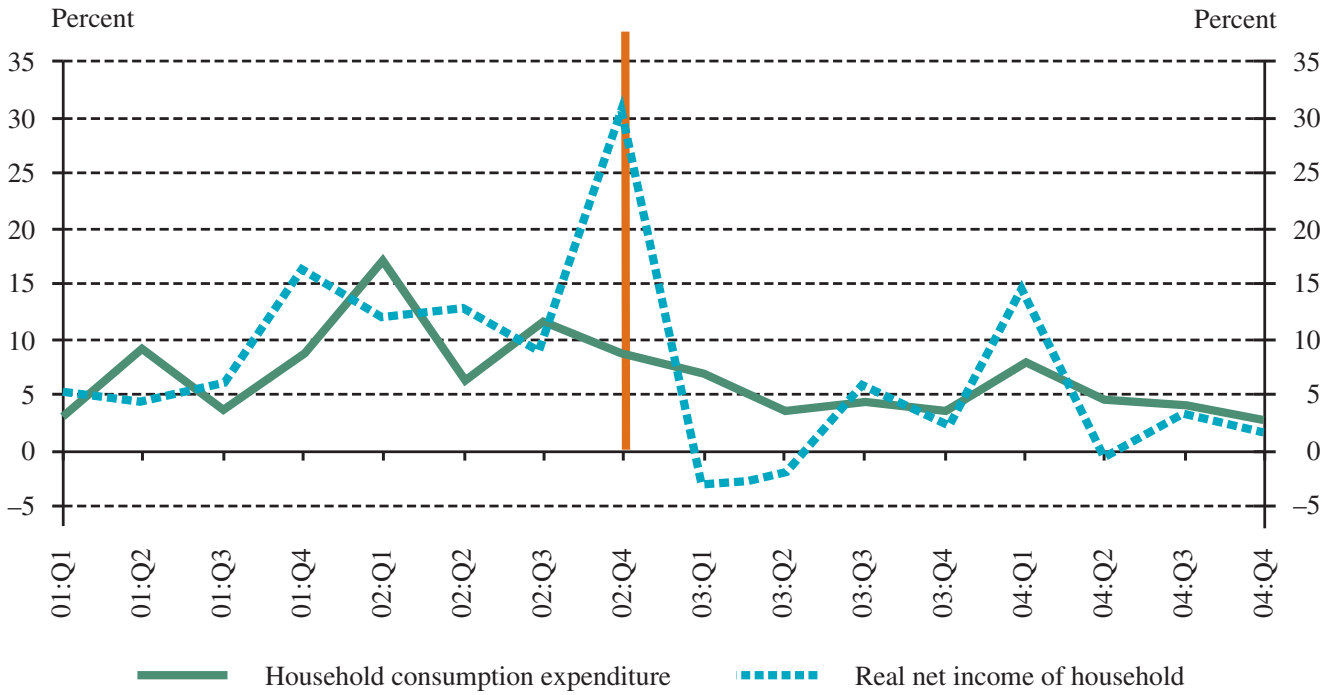
The Bank's current forecasts for 2003 and 2004 are determined by two opposing factors. An improving income position as a result of more modest fiscal restriction com-

Chart II-4 **Public sector employment***

* *Seasonally adjusted and smoothed data, actual data until February 2003, data for March is MNB estimation.*

[8] For more details see *Quarterly Report on Inflation*, November 2001. Special topics 1.
[9] In 2003 and 2004, pensions are expected to increase by 10% and 7%, respectively, based on the forecasts of the increase in net average earnings and inflation.

Chart II-5 **Household net income and consumption* (Annualised quarter-on-quarter growth)**



* *Household income equals real net income of households; consumption equals developments in consumption expenditure.*

pared to previous *Report* contributes to the increase in household consumption expenditure. This will be amplified by higher-than-expected wage inflation in the private sector. Countering this effect is the rising unemployment rate on account of slower corporate business activity, which, in turn, reduces households' propensity to consume.

Growth in household consumption expenditure was significant in 2002, as the 10.2% rate of growth published by the CSO was nearly twice as high as the peak value seen in the 1990s. A massive increase in household income from several sources was behind this strong upsurge. First, nominal wages were quite slow to adjust to disinflation, with the result that household real net income grew more strongly than expected. Second, fiscal expansion was also a factor positively influencing households' income position. There were rises in both average earnings and the number of employees in the general government sector, significantly raising household income. In addition to wages, other transfers to households, such as family allowances and pensions, also rose strongly in 2002. The rise in the unemployment rate was an opposing factor; however, this is only expected to have an effect in 2003.

Table II-9 **Household income, consumption and investment (Annual percentage changes)**

	Real net income*	Consumption expenditure	Fixed investment spending
2002	12.4	10.2	20–30
2003	6.6	6.6	5–10
2004	4.8	5.0	0–5

* *Real net income has been approximated with the sum of net wage bill and social transfers in cash.*

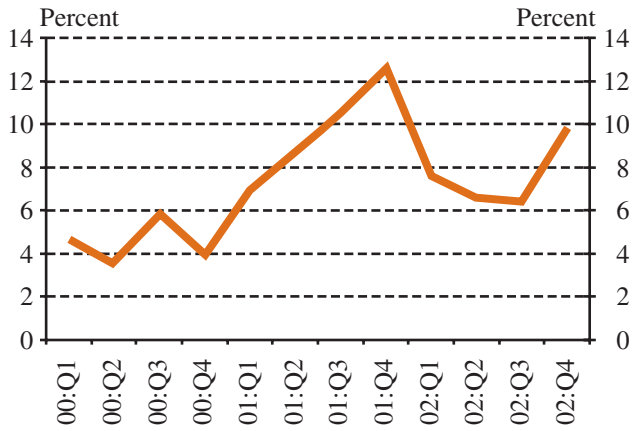
The estimation of consumer expenditure in 2003 Q1 is based on retail sales and new passenger car sales,[10] both of which increased strongly in 2003 Q1. In contrast, the GKI consumer confidence index declined to 2001 levels in a couple of months. Based on the expected further increase in unemployment and the uncertainties noted above, the Bank expects an increase in precautionary savings and consumption expenditure to

[10] Only the February data were available at the time the analysis was prepared. The missing data for March are based on statistical estimation methods.

continue to grow at a robust pace in early 2003, although somewhat slower than in 2002.

The Bank's forecast for 2003 are influenced by the following income-side effects. First, the full-year impact of the 2002 fiscal expansion will likely continue to boost households' disposable income in 2003. For example, the exemption of the minimum wage from personal income tax will have an impact throughout the period. Moreover, in 2003 the size of fiscal restriction is likely to be smaller than previously expected, also creating a more favourable income position for households.

Chart II-6 **Retail sales* (Annualised quarterly growth rates)**

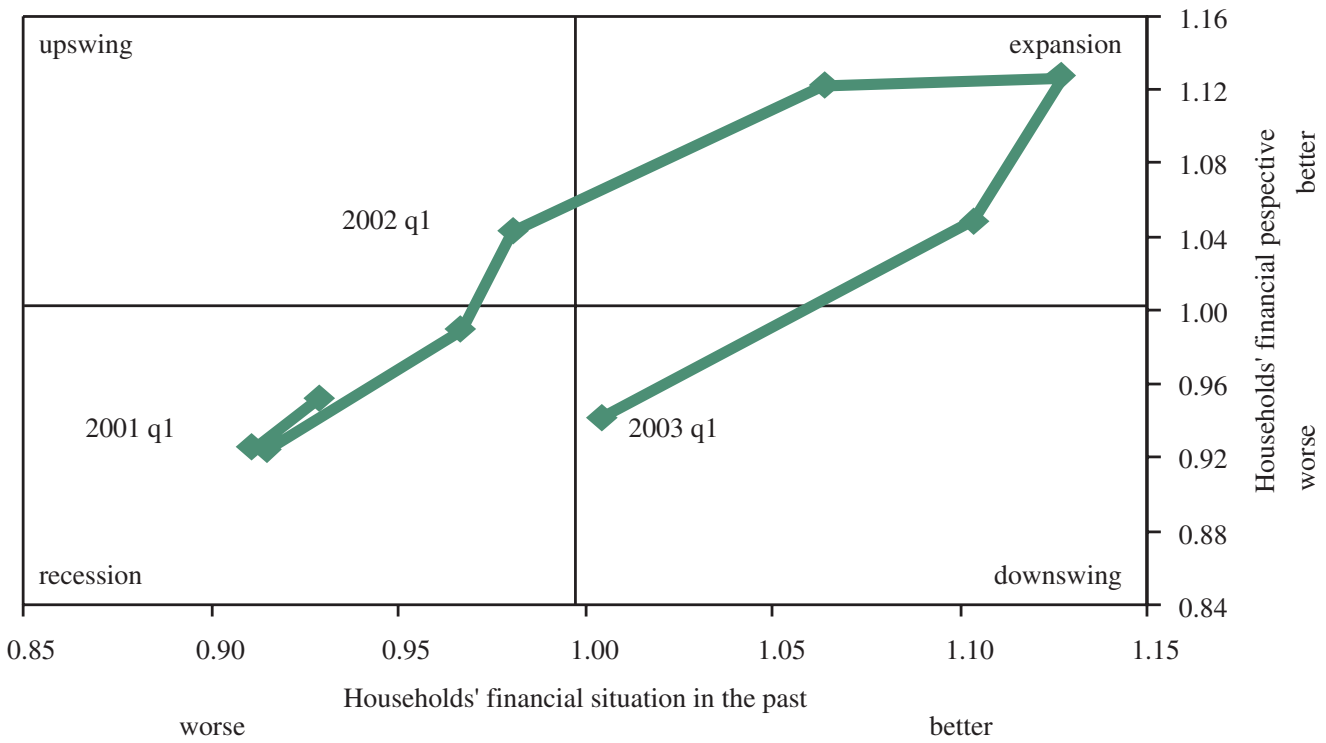


** Annalized quarterly growth rate from seasonally adjusted retail sales.*

However, rising unemployment may have a negative effect, unlike the factors noted above (for more details, see Section 3. Labour reserves and tightness). Due to the increasing uncertainties surrounding future incomes, a higher unemployment rate can reduce households' propensity to consume. According to evidence from the GKI survey, households expect a rise in unemployment, reflecting underlying public opinion about labour market conditions. Other sentiment indices also reflect higher uncertainty. It can be seen that, whereas prior to the upsurge in consumption in 2002 Q1, households judged their past position as unfavourable and their future position as favourable, by 2003 Q1 the situation had reversed.[11]

Balancing the risks of higher expected incomes and rising uncertainties, the Bank has not changed its forecast for consumption relative to the previous *Report* and remains at 6.6%.

Chart II-7 **Households' assessment of their financial circumstance**



Source: GKI household survey. The axes plot deviations of survey responses from the long-term trend.

[11] For a more detailed analysis of the relationship between the household confidence index and consumption expenditure, see MNB Background Studies, 2/2001.

The consumption forecast for 2004 is basically determined by three factors: while the expansion of household's income is to be continued on the fiscal side, total disposable income will grow at a slower pace and unemployment is not likely to rise further.

The financial position of households may be improved by the more modest fiscal restriction than previously expected. In light of the determinations, fiscal restriction may be undertaken in a manner that could be expansive for households, thereby allowing for higher consumption expenditure. Even taking into account fiscal circumstances, households' disposable income will increase at a more modest pace. The unemployment rate is not expected to continue to rise in 2004, so this factor will not further reduce propensity to consume. Based on the foregoing, consumption expenditure will likely grow slower, broadly in line with income. In all, the Bank expects some 5% growth in consumption expenditure in 2004.

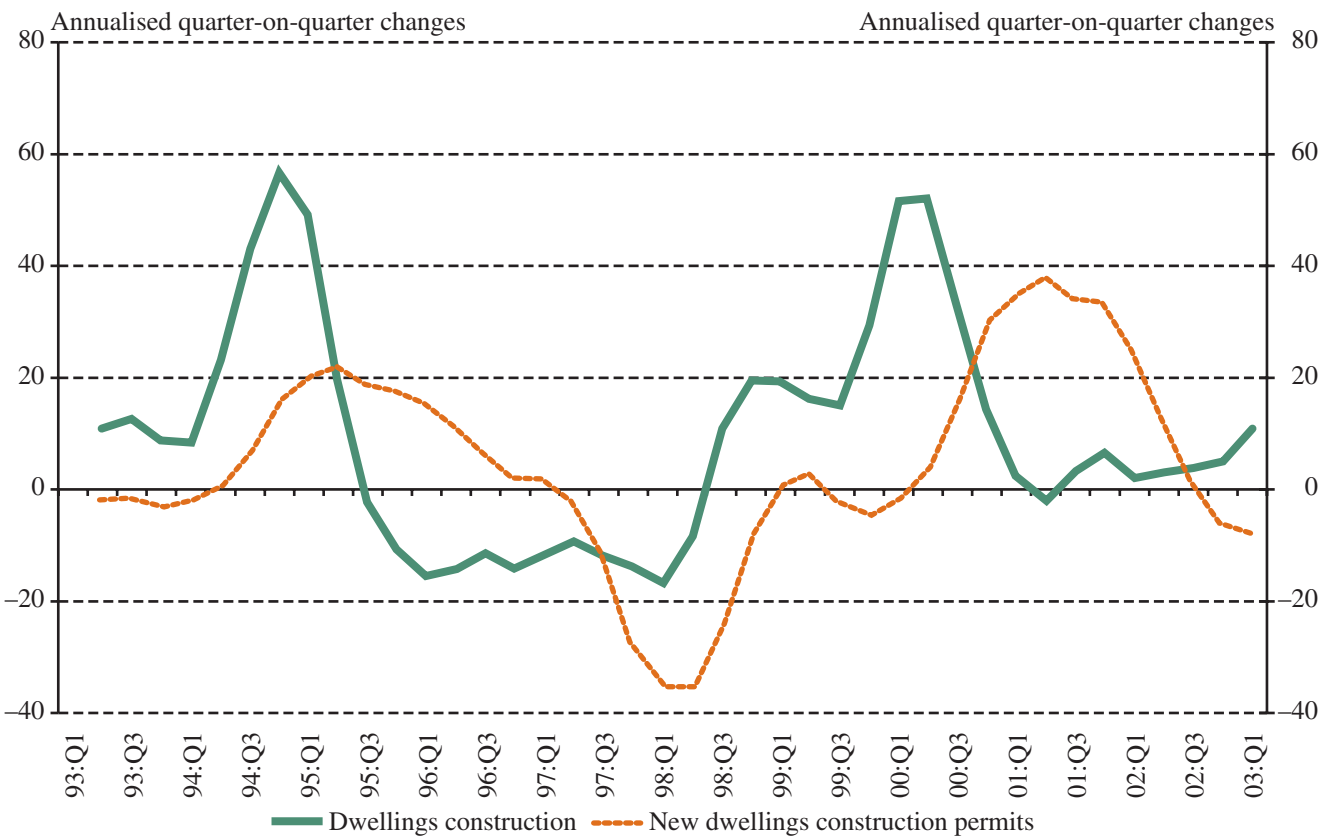
As a consequence of nearly equal growth rates in income and consumption, the gross accumulation rate may not change significantly relative to 2002. However, its distribution between financial savings and accumulation spending is currently uncertain. Presumably though, the financial savings rate will rise slightly, associated with more modest housing investment.

Future developments in housing investment will be shaped basically by home construction. Consequently, the number of housing completions and issued housing permits play a special role in the Bank's forecast. The increase in housing permits has been slowing gradually since its peak in 2000, so the number of completions and, consequently, household accumulation expenses are expected to have peaked in 2001–2002.[12]

Actual data on home construction in 2002 was practically identical with the Bank's estimate. The forecast of decreasing housing investment is strengthened by the fact that the number of housing completions declined in 2003 Q1.

Based on the factors discussed above, the number of new housing permits is the most important indicator for forecasting accumulation expenses. Though the actual data do not differ materially from the Bank's previous expectation, accumulation may turn out to be somewhat higher than previously estimated, due to higher incomes and more modest propensity to consume. This, however, will remain within the range previously forecast by the Bank *(see chart II-8)*.

Chart II-8 **Housing permits and completions**



[12] The CSO releases households' accumulation expenses in the sector's income balance sheet with a lag of around 18 months. Only actual data on 2000 were available at the time the *Report* was prepared. Caution is required in interpreting the information content of housing loans, as these may be spent on purchasing used homes as well. However, in the SNA statistics only purchases of new homes can be recorded as housing investment, purchases of used homes only represent an exchange of financial and real assets among households.

II.

Corporate investment

Corporate fixed investment activity may have passed its cyclical trough in 2002, as its volume stopped declining in Q4. In the Bank's view, the slow recovery of external demand and the prolonged increase in domestic demand has led to an upturn in fixed investment activity. However, the recent worsening of business expectations both in Hungary and abroad has influenced short-term prospects negatively. Accordingly, the uncertainty has increased in the Banks' forecast of the short-term prospects for investment activity.

The assessment of the factors influencing investment over the longer term, namely external demand and competitiveness, has been maintained in broad terms. As a result, in the Bank's current projection, corporate fixed investment in 2003 and 2004 is virtually identical with the forecasts contained in the previous *Report*. However, over the short term, the risk of slower growth in the forecast has increased *(see table II-10)*.

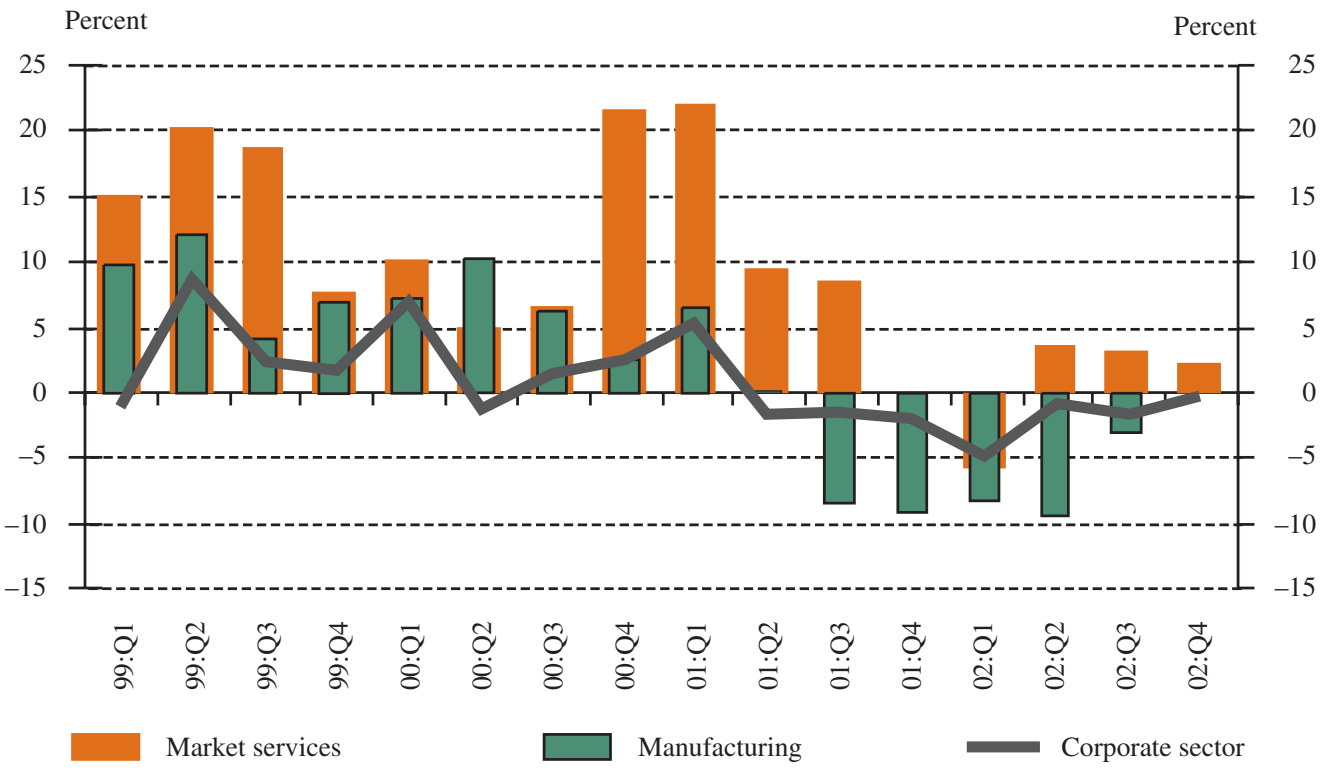
In analysing developments in corporate fixed investment, the focus is on manufacturing investment, which accounts for some 40% of investment by the sector. This is explained, on the one hand, by the fact that, as a result of its strong export-oriented nature, manufacturing investment can be described in more exact terms than market services investment which is influenced by both domestic and external business conditions. On the other hand, the cycles of manufacturing and corporate sector fixed investment activity have corresponded strongly in the past; thus the Bank's statements on manufacturing can also be seen as indicative of the corporate sector as a whole.

According to the latest data, the decline in manufacturing investment, which lasted for two-and-a-half years, stopped in 2002 Q4, and manufacturing investment presumably reached its cyclical pivot point towards the end of the year. The pick-up in external demand and, consequently, the improvement in the prospects for output must have played a role in the strengthening of fixed investment activity.

Table II-10 **Forecasts for corporate and manufacturing investment (Annual percentage growth rates**

	Actual	Forecast	
	2002	2003	2004
Manufacturing fixed inv.	–9.2	0.5	6.8
Corporate sector fixed inv.	–2.3	1.5	5.5

Chart II-9 **Corporate fixed investment in a breakdown by sector (Annualised quarter-on-quarter contributions to growth)**



Nevertheless, the level of capacity utilisation continues to be low, and the uneasiness observed at the end of 2002 suggests a fragile recovery in the period ahead.

The uncertainties surrounding developments in manufacturing investment in 2003 H1 have increased since the February Report for two reasons. First, over the first quarter of the year the Iraq conflict and fluctuations in the price of oil marred international business expectations. Second, the prospects for domestic output have not improved significantly from the extremely low level seen at end-2002. Capacity utilisation in manufacturing has been falling steadily, and the ratio of companies with excess future capacities seems to be stuck at a record level *(see chart II-10)*.

Accordingly, the Bank expects manufacturing investments to recover only modestly in 2003 H1, despite the lasting upturn in external demand. A more pronounced increase may only get underway after business confidence has strengthened and the capacity surplus has been soaked up. This may occur in the second half of the year.

The deterioration in companies' cost-based competitiveness and the decline in their profitability seen in recent years will likely affect manufacturing investment negatively in 2003. Despite these factors, however, the Bank expects the recovery of external demand to allow for weak, albeit positive, growth of around 0.5% in manufacturing investment in 2003. In 2004, fixed investment is expected to rise more dynamically, by around 7%, assisted by a gradual decline in the negative impact of uncertainty and weaker competitiveness.

Actual data for fourth-quarter *corporate fixed investment* are also evidence of a cyclical turnaround. The sector's fixed investment activity fell by less than manufacturing investment in the period 2001-2002, as a result of a pick-up in market services investments induced by domestic demand. The extent to which domestic corporate investment declined and its time pattern were comparable with the EU average.

In forecasting future prospects for corporate sector fixed investment, the Bank expects market services investment to continue to rise strongly, reflecting the effects of domestic business activity. Accordingly, in the current forecast corporate investment growth is only slightly lower than manufacturing investment growth: the Bank anticipates an increase of 1.5% in 2003 and 5.5% in 2004.

