QUARTERLY REPORT ON INFLATION

AUGUST
2003

Prepared by the Economics Department of the Magyar Nemzeti Bank

István Hamecz, Managing Director

Published by the Magyar Nemzeti Bank

Krisztina Antalffy, Head of Communication Department

1850 Budapest, Szabadság tér 8–9.

www.mnb.hu

ISSN 1419-2926

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

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

CONTENTS

Statement by the Monetary Council 7

Summary table of projections 10

MNB forecast versus other projections 11

1 Inflation 13

1.1 PREVIOUS INFLATION PROJECTION VERSUS THE ACTUAL RATE 15

1.2 INFLATION PROJECTION 17
1.2.1 Short-term projection 18
1.2.2 Long-term projection 18

1.3 UNCERTAINTY SURROUNDING THE CENTRAL PROJECTION 23

2 Economic activity 25

2.1 DEMAND 27
2.1.1 External demand 29
2.1.2 Fiscal stance 30
2.1.3 Household consumption, savings and fixed investment 34
2.1.4 Corporate investment 36
2.1.5 Inventory investment 38
2.1.6 External trade 38
2.1.7 External balance 39

2.2 OUTPUT 41

3 Labour market and competitiveness 43

3.1 LABOUR USAGE 47
3.2 LABOUR MARKET RESERVES AND TIGHTNESS 49
3.3 WAGE INFLATION 51
3.4 UNIT LABOUR COSTS AND COMPETITIVENESS 53

4 Monetary developments 57

4.1 INTERNATIONAL ENVIRONMENT 59
4.2 SHORT-TERM INTEREST RATES AND EXCHANGE RATE DEVELOPMENTS 61
4.3 CAPITAL FLOWS 64
4.4 LONG-TERM YIELDS AND INFLATION EXPECTATIONS 66

5 Special topics 69

5.1 HOW ARE THE ANNOUNCED CHANGES IN INDIRECT TAXES LIKELY TO AFFECT INFLATION? 71
5.2 PRINCIPLES OF THE RULES-BASED FISCAL FORECAST 76
5.3 ESTIMATES OF THE OUTPUT GAP IN HUNGARY 78

STATEMENT BY THE MONETARY COUNCIL

At its meeting on 18 August 2003, the Monetary Council discussed and approved for publication the *Quarterly Report on Inflation*. The Council made the following assessment of developments in inflation.

The Central Bank supports the Government's objective of adopting the euro in 2008

The Government has set 1 January 2008 as the target date of adopting the euro and announced that, shortly after joining the EU, it will request Hungary's admission into the European Exchange Rate Mechanism (ERM II). A condition for joining the euro is consistent implementation of a stringent convergence programme based on the realistic assessment of the state of the economy. Any divergence from the programme may trigger undesirable reactions from the market and an increase in the costs of adjustment. The Bank supports the Government's objective and, in its conduct of monetary policy, will endeavour to foster economic and financial integration, as well as to meet the criteria set as a condition for adopting the euro.

Joining ERM II will influence monetary policy's room for manoeuvre in the pre- and post-entry period

The preparations to be made prior to adopting the euro influence the conduct of monetary policy in several respects. Entry into the ERM II exchange rate regime will entail introduction of a new exchange rate band with a width of ±15%, identical with the current system. The central parity will be defined by means of negotiations with the finance ministers and central bank governors of the EU member countries. With respect to successful convergence, it is crucial that the central parity equally fosters price stability and competitiveness, in addition to being sustainable. Therefore, it seems desirable to avoid an excessively under- or overvalued exchange rate during the period prior to entering ERM II. Provided that the economy can successfully follow the course set out in the Government's Medium-term Economic Policy Programme, the Monetary Council puts the equilibrium exchange rate which fosters rapid economic growth without endangering price stability in the range of 250 to 260 forints per euro.

Rapid disinflation is a precondition of adopting the euro

The target date of 2008 is based on the condition that in the reference period between March 2006 and March 2007, the rate of inflation may not exceed the average rates of inflation of the three EU member states with the lowest inflation by more than 1.5%. Reaching this end will probably require a rate of inflation in the range of 2.5% to 3%. The inflation target set for the reference period cannot be met unless the fiscal, price and income policies are consistent.

Monetary policy continues to follow the rules of inflation targeting

Within the boundaries of the prevailing exchange rate band, the Bank continues to rely on inflation targeting while supporting the Government's disinflation policy. The stability of the exchange rate, monitored continuously by our foreign partners, will be an important measure of the success of economic policy during the pre-and-post-ERM II period. Provided that economic policy is co-ordinated efficiently, the dual requirements of price and exchange rate stability will not run contrary to each other. However, exchange rate stability should not be the immediate goal but rather the result of monetary policy committed to the achievement of price stability.

Low inflation in the first six months of 2003

During the first half of 2003, annual CPI growth reached a twenty-year low. However, in the past few months, core inflation has started to edge up and the rate of wage growth has also declined slower than previously anticipated. In the Monetary Council's view these developments are primarily related to excessive growth in consumption, wages increasing out of line with productivity, and continuing labour market tightness in certain areas, in addition to undesired weakening in the exchange rate.

Greater-than-usual uncertainty about the inflation outlook

Prospective developments in inflation are surrounded by larger uncertainty than usual. This is because the measures announced by the Government on 16 July have not received a final approval yet. Another source of uncertainty is that it is difficult to predict how economic agents will respond to the proposed measures. The Bank has based its projections published in the 18 August *Report on Inflation* on the assumption that the budgetary measures announced by the Government will be approved in an unchanged form.

The proposed budgetary measures will cause a temporary rise in inflation

Fiscal consolidation is indispensable in order to maintain macroeconomic equilibrium. The recently announced measures imply divergence from the fiscal path earlier anticipated by the MNB, proposing to curb the budget deficit primarily by increasing revenues. The measures relating to next year's budget will affect the rate of price increases via a number of channels. The measures to have the greatest impact in 2004 are changes in the VAT system and related excise duty measures. Assuming an unchanged tax base, the VAT change will directly raise the price level by 1 percentage point. In addition, based on international experience, a further increase of approximately 0.4 percentage points can also be expected.

In the past two years, disinflation has been considerably impeded by unsustainable growth in domestic demand. Fiscal instruments planned to be used in order to curb excessive demand may mitigate the ripple effect of inflationary pressures triggered by the one-off tax measures. The slowdown in domestic demand growth in the wake of the fiscal adjustment may exert disinflationary pressure in the latter half of the year.

Main risks include rising inflation expectations, wages and a weak exchange rate

In the Monetary Council's view, the most important of the risks inherent in the measures in the pipeline is that one-off measures representing upside pressure on prices may lead to increased inflation expectations, and the economy may have a higher wage path ahead.

Of the factors posing upside risk to inflation, in addition to the budget, the exchange rate of the forint has been permanently weaker than the one that the Monetary Council deems as ideal for creating monetary conditions in favour of disinflation. The MNB has broadened the appeal of forint investments by increasing its key policy interest rates, sending the message to investors that it would insist on supporting developments in the exchange rate that were predictable and consistent with inflation targets. As a result of such measures, consolidation in the FX market has been slowly picking up and a gradual appreciation of the forint's exchange rate has also commenced.

Projection for higher inflation

The Bank's provisional projection based on the average July rate of exchange of HUF/EUR 264 and prepared in accordance with the relevant technical rules is for increasing inflation until mid-2004 and for declining consumer prices in the second half of 2004. Accordingly, inflation would probably stand at approximately 5.2% and 5.8% at year-end 2003 and 2004 respectively. The inflation indicator excluding one-off effects may be around 4.4 to 4.8% at year-end 2004. In 2005, inflation will have to be substantially reduced. The price index is unlikely to include the one-off effects of tax measures, but in order for the process of disinflation to continue, it is also important that these transitory measures should not increase inflation expectations and that domestic demand growth should remain subdued.

In order for the inflation criteria to be met, an exchange rate of HUF/EUR 250 to 260 must be achieved

In the current uncertain situation, which can be characterised by the simultaneous presence of both upside and downside risks to inflation, the basic principle of monetary policy is that the following of the long-term path of disinflation, instrumental in fulfilling the Maastricht criteria, should be ensured. The full off-set by monetary means of the short-term inflationary pressure from tax and regulated price-related measures would entail excessive real economic costs. At the same time, indicators excluding one-off effects and reflecting longer term inflation trends should not be allowed to rise.

In the Monetary Council's opinion, the HUF/EUR 260 exchange rate that prevailed last week still allows upside risks to inflation too much latitude in making themselves felt. In order that short-term risks can be reduced and that the Maastricht criteria will bet met in 2006 and 2007, the Monetary Council recognizes the need for an exchange rate stabilising near the stronger limit of a HUF/EUR 250 to 260.

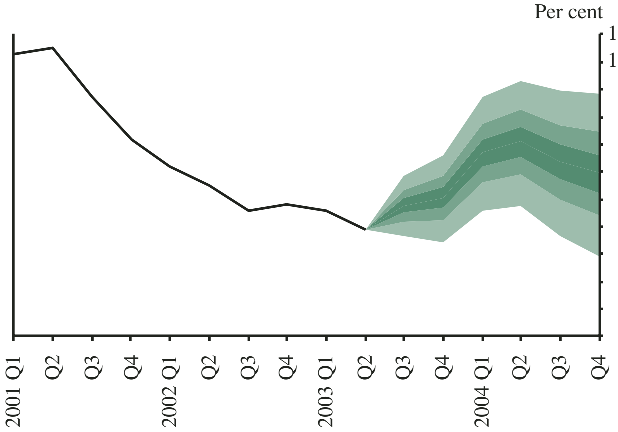
Due to upside risks, the MNB cannot envisage any interest rate cuts before the *exchange rate* permanently stabilises near the upper limit of a HUF/EUR 250 to 260 band. An exchange rate permanently below this level may necessitate further rises in the Bank's key policy rate so that the rate of inflation at end-2004 remains below 5.5%.

Budapest, 18 August 2003

MAGYAR NEMZETI BANK
THE MONETARY COUNCIL

*Fan chart of the inflation projection**

Percentage changes on a year earlier



* *The fan chart shows the probability distribution of the outcomes around the central projection. The entire coloured area covers 90% of all probabilities. The central band contains the central projection (as the mode) with a 30% probability. Outside the central projection (centred around the mode), the bands represent 15% probability each.*

Summary table of projections

(Percentage changes on a year earlier unless otherwise indicated)

	2001	2002	2003		2004		
	Actual data		Projection				
			May Report	Current Report	May Report	Current Report	
CPI							
							"net"[1]
December	6.8	4.8	4.6	**5.2**	3.9	**5.8**	**4.8**
Annual average	9.2	5.3	4.5	**4.6**	4.1	**6.5**	**5.5**
Economic growth							
External demand	1.6	–0.8	3.7	3.1 – **3.9** – 4.3	4.6	3.0 – **4.6** – 6.3	
Manufacturing value added	2.5	0.7[2]	3.3	1.4 – **2.3** – 3.0	4.4	3.6 – **5.3** – 6.7	
Household consumption[3]	5.7	10.2	6.6	6.3 – **7.6** – 8.4	5.0	0.0 – **1.0** – 3.5	
Gross fixed capital formation	3.5	5.8	4.0	2.5 – **4.3** – 5.0	4.3	2.0 – **4.1** – 6.0	
Domestic absorption	1.9	5.1	4.9	5.0 – **5.7** – 6.4	4.3	1.0 – **1.8** – 3.5	
Exports	8.8	3.8	3.4	2.5 – **4.0** – 5.5	6.7	5.0 – **7.5** – 10.0	
Imports	6.1	6.1	5.3	5.5 – **7.1** – 9.0	7.4	4.0 – **6.0** – 9.0	
GDP	3.8	3.3	3.4	3.0 – **3.2** – 3.4	3.6	2.4 – **2.7** – 3.6	
Current account deficit							
As a percentage of GDP	3.4	4.0	5.1	5.3 – **5.8** – 6.2	5.1	4.8 – **5.2** – 5.8	
EUR billions	2.0	2.8	3.9	3.9 – **4.2** – 4.4	4.2	3.7 – **4.0** – 4.5	
Fiscal stance							
Demand impact	1.8	4.3	(–0.5)	0.0 – **(–0.5)** – (–0.9)	(–1.3)	(+0.3) – **(–1.0)** – (–1.9)	
Labour market (private sector)[4]							
Wage inflation	14.6	12.8	8.8	9.1 – **9.3** – 9.7	6.5	7.5 – **8.1** – 10.6	
Employment	1.1	(–0.2)	(–0.4)	(–0.3) – **0.0** – 0.2	(–0.2)	(–0.6) – **0.4** – 1.0	
ULC based real exchange rate in manufacturing[5]							
Annual average	7.9	11.3	1.0	(–1.0) – **(–0.5)** – (0.1)	(–1.7)	(–3.0) – **(–2.6)** – (–1.6)	
Q4	12.9	9.8	(–3.3)	(–7.5) – **(–7.1)** – (–6.4)	(–0.7)	(–0.1) – **0.3** – (1.3)	

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

[1] Excludes the direct, one-off effects of the planned 2004 change in the VAT and excise duties system.

[2] Adjusted series in 2002 Q3-Q4.

[3] Household consumption expenditure.

[4] Average for manufacturing and services.

[5] Positive values denote appreciation.

MNB forecasts versus other projections

	2003	2004
CPI (December on December, %)		
MNB[1]	**5.2**	**5.8**
Reuters survey (July 2003)	5.0	4.7
CPI (average annual growth, %)		
MNB[1]	**4.6**	**6.5**
Consensus Economics (July 2003)[2]	4.7	4.4
European Commission (April 2003)	5.0	4.5
IMF (April 2003)	5.3	4.8
OECD (April 2003)	5.2	4.6
Reuters survey (July 2003)	4.7	5.1
GDP (annual growth, %)		
MNB[1]	**3.2**	**2.7**
Consensus Economics (July 2003)[2]	3.0	3.5
The Economist poll (August 2003)[3]	2.9	3.3
European Commission (April 2003)	3.7	4.1
IMF (April 2003)	3.6	3.9
OECD (April 2003)	3.1	3.7
Reuters survey (July 2003)	3.2	3.6
Current account deficit (EUR billions)		
MNB[1]	**4.2**	**4.0**
Consensus Economics (July 2003)[2]	3.8	3.8
Reuters survey (April 2003)	3.8	3.8
Current account deficit (as a percentage of GDP)		
MNB[1]	**5.8**	**5.2**
The Economist poll (August 2003)[3]	5.4	5.0
European Commission (April 2003)	4.4	3.5
IMF (April 2003)	4.8	4.6
OECD (April 2003)	4.5	3.8

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

[2] *Consensus Economics Inc. (London). Based on a survey by 'Eastern Europe Consensus Forecasts'. The balance of payments forecasts indicated in the survey are given in US dollars, which the MNB translated using the euro/US dollar cross exchange rate prevailing at end-2002.*

[3] *Results of an international poll of forecasters, published in the 2 August 2003 issue of "The Economist".*

1 Inflation

1.1 Previous inflation projection versus the actual rate

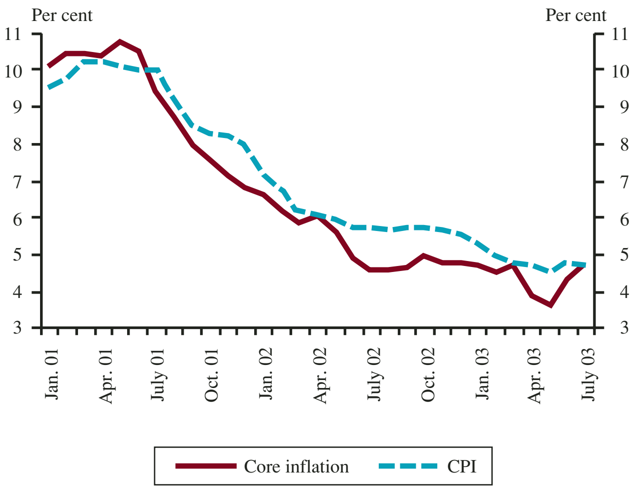
In 2003 Q2, the consumer price index (CPI) stood at 3.9%, down 0.7 percentage points on the previous quarter. Inflation in the prices of goods and services relevant for monetary policy stood at 4.7%, following a smaller decline of 0.3 percentage points.[1]

As projected in the May *Report*, the disinflation process was interrupted during the second quarter, with inflation once again gaining momentum. Previously, the Bank projected that this development would be largely due to an acceleration in prices of products exogenous to monetary policy. In contrast, it was primarily endogenous items that led to the higher price index in June. As reflected in the monthly indices, core inflation has been on a steady rise ever since February. This means that the significant rate of disinflation seen in 2003 Q1 in respect of goods and services relevant for the judgement of the longer-term development of inflation was a temporary trend.

Chart 1-1

CPI and core inflation

(Percentage changes on a year earlier)



At 3.9%, the CPI for 2003 Q2 is approximately 0.3 percentage points lower than the May projection, while core inflation in the second quarter was the same as the Bank's estimate.

The difference between the overall CPI and its projected rate was primarily due to the fact that, contrary to the Bank's expectations, seasonally adjusted prices for unprocessed food were on a downward trend rather than an upward trend throughout the quarter. In addition, inflation in regulated prices also fell short of the Bank's previous projection, as the mid-May rise in gas prices did not pass through to consumer price inflation in the second quarter.

Table 1-1

Previous projection versus actual inflation

	Weight (%)	Actual	May projection	Difference	Weighted difference*
		Annual percentage changes		Percentage points	
Core inflation estimate	68.1	4.5	4.6	0.04	0.02
Unprocessed food	6.3	–2.3	0.7	2.99	0.19
Motor fuels and market-priced energy	6.2	3.7	3.4	–0.27	–0.02
Regulated prices	19.4	3.9	4.5	0.67	0.13
CPI	**100.0**	**3.9**	**4.3**	**0.33**	**0.33**

** Figures may not add up due to rounding.*

While core inflation was identical with the Bank's projection for the quarter as a whole, its development was slightly different when viewed in a monthly breakdown. It was suggested in the May *Report* that there was considerable uncertainty as to whether the disinflation seen in the first three months of the year would last. This was because the pricing behaviour seen in the market of goods, in line with an inflation environment lower than previously, was not consistent with the still flat rate of wage inflation prevailing in the private sector. At that time it was not clear whether these pricing or wage setting behaviours would change.

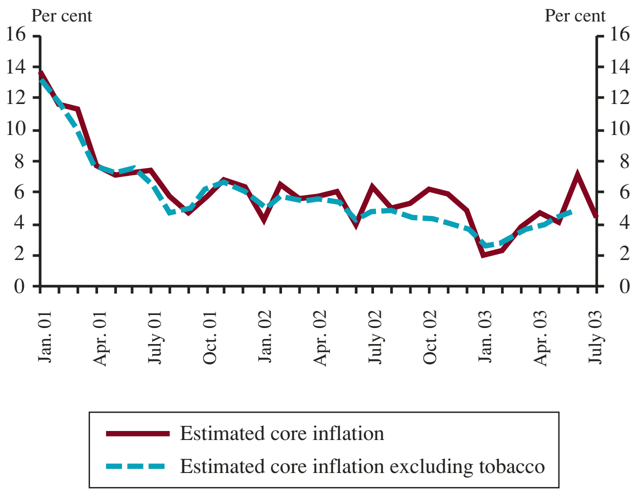
---

[1] The July 2003 CPI figures were published after this *Report* was finalised. The 4.7% annual rate of CPI registered in July, and core inflation as well, show the continuation of earlier tendencies, but suggest some new developments as well. On the one hand, the monthly rate of core inflation remains high. On the other hand, the month-on-month acceleration of core inflation seen since February 2003 stopped in July. However, tradables inflation started to pick up, which may be due to the weak forint exchange rate in June-July.

Data for the second quarter, however, indicate that the pricing behaviour was temporary and the correction may be more pronounced than expected, as the seasonally adjusted monthly rate of core inflation has been on a steady increase since February and reached a higher rate in June than at any time since the exchange rate band widening in May 2001. It should be noted, however, that the acceleration seen during the previous quarter was partly due to the April increase in the excise duty on tobacco, an item methodologically covered by core inflation. However, the monthly rate of core inflation excluding tobacco prices has also increased since February, but less sharply than that of original core inflation, especially in June.

Chart 1-2

Changes in core inflation estimates with and without tobacco *(Annualised monthly changes)*



In addition to the aforementioned tobacco price increase, the higher rate of core inflation was due to more rapid increases in prices of processed foods and market services relative to 2003 Q1. Processed food price inflation jumped to the level seen a year earlier, despite the previous quarter's decline in seasonally adjusted unprocessed food prices. These sharp, rapid increases in market services prices were partly due to cost-push pressure from strong wage inflation and robust consumer demand.

