



**QUARTERLY
REPORT
ON INFLATION**

**May
2002**

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The Act on the National Bank of Hungary, 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 a 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 National Bank of Hungary, 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 presents the Monetary Council’s position and the grounds for its decisions. This is followed by a projection prepared by the economists at the Bank’s Economics Department on the outlook for inflation and the underlying principal macroeconomic developments. The expected path and uncertainty of the exogenous factors used in the projection reflect the opinion of the Monetary Council.



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Statement of the Monetary Council

At its meeting of 6 May 2002, the Monetary Council discussed the latest issue of the *Quarterly Report on Inflation* and approved it for publication.

Developments hampering disinflation have gained momentum

Disinflation continued in the first quarter of 2002. The annual rate of price inflation dropped from 6.8% in December 2001 to 5.9% in March. In the three months to March, core inflation fell by 1.9 percentage points to 6.2%. Simultaneously with these favourable trends, a number of factors that might hamper the process of disinflation have gained momentum. Of these factors, inflation imported from Hungary's trading partners and the sharp rise in oil prices can be viewed as exogenous to monetary policy. Stronger domestic demand growth also exerts downward pressure on the pace of disinflation. In addition, faster private-sector wage growth tends to increase the real economic costs of disinflation.

Higher imported inflation

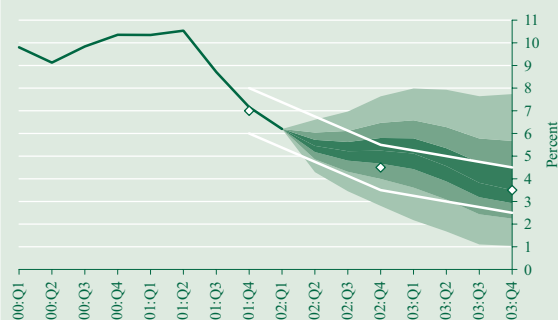
Inflation imported from the euro area does not take long to feed through into domestic tradables prices. The National Bank's management of the resulting inflationary risk is consistent with the policy of the European Central Bank (ECB). While during the previous few months, the ECB had emphasised the role of temporary factors in the strong increase of the level of European tradables prices, its latest statements have stressed the upsurge in persistent inflationary risks.

Rising oil prices

Oil price increases tend to affect consumer prices directly via household energy and fuel prices. However, in previous episodes of rising oil prices, the rise in inflation did not stop at the di-

Inflation projection fan chart

Year-on-year rates



The fan chart shows the probability distribution of the outcomes around the central projection. The central band with the darkest shading includes the central projection. The entire coloured area covers 90% of all probabilities. Outside the central projection (centred around the mode), the bands represent 15% probability each. The uncertainty intervals have been estimated relying on the Bank's historic forecast errors and the uncertainties perceived by the Monetary Council regarding the current forecast. The year-end points represent the fixed inflation targets (7%, 4.5% and 3.5%); while the straight lines mark the ±1% tolerance intervals on either side of the target rates.

rect cost-push effect but, generating a cost-price inflationary spiral, led to a permanent upturn in inflation. As far as the direct inflationary pressure is concerned, monetary policy makers have to consider the extent they will let these developments gain ground or, else, decide to tighten monetary conditions. As will be remembered, the direct impact tends to raise inflation only over the short term, whereas monetary policy actions affect economic developments with a lag. Nevertheless, potential spillover effects may necessitate a tightening in monetary conditions.

Data for the first two months of 2002 indicate that nominal wages have continued to rise at the fast pace seen last year. The persistence of this trend may undermine corporate profitability, threatening a slowdown in economic growth. Companies will not be able to maintain profitability over the longer term unless, when planning nominal costs, they take account of the expected disinflation in selling prices.

Compared with the previous report, GDP is expected to grow faster both in 2002 and 2003. The prospect for more buoyant global activity may give impetus to corporate investment demand. The expected rapid rise in household income, due to higher transfers and robust wage growth, projects further expansion in consumer demand. Demand growth continues to be unhampered by general capacity shortages over the short term, but will enable higher costs to be incorporated into consumer prices, which can slow down the economy's adjustment to the path for disinflation.

The current inflation projection, which takes account of real economic forecasts and changes in exogenous assumptions, is higher than that published in the previous Report. The factors at work behind the shift include changes in the projections for oil prices and labour costs. As oil prices started to increase sooner than assumed in the February Report, the Monetary Council judged that the oil price assumption should be maintained around the current price of USD 25.5 per barrel over the forecast horizon, which seems to be a cautious assumption from the point of view of inflationary risks. Based on the above assumptions, the central inflation projection for December 2002 is 5.3%, near the upper boundary of the inflation target range, while the projected rate of inflation for December 2003 remains in the medium range of the target band at approximately 3.4%. The annual rates corresponding to these projections amount to 5.5% in 2002 and 4.3% in 2003.

In the Council's current assessment, further upward risks to inflation should be expected in 2003. Recent movements in wages suggest that inflation inertia may prove to be stronger than expected. There was no available information in respect of the future courses of the central budget and regulated prices at the time of preparing the forecast. Therefore, the forecasts of neither the path of macroeconomic performance nor inflation justified a modification of the Bank's earlier, 'technical' assumptions for the fiscal path. The current forecast of the expansionary effect of the budget on demand only takes into account the decisions that have already been passed by government. These have

Private sector is slow in adjusting wage costs

Stronger domestic demand

Next year's inflation is expected to be higher than previously projected, but the central projection remains below the upper limit of the designated path for disinflation

Further upside risks to inflation in 2003

raised by 0.5 percentage points to 1.3% of GDP the expected expansionary impact of fiscal policy in 2002 relative to the earlier forecast. According to recent indications, fiscal policy will likely be more expansive in 2002. Therefore, the Monetary Council judges the likelihood of a shift towards higher inflation to be greater in the case of forecasts of the expansionary impact of fiscal policy and regulated prices. As an effect of these factors, the December 2003 inflation may increase to 4%.

Monetary conditions have been little changed in the past three months

Monetary conditions have been little changed in the period since publication of the previous *Report*. Although international investors' demand for assets categorised into similar classes of risk as those of Hungarian financial assets has increased, the risk premium on forint investments has not fallen. Country-specific factors provide the primary explanation for this. The current account deficit turned out to be higher than expected earlier, and inflation expectations intensified. Uncertainties related to the parliamentary elections were another factor leading to the temporary rise in the risk premium. While the Bank has maintained the major policy rate at 8.5% since the official rate reduction on 19 February, the exchange rate has stabilised around HUF/EUR 240–250, aside from narrow and brief fluctuations.

Rising upside risks to inflation may require the maintenance of tight monetary conditions

Increased risks to disinflation do not allow to relax current monetary conditions. If the exchange rate remained at the weaker levels seen in the preceding few months for a prolonged period, this would jeopardise the achievement of the inflation target. In the coming months, the Monetary Council will closely monitor changes in nominal incomes and the pass-through from higher oil prices to the domestic inflation process. A potential amplification of unfavourable developments for inflation may require a further tightening of monetary conditions.

*Monetary Council
of the National Bank of Hungary*

Summary Table of Forecasts*

Percentage changes on a year earlier unless otherwise indicated

| | 2001 | 2002 | 2003 |
|--|---------------------------|-------------------------------|-----------------------------|
| | Actual data | Forecasts | |
| CPI | | | |
| December | 6.8 | 5.3 | 3.4 |
| Annual average | 9.2 | 5.5 | 4.3 |
| Economic growth | | | |
| External import demand | 0.8 | 1.2 - 1.7 - 2.3 | 5.0 - 6.6 - 8.1 |
| Manufacturing value added | 1.3 | 1.5 - 2.0 - 2.5 | 5.7 - 7.4 - 8.9 |
| Household consumption ** | 5.1 | 5.6 - 6.1 - 6.6 | 3.6 - 4.4 - 5.2 |
| Gross fixed capital formation | 3.1 | 3.0 - 4.5 - 6.0 | 4.3 - 6.3 - 8.3 |
| Inventory investment | -20.0 | 5.0 - 12.0 - 15.0 | 0.0 - 3.0 - 8.0 |
| Domestic absorption | 2.1 | 4.3 - 4.9 - 5.5 | 3.1 - 4.0 - 4.9 |
| Exports | 9.1 | 4.5 - 5.3 - 7.0 | 7.0 - 8.8 - 11.6 |
| Imports | 6.3 | 5.6 - 7.2 - 8.8 | 7.0 - 8.3 - 10.5 |
| GDP | 3.8 | 3.3 - 3.6 - 3.9 | 3.6 - 4.3 - 5.0 |
| Current account | | | |
| As a percentage of GDP | -2.1 | (-3.6) (-3.1) (-2.8) | (-3.7) (-3.2) (-2.6) |
| In EUR billions | -1.2 | (-2.4) (-2.1) (-1.9) | (-2.7) (-2.3) (-1.9) |
| General government | | | |
| Demand impact (as a percentage of GDP) | 2.2 | 1.1 - 1.3 - 1.5 | -0.3*** |
| Labour market (private sector) **** | | | |
| Wage inflation | 13.1 - 14.0 - 15.7 | 10.4 - 11.2 - 12.0 | 6.2 - 7.5 - 8.8 |
| Employment | 1.0 | (-0.6) - (-0.3) - 0.0 | 0.3 - 0.8 - 1.3 |

* Central projection in bold print

** Household consumption expenditure (consumer spending)

*** It is not a forecast but a value derived from a hypothetical path spanning several years

**** Average for manufacturing and market services. The lower and central projections for wage inflation in 2001 are estimates made by the Bank, taking account of the effect of the minimum wage rise, while the upper index was released by the Central Statistical Office (see Chapter III.).

Summary

The National Bank's *projection* for domestic absorption growth in the real economy in 2002 has been revised upwards, compared with the February *Report*. In the current projection, rapidly growing household consumption and stronger corporate investment, in addition to the replenishment of inventories, reflect an upturn in domestic absorption. In 2003, domestic absorption is expected to expand at a lower rate to that in 2002, and there will be a structural shift, with the role of consumption being gradually replaced by stronger investment.

Compared to the February projection, the *central projection* for inflation is 0.5 percentage points higher at end-2002 and 0.2 percentage points higher at end-2003. This is primarily due to an upward revision to the projection for tradables price inflation, as described in more detail in Chapter 1. This higher rate of inflation can also be attributed to sharper wage increases as the labour market adjusted less quickly than assumed, and unprocessed foodstuff and certain regulated prices rose more markedly during the first quarter. The upper and lower limits surrounding the *central projection* for the real economy reflect the uncertainty of the Bank's previous forecasts. The projection is based on the assumption of unchanged fiscal policy. In accordance with the decision of the Monetary Council, the Staff have only taken account of measures on which a decision already existed at the time of making the projection. In this sense, the projection can be viewed as conditional. Note, however, that the next *Report*, due to be published in August, will also discuss the effect of measures that will have been implemented by then. This effect may exceed the estimated upper limit of the current projection range in respect of the expansion of demand by general government and in respect of consumption. The Bank has drawn up two alternative scenarios for the evolution of external demand. If external conditions are better than the *central projection*, which assumes import demand growth of 2.3 % this year and 8.1% in 2003, corporate investment will respond more strongly to the pick-up in activity and export sales will also gain momentum. This may cause private sector wages to increase faster as well, resulting in stronger consumption growth than the *central projection*. As a combined result of all these factors, the rate of economic growth may reach the upper limits of its assumed range, shown in the table, in both years (3.9% in 2002 and 5% in 2003).

Under the scenario assuming subdued growth in external demand, at 1.2% this year and 5% next year, corporate investment and exports increase at a somewhat sluggish pace. In this scenario, economic growth may be slower than assumed in the *central projection*. Should weaker activity feed through to consumption, economic growth may very well remain at the lower end of the projection range (3.3% and 3.6%, respectively). In addition to the above factors, the rate of economic growth is significantly affected by the extent of nominal adjustment within the labour market. The limits of the projection range for consumption also reflect the uncertainty surrounding the forecasts of the financial saving rate and assessment of households' consumption smoothing behaviour.

Section 1.2 deals at length with the uncertainty surrounding the inflation projection. The factors noted above in relation to the real economic forecast would not by themselves cause a considerable shift in the CPI projection for 2002-03. The factors posing the greatest risk to the inflation projection include the effect of prospective changes in oil prices and centrally regulated prices, as well as the exchange rate pass-through. Due to the time schedule of the inflation projection process, only data available till March 2002 was used in the preparation of the central projection and the uncertainty distribution. The effect of the April consumer inflation figure on the central projection is therefore treated separately in section 1.2.3.

1 Inflation

Chart 1- 1 CPI and core inflation
Percentage changes on a year earlier

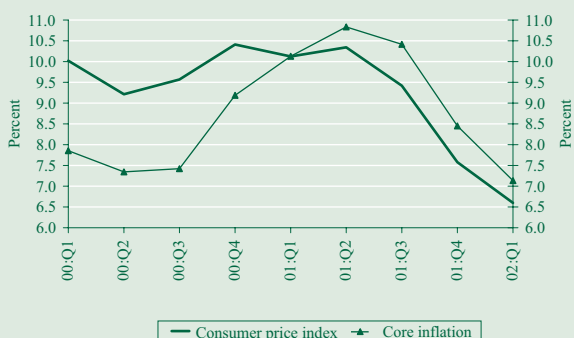
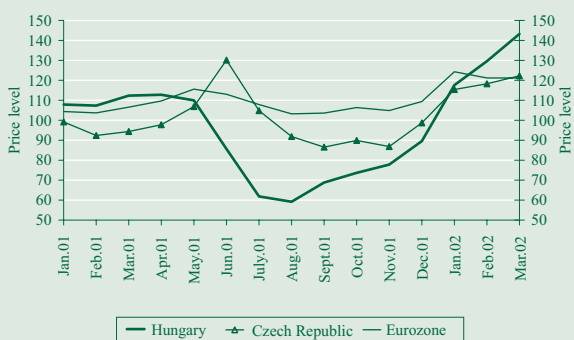


Chart 1- 2 Annualised quarterly growth rate of market service prices
Seasonally adjusted data



Chart 1- 3 Price level of vegetables in the Euro area, the Czech Republic and Hungary
(January 2000 = 100)



1.1 The NBH's projection and latest inflation developments

In the first quarter of 2002, the consumer price index (CPI) fell to 6.2%, down from 7.2% in 2001 Q4. Core inflation, computed excluding high-volatility components of the consumption basket, also indicates a continuation of the disinflation process.¹

1.1.1 Assessment of first-quarter data

Disinflation in tradable goods and market service prices continued in 2002 Q1. Market service prices declined at an especially rapid pace. Although the price index of this category was quite high in 2001, seasonally adjusted data indicate that the drop was not exclusively due to high base period values. While the price inflation of tradable goods slowed down clearly during the first three months as a whole, monthly data suggests that the latter half of the quarter showed definite signs of stagnation, especially in the category of non-durables.

Early in the year disinflation was hampered by a sharp rise in unprocessed food prices. Based on the information received from regular consultations with agricultural market analysts, it is believed that the exceptional rise in the price level may have a twofold reason, one being developments in domestic supply and the other a jump in the import price of certain vegetables, due to bad weather conditions. The latter explanation is supported by similarly high price indices seen in the euro area and the Czech market. On the other hand, the domestic unprocessed food price level increased in February and March as well, while Czech and euro zone data show virtually unchanged prices. This points out that domestic reasons also played a significant role in the first-quarter price hike.

The jump in unprocessed food prices was not accompanied by a similar rise in the price level of processed foodstuffs. This is because processed food prices are mostly sensitive to changes in pork and cereal prices, which did not increase at an exceptional rate.

The negative price index for vehicle fuels was primarily due to the base effect. The downward trend in the price level seen

¹ Primarily as a result of the inflationary developments in the highly volatile and not easily forecastable categories, the April consumer inflation figure shows a halt in the disinflation process. As noted earlier, the April CPI data and its effect on the central projection is treated among the uncertainties in section 1.2.3.

since the second half of last year seems to be losing momentum as reflected in data for the latest quarter, due in all likelihood, to the oil price increase in March.

Monitoring price developments in the euro zone is crucially important in respect of domestic price changes. The euro zone Harmonised Index of Consumer Prices (HICP) stood at 2.5% in the first quarter of 2002, up 0.3 percentage points on the previous quarter. Although the Eurostat figure for the April euro zone HICP is 2.4%, recent data show no clear sign of a significant decline in the HICP, which has remained above 2% since mid-2000.²

High euro zone consumer inflation reflects the inflationary effects of several factors. Among these factors, the effects of the January price rise of tobacco products, due to the excise tax increase in some euro zone countries, can be regarded as temporary. On the other hand, data for February and March show that the January increase in the price level of unprocessed foodstuffs, a result of the price increases for fruit and vegetable products, seem to be more persistent than expected.³ Regarding energy products, while annual indices are still in negative territory, monthly price changes clearly reflect the impact of the oil price increase in the first quarter of 2002.

The high price index figures for tradables⁴ and the price measure excluding categories with high price volatility (foodstuffs, alcoholic drinks and tobacco, as well as energy products), however, show that the higher-than-average consumer inflation has other causes as well. According to the ECB's analysis, the most important of these causes is the continuous weakening of the euro vis-à-vis the US dollar during the period 1999-2000, which has a delayed inflationary impact via the increase in import prices.⁵

1.1.2 The previous inflation projection versus the actual rate

Divergence between actual data and the projection may have two reasons. One may be that exogenous factors have not behaved in accordance with the Bank's expectations, and the other that the economic developments governing inflation have not been captured correctly. In other words, although the assumptions about exogenous factors were correct, the forecast was still wrong. The following section first reviews some of the key exogenous developments and the assumptions related to such, and then analyses how the differences between these account for the divergence between the February projection and actual data.

Assumptions of the February projection

The central projection in February was based on assumptions about the main factors affecting inflation as listed in the table below. The evolution of the forint/euro and dollar/

² Figures for April cannot be analysed yet, since no detailed data are available.

³ As far as national CPI data for April are available for some eurozone countries, unprocessed food inflation figures already show the start of a decline in April.

⁴ 1 Category tradables corresponds to the category "Non-energy industrial goods" in the Eurostat's HICP classification. Due to data revision in this category for 2001 following a methodological change at the beginning of 2002, seasonal adjustment and analysis of this time series became problematic.

⁵ See ECB Monthly Bulletin, May 2002.