Chart II-10 **Current and future capacity-utilisation in manufacturing (KOPINT survey)**

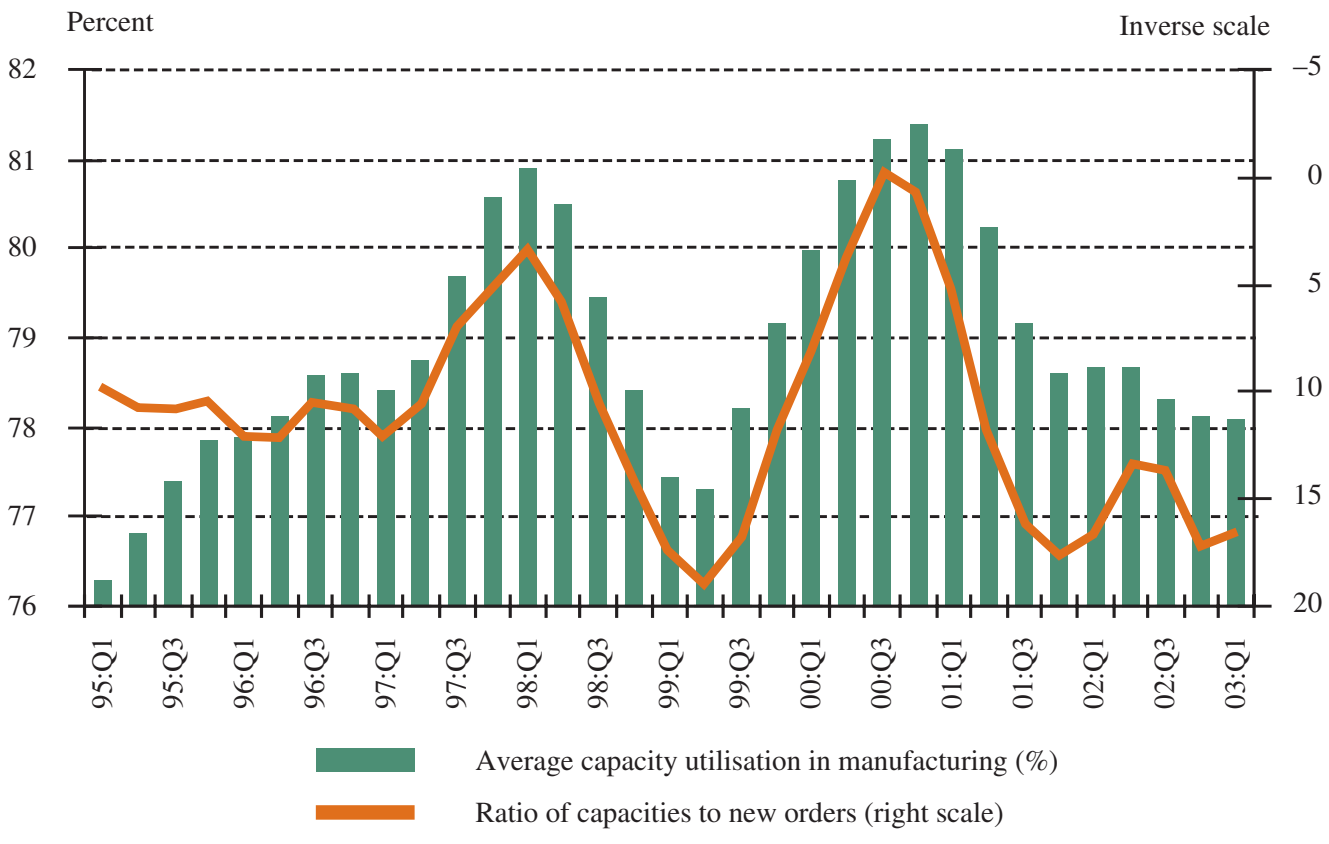
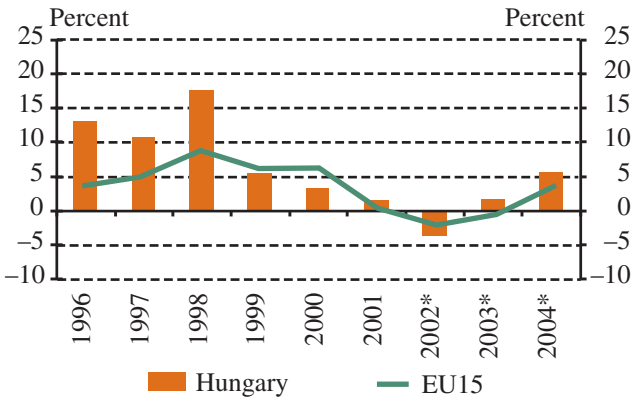
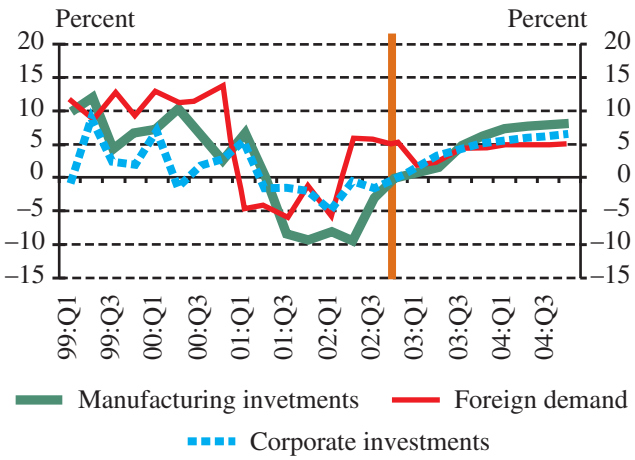


Chart II-11 **Corporate investment in international comparison (Percentage changes on a year earlier)**



The source of EU15 data is OECD Outlook, April 2002; data for Hungary are MNB estimates.
** 2002 data are preliminary, those for 2003 are 2004 are forecasts*

Chart II-12 **Corporate investments and foreign demand (Annualised quarterly volume indices)**



Inventory investment

According to the CSO's inventory data, whole-economy output inventories increased at a higher rate in 2002 Q4 than in the previous quarter. Reflecting the cyclical slowdown, the level of inventories had been falling since early 2001 and, apart from an upswing driven by overly optimistic expectations in 2002 Q1, stockbuilding showed the first signs of a pick-up towards the end of 2002. Accordingly, inventories in the total economy may have passed their cyclical trough, which is in line with firms' investment and output developments.

However, the sectoral structure of growth in inventories shows that the increase in Q4 was driven by stock-building in sales, while manufacturing inventories only stagnated. On balance, therefore, buoyant domestic demand has been feeding the recent expansion of stocks in the total economy, and the assessment of the strength of external demand remains dubious.

The outturn for manufacturing stocks in 2002 Q4 reflected the sub-sector's modest economic activity and weak business expectations. Manufacturing inventories were virtually flat in the period under review. This is consistent with other information available for the end of last year which indicated a gradual slowdown in corporate activity and a decline in business confidence, following a pick-up in manufacturing activity in early 2002. Although the ratio of inventories to output is hardly interpretable as a result of its long-term downward trend (see the February Report), there are signs that firms continued to adjust their superfluous inventories to the level of output.

In contrast with manufacturing inventories, retail inventories rose very robustly towards end-2002. This suggested a further pick-up in consumer demand, in addition to the high growth rate of retail trade. Taken together, whole-economy inventories were rising significantly at year-end. This, however, suggests a strengthening of domestic demand effects rather than a recovery of external business conditions *(see chart II-13)*.

External trade

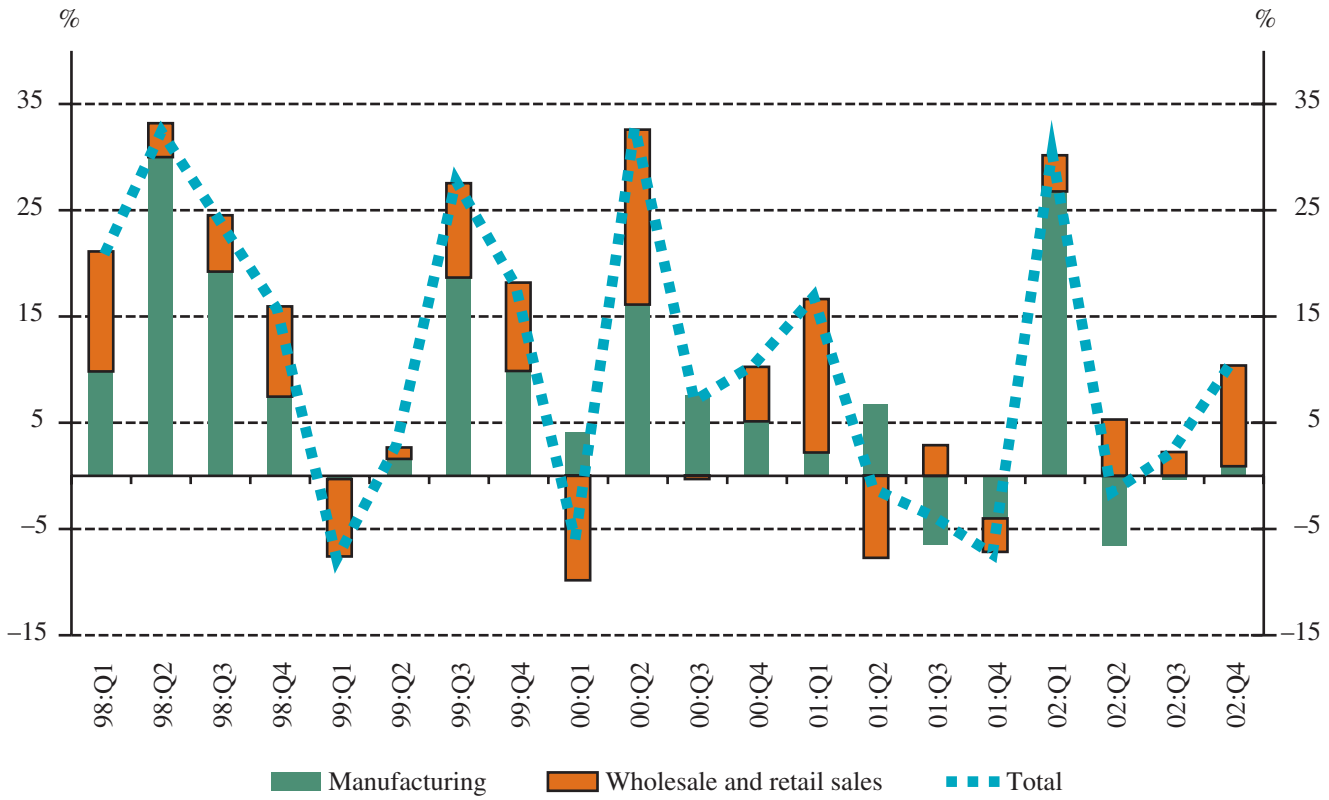
Developments in external trade continue to be shaped mainly by exchange rate movements and the path of external demand, which have changed only slightly since the previous forecast.

The current forecast, however, is significantly influenced by decisions taken by firms to establish or close down production units with large foreign trade volumes as well as by methodological changes affecting the statistical recording of goods trade, which fundamentally affect data both retrospectively and on the forecast horizon.

The Bank has altered its forecasts for Hungarian foreign trade considerably since the previous *Report*. The larger part of this, however, has been the result of the methodological changes noted above *(see table II-11)*.

A comparison of the Bank's forecasts for 2003 prepared in accordance with the old and new methodologies suggests that more than three-quarters of the decline of some 3 percentage points in the forecast for exports has been caused by the methodological changes (2.2 of the 2.8 percentage point decrease). As concerns imports, the 2.5 percentage point reduction in the forecast is attributable almost solely to the recent methodological changes.

Chart II-13 **Contributions to whole-economy inventory growth***
(Contributions to quarter-on-quarter annualised growth rates)



** Source of data: CSO inventory statistic at current prices, see Manual to Hungarian Economic Statistics, MNB.*

In terms of external demand and the real exchange rate, there have not been any major events affecting the forecast which were not included in the previous forecast. However, decisions by firms to relocate production which has exerted both temporary and lasting influences, mainly affecting last year's developments, were significant. These caused goods exports to grow at a high rate in early 2002, despite weak external demand and the strengthening real exchange rate. But export growth slowed down around mid-year, followed by a slight decline in the final quarter.

Nevertheless, Hungary's market share, measured by the country's share within total imports of the European Union from all non-EU countries, increased further in 2002. It deserves mention, however, that the Czech Republic and Poland, facing broadly similar external demand and real appreciation, saw their shares of EU imports grow more strongly in the past two years. This was presumably related to the fact that the build-up of higher export capacities in Hungary with foreign direct investment occurred in the mid and late 1990s, and thus growth in the country's market share was strongest during that period. In the Czech Republic

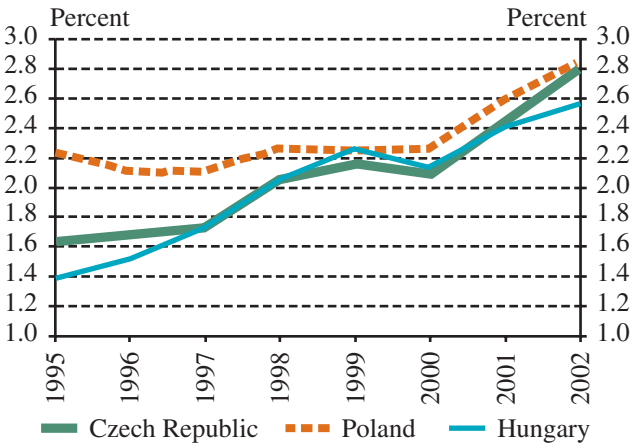
Table II-11 **Comparison of forecasts for external trade based on the old and new methodologies[13]**
(Growth rates in percent)

	Under the old CSO methodology		Under the new CSO methodology		
	2002	2003	2002	2003	
	Actual	February *Report*	Actual	Febr. *Report*	*Current Report*
Total exports	6.1	6.2	3.8	4.0	**3.4**
o/w: Goods trade	7.0	5.3	5.7	4.5	**3.4**
Total imports	9.3	7.7	6.1	5.2	**5.3**
o/w: Goods trade	7.1	7.7	4.9	5.5	**5.0**

[13] The Manual to Hungarian Economics Statistics contains the earlier methodology of compiling GDP. For a description of the methodological changes introduced by the CSO recently, see 'Gross domestic product in 2001' (A bruttó hazai termék 2001-ben), April 2003, at: http://www.ksh.hu/.

and Poland, in contrast, inflows of direct investment capital have only gained significant momentum since 2000. In this context, slower growth in Hungary's market share may reflect the impact of real appreciation, as compared with the Czech Republic and Poland, where newly introduced capacities mask this influence for the time being.

Chart II-14 **Market shares in total EU imports***



* *After eliminating intra-EU trade, at current prices.*

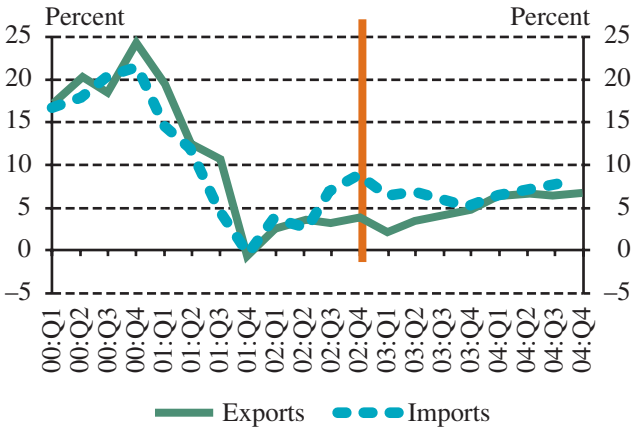
Owing to the decisions to relocate production discussed above, Hungarian goods exports were much lower in early 2003 than forecast in the previous Report. These factors reduce annual average growth by slightly more than 1 percentage point, despite the only modest changes in the paths of external demand and the real exchange rate. In 2004, when the effect of relocation decisions will have disappeared from goods export data, the rate of annual growth may rise back to the somewhat higher growth rate in the previous forecast.

To some extent, exports of services are likely to offset these factors, as, starting from a low base, they may contribute significantly to GDP-based whole-economy export growth in 2003. Even so, the Bank expects whole-economy exports to grow at a rate which is some 0.5 percentage points lower in 2003 and at a marginally lower rate in 2004, relative to the previous forecast.

The forecast for the major factors of goods imports, apart from the real exchange rate, have been altered much more significantly than in the case of exports. Growth in domestic demand will likely be stronger than previously thought, mainly on account of a rise in fixed asset accumulation fuelled by rising domestic economic activity. On the other hand, the relocation decisions, discussed in connection with goods exports, will likely influence developments in goods imports as well, as the companies involved have been exporting goods with import contents well exceeding the whole-economy average.

Owing to these factors, growth in goods imports in 2003 is expected to be roughly 0.5 percentage points lower than forecast previously. Although the rate at which domestic demand grows will be lower in 2004 than in 2003, the growth rate of goods imports will likely be considerably higher than in 2003, assisted by stronger external and domestic economic activity and the import needs of rising exports.

Chart II-15 **Growth rate of whole-economy exports and imports (Percentage changes on a year earlier)**



Services imports are expected to grow at a stable and relatively slow rate on the forecast horizon, which will speed up, and then dampen, whole-economy imports in 2003 and 2004, respectively.

External balance

In the current forecast, net lending/net borrowing of each sector is defined on the basis of a new methodology[14] *(see chart II-16)*.

Based on the new methodology, the Bank has revised up its forecast for the current account deficit in 2003 to EUR 3.9 billion (5.1% of GDP). The external borrowing requirement as a proportion of GDP is not expected increase in 2004, with the current account deficit forecast at EUR 4.2 billion (5.1% of GDP).

[14] Households' net financing capacity is based on new financial accounts, external financing requirement

Net borrowing of general government in 2003 will likely fall by less than forecast in the previous *Report*. In the current forecast, net lending of the private sector falls more strongly, resulting in an increase in the external borrowing requirement. Net savings of households are expected to fall further slightly as a proportion of GDP. Explanation for this is that the sector's consumption, expressed as a percentage of GDP, is likely to continue increasing, whereas its disposable income is expected to rise less strongly. Net lending of the corporate sector is expected to fall, owing to a slight increase in its investment demand and a decline in profitability.

The external borrowing requirement is expected to remain stable as a proportion of GDP in 2004. Net borrowing of the general government sector is likely to fall, consistent with fiscal policy's contractionary impact on demand. The estimate for the fall in private sector net lending is largely comparable with that in net borrowing of general government. Net savings of households are not expected to change significantly, as a result of the slowdown in growth in consumption and investment expenditure. Corporate sector accumulation will likely pick up in 2004, driven by the external business cycle entering its upward phase. However, the Bank estimates that firms will retain their net lending position.

Chart II-16 **External financing requirement (As a percentage of GDP)**

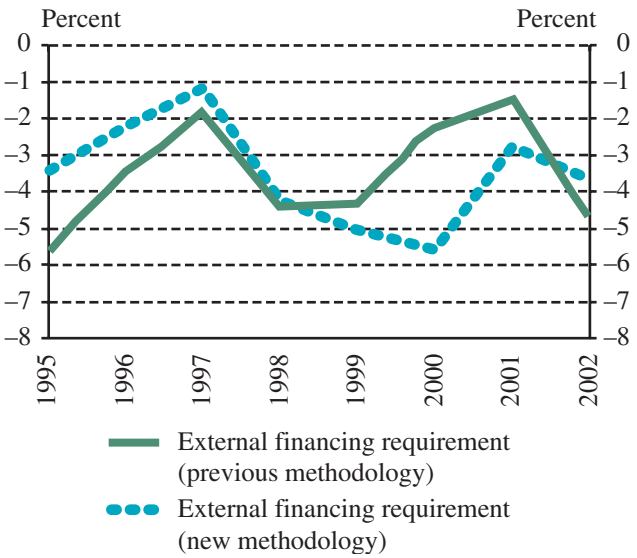


Table II-12 **Current account deficit and net lending/net borrowing of sectors (As a per cent of GDP)**

	2001	2002	2003	2004
	Estimate		Forecast	
I. General government*	(–5.1)	(–8.9)	(–7.7)	(–6.2)
II. Private sector (1.+2.)	2.3	5.2	2.8	1.4
1. Households	4.8	2.2	1.5	1.1
2. Corporate sector**	(–2.5)	3.0	1.3	0.3
Financing requirement (I.+II.)* **	**(–2.8)**	**(–3.7)**	**(–5.0)**	**(–4.7)**
Current account balance	**(–3.4)**	**(–4.0)**	**(–5.1)**	**(–5.1)**
in EUR billions	*(–2.0)*	*(–2.8)*	*(–3.9)*	*(–4.2)*

* *Specially constructed cash-flows based indicator to describe net saving position. It is different from the general government balance measures.*
** *Financial and non-financial corporations combined. Government spending on motorway construction is included in data on the general government sector.*
*** *The external financing requirement includes both the current and capital account balances.*

Output

Domestic output continues to be dominated by the slow recovery of external business activity and brisk domestic demand. However, business and household confidence has deteriorated significantly in recent months, suggesting only modest growth in output in the next quarter.

Over the long term, the lasting upturn in external demand and the slower deterioration of competitiveness may lead to a robust increase in manufacturing activity. In addition, the fall in domestic demand may cause a slowdown in certain segments of market services. The construction cycle has already started to slacken this year, and a massive slowdown is expected in 2004. On the whole, the Bank expects domestic output to increase gradually in 2003 and 2004.

Table II-13 **Output projection (Percentage changes on a year earlier)**

	Actual	Forecast	
	2002	2003	2004
Gross manufacturing output	3.6	3.6	6.3
Manufacturing value added*	0.5	3.3	4.4
Market services value added	4.1	4.0	3.9
Construction industry value added	14.8	10.0	2.0

* *Time series adjusted in 2002 Q3–Q4.*

Gross manufacturing output rose by 3.6% in 2002. In conjunction with the global economic slowdown, domestic industrial output stagnated in 2001, then resumed rising in early 2002. Accordingly, the output cycle may have turned around at end-2001.