Chart 1-3

Changes in the main constituents of core inflation *(Annualised monthly indices)*

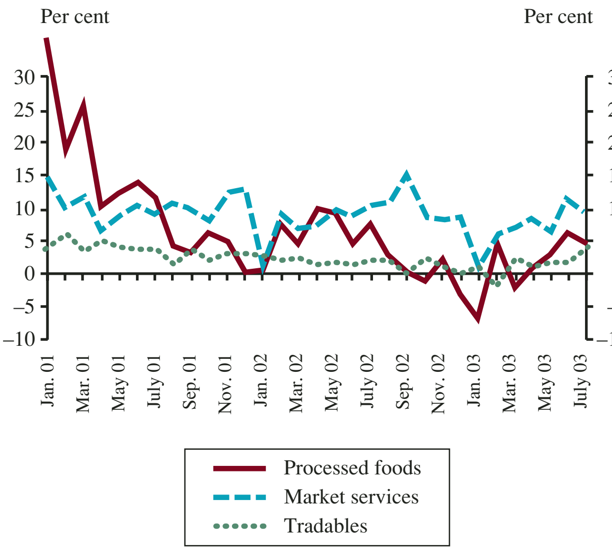


Table 1-2

Assumptions and forecasts of the May projection and actual data for 2003 Q2

	May projection	Second-quarter actual data
Wage inflation in the private sector	9.2	9.4*
Unit labour cost	3.9	5.3*
Household consumption expenditure	7.7	8.6*
EUR/HUF exchange rate	245.6	250.9
EUR/USD exchange rate	1.085	1.137
Brent oil price (USD/barrel)	25	26.2
Imported inflation of tradables prices**	1.0	0.7

* *Estimates.*
** *Annualised month-on-month growth rates.*

The difference between the Bank's projection for 2003 Q2 and the data was due to items exogenous to monetary policy. Inflation in regulated prices fell short of the Bank's projection by approximately 0.7 percentage point. This was because, in contrast to the Bank's expectations, the mid-May rise in the price of pipeline gas will be accounted for fully in the third quarter.

On the average of the quarter, the rise in unprocessed food prices did not occur as expected by the Bank.

1.2 INFLATION PROJECTION

The Bank's inflation projection is conditional with respect to both monetary and fiscal policy. The assumption on monetary policy is reflected by the constant future path of the forint exchange rate fixed at its average July 2003 value of 264 forints to the euro. As regards fiscal policy, the Bank uses the assumption that the measures announced on 16 July and detailed in the document on budgetary plans for 2004 will be implemented.[2]

Since the May *Report*, the Bank has made a major upward revision to its CPI projection, due to two factors in particular. First, the devaluation of the forint's central parity within the exchange rate band triggered significant depreciation of the nominal exchange rate, which, assuming the exchange rate remains at its weak July average, is expected to lead to an interruption in exchange rate-based disinflation. Second, next year's projected changes to some indirect taxes (such as VAT and certain excise duties), as well as a few regulatory price measures taken this year will exert considerable upward pressure on the CPI in 2004.

In the current projection, the CPI is 5.2% at end-2003, and 5.8% at end-2004. This means that, based on the assumptions underlying the projection, the central inflation projection falls outside the inflation target range of 3.5 ±1% in both years.

The factors behind the high inflation projection for 2004 include one-off upward pressure on the price level of the announced change in indirect taxation (1.4 percentage points), in addition to prospective macroeconomic developments.

Table 1-3

Central projection for the CPI *(Percentage changes on a year earlier)*

	Weights %	Actual		Forecast							
		2003					2004				
		Q1	Q2	Q3	Q4	Dec.	Q1	Q2	Q3	Q4	Dec.
Core inflation estimate*	68.1	4.8	4.5	4.5	4.9	5.0	6.0	6.2	6.0	5.6	5.5
Unprocessed food	6.3	–0.8	–2.3	3.5	2.7	3.8	5.1	8.9	9.0	7.9	6.8
Motor fuels and market-priced energy	6.2	12.5	3.7	2.2	1.7	2.2	–1.8	2.0	–0.6	–1.1	–1.2
Regulated prices	19.4	3.0	3.9	7.0	7.3	7.3	12.4	11.3	9.3	8.6	8.6
CPI	**100.0**	**4.6**	**3.9**	**4.8**	**5.1**	**5.2**	**6.7**	**7.1**	**6.4**	**5.9**	**5.8**
*Net CPI***		*4.6*	*3.9*	*4.8*	*5.1*	*5.2*	*5.7*	*6.1*	*5.4*	*4.9*	*4.8*
Annual average		*4.6*					*6.5*				

* *The estimate for core inflation is an approximation of the measure of core inflation calculated by the Central Statistical Office (CSO).*

** *The direct, one-off price level effects of changes in the VAT system and excise duties, directly linked to the former, are removed from this index. For year 2003 the net index is identical to the CPI.*

---

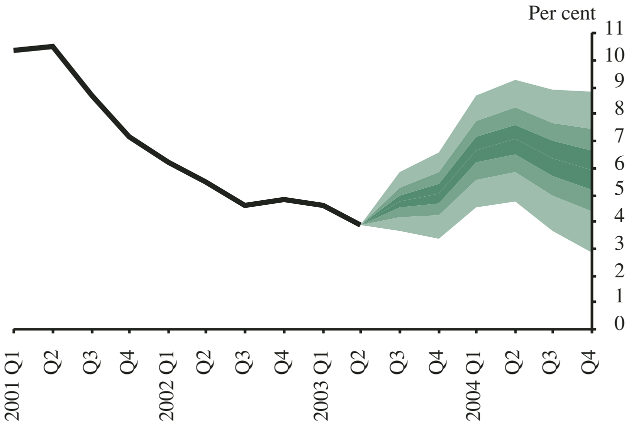
[2] The 16 July announcements and the document on the Ministry of Finance website ('Some details of the revenue and expenditure side of the budget in 2004', see http://www.p-m.hu/home.htm), will be henceforth referred to as *Budgetary Proposals for 2004* in this *Report*.

The uncertainty about the projection for 2004 is significantly larger than previously. This is primarily due to the increased risk linked to the forint exchange rate and the taxation changes in 2004. In the Monetary Council's assessment, the Bank perceives the distribution of risks as being almost symmetrical in other words, it is equally probable that inflation will be higher or lower than the central projection. This is because the two main risk factors basically cancel each other out in 2004. On the one hand, it is more likely that the EUR/HUF exchange rate will be consistently stronger than assumed, while on the other hand, the impact on inflation of the taxation changes constitutes an upside risk to the inflation projection.

Chart 1-4

The fan chart*

(Percentage changes on a year earlier)



** The fan chart shows the probability distribution of the outcomes around the central projection of CPI. The entire coloured area covers 90% of all probabilities. The central band covers 30% of the distribution, and contains the central projection (as the mode); outer bands cover 15% probability each.*

In view of the figures for the quarter it seems likely that the disinflation process seen over the past two years has already come to a halt, simultaneously with a pick-up in inflation, a trend not expected to reverse until the second half of 2004. As far as the moderation in inflation expected at end-2004 is concerned, a potential increase in economic agents' inflation expectations constitutes a considerable upside risk.

1.2.1 SHORT-TERM PROJECTION

The Bank's short-term projection for consumer price inflation in 2003 Q3 is 4.8%, up from the low rate (3.9%) measured in the second quarter.[3] This is partly due to the base period effect caused by a drop in unprocessed food prices seen early last summer, and partly to a considerable increase in regulated prices (such as electricity).

Even though the decline in core inflation is expected to come to a halt in the third quarter, the high rate of consumer price inflation can be primarily attributed to goods and services not covered by core inflation. Accordingly, the Bank does not expect the mid-2003 depreciation of the exchange rate to exert substantial inflationary pressure on prices included in the core inflation index.[4]

1.2.2 LONG-TERM PROJECTION

The long-term projection describes the likely path of inflation until end-2004. The forecast is based on the assumption of a constant forint exchange rate fixed at its average July 2003 value of 264 forints to the euro. On the other hand, with regard to fiscal policy, the inflation projection assumes the realisation of the Budgetary Proposals announced for year 2004.

Table 1-4

Difference between the current projection and the May 2003 projection *(Difference between annual indices, percentage points)*

	Absolute difference (Current – May)		Share of item in CPI difference	
	December 2003	December 2004	December 2003	December 2004
Core inflation estimate	0.8	1.8	0.56	1.19
Unprocessed food	–4.7	1.7	–0.30	0.10
Motor fuels and market-priced energy	3.2	–2.5	0.20	–0.16
Regulated prices	0.7	4.1	0.14	0.79
CPI	**0.6**	**1.9**	**0.61**	**1.93**
Net CPI*	0.6	0.9		

** The direct inflationary effects of changes in the VAT system and excise duties, directly linked to the former, are removed from this index.*

---

[3] The July 2003 CPI figures were published after finalising the forecast. The 4.7% headline rate as well as the core inflation figures were in line with the Bank's short-term forecast.

[4] Note, however, that according to the July 2003 CPI data, the weak forint might have already had an impact on tradables inflation.

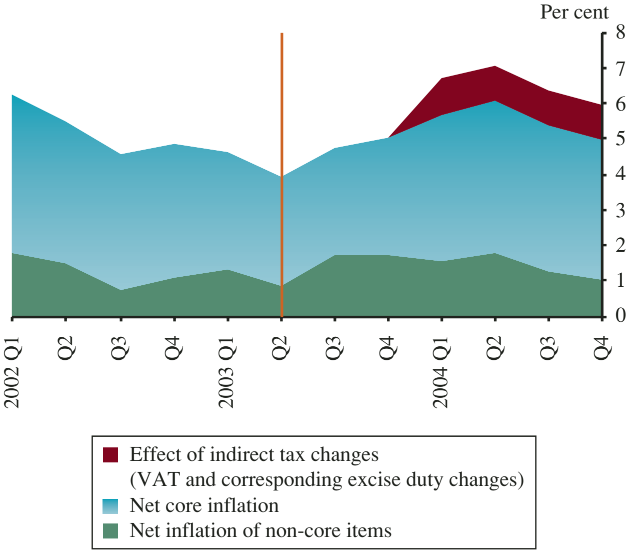
The chart showing consumer price inflation in a breakdown into net price changes and the effect of taxation reveals that, in the second half of 2003, net core inflation exerts upward pressure on overall consumer price inflation, while the contribution of non-core items is also significantly large. During the first half of 2004, inflation is expected to temporarily rise to over 7%, owing to further acceleration in net core inflation and the effect of changes in indirect taxation.[5]

In the second half of next year, the Bank expects a slowdown of inflation with regard to both core and non-core items. On the other hand, due to the effect of taxation, the overall CPI will remain at a high rate of over 6%.

Chart 1-5

Composition of effects influencing the CPI*

(Percentage changes on a year earlier)



* *The chart is based on the Banks' inflation projection. All the information it conveys is subject to the assumptions underlying the forecast.*

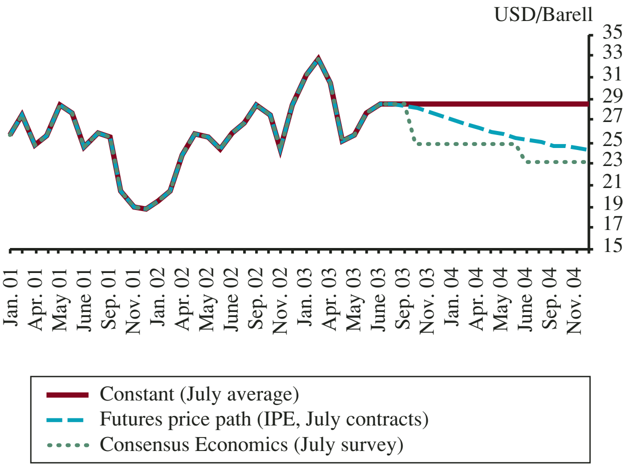
As in the previous *Reports*, in respect of the assumptions underlying the central projection the exchange rate assumptions are constant, fixed at the average rate recorded in the last full month (July). Accordingly, the assumption for the forint exchange rate is 7.5% weaker than in May, while the exchange rate of the euro against the US dollar is approximately 5% stronger. The latter assumption has a moderate disinflationary impact at end-2003 *(see Table 1-5)*.

Compared with the projection in May, there has been a change in the rule applied by the Bank in the assumption for the world price of oil. In addition to the constant path fixed as the average price for the final month, the Bank has always used a few alternative assumptions, such as that derived from oil futures prices and consensus forecasts based on the expectations of market analysts and international institutions.[6] The current projection uses the oil price path constructed from the futures prices, consistent with the practice of several foreign central banks (including the Bank of England). Another argument in favour of using this futures-prices-based path is that it appears to be similar to analysts' consensus forecast (Consensus Economics).

In contrast to the constant path, the applied oil price path predicts gradually lower oil prices, resulting in a nearly 0.3 percentage point lower rate of inflation at end-2004 than based on the constant path. At the same time, compared with the assumption used in May, the new path causes inflation to be higher at end-2003 and lower at end-2004.

Chart 1-6

Alternative oil price paths



Finally, the Bank's fiscal policy assumption is based on schemes proposed in the Budgetary Proposals published for 2004. The effects on inflation of potential fiscal policy measures different from those set out in the proposals are covered under the risks to the projection.

Impact of a depreciated exchange rate

The over 7% depreciation of the exchange rate relative to the assumption used in the May *Report* had a significant impact on the future path of inflation, exerting most of its upward pressure on core inflation, over which monetary policy has the greatest control. The Bank's calculations based on the former assumption of

---

[5] In addition, the high twelve-month index is also attributable to the full-year effect of increases in regulated prices (e.g. price of electricity) in the latter half of 2003 and the low base.

[6] The path derived from futures prices is constructed on the basis of the futures transactions for Brent oil on the London-based International Petroleum Exchange. In the current projection, the path of the futures prices is based on July 2003 transactions. The other alternative path is based on the July survey of Consensus Economics, which calculated the consensus forecast of more than fifty market analysts and international institutions.

Table 1-5

Assumptions underlying the central projection

	May 2003 projection		Current projection		Change	
	2003[1]	2004	2003[1]	2004	2003	2004
EUR/HUF exchange rate (HUF)	245.6		264.0[2]		+7.5%	
EUR/USD exchange rate (cents)	108.5		113.8[2]		+4.8%	
Brent oil price (USD/barrel)[3]	25.0		28.1	25.3	+12.4%	+1.4%
Brent oil price (USD/barrel)	5653		6517	5881	+15.3%	+4.0%
Imported inflation of tradables prices (%)[4]	1.0	1.0	1.0	1.0	0.0	0.0
Wage inflation in the private sector (%)[5]	8.8	6.5	9.3	8.1	+0.5	+1.6
Nominal ULC in the private sector (%)[5]	3.5	1.9	5.1	3.9	+1.6	+2.0
Household consumption expenditure (%)[5]	6.6	5.0	7.6	1.0	+1.0	–4.0

[1] *For the period of time in 2003 that is included in the forecast horizon.*

[2] *Average value for July.*

[3] *Based on oil futures prices from IPE (International Petroleum Exchange) in July.*

[4] *Average of annualised month-on-month growth rates. Euroarea-11 industrial goods inflation. Eurostat NewCronos code: igoodsxe.*

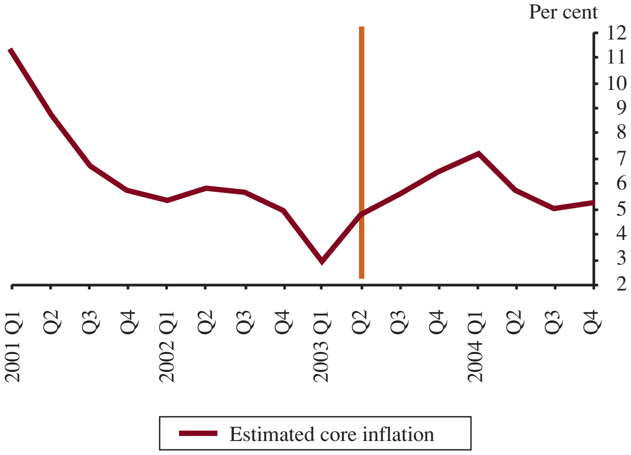
[5] *Average annual growth.*

exchange rate pass-through show that the weaker exchange rate raises core inflation by approximately 1.2 percentage points and the overall CPI by 0.8 percentage point at end-2004.

Chart 1-7

Changes in net core inflation*

(Seasonally adjusted and annualised quarter-on-quarter growth rates)



* *The direct inflationary effects of changes in the VAT system and excise duties, directly linked to the former, are removed from the core inflation index.*

In the core inflation projection, inflation accelerates early in the forecast horizon and then slows down somewhat in 2004. The decline in the pace of price increases in 2004 is due to the projected slowdown in the domestic demand growth rate.

As a weakening in the exchange rate affects the price of tradables more rapidly and strongly than that of non-traded services, via an increase in import prices in forint terms, the inflation differential between tradables and non-tradables prices is likely to narrow, leading to depreciation of the so-called internal real exchange rate. This phenomenon, reflects an interruption in the earlier trend of exchange-rate-based disinflation, provided that the forint exchange rate remains at its weak average July level. While over the past eighteen months the strong exchange rate caused the inflation differential to increase, the Bank forecasts a reversal in this trend from 2003 Q2.

A more depreciated exchange rate may have the longer-term inflationary pressure of becoming incorporated into economic agents' expectations as well as pricing and wage decisions. This effect working via expectations further hampers disinflation. The latest information on firms' inflation expectations also seems to support this reasoning. A survey conducted in July by TÁRKI Social Research Centre found that corporate

Chart 1-8

Market services and tradables price inflation differential *(Differences between year-on-year indices)*

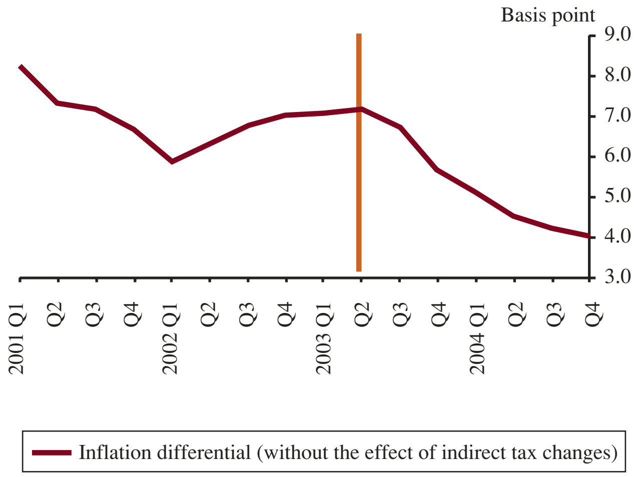
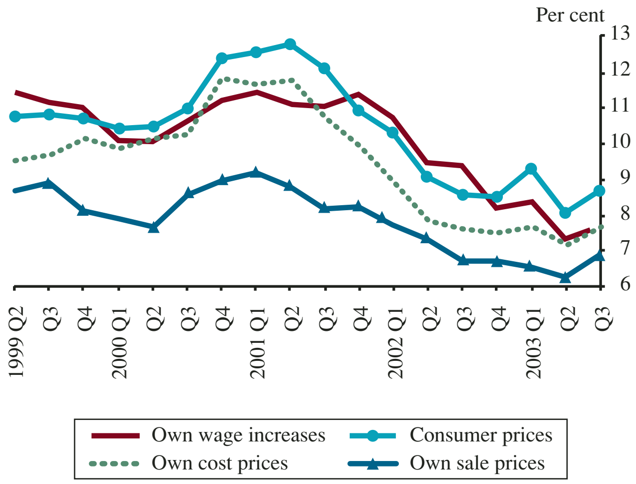


Chart 1-9

Firms' inflation and wage expectations (TÁRKI survey) *(Percentage changes with regard to the next twelve months)*



respondents all expected both prices and wages to increase faster next year. Some of the impact manifested in the expectations is taken account of in the inflation projection and some of it in the coverage of the risks surrounding the central projection.

Effect of changes in indirect taxation[7]

The Budgetary Proposals for 2004 announces some comprehensive changes to value added taxation with effect from 1 January 2004, as well as some related changes in certain kinds of excise duties (for a detailed analysis of this subject, see *Special topics*).

The Bank's projection is based on an estimate of the expected impact of policy measures on consumer prices. The estimated impact on inflation of the change in indirect taxation is divided into *direct* and indirect effects. The direct effect is derived by feeding all tax changes fully into the prices. The size of this effect on the full CPI is 1.0 percentage point.