Chart 1- 4 Euro zone Harmonized Index of Consumer Prices (HICP)
Percentage changes on a year earlier

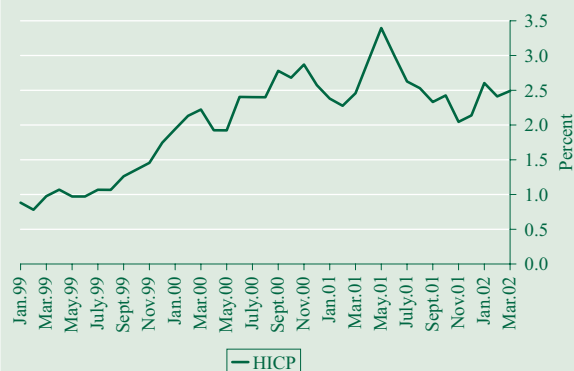


Chart 1- 5 Euro zone tradables inflation and "core inflation"
Percentage changes on a year earlier

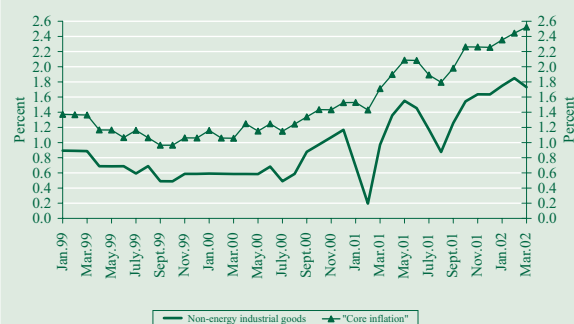
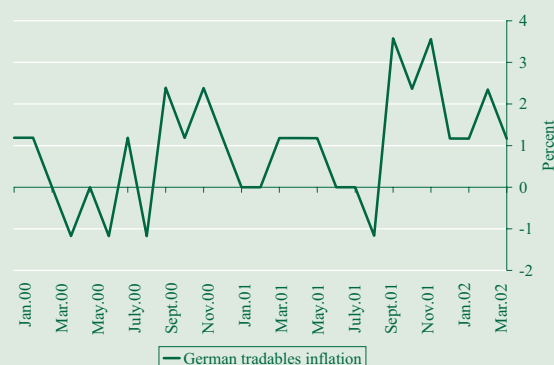


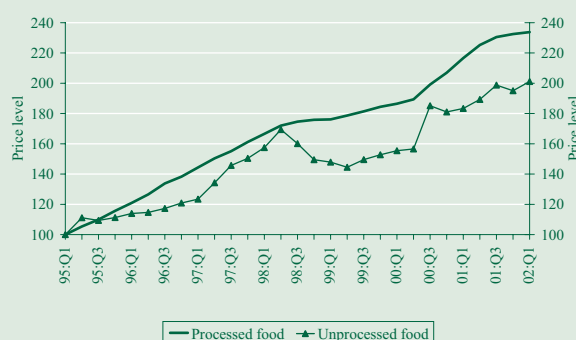
Table 1– 1 Assumptions of the February forecast versus actual data in 2002 Q1

| | February forecast | 2001 Q1 |
|-----------------------------------|-------------------|---------|
| Forint/euro exchange rate (HUF) | 244.0 | 244.1 |
| Dollar/euro exchange rate (cents) | 88.4 | 88.0 |
| Brent crude oil (USD/barrel) | 19.4 | 21.2 |
| Imported tradables inflation (%)* | 0.5 | 1.5 |

*annualised monthly growth rate as an average of Q1

Chart 1– 6 German tradables price index Annualised monthly growth rates**Table 1– 2 Central inflation projection and actual data in 2002 Q1**

| Category | Weight (%) | Actual data | February projection | Difference | Effect of difference on CPI |
|--------------------------------|------------|--------------------------------------|---------------------|------------|-----------------------------|
| | | Percentage changes on a year earlier | | | |
| Food | 19.0 | 8.5 | 7.9 | 0.6 | 0.1 |
| Unprocessed | 5.4 | 9.5 | 5.5 | 4.0 | 0.2 |
| Processed | 13.6 | 7.9 | 8.9 | -1.0 | -0.1 |
| Tradables | 26.0 | 3.3 | 3.0 | 0.3 | 0.1 |
| Market services | 20.4 | 8.8 | 9.4 | -0.6 | -0.1 |
| Market-priced household energy | 1.5 | 0.0 | -1.1 | 1.1 | 0.0 |
| Vehicle fuel | 5.2 | -9.1 | -7.5 | -1.6 | -0.1 |
| Alcohol and tobacco | 9.1 | 9.4 | 8.3 | 1.1 | 0.1 |
| Regulated prices | 18.9 | 7.9 | 7.6 | 0.3 | 0.1 |
| CPI | 100.0 | 6.2 | 6.0 | 0.2 | 0.2 |
| Core inflation | | 6.7 | 6.5 | 0.2 | |

Chart 1– 7 Price level of processed and unprocessed food prices 1995 Q1 =100

euro exchange rates, assumed to remain fixed at their average rates of the month preceding the preparation of the forecast, in accordance with a technical rule, was consistent with the assumption. The strong forint/euro exchange rate seen in the first quarter was a major factor behind the drop in petrol prices, whereas inflation of tradables and, indirectly, market service prices declined largely as the effects of last year's appreciation have fed through.

Actual oil prices in 2002 Q1 were approximately two dollars higher than expected, despite the fact that the central projection was derived by assuming an upward path for oil prices based on market forecasts, in contrast with the previous assumption of a constant oil price. The difference between actual prices and the assumption suggests that market participants were equally surprised by the high oil prices of the first quarter.

Imported (German) tradables price inflation was also higher than expected. As there are no independent forecasts for changes in this variable, the Bank assumes that the prospective annualised monthly growth rate of this price level will correspond to the historical average. The current difference is due to the high rate of tradables price inflation seen in the euro area since September 2001 (see section 1.1.1 above).

Of the domestic developments bearing on inflation, the evolution of wages and, hence, household consumption is the most crucial, in addition to the exchange rate. Although the Bank's forecast for household consumption in 2001 Q4 cannot be directly compared to the previously published data due to a revision by the Central Statistical Office, actual figures indicate higher-than-expected increases in wages and consumption.

1.1.3 Reasons for the difference between projections and actual data

In 2002 Q1, both the CPI and core inflation were 0.2 percentage points higher than projected in the February *Report*. Although this difference falls within an acceptable margin of error, the divergence for core inflation suggests that the error is not confined to the prediction of high-volatility developments.

The largest difference between the February projection and the actual rate relates to *unprocessed food* prices. Projecting inflation within this category is rather difficult due to the strong volatility of agricultural producer prices, which have a major impact on unprocessed food prices. The reason for this significant error in the projection is primarily attributable to an high fruit and vegetables price index seen in the early months of the year. Unprocessed food price increases did not pass through to *processed food* prices, as the category of goods involved is only partly subject to further processing.

Inflation in tradables and market services, the two categories most crucial to assessing a central bank's disinflation policy, was characterised by mutually opposing trends, causing the inflation differential between the two groups to narrow. *Tradables* prices rose at a higher-than-projected rate as a combined result of 5% price inflation for non-durable goods and a -1.2% year-on-year rate for durables. Increases in non-durable goods prices were in line with the Bank's expectations, while the price of durables was expected to fall at a faster pace. The projection error for this category could be partly attributed

to stronger-than-expected imported inflation. At the same time, it cannot be ruled out that the impact on inflation of increases in wages and consumption is stronger than initially assumed. This is mostly a direct demand-pull effect, but it is also possible that the intensity of demand also affects the size of the exchange rate pass-through. Because when demand is buoyant, retailers may not want to fully pass through to prices the reduction in costs due to the appreciation of the exchange rate.

The *market services* price index was lower than projected, especially in respect of inflation of home improvement and certain health-related services. Prices declined faster than expected even though wages and consumers' expenditure as well as tradables prices increased more strongly than projected. As the value of most variables affecting the projection of the market services price index over the near term developed in a direction implying stronger-than-projected inflation, the aforementioned error must have occurred due to the fact that the Bank's model chiefly captures medium-term developments. The Bank wishes to remedy this problem by paying greater attention to using statistical and expert methods that describe inflation inertia, when preparing short-term projections.

As far as *vehicle fuels* are concerned, inflation remained lower than projected, despite higher-than-expected oil prices. This implies that even though Mediterranean petrol prices were consistent with the upward trend in global oil prices, this has not yet been fully passed on to domestic petrol prices. *Alcohol and tobacco* price inflation was 1.1 percentage points above the Bank's projection, as beer prices rose at an above-average rate at the start of the year. Of the regulated category, prices of certain postal services affecting households and gambling began to rise sooner and at a faster pace than expected, causing inflation to be higher than projected. These increases in prices are likely to exert persistent upward pressure on inflation.

1.2 Projecting the consumer price index

The central projection estimates the CPI to be within the target range of 4.5% and 3.5%, $\pm 1\%$ at end-2002 and end-2003, respectively. The CPI at end-2002 is near the upper limit of the target range, while the projection for end-2003 is in the middle of the range. The inflation projection follows a similar course to that of the February projection, anticipating a slowdown in disinflation in the second half of 2002, followed by a pick-up in its pace in 2003. According to the uncertainty distribution, the risk of higher consumer price indices for both years is considerable. Due to the end-2003 inflation risk, the consumer price index of December 2003 may even reach 4%, which is mainly attributable to the uncertainties surrounding future fiscal policy measures and price regulation which are difficult to anticipate. It is important to note that our central inflation projection is based on a "no fiscal policy change" assumption, i.e. only the government actions, which were taken by the government in charge at the time of the preparation of the Report and were not subject to further decisions are considered. In the forthcoming *August Report*, however, the central projection may be altered to reflect the effects of any new developments in economic policy.

Chart 1-8 Market services and tradables price inflation

Percentage changes on a year earlier

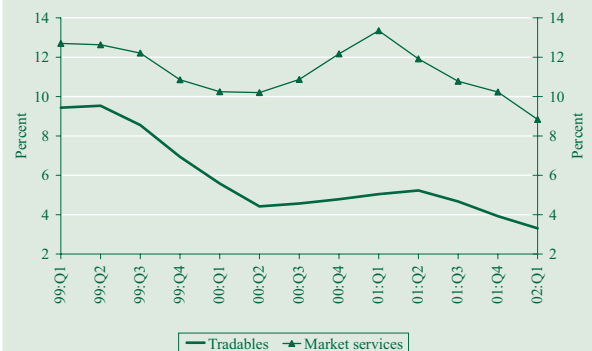


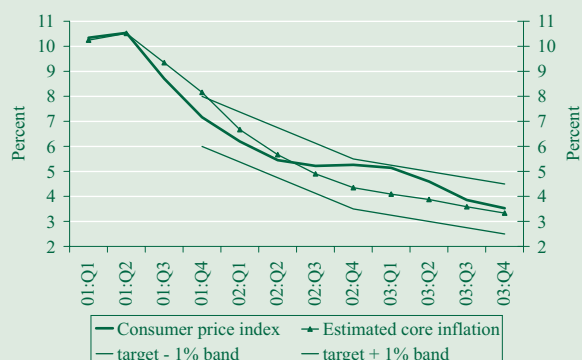
Chart 1-9 Differential between market services and tradables price inflation

(differences of year-on-year indices in percentage points)



Chart 1- 10 Projections for the CPI and core inflation*

Percentage changes on a year earlier



*Core inflation is an estimate of the official core inflation measure of CSO.

Chart 1- 11 Recent oil price projections of seven market analysts and the median for 2002*

* Individual forecasts of different market analysts are indicated by the different marks; the continuous line is their median for each quarter.*

Similar to the previous forecast, the current inflation projection was originally prepared using two different assumptions for prospective oil prices: a constant oil price fixed at its average April level and an alternative path based on the consensus expectation of several market analysts. The constant scenario assumes an oil price 18% higher on average for 2002-2003 as compared to the market analysts' consensus expectation scenario, which results in an approximately 0.5 percentage point higher inflation projection at end-2002. Discussing the two alternative scenarios, the Monetary Council decided to opt for the constant oil price scenario for risk-management considerations, because the constant scenario implies no significant risk of higher inflation, in contrast to the scenario based on the market analysts' current expectations.

Moreover, it is important to note that analysts' oil price forecasts vary widely, exhibiting high volatility even over a relatively short time horizon. The latest forecasts of seven large market analysts⁶ for the period 2002 Q1-Q4 show an average volatility of 3 dollars per barrel - in other words, an average annual oil price in the range of 17 and 28 dollars is within the margin of error of the consensus forecast. The uncertainty about oil price assumptions based on analyst opinions seems all the greater as they differ not only in their predictions for a given point in time, but also in respect of the shape of the projected course of oil prices. Some analysts feel that oil prices will start in an upward direction and then turn downwards late in the year, with others predicting just the opposite of this. Nevertheless, it should be noted that the declining consensus oil price projection for end-2002 reflects market analysts' expectation of a diminishing premium due to less geopolitical uncertainty.

According to the current projection, the central projection for inflation is 0.6 percentage points higher at end-2002 and 0.2 percentage points higher at end-2003, than the figures published in the February *Report*. The main reasons for the end-2002 divergence are as follows. First, inflation in tradable goods prices is anticipated to be higher, accounting for 50% of the difference. The higher projection for tradables price inflation is due to higher-than-expected actual data in Q1, as well as changes in assumptions and methodology.⁷ Second, higher market services inflation, mainly due to the higher wage projection and tradables price inflation, increases the end-year projection by 0.1 percentage point. Third, the effect of an unprocessed food price shock in the first quarter and higher wage projection increased food inflation, which exerted 0.1-percentage-point upward pressure on the projection for the year-end. Finally, the higher-than-anticipated rise in certain regulated prices and a higher projection for inflation in alcoholic drinks and tobacco account for another 0.1 percentage point rise.

Just as the headline CPI, *core inflation* measuring the inflation of prices relevant for monetary policy, is also projec-

⁶ Merrill Lynch, JP Morgan, BNP Paribas, Lehman Brothers, Morgan Stanley, Salomon Smith Barney, és Goldman Sachs.

⁷ The methodological change means that results from time-series models capturing the short-run inertia of price movements are also taken into consideration when forming the consensus forecast.

Table 1– 3 Central CPI projection
Percentage changes on a year earlier

| | Weights (%) | 2001 | | 2002 | | | | 2003 | | | | |
|----------------------------|-------------|-------------|------|------------|-----|------|------|------------|------|------|------|------|
| | | Actual data | | Projection | | | | Projection | | | | |
| | | Q4 | Q1 | Q2 | Q3 | Q4 | Dec. | Q1 | Q2 | Q3 | Q4 | Dec. |
| Food | 19.0 | 11.1 | 8.5 | 5.5 | 3.7 | 3.8 | 3.9 | 4.1 | 5.2 | 5.3 | 5.3 | 5.1 |
| Unprocessed | (5.4) | 7.6 | 9.5 | 6.3 | 2.0 | 2.6 | 2.7 | 2.2 | 4.8 | 5.7 | 5.8 | 5.8 |
| Processed | (13.6) | 12.3 | 7.9 | 5.2 | 4.4 | 4.3 | 4.4 | 4.9 | 5.3 | 5.2 | 5.1 | 4.9 |
| Tradables | 26.0 | 3.9 | 3.3 | 2.7 | 1.7 | 1.0 | 0.8 | 0.2 | -0.2 | -0.4 | -0.5 | -0.4 |
| Market services | 20.4 | 10.2 | 8.8 | 8.6 | 8.0 | 7.2 | 6.9 | 6.9 | 6.5 | 5.9 | 5.4 | 5.2 |
| Market-priced energy | 1.5 | 1.4 | 0.0 | 4.6 | 7.3 | 7.5 | 7.2 | 6.0 | 2.8 | 0.9 | 0.1 | 0.2 |
| Vehicles fuels | 5.2 | -13.1 | -9.1 | -4.8 | 6.4 | 14.2 | 17.4 | 19.3 | 10.0 | 3.6 | 3.6 | 3.6 |
| Alcohol and tobacco | 9.1 | 10.4 | 9.4 | 8.4 | 7.9 | 7.7 | 7.7 | 7.7 | 7.5 | 7.3 | 6.9 | 6.6 |
| Regulated prices | 18.9 | 8.9 | 7.9 | 7.3 | 6.8 | 6.7 | 6.7 | 5.8 | 5.8 | 4.6 | 3.8 | 3.8 |
| CPI | 100 | 7.2 | 6.2 | 5.5 | 5.2 | 5.3 | 5.3 | 5.1 | 4.6 | 3.9 | 3.5 | 3.4 |
| Core inflation estimate | 69.0 | 8.2 | 6.6 | 5.7 | 4.9 | 4.4 | 4.2 | 4.1 | 3.9 | 3.6 | 3.3 | 3.2 |
| Annual average price index | - | 9.2 | | | 5.5 | | - | | 4.3 | | | - |

ted to be higher than in the February *Report*.⁸ This implies that disinflation of prices showing smaller fluctuations and which are more strongly influenced by monetary policy, with special regard to prices of tradables, alcohol and tobacco, is expected to lose momentum in 2002. Nevertheless, disinflation in both the CPI and core inflation is expected to continue at a fast pace in 2002 and 2003.

The fan chart, reflecting the uncertainty surrounding the central projection, shows the presence of considerable upward risk relative to the target values for both end-2002 and end-2003.⁹ The darkest central band of the fan chart, which presents the most likely expected values of the consumer price index with thirty percent probability, exceeds the upper tolerance limit of the inflation target range from end-2002. Under the current assumptions applied to the exogenous variables, the probability of consumer inflation falling within the target range of +/-1 percent is 45 percent at end-2002 and 37 percent at end-2003. When comparing the central bands of the current and the previous fan chart in the February *Report* it can be seen that at each forecast horizon the current fan chart indicates higher expected values of the consumer price index. The higher projection for end-2002 can be explained by the upward revision of the central projection relative to the February forecast, while that for end-2003 is mostly attributable to the increased upward risk related to the uncertainties around regulated price movements and fiscal policy measures.