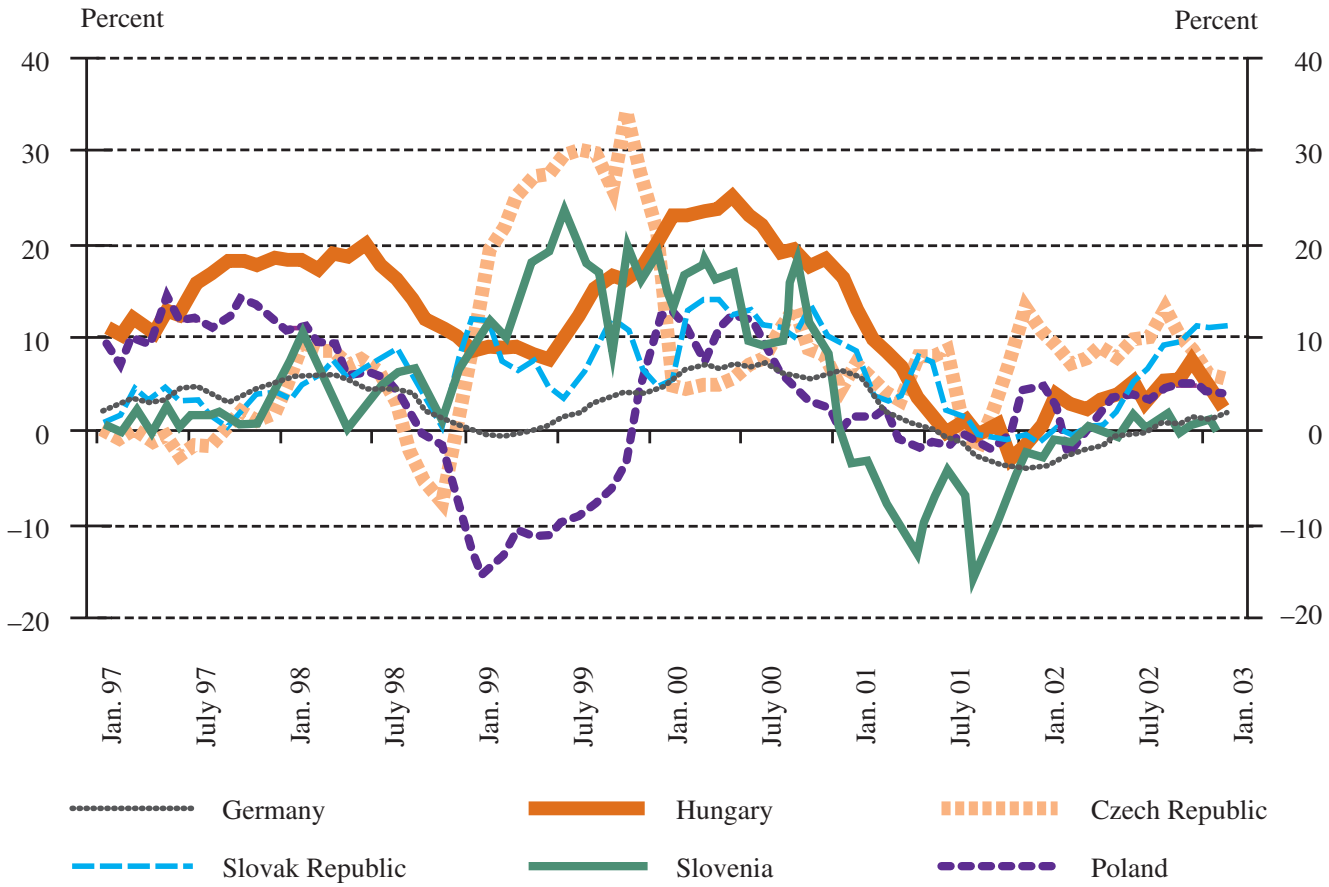
A comparison of German and Hungarian industrial activity in recent years shows that, although it has been closely aligned, output in Hungary appears to have passed through the bottom of the trough earlier than in Germany, unlike in earlier recessions. This is not a Hungary-specific phenomena: industrial production throughout the Central and Eastern European region seems to strengthen faster than in Germany. One possible explanation for this may be that the share of goods for further processing and investment goods exceeded 70% in the Hungarian exports in 2002, and demand for these goods tends to increase significantly in the upward phase of the cycle. The slight upturn in industrial production was clearly led by exports in 2002, while despite of the strong consumption demand, domestic sales showed no significant increase during the year *(see chart II-17 and II-18)*.

Hungarian industrial activity weakened slightly in early 2003 relative to its slow but steady growth last year. This slowdown was partly due to a decline in business confidence. In line with international expectations, domestic corporate expectations deteriorated significantly late last year and stabilised at this subdued level in the first quarter of 2003. In addition, as the past few months have seen a steady worsening in both German and euro-area confidence indices, it is unlikely that Hungary will experience any major improvement in business confidence over the first six months of 2003.

Similarly to the investment projection, there is considerable uncertainty regarding the short-term evolution of the industrial business cycle. Based on January and February data for industrial production, the Bank expects production growth to slacken somewhat in 2003 Q1 and Q2.[15] An upswing on a scale similar to that seen in 2002 is only likely to occur in the latter half of the year. Output growth in 2003 will likely be affected by approximately 1 percentage point due to the loss of competitiveness which has already occurred, resulting in an overall growth rate of 3.6%. In 2004, industrial production is projected to grow by roughly 6.3%, thanks to a steady pick-up in external demand and stronger business confidence.

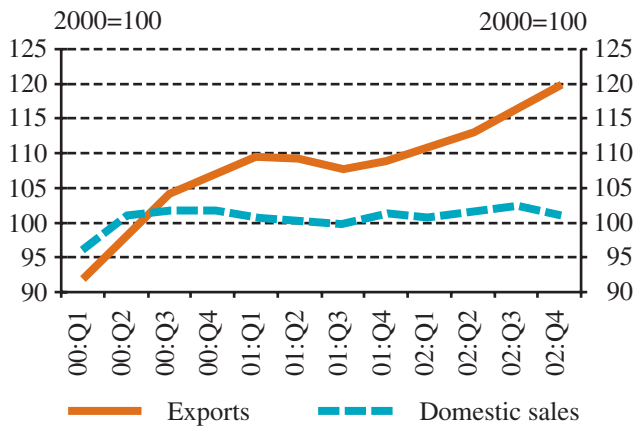
[15] The preliminary data on March industrial production (which arrived after this *Report* was finalised) show no clear sign of a slowdown. However, industrial production in the first quarter of the year has been pushed up by the dynamic growth of the energy sector as a result of the unusually cold weather in that period. The growth of manufacturing production may significantly fall behind that of the industrial sector.

Chart II-17 German and Central Eastern European business cycle
(Percentage changes on a year earlier, smoothed data)



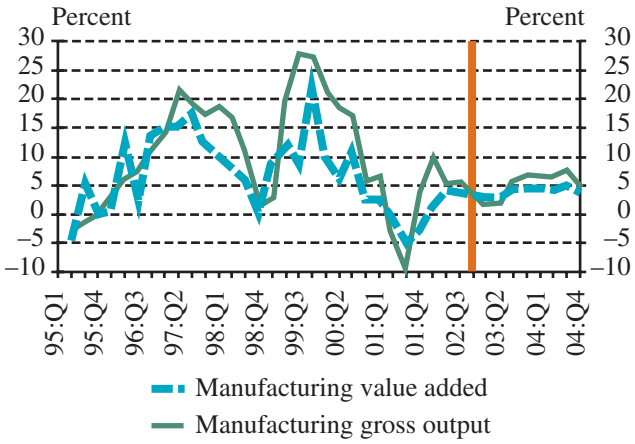
Information from the Central Statistical Office (CSO) shows that manufacturing value added grew at an exceptionally high rate in the second half of 2002. This growth in value added, considerably exceeding gross production, does not seem to be supported by business trends, and developments in both exports and employment would point to slower growth. One explanation for the widening gap between value added and gross production may be the reallocation effect, namely the flight of low value added activity, together with a strengthening of high value added production. However, at the disaggregation level, the Bank found evidence of neither phenomena. At the same time, the Bank is unaware of any information that would explain the widening gap on a statistical or methodological basis. Taking into account the foregoing considerations, the Bank has decided to ignore the CSO's Q3 and Q4 data on manufacturing value added in preparing its projections. Instead, estimates with gross output-based corrections are offered. Thus corrected, manufacturing value added is forecast to stand at 3.3% and 4.4% in 2003 and 2004, respectively *(see chart II-19)*.

Chart II-18 Volume of domestic and export sales of manufacturing



Value added of market services slightly exceeded the Bank's expectations in 2002 Q4, which can be attributed to vigorous consumption demand. Market services-related value added increased by 4.1% in 2002. Domestic demand-driven trade grew more and transport, which moves together mostly with industrial business cycles, less markedly. The Bank's projection continues to anticipate a strong domestic business cycle in 2003. Looking forward to 2004, consumption demand is likely to be replaced with a recovering industrial

Chart II-19 **Manufacturing output and value added (Annualised quarter-on-quarter growth rates)**



business cycle. Accordingly, market services are forecast to increase by 4% and 3.9% in 2003 and 2004, respectively.

Construction industry value added increased by 15% in 2002. The housing market boom and a pick-up in government fixed investment explained this salient outturn. A good illustration of last year's performance, building construction and construction of other structures surged by 15% and 28%, respectively, in the year under review. In the final quarter, however, growth faltered, with building construction stagnating and other construction (e.g. road, railway and water structures) declining *(see chart II-21)*.

Information available on construction activity in early 2003 suggests a further slowdown in output in the months ahead. The volume of output fell by 10% in the first two months of the year, and the number of new contracts stagnated at 70% of the level of a year earlier. The Bank's long-term forecast is based on its projec-tions for home-building and government fixed investment (essentially motorway construction).

The Bank expects the housing boom to remain robust in 2003, before slowing in 2004. In the current forecast, government fixed investment rises slowly and at a moderating pace. In the Bank's view, the current strong performance may result in a nearly 10% annual growth in construction industry value added in 2003, followed by a drop to 2% in 2004.

Chart II-20 **Decomposition of service sector value added growth (Contribution to annualised quarterly growth)**

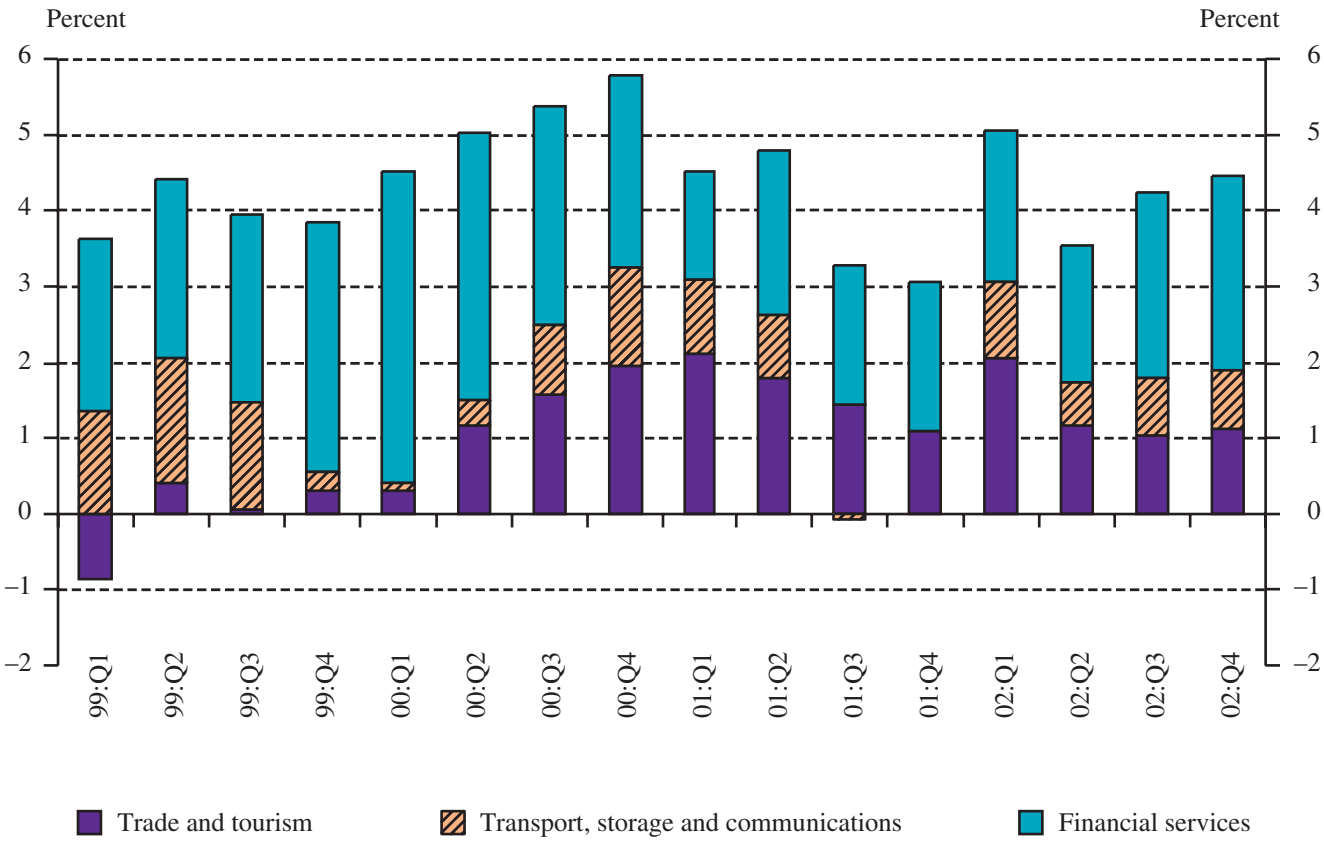
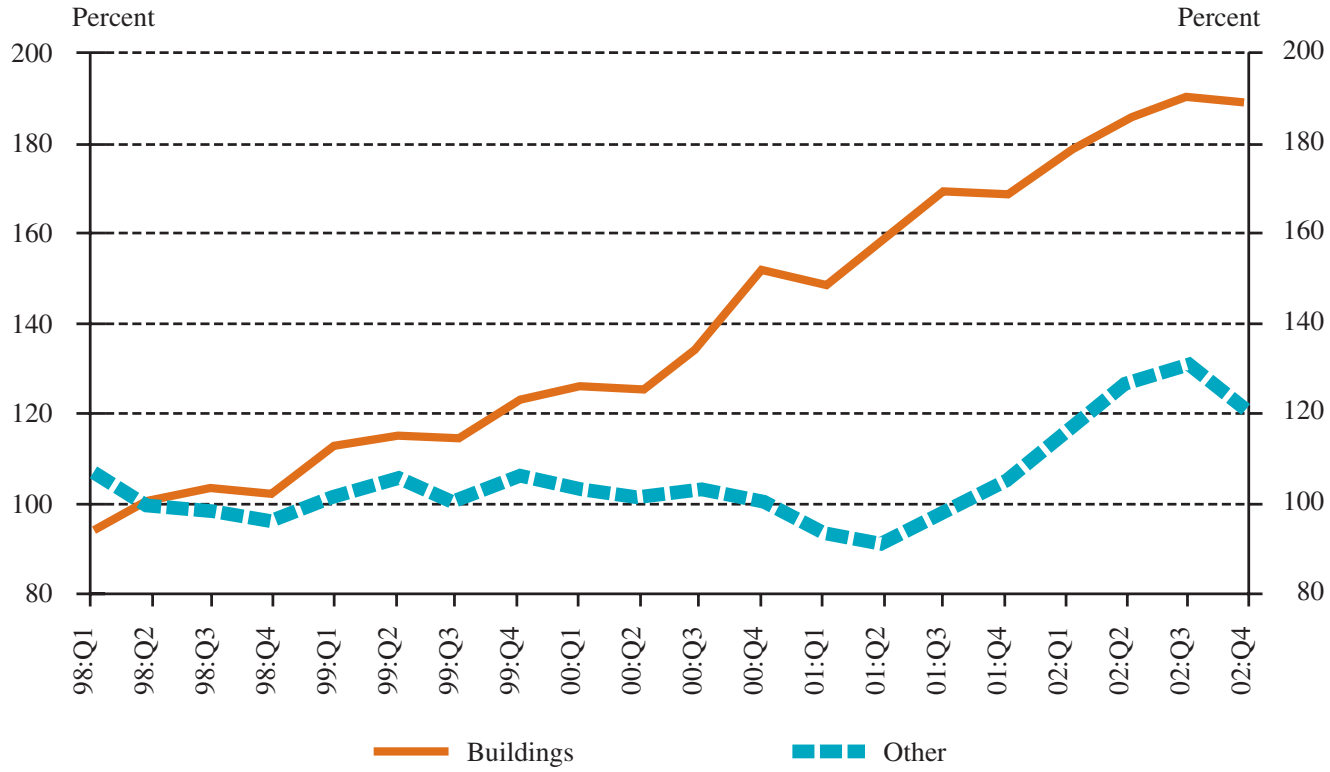


Chart II-21 **Construction output by main groups* (1998=100)**



* *'Other' contains road, railway and water structures*

III. Labour market and competitiveness

In the period between 2001 and 2004, labour market processes have been and will be subject to the delayed effects of the external cyclical slowdown, the consequences of forint appreciation and the impact of a considerable rise in the minimum wage in 2001–2002.[16] The extent to which the individual effects have influenced and will influence these processes is difficult to gauge separately.

International experience shows that the labour market reacts to factors influencing its operation with some delay. As presented in detail in the Bank's successive Reports prepared after the widening of the exchange rate band, both the manner and extent of labour market adjustment are of key importance in terms of the real economic costs of the process of disinflation. The Bank suggested that enterprises were likely to react to any rise in the relative cost of labour by employment reduction if the adjustment of wage-setting practices to lower inflation became a protracted process. As a result, output might also decline, and growth might fall victim to disinflation to a larger extent. It seems that current labour market processes fall into this pattern of trends. Despite the process of disinflation, the past 18 months have seen a fast increase in nominal wages, which have only decelerated slightly in the private sector, with moderate labour demand and unemployment on the rise.

Table III-1 **Summary labour market indicators (Percentage changes on a year earlier)***

	MNB estimate	Projection			MNB estimate	Projection	
		February *Report*			Current *Report*		
	2001	2002	2003	2004	2002	2003	2004
Manufacturing							
Employment**	-0.7	-2.0	-1.3	-0.2	-1.9	-1.8	-0.6
Wage inflation**	14.4	11.9	6.9	4.9	11.8	7.5	5.4
ULC***	9.8	7.9	1.1	0.3	7.6	0.9	-0.1
Market services							
Employment**	2.9	1.4	1.0	0.3	1.6	1.0	0.1
Wage inflation**	14.8	13.6	8.7	5.8	13.7	9.9	7.4
ULC***	11.3	9.3	4.6	1.9	9.3	6.0	3.6
Private sector							
Employment**	1.1	-0.3	-0.1	0.1	-0.2	-0.4	-0.2
Wage inflation**	14.6	12.9	7.8	5.4	12.8	8.8	6.5
ULC***	10.4	8.4	2.9	1.2	8.2	3.5	1.9

* *Annual average changes often fail to reflect actual processes faithfully owing to base effects. Level- and short-based (e.g. quarter-on-quarter) indicators in the relevant sub-chapters offer a more accurate picture.*
** *Computed from CSO figures on the basis of the Bank's own estimates (See Manual to Hungarian Economics Statistics).*
*** *ULC: Nominal increase in labour cost per unit (value added) in forints.*

[16] The entire Chapter III. has been devoted to the private sector. Employment and wage developments in the government sector are presented in Chapter II., Fiscal Stance.

Fiscal policy, which was expansive last year and is expected to be slightly restrictive this year and in 2004, has manifested itself partly in a dramatic rise in public sector wages, which may function as an example for the private sector, especially, for market services.

However, since the second half of 2002, wage adjustment in certain parts of the private sector has seemed be occurring faster than what was seen earlier. Wage increase in manufacturing has been conspicuously slower. But, according to the latest (February) data, the downward tendency in manufacturing wage inflation has become uncertain. At the same time, wage inflation has been stagnating at a high level in market services.

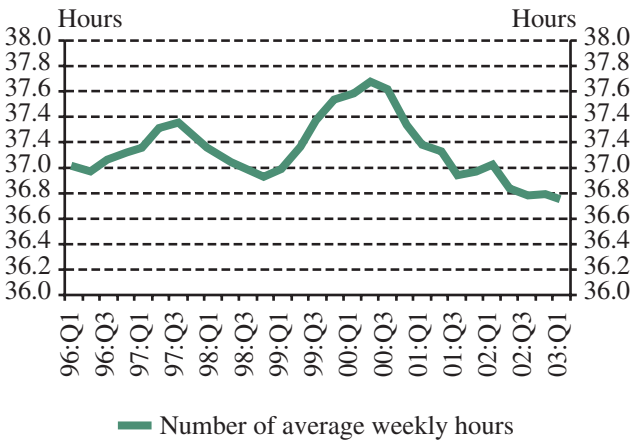
The most recent business surveys by TÁRKI suggest that inflation expectations and planned wage increases have weakened compared to the previous period.

In sum, the Bank has increased its earlier 7.8% wage inflation projection for 2003 to 8.8%, as recent data reveal no discernible signs of a significant slowdown in wage inflation in market services. Moreover, as noted above, nor do the February data suggest a marked slowdown in manufacturing wages. The Bank has also increased its earlier 5.5% projection for 2004 to 6.5 %, as now it expects less rapid wage adjustment. Special importance has been attached to the adverse effects of real appreciation on corporate profitability and the increase in labour reserves in the projection.

LABOUR USAGE

No major changes have occurred in labour usage trends since the previous *Report*. The average number of working hours, which measures the intensity of labour usage, is usually a reliable indicator of developments in business cycles. In manufacturing, the average number of hours worked by manual workers remained nearly the same at end-2002 and early this year.[17] Relying on the data available at the time of preparing the previous *Report*, the Bank did not rule out that, in line with developments in external demand and manufacturing output, there had been a turnaround in the development of working hours. This has not, however, been evidenced by the most recent data available on working hours. The latest information available on production, too, points to the uncertainty of a short-term business cycle outlook.

Chart III-1 **Average weekly hours worked by manual workers in manufacturing***



* *Statistical methods were used to recalculate data for businesses employing over 5 people (source of basic data: CSO). Factual data were used for the period leading to February, whereas statistical methods were employed to estimate March data.*

Labour demand in the private sector increased slightly in the final months of 2002.[18] However, seeing that employment is somewhat late in responding to cyclical changes, no significant changes in employment are projected for either 2003 or 2004 in the private sector overall. The Bank's projection allows for the latest research results which indicate that, although the short-term labour market behaviour of Hungarian companies has become more or less similar to that of corporations in developed market economies, such behaviour is still likely to be unstable in the long run. This means that the labour demand of enterprises begins adjusting to declining output relatively quickly, while the growth elasticity of such demand is rather low.[19] As a result, the lacklustre economic growth in 2001–2002 may easily have further future repercussions on employment.