At the same time, *indirect* effects have also been taken into account, namely that the degree of the feed-through of tax rises into prices depends on the features of each particular product (such as the degree of competition, price elasticity of demand and transparency of prices). In addition, the calculations of the direct effect are based on the assumption that the feed-through of the tax measure into prices may be asymmetrical depending on whether it involves a rise or a reduction in taxes. Accordingly, assuming higher downward price elasticity, a tax rise may feed through into prices more strongly than a tax cut.

Results of the estimation carried out by the Bank indicate that the change in indirect taxation, taking account of both direct and indirect effects, will cause a rise of 1.4 percentage points in the CPI.

It should be noted that the impact of the change in indirect taxation to the real economy has also been taken account in the inflation projection. On the other hand, the potential second order effect that increasing inflation expectations, caused by higher price indices during the year, may trigger faster wage growth, exerting further inflationary pressure, has not been reckoned with. However, this effect is expected to be felt as early as 2005, with its magnitude depending essentially on the disinflationary commitment of economic policy.

General effects of fiscal policy

The Bank's projection for the size of the contractionary impact of fiscal policy (–1% in 2004), based on the Budgetary Proposals for 2004, remains virtually unchanged from that projected in May. At the same time, the difference is significant with regard to the *structure* of the fiscal stance, as the current plans primarily envisage contractionary measures that would directly affect households.

The 2004 increase in taxes linked to consumption and excise duties will sharply reduce household disposable income, and consequently, consumer demand. In the

---

[7] The analysis is confined here to the effect of the proposed change in the VAT system and related excise duty changes. The proposed reduction in the excise duty on diesel and the increase in the tax on tobacco products in excess of the measure compensating for the reduction in VAT rates are not taken into account.

Bank's projection annual growth in household consumer demand falls from a rate of approximately 9% measured early this year to virtually zero per cent at end-2004. The lower demand exerts downward pressure on inflation, reflected in a slight drop in the inflation projection for end-2004.

Effects of labour market developments

The disinflationary period of the past two years has been characterised by a contradictory trend, in that the adjustment in the rate of wage increases has lagged behind the decline in inflation. Furthermore, the macroeconomic environment seen since publication of the May Report also shows signs of a continued slowdown in this adjustment. In particular, a pick-up in economic activity and the increase in inflation expectations from exchange rate depreciation causes wage inflation to exceed the projected rates in both years (9.3% in 2003 and 8.1% in 2004).

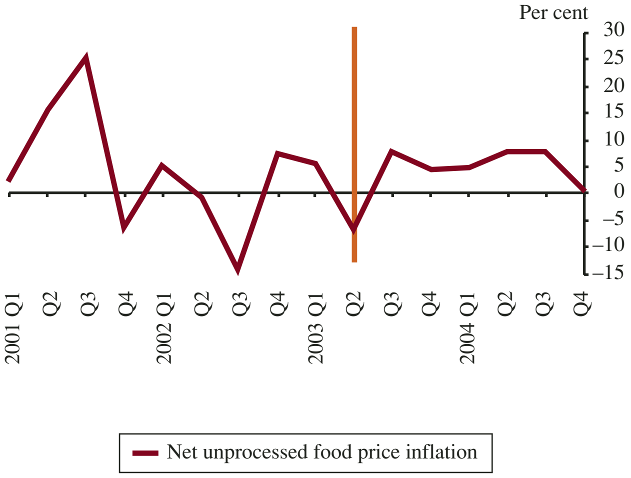
Despite the higher wage inflation projection, the Bank still assumes that growth in real wages will return to a path consistent with productivity growth, reflecting the adjustment of wage inflation to more moderate consumer price inflation. Accordingly, the Bank expects wage inflation to continue to moderate gradually over the forecast horizon.

Other goods and services

The projection for unprocessed food prices is for a broadly constant inflation profile until mid-2004, causing the annual price index to be over 9% in mid-2004, due to the low base. From 2004 Q2, the Bank expects price increases to moderate, thanks to sharper competition arising from the termination of existing customs duties on imports following EU accession.

Chart 1-10

Net unprocessed food price inflation *(Seasonally adjusted and annualised quarter-on-quarter growth rates)*



Since the publication of the May *Report*, the motor fuel and market-priced energy projection has been revised up for end-2003 and down for end-2004. This could be primarily attributed to the assumed path of the world oil price, which, in forint terms, is more than 15% higher in the second half of 2003 than in the May projection and declines gradually over the forecast horizon.

While with regard to petrol, the cut in VAT rates scheduled for 2004 is offset by the rise in excise duty, with regard to diesel, also in the group of motor fuels, the Budgetary Proposals for 2004 prescribe a cut in excise duties. The proposed 2.4 forint per litre cut will reduce the CPI in December 2004 to an extent of only 0.05 percentage point.

The increase in the excise duty on tobacco exceeds the rate offsetting the cut in the VAT rate. In the projection, the rise in excise duties reaches a total of 17.6% for this group of products in January 2004, in line with the provisions of the Budgetary Proposals. This is essentially consistent with a linear path for excise duties, which can bring the rate to the EU requirement (of 64 euros/1,000 cigarettes) by January 2009.

There have been several revisions to the projection for regulated prices relative to the May *Report*. First, as opposed to the previous forecast, the May rise in the price of pipeline gas has been reported in the July CPI data. Second, two further price increases are scheduled for August (electricity prices will be raised by 9% and postal services by 6.8%), raising inflation with regard to prices in this category relative to the projection in May.

The Bank has no official, detailed information regarding the price regulatory measures to be taken in 2004. With respect to regulated items, where no other published information is available, the Bank uses the previously applied technical assumption that (net) prices will rise on average at the rate of non-tradables, that is, by 7.7% (annual average index) in 2004. For some prices, we assume, based on past patterns (e.g. telecommunications) and 2003 measures (e.g. electricity) that prices would be increased at a lower rate. Overall, the average net rate of price increases of the regulated group is projected to be 5.8% on average in 2004.

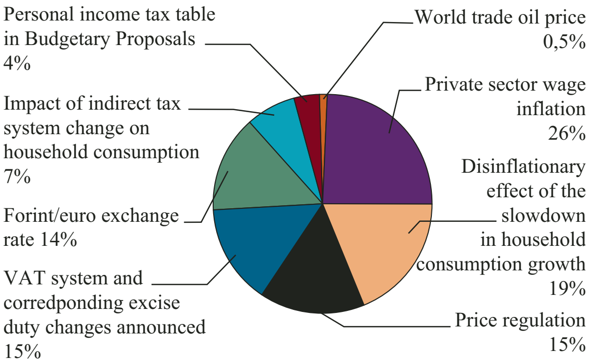
1.3 UNCERTAINTY SURROUNDING THE CENTRAL PROJECTION

In the Monetary Council's assessment, the risks to the central projection are balanced at the end of both years. This is because the probability of a disinflationary movement in the forint exchange rate balances the upside inflationary risk in the wage forecast and that of the impact of tax changes on inflation.

At the same time, uncertainty (the variance of the distribution) is 25% higher in 2004 than at the time of the previous projections.

Chart 1-11

Main factors of uncertainty in 2004



The risk factors in both years comprise private sector wage inflation, changes in world oil prices and price regulation, constituting an upside risk to inflation, as well as the forint exchange rate, representing a downside risk to the central projection.

Additional risk factors will appear in 2004, due to the changes in taxation and its implications announced in the 2004 Budgetary Proposals. Even though the risks to the exchange rate of the forint and the impact of the expected decline in household consumer demand growth are downside risks in 2004, they will be offset by the upside risks.

The following section outlines three alternative scenarios, depicting prospective developments in both inflation and the real economy. First, the uncertainty relating to the personal income tax table for 2004 is examined, second, the effect of the forint exchange rate being stronger than the Bank's assumption, and third the risk involved in private sector wage inflation differing from the central projection.

Table 1-6

Bounds of the bands in the fan chart

(Percentage changes on a year earlier)

	Lower 90%	Lower 60%	Lower 30%	**Central path (mode)**	Upper 30%	Upper 60%	Upper 90%
2003 Q3	3.6	4.2	4.5	**4.8**	5.0	5.3	5.8
2003 Q4	3.4	4.2	4.7	**5.1**	5.4	5.8	6.6
2004 Q1	4.5	5.6	6.2	**6.7**	7.2	7.7	8.7
2004 Q2	4.7	5.9	6.5	**7.1**	7.6	8.2	9.3
2004 Q3	3.7	5.0	5.7	**6.4**	7.0	7.7	9.0
2004 Q4	2.9	4.4	5.2	**5.9**	6.6	7.4	8.8

Uncertainty surrounding the personal income tax table

Uncertainty surrounding the personal income tax table is divided into three key components. An upside risk to inflation is that it is not definite yet whether the tax table announced in the Budgetary Proposals will be adopted in 2004, as assumed in the Bank's central projection, or the tax table set out under current law. Should the tax table be as it is in the current law, in contrast to the Bank's assumption, household disposable income might grow faster than indicated in the central projection, which may dampen the decline in household consumer demand growth in 2004. This may cause GDP to grow by nearly one percentage point faster than projected, as well as a slightly higher rate of inflation in 2004.

Second, even if the tax table outlined in the Budgetary Proposals is adopted, there will be significant upside risk to inflation associated with the impact of the measure on household consumer demand. The central projection is based on the assumption that households respond to the decline in disposable income primarily by curbing consumption. On the other hand, it is also possible that households make adjustments by cutting back more sharply on savings, which may cause a 1-2 percentage point rise in the projected growth rate of consumer demand in 2004. Here, GDP growth may amount to 3.5% as an average for 2004, while the CPI may be approximately 0.2 percentage point higher at the year-end.

Third, there is also great uncertainty about the disinflationary effect of the projected slowdown in household consumer demand growth. Against the background of robust growth in consumer demand in 2002 and 2003, the slowdown projected for 2004 is substantial, indeed unprecedented, in the history of the Hungarian economy since the early 1990s. As based on statistical estimates, the central projection is for a relatively moderate disinflation profile, the above factor constitutes major downside risk to the inflation projection. If the expected decline in consumer demand is assumed to exert stronger disinflationary pressure than proposed in the central projection it will lead to an inflation projection lower by a few tenth of percentage points at end-2004.

Uncertainty about the exchange rate of the forint

A significant downside risk to the inflation projection is the outlook for the EUR/HUF exchange rate. The central projection was based on the assumption that the exchange rate of the forint will remain constant over the full forecast horizon at the very weak rate prevailing in July 2003 (EUR/HUF 264). The central inflation projection suggests that a forint exchange rate stronger than its assumed value is desirable for inflation to approach the inflation target. Therefore, the alternative scenario of an exchange rate gradually strengthening over the forecast horizon should be considered.

Assuming that the exchange rate appreciates to EUR/HUF 250 by end-2004 at a smooth pace, this may lower inflation at end-2003 slightly and by over 0.5 percentage point in December 2004. At the same time, the stronger exchange rate will worsen corporate competitiveness over the short term and, mainly through its impact on the current account, and reduce the GDP projection. At the same time, the deterioration in corporate sector profitability may stimulate a decline in wage inflation and slow down the upward trend in the level of employment seen since early 2003.

Uncertainty about wage inflation in the private sector

The Bank perceives an upside risk to private sector wage inflation over the full forecast horizon, basically due to two factors. First, the weak exchange rate may further slow down the adjustment of the rate of wage increases to the existing moderate inflation environment.

A second source of uncertainty is the upward pressure of inflation expectations on wage inflation, not taken account of in the current central projection. The latter, so-called secondary effect may arise as the one-off upward pressure of the change in indirect taxation in 2004 on the price level may be perceived by economic agents as an acceleration in inflation, causing them to adjust their wage increase decisions to a higher expected rate of inflation.

Faster wage increases will impair competitiveness by increasing firms' labour costs, which may in turn hamper the recovery in employment and production projected for 2004. On the other hand, it may raise household income, stimulating faster growth in consumer demand. Finally, the increase in the income tax base will cause fiscal revenues to increase as well, improving the position of general government in 2004.

At the upper limit of the wage inflation projection for the private sector, a rate of wage growth 0.4 and 2.5 percentage points faster in 2003 and 2004 respectively may raise the inflation projection by 0.2 percentage point at end-2003 and 0.6 percentage point at end-2004. The Bank estimates that, on the whole, this would exert upward pressure on GDP and consumption in 2004. GDP could grow at a roughly 0.5 per cent higher rate next year. The effects on the labour market and competitiveness would appear only later.

2 Economic activity

2.1 DEMAND

The real economy forecast is founded on the assumption that the exchange rate is fixed for the whole forecast horizon in terms of the average rates for July 2003 (264 HUF/EUR), representing a 7% depreciation of the exchange rate relative to the assumption in the May *Report*. The Bank's fiscal policy assumption is based on measures of the 2004 Budgetary Proposals published in July.

The Bank has revised down its forecast for economic growth to 3.2% in 2003 and 2.7% in 2004, relative to the earlier forecast. The downward revision to the earlier forecast for 2004 is mainly due to the planned fiscal consolidation, different in structure relative to the earlier assumption, which will likely have a negative influence on the expected rate of economic growth. The explanation for this is that the measures envisaged in next year's fiscal policy proposals will likely retard household consumption growth, although its effects will also be reflected in a decline in household investment.

In 2003 Q1, Hungarian economic growth slowed dramatically and was lower than estimated in the Bank's May *Report*. Based on first-quarter actual data, the Hungarian economic cycle is assumed to have been at its trough in the period, but signs of an expected pick-up have since appeared. Available data for Q2 appear to reinforce the Bank's assumption that manufacturing has perhaps passed the bottom of its cyclical slowdown.

The Bank's view of external economic developments has remained unchanged since the May *Report*. Data on external demand appear to underline the opinion that, although the recovery has already started, considerable uncertainties still remain.

In respect of fiscal consolidation this year, the Bank's expectation has remained unchanged relative to the previous *Report*. By contrast, owing to the fiscal consolidation measures announced by the Government in the fiscal policy proposals for 2004, consolidation will likely be slightly more modest, though substantially different in terms of structure, compared with the May forecast. In contrast with the earlier assumption, fiscal consolidation will mainly affect households, which, in turn, will slow down economic growth directly, through declines in household consumption and fixed investment.

Major uncertainties remain in the labour market. Based on actual data for the first quarter, the Bank assumes the private sector to have shown signs of a slight adjustment in wage-setting behaviour, which, however, is not reflected in the April–May data. Despite continued disinflation, wage inflation in the manufacturing sector began to increase slightly in the second quarter. In the market services sector, wage inflation has continued to grow in recent months, after stalling at high levels due to robust domestic demand and persistently high inflation expectations.

Although the latest labour market data on the private sector appear to reinforce the Bank's expectation of an improvement in economic performance, uncertainties still remain. The rise in unemployment may have ended in the period, but the household confidence index continued to fall. This leads to the assumption that the currently strong growth in household consumption will likely weaken further in the coming months. The current forecast for nominal wages in the private sector in 2004 is higher than in the May *Report*, but this implies much more modest wage growth, due to the changed inflation path and the dampening effects on real wage growth of the Government's proposed tax measures. Consequently, the rate of household consumption is likely to fall strongly in 2004.

The Bank's forecast for whole-economy fixed investment has changed little relative to the previous *Report*, and continues to reflect the different paths of the external business cycle and domestic fiscal policy. The current forecast points to a pick-up in corporate fixed investment, closely aligned with the recovery of external demand, as experienced in the first quarter. Although fixed investment growth in the services sector is estimated to be slightly lower in 2004, due to the decline in domestic demand, this will likely be counterbalanced by a pick-up in manufacturing fixed investment activity. The growth of household sector fixed investment is expected to slow in 2003, after growing robustly in the previous year, and may even slip into negative territory in 2004, due to the restrictive measures called for by fiscal policy. The Bank expects the growth of public sector fixed investment to fall this year and to remain stable in 2004, in line with the fiscal adjustment programme.

Table 2-1

Fixed investment by sector*

(Annual percentage changes)

	Weights %**	2001	2002	2003	2004
		Estimates		Forecast	
Corporate sector	57	1.0	(–2.3)	2–6	3–7
General government	19	(–6.9)	21.7	3–10	5–10
Households	24	21.4	18	0–5	(–5)–0
Whole-economy fixed investment	**100**	**3.2**	**5.8**	**2.5–5.0**	**2.0–6.0**

* *These investment data may differ from the figures for gross fixed capital formation, see Manual to Hungarian Economic Statistics.*

** *Government spending on motorway construction is included in general government data.*

The Bank has revised up its forecast for whole-economy exports. This mainly reflects the actual first-quarter data and, to a lesser extent, the weaker exchange rate taken as an assumption. Import growth has been stronger than export growth since 2002 H2. The Bank expects this trend to remain uninterrupted in 2003. The rising import content of household consumption and the pick-up in corporate fixed investment provide an explanation for the growth in whole-economy imports. In the Bank's forecast for 2004, exports expand more robustly than imports, due to the expected recovery in external demand and a slowdown in household consumption.

The Bank's evaluation of the current phase of the economic cycle has also been reinforced by its first experimental analysis of developments in potential output (potential GDP) and the output gap.[8] Potential GDP shows the trend of output. The difference between actual and potential GDP, also known as the output gap, shows whether the economy is above or below its long-term growth path.

In 2002, the output gap fell to around zero, as a result of the opposing effects of the decline in external economic activity and an expansionary fiscal policy. The output gap was at around zero in 2003 Q1. It indicates GDP fluctuating around its long-term trend and does not necessarily mean that inflationary pressures have abated, as this does not take into account the different structure of economic growth in which below-potential output was registered, accompanied by a strong pick-up in household demand.

Table 2-2

GDP growth and its components

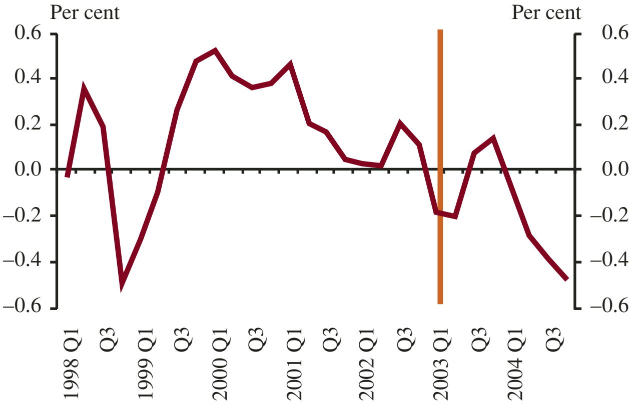
(Percentage changes on a year earlier)

	Actual		Forecast	
	2001	**2002**	**2003**	**2004**
Household consumption	5.3	8.8	6.8	0.6
Household final cons. expenditure	5.7	10.2	7.6	1.0
Social transfers in kind	3.8	3.0	3.0	–1.0
Public consumption	4.9	1.5	2.0	1.5
Gross fixed capital formation	3.5	5.8	4.3	4.1
'Final domestic sales'*	4.8	7.3	5.7	1.5
Domestic absorption	1.9	5.1	5.7	1.8
Exports	8.8	3.8	4.0	7.5
Imports	6.1	6.1	7.1	6.0
GDP	**3.8**	**3.3**	**3.2**	**2.7**

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

Chart 2-1

Output gap*



* *Output gap: percentage difference of actual and potential GDP.*

The Bank has also estimated the output gap for the forecast period. Based on the results of the estimation, the output gap is expected to turn positive in 2003 H2, as an effect of the expected recovery in external demand. In the Bank's current forecast, a significantly negative output gap is expected next year, resulting from a considerable decline in household demand. In addition, domestic demand is likely to fall and actual GDP to drop below its potential as a consequence of fiscal consolidation. Apart from other factors, the negative output gap would lead to declining inflationary pressure; however, other factors also affect developments in inflation.

---

[8] For more details, see the Special topics section of the *Report*.

2.1.1 EXTERNAL DEMAND

In the *Report*, the Bank uses the weighted average of imports, at constant prices, of Hungary's major trading partners, as the main gauge of developments in external demand. The weights accounted for by the countries in the indicator are determined by the shares of the countries within Hungarian exports. In the analysis, reference will be made to the indicator as a gauge of the size of Hungary's export markets, in order to distinguish it more markedly from other indicators of external business activity.

According to the Bank's current forecast, the size of Hungary's external markets will only change marginally on the forecast horizon of end-2004 relative to the earlier forecast, although there may be slight deviations over the short term (2003 H2).

External economic activity, particularly in Western Europe, remained subdued in 2003 Q1, and available data for the April–May period suggest that a significant acceleration of performance failed to commence in Q2. This is underlined by GDP and industrial output data, and industrial confidence indices from Hungary's major trading partner countries. However, the size of Hungary's export markets indicates dynamic growth since 2002 Q2. A significant difference between the dynamics of GDP, industrial output and other coincident and leading indicators, on the one hand, and imports, on the other, for 1–2 quarters, cannot be seen as extraordinary. However, this gap has lasted for four consecutive quarters, making it difficult to forecast external demand over the short term. In fact, it is the German data that are practically the sole cause for this phenomenon, making the evaluation slightly easier.