1.2.1 Assumptions of the central projection

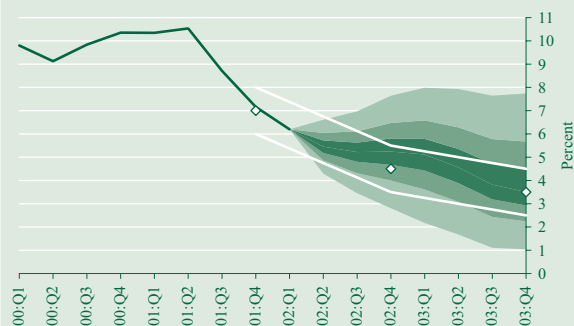
The assumptions of the current inflation projection differ in four significant respects from those underlying the February projection. As far as external market conditions are concerned, the assumptions for oil prices and imported tradables inflation

⁸ The Bank's estimate for core inflation, which comprises processed foodstuffs, tradables, market services as well as alcoholic drinks and tobacco, is a close approximation of the official core inflation indicator published by the Central Statistical Office.

⁹ For a detailed description of these uncertainties, see section *Uncertainty in the central projection*.

Chart 1– 12 The Fan Chart

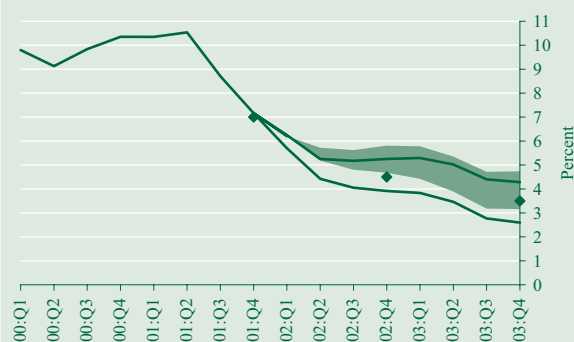
Percentage changes on a year earlier



The fan chart shows the probability distribution of the outcomes around the central projection. The central band with the darkest shading includes the central projection. The entire coloured area covers 90% of all probabilities. Outside the central projection (centred around the mode), the bands represent 15% probability each. The uncertainty intervals have been estimated relying on the Bank's historical forecast errors and the uncertainties perceived by the Monetary Council regarding the current forecast. The year-end points represent the established inflation targets (7%, 4.5% and 3.5%); while the straight lines mark the +/-1% tolerance intervals on either side of the target rates.

Chart 1– 13 The central bands of the current and the February fan charts and the target values*

Percentage changes on a year earlier



*The bands cover the 30 percent probability intervals

Table 1– 4 Assumptions of the inflation forecast

| Assumption | Where does it play a role? | In February 2002 projection | | In current projection | |
|--|---|---|------|------------------------|------|
| | | 2002 | 2003 | 2002 | 2003 |
| Forint exchange rate | Tradables, petrol, market-priced, energy, certain foodstuffs | January average 244.0 | | April average 242.3 | |
| Price of Brent crude (USD/barrel) | Petrol, market-priced energy, market services, certain foodstuffs | Market analysts' consensus 21.7 23.9 | | April average 25.5 | |
| USD/EUR exchange rate (cents) | Petrol, market-priced energy and certain foodstuffs | January average 88.4 | | April average 88.4 | |
| Imported tradables price inflation ^{a)} | Tradables | 0.5 | | 1.1 | 0.5 |
| Change in manufacturing productivity | Market services | 5.0 | 5.9 | 3.6 | 7.3 |
| Wage growth ^{b)} | Food, market services and tradables | 9.2 | 7.5 | 10.9 | 8.4 |
| Consumption growth ^{c)} | Food and market services | 4.9 | 4.0 | 6.1 | 4.4 |

Notes:

a) average of annualised monthly growth rates.

b) changes in the gross wage bill in manufacturing and market services

c) annual growth of household consumption expenditure (seasonally adjusted).

Chart 1– 14 Assumptions for Brent oil prices in the previous and the current inflation projection

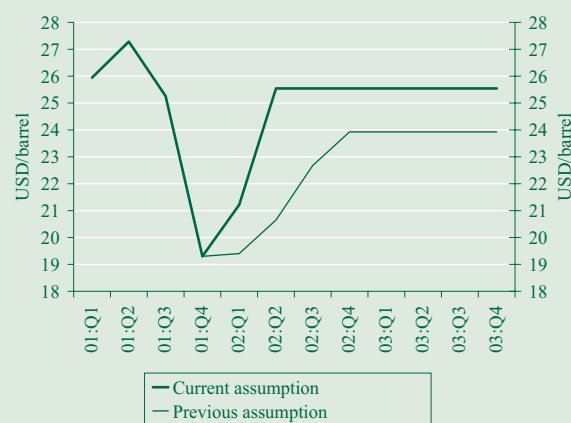
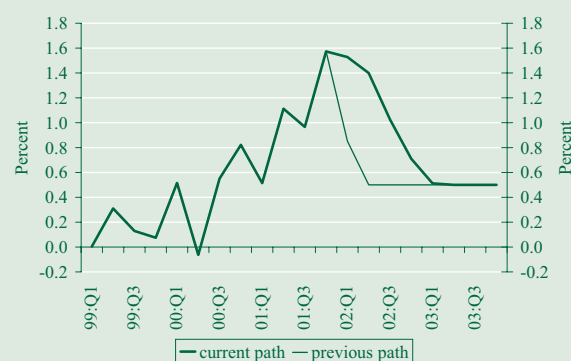


Chart 1– 15 Path of imported tradables price inflation in the previous and the current inflation projection*



*Tradables price inflation in Germany, annualised quarterly growth rates, seasonally adjusted data

have shifted in an inflationary direction. Likewise, the projection for domestic wages and household spending has also begun to exert upward pressure on inflation.

The current central projection is based on a constant *oil price* assumption, presuming that the Brent oil price will remain unchanged from its average April level for 2002-2003. This constant oil price path is 10 percent higher on average than the February oil price assumption based on the consensus expectation of market analysts, which, *ceteris paribus*, increases the current central projection for end-2002 by around 0.3 percentage points. The impact of oil price changes on consumer inflation appears in several different stages. In the short run, oil price changes directly influence the price of vehicle fuels and market-priced energy. As an indirect effect, oil price changes also affect the prices of products, such as market services and processed foodstuffs, the production of which is dependent on vehicle fuel and energy prices. Finally, as a tertiary effect, oil price changes have a long-term impact on almost all the consumer product groups through their effect on inflationary expectations.

There has been a significant change in the assumption for *inflation in imported tradables prices*, reflecting an inflationary shift mainly in respect of domestic tradable goods and, indirectly and over the longer term, prices of market services. Previously, monthly inflation was assumed to be relatively low - although average by historical comparison - for the entire forecast horizon. By contrast, in the current assumption, monthly growth is higher in the first half of the forecast period (until December 2002), and declines gradually. The assumption had to be modified because data for 2002 Q1 signalled accelerating inflation in the entire euro area and in Germany, Hungary's main trading partner. The new assumption is consistent with the fact that the currently strong inflationary pressure of imported tradables prices will gradually decline by end-2002, edging down to the previously assumed long-term equilibrium rate (annualised monthly growth of 0.5%) by December.

Compared to February, the projections for *wages* and *household consumption expenditure* have changed significantly. They are now assumed to exhibit strong inflationary pressure due to simultaneous demand-pull and cost-push factors. Stronger wage increases constitute a strong cost-push

factor in respect of market services, processed foodstuffs and tradables, while the demand pull of household consumption exerts inflationary pressure on market services.

The Bank's assumption for the *forint/euro exchange rate* reflects a somewhat stronger currency than in the February *Report*. The assumption is for the exchange rate to remain constant at the average rate of the last full month of 242.3 forints to the euro, in accordance with the notion of unchanged monetary policy. This rate is around one percent stronger than the assumption (244 forints/euro) underlying the February inflation projection. The assumption for the rate of the *exchange rate pass-through* remains similarly unchanged, amounting to 37.5% over one year and 60% over two years in regarding the pass-through to domestic tradables prices.

1.2.2 Details of the central projection

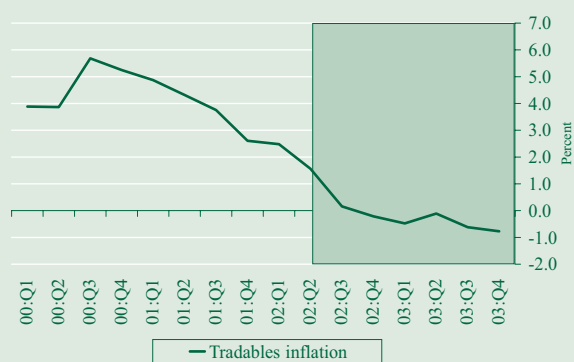
Inflation in *unprocessed food* prices, which is rather erratic and therefore difficult to predict, has been revised upward relative to the February central projection. The higher forecast is partly due to the unprocessed food price shock in 2002 Q1, which caused the price level to shift resulting in higher annual indices. In addition, a methodological development, which projects unprocessed food price inflation at a more disaggregated level than before, also exerted upward pressure on the projection. Finally, the projection is also higher because it partially takes into consideration the expected inflationary effects of the winter and spring frost damage to certain agricultural products for the second half of 2002.

Inflation in *processed food* prices in 2002 is expected to be lower than the February projection. This is because disinflation in this category was faster than expected in Q1 and because the price shock affecting unprocessed foodstuffs was assumed to have been borne primarily by foodstuffs that are usually subject to further processing only to a limited extent (such as certain fruits and vegetables). At the same time, inflation in this category is expected to accelerate in 2003, due to the rollover effect of subsequent unprocessed food price increases and the stronger projection for wages, relative to February. It should be noted that, in the food category, the December 2002 inflation projection is somewhat above the projection for the fourth quarter, which can be explained by a base effect arising from the rapid disinflation in foodstuffs in December of last year.

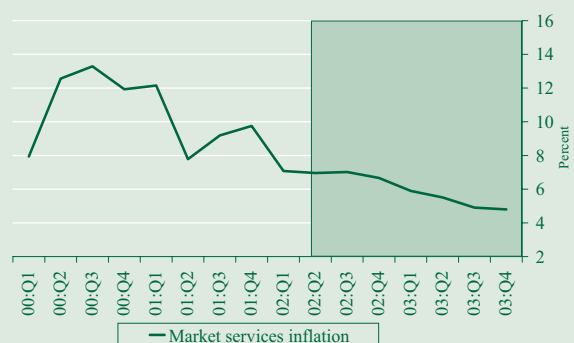
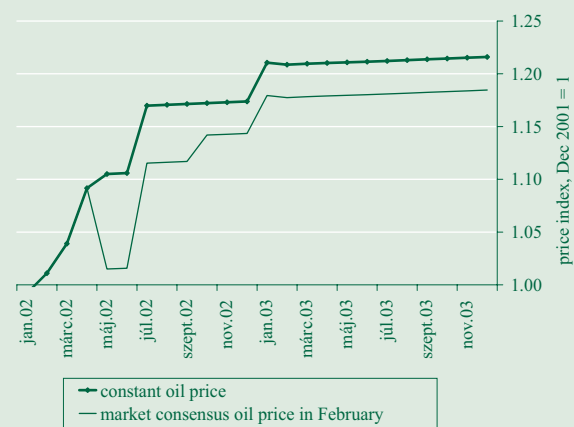
The largest revision is seen in the projection for *tradable goods* price inflation, which is one percentage point higher in 2002 Q4 than in the February projection. This is the combined effect of several factors. More than half of the revision is accounted for by the new assumption about imported tradables price inflation, as German tradables prices increased at an accelerating pace in the last quarter. It should be noted that, according to the Bank's presumption based on foreign experience, the effect of imported tradables price inflation on domestic prices tends to be stronger and is passed on faster than the exchange rate effect. This is because domestic sellers usually view changes in the price of imports as more permanent than the often erratic development of the exchange rate.

Chart 1- 16 Projection for tradables price inflation

Annualised quarter-on-quarter changes, seasonally adjusted data

**Chart 1- 17 Projection for market services inflation**

Annualised quarter-on-quarter changes, seasonally adjusted data

**Chart 1- 18 Price levels of vehicle fuels, under different oil price assumptions**

The factors accounting for the higher projection for tradables price inflation also include the effect of the actual, higher-than-expected rate in 2002 Q1. Another factor implying an upward revision in the projected inflation in tradables prices is the significantly higher wage projection for 2002, reflecting cost-push pressure on domestic prices. Finally, the higher rate is also due to a change in methodology, to the extent that the May projection for the short-term course of inflation in tradables and market service prices also considers the results of statistical methods that put a stronger emphasis on inflation inertia. It should be noted that although the current projection is higher than in February, the prices of tradable goods are expected to moderate steadily, as reflected in projected quarterly growth.

Just as the inflation projection for tradables, that for *market service* prices also shows steady disinflation in 2002 and 2003. However, the pattern of price indices is different from the February forecast, with a lower inflation projection in the first six months of 2002 and a higher forecast at end-2002 and in 2003. The expectation of rapid disinflation over the first half of this year is due to the fact that market service prices fell faster in Q1. Nevertheless, this is not viewed as lasting over the medium term, since household consumption and wages - two powerful determinants of inflation - are expected to rise sharply in 2002, causing strong inflationary pressure from the latter half of the year.¹⁰ Furthermore, the oil price assumption, which is higher than in February, and the slower disinflation in tradables prices also account for a large portion of higher service price inflation from end-2002.

Due to the disinflation in both tradables and service prices, the inflation differential between the two sectors remains at or above 6% until the end of 2003. This can be regarded as above normal level for the inflation differential, but can be attributed more so to the effects of robust household consumption growth and certain cost-push factors (e.g. oil prices) than to the productivity differential between the tradables and market services sectors.¹¹

Vehicle fuel prices are partly governed by world prices for oil and the forint/euro and the euro/dollar exchange rates, and partly by the measure of excise duties. As a result of a higher oil price and slightly stronger forint/euro exchange rate, the price level of vehicle fuels is 5% higher on average in May-December 2002, and 2.6% higher in 2003, relative to the projection based on the February oil price assumption. The projected amount of increase in excise duties for 2003, however, remains unchanged at 5 forints net, which is expected to cause a 2.8% rise in vehicle fuel prices. Similar to the path of the consumer price index in foodstuffs, the price index for vehicle fuels in December 2002 is also higher than the fourth-quarter figure, which can again be explained by the base effect.

The inflation projection for *alcohol and tobacco* has also been revised upwards since February. This is due to a methodological change, which has become necessary as the

¹⁰ The wage effect is even greater, as minimum wages are expected to have a significant effect in the service sector in 2002.

¹¹ The difference between the inflation rate of market service and tradables fluctuated in the 5-5.5 percent range in the past years.

February projection systematically underestimated trends in 2002 Q1. In order to improve projection quality, the Staff has developed an alternative projection model. The central projection is derived as a consensus of the results of this new and the previous model. Although the Bank has no detailed economic analysis and theory regarding the path of alcohol and tobacco prices, the new model is based on the idea that inflation in alcohol and tobacco prices tends to be consistent with general increases in market prices, in addition to the effect of excise duty hikes. The projection assumes that, in 2002 tobacco excise duty increases at the statutorily mandated rate, which amounts to 13%. The increase in duties in 2003 is expected to be higher, at 16%.

Regulated prices are also expected to increase faster than in the February projection. This is partly because early in the year certain regulated prices (such as household postal fees, gambling fees) rose more sharply than anticipated in view of the government intentions, consistent with inflation expectations. This causes the annual measure of regulated prices to be persistently high over the course of 2002. Secondly, in the case of a few goods (such as non-subsidised pharmaceuticals), the increases, which usually occur at the start of previous years, seem to have been postponed to a later date this year, reflecting further upward pressure on the price index in the coming quarters. Nevertheless, the Bank wishes to emphasise that, in accordance with transparency requirements, the projection for inflation in regulated prices is based on the rate of increases laid down in the prevailing Budget Act. For 2003, however, since there is no Budget Act for this period, no official figures for planned price regulation are available. The assumed measure of regulated price increases is therefore set at 5 percent on average, in line with the inflation target for 2003. Particularly, the price increase of piped gas is assumed to be 12 percent in July 2002 and 2 percent in both January and July 2003. According to the decision of the Monetary Council, any deviation from the assumed path of regulated prices and future changes in fiscal policy measures is reflected in the uncertainty distribution and not in the central projection.

1.2.3 Uncertainty in the central projection

In the assessment of the Monetary Council, uncertainty surrounding the central projection is approximately symmetrical at end-2002, while the balance of risks to inflation at end-2003 is on the upside. To determine the uncertainty distribution, the Monetary Council formed its judgement on the expected trends of five factors. These were: 1) the world price for oil; 2)

Table 1– 5 Effect of various shocks on the CPI – simulation results

| Scenarios | 2002 | | 2003 | |
|---|------|-----------------------------------|------|-----------------------------------|
| | Q4 | Deviation from central projection | Q4 | Deviation from central projection |
| Central projection | 5.3 | – | 3.5 | – |
| Fall in oil prices (10% lower, from May 2002) | 5.0 | -0.33 | 3.5 | -0.01 |
| Higher imported inflation (annualised month-on-month growth 0.7 % points higher, from April 2002) | 5.4 | 0.12 | 3.8 | 0.30 |
| Slower exchange rate pass-through (10% for tradables, over one year) | 5.8 | 0.51 | 4.3 | 0.82 |
| Higher private sector wage inflation (1 % point higher annual average) | 5.5 | 0.16 | 3.7 | 0.22 |
| Postponement of increase in regulated prices (increase in gas prices postponed from 2002 to July 2003) | 5.0 | -0.27 | 3.8 | 0.26 |

imported tradables price inflation; 3) the extent of exchange rate pass-through into tradables prices; 4) labour market adjustment of wages; and 5) changes in regulated prices in 2003.

The uncertainty about the course of world oil prices constitutes a major downside risk to the inflation projection in 2002. As the consensus forecast of market analysts is lower than the Bank's assumption of a constant price for oil, there is a downside risk to the CPI at end-2002. This reflects a divergence from the February perception of uncertainty, when the Monetary Council designated a symmetrical uncertainty distribution for the analysts' forecast of rising oil prices. According to the Bank's calculations, an oil price that is 10% lower at end-2002 would cause the CPI to be 0.3 percentage points lower in 2002.

In the Monetary Council's view the uncertainty about changes in *imported inflation* has a symmetrical distribution. It must be noted, however, that in the current projection, the assumption for imported tradables price inflation has been revised upwards for 2002, while the long-term annualised quarter-on-quarter index remains at 0.5%. Should the assumption for this index be 0.7 percentage points higher starting in April, then the CPI projection at end-2003 would be 0.3 percentage points higher.