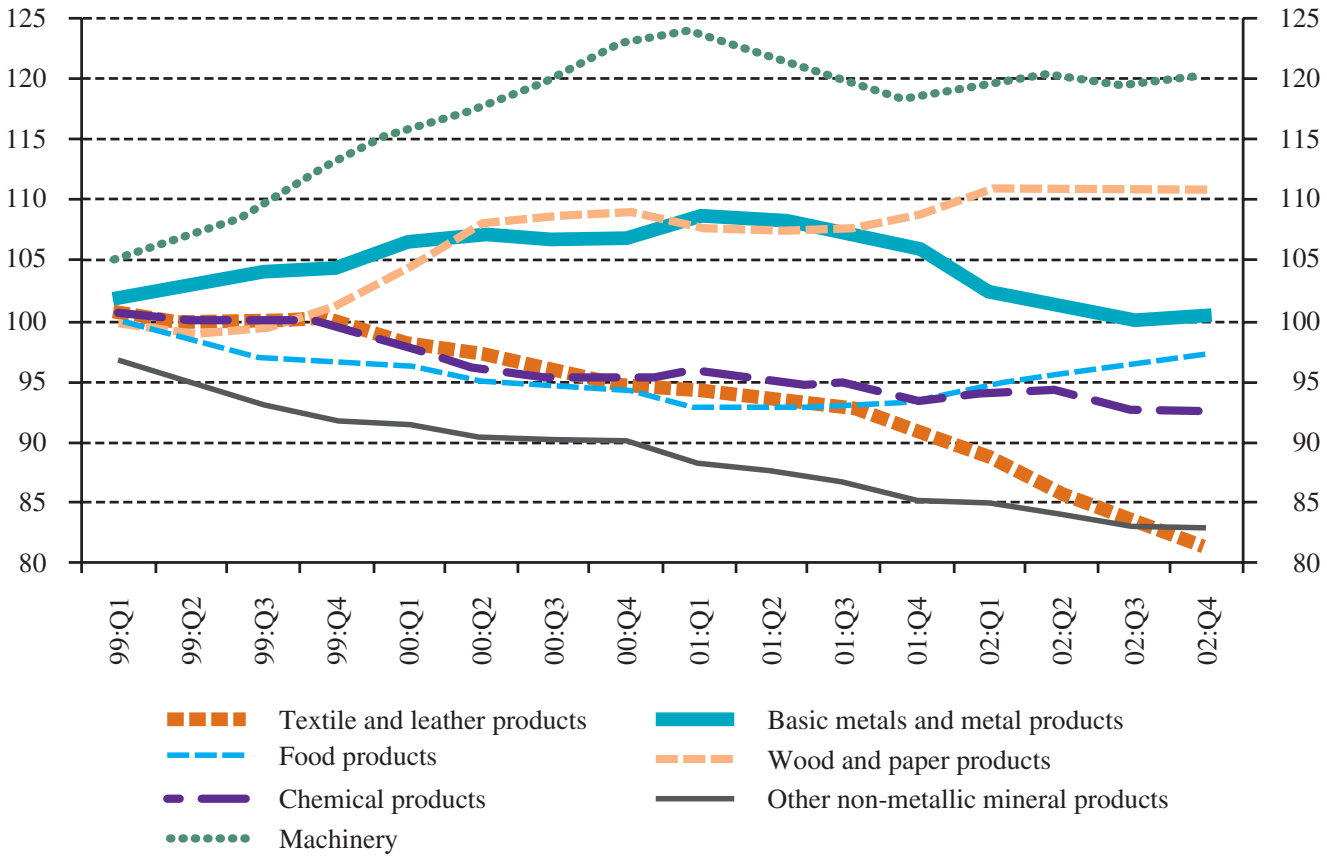
The decline in demand for labour force in manufacturing continued. As a result, the level of employment and total number of hours worked diminished further.[20] At present, the delayed effects of cyclical slowdown, the impact of rises in the minimum wage pushing up the actual level of wages, a rapid rise in labour costs and, to some extent, deteriorating competitiveness that can be attributed to the forint exchange rate appreciation have combined to shape these employment trends in the sector.

Last year's employment reduction in manufacturing shows substantial sectoral differences. There are two sectors, which the Bank views as labour-intensive, where employment has been falling significantly since mid-2001 – one is textile and clothing, and the other is metallurgy (basic metals and fabricated metal products); *(see chart III-2)*.

The Bank has made a slight downward modification of its manufacturing employment projection for 2003 compared to the previous *Report*. This is because deteriorating competitiveness and a rise in the relative price of labour appear to be holding employment slightly

[17] CSO factual data were used for the period leading to February, whereas statistical methods were employed to estimate March data.
[18] Early private sector employment figures in labour statistics are tentative, with late corrections being the order of the day. Data on the first few months and/or Q1 are rather 'noisy'. When seasonally adjusted, they often prove to be 'outliers'. Therefore, data cannot be properly evaluated on either market services, or the aggregate level of the private sector on the basis of the January-February 2003 figures.
[19] G. Kőrösi, Corporate labour demand, Budapest Working Papers on the Labour Market 3/2000; G. Kőrösi, Labour Adjustment and Efficiency in Hungary, Budapest Working Papers on the Labour Market 4/2002.
[20] Based on institutional labour statistics.

Chart III-2 Employment in manufacturing sectors* (1998 Q1 = 100)



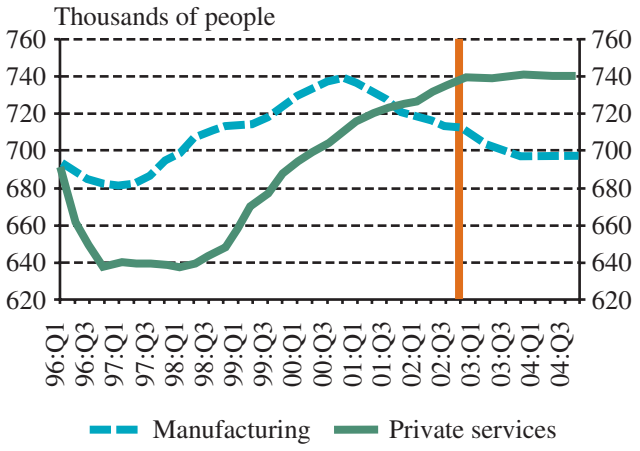
* *Full-time employees.*

more firmly in check than expected. The Bank's previous projection already allowed for the employment reduction that took place early this year. Judging from mass layoffs planned for the coming months and anecdotal information, employment is likely to fall more significantly throughout the year than projected by the Bank.

Though data on external demand and production suggest that there has already been a turnaround in the business cycle in manufacturing, employment in manufacturing is likely to remain unchanged rather than take off even in 2004, owing to the delayed impacts of the business cycle, the dampening effect of the currency's real appreciation on economic activities in general as well as the low degree of growth elasticity of labour demand *(see chart III-3)*.

Due to the strong conditions in the domestic business cycle, employment and the number of working hours in the market services sector increased slightly more markedly at end-2002 than expected earlier. By contrast, in 2003 a slower rise in consumer demand and high unit labour costs are likely to put a brake on the dynamic increase in employment in the market services sector. Anecdotal information from early 2003 about major planned layoffs also point to a more moderate increase in employment. In line with its previous projection, the Bank expects employment to remain flat in the market services sector in 2004, reflecting stagnating economic growth.

Chart III-3 Employment developments*



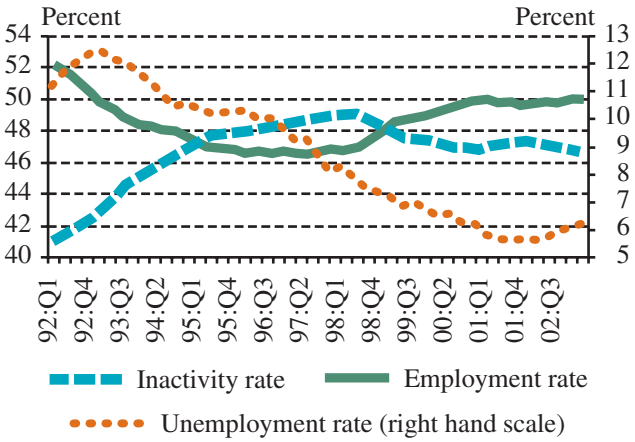
* *Source of basic data: CSO.*

Labour reserves and tightness

Since mid-2002 the economy has seen a steady expansion of labour reserves. The unemployment rate increased in the second half of last year and early this year.[21] Similar tendencies are discernible in unemployment registered by labour offices. Unemployment has not grown in the Hungarian economy since 1992. In the years after that, downward pressure on labour demand tended to manifest itself in growing inactivity. In 2002, the employment rate rose somewhat along with rising unemployment, resulting in a slightly increased rate of economic activity.[22]

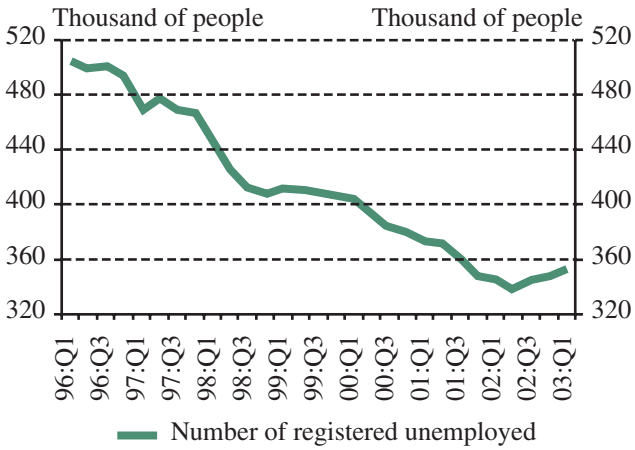
The current level of the unemployment rate is not considered high by international standards. In the first quarter of 2003, the unemployment rate was 6.2%, which for instance was 1.9% lower than the rate in the European Union in February. Nevertheless, the degree of economic activity in the working age population is quite low in Hungary. However, according to research, inactive people cannot necessarily be considered as effective labour reserves in terms of restraining wage inflation.[23]

Chart III-4 **Employment, inactivity and unemployment***



** Based on CSO's labour force survey.*

Chart III-5 **Changes in registered unemployment***



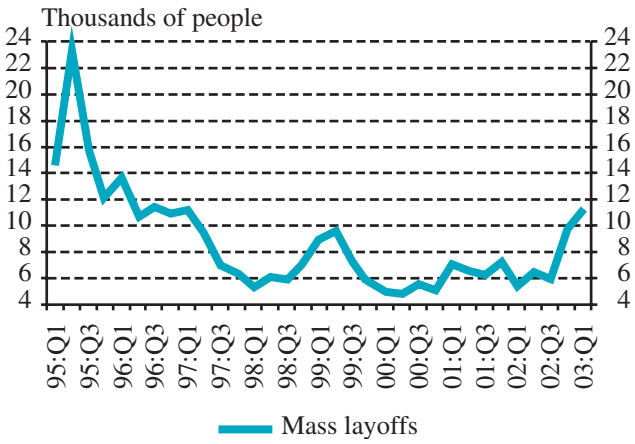
** Based on Employment Office data.*

The number of persons affected by announced mass redundancies increased significantly in November 2002 and February 2003. As presented in the previous *Report*, it is safe to assume that the rise in the number of planned redundancies can, in part, be attributed to the delayed effects of the slowdown in the global business cycle. Furthermore, labour costs increasing far in excess of productivity growth and deteriorating competitiveness induced by real appreciation may also have contributed to this rise.[24]

No sectoral breakdown of planned mass redundancies is available. Anecdotal evidence, however, suggests that, while planned employment reduction primarily affected manufacturing activity late last year, significant staff cuts were planned early this year in certain services, for example, in telecommunications and financial services, as well as the energy sector. Meanwhile, the number of reported unfilled vacancies has decreased slightly *(see chart III-6 and III-7)*.

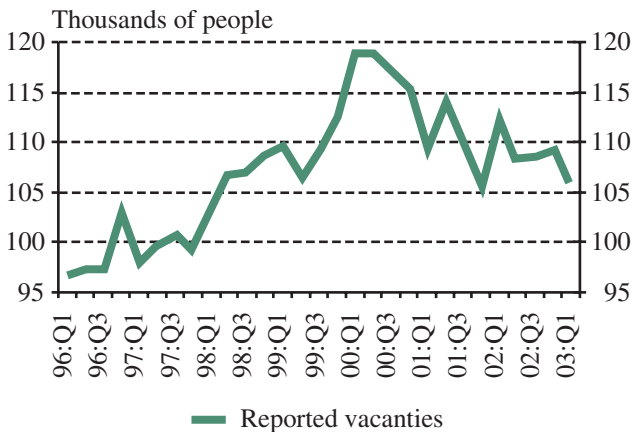
[21] Based on CSO's Labour Survey (ILO definition).
[22] In part, this may also be accounted for by the fact that there was no female age group which, pursuant to statutory regulations for the transition period following the raise in the retirement age, reached the age of retirement.
[23] B. Ferenczi, Labour Market Developments in Hungary from a Central Bank Perspective, MNB Working Papers, 5/1999.
[24] However, it should be noted that, on the whole, the level of the indicator is very low, hence it is rather susceptible to such announcements.

Chart III-6 Announced mass redundancies*



* *The number of people included in the reports filed in a given quarter to the Employment Office (Source: Employment Office).*

Chart III-7 Reported unfilled vacancies*

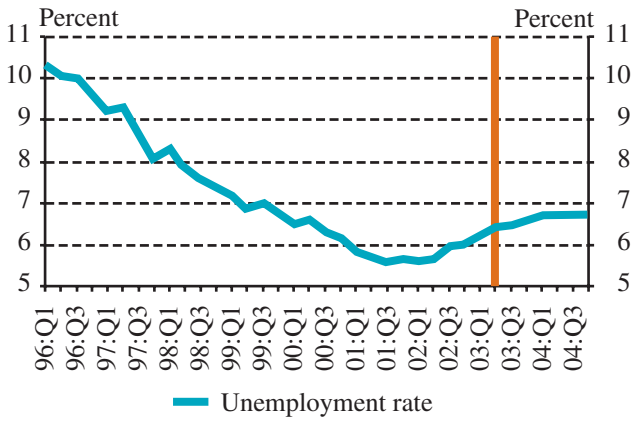


* *See note for previous chart.*

The data clearly suggest that labour market tightness has been easing recently, which in turn can curb wage inflation. On the basis of the anticipated developments in labour demand and the labour force, unemployment is expected to continue to rise in 2003 and stagnate in 2004 *(see chart III-8).*

Whether cyclical unemployment would later be absorbed owing to an upswing in business activity or to what extent it is likely to transform itself into permanent structural unemployment (known as the hysteresis phenomenon) depends on labour market flexibility.

Chart III-8 Projected developments in the unemployment rate*



* *ILO definition, based on the CSO's labour force survey.*

WAGE INFLATION

Since the second half of last year there have been signs in the private sector that the process of adjusting wage-setting practices to lower inflation has accelerated. Nevertheless, average wage inflation in the private sector in 2002 stood at 12.8% compared to 14.6% in 2001.

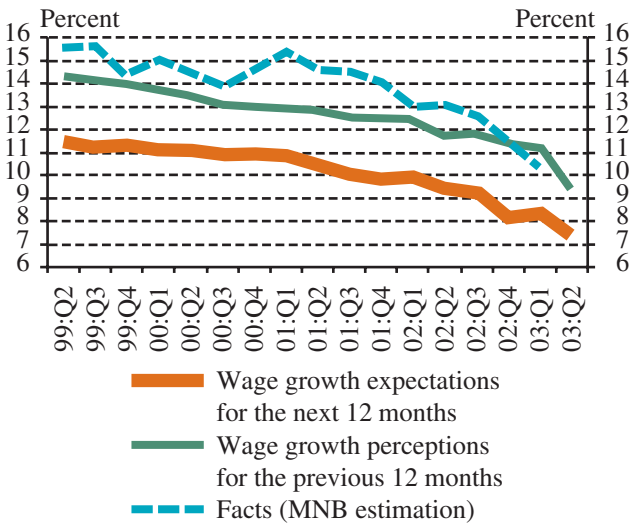
In 2002, real wages increased far more than productivity growth mainly because the inflation expectations of enterprises decreased slowly, despite the disinflation process. According to the latest survey results, the pull effect of considerable wage raises in the public sector was a further possible reason for the significant wage increase in the private sector.[25] Survey results also indicate that the impact of rises in the minimum wage boosting the actual level of wages was concentrated mainly in certain industries and groups of enterprises.[26] In 2003, however, these measures are likely to influence wage increases by indirect effects.

In formulating its 2003 wage inflation projection, as in the previous *Report* the Bank assumed that businesses' nominal wage adjustment to lower inflation would be stronger this year. This is because the significant increase in labour costs over the past two years has led to lower corporate competitiveness, which, combined with modest economic growth and disinflation, may leave enterprises more reluctant to raise wages this year.

The Bank has raised its wage projection of 7.8% in its February *Report* to 8.8%. Note that even in the higher forecast the actual (quarter-on-quarter) rate of wage inflation drops significantly. Upward pressure on wage inflation projection has been generated by the fact that, considering February figures, the current projection assumes a somewhat slower path for wage adjustment than the previous *Report*.

In formulating its forecast for wages, the Bank also allowed for the fact that the easing of market labour tightness and rising unemployment would put a brake on wages. TÁRKI's most recent (April) survey also suggests that, concurrently with lower inflation expectations, the extent of planned wages increases at business enterprises over the next 12 months is smaller compared to what it was in January.

Chart III-9 **Firms' perception and expectation of wage growth (TÁRKI survey)***



** On the basis of a survey of inflation expectations by TÁRKI. Actual data for the first quarter of 2003 is MNB estimation on the basis of CSO data available up to February.*

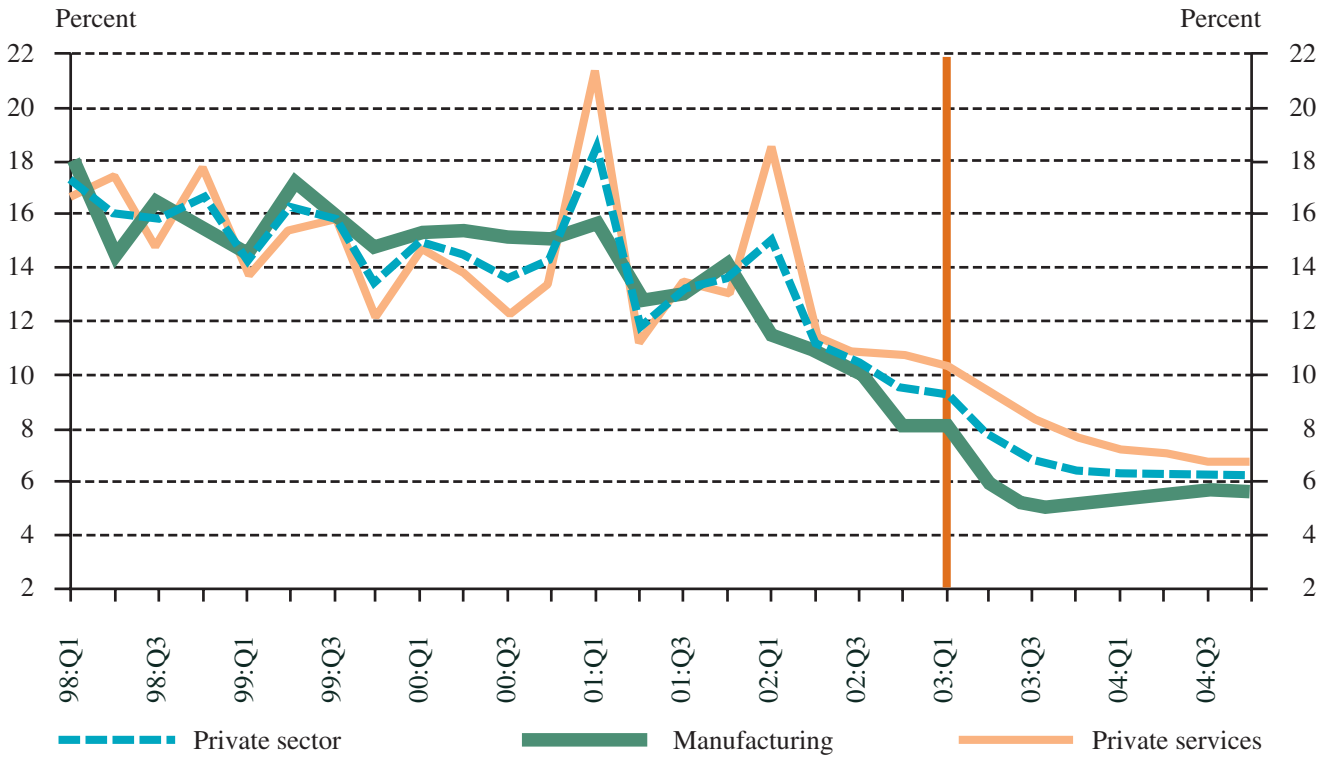
The Bank has revised up its wage projection of 5.5% for 2004 to 6.5%. The underlying reason for such a substantial modification was this year's more sluggish wage adjustment. At the same time, however, in preparing the forecast, the Bank also allowed for the adverse effects of real appreciation that had materialised on corporate profitability and an envisaged increase in labour market reserves.

Looking at developments by major sectors, in accordance with the Bank's expectations, wage inflation has abated considerably since the second half of 2002, mainly in manufacturing. Here, profits earned from

[25] É. Palócz–I. J. Tóth, Components of the wage growth in 2002 and expected wage raise for 2003 on the basis of a corporate survey, Kopint-Datorg – MKIK GVI, February 2003 (http://www.gvi.hu/)

[26] For this reason, labour cost increased mainly for medium or large enterprises in Hungarian ownership with considerable proportion of exports in sales.

Chart III-10 **Wage inflation forecast (Annualised quarter-on-quarter growth rates)**



exports have dwindled significantly over the past two years owing to slack external business activity, the appreciation of the exchange rate of the forint and real labour costs increasing far in excess of productivity growth.

The Bank has only slightly raised its projection of around 7% average wage inflation in manufacturing in 2003. Due to the aforementioned factors, economic constraints holding nominal wage increase in check are likely to prove rather strong, which may in turn lead to a further marked decline in wage inflation in 2003. The Bank assumes that, similar to what happens in the case of a cyclical slowdown, there will also be a lag in the effects of an upswing in external demand on wage-setting behaviour, and thus rules out more vigorous wage growth in this sector in 2004.

For the time being, no signs indicating significantly lower wage inflation are discernible in market services. The Bank presumes that stagnating wage inflation is closely related to buoyant consumer demand in particular, as well as the demonstrative effect of strong growth in public sector wages. Allowing for the fact that wage inflation has stagnated at a high level recently, the Bank has raised its projection for wage inflation in market services in 2003 by 1.2% to approximately 10%. This projection continues to be based on the assumption that actual (quarter-on-quarter) wage dynamics in the sector lose momentum in the course of the year; however, the pace of such slowdown is more sluggish than forecast in earlier projections. Due to the spillover effects of the higher wage increases in 2003, the Bank has also raised its projection for wages in market services in 2004 relative to its previous *Report*.

In the Bank's view, the uncertainties surrounding the centrally projected path of wage inflation are symmetrical. Wage inflation exceeding the Bank's basic projection may emerge if major changes in the wage-setting practice of firms take longer to occur than expected, in part, owing to persistently high inflation expectations. If, however, unemployment rises at a faster-than-expected rate, that will represent a downside risk to the central projection for wage inflation.

UNIT LABOUR COSTS AND COMPETITIVENESS

The growth rate of the private sector unit labour costs decelerated considerably in 2002. The declining rate of growth was generated by a rise in demand and better productivity on the one hand, and a decrease in the rate of wage increases on the other. In the Bank's view, the moderate growth in unit labour costs (ULC) put an end to the downward trend in corporate profitability at end-2002.