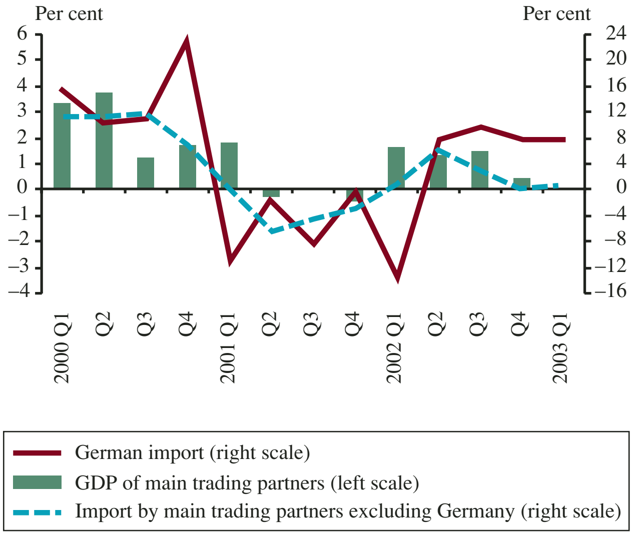
In the previous *Report*, the Bank expected modest growth in imports of Hungary's major trading partners in 2003 Q1. Data confirmed this expectation, except in the case of Germany. German imports rose at a rate of nearly 2% during the period, despite the country's declining GDP. Consequently, short-term growth in external demand turned out to be significantly higher than the Bank's forecast for three consecutive quarters.

As, based on the Bank's current expectation, a perceptible recovery in external business conditions is only likely to begin around the end of this year or early 2004, imports of Hungary's major trading partners are assumed to rise only modestly in 2003 Q2, then to pick up slightly, though tentatively, in the second half of the year.

Chart 2-2

Comparison of German imports and other indicators of external economic activity

(Annualised quarter-on-quarter growth rates)

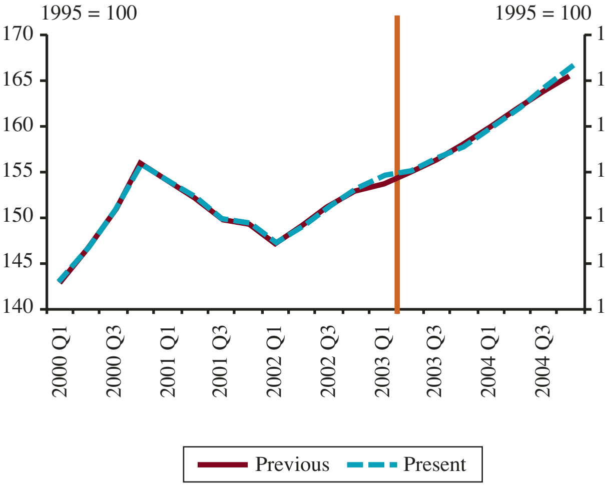


However, the factors defining the medium-term path of external demand have changed little. Consequently, import growth registered by Hungary's major trading partners in 2004 may be roughly equal to the forecast in the previous *Report*.

Of the major international economic forecasters, the OECD, the IMF and the European Commission have not yet updated their April forecast; consequently the Bank's projection for external demand in 2003 continues to be one of the lowest and contains the lowest increase in 2004, compared with other projections.

Chart 2-3

Size of Hungary's export markets*



* *Weighted volume of imports of Hungary's 12 major trading partners.*

In the Bank's view, there is a risk that external demand will grow slightly below the central path in 2003, due to the indicators depicting a somewhat less favourable picture of external economic activity. In 2004, the direction will likely turn around the Bank anticipates a much lower growth rate in the central path than international organisations and market research institutes. Consequently, the balance of risks is on the upside.

Table 2-3

Forecasts for the growth of Hungary's export market size*

	2003		2004	
	Current	**Previous**	**Current**	**Previous**
MNB	3.9	3.7	4.6	4.6
European Commission	3.9	5.9	6.4	7.1
OECD	4.1	5.5	6.8	7.6
IMF	4.4	5.7	6.3	N/A

* *Weighted annual average of import growth of Hungary's 12 main trading partners in per cent (constant prices). Sources: European Commission: Economic Forecasts (April 2003/November 2002); OECD: Economic Outlook (April 2003/November 2002); IMF: World Economic Outlook (April 2003/October 2002).*

2.1.2 FISCAL STANCE

The Bank has estimated the fiscal stance on the basis of the Budget and Taxation Acts, and approved government policy measures for 2003, as well as the published budgetary proposals for 2004.[9] In the Bank's current forecast, the contractionary impact of general government on demand may be approximately 0.5% of GDP in 2003 and approximately 1.0% in 2004, indicating a somewhat lower contractionary impact relative to the forecast in the previous *Report*.[10]

In 2003, a contraction of demand is likely to materialise in a structure in which items affecting household income rise at a rate in excess of economic growth, due to pre-determined revenues and expenditures. Contraction of demand will occur through spending cuts in the rest of the items, for example, fixed investment.

The Bank's May forecast assumed that this structure would be maintained in 2004 as well. However, based on the budgetary proposals announced by the Government in July, a completely different picture has emerged. The central projection is based on the assumption that fiscal policy will implement the measures set forth in the budgetary proposals. In that case, contraction of demand would involve the items affecting household income and consumption (direct and indirect taxes), while fixed investment would increase.

Table 2-4

Fiscal demand impact

(As a per cent of GDP)

	2002	2003	2004
	Preliminary	**Central projection**	
Direct demand impact*	4.3	-0.5	-1.0

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

Estimating the 2003 fiscal demand impact

The basis for the Bank's 2003 estimate is that, in respect of the fields where the Government's measures are expected to have a full impact, the Bank only takes into account information available in legal instruments or, in exceptional cases, other pieces of information available in draft proposals.

In addition, in fields where there is no full central government control over the developments, the Bank prepares its own forecast. Accordingly, the Bank forecasts developments in tax revenue and expenditure on old-age pensions on the basis of its own macroeconomic projections and the estimated effects of government measures, while it forecasts autonomous fiscal developments, such as the behaviour of local authorities and budgetary units, and uses of open-ended subsidies, on the basis of observable trends.

A number of the risks indicated in the central projection in the May Report are likely to materialise this year. The Government has decided to reform the open-ended subsidy systems (–0.1%) and freeze some spending items (–0.2%). These effects are broadly comparable with the Bank's earlier assumption.

In addition, the Bank has also taken into account a government measure already announced but not yet legislated, according to which the deadlines for the payments of 13th month wages would change, slightly

---

[9] Fiscal targets and measures for 2004 were announced on 16 July. A more detailed version was published on the website of the Ministry of Finance (see http://www.p-m.hu/home.htm).

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

Table 2-5

Current estimates for the 2003 fiscal demand impact relative to the May *Report* *(As a per cent of GDP)*

Previous central projection: –0.5			
Additional child-care benefits (due to lawsuits)	+0.2	Higher tax revenue	–0.1
Pharmaceutical and housing subsidies	+0.1	Expenditure cuts	–0.3
Quasi-fiscal subsidies	+0.2	Delays in road construction	–0.1
Expansionary effect	**+0.5**	**Contractionary impact**	**–0.5**
Current central projection: –0.5			

reducing the 2003 and 2004 deficits. In addition, the Supreme Court has ruled that certain child-care benefits must be paid. Relying on the official release of the National Motorway Company, the Bank has revised down its estimate for government road construction. However, taking the Government's decisions as a basis, the Bank has revised up its forecast for quasi-fiscal items by 0.2% of GDP, in relation to the loans and state guarantees granted to agriculture and loss-making companies.

Updating the macroeconomic forecast for 2003 would have resulted in a 0.3% higher tax revenue as a proportion of GDP (PIT, social security contributions, VAT). However, the Bank has chosen to revise down its forecast for tax revenue by 0.2%, due to actual revenue data for the second quarter of 2003. Explanation for this is that tax revenue lagged far behind the assumptions based on actual macroeconomic developments, such as the increasing tax base, for instance.

If the shortfall in tax revenue proves to be a lasting phenomenon, then the projection will have to be revised down further. This will also be reflected among the risks to the central projection for 2003 which also includes the uncertainties surrounding the expenditure of local authorities and budgetary units, given that a major part of this is concentrated in the last quarter.

Estimating the 2004 fiscal demand impact

Given the high level of uncertainty surrounding fiscal policy for 2004, the Bank has prepared two different fiscal forecasts based on different principles. The Government and Parliament may make significant changes during the period between its proposed measures announced in July and the adoption of the Budget Act towards the end of this year. As a benchmark or extreme value of the possible forecasts, a rule-based version is presented. Its principles, in harmony with the OECD's practice, imply that all proposed measures not yet legislated are excluded from the forecast. (This method is discussed in detail in the Special topics section of the *Report*.) On the other hand, we calculated the usual expert baseline scenario based on the proposed fiscal measures announced by the Government in mid-July. The difference between the results of the two forecasts expresses in numerical terms the size of announced but not yet legislated government measures, and also the *risks* of postponing their implementation.

Based on the expert central projection which uses the fiscal proposals as a starting point, the expected contractionary impact may amount to 1.0% of GDP in 2004. The rule-based projection, prepared for the purposes of comparison, does not reflect the proposed measures. Instead, it starts from the observable trends of earlier years, pre-

Table 2-6

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

Central projection: –0.5% demand impact			
Higher contraction of demand		**Lower contraction of demand**	
Higher tax payment at the end of the year	–0.1	Lower tax revenue	+0.2
Slowdown in broadly defined government fixed investment	–0.1		
Delays in expenditure by local authorities and budgetary units	–0.2	Additional expenditure by local authorities and budgetary units	+0.3
Total difference under extreme scenario	*–0.4*	*Total difference under extreme scenario*	*+0.5*
Demand impact under extreme scenario	**–0.9**	**Demand impact under extreme scenario**	**0.0**

Table 2-7

Results of the different forecasts for the 2004 demand impact *(As a per cent of GDP)*

	MNB forecasts for 2004		
	Rules-based forecast	Expert central projection	Difference in percentage points (= expected measures based on proposals)
Demand impact	+0.8	–1.0	–1.8

determined revenues and expenditures and measures already adopted in law (for example, the reduction in income tax for 2004). The resulting 0.8% expansionary impact shows what would be the demand impact of fiscal policy in absence of the proposed measures. Thus, the effects of the measures in the budgetary proposal of July will presumably amount to 1.8% of GDP.

The Bank's 2004 forecast in the May Report was based on projecting the behaviour of the central government based on our past experience, in addition to partial information available at that time (on legal instruments and pre-determined revenues and expenditures). Since then, the budgetary proposals adopted by the Government in July, have been announced, together with a number of details, in addition to the major aggregates. Based on these, the Bank has prepared an expert central projection, using its own forecasts for macroeconomic developments and estimates for autonomous fiscal developments.

The budgetary proposals suggest that expenditure would rise as a proportion of GDP in 2004, and the increase in revenue would be higher than the increase in expenditure. However, after eliminating the effect of payments to EU, expenditure would fall slightly as a proportion of GDP. Accordingly, the proposed tax increases do not provide cover for additional expenditure, but only reduce the deficit.

In contrast with the May assumption, the budgetary proposals do not include measures to reduce fixed investment activity. Instead, the central budget takes back a part of tax reductions implemented in 2002-2003. Tax revenue would increase through increases partly in direct taxes (taxes on labour income) and partly in indirect taxes (VAT and excise duties).

The 1% increase in the social security contribution rate would affect all levels of income. By contrast, the proposed measures affecting labour PIT (taxes on pension contributions, higher tax brackets and restrictions on other allowances) would affect low income categories less, due to compensation through tax credits.

Although the planned changes to VAT and excise duties contain certain reductions in rates, on balance they will boost revenue. A large part of these measures will affect household consumption and consumer prices. Another measure (its effect being 0.1% of GDP) will cease tax deductibility of certain government subsidies, which, in turn will reduce the value of these corporate subsidies.

Apart from payments to the EU, expenditure as a proportion of GDP will fall slightly. All this can be implemented with a significant degree of restructuring, as a number of additional expenditure items will occur which the Government will only be able to cover by curbing allocations to other areas. EU subsidies, which will require co-financing by the central budget, and the necessary institutional development will cause automatic additional expenditure. The budgetary proposals will offset this to a great degree by reducing the estimation basis for certain items of expenditure (0.7% of GDP). As a combined effect of pre-determined expenditures[11] and priorities[12] the proposals envisage only a small increase, or even a nominal reduction, in some of the other expenditure items. All in all, wages and household transfers will grow at a somewhat slower rate than GDP and infrastructure investment will expand at a faster rate.

The central projection differs from the announced budgetary proposals in three points:

- Based on its macroeconomic forecast, the Bank expects tax revenues to be lower and pension indexation to be higher than set out in the proposals.
- Based on trends of autonomous fiscal developments, local authorities are expected to continue to run a deficit.
- Measures not presented in detail (for instance 'improvement in the efficiency of tax collection') have been ignored.

There are also other risks to the central projections. First, macroeconomic developments constitute an upside risk to the projected demand contraction. Faster growth in the main tax bases (such as salaries, consumer spending) would entail higher revenues and slightly higher pension expenditure. Provided that the tax bases increase at the projected rate and inflation is higher, the pension expenditure would increase due to the indexation.

---

[11] The full-year effect of this year's wage increases and widows' pension, the payment of another one-week amount of 13th month pensions and Hungary's NATO commitments.

[12] Infrastructure projects, certain welfare measures, next year's wages increases.

In addition to the expected macroeconomic developments, 2004 revenues will be determined this year's tax base, and whether the shortfall in tax revenue in H1 proves to be lasting or temporary.

The major restructuring planned on the expenditure side carries the risk that the proposed reduction in expenditure will not actually occur. This may happen in such a manner that local government authorities and budgetary units use their own funds, and that certain items are spent outside general government. Additional expenditure, as noted above, carries especially important risks, as the Bank's central projection does not contain any increased uses of carry-forwards in the budget and assumes a reduction in local government deficit.

Finally, the central projection is based on the proposed measures, some of which are uncertain, particularly with regard to the withdrawal of changes in the personal income tax (PIT) table. Hence, there is also a fiscal policy risk among the uncertainties surrounding the projections. Accordingly, if the Government foregoes the proposed PIT measures announced in July, revenues from personal income taxes would be lower by 0.7% of GDP compared to the level set out in the budgetary proposals. It is an unanswered question as to whether this would be offset by other measures at the level of the approved official deficit, probably not affecting households.

- First, it is possible that the *contractionary stance would not change in size* but only in structure as a result. As the indirect effect of the previously approved PIT table, the Swiss indexation method (based on net wages) would lead to higher expenditure on pensions. Simultaneously, the fact that higher household income would generate higher consumption would have an impact of a similar size on tax revenues. The loss in PIT revenue would presumably be offset in the case of investment projects and corporate transfer payments.

- Second, it is also possible that the aforementioned *saving on expenditure would be implemented only partially*. This is because the saving may be partially offset by autonomous fiscal developments, or quasi-fiscal items, not included in the official deficit, may decrease less strongly. As a combined effect of these factors, the balance of risks to the central projection for the contractionary stance appears to be on the downside.

Within the demand impact, the items directly affecting household disposable income and developments in government fixed investment as part of whole-economy fixed investment are dealt with separately in this section.

The Bank has revised down its forecast for general government sector wages in 2003 and 2004 relative to the previous *Report*. This revision reflects the release of the CSO's data report for May and the Government's fiscal policy proposals announced for 2004. The Bank has revised up its forecast for the annual increase in employed persons in 2003 by 0.2 percentage point to 1%, and has reduced down its forecast for the average wage increase from 18.6% to 17.7%.

The increase in wages in 2003 continues to be shaped by the full-year effect of public servants' wage increases, an increase in civil servants' wages, effective from July, and the increase in judges' and prosecutors' wages implemented in

Table 2-8

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

Central projection: –1.0% demand impact			
Higher contraction of demand		**Lower contraction of demand**	
Macroeconomic developments	–0.3	Macroeconomic developments	+0.1
Smaller offsetting effect of fiscal developments (local government, institutions)	–0.1	Higher offsetting effect of fiscal developments (local government, institutions)	+0.6
2003. temporary effect of tax shortfall in H1	–0.2	2003. lasting effect of tax shortfall in H1	+0.2
Greater reduction in quasi-fiscal items	–0.1	Lower reduction in quasi-fiscal items	+0.4
Deficit-reducing measure which is not covered by the central projection	–0.7	The approved and not the proposed PIT table is implemented	+0.7
*Maximum total risk**	*–0.9*	*Maximum total risk**	*+1.3*
Demand impact under extreme scenario	**–1.9**	**Demand impact under extreme scenario**	**+0.3**

** These risks cannot be summed up, as they are not independent of each other.*

two stages. Explanation for the more modest decrease relative to the previous *Report* is the payment of a 13th month bonus salary to civil servants, partially postponed to 2004, as included in the fiscal policy proposals for 2004.

Following a decline in the previous years, the number of persons employed in general government increased by 1.5% in 2002. This increase gained momentum in September, and employment in December was 4.4% higher than in the same period of the previous year. Presumably, this increase was the effect of rises in wages of public servants in education and health care, although there were significant increases in public administration as well. Up to end-May, the rate of increase in employment barely dropped (3.7%).

The Bank's forecast for 2004 public sector wages reflects a 1% reduction in employment on the basis of the 2004 budgetary proposals and a total HUF 119 billion wage bill on the basis of the partial data published in the budgetary proposals. According to the proposals, this amount provides cover for the full-year effect of wage increases in 2003 as well as the 5% increase in wages of public servants and employees of defence and public order. Accordingly, the Bank forecasts general government gross wages to increase by around 8% in 2004.

Transfers to households in cash will likely increase by 9.5% in nominal terms in 2003, up some 1.1 percentage points on the forecast in the previous *Report*. This revision has been necessitated by that fact that supplementary benefits to people receiving child-care benefits in previous years will be paid out on the basis of a court ruling. The nominal growth expected in 2004 is 7.8%, comprising a pension rise calculated using the Bank's own macroeconomic forecasts and a one-week payment of the 13th month pension, as well as family allowances preserving the real value of money.

The volume of broadly defined government fixed investment is expected to increase by 5% in 2003 on the basis of the CSO's national account statistics. Whereas spending on general government fixed investment will fall temporarily, this will hardly be reflected in the accruals-based accounts. By contrast, general government spending on fixed investment will resume rising in 2004. This, however, will only have a moderate effect on the CSO's fixed investment statistics for the year. The expected increase in fixed investment volume on an accrual basis is likely to be around 8% in 2004.

2.1.3 HOUSEHOLD CONSUMPTION, SAVINGS AND FIXED INVESTMENT

Compared to the projection in the *Report* in May 2003, the Bank's current projection for household behaviour is substantially different. While, owing to a higher-than-expected wage inflation and a slower-than-expected rate of saving, the projection for 2003 consumption expenditure has been revised upwards, a significantly lower rate of increase in consumption expenditure is forecast for 2004. The principal underlying reason for this is that, in the Bank's estimation, inflation will be higher, with the proposed fiscal tightening directly affecting households. Simultaneous regulatory changes concerning subsidised housing loans and negative real income prospects will also hit household fixed investment adversely in 2004.

What makes the expected household behaviour difficult to study is that as of yet no similarly major, abrupt switches from an expansionary to a tightening fiscal policy have been experienced in the household sector. While 2002 was the year of record incomes and soaring consumption with spillovers to developments in 2003, judging from the disclosed fiscal proposals for 2004, fiscal policy will be highly restrictive in the household sector in 2004. In addition, households' real income will be further tapped by higher-than-expected inflation, as according to the Bank's estimation CPI inflation will be higher than the rate of increase in the households' disposable income.