As far as the extent of *exchange rate pass-through* is concerned, the Monetary Council maintains the February assumption of 37.5% pass-through into the level of tradables prices in the course of one year. As, however, the data for tradables price inflation in 2002 Q1 reflect slower-than-expected disinflation, the uncertainty about the exchange rate pass-through implies an upside risk to inflation. This is supported by the potential impact of aggregate demand on the rate of exchange rate pass-through. As noted earlier, strong demand may dampen the disinflationary effect of appreciation. It should be noted that the current projection reflects a different perception of uncertainty from the February one. At the time of the previous *Report*, the Monetary Council perceived a downside risk to inflation. Simulation results suggest that a slower exchange rate pass-through than currently assumed, say a rate of 10% instead of 37.5%, would cause the CPI to be 0.5 and 0.8 percentage points higher at end-2002 and end-2003, respectively.

After examining the issue of *wage adjustments in the labour market*, that is, bringing private sector nominal wage growth in line with the disinflation path, the Monetary Council has made a nearly one percentage point upward revision to the Economics Department's initial wage projection for 2003. Accordingly, the central projection is based on assuming wage inflation of 11.2% in 2002 and 7.5% in 2003. With this revision included, the uncertainty surrounding wage adjustment is symmetrical. Should annual average private sector wage inflation be one percentage point higher than the central projection in both years, this would cause headline CPI to increase by 0.2 percentage points at both end-2002 and end-2003.

Finally, prospective changes in regulated prices may constitute a special risk factor in 2003. In the central projection, prices in this category of goods increase at an average rate of 5% in 2003. In the Monetary Council's view, this implies an

upside risk to inflation. The risk in 2003 stems primarily from the fact that the price increases scheduled for 2002 may be postponed to a later date. The Bank's calculations suggest that such a change in timing may cause inflation to be lower at end-2002, but 0.3-0.4 percentage points higher at end-2003.

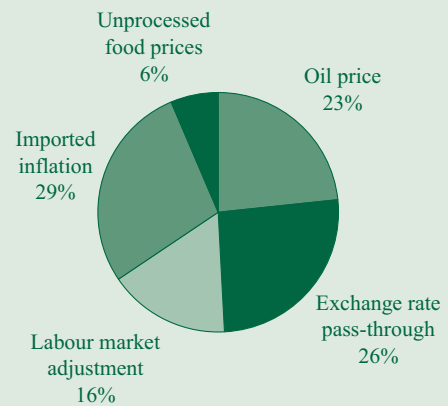
Inflation projections were also prepared for the two real economy scenarios presented in the Summary above. The two scenarios, based on faster and slower external demand growth, primarily differ in terms of the projected development of household consumption. Under the faster external growth scenario, the annual growth rate of household consumption is 0.5 percentage points higher in 2002 and 0.8 percentage points higher in 2003, relative to the central projection. Similarly, the slower external growth scenario assumes a household consumption growth by the same extent slower than the central path, the two consumption paths being the upper and lower values of the projected range for household consumption growth. Additionally, the two real economy scenarios also differ in the wage projection for the competitive sector as well as the assumed path for tradable imported inflation. In the faster external growth scenario, consumer inflation is projected at 5.5 percent for end-2002 and 3.7 percent at end-2003, while, in the slower external demand growth scenario, the corresponding rates of inflation are lower at 5.1 percent and 3.1 percent.

How does the April 2002 CPI data affect the central projection?

The consumer price index stood at 6.1 percent in April 2002, 0.2 percentage point higher than the March index. Though the April figure was higher-than-expected, inflation in tradables and market services, the two categories over which monetary policy exerts the greatest control, was in line with the expectations. This is also reflected by the decline of the core inflation figure from 6.2% in March to 6.1%. The unfavourable April CPI figure can primarily be explained by three factors. First, prices of vegetable and fruit did not moderate at the expected pace. While price hikes of these products at the beginning of the year coincided with foreign, mainly Mediterranean, price increases, domestic vegetable and fruit prices did not decline in April, unlike prices in several other European countries. Second, despite the continuous decline in cereal and flour prices, prices of bakery products rose faster than expected, which constitute a so far unusual phenomenon. Finally, the rate of price increases in alcoholic drinks and tobacco remained high due to the lagged effects of the January rise in the excise tax of tobacco and as the lingering run-out of inventories.

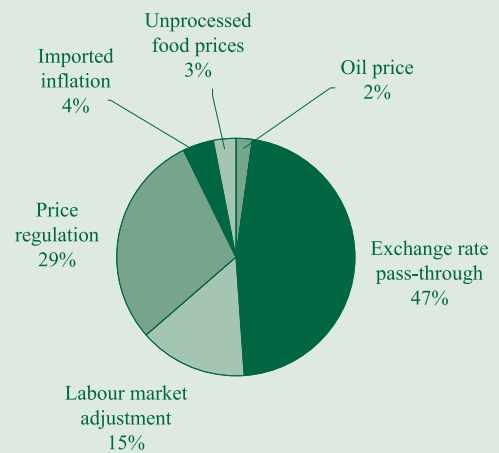
Given these processes are permanent, our central projection for the December 2002 consumer inflation might rise by 0.1 percentage point to 5.4 %, while the forecast for end-2003 would not be altered significantly.

Chart 1- 19 Main uncertainty factors in the central projection in 2002 *



* The rates at which the various factors contributed to total uncertainty have been derived from the fan chart and not the above 'discrete' scenarios.

Chart 1- 20 Main uncertainty factors in the central projection in 2003 *



* The rates at which the various factors contributed to total uncertainty have been derived from the fan chart and not the above 'discrete' scenarios.

Table 1- 6 Projections for consumer inflation under two real economy scenarios

| Scenarios | 2002 Q4 | 2003 Q4 |
|-------------------------------|---------|---------|
| Central projection | 5.3 | 3.5 |
| Faster external demand growth | 5.5 | 3.7 |
| Slower external demand growth | 5.1 | 3.1 |

2 Demand and output

2.1 Demand

Hungarian economic growth slowed to a year-on-year rate of 3.8% in 2001, closely linked to the weakening of activity in external markets. There was a continuous slowdown in growth throughout the whole year. In the Bank's current forecast, economic growth is somewhat lower in 2002 than in the previous year, with a stronger recovery in 2003.

The outlook for external demand in the current projection is broadly in line with the trends outlined in the February *Report*. The projection is based on the assumption of unchanged fiscal policy. In accordance with the decision of the Monetary Council, the forecast is based on actual government measures.

Comparing the 2002 forecast with that in the February *Report*, domestic absorption will likely grow at a significantly faster rate in 2002. A stronger rise in household consumption and an upswing in corporate fixed investment, coupled with the replenishment of inventories, will be the most important factors shaping the future course of domestic demand. The expansion of domestic absorption will be somewhat slower in 2003, with a slowdown in consumption growth and a further strengthening of fixed investment. Hungarian net exports are expected to contribute positively to economic growth, assisted by robust external demand and a more modest increase in domestic absorption.

Quarter-on-quarter GDP growth - which better reflects cyclical developments - suggests that economic growth is

Table 2- 1 GDP growth and its components

Percentage changes on a year earlier¹²

| | Actual | | Projection | |
|---|------------|------------|------------------------|-------------------------|
| | 2000 | 2001 | 2002 | 2003 |
| Household consumption | 4.1 | 4.0 | 4,8 - 5,2 - 5,6 | 3,0 - 3,7 - 4,7 |
| Household final consumption expenditure | 4.4 | 5.1 | 5,6 - 6,1 - 6,6 | 3,6 - 4,4 - 5,2 |
| Social transfers in kind | 2.8 | (-0.3) | 1,1 | 0,5 |
| Public consumption | 1.2 | 0.4 | 0,7 | 0,6 |
| Gross fixed capital formation | 7.7 | 3.1 | 3,0 - 4,5 - 6,0 | 4,3 - 6,3 - 8,3 |
| 'Final domestic sales'* | 4.7 | 3.4 | 3,9 - 4,6 - 5,2 | 3,1 - 4,1 - 5,0 |
| Inventory investment and other non-specific use | 12.6 | (-20.0) | 5,0 - 12 - 15,0 | 0,0 - 3,0 - 8,0 |
| Domestic absorption | 5.1 | 2.1 | 4,3 - 4,9 - 5,5 | 3,1 - 4,0 - 4,9 |
| Exports | 21.8 | 9.1 | 4,5 - 5,3 - 7,0 | 7,0 - 8,8 - 11,6 |
| Imports | 21.1 | 6.3 | 5,6 - 7,2 - 8,8 | 7,0 - 8,3 - 10,5 |
| GDP | 5.2 | 3.8 | 3,3 - 3,6 - 3,9 | 3,6 - 4,3 - 5,0 |

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

¹² The forecast of GDP growth has been based on projections for cyclical developments on the production side and items on the uses side. Social transfers in kind and public consumption, the estimation and interpretation of which is rather uncertain, have been forecast on the basis of average growth in the eight preceding quarters.

accelerating in 2002, in contrast with the year-on-year index. In addition to stronger domestic demand, the recovery of external demand will likely have an impact in the second half of 2002. The higher growth path is expected to cause a temporary rise in imports, due to the jump in stockbuilding. Currently, economic growth is forecast to be higher from 2003 onwards, at a slightly rising rate between 4–5%.

2.1.1 External demand

In view of the actual data for 2001 Q4 and substantial revisions to data for earlier quarters, last year's developments in effective external demand are slightly different from those outlined in the previous *Report*.¹³ Currently available data indicate an even more marked slowdown in 2001 Q1–Q3; however, fourth-quarter data show a slight pick-up, in contrast with the earlier projection of stagnation. Taken together, the level of external demand turned out to be lower in 2001 than suggested by the earlier figures, its annual growth rate being only about a half of that published in the February *Report*. In 2002 external demand is expected to grow between 1.2 and 2.3 percent, the highest probability is given to the 1.7 percent rate. A sharper increase will take place in 2003, the average annual growth rate will fall into the 5.0 and 8.1 percent band, with 6.6 percent as the central projection.

Over the short term, the Bank's external demand forecasts take into account the confidence indices of those European countries with the strongest influence on the Hungarian economy as well as the composite leading indicators of economic activity calculated by the OECD for Hungary's major trading partners. These confidence indices turned upwards in the final quarter of 2001, and then improved particularly strongly in 2002 Q1.¹⁴ External demand is expected to take the same course with a lag of one quarter – expansion in the first quarter will likely be rather modest, followed by a significant increase in growth in the second.

The path of external demand is determined by longer-term economic factors over a one to two-year time horizon. The Bank's overall perspective has changed little since the previous *Report* – the most recent and the revised data do not contradict the assumption that by end-2003 external demand will likely advance to levels suggested by the model calculations which have taken into account the longer-term economic context. Although annual average growth for 2002 remains unchanged due to the modest expansion in the first quarter relative to that assumed in the previous *Report*, growth in 2003 rate will likely be a little higher, owing to the narrowing of the gap with the earlier assumption. For both years, the Bank's forecasts of the central path fall between the highest and lowest projections provided by other international analysts.

¹³ Effective external demand is defined as imports of goods and services (as provided by GDP statistics) of Hungary's 11 major trading partners at constant prices, weighted by their percentage share in Hungary's export structure. The data revisions mostly influenced the German and Italian figures.

¹⁴ However, the IFO index, that is the most influential business climate index for the German economy, exhibited a slight drop in April, just as the EABCI, the similar index for the European Union. Other data at hand (such as the French INSEE index, that did exhibit further increase in April) do not yet provide strong evidence in favour of revision of the central external demand forecast, nevertheless the Bank does take into account these pieces of information as additional downside risk.

Chart 2-1 Quarterly GDP growth
Annualised percentage changes on the previous quarter, based on seasonally adjusted data



Chart 2-2 Current and past projections for external demand
1995 = 100

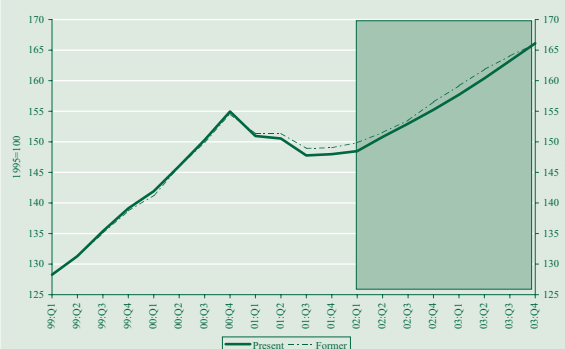


Chart 2-3 Business confidence indices of the euro zone (EABCI) and the German IFO Institute

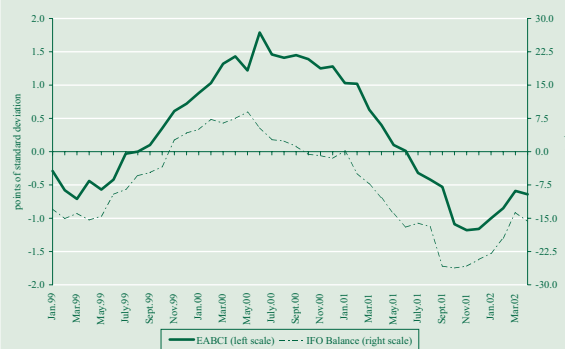


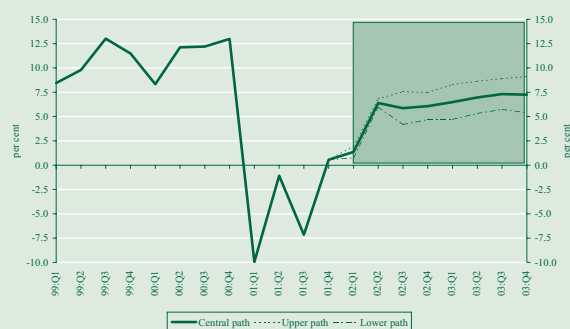
Table 2– 2 Forecasts of external demand
Annual average growth rates

| | 2001 | 2002 | | 2003 | |
|--|------|---------|----------|---------|----------|
| | fact | current | previous | current | previous |
| Weighted GDP-growth of trading partners* | | | | | |
| NBH central | 1,1 | 1.1 | 1.2 | 2.9 | 2.9 |
| NBH lower - upper | | 0.7–1.4 | 0.7–1.5 | 2.2–3.6 | 2.1–3.4 |
| OECD | | 1.1 | 1.2 | 2.7 | 2.9 |
| IMF | | 1.1 | 1.0 | 2.8 | - |
| Economist Poll | | 1.2** | 1.0** | 2.8** | - |
| JP Morgan | | 1.4 | 0.7 | 3.0 | 2.4 |
| *Weighted goods and services import of trading partners | | | | | |
| NBH central | 0,8 | 1.7 | 1.8 | 6.6 | 6.5 |
| NBH lower - upper | | 1.2–2.3 | 0.7–2.4 | 5.0–8.1 | 3.3–8.1 |
| OECD | | 2.0 | 2.9 | 7.4 | 6.9 |
| JP Morgan | | 1.7 | 1.5 | 7.5 | 7.5 |

* Weighted imports of Hungary's 11 major trading partners.

** For EU-12

Chart 2– 4 Projection for external demand
Annualised quarterly growth rates



Slower adjustments in inventories in the US, combined with lower economic growth from 2002 Q2 have been taken into account as downside risks to the central projection. A less stringent-than-expected fiscal accommodation in Germany, leading to a 1 percent higher long-term fiscal deficit than determined in the stability pact, represents the upside risk. After calculating the paths corresponding to the two scenarios, the distribution of risks around the central projection is now seen as largely symmetrical, in contrast with the assumption of the previous *Report*.

2.1.2 Fiscal stance

The direct expansionary effect of general government on demand amounted to 2.2% of GDP in 2001, turning out to be lower than the 2.5% suggested by earlier preliminary data. Due partly to the lower base and partly to developments in the year under review, the expansionary effect has been revised up from the previous 0.7% to 1.3% of GDP. This forecast is based on actual government measures¹⁵, without estimations of future discretionary actions. This no-policy-changes scenario can be seen as a conditional forecast of the demand impact, which has bands of $\pm 0.2\%$ of GDP on the basis of the Bank's normal forecasting errors: consequently, the expansionary effect is likely to fall in the range of 1.1-1.5 percent. In the next *Report* the Bank will assess the demand effect of new policy decisions, and it is possible that the result will exceed of the current upper figure of 1.5%.

The Bank assumes a contractionary impact of 0.3% of GDP for 2003. This assumption was derived from a hypothetical path which harmonises with Hungary's joining the EMU. The technical assumption of the timing of Hungary's accession to the EMU was changed from 2006 to 2007 meaning that the fiscal convergence criteria should also be met one year later, which reduces the contractionary impact from 0.6% to 0.3% of GDP in 2003.

Information on the expenditures of MFB Rt in 2001 continues to be incomplete. However, spending on road construction turned out to be 0.2% lower as a percentage of GDP than previously estimated. In addition, more modest drawings from the Deposit Account reduced the sector's expansionary effect by 0.1% of GDP in 2001. Explanation for this is that a portion of the amount transferred to this extrabudgetary account in 2000 for construction of rental units will actually be spent in 2002.

The expected expansionary effect in 2002 has been revised up by 0.3% of GDP, due to the change in the base, as the lower-than-expected data for 2001, as was already noted, have provided little argument to alter the forecast of spending on road and residential construction in 2002. In addition, it has been assumed that fiscal developments will likely contribute

¹⁵ Measures here are as decisions by relevant levels of decision-making ie. government or parliament. This means that decisions made by the former government but requiring approval from the new parliament are not taken into consideration.

to the expansionary impact by nearly 0.3% of GDP, in contrast to the earlier assumption of a neutral impact.¹⁶ However, revenues are now forecast to be higher than previously expected, based on macroeconomic developments, which will mitigate this effect by 0.2% of GDP. The effect of these developments has been taken into account on a net basis – revenues have been reduced by the amount of spending on old-age pensions calculated on the basis of the Swiss indexation system. In April, the government decided to raise pensions by more than the Bank calculated using the Swiss method on the basis of its current macroeconomic assumptions. Accordingly, government expenditures unmatched by excess revenues may boost demand by another 0.2% of GDP. But beyond these uncertainties, the Bank's forecast of fiscal policy measures has only taken into account the earlier assumptions for excess spending – the calculations reflect the full-year effects of decisions taken in the course of 2001 and the use of general reserves.