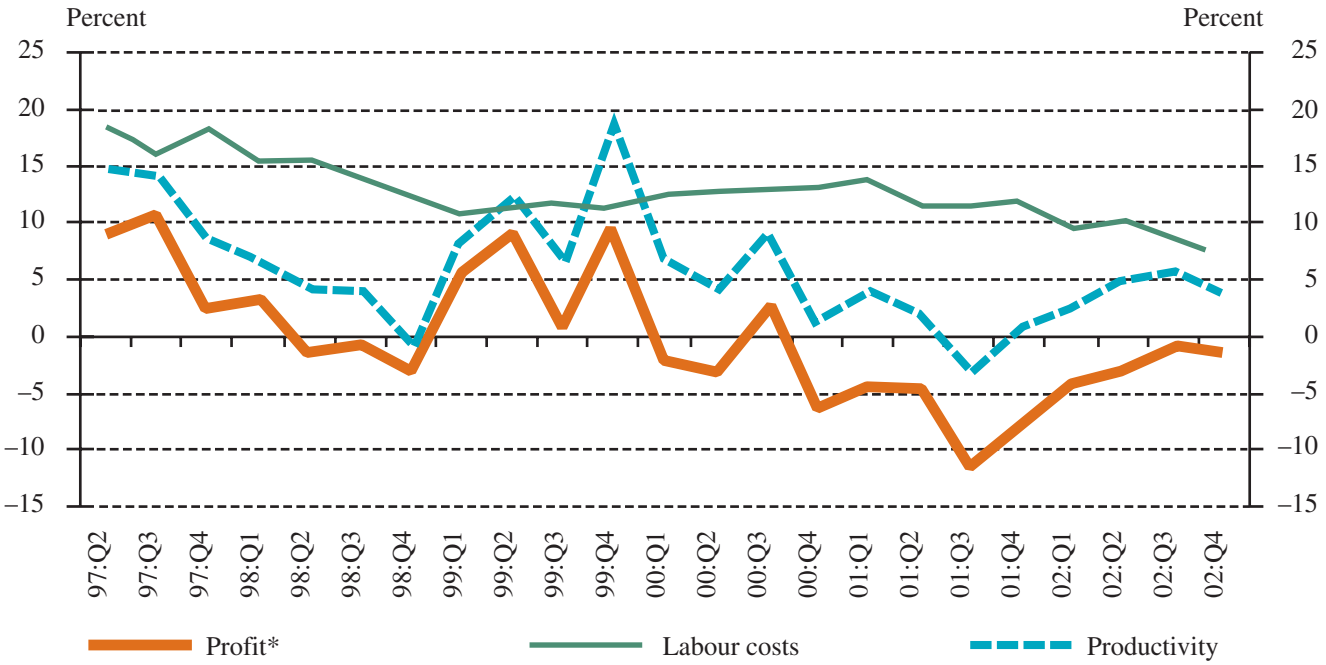
The forecast assumes growth in private sector nominal ULC of 3.6% and 1.9% in 2003 and 2004, respectively. Unit labour costs in manufacturing are expected to grow relatively slower, by roughly 1% and 0% in 2003 and 2004, while ULC in market services are anticipated to rise by 6% and 3.6%, respectively.

In parallel with lower manufacturing ULC, the Bank also forecasts that foreign unit labour costs will be lower in the following years. Consequently, the cost competitiveness of manufacturing companies does not differ significantly from the previous forecast. Accordingly, the Bank expects the ULC-based real exchange rate to depreciate by 3.3 percent in 2003 and by 0.7 percent in 2004 (Q4 indices). On the other hand, price-based competitiveness will deteriorate in the following years, as a result of the slow approximation of domestic inflation to the EU level.

Declining external demand, exchange rate appreciation since mid-2001 and a steep rise in wages have reduced corporate profitability over the past two years. Though consumer demand has remained high, an increase in the minimum wage has resulted in upside pressure on the cost side in the market service sector. Consequently, as early as late 2001 the Bank already assumed that companies would begin to adjust to the situation (see the November 2001 *Report*). However, this process has taken longer than expected. In addition, a considerable portion of the adjustment of labour costs materialised through employment reduction.

In 2002, unit labour costs only increased slightly in both manufacturing and market services. Stronger business activity in manufacturing and continuing cuts in the work-

Chart III-11 **Productivity, wages and profit in manufacturing (Annualised quarter-on-quarter growth rates)**

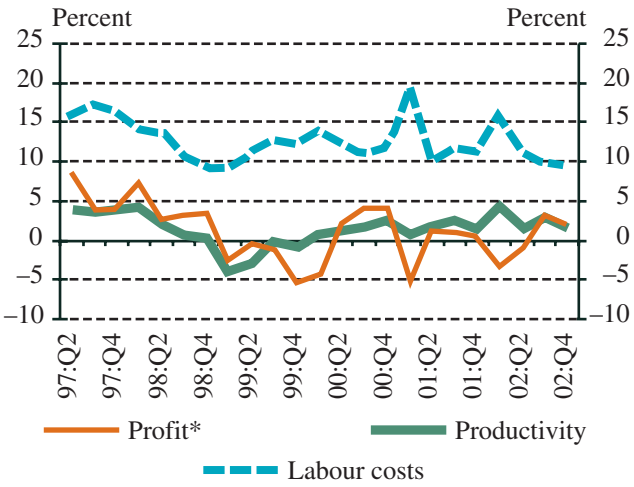


* *Changes in the rate of profit have been approximated by the inverse of changes in (real) unit labour costs deflated by the price index of traded goods. In fact, the category included in the chart denotes a term whose meaning is narrower than that of the rate of profit, for it does not comprise cost elements (e.g. the costs of intermediate products) other than labour.*

force resulted in a considerable improvement in productivity. Furthermore, in the second half of the year the increase in wages tapered off. The Bank feels that, as a result of this slowdown, the deterioration in corporate profitability, which had been declining continuously since year-end 2000, came to a halt by Q4 *(see chart III-11)*.

As a result of employment expansion, productivity in market services improved more slowly than in manufacturing, despite the fact that consumer demand generated a steady increase of approximately 4% in output. Wage adjustment, however, was slow and consequently unit labour costs in Q4 still increased twice as fast as manufacturing ULC. Nevertheless, corporate profitability improved in 2002 H2, primarily owing to higher market services inflation.

Chart III-12 **Productivity, wages and profit in market services (Annualised quarter-on-quarter growth rates)**

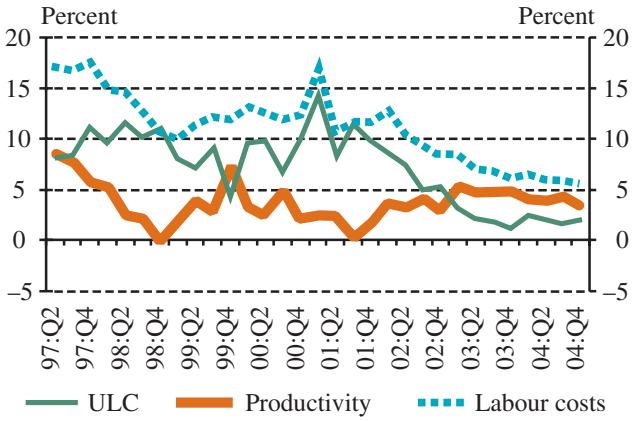


* *Changes in profits have been approximated by the inverse of changes in (real) unit labour costs deflated by the price index of market services. In fact, the category included in the chart denotes a term whose meaning is narrower than that of the rate of profit, for it does not comprise cost elements (e.g. the costs of intermediate products) other than labour.*

In the projection for domestic unit labour costs, the Bank assumed that productivity would increase and further adjustment of wage costs would occur in both sectors. In respect of private sector unit labour costs, the MNB expects growth to amount to 3% and 0.7% in 2003 and 2004, respectively *(see chart III-13)*.

The cost-based external competitivness of manufacturing continued to deteriorate slightly in 2002 Q4. While

Chart III-13 **Productivity, wages and unit labour costs in the private sector (Annualised quarter-on-quarter growth rates)**



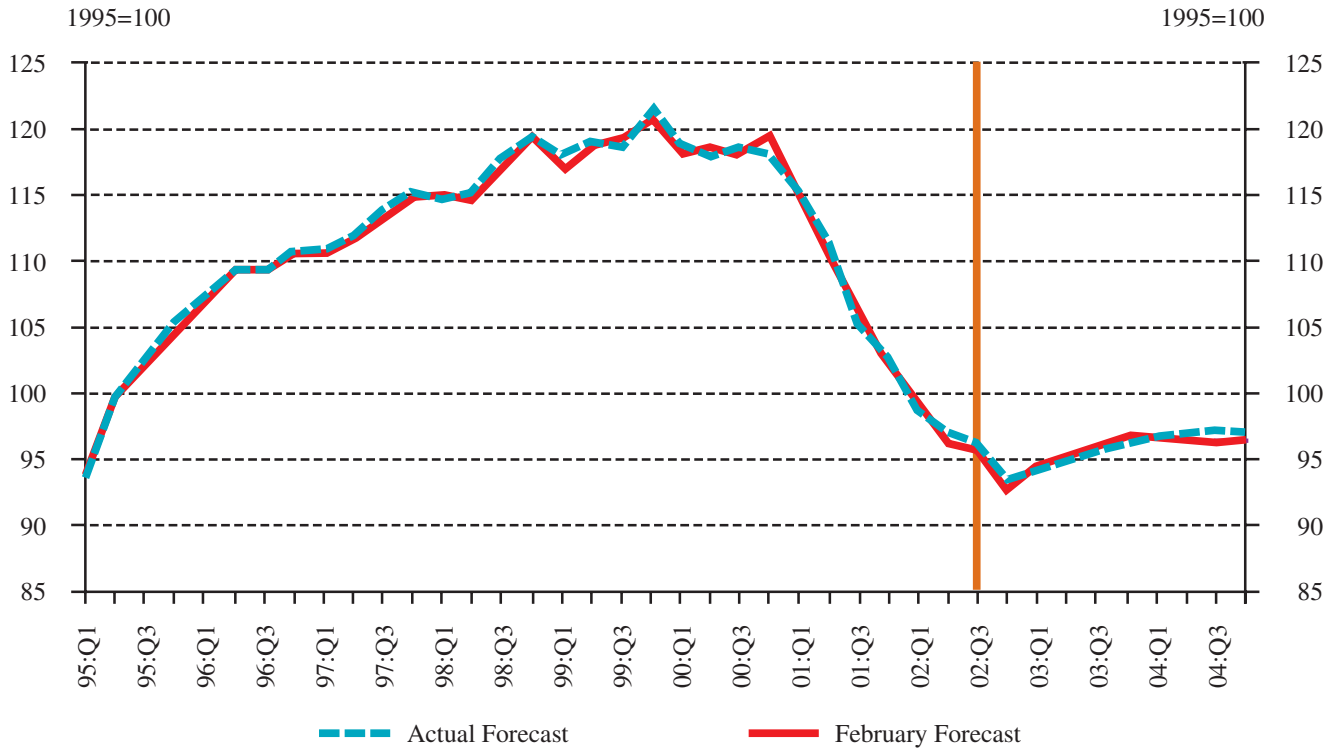
* *The number of people included in the reports filed in a given quarter to the Employment Office (Source: Employment Office).*

domestic unit labour costs only increased moderately, foreign wage costs rose at a slower-than-expected rate. Thus, the 2.7% appreciation in the effective exchange rate of the Hungarian forint led to deteriorating competitiveness. In total, the ULC-based real exchange rate has appreciated by approximately 16% over the past two years.

Relative to the forecast in the February Report, there has been no significant change in the projection for manufacturing competitiveness. The Bank maintains its assumption that domestic unit labour costs will remain roughly the same, while foreign unit labour costs will increase. Accordingly, competitiveness is likely to improve in the coming period–real depreciation is projected at 3.3% and 1% in 2003 and 2004, respectively *(see chart III-14)*.

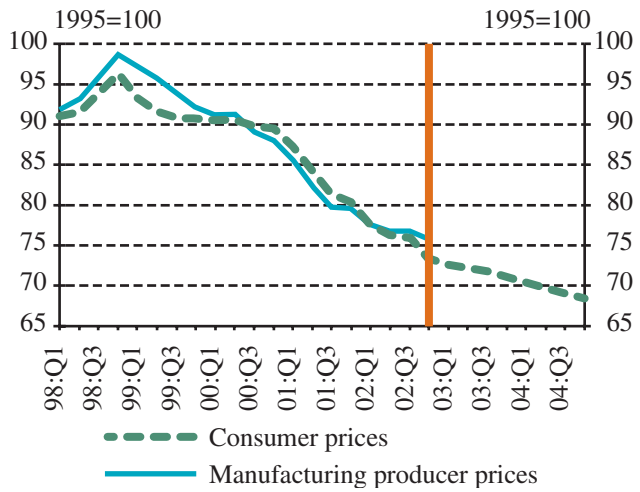
Price-based competitiveness deteriorated significantly in the last months of 2002, due to the strong year-end appreciation of the nominal effective exchange rate. The CPI-based real exchange rate has appreciated by approximately 13% since the widening of the band. As the growth rate of prices in the sector competing in foreign trade was moderate, the price competitiveness of manufacturing declined less markedly, by approximately 7%, than that of the whole economy. In early 2003, due to the weakening of the nominal exchange rate, price-based competitiveness did not deteriorate considerably. Over the long run, however, the Bank expects an annual real appreciation of 3% as a result of the slow disappearance of inflation differences *(see chart III-15)*.

Chart III-14 Unit labour cost based real exchange rate in manufacturing* (1995=100)



* An increase denotes real depreciation.

Chart III-15 Price-based real effective exchange rate indicators* (1995=100)



* An increase denotes real depreciation.

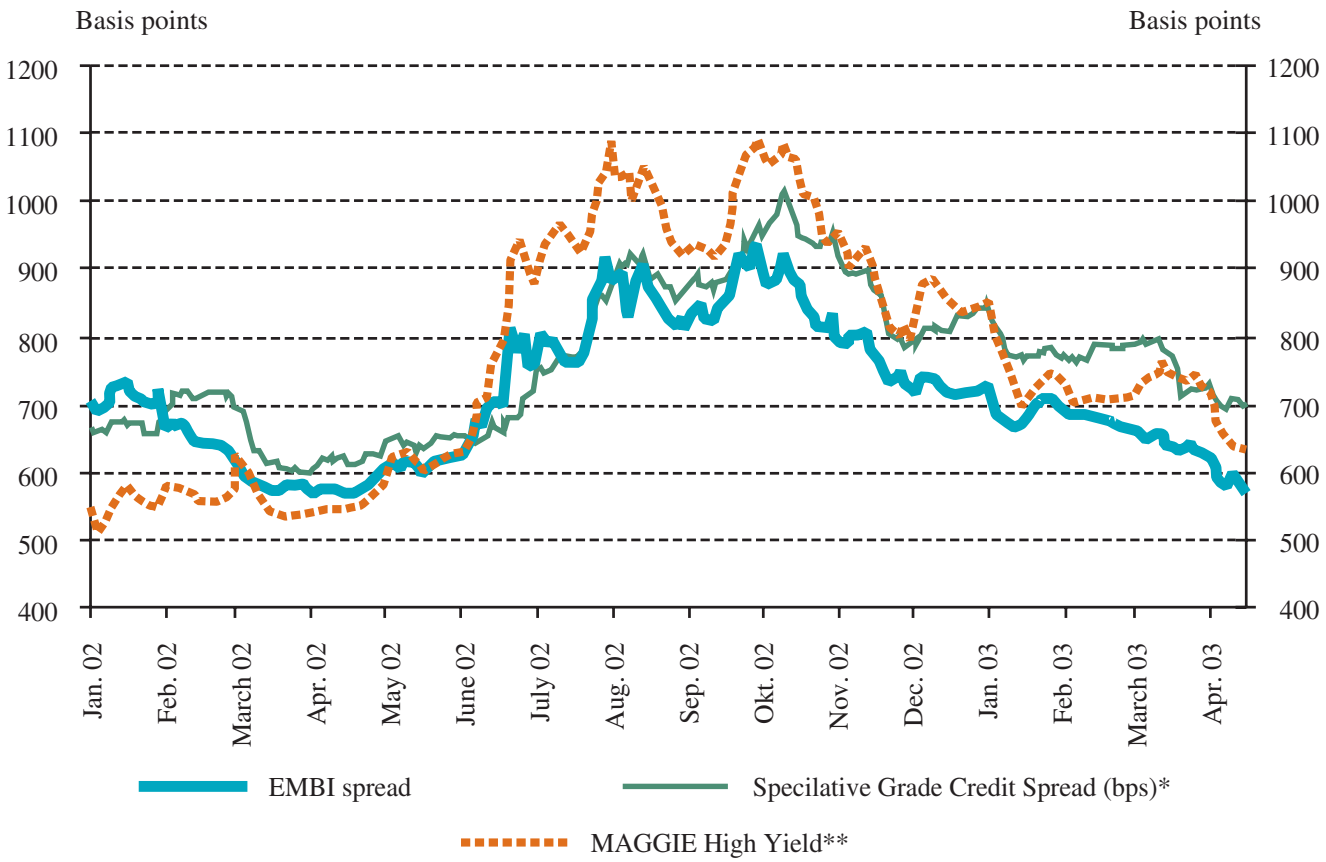
IV. Monetary developments

INTERNATIONAL ECONOMIC ENVIRONMENT AND RISK PERCEPTION

In small open economies such as Hungary, external demand for domestic assets is heavily influenced not just by domestic macroeconomic developments, but by the global economic environment, especially changes in returns on alternative assets and the 'risk appetite' of investors, as well. Through their effect on capital flows, these factors may influence the forint's exchange rate and domestic yields, which must be taken into account when reaching monetary policy decisions. Therefore, in the *Inflation Reports*, the MNB tries to assess recent and prospective changes in the external environment (focusing predominantly on euro-zone yields) and in risk sentiment (regarding both developed and emerging markets, as well as the CEE region and Hungary itself).

The downward trend in global risk indicators, first seen in last autumn, continued in 2003 Q1. The EMBI spread, regarded as the most widely used indicator of global 'risk appetite', sank below 600 basis points in April, a very low figure compared to recent years. There was a similar drop in the spreads on US and European bonds with a higher risk rating. This suggests that recent optimistic investor sentiment about higher-risk investments, including those in emerging markets, has remained unbroken. This sustained interest is due primarily to the worsening performance of overseas stock markets and the low level of interest rates in the US and Europe, which have led investors to look for higher-yielding instruments. Another factor is that the perception of some emerging countries has improved (thanks

Chart IV-1 **Global indicators of risk**



* *S&P Speculative Grade Credit Spread (bp).*
** *MAGGIE – Index of euro-denominated government and corporate bonds and mortgage bonds (bp), computed by JP Morgan-Chase.*

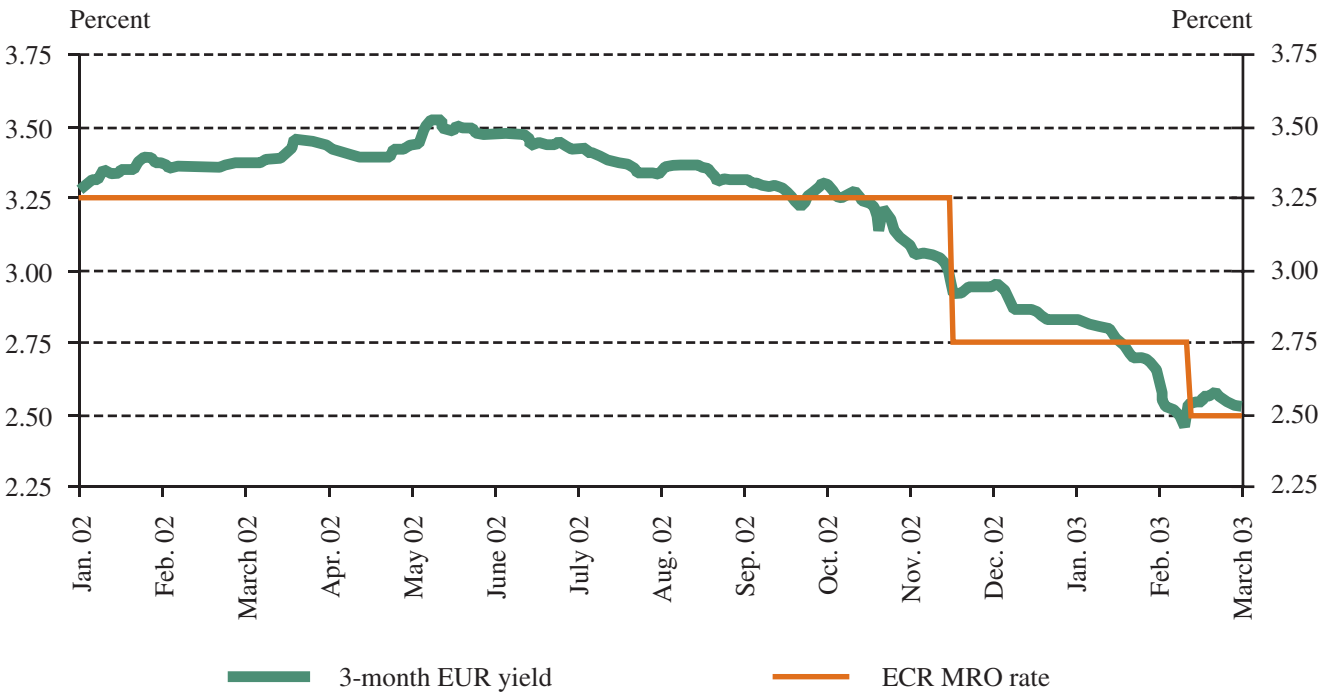
to financial reform in Brazil and the IMF aid to Turkey, for instance). In contrast with previous market expectations, the military conflict in Iraq has not caused the risk perception of emerging markets to worsen, partly because rising oil prices had a beneficial effect on the perception of a number of emerging oil exporter countries. The uncertainty felt at the time of the outbreak of the war was reflected in certain indicators, but as soon as the allies commenced operations and the first news of success appeared, the indicators resumed their downward trend, reflecting investor expectations of a rapid end to the war *(see chart IV-1)*.

One of the main reasons why investors turned from the advanced markets towards emerging countries was the string of unfavourable news and forecasts of a global economic slowdown. These included the April projection by the IMF with a downward revision of global economic growth for 2003 of 0.5 percentage points. The IMF forecast that any major recovery in growth would only start in 2004. Virtually all major economic regions faced a negative outlook for 2003, with projections for developed country growth revised down by 0.3–1.5 percentage points. Thus, the downward revisions to economic growth in the United States and the euro area were 0.4 and 1.2 percentage points, respectively.

Against such a background, the ECB's 25-basis-point interest rate cut in early March did not come as a surprise for European money markets. Market participants had already incorporated the move into their prices. Expectations of interest rate reduction had gained momentum in the second half of February, after the release of data reflecting sluggish European activity. In addition to the poor macroeconomic performance, higher geopolitical uncertainty was also one of the factors behind the stronger expectations. Due to poor economic performance last year and in early 2003, as well as the protracted effects of the appreciation of the euro against the US dollar in 2002, the ECB perceived no signs of any serious risk to inflation. However, expectations of further interest rate cuts have cooled down as inflation in the euro area remained unchanged in March (at 2.4%). Information currently available[27] suggests that market participants do not expect interest rate cuts in excess of 25 basis points for the remainder of 2003 *(see chart IV-2)*.