Table 2-9

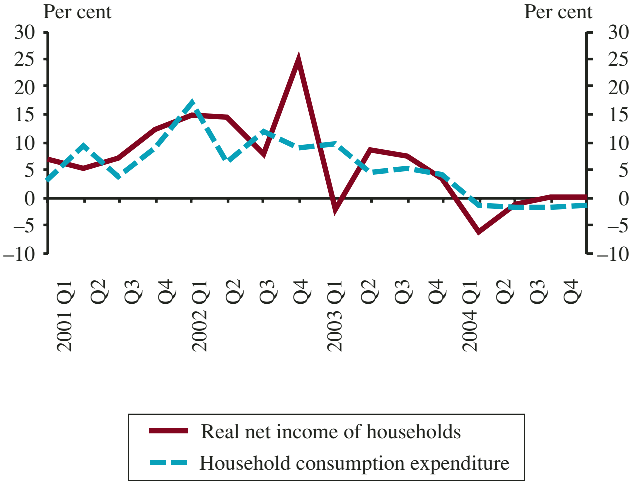
Household consumption, savings and fixed investment *(Annualised growth rates, per cent)*

		Real net household income	Real consumption expenditure	Real fixed investment expenditure
2002	Fact/Estimates	12.4	10.2	20–30
2003	Projections	7.7	7.6	0–5
2004		(–1.6)	1.0	(–5)–0

Chart 2-4

Household income and consumption expenditure

(Annualised growth rates, per cent)



The Bank's indicators also underline the uncertainty about the future. New vehicles sales further increased in 2003 Q1, while retail turnover and the consumer confidence index fell in Q2.[13] A GKI consumer survey reveals that households' perception of the country's future and of their own is bleaker than in Q1. All things considered, the Bank projects the continuation of a slower but still dynamic increase in consumption expenditure for 2003 Q2.

Chart 2-5

Growth rate of retail turnover

(Annualised growth rates, per cent)

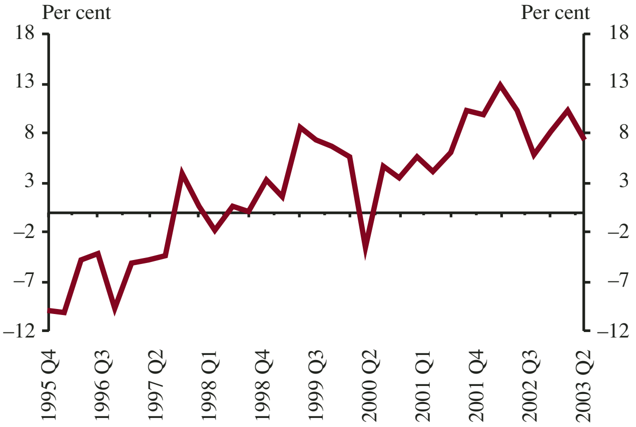
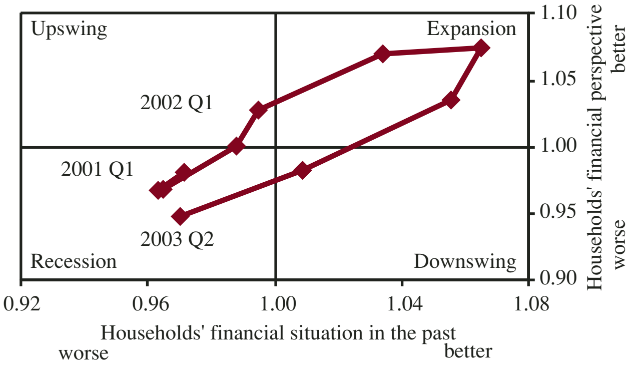


Chart 2-6

Households' assessment of their own business position as shown by the GKI confidence index



Source: GKI business survey. The values are the deviations from long-term trends.

The Bank's projection for the entire 2003 calendar year is also affected by the above divergent factors. On the one hand, factual data show higher-than-projected income and consumption in Q1. On the other, wage adjustment to disinflation was slower than projected in the Bank's previous *Report*. Another factor that increased income was the court ruling on the payment of supplementary childcare benefits. Given such factors, real consumption expenditure is expected to grow by 7.6% in 2003.

The perception of the developments envisaged for 2004 is considerably different than projected in the May *Report*. Basically, three significant shocks will influence household behaviour and lower household income: the forint depreciation, changes in indirect taxes (e.g. VAT rates, reclassification of VAT rates and excise duties) and personal income tax.

The forint depreciation in mid-2003 and the assumed average July forint exchange rate is likely to exert upward pressure on inflation in 2004. The proposed indirect tax changes imply a one-off rise in the price level in 2004. The effect of the former on wages was taken into account in terms of an increased wage inflation forecast for 2004. However, the potential second order effects of the indirect tax changes on wages and prices were only considered as upside risk to the baseline wage and price inflation projection. As a result, although the Bank's wage projection was also revised upwards, this will still not prevent households' gross (pre-tax) real income from growing at a slower rate in 2004 than projected in the May *Report*.

The announced direct tax (personal income tax (PIT) and social security contributions) changes for 2004 imply that net (after-tax) real income levels will decline in 2004. Fiscal policy for 2004 as at the compilation of the May *Report* was expected to be expansionary in the household sector owing to the legislated PIT cuts. The fiscal plans announced in July include fiscal tightening measures that will drain household income in 2004. In the Bank's estimation, such direct tax changes will entail a 3.5% decrease in the proportion of net wages relative to gross wages. A modest rise in wages will be concomitant with an equally modest increase in pecuniary social benefits (e.g. pensions, childcare benefits, etc.). Although, overall, while households' gross real income is expected to grow by roughly 2% in 2004, households' net real income may well shrink by 1.6 % as a result of the announced changes in direct taxes.

The question is to what extent households will adjust to the anticipated decrease in real income following a robust expansion in real wages and consumption in 2002 and 2003. The Bank's assumption is that in making decisions on consumption expenditure, households will allow for their earlier habit formation, i.e. they will only gradually be willing to reign in the high consumption that they have become accustomed to. Accordingly, consumption expenditure is expected to take some time to adjust to developments in real income. Based on the above, consumption is likely to grow by 1% in 2004, reflecting higher willingness to consume and further disinterest in saving.

---

[13] As data on retail turnover were only available for the first five months of the year, May included, those on the June turnover, unavailable at the time of preparing the *Report*, were assessed with statistical methods.

Another pivotal issue to bear in mind when households are studied is housing loans and related changes in housing fixed investment and fixed investment expenditure. The vigorous expansion of subsidised housing loans has greatly contributed to the fact that household net lending was negative in Q1 and that no marked increase was experienced in this respect in Q2 either. It remains a moot question whether such vigorous expansion was fuelled by a sudden rush for loans owing to the introduction of stricter eligibility criteria for and credit limits on subsidised housing loans in June or by credit demand that is here to stay for any length of time.[14]

The abolition of tax relief due on housing loans put forward as a proposal in the Budgetary Proposals may also reduce demand. Costlier housing loans and bleak real income prospects are likely to combine to dampen households' housing investment willingness. It seems to be safe to assume that, based on the foregoing, households' fixed investment expenditure will grow more modestly in 2004 than projected in the Bank's previous *Report.*[15]

The uncertainty of projections for consumption expenditure is rather asymmetric in 2003 and will remain so in 2004 as well. Such asymmetry is caused by the manner in which households react to the conflict between an expansionary and a restrictive fiscal policy. If, with a view to the adjustment measures to take effect from 2004, households cut back consumption as early as this year, consumption in 2003 may turn out to be lower than projected.

Since the fiscal tightening announced in July has not yet been codified in legislation, it may still change, and thus it can be assumed that the Government's adjustment package will take a less heavy toll on households. This, in turn, may provide for the possibility of higher consumption in 2004. For example, if the announced PIT tightening was not to be implemented in 2004, households' real income would not decline and consumption expenditures in real terms would grow by 2.5 percent in 2004.

2.1.4 CORPORATE INVESTMENT

Corporate investment grew more than expected in the first quarter, substantiating the Bank's assumption that accelerating business activity is also beneficial to corporate investment decisions. Thus, the Bank projects steadily expanding corporate investment in the future. As expansion in the first quarter was, however, significantly higher than what can be attributed to the business cycle, the Bank assumes that the short-term uncertainty of its projection has grown.

The Bank's perception of external demand, one of the factors affecting long-term developments in fixed investment, has remained basically unchanged over the past quarter. At the same time, however, improving corporate competitiveness is expected to produce better sales figures in 2004. Consequently, the Bank projects vigorous fixed investment activity relative to its earlier projection. The reason that long-term projections are uncertain is that expectations for the global business cycle remain subdued, which may, in turn, jeopardise a lasting recovery in the domestic economy.

Table 2-10

Projected corporate investment

(Annual growth rates, in per cent)

	Actual	Projection	
	2002	**2003**	**2004**
Manufacturing investment	(–9.2)	3.3	6.5
Corporate investment	(–2.3)	3.8	5.3

Manufacturing fixed investment grew considerably in the first quarter, amounting to 4.4% growth on a year earlier. This has corroborated the Bank's assumption that manufacturing fixed investment passed through the trough of the business cycle in Q2 2002 and that it is likely to pick up again in 2003.

Growth, a considerable portion of which cannot be accounted for by business cycle-related factors, was, however, much faster than expected. Although there are an increasing number of signs indicating recovery in the domestic business cycle (see the sections on *Output* and on *Inventory investment*), neither sales outlook nor business confidence has improved to an extent that could account for the expansion of manufacturing fixed investment in the first quarter. Therefore, in the Bank's opinion, such a conspicuous expansion must have been generated by individual factors and may undergo minor correction during the rest of the year.

---

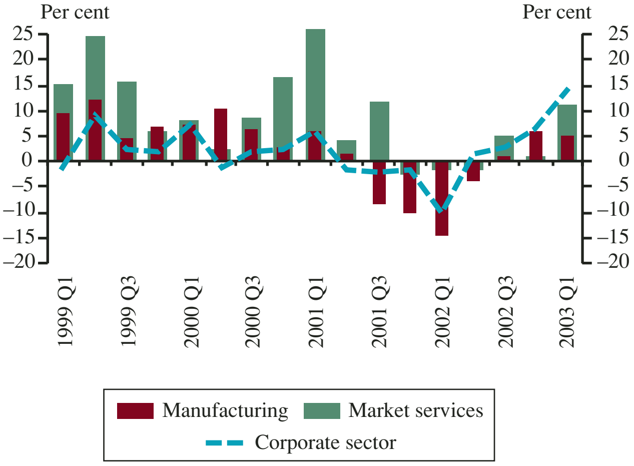
[14] Major changes in eligibility criteria for and credit limits on subsidised housing loans that affect borrowers are that the ceiling of subsidised loans for housing-related purposes has been lowered from HUF 30 to 15 million and that the interest rate due on such loans has risen to 6%.

[15] Data for 2003 H1 residential investment was released after finalising the *Report*. The number of building permits rose, implying a pick-up in housing investment activity. This may, however, be linked to the announced tightening of eligibility criteria and credit limits. Overall, the growth of residential investment slowed in H1. This increases the downside risk to the household investment projection.

Chart 2-7

Sectoral composition of corporate investment

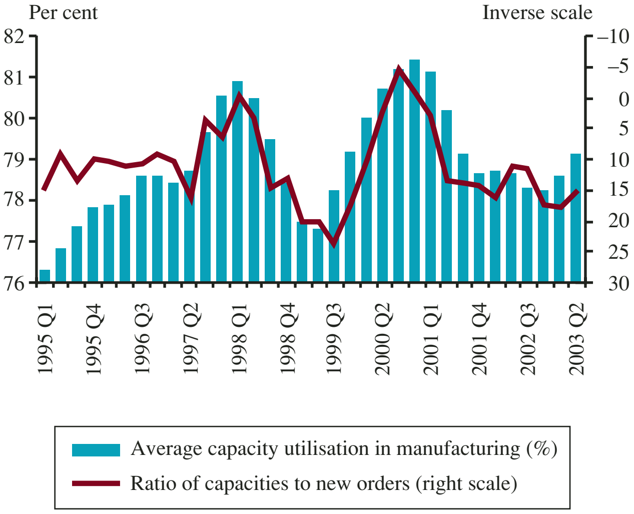
(Annualised quarter-on-quarter growth rates)



Due to the ‘noisiness’ of Q1 data, short-term developments in manufacturing investment are rather hard to assess. The results of a Kopint survey on corporate business activity in the second quarter point to a continuing recovery in fixed investment. Capacity utilisation increased substantially in the first quarter, reaching its historical 79% level for the first time since mid-2001.[16] The ratio of companies that view their capacity as unable to match their anticipated orders also grew. These indicators, therefore, suggest diminishing production capacity and a take-off in the business cycle.

Chart 2-8

Current and expected capacity utilisation in manufacturing *(Based on a KOPINT survey)*



Business confidence, however, remains subdued, which may hamper a rapid take-off in manufacturing investment. According to the Kopint survey, the expectations of manufacturing companies hardly improved in Q2. The majority deemed export and sales outlook as more favourable and output prospects less favourable than in early 2003. Multinational companies, which were not included in the survey, primarily allow for Western European, rather than Hungarian prospects for the business cycle, which seem to continue to be bleak. The issue of when a slow recovery in the business cycle will start to boost corporate confidence is key to a permanent upswing in corporate investment.

External demand, real exchange rates and corporate profitability combine to affect manufacturing investment in the long term. The Bank’s perception of external demand has barely changed over the past quarter, and its projection calls for modest, steady expansion (see the section on External demand). The unit labour cost-based real exchange rate depreciated by over 6% in the period under review, owing to the shift in the band of the central parity and the weakening of the forint, assuming the July exchange rate to remain constant over the forecast horizon. However, according to the Bank’s expectations this depreciation will improve corporate competitiveness only in the short run, up until 2004, even with the technical assumption of keeping the nominal exchange rate at the current level. With a weak exchange rate, accelerated cost inflation and a higher effective cost of euro-denominated debt would all lead to the restoration of the previous, stronger real exchange rate and lower competitiveness.

On the other hand a further continuous, albeit slow adjustment is expected on the labour market, which by improving labour side profitability is also likely to encourage fixed investment. Based on the above factors, manufacturing fixed investment is expected to grow by 3.3% and 6.5% in 2003 and 2004, respectively.

Corporate investment exceeded manufacturing investment in 2003 Q1, which can be attributed to the strong dynamics of investment in market services. In the Bank’s view, the growth rate of investment in market services will be the same in 2003. In 2004, however, its growth dynamic will be more modest. Although, due to the simultaneity of the impacts of domestic and global business activity, market services are difficult to model, and no unequivocal link between the investment and consumer demand can be identified. Overall, output and investment in this sector are expected to slow down in 2004 as a result of dwindling domestic demand. Accordingly, the Bank assumes that corporate investment will exceed manufacturing investment in 2003 and then fall behind 2004, growing by 3.8% and 5.5% in 2003 and 2004, respectively.

---

[16] By ‘historical’ the average level between 1995 and 2002 is meant.

Chart 2-9

Forecasts of corporate and manufacturing investment

(Annualised quarter-on-quarter indices of volume)

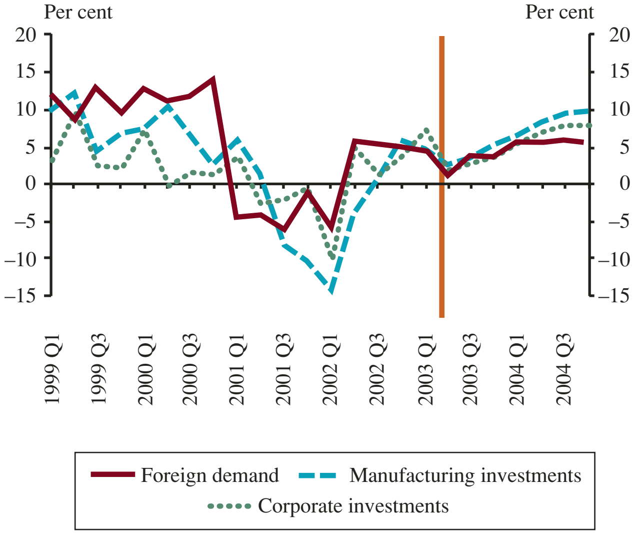
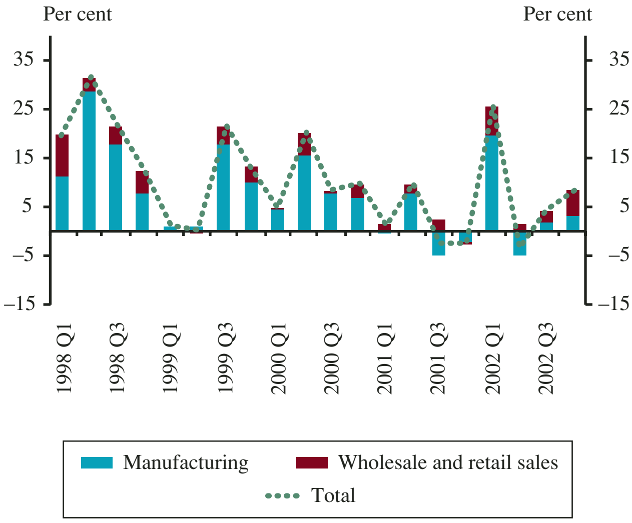


Chart 2-10

Contributions to growth in the whole-economy stock level

(Annualised quarter-on-quarter contributions to growth)



2.1.5 INVENTORY INVESTMENT

The Bank's inventory indicators showed the first signs of a nascent upward phase in the business cycle in 2003 Q1. Although the Bank’s previous *Report* covered the increase in whole-economy inventories, it attributed such increase to strong domestic demand rather than to an upswing in business activity, owing to the fact that the level of manufacturing stocks remained unchanged.

Available data on Q1 have, however, led the Bank to revise its perception of the past situation. Recent data show that manufacturing stock levels have been rising steadily since mid-2002, suggesting that the inventory cycle may have recovered from its lows approximately 9 months ago.

As the growth rate of manufacturing output slowed in the first quarter, it is hard to say at first to what extent sales problems or a brighter outlook for a pick-up in the business cycle are responsible for rising manufacturing stocks. A closer look at manufacturing stocks reveals that expansion in Q1 was attributable roughly in equal measure to increased input stocks and stocks of finished goods. Based on this, it is safe to assume that an improved perception of the business cycle also contributed to rising manufacturing stocks.

In the Bank’s view, unchanging levels of stocks of goods in trade point to a further upswing in domestic demand, which is substantiated by a vigorous retail turnover in H1 and highly dynamic consumption in Q1. It is equally possible, however, that, deteriorating consumer confidence dampened trading companies’ expectations of future sales, cautioning such companies to show restraint in increasing their stocks. Due to the high volatility of data on stocks, it will be possible to substantiate the latter alternative conclusion only when further detailed data are available.

2.1.6 EXTERNAL TRADE

Growth in imports and exports is likely to be seen in 2003, whereas 2004 is expected to be the year of increasing exports and decelerating imports. With exports growing faster than imports next year, the projection is in line with the assumed drop in consumer demand due to the fiscal tightening.

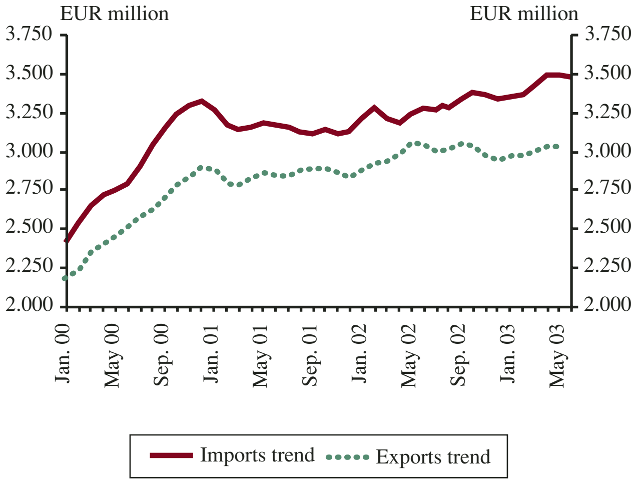
Available current data suggest that the volume of goods exports grew in 2003 Q1 and will continue to do so in Q2. This might seem to be in contrast with the foreign trade data published by the Central Statistical Office in euros at current prices, that shows a decreasing value of goods exports. For proper conjunctural assessment, however, export data must undergo several corrections. The most influential of those is the exclusion of the ”X-box effect”, that, as a result of a one-off location/relocation decision, significantly raised foreign trade figures at the beginning of the last year, but may not have relevance on longer-term developments. Taking into account all these corrections, goods exports exhibit a slight increase even at current prices, and the growth rate is even stronger once one deals with data at constant prices.

The same holds true in the case of goods imports, with the exception that imports exhibit a positive growth rate even without corrections. But with these corrections implemented, the growth rate is even stronger.

Chart 2-11

Goods exports and imports at current prices

(Corrected time series, in EUR)



Growing goods export seems to be fully consistent with developments in external demand and industrial export sales. Over the medium term, the path of external demand is expected to remain unchanged. Forint depreciation is only likely to encourage companies' export sales slightly, as changes in the real exchange rate are blunter than those in the nominal exchange rate, exerting their effects with a time lag. Dynamic expansion in early 2003 is likely to generate a considerably higher annual growth rate in goods exports relative to the Bank's forecast in May. Accordingly, the annual growth rate is expected to exceed earlier projections in 2004 despite roughly unchanging dynamics.