The conditional forecast for 2002 assumes a no-policy-changes scenario: in other words the demand impact of post-election measures have not been taken into account. Normally, the Bank's past estimation errors were not caused by unexpected measures, but rather the volatility of the fiscal developments and the temporary differences between macroeconomic developments and trends of the relevant taxes. The uncertainty of these factors have the same degree as usual, $\pm 0.2\%$ of GDP in 2002; both taxes and spending determined by developments may be higher than expected.

The Bank's assumption of a 0.3% improvement in the ESA¹⁷ primary balance as a percentage of GDP has been derived from a hypothetical path. The contractionary impact – calculated as a change in the SNA primary balance – is assumed to be more or less the same, namely 0.3% of the GDP. The previous *Report* hypothesized a stronger contraction of 0.6%, because the Bank assumed that 2004 is the end point of the hypothetical path which is determined by meeting the Maastricht convergence criteria, a requirement for Hungary to join the EMU in 2006. Since then the Bank has altered the technical assumption of the timing of Hungary's accession to the EMU. In the case of joining the EMU in 2007 the ESA deficit should be reduced below 3% of GDP in 2005. The hypothetical path contains another uncertainty factor due to the uncertain net effect of EU membership on the budget.

The structure of the expansionary effect on demand has a major influence on developments in prices and volumes at the macroeconomic level. This was given special attention in the Special Topics Chapter of the November 2001 *Report*. The

¹⁶ Fiscal developments include decisions taken by local authorities, government units and chapters, in addition to exogenous factors which result in the failure to meet the expenditure estimates. In the case of estimates for the chapters and institutions, residue in 2002 is expected to be nearly as much as the amount of carry-overs in estimates and deposit accounts from 2001. Consequently, these items are only expected to be overrun by less than 0.1% of GDP. In addition, however, spending overruns are expected relative to the earlier forecast in pharmaceuticals subsidies, family allowances, taking into account actual data released by the CSO, and in labour market expenditure.

¹⁷ The European System of Integrated Economic Accounts (ESA) is a conceptual reference framework, created in order to obtain comparable statistics evaluating convergence. Some conceptions of the analytical fiscal indicator of the NBH (the so called SNA deficit) are close to those of the ESA. (For more information on conceptual differences, see the *Methodological Papers*, forthcoming.)

Table 2– 3 Expansionary effect of general government on demand, as a percentage of GDP

| | 1999 | 2000 | 2001 | 2002 | 2003 |
|--|-------------|------|-------------|------------|---------------|
| | actual data | | preliminary | projection | assumed path* |
| 1. Change in SNA operational deficit** (2.+3.) | -1.0 | -0.9 | 1.9 | 1.4 | -0.4 |
| 2. Indirect demand impact (change in real interest expenditures**) | -0.4 | -0.3 | -0.3 | 0.1 | -0.1 |
| 3. Direct impact (4.+5.) | -0.6 | -0.6 | 2.2 | 1.3 | -0.3 |
| 4. Change in GFS primary balance | -1.3 | 1.2 | 0.6 | 0.9 | – |
| 5. Change in other factors (SNA corrections)*** | 0.7 | -1.8 | 1.5 | 0.4 | – |

* The assumption pertains to the impact on demand in general, and not to the specific details.

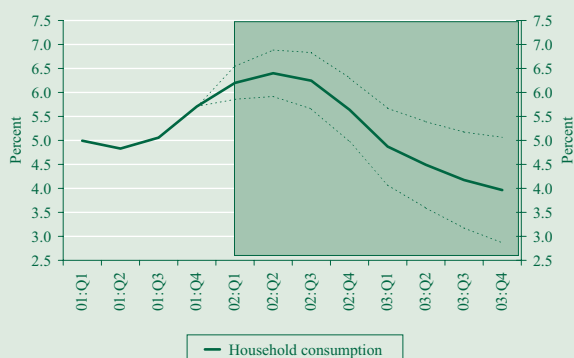
** Calculation of the operational deficit is based on the assumption that neither the inflation compensation incorporated into interest rates nor its yearly volatility affects demand. Accordingly, real interest rates are smoothed by moving averages.

*** Other factors represent those channels of demand tightening or expanding that are not reflected in the official primary balance. These factors include the effects on demand of the Hungarian Development Bank (MFB), the State Privatisation Agency and the National Motorway Company.

The sub-totals may not sum because of rounding.

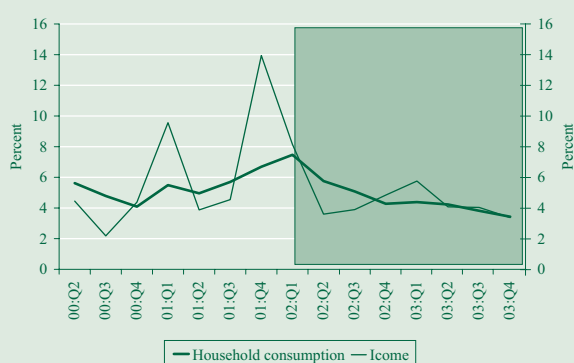
The (+) sign denotes an expansion of demand and the (–) sign denotes contraction.

Chart 2- 5 Annual growth in household consumption expenditure



The confidence interval represented by the dashed line has been calculated from the errors of past forecasts; there is a 68% probability of future actual data falling within the designated interval.

Chart 2- 6 Annualised quarter-on-quarter growth in household consumption expenditure and disposable income



composition of the expansionary effect in 2001 developed broadly as portrayed in the publication noted above. However, wages, transfers and fixed investment will likely rise more strongly in 2002 than previously expected. The Bank only has a hypothesis for the size of contraction in 2003, but obviously not for the structure thereof. In the following, these developments will be presented on the basis of the CSO methodology, in order to maintain consistency with the statistical approach to real economic developments.¹⁸

The wage bill increased by 22% in the general government sector in 2001, whereas employment fell by 0.4%. In 2002, the wage bill is forecast to rise by 19.7%, taking into account spending on wages from general reserves. This is 0.7% higher than the previous forecast, with actual data for January-February appearing to reinforce this view.¹⁹ However, the assumption that employment may fall by 0.2% in 2002 has remained unchanged.

Government transfers to households accounted for 14.1% of GDP in 2001. In the Bank's current forecast, the value index of transfers may increase by 13.2% in 2002.

The volume of government fixed investment, calculated including road construction financed off-budget, was 14.4% in 2001. The volume index will likely be around 7% in 2002. This path derived from the CSO release of statistical data cannot be made fully consistent with the dynamic of fixed investment spending recorded on a different base, reflecting the general government accounting method.²⁰

2.1.3 Household consumption, savings and fixed investment

The expected band of consumption expenditure growth is 5.6%-6.6%, and the central rate is 6.1% in 2002. In 2003 the increase in consumption expenditure may fall between 3.6% and 5.2%, with the central projection at 4.4%. As a consequence of consumption adjusting only gradually to higher earnings growth, the financial savings rate will probably not fall in 2002, even despite rising household investment expenditure. The current forecast for 2003 is lower consumption expenditure growth and financial savings rate, accompanied by lower real earnings growth.

¹⁸ When discussing general government sector wages, the February 2002 *Report* analysed the differences between general government accounting and the CSO methodology. There is no discrepancy between the two approaches to transfers to households. The differences in the treatment of fixed investment will be discussed in detail below.

¹⁹ The base effect played a strong role in the 32.4% increase in average earnings in January-February. In the same period a year earlier, average earnings growth was only 15.5%, compared with 22.4% in the year as a whole. Explanation for this is that wages were raised in several steps from April until year-end. This has a full-year-effect in 2002. Furthermore, the majority of wage increases in 2002 was concentrated in January-February.

²⁰ General government spending data suggest a stronger volume increase than those released by the CSO; 25% in 2001 and 14% in 2002. The primary reason for this is that there are significant differences in the principles of time of recording; however, general government spending, treated as fixed investment, includes a wider range of costs, which may be another cause for this difference. The CSO records fixed investment at the time of capitalisation, until then it is treated as inventory. In contrast, general government records fixed investment earlier, at the time of actual spending. This explains why the jump in fixed investment spending in 2001 has only gradually been reflected in the fixed investment data reported by the CSO.

Table 2– 4 Savings rates²²

| | Savings rate | | | | | |
|-----------------------------------|--------------|------|-------|----------|-----------|-----------|
| | Facts | | | Estimate | Forecast | |
| | 1998 | 1999 | 2000* | 2001* | 2002 | 2003 |
| Gross savings rate | 15.8 | 12.6 | 12.5 | 12.3 | 13.7–14.3 | 13.3–14.6 |
| Financial saving rate | 10.9 | 7.9 | 7.0 | 6.9 | 7.8–8.5 | 7.4–8.6 |
| Operational financial saving rate | 6.7 | 4.4 | 3.7 | 3.9 | 4.8–5.5 | 4.3–5.5 |
| Households' investment rate | 5.4 | 5.2 | 5.5 | 5.9 | 6.2–6.4 | 5.9–6.5 |

* Data for adjusted total disposable income is available only until 2000 and 2001 is approximated by wages and salaries and social benefits.

The Bank only takes into account those governmental incomes, in line with no fiscal politics change approach, which are determined by earlier decisions. In the August *Report* the effect of new income elements on consumption expenditure will be investigated, and this effect may well be considerably higher.

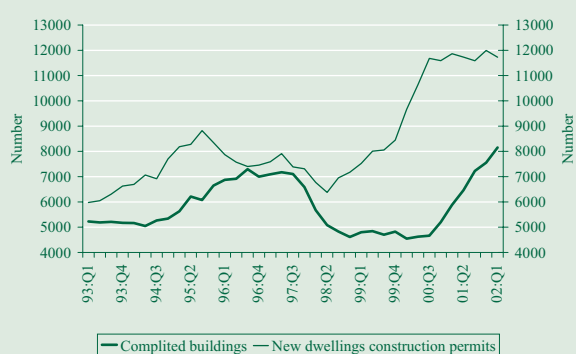
Household consumption expenditure in 2002 will likely exceed the Bank's February forecast by a large margin. This change to the projection can be traced to two main factors. First, the revision to data published by the CSO for 2001 and high fourth-quarter consumption have changed the base assumption of the forecast significantly. Second, household sector disposable income is currently forecast to be higher than previously assumed.

The Bank's forecast of consumption expenditure in 2002 has been revised up to 6.1%, in which the revision to data for 2001 Q1–Q3 and the very strong increase in consumption in Q4 both have played a definitive role. The rises in the indicators²¹ used in "nowcasting" imply a high level of consumption in 2002 Q1. Developments in the real value of the gross wage bill are a factor influencing consumption growth over the longer-term time horizon. In 2002, private sector real wages are expected grow more strongly than in 2001, due to the slower nominal adjustment (see the Chapter on labour market developments for more details). Earnings growth in the general government sector will likely be higher than in the private sector. Another factor suggesting high consumption expenditure levels is the expected stronger increase in social benefits relative to 2001. This high earnings growth will likely be only partially reflected in consumption and household investment expenditure (see below). Consequently, the Bank expects the financial savings rate to rise, consistent with the assumed smoothing impact of household behaviour on consumption.

Gross real earnings growth in 2003 in the private and general government sectors combined will likely fall below the volume seen in 2001. Furthermore, the real value of social benefits will

²¹ These indicators are the household confidence index and new car registrations in 2002 Q1 and January–February retail trade turnover. All of them show improvement compared to previous quarter.

²² The *gross savings rate* equals financial savings plus households' investment expenditure minus the ratio of capital transfers to adjusted total income. The *financial savings rate* is the ratio of financial savings to adjusted total income. The *operational financial savings rate* filters out the inflation compensation from financial savings rate. The *rate of households' accumulation* equals the ratio of households' investment expenditure, mostly on dwelling and garage construction, to adjusted total income. *Adjusted total disposable income* includes transfers in kind and savings in pension funds, in addition to total income.

Chart 2-7 Number of building permits and completions

probably grow at a more modest pace relative to 2001. As a consequence of this more subdued earnings growth, the smoothing effect on consumption will likely show its 'opposite' side – the financial savings rate will likely fall as a result of consumption moderating at a slower pace than the slowdown in earnings growth.

The third component of households' decision on using earnings is the determination of investment expenditure, the largest constituent of which is home construction investment. The current forecast is based on the number of building permits and the increase in disposable income. According to past experience, around 60% and 40%, respectively, of building permits are reflected in the number of completions in the following year and in two years' time.²³ Taking this into account, the volume of dwelling investment may be around 13-15% in 2001, 12%-16% in 2002 and 5% in 2003, broadly comparably with the February forecast.

The biggest factor of uncertainty in forecasting consumption expenditure is the degree of labour market adjustment. In the Bank's estimate, provided that real earnings are permanently 1 percentage point higher than the current forecast, then the volume of consumption expenditure will be 0.5 of a percentage point higher in the initial year and 0.3 of a percentage point higher in the second year than projected.

2.1.4 Corporate investment

Both forecasts of corporate and total investment have been revised up compared to the previous *Report*, in spite of lower forecast for the *level* of external demand. In contrast with the fall between 0-5% in the Bank's previous forecast, corporate fixed investment currently is expected to rise slightly, by 0-3% in 2002. The earlier forecasts of investment growth for 2003 has also been revised up to a current 4-8%.

As the corporate sector accounts for more than 60% of total fixed investment, the change to the forecast for corporate investment has modified the Bank's projection for investment in the total economy as well.²⁴ Based on the forecasts for government and household sector investment, presented in the Chapters on fiscal policy and household consumption, as well as on the forecast for corporate sector investment outlined above, fixed capital formation in the total economy will likely be higher than previously expected.

Accordingly, total fixed investment is currently forecast to grow by roughly 4.5% in 2002 and by approximately 6.3% in 2003. Based on previous errors the interval of the Bank's forecasts is 3-6% for 2002, and 4.3-8.3% for 2003. The revision in total investment was due to the higher than expected last quarter data of 2001, and also to the improvement of economic prospects.

Total fixed investment growth slowed gradually in 2001 Q1-Q3. This was caused mainly by a decline in manufacturing

²³ Excluding the number of failed constructions.

²⁴ At the whole-economy level, the Bank's forecast refers to fixed capital formation as shown in the GDP balance sheet. Small items, such as leasing, may cause differences between the values of fixed capital formation and fixed investment; however, the volume indices for the two categories are only marginally different.

investment activity, explained in turn by the sector's unfavourable cyclical outlook. The uncertainty of the turning point of external demand, the decline in the GKI confidence index and the high ratio of unutilised production capacity suggest that the level of fixed investment may even fall in the first half of 2002.

In contrast, fixed investment growth did not slow further in 2001 Q4 relative to earlier periods, with its annual rate stabilising around 3%. Several factors may have played a role in the slowdown in investment growth coming to a halt towards year-end. First, high investment volumes in the transport, telecommunications and property sectors indicate that the rates of motorway and residential construction growth remained unchanged. Second, large investment projects were implemented in the government sector as well. Third, manufacturing investment fell more modestly in the final quarter than expected earlier. This suggests that the decline in manufacturing investment may have passed its low point in 2001 Q3.

The current assessment of corporate investment²⁵ is more favourable than earlier. The Bank previously forecast corporate investment activity to slow further towards end-2001 and in the first half of 2002 and to recover in the second half, due to the close relationship between fixed investment and external cyclical conditions. In contrast with this picture, actual data for 2001 Q4 did not show a further decline. The recent significant increase in capital goods imports also indicates a pick-up in investment activity. The cyclical outlook for investment has been improving – the GKI confidence fell to its low at end-2001 and resumed rising in 2002 Q1.

However, indicators of capacity utilisation paint an even more complex picture. According to the survey by Kopint-Datorg, capacity utilisation has been falling since the end of 2000 and has recently been near the level seen at the time of the Russian financial crisis. This suggests that investment activity is unlikely to recover in the near future, and that further gains in output are feasible even with the current excessive levels of production capacity. However, there was a change in the assessment of capacity in relation to future orders for output in 2002 Q1 – firms expected higher capacity utilisation rates in the coming six months than earlier. If this trend proves to be lasting, then fixed investment activity may pick up from 2002 Q2.

2.1.5 External trade

Developments in Hungarian goods exports in 2001 were shaped primarily by the decline in external demand, while the strong unit labour cost-based real appreciation of the forint played a less significant role. But the real exchange rate tends to exert its influence over a period of more than one year. Therefore, the slowdown in export growth was less sharp than that in external demand in the year under review, broadly in

²⁵ The value of corporate fixed investment has been estimated by the Bank. The CSO only reports data on corporate fixed investment annually. The category of fixed investment in the Bank's methodology does not include investment projects linked to motorway construction, treating these as state investment projects, in contrast with the CSO's treatment.

Chart 2-8 Corporate fixed investment and capital goods imports
Percentage changes on a year earlier



Chart 2-9 Corporate fixed investment and the GKI confidence index



Chart 2-10 Current and expected capacity utilisation in manufacturing

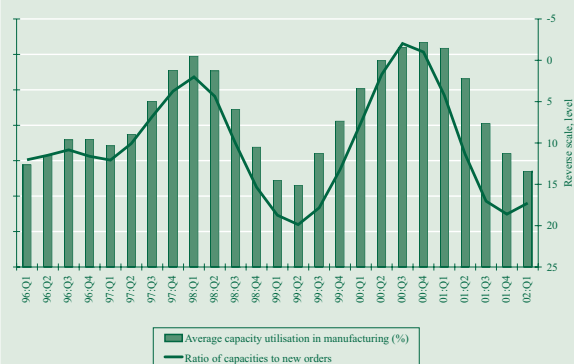
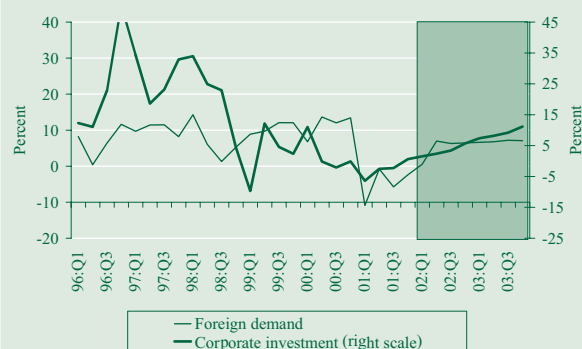


Chart 2-11 Forecasts of corporate fixed investment and external demand

Annualised growth rates



line with the forecast of the previous *Report*. With the earlier-than-expected recovery in external demand, the Bank assumes, based on data currently available, that export and import expansion will likely be stronger than previously thought.