Hungarian financial markets have remained virtually unaffected by the accession-related developments taking place in Central and Eastern Europe since the publication of the February Report. The approval of the resolution passed by the Copenhagen summit on 12–13 December, inviting the ten accession countries to be-

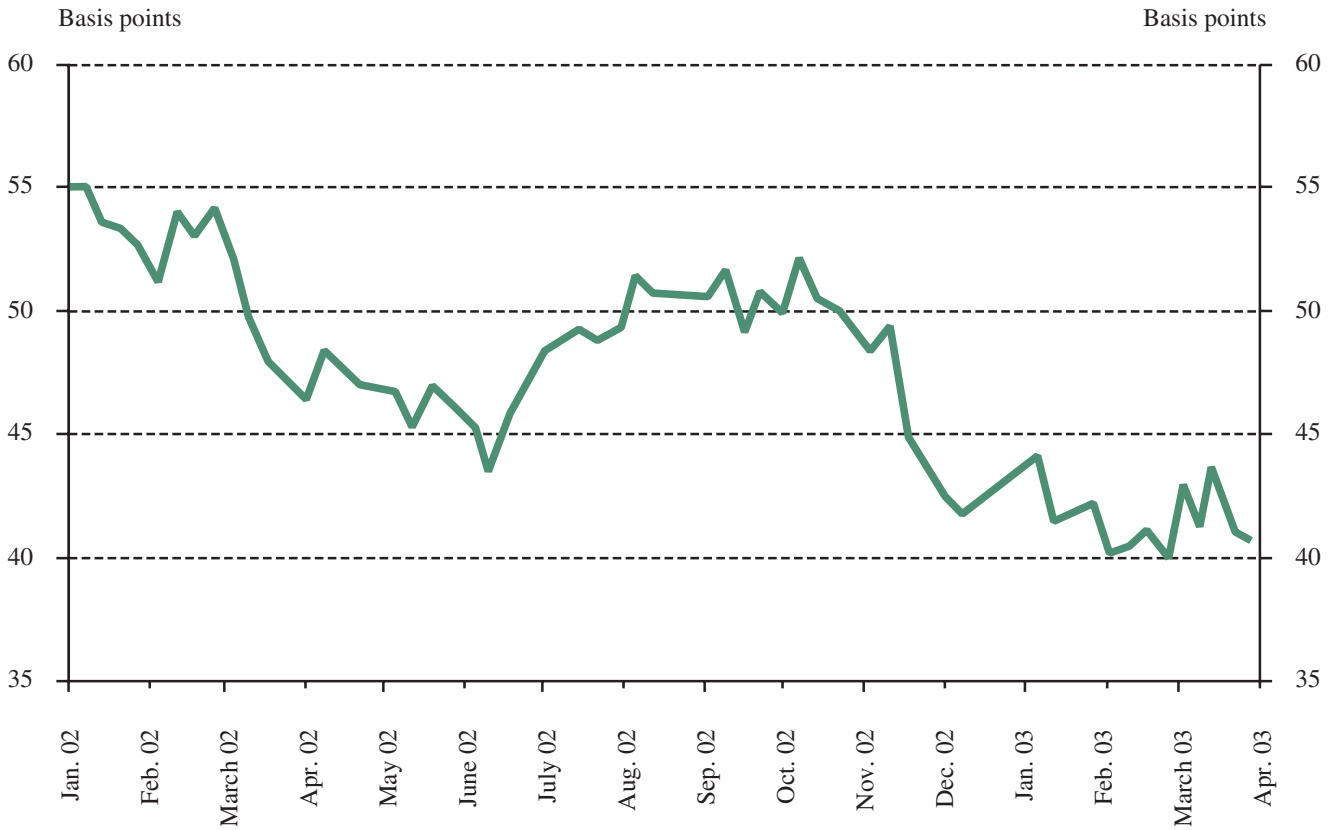
Chart IV-2 **ECB's main refinancing rate and short-term market rates**



Sources: Reuters, ECB.

[27] Three-month euro interest rate futures (LIFFE-EURONEXT) and the euro yield curve.

Chart IV-3 **Spread on Hungary's euro-denominated sovereign bonds**



come members of the European Union, removed virtually all obstacles to accession in 2004, putting an end to the uncertainty about the date. While passing this resolution probably improved the perception of investing in these countries, the subsequent referenda held in Malta, Slovenia and Hungary appeared to have no perceptible effect on either Hungarian yields or the exchange rate of the forint.

The political crises affecting some countries in Central and Eastern Europe in previous years had an adverse impact on the risk perception of the region as a whole, reflecting in a depreciation of the three main currencies over this period. However, developments in March 2003 point to a slight change in investor sentiment regarding this region. Although the exchange rate of the forint moved in strong correlation with that of the Czech crown and the zloty during the Iraq crisis, the political turbulence in Poland and the Czech Republic has had no lasting or dramatic effect on the forint's exchange rate.

Consistent with the above analysis, the period under review witnessed no significant change in the risk perception of the Hungarian government, with the spread in euro-denominated Hungarian government bonds remaining around a historical low of 40 basis points ever since publication of the February Report. This suggests that the January re-valuation speculation had no profound or long-lasting effect on country risk *(see chart IV-3)*.

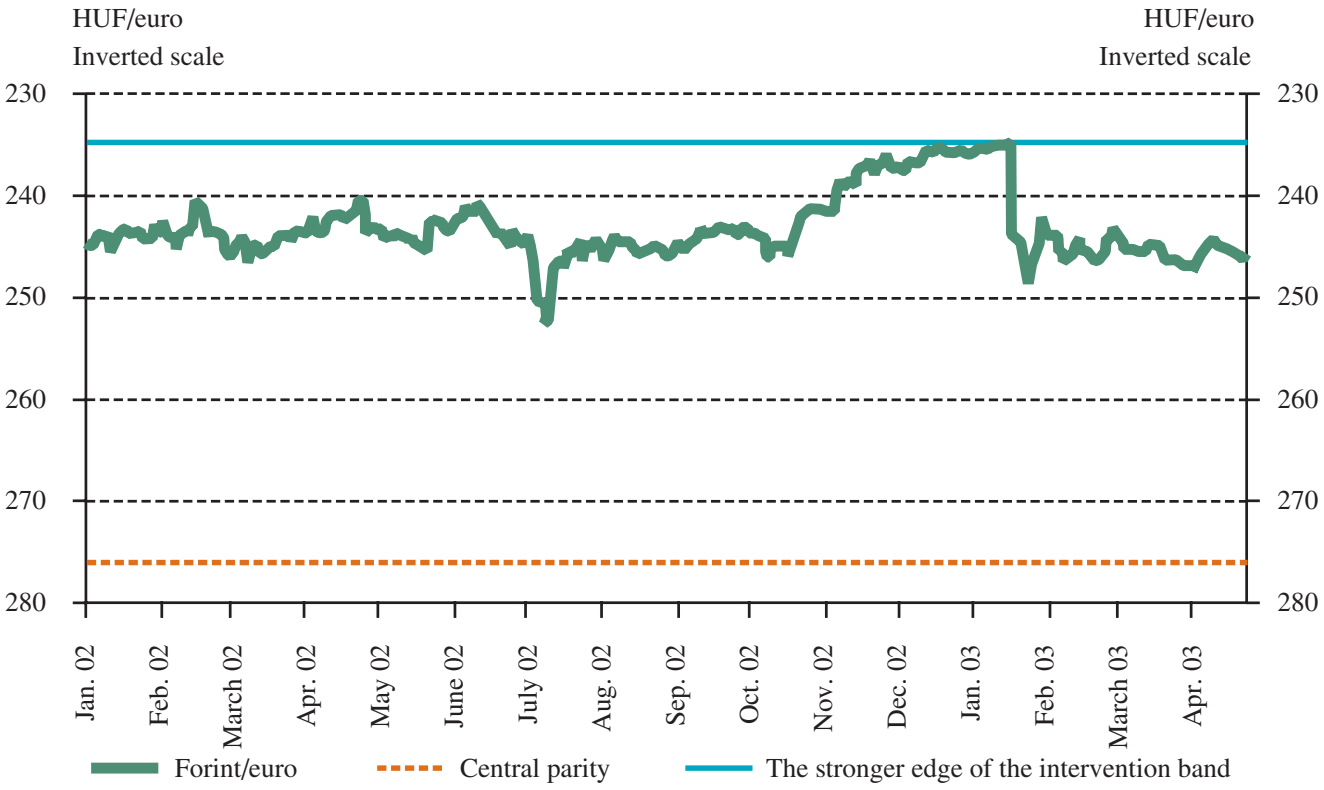
SHORT-TERM INTEREST RATE AND EXCHANGE RATE DEVELOPMENTS

During the one and a half months following the re-valuation speculation on 15-16 January, the MNB's interest rate and exchange rate policy was primarily aimed at restoring normal business operations and stabilising monetary conditions. These efforts have proved to be successful. With a more active presence in foreign exchange markets, the Bank was able to make the majority of the speculative capital leave the Hungarian banking system without threatening the stability of the forint's exchange rate. In addition, by restoring the former set-up of central bank instruments (the ±1% width of the overnight interest rate corridor, no quantity limits on the two-week deposit facility), it was possible to put an end to the instability that had begun to manifest itself at the short end of the yield curve.

The exchange rate of the forint has been exceptionally stable ever since early February, staying in a range of ±1% around a rate of HUF 245 per euro. This volatility appears to be quite low both historically and compared to that of the major currencies of Central and Eastern Europe (such as the Polish zloty and the Czech crown) observed during the same period. Regional and global political events, such as the Polish government crisis and the resulting significant weakening of the zloty, or news about the Iraq war, have triggered only minor movements in the exchange rate *(see chart IV-4)*.

This stability of the forint can be attributed to two factors. One key factor has been the successful resolution of the contradiction between the level of the exchange

Chart IV-4 **Forint/euro exchange rate**



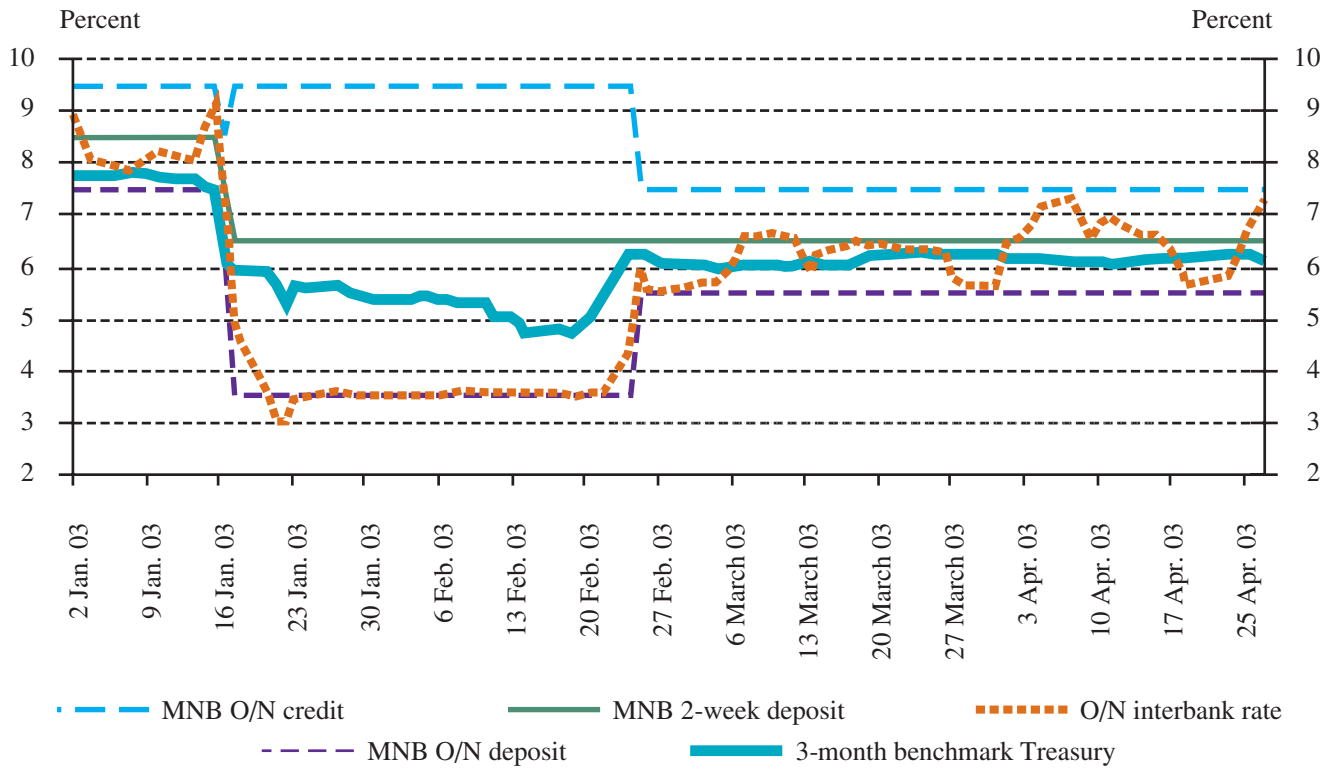
rate seen in the aftermath of fending off the re-valuation speculation and the inflation target for 2003. In its statement published in the February *Report*, the Monetary Council announced that due to recent developments and the constraint posed by the exchange rate band, the rate of inflation in 2003 would probably be above the target range. On the other hand, based on the assumption of an exchange rate of HUF 245 per euro at the Council's request, the inflation projection for end-2004 indicated a tolerable level within the target range. In subsequent statements, the Council also pointed out that this exchange rate, with other conditions also taken into account, appeared to be at a level sufficient for meeting the inflation target in 2004. These statements provided the market with verbal reassurance on several occasions about the level of the exchange rate, viewed not as desirable *per se*, but rather as consistent with the Bank's inflation targeting strategy now focussing on the target for 2004.

The other key factor lending stability to the forint was the Bank's active participation in foreign exchange markets. The over five billion euros that had poured into central bank overnight deposits during the re-valuation speculation posed a significant risk to stability, and would have pushed up sterilisation costs at the time of restoring the effective level of interest rates from 3.5% to 6.5% (see below). The Bank held auctions and used other market solutions in January to speed up the outflow of foreign capital. The MNB's presence in the foreign exchange market is presumed to be one of the contributory factors to the low volatility of the forint's exchange rate, as by selling euros, the Bank prevented potential depreciation.

In response to the re-valuation speculation, the Bank reduced the interest rates sharply. During the two days of the attack, the two-week deposit rate on the policy instrument was lowered by 200 basis points to 6.5%. At the same time, the effective reduction in the central bank rate was even larger due to a quantity limit imposed on the two-week deposits, equivalent to an average of the amounts deposited before the attack. Thus, only the overnight deposits, offering lower rates, absorbed the inflow of excess liquidity without any restrictions. Hence the overnight deposit became the effective central bank instrument. However, the yield on this instrument was also reduced when the overnight interest rate corridor was widened around the two-week deposit rate from ±1 to ±3 percentage points, bringing the total reduction in effective yields to 500 basis points *(see chart IV-5)*.

This large interest rate cut implemented by the central bank was naturally also reflected in the development of

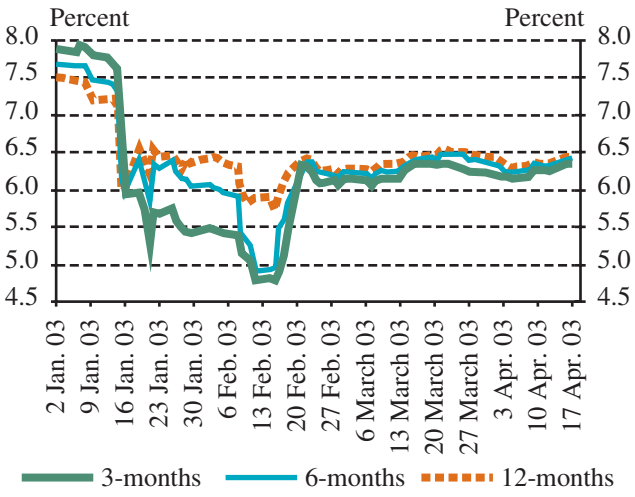
Chart IV-5 **Key central bank interest rates and short-term market rates**



short-term market rates. However, it was clear from the beginning that market participants perceived part of the reduction in effective rates from 8.5% to 3.5% as temporary, expecting the effective central bank rate to rise to 6.5% within a short time, once the limits placed on the amount of two-week deposits were lifted. Accordingly, commercial bank deposit and lending rates followed only the 200 basis-point drop in the two-week central bank deposit rate, in addition to the effect of the 50-basis-point cuts in November and December, which were also incorporated at that time. Yields on short-term government securities also reflected the temporary nature of the reduction. Even though three-month yields fell sharply, 6- and 12-month yields indicated significantly higher interest rate expectations, based on the assumption that the original central bank instruments would be restored. The Bank gained valuable time thanks to market participants' view of the rate cut as being temporary. Consequently, the Bank was able to facilitate the outflow of the speculative capital by selling euros, while causing the least possible disturbance in the market.

However, by mid-February, considerable uncertainty had emerged about the likely date of restoring the original central bank instruments. With the patience of banking sector and money market participants exhausted, 6- to 12-month yields had started to fall. As, by then, a large portion of the foreign speculative capital had been withdrawn from the country, at its meeting on 24 February, the Monetary Council decided to remove the quantity limit imposed on the two-week deposits and restore the overnight interest rate corridor to its pre-attack width of ±1%. This move returned the central bank instruments to their state before the re-valuation speculation, with the 6.5% two-week deposit rate again becoming the key policy rate.

Chart IV-6 **Short-term benchmark government security yields**



Restoring the original set of instruments has terminated the uncertainty surrounding the central bank's interest rate policy, quickly leading to a spectacular stabilisation of short-term rates in the range of 6% to 6.5%. The yield curve has assumed a nearly horizontal shape, unseen in recent years. This also means that the market does not expect the average rate on the two-week central bank deposit to change this year, an expectation also confirmed by Reuters' latest survey of macroanalysts. At the same time, this stability implies a much lower level of interest rates than before the re-valuation speculation. Based on Reuters' latest, April, survey of analysts' average inflation expectations for 2003, the one-year ex ante real interest rate, currently at a level of 1.7%, remains low. The combination of the nearly horizontal shape of the yield curve and the less-than-one-percentage-point lower inflation expectations for end-2004 imply that over the next twelve months market participants expect no significant tightening in the real interest rate component of monetary conditions. This means that the current extremely low level of real interest rates is expected to rise only slowly *(see chart IV-7)*.

In addition to the low volatility of the spot exchange rate of the forint, another noteworthy development has been the steady increase of expectations of a future appreciation ever since late January. The Reuters surveys indicate that since the weakening of the forint in the wake of the re-valuation speculation, macroanalysts have expected the exchange rate to approach the strong edge of the band gradually, at HUF 240 per euro at end-2003 and HUF 235 per euro at end-2004. However, despite the higher average expectations of tighter monetary conditions in terms of the real exchange rate, the market's current exchange rate expectations are 1%–1.5% lower than they were in January *(see chart IV-8)*.

Chart IV-7 One-year real interest rates

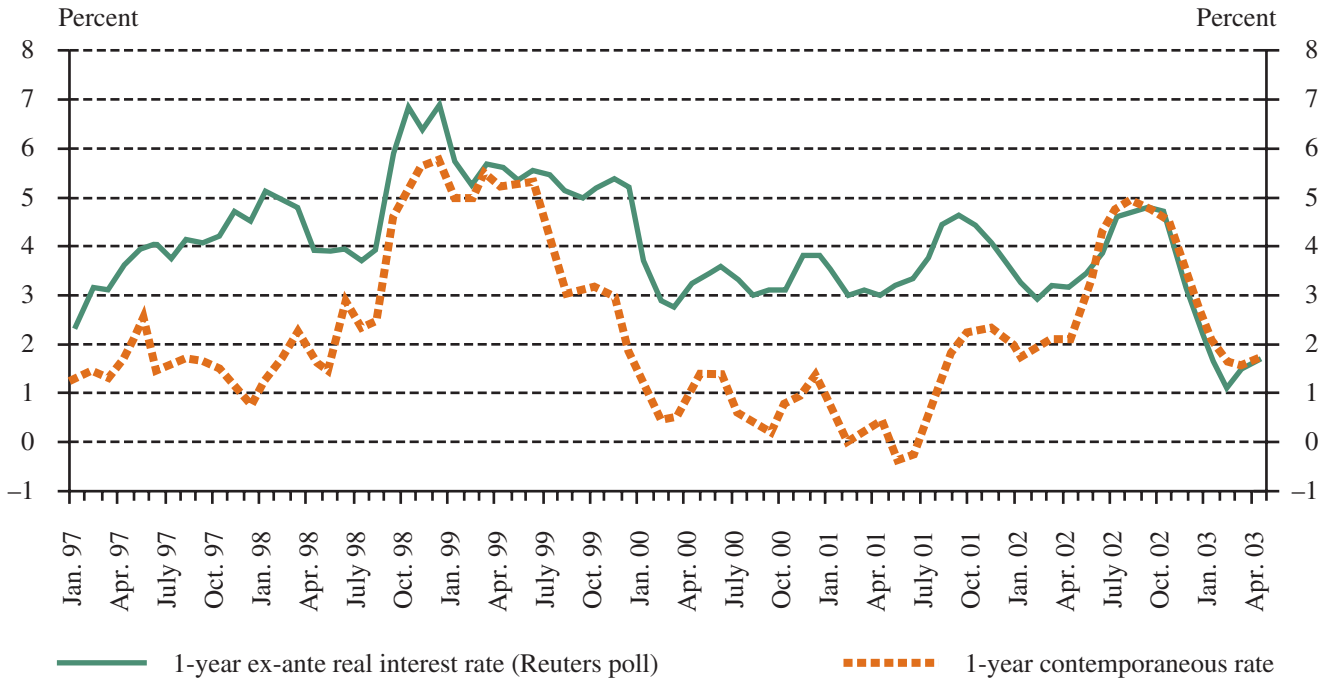
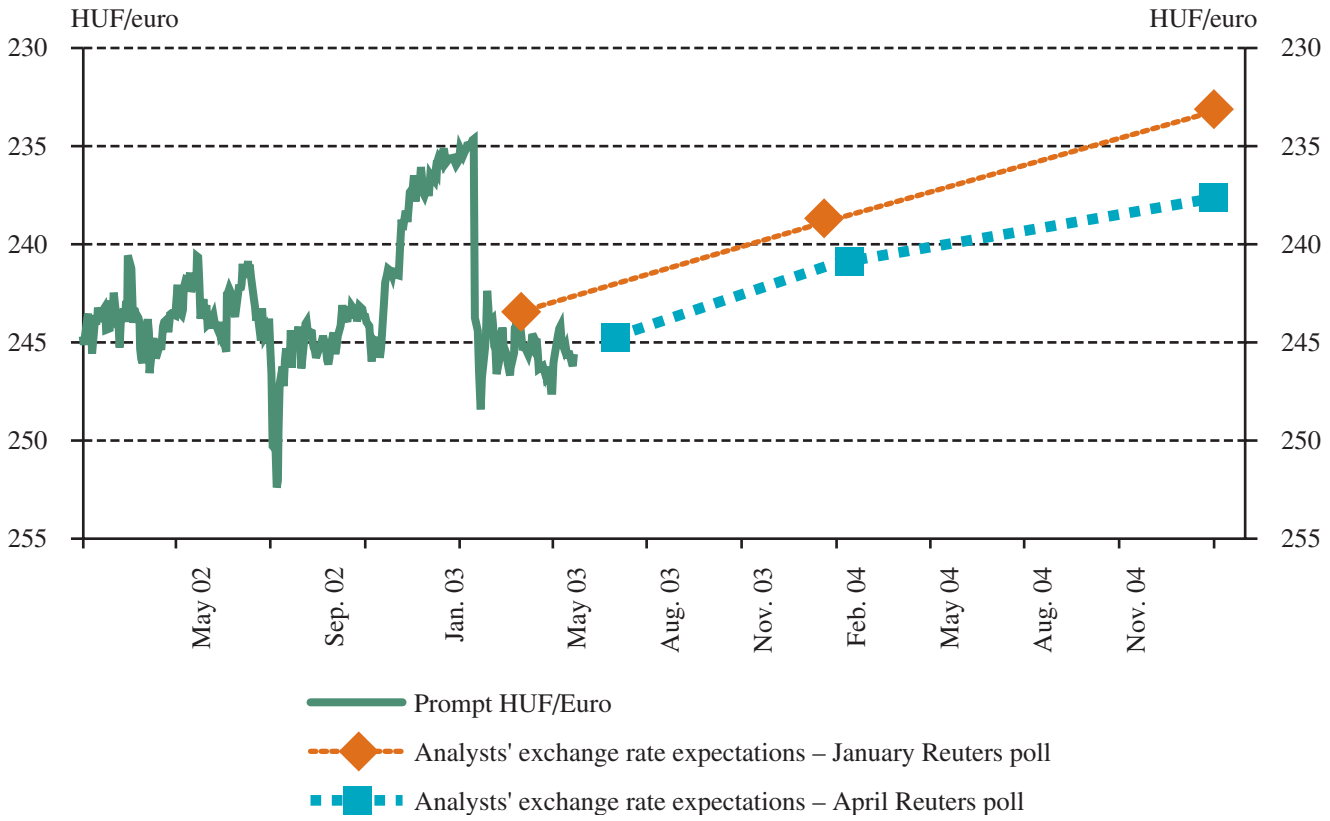


Chart IV-8 Forint/euro spot exchange rate and market exchange rate expectations



Sources: Reuters, MNB.