Based on available data, services exports, projected as very dynamic in the previous Report because of the 2002 basis, will be much weaker, which mainly reflects developments in tourism revenues. The Bank assumed that following a plunge in 2002, tourism revenues would recover as early as 2003. Data on the past period, however, point to a further downturn, which cannot be offset even by more impressive revenues in other services. Although tourism revenues, too, are expected to rise in 2004, revenues of services as a whole are likely to fall slightly below those of goods exports.

As a result, the Bank's projections are for a 4% and 7.5% rise in whole-economy exports in 2003 and 2004, respectively, reflecting an optimistic perception relative to its earlier assessment of the global market opportunities of domestic enterprises.

Similar to goods exports, goods imports also grew faster in 2003 Q1 than expected in May. Given the current business cycle, the growth rate of goods imports can be considered especially high, attributable to increased investment activity on the part of the corporate sector (and within this, developments in inventory investment, see Section 2.1.4 and 2.1.5) and a stronger-than-expected expansion of external demand in early 2003. The forint depreciation in mid-2003 as well as the fiscal measures aimed at curbing consumer demand mainly in 2004 are likely to slow the dynamics of goods imports considerably over the medium term.

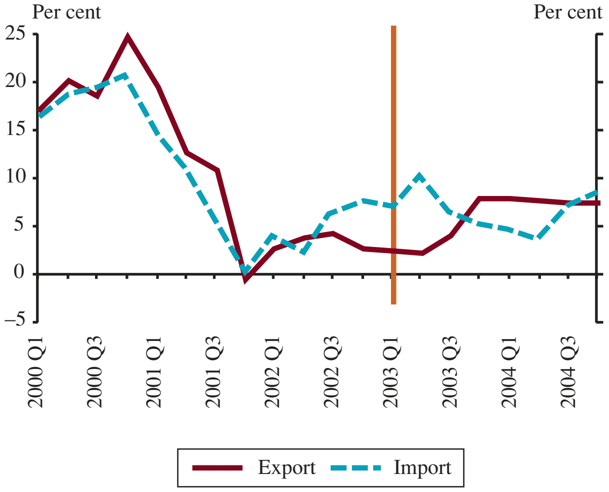
The Bank's projection is for continuing slow growth of services imports over the projection horizon, which will – owing to increasingly sluggish domestic demand – further reduce the growth rate of whole-economy imports in 2004. Data, now to be treated as facts, suggest that whole-economy imports will grow by 7.1% and 6% in 2003 and 2004, respectively, the former markedly higher and the latter markedly lower than the Bank's previous projections.

These developments also point to improving net exports after a pronounced deterioration of the trade balance in 2003, which means that, with domestic demand significantly slowing down, exports may resume their role as the engine of economic growth in 2004.

Chart 2-12

Whole-economy exports and imports

(Growth rate year on year)



2.1.7 EXTERNAL BALANCE

The Bank has revised its estimate of the current account deficit for 2003 upwards to EUR 4.2 billion (5.8% of GDP), relative to the previous *Report*. The Bank expects the external financing requirement to fall in 2004. Due to the methodology concerning EU transfers, the current account deficit is still projected to amount to EUR 4.0 billion (5.2% of GDP), roughly converging with the Bank's projection from May.

Consistent with the projections in the May *Report*, the general government borrowing requirement has declined in 2003. Private sector lending has decreased to a larger-than-projected extent, generating an increase in the external financial requirement. Data for the first six months of the year indicate that households have taken an unprecedented net borrowing position. In addition to high household consumption in H1, the amount of outstanding housing loans also grew dynamically. Neither household consumption nor the amount of housing loans is expected to accelerate in H2. Thus, looking at the entire year, households are expected to take a positive net saving position, albeit lower than last year. Corporate sector lending is also shrinking, as its accumulation, following last year's low levels, is increasing this year.

The external financing requirement as a proportion of GDP is expected to decline somewhat in 2004. The Bank assumes that the general government borrowing requirement will decline as a result of fiscal tightening aimed at contracting demand. The planned fiscal measures will also tap households' disposable income. The Bank projects a slight increase in household net savings as a result of reduced consumption. Although, consistent with the global business cycle, corporate sector accumulation is expected to continue to grow, it is projected to remain in a net lending position.

EU accession will have a neutral effect in terms of the external financial requirement. The Bank estimates that, compared to last year, the settlement of EU transfers and customs duties, different from the Hungarian system of settlement, will be offset by Hungary's overall contributions. EU-related settlement will, however, increase the current account deficit by approximately 0.4% of GDP, since Hungary's contributions will be recorded as unrequited transfers among current items, while transfers from the EU will be recorded in the capital account.

Table 2-11

Current account deficit and financing capacity of sectors *(As a per cent of GDP)*

	2001	2002	2003	2004
	Estimate		Projection	
I. General government*	(–5.0)	(–9.1)	(–8.0)	(–6.4)
II. Private sector (1+2)	2.2	5.4	2.3	2.0
1. Households	5.1	2.4	0.4	0.9
2. Corporate sector**	(–2.9)	3.0	1.9	1.1
External financing requirement (I+II)***	**(–2.8)**	**(–3.7)**	**(–5.7)**	**(–4.4)**
Current account balance	**(–3.4)**	**(–4.0)**	**(–5.8)**	**(–5.2)**
in EUR billions	*(–2.0)*	*(–2.8)*	*(–4.2)*	*(–4.0)*

* *Specially constructed cash flow indicator to analyse net saving positions, which are different from the general government balance.*

** *Financial and non-financial corporations combined. Government spending on motorway construction is included in data on the general government sector. Companies that are otherwise included in the government sector when the effects of fiscal demand are analysed fall into this category.*

*** *The external financing requirement includes the current and capital account balances.*

2.2 OUTPUT

In respect of conditions determining developments in output, external demand, the real exchange rate and consumer demand have undergone changes that, compared to the Bank's May prognosis, affect the current projection. Changes in external demand only influence the timeline of output dynamics, leaving the paths of gross output and value added on the same level in the medium term. Modification in the projection for competitiveness and consumer demand on the Bank's projection horizon will have tangible albeit conflicting effects in 2003 and 2004.

Due to the depreciation of the nominal exchange rate in mid-2003 and the assumed July 2003 exchange rate for the whole forecast horizon, manufacturing unit labour cost-based real exchange rate has depreciated more than previously projected. If the nominal exchange rate of the forint remains at the July level, manufacturing may be able to experience some extra transitory expansion, albeit quite small. However, such expansion will, over the longer run, be restricted by inflation through nominal depreciation, costlier imports, the increased burden of foreign exchange credit and the fact that, owing to the announced fiscal measures, consumer demand will be lower than expected. Such measures will also reduce the growth rate of value added in market services significantly, which will be reflected mainly in the 2004 figures. The construction industry is already slowing down and is likely to do so next year as well.

Since the turning point, which relying on the information available the Bank believes came at year-end 2001, manufacturing output has started growing. Actually, output started increasing a quarter of a year earlier than in Germany which is deemed as a benchmark indicator. The Bank continues to tentatively assert that this mainly reflects stronger activity by Hungarian companies (subsidiaries of foreign companies), the major exports of which are goods for fixed investment purposes. The reason for such a tentative assumption is that turnover in this type of goods will pick up most rapidly at the outset of an upturn in the business cycle. Nevertheless, there is some uncertainty about the stability and expected rate of growth, since, similar to major European confidence indexes, Hungarian indicators have also been eroding since 2002 H2, with gross manufacturing output declining from quarter to quarter. This spilled over to 2003 Q1; however, the data available for April and May point to another take-off in manufacturing output.[17] Similar developments can be observed in manufacturing productivity, the growth rate of which also began rising at year-end 2001 after a period of lengthy sluggishness. Growth, however, continues to be subdued.

Table 2-12

Output *(Average annual growth rate, in per cent)*

	Fact	Projection	
	2002	2003	2004
Gross manufacturing output	3.6	3.4	6.6
Manufacturing value added*	0.7	2.3	5.3
Value added in market services	4.1	3.9	3.5
Value added in construction industry	10.0	6.1	4.0

** Corrected time series.*

Manufacturing output is basically external demand-driven, as due to the high import content of exports and investments and FX-denominated debts, over the short run the profitability of export companies is only slightly influenced by depreciation. The projection for output attaches rather more significance to slight changes in the path of external demand. No matter how uncertain the short-term projection is (due to conflicting views on short-term developments in external demand), over the medium run, manufacturing output may stabilise along the former path. Accordingly, gross manufacturing output is expected to stand at 3.4% and 6.6% in 2003 and 2004, respectively.

---

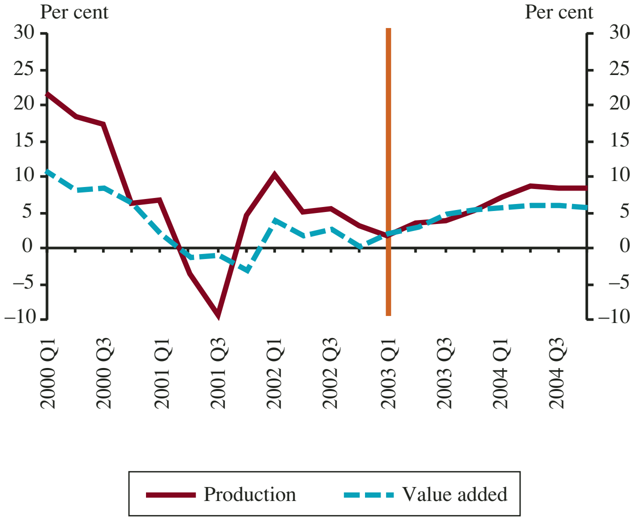
[17] Just before finalising this Report, the Central Statistical Office published the preliminary data on industrial production for June. Although the Report only contains forecasts on manufacturing production, the figure for industrial production reinforces the Bank's view of accelerating manufacturing in the second quarter.

Nearly the same is true for manufacturing value added, with the exception that relevant data for this item reflected a large increase at year-end 2002 and a small increase in early 2003, neither of which can be reconciled with output, exports or employment figures. As a result, based on what was included in the Bank's previous Report, data on 2002 Q3 and Q4 have been corrected using the time series of gross output. The Bank's current projection is for manufacturing value added to increase by 2.3% and 5.3% in 2003 and 2004, respectively. The revision of data series has also contributed to such marked changes compared to the Bank's earlier projections.

Chart 2-13

Manufacturing output and value added*

(Annualised quarter-on-quarter growth rates)



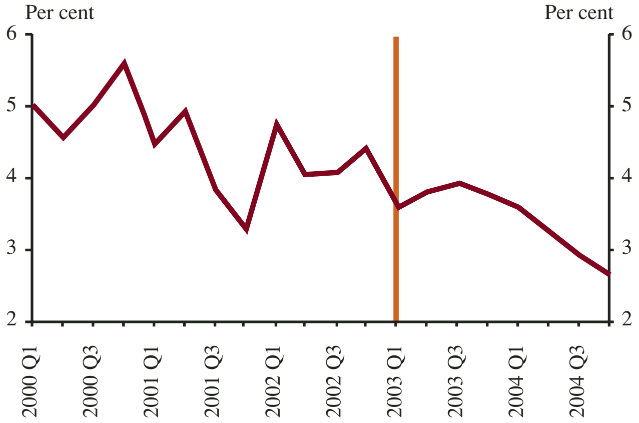
* *Corrected data on 2002 Q3 and Q4.*

Strong consumer demand continued to generate high value added in market services in 2002. The fledgling upswing in the business cycle is expected to be supported by an increase in transport services in both 2003 and 2004, but an even more important impact will be exerted by the inflation windfall from the depreciation of the forint and fiscal measures-induced contracting consumer demand in 2004. Both of these factors are bound to precipitate a major contraction in commercial services which have been expanding recently. Therefore, the Bank projects that, overall, value added in market services will expand less quickly from 2003 H2 than earlier projected and this figure is expected to stand at 3.9% and 3.5% in 2003 and 2004, respectively.

Chart 2-14

Value added in market services

(Annualised quarter-on-quarter growth rates)



Following a slowdown in 2002 Q4, value added in construction continued to dwindle in 2003 Q1, mainly attributable to unfavourable weather conditions. The growth rate of both the building construction, also representing the infrastructure development of the Government, and housing construction has plummeted. While the former is expected to pick up gradually over the medium term, the latter seems to have suffered an unusual setback in 2003 Q1, but is likely to gather considerable momentum during the rest of the year. However, 2004 is very likely to witness much more modest growth. As far as construction of other buildings is concerned, with government investment reaching increasingly massive proportions now that mid-election time is approaching, it is projected to take off slowly over the entire projection horizon. The Bank currently projects that value added in construction will increase by 6.1% and 4% in 2003 and 2004, respectively.

3 Labour market and competitiveness

In the assessment of developments in the labour market, the Bank continues to focus on the adjustment of wages to disinflation. As pointed out in several previous *Reports*, wage inflation substantially higher than productivity growth poses significant threat, because if wages are not flexible in adjusting to the lower inflation path, enterprises have no choice but to increase prices or layoff staff in response to the relative increase in the price of labour. The implications of inconsistent wage policy are inflationary pressure in the former scenario and a decline in production in the latter.

Nevertheless, data on 2003 Q2 clearly show that, in contrast to the Bank's previous assumption, there was no considerable adjustment in wages even in manufacturing, where the need to adjust was strongest due to sharp international competition. Despite steady disinflation, short-term manufacturing nominal wage indices remained virtually flat in 2003 Q1, starting even to edge up in the second quarter. The picture is similar with regard to market services, where wage inflation, which was already stuck at a high level early in the year due to buoyant domestic demand, has been further increasing over the past few months.

In addition to the significant difference between the latest data and the previous projection, another factor calling for a revision to the projection is the change in the estimates for the state of the business cycle. There are signs of a recovery, such as an increase in average hours worked, in line with production, investment and inventory data in the area of manufacturing. The Bank assumes that firms respond as slowly and with as little flexibility to the one-off depreciation in the real exchange rate arising from the depreciation of the forint exchange rate as during the previous disinflationary period.

Indeed, the central projection is for a significantly slower, prolonged nominal adjustment in the labour market than previously thought. In view of the changes in economic activity, the projection for wage inflation within the private sector as a whole has been revised up from 8.8% to 9.3% in 2003 and from 6.5% top 8.1% on 2004.

The announced 2004 increases in indirect taxation may have an impact on wage growth. If employees and employers take the one-off price level increases stemming from changes in indirect taxation as inflationary developments, then their inflation expectations would increase, implying a higher rate of wage growth for the following years. This potential, second order effect of the changes in indirect taxation is, however, not part of the Bank's baseline scenario and is treated as a major upside risk factor.

Table 3-1

Summary table of labour market indicators

(Percentage changes on a year earlier)*

	MNB estimate	Projection		MNB estimate	Projection	
	May Report			Current Report		
	2002	**2003**	**2004**	**2002**	**2003**	**2004**
			Manufacturing			
Employment*	(–1.9)	(–1.8)	(–0.6)	(–1.9)	(–1.9)	(–0.1)
Wage inflation*	11.8	7.5	5.4	11.6	8.2	7.3
ULC**	7.6	0.9	–0.1	7.2	2.9	1.7
			Market services			
Employment*	1.6	1.0	0.1	1.5	1.8	0.9
Wage inflation*	13.7	9.9	7.4	13.5	10.3	8.8
ULC**	9.3	6.0	3.6	9.1	7.3	5.8
			Private sector			
Employment*	(–0.2)	(–0.4)	(–0.2)	(–0.2)	0.0	0.4
Wage inflation*	**12.8**	**8.8**	**6.5**	**12.6**	**9.3**	**8.1**
ULC**	8.2	3.5	1.9	8.0	5.1	3.9

* *MNB estimates based on data reported by the Central Statistical Office (see Manual to Hungarian Economic Statistics).*

** *ULC denotes nominal increases in labour costs per unit of value added.*

The latest data indicate that employment in both sectors appears to be following the previous trend, that is employment has been declining steadily for a long time with regard to manufacturing and increasing at a slowing rate with regard to services. Based on the Bank's assessment of the state of economic activity, the projection is for a declining profile in manufacturing employment until early 2004, to be followed by an upturn. Numbers employed in services increase at an ever slower rate this year and the first half of next year, before flattening out in 2004 Q3.

In 2003 Q1, the growth rate of unit labour costs within the private sector continued to decline as expected. This was because while labour costs rose at the previous rate, productivity improved substantially, especially in manufacturing.

The Bank expects the growth rate of unit labour costs to fall gradually in the future, due to slower wage inflation and higher productivity. The projection for unit labour cost growth within the private sector is 5.1% in 2003 and 3.9% in 2004. As the inflation projection for the forthcoming period exceeds the current projection, labour side profitability of companies is expected to improve at a steady pace both in 2003 and 2004.

Due to the weakening in the nominal exchange rate in June, and with the technical assumption that the July exchange rate of the forint remains stable, manufacturing companies' competitiveness based on unit labour costs will improve by approximately 7%, in terms of a one-off change. Because of the acceleration of inflation, price-based competitiveness only improves by 2% this year and deteriorates by roughly 5% in 2004.

3.1 LABOUR USAGE

Labour market indicators suggest on the whole a reversal of previous trends and a pick-up in labour demand with a more intensive utilisation of the labour pool.

While the information available at the time of the *May Report* contained no evidence of a reversal in the business cycle, the latest statistics on labour usage intensity expressed in terms of average hours worked by manual workers in manufacturing indicate a recovery.

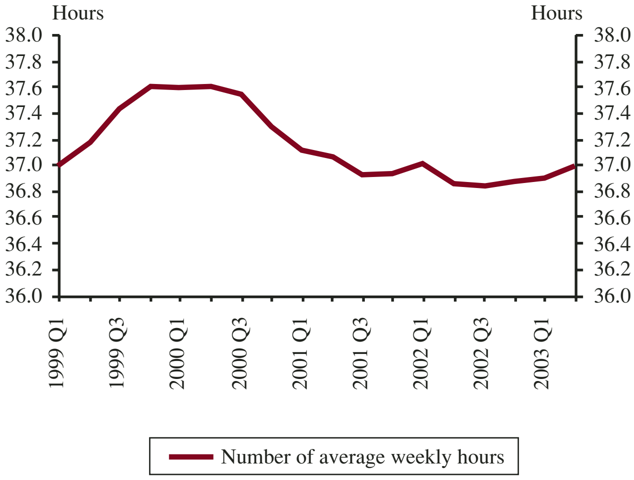
Consistent with changes in external demand and manufacturing production, data reported in April and May indicate a turning point in the trend in early 2003, with average hours worked in manufacturing beginning to increase again in the second quarter, following a long break.[18] Nevertheless, the changes in economic activity have not affected all the sectors identically. The increase in average hours worked in manufacturing was most pronounced in the chemical industry, base metal manufacturing and metal processing, as well as the food industry and, to a lesser extent, the textiles industry. In other sectors, the average hours worked remained flat or declined, even in machinery where labour usage has started to increase earlier.

Labour demand in the private sector changed broadly in line with the Bank's expectations in the reference period. On the whole, employment did not change significantly in level, and reallocation between manufacturing and market services continued at the same pace as in the previous quarter.

The steady decline in numbers employed in manufacturing since end-2000 and the simultaneous downward trend in total hours worked continued in 2003 Q2. The numbers employed in manufacturing have only diverged considerably from the previous trend in the wood and paper industry, with an upsurge instead of stagnation since the start of the year. The textiles and clothing industry continue to record a rapid rate of layoffs, while the other industries have experienced no major change in numbers employed in the recent period.

Chart 3-1

Average weekly hours worked by manual workers in manufacturing*



** Data recalculated using statistical methods, for businesses employing more than 5 people (source of original data: CSO). Actual data reported by the CSO available up to May; June data are estimated using statistical methods.*

The future demand for labour in manufacturing can be influenced by a number of economic changes affecting the sector both directly and indirectly. The first such change that should be noted is the ongoing cyclical recovery within the sector. However, firms tend to respond to a pick-up in activity by endeavouring to make more efficient and intensive use of existing labour rather than by increasing the number of staff. The Bank expects the acceleration in manufacturing output growth to have a palpable impact on labour demand only at end-2003 and early 2004, while the factor assumed to have a more pronounced impact on employment over the next few months is the slower expansion in the external market.

Another upward revision to the previous projection arises from the temporary effect on general economic activity of the one-off depreciation in the real exchange rate caused by the depreciation of the forint exchange rate in mid-2003.