Based on our forecasts 2002 will see exports growing between 4.5 and 7.0 percent, with the highest probability attached to the 5.3 percent rate. In 2003 the average annual growth rate will fall into the 7.0-11.6% range, with 8.8 percent as the central projection. Imports will expand between 5.6 and 8.8 percent this year, the base projection implies a 7.2 percent growth rate. In 2003 imports will increase in a range of 7.0 to 10.5 percent, within that range the highest probability is given to the 8.3 percent growth rate.

The path of external demand is expected to be lower in 2002 than projected in the previous *Report* and real appreciation in 2001 will likely have a larger impact in 2002, being stronger than expected a quarter earlier. Therefore, the average annual increase in goods exports would likely be somewhat lower in 2002 than the earlier forecast, however the Bank perceives additional upside risk, thus the projection band is asymmetric around the central path. In 2003, the effect of external demand will be expansionary and that of the 2002 exchange rate appreciation prevailing in 2003 contractionary. The Bank expects exports to return to levels projected earlier, fuelled by developments in external demand. Consequently, the average annual rate of export growth will likely be 1 percentage point higher than projected in the previous *Report*.

The actual decline in imports in 2001 is now seen to have been larger than assumed in February, explained by the large scale of de-stocking. It is noteworthy, however, that business fixed investment did not fall significantly in 2001 Q4. The Bank's current forecast includes a strong pick-up beginning with 2002 Q2. Taking account of the low base, the expected more robust investment activity, inventory accumulation as well as a likely expansion of household consumption in 2002, the annual average rate of import growth has been revised up from the earlier estimate. But in 2003 the rate at which the components of domestic demand other than investment grow will likely drop significantly, so goods imports will be kept on a rising growth path by the swift improvement in external cyclical

Table 2– 5 Current account deficit and the financing capacity of sectors
As a percentage of GDP

| | 2000 | 2001 | 2002 | 2003 |
|--|-------------|-------------|-----------------------------|-----------------------------|
| | Estimate | | Forecast | |
| I General government* | -3,4 | -5,1 | (-6,0) | (-5,5) |
| II Private sector (1 + 2) | 1,2 | 3,6 | 3,4 | 2,7 |
| 1 Households | 5,1 | 4,9 | 4,8 | 4,3 |
| 2 Corporate sector** | -3,9 | -1,3 | (-1,4) | (-1,6) |
| Financing requirement (I + II)*** | -2,3 | -1,5 | (-2,7) | (-2,7) |
| Current account balance | -2,8 | -2,1 | (-3,6) (-3,1) (-2,8) | (-3,7) (-3,2) (-2,6) |
| In EUR billions | -1,4 | -1,2 | (-2,4) (-2,1) (-1,9) | (-2,7) (-2,3) (-1,9) |

* Consolidated general government (including the NBH) calculated from financing side differently from SNA deficit.

** Financial and non-financial corporations combined. Spending on motorway construction by the state is not included, as it is recorded under the general government sector.

*** On a cash basis. The external financing requirement includes both the current account and the capital account balance.

conditions. This path, however, contains a somewhat lower average annual expansion than previously thought.

The Bank's projections for services have changed little – travel receipts may rise modestly in 2002 and somewhat more significantly in 2003, reflecting developments in external cyclical conditions. However, travel expenditure is expected to increase more rapidly in 2002, coupled with the expansion of household income; this rate of growth will likely slow in 2003. The trends in other services are expected to be largely comparable with those in goods. Accordingly, expenditure will likely rise more strongly than revenue, with a possible reversal in this trend in 2003.

2.1.6 External balance

At EUR 1.9-2.4 billion, Hungary's current account deficit in 2002 is now forecast to be higher than in the February *Report*. The higher external financing requirement may be explained primarily by a deterioration in the saving position of general government and, partly, the private sector. The general government borrowing requirement is expected to be higher as a percentage of GDP relative to the previous year, due to the base effect and more robust fiscal expansion, described in the Chapter on fiscal policy. In 2002, household consumption and investment as a percentage of GDP will likely rise more strongly than disposable income. Restrained by real appreciation and slow labour market adjustment, domestic firms' disposable income is expected to rise only slightly expressed as a percentage of GDP. They will likely step up their investment spending more robustly than assumed in the February *Report*, but this is not expected to cause an additional increase in the borrowing requirement as a percentage of GDP relative to the previous year.

The current account deficit in 2003 is expected to remain broadly static at the previous year's level. Although the assumption for the theoretical fiscal path is now seen to cause a fall in the general government financing capacity, this will likely be offset by a lower private sector borrowing requirement. In the current projection, households' financing capacity falls. Explanation for this is that disposable income probably will not rise as much as consumption expenditure and investment spending. In addition, borrowing needs of businesses will likely be higher on account of the cyclical upswing in fixed investment.

2.2 Output

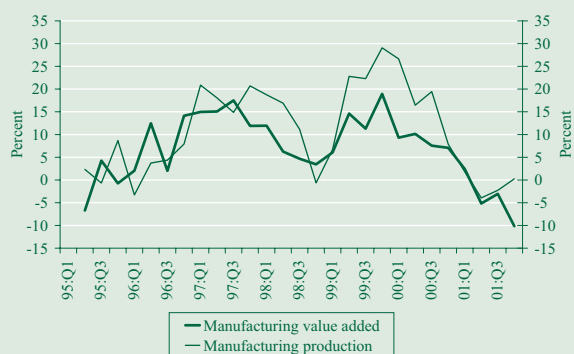
The forecast of the manufacturing value added has been lowered since the previous *Report*, due to a lower projection for the level of foreign demand and the lower-than-expected Q4 data. The Bank expects growth of 2% for 2002, and 7.3% for 2003. Based on the low foreign demand scenario even an increase as low as 1.5% and 5.7%, respectively, may occur. On the other hand, stronger-than-expected foreign demand may cause growth of 2.5% this year and 8.9% in 2003.

Chart 2- 12 Exports and imports
Year-on-year growth rates

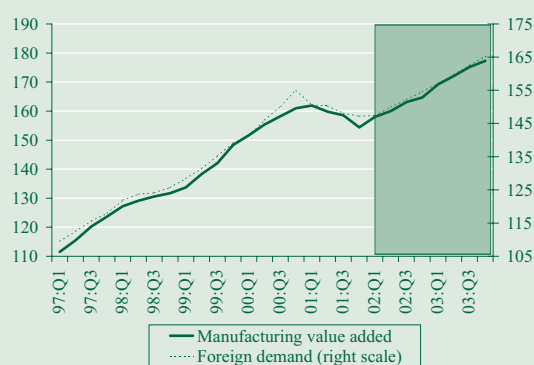
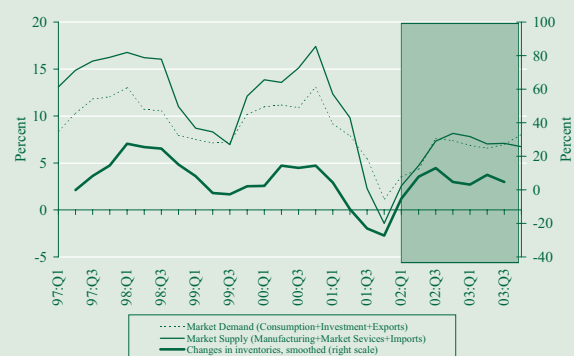


Chart 2- 13 Gross manufacturing output and value added

Annualised quarter-on-quarter growth rates

**Chart 2- 14 Forecasts of manufacturing value added and external demand**

1995 average = 100

**Chart 2-15 Annual growth in market demand* and supply****

Seasonally adjusted. Inventory statistics according to GDP have been smoothed using moving average.

* Market demand = consumption + investment + exports.

** Market supply = manufacturing output + output of market services + imports.

In line with earlier expectations, Hungarian manufacturing output continued to stagnate in 2001 Q4. Nor do the January-February 2002 data indicate a major change.²⁶

Interpreting the 5.6% decline in manufacturing value added is crucial for the assessment of end-2001 developments. There have been examples in the past for gaps between the dynamics of gross output and value added, although these have been relatively short-lived. At the moment, there is insufficient information to explain this difference.²⁷

The forecast for manufacturing value added has been altered significantly since the previous *Report*. There are two reasons for this: 1) the change in the forecast of external demand; and 2) the dramatically low fourth-quarter data. In the Bank's analysis, growth in manufacturing value added is determined by variations in external demand over the longer term. Therefore, the Bank expects lower level of external demand to allow manufacturing firms to achieve only modest gains in value added. However, fourth-quarter actual data show a significant drop in value added, despite the stagnation of external demand. It is assumed that this phenomenon, which is closely related to the jump in current production use, will prove to be transitory. Accordingly, in the current forecast manufacturing value added growth in 2002-2003 follows the long-term trend determined by developments in external demand. This means lower annual growth of 1.5-2,5% in 2002 relative to the previous forecast and higher growth of 5.7-8,9% in 2003.

Fourth-quarter developments in market services were largely as expected earlier. The volume of market services rose by 4.2% in 2001, at a much stronger rate than growth in manufacturing value added. The forecast of services sector value added has been revised up significantly relative to that published in the previous *Report*. The reason for this is that the expansion of consumption in 2002 is now expected to be higher than previously thought. In the Bank's current forecast therefore, market services value added grows by 4.5% in 2002 and by 4.0% in 2003.

The forecast for market supply for 2002, calculated as the sum of manufacturing and services sector value added plus imports, exceeds the expected volume of market demand from the second half of 2002. Accordingly, the build-up in inventories is now forecast to be strong in 2002 H2. This expected course of inventories is largely in line with that outlined in the previous *Report*, and is consistent with the business cycle forecast (see the Special Topics Chapter of the February *Report* for more details).

²⁶ The CSO data show a significant increase of manufacturing output in March, due to an increase in domestic sales. As a result of the March data the growth of manufacturing output in the first quarter was higher than our expectations. The fact that production grew faster than sales in the first quarter confirms our expectations of a strong stock building activity. The low growth of export sales in 2002:Q1 is in parallel with our foreign demand forecast.

²⁷ One possible explanation is the recovery of purchased inventories. As described in detail in the previous *Report*, purchased stocks were expected to rise, in line with the improvement with the outlook for business conditions, given that stock levels had largely been adjusted to stagnating output. In this respect, the rise in inventory intentions may be interpreted as a sign of an improvement in business conditions and a future pick-up in output. The business survey of the Kopint Datorg show a significant upsurge in purchased stocks in 2001:Q4. On the contrary, the CSO inventory statistics indicates a downward trend in purchased stocks.

3 Labour market and competitiveness

As was pointed out in the February *Report*, the intensity and speed of labour market adjustments are crucial from the perspective of the real economic costs of disinflation. As long as businesses adopt flexible wage policies, they may be able to adjust to a new disinflationary environment without incurring major losses in profitability. In other words, price disinflation need not entail a serious sacrifice in terms of growth. If, however, wages are not flexible in adjusting to a lower path for price inflation, firms may respond to the relatively higher labour costs by reducing employment. This may cause output to decline, aggravating the growth sacrifice of disinflation.

One of the assumptions of the previous *Report* was that nominal adjustment would be likely reflected in lower wage growth data at the end of last year, due primarily to a reduction in non-regular pay. However, this adjustment did not take place, and at the same time, manufacturing employment declined faster than assumed in previous *Reports*. Furthermore, data available for the period to 2002 suggest that in early 2002 the annualised monthly nominal wage indices of the manufacturing remained virtually unchanged at the level for end-2001.²⁸ The implication is that firms' wages policies have not yet been markedly disciplined by the nominal exchange rate in manufacturing either, where the necessity of adjustment was assumed to be the strongest, due to international competition.

Consequently and in accordance with the Monetary Council's request, in the central projection contained in this *Report* the nominal labour market adjustment process is slower and more prolonged than previously outlined, as a combined effect of several factors (see the section on wage inflation). Slower nominal adjustment also means that manufacturing employment is likely to slow down to a greater extent than earlier projected.

The Bank has also re-estimated its assumption of the effects of the rise in minimum wages. It still believes that the rise in 2001 had, in the most part, only a statistical distorting effect, as formerly 'grey' income was revealed. At the same time, the Bank has attempted to give a numerical estimate of the actual upward effect on service sector pay of the rise in minimum wages. The revised estimates suggest a higher wage inflation rate in this sector.

²⁸ The March index for market services appears to be high. As, however, there is considerable noise in the monthly series of services, it is difficult to judge whether it is a single outlier value.

Table 3– 1 Labour market data (central path)
Percentage changes on a year earlier

| | Headline data of CSO | February 2002 Report | | | May 2002 Report | | |
|---------------------------------|----------------------|----------------------|------|------|-----------------|------|------|
| | | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 |
| Manufacturing | | | | | | | |
| Employment* | -1.4 | -0.5 | -1.1 | 0.6 | -0.7 | -1.8 | 0.1 |
| Wage inflation | 14.6 | 14.0 | 9.0 | 5.7 | 14.4 | 11.1 | 6.6 |
| Market Services | | | | | | | |
| Employment* | 1.4 | 3.1 | 1.2 | 1.4 | 2.7 | 1.3 | 1.5 |
| Wage inflation | 16.8 | 11.3 | 9.5 | 7.0 | 13.7 | 11.2 | 8.5 |
| Manufacturing + Services | | | | | | | |
| Employment* | 0.1 | 1.3 | 0.0 | 1.0 | 1.0 | -0.3 | 0.8 |
| Wage inflation | 15.7 | 12.6 | 9.2 | 6.4 | 14.0 | 11.2 | 7.5 |

* In the Report, data of full-time employees are adjusted in 2001, because according to available data a possible form of circumventing the mandatory minimum wage increase may have been the reclassification into part-time employee but presumably this did not mean any change in the actual employment conditions.

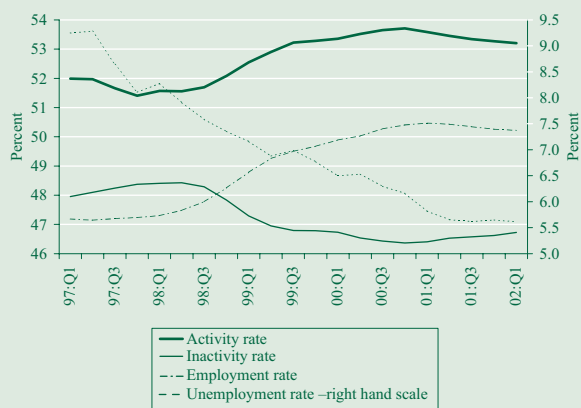
In the projection, slower-than-expected nominal adjustment leads to higher wages and lower numbers in employment. This is added to the explicit incorporation of the effects of the minimum wage rises. In view of the above, both in 2002 and 2003 the projection is for higher wage growth and lower numbers in employment than projected the previous *Report*. These two factors account for a largely equal share of the shift from the previous projection. Considering the uncertainty of the labour market processes the predictions for the private sector as a whole for wage inflation are between 10.4% and 12%, and those for employment growth are between -0.6% and 0% in 2002. Inside these ranges the central path is 11.2% for wage inflation and -0.3% for employment growth. The predictions for wage inflation are between 6.2% and 8.8% and those for employment growth are between 0.3% and 1.3% in 2003, and the central path are 7.5% and 0.8% for wage inflation and employment growth, respectively.

3.1 Employment

In the first quarter of 2002, aggregated labour market indicators suggest the continuation of tendencies which were experienced in the second half of 2001.²⁹ The labour market was characterised by a slightly falling employment ratio and by a stagnating unemployment rate. However, in contrast with earlier years, the activity ratio also fell and the proportion of inactive people rose. The delay in nominal wage adjustment may have aggravated the trends noted above.

The latest monthly information on early 2002 gives no clear indication of the most recent employment trends in manufacturing and private services relative to end-2001.³⁰ However, the final figures for 2001 signal a major fall in numbers in manufacturing employment, compared with the rate assumed earlier.³¹ This stronger-than-expected decline and the latest wage inflation figures suggest that nominal adjustment is lagging behind, compared with the path projected in the

Chart 3– 1 Labour market indicators*



* Labour Market Survey of the Central Statistical Office. Derived from seasonally adjusted data.

²⁹ On the basis of the Labour Market Survey of the Central Statistical Office

³⁰ In general employment data originated from monthly Institutional Labour Statistics show outlier values in the some earliest months of the year. At the beginning of 2002 data indicate an increase in manufacturing and a decrease in private services, but it is of little informative value from the point of view of economic analysis.

³¹ See the November 2001 *Report*.

previous *Report* (see the section on wage inflation). This may imply that firms will continue to be more inclined to adjust the number of employed people than to adopt nominal adjustment. This may continue to be typical of manufacturing, which is directly exposed to external competition and where sluggish external activity has been reflected in a falling rate of employment ever since end-2000. However, if wage adjustment is slower than described in the previous *Report*, this may cause the number of employed people to drop further. By contrast, a pick-up in external activity and an acceleration in nominal adjustment from the latter half of 2002 may lead to a gradual increase in numbers of employed in the manufacturing sector.

The service sector continues to enjoy buoyant activity thanks to strong household demand (see the section on consumption). The favourable cyclical conditions caused employment to grow in 2001, despite a high rate of wage increases. As in the current projection activity is more buoyant than previously predicted, employment in the service sector expands at a steady pace in both years. On the other hand, a stronger-than-estimated impact of the rise in minimum wages may pose a downside risk to employment growth.

All of these factors considered, total private sector employment growth is expected to be between -0.6% and 0% in 2002 and between 0.3% and 1.3% in 2003. The central path of projection are -0.3% and 0.8% in 2002 and 2003, respectively. This is the combined result of a projected 2% fall in manufacturing employment in 2002, followed by a flat period in 2003, and an approximately 1.5% rise in service sector employment in both years.

3.2 Labour reserves and tightness

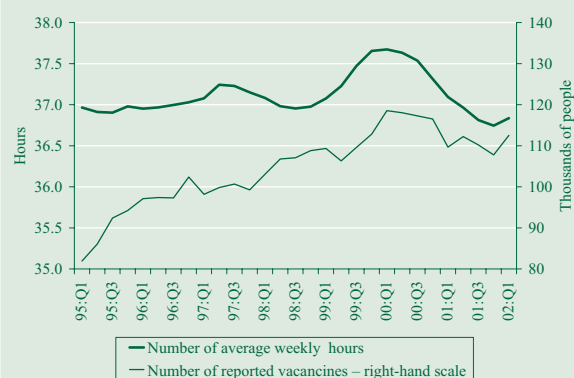
There has been relatively little new information on labour reserves and labour market tightness since the previous *Report*. As it was noted in the preceding section, the employment ratio remained level in the first quarter of 2002. Average manufacturing hours worked continued to fall in 2001, while data for January and February 2002 indicates a reversal of this tendency. The number of whole-economy vacancies also rather rose in the first quarter of 2002 following the earlier decline.