CAPITAL FLOWS

Due to the re-valuation speculation and the related defensive moves, the first two months of 2003 witnessed unprecedented high volatility in capital flows. In just two days, the Hungarian foreign exchange market received an influx of foreign currency equivalent to over one thousand billion forints. When the failure of the appreciation speculation became apparent, there was a reversal of capital flows as a large portion of the speculative funds left the country.

These unprecedented swings in capital flows did not lead to similar movements in the exchange rate. This was because the Bank successfully defended the strong edge of the band with its drastic interest rate cuts, and in the course of the subsequent outflow, used various instruments to sell off the foreign currency reserves built up during the two days of the revaluation speculation in order to mitigate the depreciation pressure.

By end-February, the Bank had sold roughly half of the foreign currency purchased during the two days of the attack. In addition, data on interbank transactions in foreign exchange markets indicated that taking advantage of the weak exchange rate of the forint, the domestic non-bank sector made forward currency sales partly for hedging and partly for speculative purposes. Commercial banks hedged these transactions by spot foreign currency sales, which provided another channel in addition to the central bank's intervention for making foreign speculative capital leave the coun-

Table IV-1 **Components of foreign exchange market demand and supply* (HUF billions)**

	2002				2003	
	Q1	Q2	Q3	Q4	Jan.	Feb.
I. Current account, net	–117	–176	–70	–306	–63	–101
II. Capital account	13	15	6	13	–19	–5
III. FDI inflow (excluding privatisation revenue)	27	80	19	28	–9	–23
IV. Forint demand arising form conversion of domestic foreign currency deposits	60	–62	26	–40	54	4
1. Business sector	25	–70	13	–41	36	–1
2. Households	35	8	13	0	18	5
V. Net portfolio investment (1.+2.+3.)	217	11	113	350	221	–22
1. Government securities	144	33	236	310	75	61
2. Equities	14	–16	–25	–36	–5	–7
3. Forint deposits	59	–7	–98	76	151	–76
VI. Corporate foreign currency borrowing (1.+2.)	–230	–182	–167	–79	47	9
1. In Hungary	45	55	70	–23	44	24
2. Abroad	–275	–237	–237	–56	4	–15
VII. Forint demand of other credit institutions	26	119	114	138	30	–7
VIII. Other	11	125	28	152	41	37
IX. Change in banks' on-balance sheet long foreign currency position	–7	70	–68	–256	752	–352
X. Net Central Bank Intervention (I.+...+IX.)	**0**	**0**	**0**	**0**	**1055**	**–459**

* *Positive values denote forint demand and negative values denote forint supply. Due to changes in BOP current account compilation methodology, the figures are different from those published in the February Report even for earlier periods.*

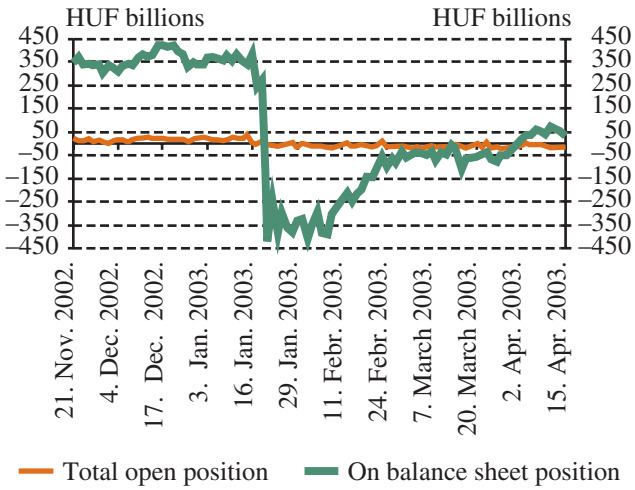
try. Some commercial bank forint liabilities to non-residents were transformed in this way into liabilities to residents. As some of these transactions were made for hedging purposes, one could say that some of the hot capital 'cooled off' even without the central bank's intervention.

Commercial banks' on-balance-sheet foreign currency position fell by HUF 750 billion in the month of the re-valuation speculation, while their total foreign currency exposures, also including derivative transactions, remained neutral. Speculators were only able to acquire forints through Hungarian commercial banks. Not wishing to take any exchange rate risk, commercial banks sold off the incoming foreign currency on the interbank foreign exchange market. However, due to the large supply of foreign currency, banks were only able to acquire forints from the MNB as it intervened at the strong edge of the band. The forints purchased were immediately transferred into central bank deposits.

The speculative capital entered the Hungarian foreign exchange market basically via two instruments. A smaller portion of the foreign currency which speculators converted at the commercial banks went directly into short-term deposits, while a larger portion was used to create synthetic deposits at the Hungarian banks. A synthetic deposit combines conversion at the spot rate with a swap. While the former instrument did not affect commercial banks' on-balance-sheet foreign currency positions, as the foreign currency purchased was immediately sold to the MNB, this was not the case with the swaps. This was because commercial banks had to record on the balance sheet the spot leg of swap transactions following the conversion of the foreign currency (purchase of forints), while the forward leg was recorded off balance sheet. Accordingly, commercial banks' forint positions increased (and foreign currency positions fell) on the balance sheet, but not by the full speculative inflow, but only an amount of over HUF 750 billion which had come in through the swaps. As the forward leg of swaps was recorded off balance sheet, the total foreign currency position of commercial banks remained neutral. This implies that they were exposed to no increased exchange rate risk either during or after the re-valuation speculation.

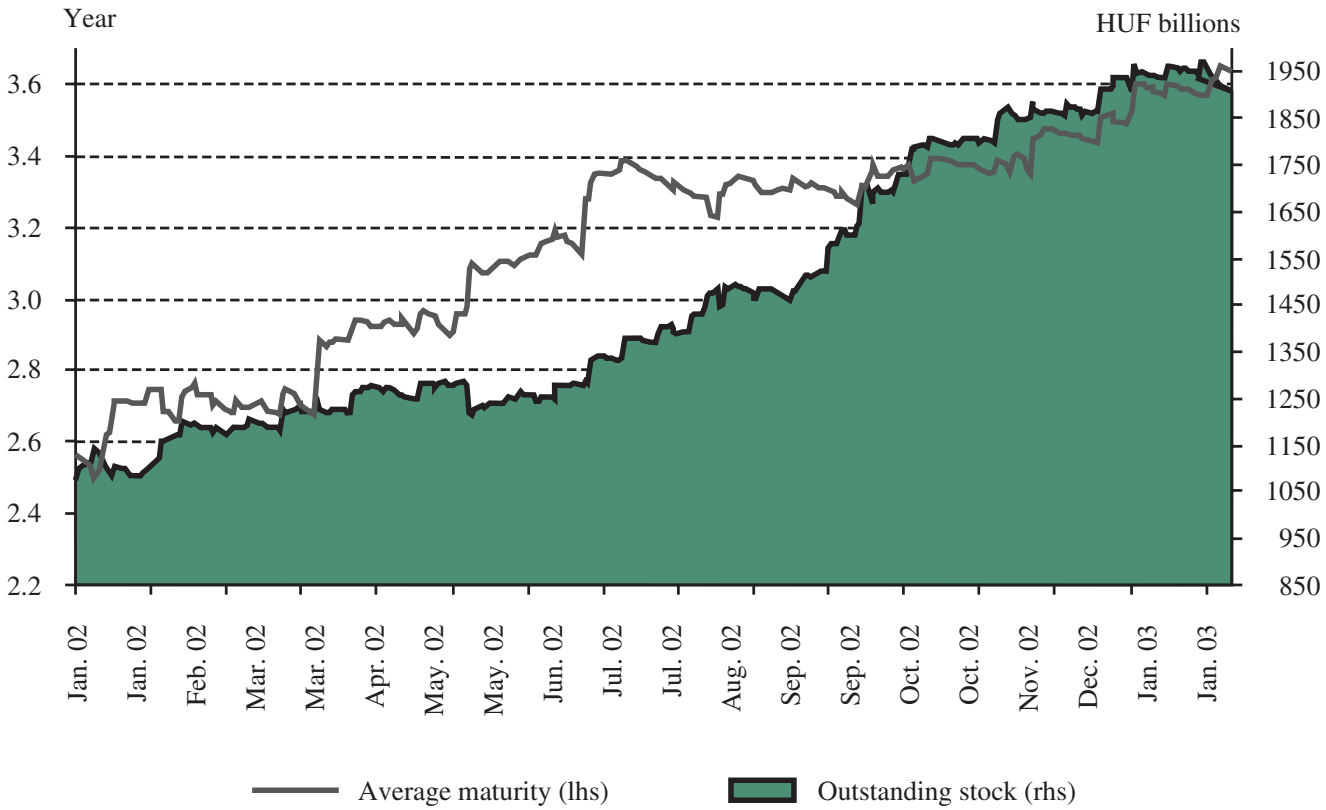
Simultaneously with the outflow of the foreign speculative capital, commercial banks managed to close most of their swap positions. By late February, on-balance-sheet foreign currency positions were nearly neutral. However, from end-March commercial banks started to open long positions in foreign currency, just as in the period before the re-valuation speculation *(see chart IV-9)*.

Chart IV-9 **On-balance-sheet and total open positions of commercial banks**



Capital flows not directly affected by the re-valuation speculation did not reflect any dramatic change. The current and capital accounts deteriorated slightly in January and February, relative to the corresponding period a year earlier. The weight of foreign direct investment within financing also declined during this period, with net outflows even experienced. On the other hand, within portfolio investments, non-residents continued to buy government securities at a robust rate, although this was somewhat slower than in 2002 Q4. Then, from mid-March net inflows tapered off altogether. Non-residents show continued interest in buying long-term government securities, with the average remaining term to maturity of their holdings up to approximately 3.6 years, consistent with the previous trend. This implies that the chief motivation behind government securities purchases remains the expectation of interest rate convergence over the longer term in the context of European integration *(see chart IV-10)*.

Chart IV-10 **Outstanding stock and average maturity of government securities held by non-residents**



LONG-TERM YIELDS AND INFLATION EXPECTATIONS

Benchmark yields on long-term forint government securities remained virtually unchanged between February and April 2003, relative to the significant volatility seen previously. Yields remained flat at levels observed in the wake of the re-valuation speculation in mid-January. The middle, three- to five-year, section of the yield curve sank by roughly 20-30 basis points relative to early February, while yields at the long end of the curve remained on the whole unchanged in the period leading up to mid-April. Thus, the yield curve assumed a nearly horizontal shape, with benchmark yields virtually identical at the 12-month and 15-year maturities. It should be noted that long yields, especially those at the three- to five-year section, were lower during the spring months than before the January re-valuation speculation.

Opposing factors have affected the yield curve recently, cancelling each other out and causing the shape of the curve to remain virtually unchanged since February 2003. The rise in long euro yields has exerted upward pressure on long yields. Despite the ECB's interest rate cut in March, euro yields for maturities longer than one year have risen by 20 to 30 basis points over the past three months, causing the euro yield curve to grow steeper. The drop in global risk premia had an opposite effect (see section 4.1). The gradual rise in war tensions in mid-March, and then the outbreak of the war in Iraq, caused long yields in particular to rise by 20 basis points. This was followed by a correction of a similar size when the war ended.

Domestic developments influencing the yield curve included monetary policy measures and a change in economic prospects in the longer term. Market participants interpreted the Report published on 10 February as a projection that the decline in short yields seen in the aftermath of the speculation would persist for some time. This has caused benchmark yields to fall perceptibly even at the three- to five-year, middle section of the yield curve. However, this situation lasted for only two weeks. On 25 February, when the Monetary Council passed a decision on reinstating the original monetary policy instruments, three- to five-year yields also returned to levels seen two weeks earlier.

Chart IV-11 **Benchmark yields in the government securities market**

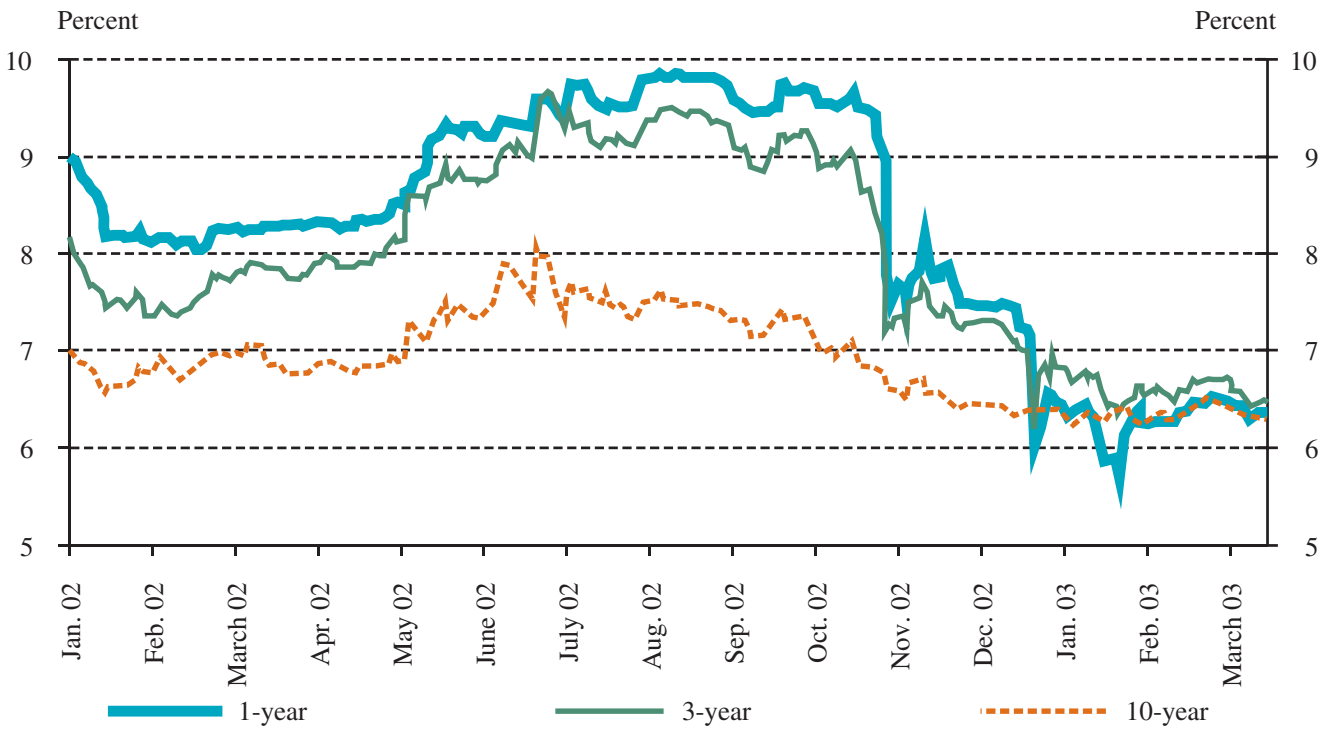
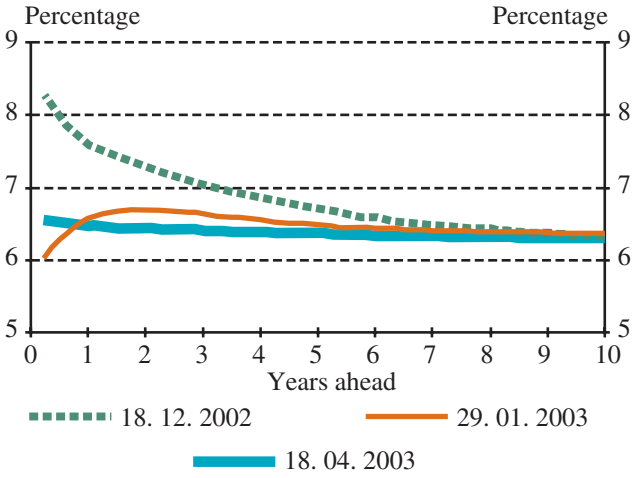


Chart IV-12 **Zero coupon yield curve***

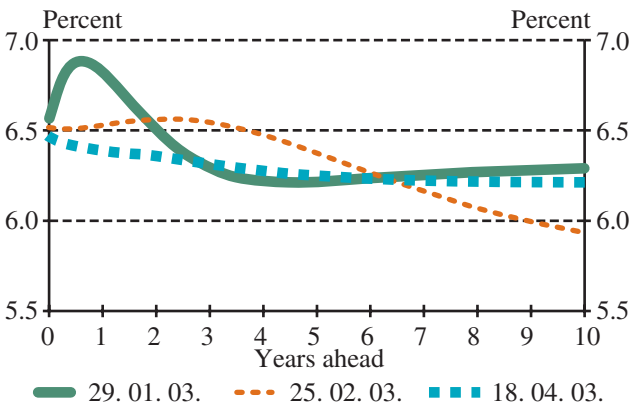


* *Zero-coupon yield curve fitting with the Svensson method.*

Based on the macroeconomic data published in recent months, the market expects less robust economic growth over the medium term, which is not consistent with a very tight monetary policy. This tends to exert downward pressure on yields.

One-year implied forward rates derived from the forint yield curve changed only slightly at long maturities in the past quarter. The period between late January and 25 February saw an increase in forward rates at the two- to seven-year section, followed by a decline causing the forward curve to flatten out significantly by mid-April.

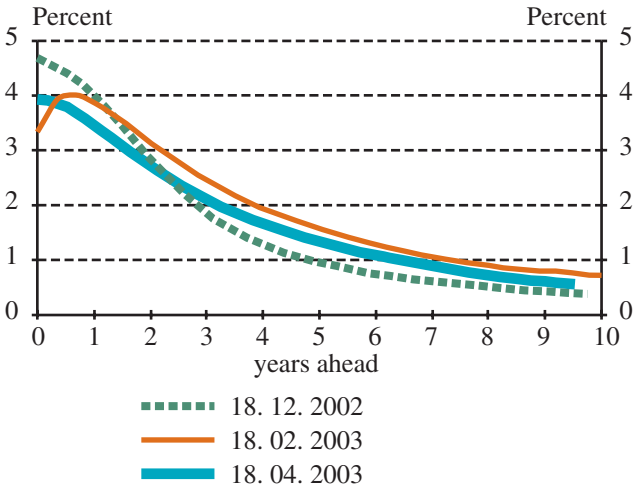
Chart IV-13 **One-year implied forward rates***



* *Zero-coupon yield curve fitting with the Svensson method.*

The differential between forint and euro forward rates, a source of key information for monetary policy makers, indicates the size of the risk premium market participants require on forint investments at different points in time, given constant exchange rate expectations. While the forward rate differential declined at the longer maturities between February and April, it remained much higher than in late 2002. This implies that participants in the government securities market have a more pessimistic view of developments in the medium term, including the prospects for the adoption of the euro.

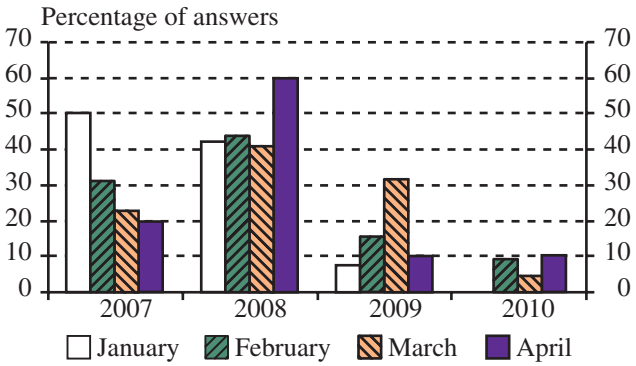
Chart IV-14 **One year forint-euro implied* forward differentials**



* *Zero-coupon yield curve fitting with the Svensson method.*

In addition to the yield curve, another source of information on market expectations about accession to Economic and Monetary Union (EMU) is a Reuters survey of market analysts about the prospective date of Hungary's entry. In the survey conducted since January 2003, each month analysts have given a later date for EMU entry. While in January half of the respondents mention 2007 as the likely date, most responses given in March and April name 2008, simultaneously with an increase in the share of 2009 voters.

Chart IV-15 **Distribution of most likely dates of Hungary's entry into EMU**

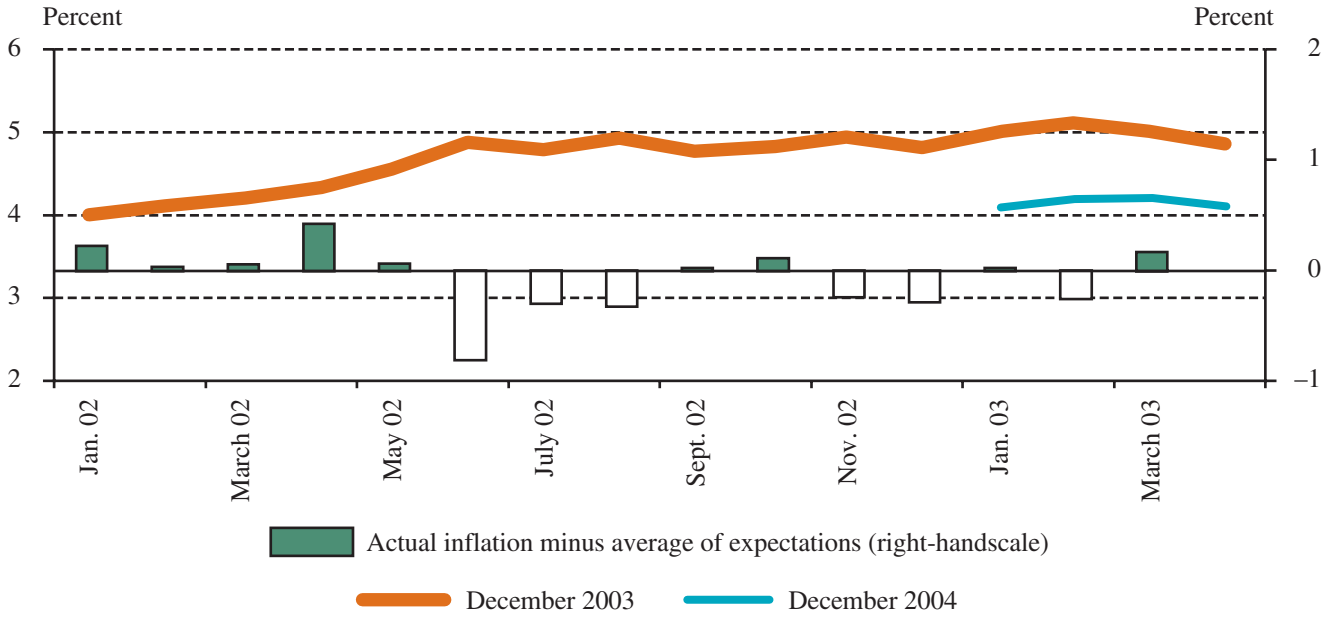


Source: Reuters.