---

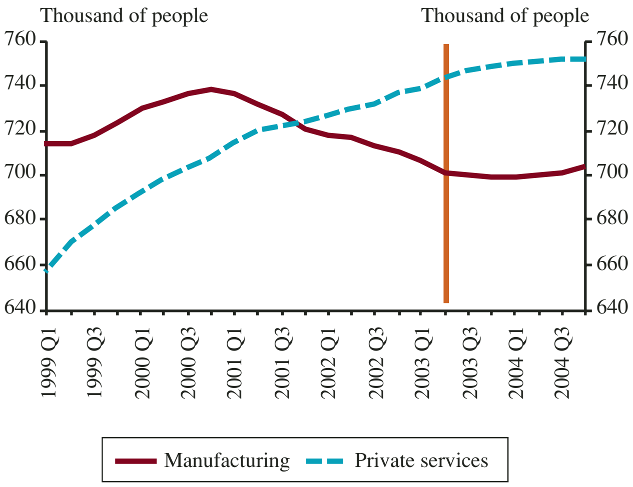
[18] Actual data reported by the CSO available up to May; June data are estimated using statistical methods.

Based on the above information, the projection is for a continued decline in manufacturing employment until end-2003 and a pick-up from 2004.

Over the past few years, market services were characterised by buoyant growth in numbers employed, which has started to taper off gradually, in accordance with the Bank's expectations. However, on the basis of the latest information, the Bank does not expect growth to come to a halt, in contrast to the assumption in the May Report. In line with the expectation of a steady decline in consumer demand, the numbers employed in the sector are projected to increase at a decelerating rate this year and in the first half of next year, and become flat from 2004 Q3.

Chart 3-2

Changes in and forecasting of full-time employment*



* *Source of original data: CSO.*

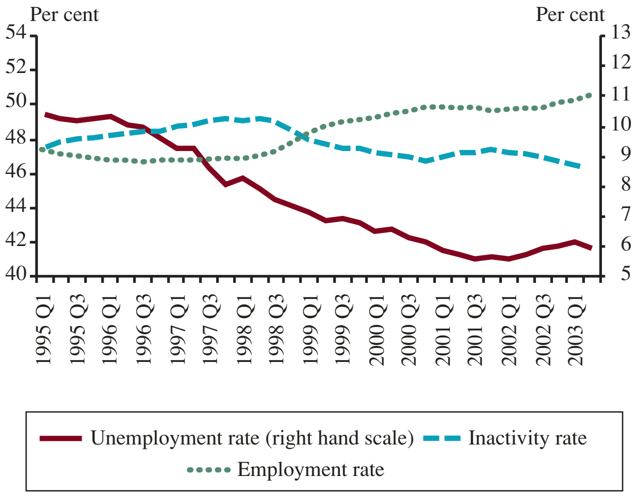
3.2 LABOUR MARKET RESERVES AND TIGHTNESS

Unemployed persons are the primary source of labour market reserves for an expanding economy. Following a decline of several years, both the number of unemployed and the ratio of such to the economically active population has been steadily increasing since early 2002.[19] However, the latest data provided by the CSO reflect an interruption in this growth. The number of unemployed people registered at the Employment Office has followed a similar trend.

Even though the latest unemployment rate of 6.0% in 2003 Q2 does not appear high by international standards, the participation rate for the working age population is low, suggesting a low level of available labour reserves.

Chart 3-3

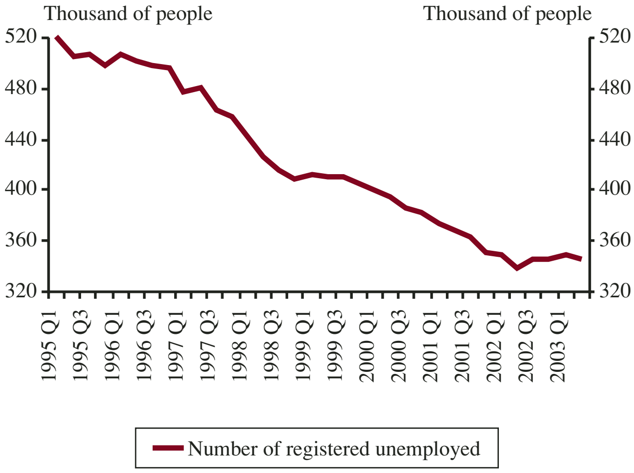
Changes in the rates of unemployment, inactivity and employment*



** Based on the CSO Labour Force Survey.*

Chart 3-4

Changes in registered unemployment



** Based on data reported by the Employment Office.*

Since early 2002, the number of collective redundancies reported has increased significantly. As noted in the May *Report*, the rise in announced dismissals is probably due to a delayed effect of the slowdown in global economic activity and partly to labour costs growing at a faster pace than productivity. However, data for the second quarter reflect a slowdown if not a reversal in this trend. It should be noted that assuming usually low values, this indicator is very sensitive to individual announcements. The decline in registered vacancies seen ever since early 2000 also seems to have come to a halt in Q2.

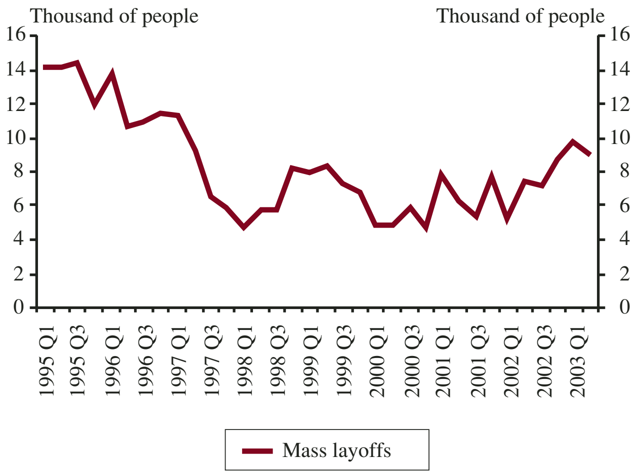
Although the only data for Q2 is little information to come to the conclusion that the trend has reversed, all signs indicate that there is an interruption in the loosening of labour market tightness observed so far. In view of the expected developments in the level of employment and the economically active population and in contrast with the projections of the May *Report,* growth in unemployment is expected to come to a halt in 2003 and turn down in 2004.

---

[19] Based on the CSO Labour Force Survey.

Chart 3-5

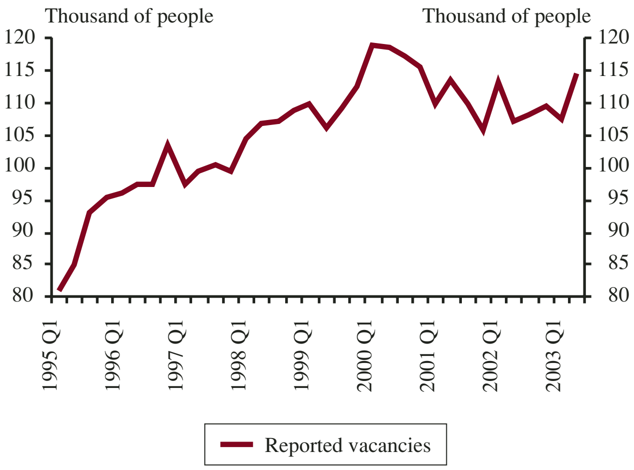
Announced mass redundancies*



* *Data reported for any given quarter and the number of people affected (source of original data: Employment Office).*

Chart 3-6

Reported unfilled vacancies*



* *Numbers reported in any given quarter (source of original data: Employment Office).*

Nevertheless, just as in the previous projection, the Bank expects, the private sector as a whole to continue to face excess capacities rather than tightness in 2003 and 2004.

At the same time, certain sectors and regions may experience labour market bottlenecks, which may also affect wage inflation.

3.3 WAGE INFLATION

Data for the past few months indicate a reversal in 2003 Q2 in wage inflation from its downward trend in the second half of 2002 and a flat level in early 2003, with signs of a slow upturn in wages.[20] While the interruption in the decline in wage inflation followed by a slight increase was noticeable in the area of market services as early as the start of the year, second-quarter data for manufacturing made it clear that, in contrast with the Bank's previous assessment, the downward trend in wage inflation has also stopped in this sector.

The stronger-than-expected increase in manufacturing wage inflation this year may be due to a combination of factors. First, production, investment and inventories data available for the second quarter, in line with other labour market statistics, reflect an upturn in business activity. The increase in production and sales revenues caused by the pick-up in activity may stimulate firms to loosen their wage policies. With regard to market services, the persistently high level of domestic demand was an additional factor in the further rise in wage inflation.

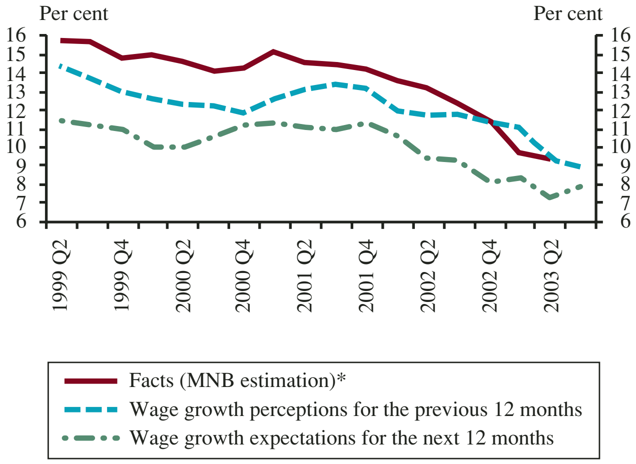
An increase in inflation expectations may also explain the slowdown in wage adjustment. The latest survey of TÁRKI Social Research Centre shows that firms which took their time in adjusting to the lower inflation environment expect both wage growth and inflation to rise faster both at end-2003 and early 2004.[21]

Clearly, wage inflation did not decline at the expected pace, i.e. firms adjusted nominal wages to the lower inflation environment more slowly than expected. The Bank's previous wage projection was based on the economic theory assumption that with disinflation and economic growth progressing much slower than wage growth, the upsurge in labour costs marred corporate competitiveness, which in turn would significantly dampen firms' intentions to raise wages.

Chart 3-7

Firms' perception and expectation of wage growth (TÁRKI survey)

(Percentage changes on a year earlier)



** The actual data for 2003 Q2 is an MNB estimate based on the data reported by the CSO for the period ending in May.*

On the basis of economic theory and assuming enterprises have rational wage policies, the Bank still expects adjustments in wages to productivity growth. The latest data reported only caused the Bank to revise the projected rate of this adjustment. It is assumed that firms will adjust their wage setting policy to productivity growth arising from economic recovery and depreciation of the forint exchange rate and to the increase in net inflation as slowly and with as little flexibility as during the previous disinflationary period. Accordingly, following an initially flat period in wage inflation and the current slight rise, companies that suffered a loss in competitiveness in the past will 'rectify', in other words further reduce the rate of wage growth, despite rising inflation. This will enable them to take advantage of higher inflation and boost competitiveness.

The proposed cut in public sector wage increases based on the budgetary proposals may also dampen private sector wage growth. The demonstration effect of exceptionally high historical wage increases seen in this sector is likely to moderate considerably in the forthcoming

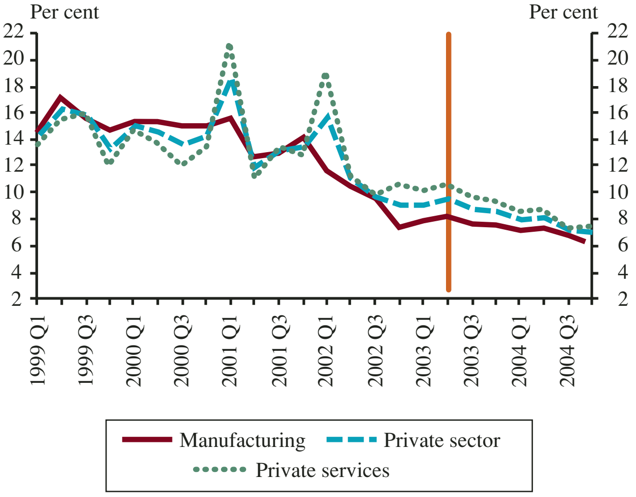
---

[20] Actual data reported by the CSO available up to May; June data are estimated using statistical methods.
[21] TÁRKI Social Research Centre's survey of inflation expectations, July 2002.

Chart 3-8

Wage inflation projection*

(Annualised quarter-on-quarter indices)



* *Based on actual data available before May 2003.*

period. Based on empirical research findings, the Bank believes that the government's more subdued wage policy may feed through to the private sector, possibly only from 2004.[22]

In addition to the noted effects, the Bank has also considered the effects on wage inflation of the announced fiscal tightening for 2004. The fiscal consolidation announced by the Government in July will lead to a sharp fall in household consumption, restricting growth in market services and, consequently, wage inflation within the sector. On the other hand, the projection has not taken account of the second order inflationary pressure caused by the proposed 2004 rise in indirect taxes via raising inflation expectations and potentially the rate of wage growth. This constitutes an upside risk to the projection for wage inflation.

Taking into account all these effects, the wage projection for 2003 has been revised up from 8.8% in the previous *Report* to 9.3%, and from 6.5% to 8.1% in 2004, still based on the decline in actual quarter-on-quarter wage growth rates. The current exceptionally high uncertainty surrounding developments in the labour market has considerably widened the margin of error around the projection. The risk to wage growth is clearly on the upside both in 2003 and 2004. The possible further slowdown in firms' adjustment to inflation constitutes an upside risk. More upward pressure on wage inflation would be felt if the rise in indirect taxes led to a further increase in firms' inflation expectations. On the other hand, a downside risk to the central projection for wage inflation is a significant rise in unemployment.

---

[22] Palócz, É.–Tóth, I. J.: *A 2002. évi bérnövekedés összetevői és a 2003-ban várható béremelések egy vállalati felmérés tükrében* [Components of wage growth in 2002 and proposed wage increases in 2003 in the light of a company survey], Kopint-Datorg Rt. – MKIK GVI, Budapest, February 2003 (see http://www.gvi.hu/).

3.4 UNIT LABOUR COSTS AND COMPETITIVENESS

In 2003 Q1, the growth rate of unit labour costs within the private sector continued to decline as expected. This was because while labour costs rose at the previous rate, productivity improved substantially, especially in manufacturing.

The Bank expects the growth rate of unit labour costs to decline gradually in the future, due to slower wage inflation and higher productivity. The projection for unit labour cost growth in the private sector is 5.1% in 2003 and 3.9% in 2004. As the inflation projection for the forthcoming period exceeds the current projection, the labour side profitability of companies is expected to improve at a steady pace both in 2003 and 2004.[23]

As a result of the weakening of the nominal exchange rate in June, the manufacturing real exchange rate depreciated as a one-off but substantial change. With the technical assumption that the July exchange rate of the forint remains stable, manufacturing companies' competitiveness based on unit labour costs will improve by approximately 7% in 2003, in terms of a one-off change, and remain unchanged in 2004. Because of the acceleration of inflation, price-based competitiveness only improves by 2% this year and deteriorates by roughly 5% in 2004.

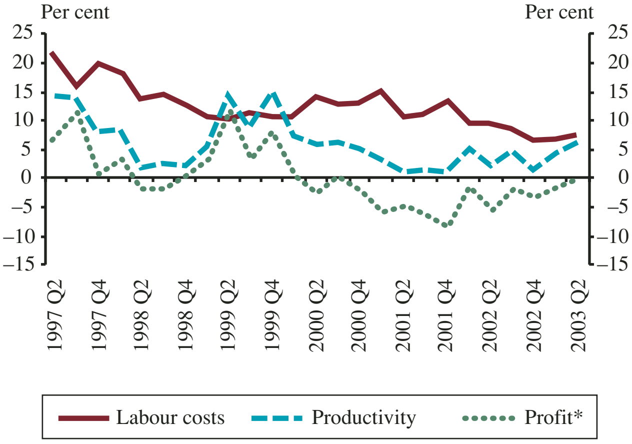
In recent years, growth in real wages has substantially exceeded productivity growth both in manufacturing and market services. As a consequence, firms' labour-side competitiveness has been on a steady decline ever since early 2001, which prompted the Bank to project increased corporate efforts to make adjustments in the labour market. The reference period, however, witnessed only a slow labour market adjustment, implemented by the theoretically more costly reduction in employment rather than by curbing wage inflation.

The need to adjust varied in size across the sectors. Due to the direct impact of developments in external demand, manufacturing companies were forced to make stronger adjustments than firms engaged in the area of market services, supported by robust domestic demand. As manufacturing companies responded quickly to the reduced production by cutting employment, there was no decline in their productivity during the crisis. Indeed, they have been able to report annual productivity growth of 2.5% every year since early 2002. However, nominal wages were first brought in line with disinflation as late as the second half of 2002, when there was a major slowdown in the growth of real wages in manufacturing, dropping nearly to the rate of productivity growth. Even though the adjustment of nominal wages came to a halt in 2003 Q1 (see Section on Wages), firms' labour-side profitability stopped deteriorating as rapidly as before, thanks to a further pick-up in manufacturing productivity.

Chart 3-9

Productivity, wages and profits in manufacturing*

(Annualised quarter-on-quarter growth rates)



* *Changes in profits are approximated using the inverse of real ULCs (see May Report). In fact, the category included in the chart denotes a term whose meaning is narrower than that of the rate of profit, for it does not comprise cost elements other than labour. Data on the actual developments of the first three months of 2003 are only available for two months. Data on the remaining one month have been estimated using statistical methods.*

---

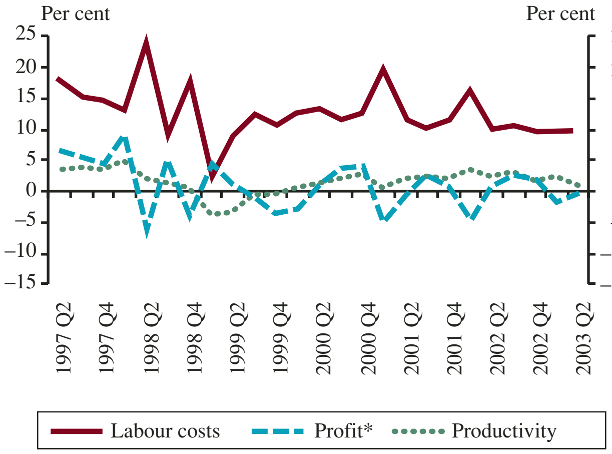
[23] Here it should be emphasised that this statement regards profitability considering only one factor of production, namely labour. As the Bank has no clear view on how changes in other cost elements (an increase in regulated prices inflation) would alter the profitability of the corporate sector in 2004, no statements on the future evolution of overall corporate profitability are made.

Output growth in the area of market services has been balanced over the past few years, thanks to robust domestic demand. Indeed, this sector managed to record similar growth in productivity to manufacturing, despite a steady rise in numbers employed. As increases in the minimum wage impeded the adjustment of nominal wages to disinflation, profitability in market services was not able to improve considerably in the reference period, despite buoyant activity.

Chart 3-10

Productivity, wages and profits in market services*

(Annualised quarter-on-quarter growth rates)



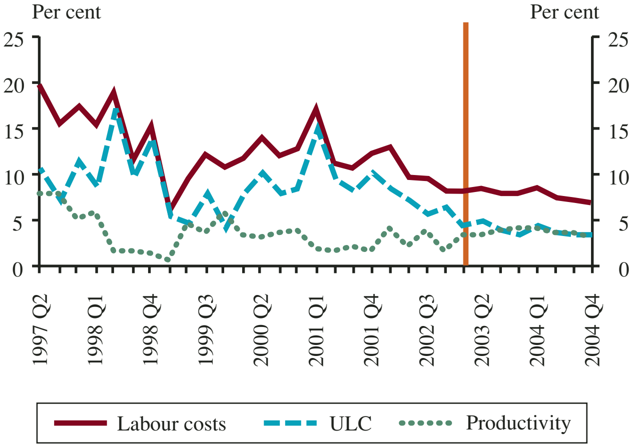
* *Changes in profits are approximated using the inverse of real ULCs (see May Report). In fact, the category included in the chart denotes a term whose meaning is narrower than that of the rate of profit, for it does not comprise cost elements other than labour. Data on the actual developments of the first three months of 2003 are only available for two months. Data on the remaining one month have been estimated using statistical methods.*

The Bank expects the growth rate of domestic unit labour costs to decline steadily in the future. This will be partly due to faster growth in productivity and partly to declining wage inflation. Improvement in manufacturing productivity may be fostered by stronger economic activity, while the Bank expects market services employment to grow at a considerably slower pace. Hence, the Bank's projection for private sector productivity growth is 3.2% in 2003 and 3.8% in 2004. The Bank also expects wage inflation to lose momentum over the forecast horizon (see Section on Wages), leading to a drop in unit labour cost growth to 3.9% in 2004.