The reversal of the falling tendency of the average manufacturing hours worked may reinforce the expectations of improving activity in this sector, because enterprises adjust to cyclical conditions in the intensive margin at first.

3.3 Wage inflation

As noted earlier, non-regular pay at end-2001 suggests that firms did not start to adjust nominal wages to the new path for inflation despite the Bank's expectations, and data for January-March 2002 indicate no decline in wage growth. Within the private sector, manufacturing annualised monthly wage indices have remained flat, while the monthly service sector indices are too erratic to draw clear conclusions.

Chart 3-2 Average weekly hours worked by manual workers in manufacturing and number of private sector vacancies*



* Data for hours worked are seasonally adjusted and recalculated statistically for businesses employing over five people (source of basic data: CSO). Data for private sector vacancies are flow data and seasonally adjusted (source: Employment Office).

There are a number of hypotheses to explain the absence of nominal adjustment. It is clear, nevertheless, that manufacturing may have been characterised by a stronger necessity of adjustment in the wake of the band widening and adverse external cyclical conditions. By contrast, strong demand in the service sector must have continued to foster good cyclical conditions.

Hypotheses explaining the absence of nominal adjustment are crucial from the point of view of the real economic costs of disinflation. The main question is to what extent the absence of firms' nominal adjustment was accompanied by worsening profitability during 2001. If there is only a minor decline in corporate profitability, there is no need for the Bank to expect stronger adjustment in the number of employed people, as firms are not forced to make such adjustments. However, if corporate profitability declines more strongly, higher-than-expected wage rates will force firms to reduce the numbers of employed to a greater extent in an attempt to restore profitability to pre-disinflation levels. The labour market hypotheses formulated to account for the absence of nominal adjustment are as follows:

Effect of relative wage levels

In one possible explanation employees also take into consideration their relative wage situations in the course of wage settlements. As a consequence, the very strong growth in general government wages has also exerted upward pressure on private sector wages. This explanation seems to be somewhat contradictory to the Bank's view of the Hungarian labour market as being characterised by decentralised wage bargaining, with employees holding relatively weak bargaining positions.

Labour market bottlenecks

Labour market bottlenecks may be another explanation for high nominal wage indices. This problem is usually not relevant for manufacturing, characterised by excess capacities rather than tightness both on cyclical and competitiveness measures. It is theoretically possible though that in general there are excess capacities, but certain, especially highly qualified, segments are characterised by tightness. If this is the case, wage growth in tight segments may exert upward pressure on the general level of wages. However, data on numbers in manufacturing employment suggest that the fall in numbers and, hence excess capacities, is a general phenomenon in manufacturing. Accordingly, the manufacturing labour market is much more strongly influenced by cyclical and competitiveness factors than by structural ones.

By contrast, considering the buoyant activity and rapidly expanding employment in the service sector, high wage growth may well be due to tight supply in certain labour segments. Review of this question is in progress in the absence of adequate information.

Effect of the minimum wage increase

Furthermore, the effect of the rise in minimum wages amounting to a total of 100% in nominal terms in 2001 and 2002 should not be ignored. In sectors where it had an actual effect it exerted significant upward pressure on wages both

³² See Kertesi-Köllo (2002) "Labour Demand with Heterogeneous Labour Inputs after the Transition in Hungary, 1992-1999 and the Potential Consequences of the Increase of Minimum Wage in 2001 and 2002", ACE Project Report, manuscript

directly and indirectly via the need for rebalancing the ratio of wages paid to low and highly qualified employees.³² However, the upward pressure from minimum wages cannot account for the strong manufacturing wage growth, as according to the Bank's knowledge and calculations the rise in minimum wages in 2001 did not have an actual effect on the aggregated level of the manufacturing wage payments.

Effect of the balance sheet channel

The band widening has affected corporate profitability via two main channels, the external trade channel and the balance sheet channel. The former has influenced firms' profitability via shrinking export earnings, and the latter via capital leverage. It may be that the appreciation of the forint's exchange rate seen since the band widening had a lesser impact on firms' profitability than could have been assumed on the basis of merely the appreciation of real exchange rates (foreign trade channel). As the great majority of firms accounting for the production of export value are in significant net debt position in foreign exchange, the appreciation may have mitigated the adverse effect on profitability of lower export earnings via the balance sheet channels. This may possibly account for the lack of such strong adjustment pressure on the corporate sector that would have held wage payments in check.

Summary

There is insufficient information to aid the Bank in choosing from the above explanations. Nevertheless, the correct choice must be some kind of combination of the above factors. It is also a plausible assumption that manufacturing and service sector profitability must have followed rather diverging trends last year. There are numerous arguments in support of the assumption that manufacturing profitability as a result of the above hypotheses worsened to an extent which was by no means negligible. First, according to the Bank's estimations due to the different term structure of foreign exchange assets and liabilities, the effect of the balance sheet channel could most probably cause any improvement in corporate profitability only one year after the appreciation. On the other hand, the unit-labour-costs-based real exchange rate reflects a roughly 9% rate of real appreciation in manufacturing in 2001, amidst unfavourable external cyclical conditions. By contrast, thanks to robust consumer demand, there is no reason to assume any worsening in service sector profitability, despite the rise in minimum wages.

The implication of the hypothesis of worsening corporate profitability is that the slower-than-expected nominal adjustment will likely be accompanied by a somewhat higher reduction of manufacturing employment than projected in the February *Report*, while labour demand continues to be strong in the service sector.

Due to the key importance of wage adjustment, the Bank's staff have attempted to take account of the potential upward pressure of the rise in minimum wages and its negative effect on employment in the sectors where the increase had an actual impact. Econometric studies support the Bank's previous assumption that the level of minimum wages in 2001 did not have a real impact on the aggregated level of the manufacturing wages, but caused nearly 2-percentage-point excess growth in service sector wages. Higher wage growth in the service sector caused employment to decline by about 1%, *ceteris paribus*.

Chart 3-3 Estimated wage inflation in the service sector*

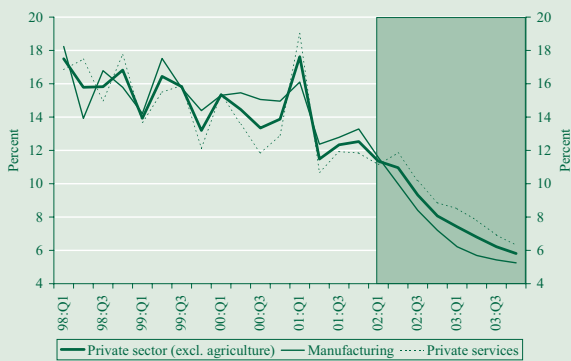
Percentage changes on a year earlier



* Year-on-year changes recalculated using a statistical method for businesses employing over five people. Seasonally adjusted data.

Chart 3-4 Current wage inflation projection*

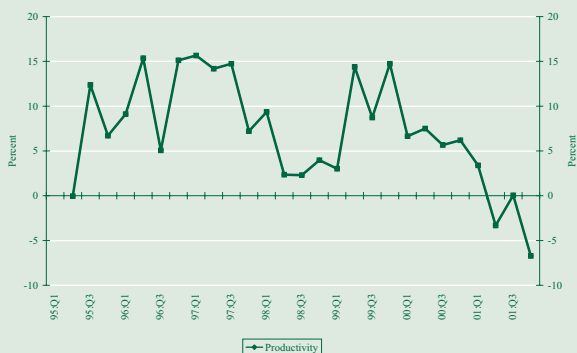
Annualised quarterly growth rates



* Seasonally adjusted data, recalculated statistically for businesses employing over five people.

Chart 3-5 Manufacturing productivity

Annualised quarterly growth rates



Giving a more accurate estimate of the minimum wage effect has implied an upward revision to service sector wage indices. Increased service sector wage inflation in turn pushed up the rate for the total private sector from about 13% to 14% (on the other hand, the wage index published by the Central Statistical Office is 15.7%).³³

Including the minimum wage effect over the forecast horizon contributes in its own right one percentage point to private sector wage indices in 2002, in addition to a similar increase caused by the weaker-than-expected nominal adjustment. In the current projection, manufacturing wage indices only decrease to a marked extent from the second half of 2002. By contrast, due to the inclusion of the minimum wage effect, no significant nominal adjustment is likely in respect of market services sooner than 2003. Thus, considering the uncertainty of the labour market processes the prediction for the private sector as a whole for wage inflation is between 10.4% and 12% in 2002. According to the central path, wage inflation amounts to 11.2%, up by 2 percentage points on the previous forecast. The increase is accounted for in equal shares by slower-than-expected nominal adjustment and by taking account of the minimum wage effect. In 2003, wage inflation is predicted between 6.2% and 8.8%. As activity is expected to pick up in 2003, the central path of projection for wage inflation for the private sector as a whole has been revised to 7.5%, up on the previous figure of 6.4%.

3.4 Productivity and competitiveness

Manufacturing cost competitiveness was weaker in 2001 than projected in February. To a certain extent, this was due to the absence of nominal adjustment, but most of all to the sharp fall in manufacturing value added seen in the final quarter of 2001 (see the section on output). The latest value added data reflect a 1.7% quarter-on-quarter decline (6.7% in annual terms) in manufacturing productivity in Q4, following a flat period since the start of 2001.

This decline raises manufacturing unit labour costs in Q4 by roughly 5% compared with the previous projection, also reflected in the 2001 Q4 index of the unit-labour-cost-based real exchange rate.³⁴ Consequently, the real exchange rate in 2001 Q4 has been revised upward by 6% from the rate projected previously.

The projected course for the real exchange rate in 2002 and 2003 has been revised upwards, basically due to the low manufacturing value added figure in 2001 Q4. According to the new central path, the level of the real exchange rate at the end of 2003 is at the level of the earlier backward looking wage formation projection. However, the dynamics of the indicator

³³ These results are somewhat more conservative than those suggested by Kertesi-Köllő (2002), who estimate the wage and employment effect of the minimum wage rise in 2001 to amount to 1.5% and 2.5%, respectively for the private sector as a whole.

³⁴ This effect was somewhat mitigated by the revision to earlier data on foreign unit labour costs.

within the two years has not changed significantly compared to the previous central scenario, despite slower nominal adjustment. There are two main reasons for this. Firstly, the Bank views the decline in value added as temporary (see the section on output); and secondly, the fall in numbers employed is expected to be larger. However, the annual average appreciation rate for 2002 has been revised upward by 2 percentage points, due to the base effect of the data on 2001 Q4. Thus, the projection for real appreciation is approximately 8-9% for 2002 and 2003 combined.

The forecast for the price based real exchange rate indicators is in strong connection with the inflation forecast, as the forecast for tradable prices and the analyses of the exchange rate pass-through implicitly contains a concept of tradable real exchange rate. Furthermore, using the concept of equilibrium nontradable-tradable price ratio, the projection of market services implicitly contains another concept of real exchange rates.³⁵ Thus, the projection of tradable prices is strongly connected to the manufacturing price based real exchange rate, while the nontradable price forecast is partially formed on a basis of consumer price based real exchange rate.

In 2001, the consumer and the manufacturing price based real exchange rates appreciated by 7.5% and 8.8%, respectively. The larger manufacturing price based appreciation is due to the low base in the previous year. From the figure below it is obvious, that manufacturing prices reacted more to the widening of the exchange rate band than consumer prices. As a result, the pace of manufacturing price based real appreciation decreased by the end of 2001, while the dynamics of consumer price based real appreciation remained almost unchanged.

Expecting more significant nominal adjustment only in the second half of 2002, the Bank projects 9% annual real appreciation in 2002, while in 2003 the dynamics of real appreciation will decrease considerably, to 2.5%.³⁶

Chart 3- 6 Level of the real exchange rate based on unit labour costs in manufacturing

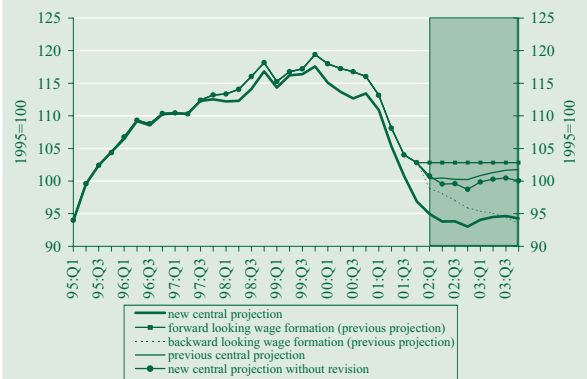
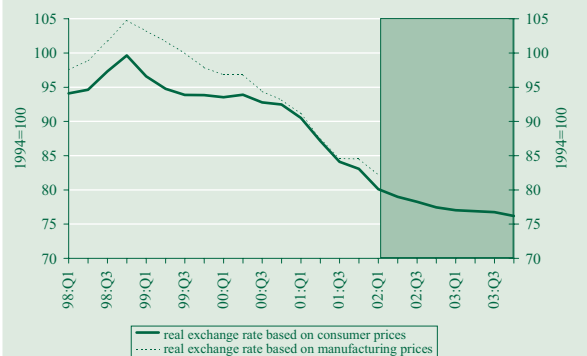


Chart 3- 7 Price based real exchange rate indicators



³⁵ The forecast of the real economy is based on a third concept, the unit labor cost based real exchange rate.

³⁶ As the Bank does not make quantitative projection for manufacturing prices, only the consumer price based real exchange rate is analysed for the projection.

4 Monetary developments

4.1 International economic environment and risk perception

The European Central Bank has not changed its major policy rates since November 2001. Higher-than-expected inflation data for the euro area at the start of the year led to stronger expectations of an official interest rate hike as early as January. Market participants' expectations of a rate increase by the ECB were intense from the end of February and into March, before moderating somewhat in April. Based on 3-month Euribor options on 24 April, the market expects official interest rates to rise by 25 basis points towards the end of June.

In addition to events and economic developments in Hungary, international investors' demand for emerging and developed country high-risk financial assets continues to be a strong factor shaping movements in the risk premium on Hungarian investments. The Bank's analysis, therefore, pays special attention to the indicators of global risk perception, in addition to Hungary-specific indicators. From among these, the Bank closely monitors variations in the EMBI spread (a gauge of investor demand for emerging country sovereign bonds), the index of spreads on high-risk US corporate bonds and the implied volatility of US stock index options. In 2002 Q1, these indicators all signalled a pick-up in investor demand for higher-risk financial instruments.

The temporarily more risk averse attitude following the events of September 11th turned around in 2002 Q1, and international investors' willingness to take more risk rose back to the level seen 18 months earlier. Increased risk appetite in developed country financial markets was clearly visible in the sudden plunge in US corporate bond spreads at the start of 2002. The decline in the implied volatility of stock index options is also a good reflection of this increased appetite for risk. An increasing amount of favourable economic data was released towards the end of 2002 Q1, indicating the end of recession in the US and the global economy, as well as a recovery in economic performance. This played a key role in the increase in investors' willingness to take risks in the developed markets.³⁷ With an improvement in the growth

Chart 4- 1 The ECB's major policy rate and euro area short-term interest rates

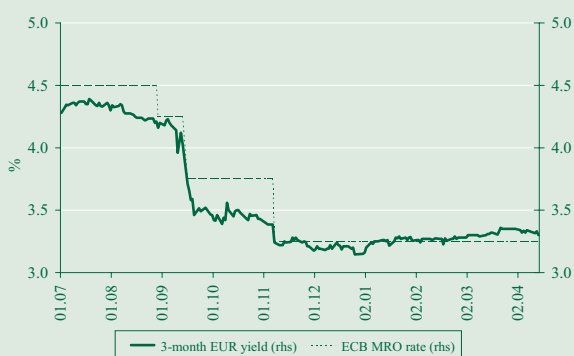
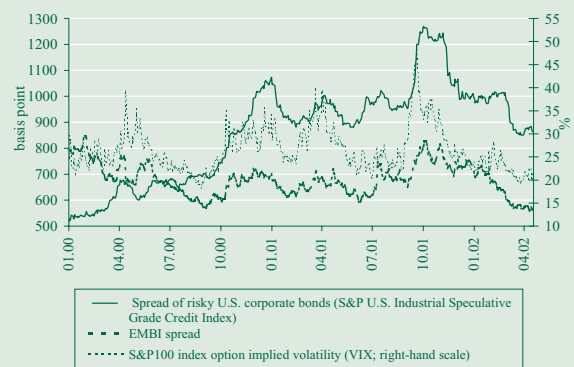


Chart 4- 2 Global risk indicators



³⁷ For example, the upward revision to fourth-quarter US GDP data, much higher-than-expected output growth in manufacturing and in other sectors, the salient rise in car sales, etc.

outlook, equities and corporate bonds carrying higher risks once again became attractive for investors. The EMBI sovereign risk premium, which reflects changes in the propensity to take risks, rose strongly in the past three quarters as well. All this is a fair indication of an increase in investors' willingness to take on risk.

The spread on Hungarian bonds originally issued in deutschemark fell only slightly in 2002 Q1. The absence of a stronger fall in the spread was not at odds with the Bank's expectations. While the upward adjustment of Hungary's current account deficit for 2001 and the parliamentary elections may have caused some temporary uncertainty in 2002 Q1, the primary explanation for the sovereign bond spread remaining broadly static must have been the fact that these spreads are already low by international comparison. During the period of the decline in the EMBI spread, the average spread on Hungarian foreign currency bonds fell to a historical low. Thus, for example, the current Hungarian forex bond spread is lower than that on Greek forex bonds in the period immediately preceding Greece's joining the EMU,³⁸ and is close to the bond spreads of member states of the euro zone, which are now between 10–40 basis points.

4.2 Interest rate and exchange rate developments

The National Bank of Hungary has maintained its major policy rate at 8.5% since 19 February. The differential between forint and euro short-term interest rates has remained around 500 basis points since February. The earlier appreciation of the forint halted following the 50 basis point rate cut in February. Apart from minor temporary swings, the exchange rate has remained in a range between HUF/EUR 240–245. Analysts polled by Reuters in April expected the strong mid-April level to remain in place, as seen in the survey conducted in January.