The Reuters survey also reports changes in inflation expectations. While the past quarter saw some improvement in analysts' inflation expectations for end-2003, they remain significantly (40 basis points) higher than the upper limit of the inflation target range. The fact that the inflation expectation for end-2004 has remained virtually unchanged over the past few months (in the range of 4.1–4.2%) is an indication of analysts' belief that the inflation target of 3.5% ±1% will be met *(see chart IV-16)*.

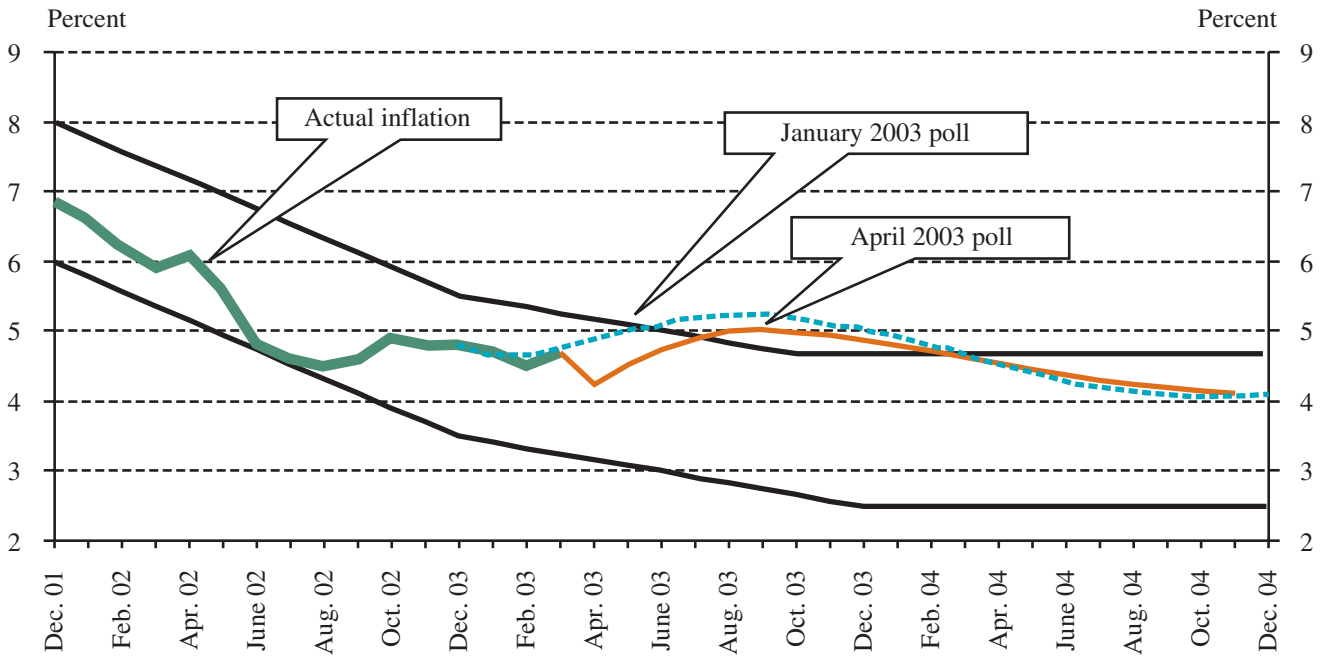
Inflation expectations derived from the Reuters survey have only changed with regard to 2003, with the inflation path for next year remaining unchanged. The April survey of inflation expectations indicates that following an approximately 50-basis-point rate of disinflation for the following month, market analysts project inflation to rise gradually. In the latter half of 2003 the market expects a peak rate of 5%, followed by a decline to 4.1% at end-2004 *(see chart IV-17)*.

Chart IV-16 **Analysts' in inflation expectations**



Source: Reuters.

Chart IV-17 **Inflation expectations in April and the target band**



Sources: Reuters, MNB.

V. Special topics

TAX AND REGULATION APPROXIMATION MEASURES AFFECTING INFLATION

Hungary's EU accession scheduled for May 2004 will entail changes in and approximation of both legislative and tax regulations. The following section summarises the quantified impact of mandatory measures on inflation in the years to come. One should note however, that the Bank's inflation forecast for 2003–2004 already takes these effects into consideration.

EU accession is likely to exert permanent impact on regulated prices at a 6- to 7-year horizon. In particular, compliance with EU regulations governing the excise duty on tobacco products as well as raising the level of the current prices of household energy to that of market prices are bound to be a long process.

In line with the above, the Bank assumes that EU accession-related actions will raise the price index by approximately 0.5–0.6 and 0.2–0.5 percentage points in 2003 and 2004, respectively *(see table V-1)*.

The market pricing of gas rates charged to households depends on (i) future domestic gas production and (ii) the difference between the global market price of gas and domestic production costs, as MOL can only top up subsidy funds by using its mining revenues from domestic natural gas production. The exhaustion of the financial resources on which subsidy funds are based may be tantamount to the actual market pricing of gas rates. What poses problems is the fact that current system of tariffs are heterogeneous–some are based on producer prices, others follow market prices according to the amount of consumption and/or consumer classification.

The future impact of applying normal VAT rates to household energy can hardly be quantified, as normal rates might be changed (decreased) prior to 2008. Current Hungarian normal rates of 25% are high relative to the ones applied in the EU.

The downward pressure on the price level exerted by the abolition of consumption tax on coffee and gold is a mere estimate. As far as increasing excise duty on tobacco products is concerned, the Bank took into account the schedule approved at meetings on derogation while preparing its projection.

Consumption tax on privately owned motor cars will be replaced with registration fees; for the time being, however, there are no data available on either their exact amount or terms. Currently, depending on technical specifications, consumption tax on privately owned motor cars varies between 10% and 32%. It is still to be seen whether registration fees will also depend on technical specifications, or a flat rate will be introduced. Nor has it been disclosed how CSO data will reflect such new fees or rates, thus the Bank has opted not to quantify this impact.

Table V-1 **Expected inflationary impact of tax and regulatory harmonisation**

Areas of action	Date	Description of planned measures	Impact on CPI (percentage points)
Abolition of zero-rate VAT (pharmaceuticals, textbooks)	By 30 April 2004	Reclassification under reduced rates; introduction of new reduced rates in 2004 (min. 5%).	0.15–0.20
Excise duty on fuel oils as one single category of products		A minimum amount of excise duty of EUR 13/ton levied on light fuel oils.	none
Abolition of consumption tax on gold and coffee		Abolition of 35% and 12% consumption tax on gold and coffee.	(–0.15)
Increasing excise duty on contract-distilled pálinka		Excise duty on contract-distilled pálinka must be raised to 50% of normal duty, which necessitates an 8.5% raise.	none
Reduced rates of home-made fruit spirits		A maximum of 50 litres of fruit spirits per household.	none
Liberalisation of energy markets, market pricing		Electricity market liberalisation scheduled for 2003; partial market pricing of gas in 2004.	0.25 in 2003 0.25–0.30 in 2004
Abolition of consumption tax on privately owned motor cars		Consumption tax will be replaced with registration fees; for the time being, there are no data on the rate of such fees.	Non-quantifiable
Changeover to EU's Common Customs Tariff	From 1 May 2004	Average custom tariffs outside the EU will be 1.53%; those of agricultural products will be 2%.	(–0.15)–(–0.20)
Reclassification of household energy under normal rates	From 1 January 2008	Temporary derogation of reclassification can be sought; negotiations to that effect are scheduled to commence next year. 12% VAT remaining in force until late 2007.	none
Reclassification of meals services under normal rates		Hungary has been granted temporary derogation of reclassification.	none
Excise duty on tobacco and cigarettes	On-going until 31 December 2008	A minimum of 60-euro excise duty content per 1.000 cigarettes and 57% excise duty content of the prevailing retail price (compared to EUR 29.3 and 43.5% as at 1 January 2003 in Hungary).	0.30 in 2003 0.10 in 2004

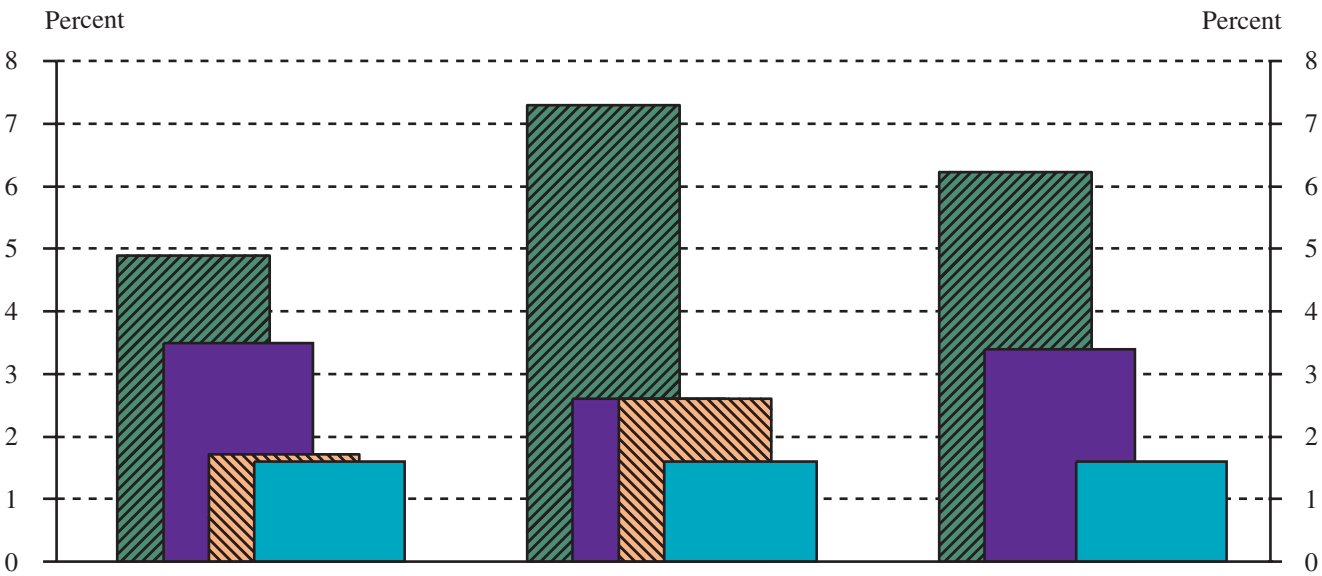
REVISIONS TO THE FORECAST OF EXTERNAL DEMAND

External demand for Hungarian exports is currently captured by assessing the import activity of Hungary's twelve main trading partners. The current country structure is presented in Section II, External demand.

Explicit projections for this indicator of external demand have been published in the *Reports* since August 2001. Although projection takes place on a quarterly basis, the tables in the *Reports* record annual average growth rates, consistent with the practice of other forecasters. This facilitates comparison between the Bank's forecasts and those of other institutes. While the Bank also takes into account market forecasters' projections, the most important lessons are drawn from a comparison with projections by the OECD and the IMF (and, more recently, the European Commission). A good example is the period from August 2001 to February 2003, when the assessment of world economic activity was hampered by uncertainties surrounding the efforts to recover from a major global slowdown.

While in August 2001 it had become obvious that there was a recession, it was less clear how deep it was. Most analysts forecast the turning point to arrive relatively soon (at end-2001), with a rapid recovery, on account of the over 10% growth in 2000. With its 4.9% growth forecast for 2001, the MNB took a more realistic approach than the OECD and the IMF, which produced forecasts of 7% and 6%, respectively. By November 2001 it had become clear that recession was deeper

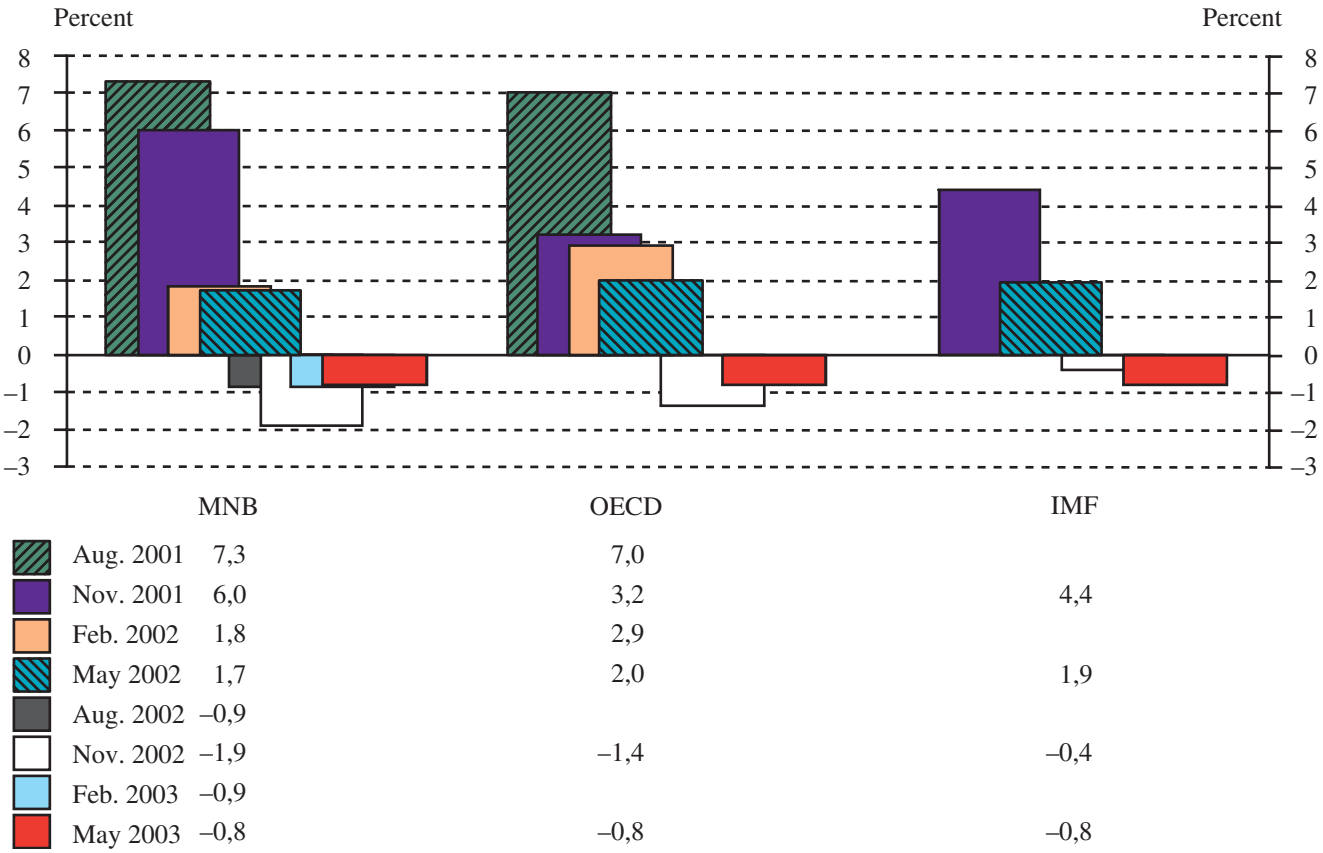
Chart V-1 **Revisions in the projection for external demand in 2001***



	MNB	OECD	IMF
Aug. 2001	4,9	7,3	6,2
Nov. 2001	3,5	2,6	3,4
Feb. 2002	1,7	2,6	
May 2002	1,6	1,6	1,6

* *The forecasts of the MNB can be found in its previous Reports. Country forecasts in the latest available issues of the OECD's Economic Outlook and the IMF's World Economic Outlook have been weighted together. The last data row at the bottom of the chart contains the actual data.*

Chart V-2 **Revisions for the 2002 growth rate of external demand***



* *See note for previous chart.*

and recovery would be slower than expected a quarter earlier. Consequently, the MNB made a small downward revision and the OECD and IMF sharply reduced growth projections for 2001.[28]

In early 2002 it was clear that the trough of the recession was not passed in late 2001, which prompted the MNB to considerably revise down its projections. Even though the OECD published an updated Economic Outlook, there were only minor revisions to its import forecasts, and the IMF did not publish a new forecast at that time. The preliminary data for 2001, published in May 2002, were close to the MNB's projection of three months earlier. Thus, with the exception of November 2001, the MNB made somewhat more accurate assessment of the depth of the recession. Consequently, the MNB's consecutive *Reports* included some significant, but slightly smaller, revisions *(see chart V-1)*.

In August 2001, the MNB (and the OECD) provided a forecast for 2002 for the first time. This was governed by confidence in a near-term, rapid recovery. In November 2001, the Bank had anticipated a fast pick-up in external business activity from 2002. But the OECD, as in the case of its forecast for 2001, revised down massively its 2002 projection; and the IMF's first forecast for 2002 contained the likelihood of a fairly slow recovery as well. It was in February 2002 that the MNB recognised that the cyclical turnaround may have delayed to early 2002, which would be followed by an only slight upturn, or perhaps stagnation, in contrast with a rapid upswing expected earlier. Consequently, the Bank turned from optimistic into the most pessimistic forecaster, with a forecast of below 2% growth.

In May 2002, Germany released extremely weak import data for 2002 Q1. This met the Bank's expectation of the previous quarter. Consequently, the earlier forecast was left almost unchanged. However, both the OECD and the IMF reduced their forecasts by a large margin.

[28] These especially sharp revisions by the OECD and the IMF were, to a large extent, due to the fact that they had only a short time available before publishing their projections for the assessment of the impact of the terrorist attack against the United States on 11 September 2001. Apparently, they possibly attached too much importance to the impact of these events. The MNB also took account of the adverse impact on the recession of the events, but its projections were not influenced to such a great extent.

In view of the contradictions of the recovery (weak growth in GDP and output, coupled with rapidly deteriorating business confidence and stagnating imports), the Bank also reduced further its projection for 2002 in August and November 2002. Thus, the November forecast contained a decline of nearly 2% in external demand. Meanwhile, the OECD and the IMF also revised down their forecasts. Finally, the revision of German import data in the course of the year resulted in the Bank raising its own forecast in February 2003. In retrospect, recent actual data appear to reinforce this decision. Admittedly, though, the Bank made significant revisions to its forecasts for growth in external demand for 2002 in the period since August 2001. These revisions proved somewhat larger than those by the OECD and the IMF *(see chart V-2)*.

BOXES AND SPECIAL ISSUES IN THE QUARTERLY REPORT ON INFLATION

1998
Changes in the central bank's monetary instruments 23
Wage inflation – the rise in average wages 62
Wage increases and inflation 63
Impact of international financial crises on Hungary 85

March 1999
The effect of derivative FX markets and portfolio reallocation of commercial banks on the demand for Forints 20
What lies behind the recent rise in the claimant count unemployment figure? 34

June 1999
New classification for the analysis of the consumer price index 14
Price increase in telephone services 18
Forecasting output inventory investment 32
Correction for the effect of deferred public sector 13th month payments 39
What explains the difference between trade balances based on customs and balance of payments statistics? 44

September 1999
Indicators reflecting the trend of inflation 14
The consumer price index: a measure of the cost of living or the inflationary process? 18
Development in transaction money demand in the South European countries 28
Why are quarterly data used for the assessment of foreign trade? 37
The impact of demographic processes on labour market indicators 41
What explains the surprising expansion in employment? 42
Do we interpret wage inflation properly? 45

December 1999
Core inflation: Comparison of indicators computed by the National Bank of Hungary and the Central Statistical Office 18
Owner occupied housing: service or industrial product? 20
Activity of commercial banks in the foreign exchange futures market 26

March 2000
The effect of the base period price level on twelve-month price indices – the case of petrol prices 19
The Government's anti-inflationary programme in the light of the January CPI data and prospective price measures over 2000 taken within the regulated category 21
The impact of the currency basket swap on the competitiveness of domestic producers 51

June 2000
How is inflation convergence towards the euro area measured? 14
Inflation convergence towards the euro area by product categories 15
Changes in the central bank's monetary instruments 23
Transactions by the banking system in the foreign exchange markets in 2000 Q2 26
Coincidence indicator of the external cyclical position 39
How is the wage inflation index of the MNB calculated? 47

September 2000
Background of calculating monetary conditions 20
Foreign exchange market activities of the banking system in 2000 Q3 25

December 2000
Changes in the classification methodology of industrial goods and market-priced services 25
Different methods for calculating the real rate of interest 27
Changes in central bank instruments 28
Foreign exchange market activities of the banking system in the period of September to November 31
Hours worked in Hungarian manufacturing in an international comparison 53
Composition effect within the manufacturing price-based real exchange rate 57

March 2001
Foreign exchange market activities of the banking system from December 2000 to February 2001 30
Estimating effective labour reserves 50

August 2001
New system of monetary policy 35
Forecasting methodology 37
Inflationary effect of exchange rate changes 38

November 2001
The effects of fiscal policy on Hungary's economic growth and external balance in 2001–02. 39
Estimating the permanent exchange rate of forint in the May–August period 41
How do we prepare the Quarterly *Report* on Inflation? 41

February 2002
The effect of the revision of GDP data on the Bank's forecasts 50
Method for projecting unprocessed food prices 52
What do we know about inventories in Hungary? 53

August 2002
The exchange rate pass-through to domestic prices – model calculations 49
How important is the Hungarian inflation differential vis-à-vis Europe? 50
How do central banks in Central Europe forecast inflation? 51
An analysis on the potential effects of EU entry on Hungarian food prices 52
A handbook on Hungarian economic data 53
The economic consequences of adopting the euro 54

November 2002
What do business wage expectations show? 44
Should we expect a revision to 2002 GDP data? 45

February 2003
The speculative attack of January 2003 and its antecedents 39
Macroeconomic effects of the 2001–2004 fiscal policy æ model simulations 43
What role is monetary policy likely to have played in disinflation? 46
What do detailed Czech and Polish inflation data show? 48
The impact of world recession on certain European economies 50
Inflation expectations for end-2002, following band widening in 2001 52
„Gyakran ismételt kérdések és ezekre adott válaszok"
– A forint erősödése által kiváltott gazdasági hatásokról 53

May 2003
Tax and regulation approximation measures affecting inflation 77
Revisions to the forecast of external demand 79

Quarterly Report on Inflation
May 2003

DTP works: Iconos Advertising
H-1022 Budapest, Bogár u. 29.

Printing: Print-X