Forward rates derived from the yield curve and the Reuters poll of market participants' expectations provide a picture of future movements in official interest rates. In April, market participants continued to expect the downward trend of official interest rates to remain unbroken, but at a much slower pace than they anticipated in February. Namely, they revised down their expectations of an official rate cut to 50 basis points, taking into account the slope of the yield curve in April. The Reuters' survey conducted on 19 April also indicates a moderation in official rate reduction expectations – market observers expected the official interest rate to be 7.9% at end-2002, which is also higher than the result of the February poll. The clear upward revision of inflationary expectations from mid-February, affecting movements in longer-term yields as well, must have been behind this moderation in rate cut expectations. Section 4.4 deals with this issue in more detail.

³⁸ It fluctuated between 90–120 basis points in 1999 Q4.

Chart 4– 3 Average spread on DEM-denominated Hungarian sovereign bonds



Chart 4– 4 Official interest rates and short-term market yields

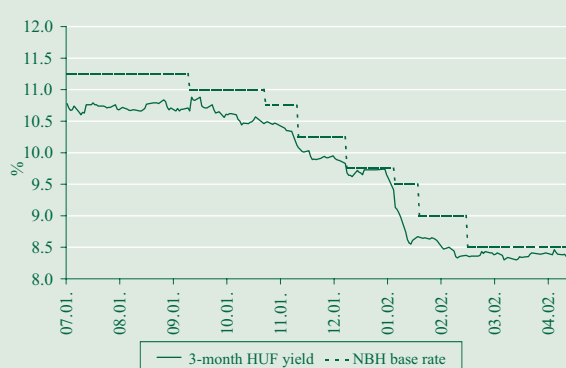


Chart 4– 8 Exchange rate of the forint

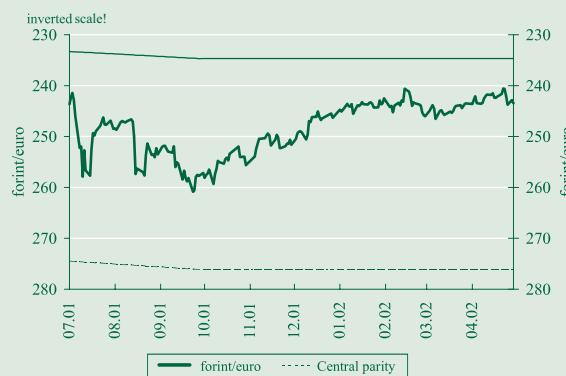


Chart 4– 5 Three-month interest rate differential vis-à-vis the euro area



Chart 4– 6 Official interest rates and expectations based on the yield curve and Reuters poll

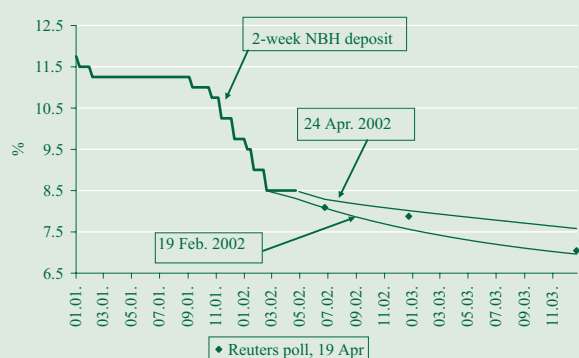


Chart 4– 7 Forint exchange rate and analysts' expectations of future exchange rate movements

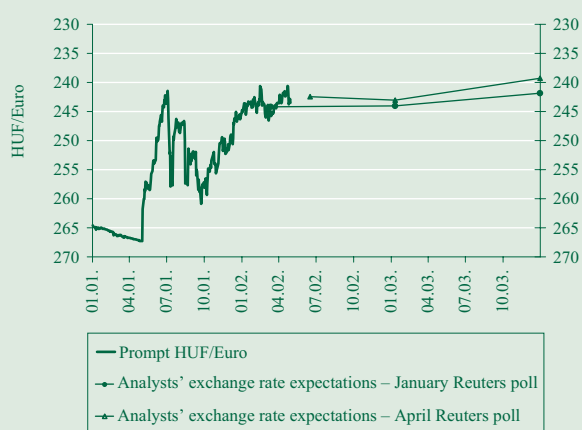


Chart 4– 9 Volume and average maturity of non-residents' government securities holdings

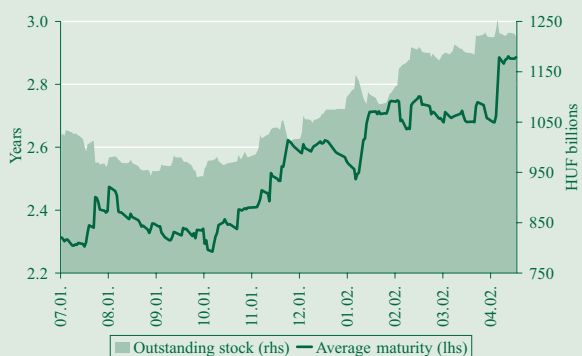
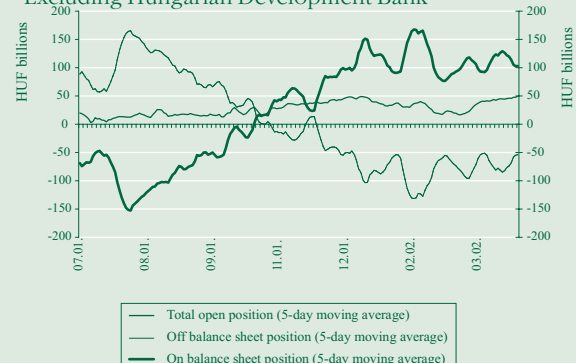


Chart 4– 10 Commercial banks' open foreign exchange positions*

* Excluding Hungarian Development Bank



4.3 Capital flows

January–February 2002 data suggest that non-banks' forint demand has not changed significantly (see Table 4.1). Portfolio investments by non-residents counterbalanced the higher current account deficit in January and firms' net foreign currency borrowing from abroad in February.

Non-interest sensitive capital inflows were a strong factor counterbalancing the higher January current account deficit – in addition to foreign direct investment, purchases by non-residents of equity securities were atypically robust. However, the February current account deficit was solely offset by interest sensitive capital flows – the fall in household and corporate sector foreign currency deposits generated additional demand for the domestic currency, in addition to non-residents' net portfolio investments.

The corporate sector net borrowing position vis-à-vis non-residents strengthened significantly in January, followed by another robust improvement in February. The lion's share of this improvement can be attributed to purchases of foreign-issued securities by investment funds and an increase in their assets held on current accounts abroad, which were previously not substantial.³⁹ In addition, repayments by non-financial corporations of existing foreign currency borrowings from abroad continued, aided mostly by own foreign currency funds.

Nevertheless, all this does not suggest a decline in corporate sector fixed investment demand, given that firms' net liabilities to domestic banks increased by HUF 150 billion in the period. On the other hand, a reduction in forint deposits rather than a rise in new borrowing provides explanation for this.

In January–February 2002 there was a sharp increase in non-resident investors' net portfolio investments, with a particularly strong rise in their holdings of Hungarian government securities. According to the depository statistics released by KELER, this trend continued in March–April. The average maturity of non-resident holdings of government securities increased significantly in mid-April. This mainly reflected the stronger demand for papers with maturities over five years. In addition to purchases of shares in January, forint deposits of non-residents also rose.

Households reduced their foreign currency deposits in January–February, by an amount uncharacteristic for earlier periods. This, however, must have been the adjustment to the increase on foreign exchange accounts at end-2001 due to the introduction of the euro.

Banks' total foreign exchange position did not change significantly in January–February. Following the temporary drop in March, they maintained long foreign exchange positions amounting to HUF 50 billion at end-April again. Nevertheless, they managed to reduce significantly their on-balance-sheet long foreign exchange position relative to end-January.

³⁹ The balance of payments records foreign investments by funds, in addition to those of non-financial corporations, under corporate sector foreign currency borrowing abroad. Investment funds registered a HUF 29 billion and a HUF 74 billion increase in foreign investments in January and February, respectively.

Table 4–1 Components of foreign exchange market demand and supply* (HUF billion)

| | 2001 | | | | 2002 | |
|---|------------|------------|-----------|------------|-----------|-----------|
| | Q1 | Q2 | Q3 | Q4 | January | February |
| I Adjusted current and capital account (1+2–3) | –52 | –124 | 79 | –97 | –102 | –48 |
| 1 Current account | –63 | –195 | 71 | –131 | –95 | –48 |
| 2 Capital account | 15 | 39 | 23 | 16 | 4 | 1 |
| 3 Foreign exchange balance of the consolidated government budget | 3 | –32 | 14 | –19 | 11 | 1 |
| II FDI inflow (excluding privatisation revenues) | 126 | 179 | 108 | 155 | 46 | –6 |
| III Forint demand resulting from the conversion of domestic foreign currency deposits (1+2) | –27 | –15 | –6 | –111 | –23 | 54 |
| 1 Business sector | –19 | –21 | 2 | –64 | –37 | 42 |
| 2 Household sector | –8 | 6 | –8 | –47 | 13 | 11 |
| IV Net portfolio investment (1+2+3) | 90 | 212 | –134 | 85 | 70 | 92 |
| 1 Government securities | 90 | 196 | –79 | 136 | 30 | 80 |
| 2 Equity securities | 6 | –10 | 8 | –15 | 12 | 0 |
| 3 Forint deposits | –6 | 26 | –62 | –36 | 28 | 12 |
| V Foreign currency borrowing by non-financial corporations (1+2) | –81 | –128 | –44 | –62 | –26 | –122 |
| 1 Domestic | –7 | 5 | 19 | –12 | 15 | 11 |
| 2 Foreign | –74 | –134 | –63 | –50 | –41 | –133 |
| VI Forint demand of other credit institutions | 12 | 37 | 50 | 99 | 1 | –1 |
| VII Other | 43 | 18 | 20 | 132 | 32 | 26 |
| VIII Net forint demand outside the banking sector (I+...+VII) | 112 | 178 | 73 | 201 | –1 | –5 |
| IX Purchases of foreign currency by the central bank | 178 | 165 | 47 | 40 | 0 | 0 |
| X Change in the on balance sheet long foreign exchange position of banks (VIII–IX) | –65 | 13 | 26 | 161 | –1 | –5 |

* A positive value denotes forint demand, a negative value denotes forint supply.

4.4 Long-term yields

The previous *Report* traced shifts in the yield curve up to end-January 2002. Since then, yields at maturities beyond one year have risen 20–50 basis points on average, depending on maturity. The largest rise in yields was observable in the 3 to 5-year maturity bracket.

What has been the cause of this rise in longer-dated yields? As was discussed in section 4.1, since January there has been an improvement in global risk perceptions rather than a deterioration. Expectations of a currency appreciation have changed little over the 1- to 2-year forecast horizon. However, there was a significant increase in longer-maturity euro yields, explained by intensifying expectations of an interest rate hike by the ECB (see section 4.1). This increase started at the end of February, and towards end-March it was largely comparable with the rise in Hungarian yields, amounting to 20–50 basis points. Consequently, a partial explanation for the rise in long-term forint yields in February–March can be found in long-term euro yields.

Euro yields have not risen much since early April. In contrast, the upward trend of forint yields has remained uninterrupted. The path of implied forward rates shifted more strongly upwards in Hungary than in the euro zone between January and mid-April. In April, the gap between the two paths indicated a slower expected interest rate convergence for the coming 3–4 years than in January. This may have been connected with the worsening of the outlook for inflation (see below). However, over the longer-term horizon, i.e. over 6–15 years, the differential between implied forward rates narrowed somewhat, indicating market participants' belief that the likelihood of Hungary joining the euro zone increased.

Another dominant factor in the rise in long-dated yields was an increase in inflation expectations – the survey by Reuters showed that market analysts expected inflation to be 0.3% higher at both end-2002 and end-2003 than in January. One reason for this may have been that inflation in each of the first three months of the year turned out to be worse than the market

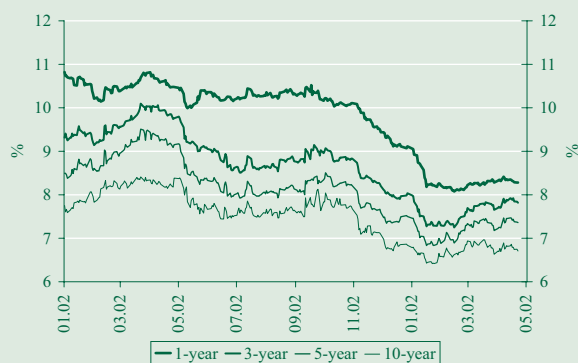
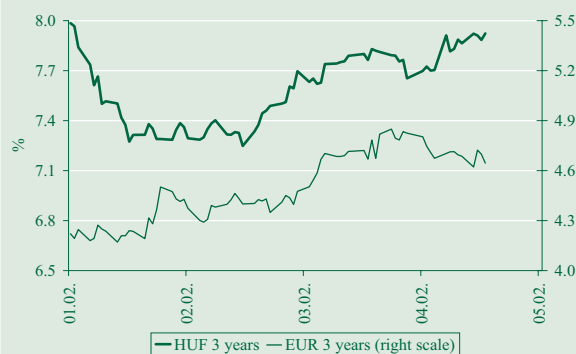
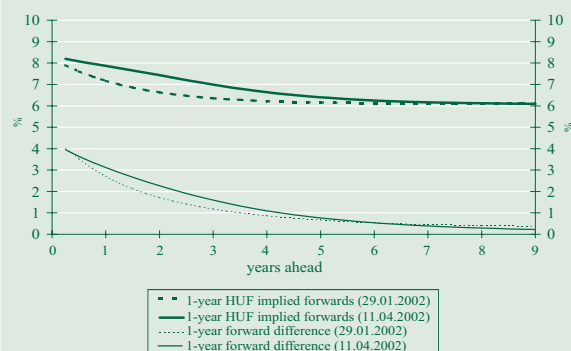
Chart 4–11 Zero-coupon yields**Chart 4–12 Three-year forint and euro yields, January–April 2002****Chart 4–13 Forint one-year implied forwards and the forint–euro implied forward differential**

Chart 4– 14 Reuters survey of inflation expectations for end-2002 and end-2003
Trimmed means

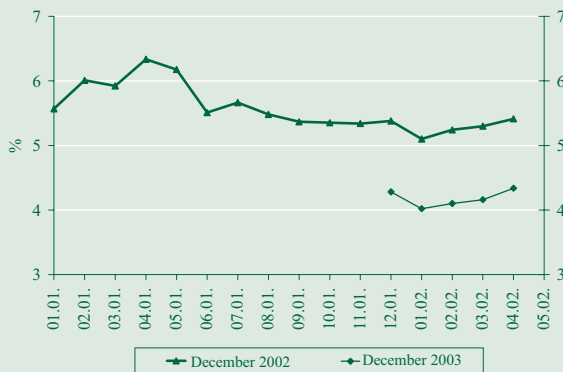


Chart 4– 15 Reuters survey of inflation expectations for one month ahead versus actual inflation rates

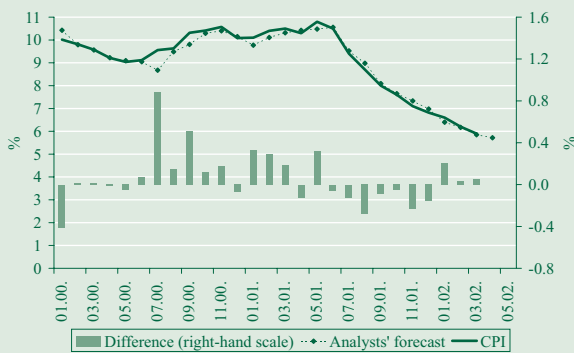


Chart 4– 16 Analysts' expected inflation paths between January–April 2002

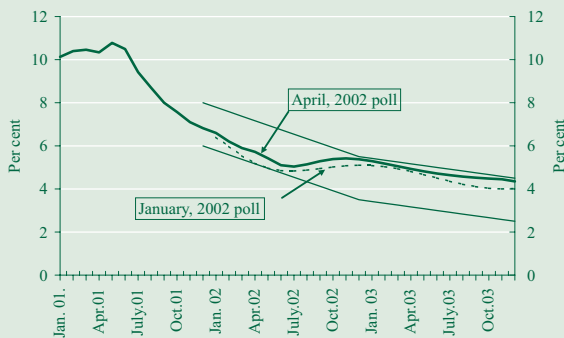
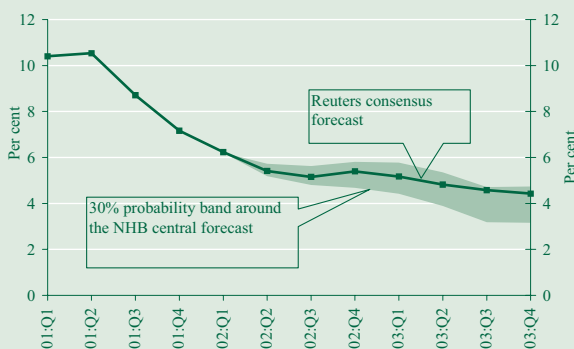
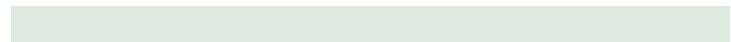


Chart 4– 17 Comparing analysts' expectations with the Bank's forecasts



expected. The first and arguably the largest surprise was the mid-February release of inflation data for January, which was 0.2% higher than expected. This may have been the explanation for the rise in forint long-term yields in mid-February, slightly ahead of the rise in euro yields. With the worsening of inflation expectations, a number of analysts forecast higher inflation in April than the upper extreme of the Bank's target band (5 out of the 19 forecasters for end-2002 and 6 for end-2003), although the averages of the forecasts (2002: 5.4%, 2003: 4.3%) continued to be inside both the target band and the 30% probability range around the Bank's forecast.⁴⁰

taken together, the modest rise in long-term forint yields since mid-February has been caused in part by rising euro yields and in part by a slight worsening of Hungarian inflation expectations.



⁴⁰ The Bank's forecast is conditional, and as such it relies on unchanged nominal exchange rates. In contrast, market expectations contain analysts views of future monetary policy decisions and variations in exchange rates as well. This should be taken into account when comparing the Bank's forecast with inflation expectations.