Chart 3-11

Productivity, wages and unit labour costs in the private sector

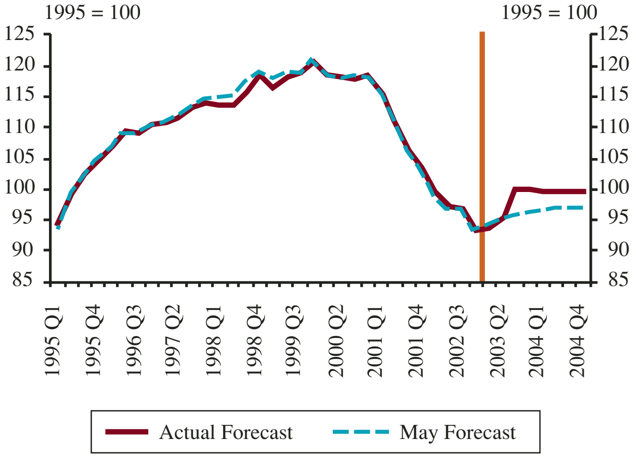
(Annualised quarter-on-quarter growth rates)



Due to the effect of the June 2003 shift in the exchange rate band and the June depreciation of the forint, there was significant one-off, temporary depreciation in the ULC-based real exchange rate in manufacturing in 2003 Q2. (Assuming that the nominal exchange rate ruling in July remains stable, the ULC-based real exchange rate will depreciate by approximately 7% this year.)

Chart 3-12

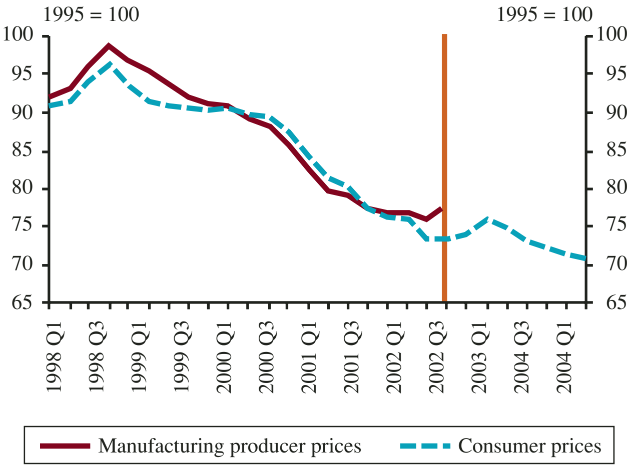
ULC-based real exchange rate, manufacturing*



* *Higher values denote real depreciation.*

Chart 3-13

Price-based real effective exchange rate indicators*



** Higher values denote real depreciation.*

Expecting Hungarian unit labour costs to increase at the same pace as those abroad, the Bank uses a constant assumption for the real exchange rate in 2004.

The picture is less rosy with regard to price-based competitiveness, due to direct inflationary pressure, with a projected improvement of roughly 2% in 2003 and 5% deterioration in 2004. Thus, the projection is based on the assumption that the shift in the exchange rate band will only improve domestic competitiveness in the short term and to a limited extent.

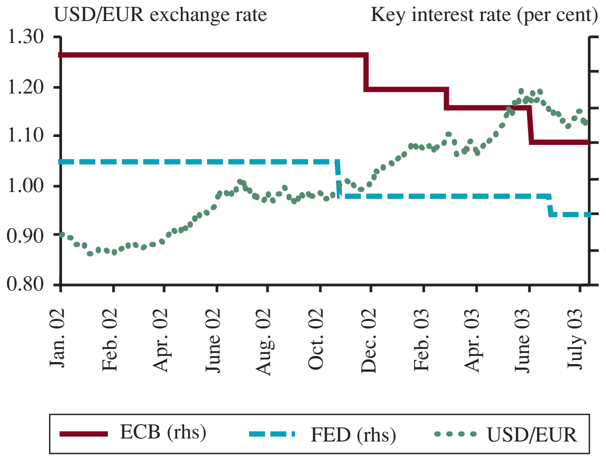
4 MONETARY DEVELOPMENTS

4.1. International environment

In small economies with open capital markets, developments and expectations in international markets have a major impact on investor behaviour and capital flows, by influencing the risk appetite and returns on alternative investments. Monetary policy makers should take account of the fact that global money market trends equally affect the forint exchange rate and yields on domestic investments. This is why every *Report* gives a summary of the changes that have occurred over the recent months or are expected in the near term in the external environment (with particular regard to euro yields) and investor sentiment. It is especially important to carry out a thorough analysis of the international environment in the current situation when Hungary is much more dependant on funds from foreign financial investors, due to the domestic saving positions seen in 2003.

Chart 4-1

Key Federal Reserve and ECB interest rates and the US dollar/euro exchange rate

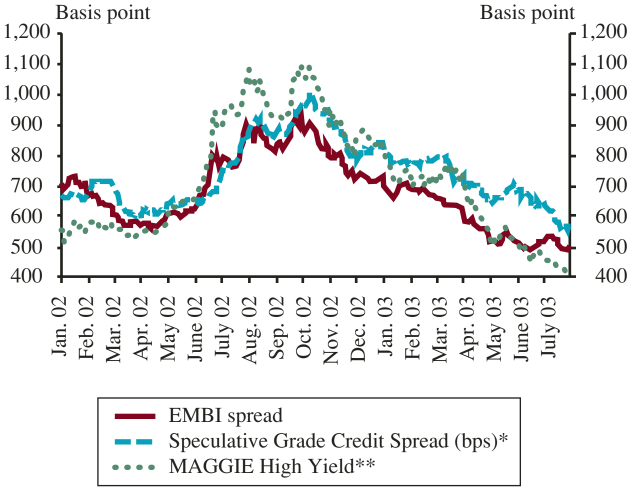


The Federal Reserve's rate reduction in June brought the key monetary policy rate in the US economy to another historical low of 1%. There are a number of factors which may stimulate a pick-up in economic growth in the US economy from 2003 Q2, including the 9% weakening of the US dollar seen this year, calculated using trade weights, the decline in long yields and the recovery on the equity markets. Despite these favourable developments, there is significant risk to growth. Therefore, based on the Federal Reserve's latest statements, market participants expect the level of interest rates to remain low over the longer term.

Compared with the 25 basis point reduction in the Federal Reserve's key rate, the ECB lowered its key rate by 50 basis points early in the summer. However, the ECB was in a different position from the Federal Reserve, due to a major strengthening of the euro against the US dollar in spring. The disinflationary pressure of the strong euro allowed the ECB to cut the key rate by half a percentage point in June without causing an increase in the medium-term risk to inflation. This, however, did not lead to an easing of monetary conditions within the euro area, as the effect of the interest rate cut was offset by the stronger exchange rate. A sign of rising tensions about European prospects was the German Chancellor's public statement for the ECB to create a weaker euro exchange rate. Based on information provided by the yield curve, market participants on the whole do not expect the ECB to make further rate cuts over the remainder of the year.

Chart 4-2

Global indicators of risk



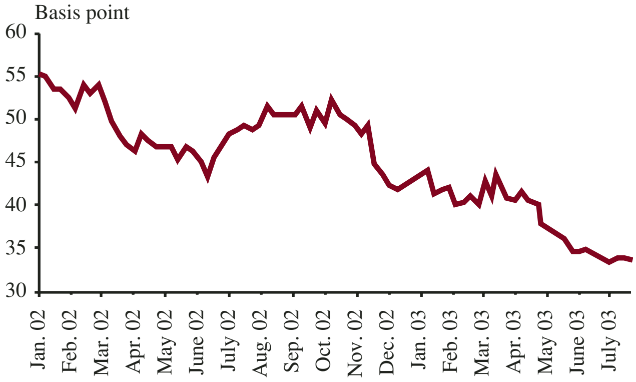
** S&P Speculative Grade Credit Spread (bp).*
*** MAGGIE – JP Morgan Euro Credit Index High Yield Spread (bp).*

The EMBI index, calculated from spreads on emerging country dollar-denominated bonds, which measures investors' risk appetite, has remained virtually unchanged in the past three months at an exceptionally low level relative to previous years. In international markets, there is a clear relationship between the level of yields seen in advanced economies and risk premia. When US dollar and euro yields are low, investors tend to be more interested in higher-yielding, and necessarily riskier, investments, which exerts downward pressure on the risk premia. In addition to the market of developing country sovereign bonds, this trend was also observable in the market of higher-risk corporate bonds, both in European and American markets. The short-term outlook for risk premia is currently determined by expectations of a recovery in the advanced countries, the USA in particular. If US dollar and euro long yields start to rise rapidly, it is likely that investor preferences will change and they will refuse to hold higher-risk instruments unless they can expect a higher difference in yields. In other words, measures of risk appetite are likely to increase.

Another piece of news reflecting on the perception of the Central European region is Standard&Poor's negative outlook in June on the creditworthiness of Poland. In a similar move, Fitch credit rating agency put a negative outlook on Hungarian debt in mid-July. The first reactions to these decisions do not show an increase in the market premia on sovereign debt. It is of key importance with regard to the international perception of Hungary that the economic policy decisions of the past few weeks have not caused any major change in sentiment about euro-denominated sovereign debt, with a slight drop in the roughly 40 basis point premium seen during the first few months of the year.

Chart 4-3

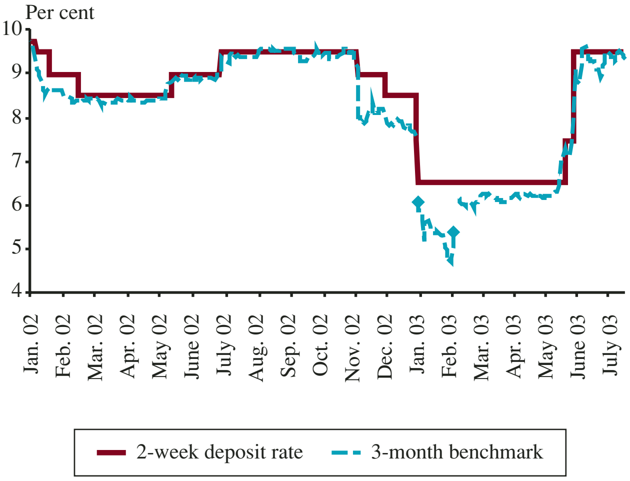
Spread on Hungary's euro-denominated sovereign bonds



4.2 SHORT-TERM INTEREST RATES AND EXCHANGE RATE DEVELOPMENTS

Chart 4-4

Key policy rate and the three-month reference yield



In the period from 16 January and 21 February 2003, the overnight deposit facility replaced two-week deposits as the key de facto policy instrument due to a quantity restriction in effect, as the former had a larger interest rate cut than the latter. As a result, three-month benchmark yields declined at a rate exceeding the rate on two-week deposits. This period is denoted in the chart by an interruption in the series for three-month yields.

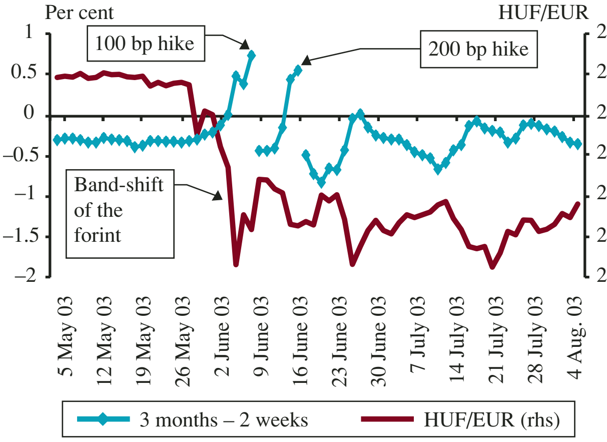
The reference period was characterised by unusually high volatility in the exchange rate of the forint and persistent weakness not experienced since the exchange rate band was widened in May 2001. Short yields were primarily governed by expectations about central bank measures which market participants expected in response to the weakening of the exchange rate. Market participants' uncertainty increased steadily, considerably raising the risk premium required on forint investments. This rise in the risk premium could be fully attributed to country-specific factors, as there was no deterioration in international risk perception during the period under review. Nevertheless, the reasons for the weakening of the exchange rate date back to the period before May. Investment bank analysts have been concerned about the upward trend in the current account and budget deficits ever since the beginning of the year.

Investors' risk perception grew further when the MNB announced on 26 May that the period of consolidation after the speculative attack had ended. On 29 May, the exchange rate of the forint weakened by 2%, followed by further depreciation a few weeks later, bringing it to the level of 255. Implied volatilities expressing foreign exchange market option prices rose sharply, reflecting the market's increased uncertainty in exchange rate expectations.

In terms of an agreement between the Government and the MNB on 4 June, the latter gave its approval for the devaluation of the central parity of the forint by 2.26%, with the width of the exchange rate band remaining unchanged. This moved the strong edge of the band to EUR/HUF 240 from EUR/HUF 234.7, which while not restricting monetary policy would, in the view of the Government, help to avoid any potential overshoot of the exchange rate that could jeopardise Hungarian exporters' competitiveness. At the same time, the Government undertook the commitment to implement the fiscal path set out in the Pre-Accession Programme and to a rapid entry into ERM II. This intention was also confirmed by an immediate fiscal adjustment.

Chart 4-5

Exchange rate of the forint and the difference between the two-week rate and the yield on three-month government securities



In response to the shift in the exchange rate band, the forint continued to weaken relative to the euro. It weakened from EUR/HUF 257 at the start of the day by 4% to about EUR/HUF 268, followed by a slight correction. Market participants viewed this move as a deliberate weakening of the exchange rate, which they considered to be inconsistent with the Bank's former policy and objectives. This interpretation of events might well be explained by EU Monetary Affairs Commissioner Pedro Solbes's statement on 20 May, saying that, upon EMU accession, the exchange rate stability criterion will be assessed using a ±2.25 per cent band. In light of that statement, market players might have thought policy makers wanted the centre of the ERM II exchange rate band to be around 282 HUF/EUR. Yet, such a view is mistaken because this level is compatible neither with the present nor the future anti-inflation efforts of the MNB.

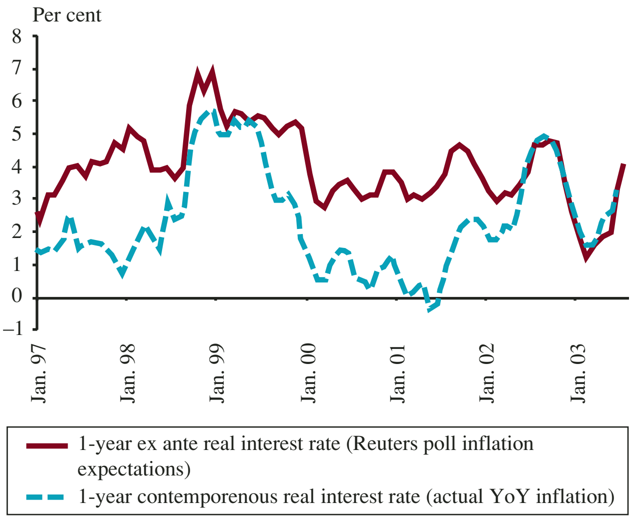
Indeed, on 5 June, one euro traded for as much as 270 forints in the interbank market, when senior officials of the MNB and the Ministry of Finance issued a statement saying that they would welcome a stronger exchange rate. This instance of verbal intervention caused the exchange rate to stabilise in the range between EUR/HUF 260 and 265, still weaker than the EUR/HUF 250 or 250–260 noted in the statement as the preferred range.

The Bank moved to increase rates twice in the course of June, raising the key policy rate by 300 basis points, in response to the persistently weak exchange rate. As the second, 200 basis point rise on 19 June exceeded expectations by roughly 100 basis points, initially market participants expected a rapid reduction (within one or two months). In view of the fact that the interest rate rises caused the exchange rate to return to its former stronger state only temporarily, the current level is viewed by the market as more likely to be permanent.

Due to the ECB's interest rate cut of 0.5 percentage point in June, the MNB's key policy instrument offers a 7.5% higher yield, up by 3.5% on April, than the ECB's key instrument. Due to the rise in short forint yields, the real yield earned on one-year discount treasury bills increased by over 2 percentage points relative to April. The July rate of 4.1% slightly exceeds the average rate (3.6%) for the years 2000 to 2002.

Chart 4-6

One-year real interest rates

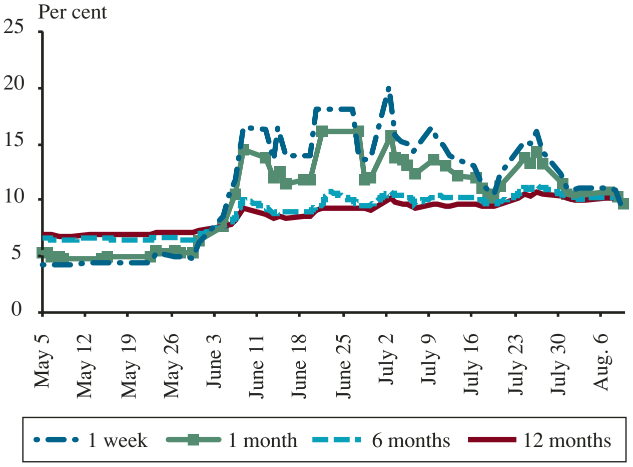


The changes in the interest rate have only stabilised the forint, and permanent and significant strengthening is something yet to come. In the final week of June and in the middle of July, following temporary strengthening, the exchange rate was again at a level weaker than EUR/HUF 265. This weakening started in the wake of the unfavourable decision of the Fitch rating agency on the outlook for Hungarian government debt. The forint further deteriorated following the joint press conference of the Prime Minister, the Minister of Finance and the President of the MNB on 16 July, when the Government made an announcement about the proposed schedule of fiscal consolidation and their commitment to adopting the euro in Hungary in 2008 and entering ERM II in 2004. Short yields also moved in conjunction with the exchange rate, with the market pricing higher interest rates when the exchange rate weakened and lower when it strengthened.

There was also a sharp drop in exchange rate uncertainty, reflected in exchange market option prices in the first half of July (as the exchange rate strengthened), but the new wave of weakness triggered an increase in implied volatilities. This has brought the twelve-month implied volatility to its highest level this year, implying major uncertainty also on the longer (one year) horizons.

Chart 4-7

Changes in implied volatilities relating to the forint exchange rate



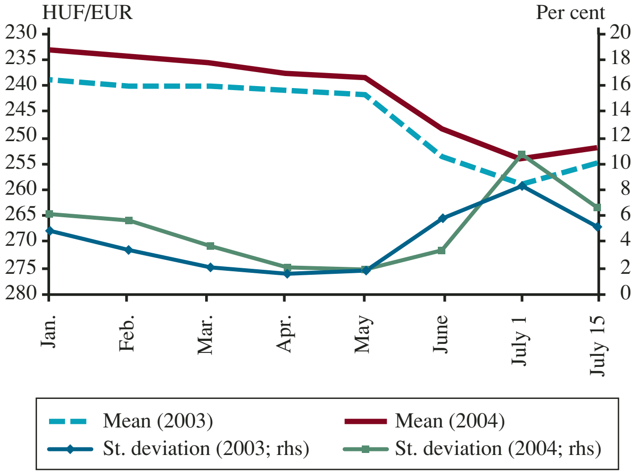
Reuters survey of macroanalysts also reflects greater uncertainty in exchange rate expectations, that is a more unpredictable environment. The May, June and July surveys showed not only a shift towards steadily weaker expected exchange rate appreciation but also an increase in the spread of expectations. Although this does not necessarily mean that analysts are uncertain about the future course of the exchange rate, this seems to be the case.

In addition to market participants' view of Hungarian economic policy as being unpredictable, another key factor behind the movements in and spread of exchange rate expectations may be Hungary's imminent entry into ERM II, which is also called the 'waiting room' for Economic and Monetary Union. This is because entry will entail a change in the monetary regime, in other words, setting (multi-laterally) a new central parity. Experience of earlier entrants suggests that this central parity cannot be far removed from the prevailing market rate.

Macroanalysts vary widely in their opinion. Some analysts said they would expect the central parity to be in the range of EUR/HUF 250–260, while others seem to believe that the current band would continue under ERM II. A factor that may ease the uncertainty is that the Government and the Bank declared a commitment to enter at an equilibrium rate which takes account of both disinflationary and competitiveness objectives.

Chart 4-8

Average value and spread of exchange rate expectations of Reuters analysts in 2003



4.3 CAPITAL FLOWS

Developments in capital flows in April and May 2003 are governed by opposing trends. Just as in the first quarter, the current account deficit is far in excess of that for 2002. Direct capital investment continues to play a negligible role in financing the current account deficit. Indeed, just as in 2003 Q1, the month of May witnessed a net outflow, as a result of the negligible level of direct investment in Hungary and capital good exports by Hungarian firms.

In the period from May to July 2003, there were some relatively erratic changes in the stock of government securities held by non-residents, increasing approximately by HUF 150 billion in the period as a whole.

Table 4-1

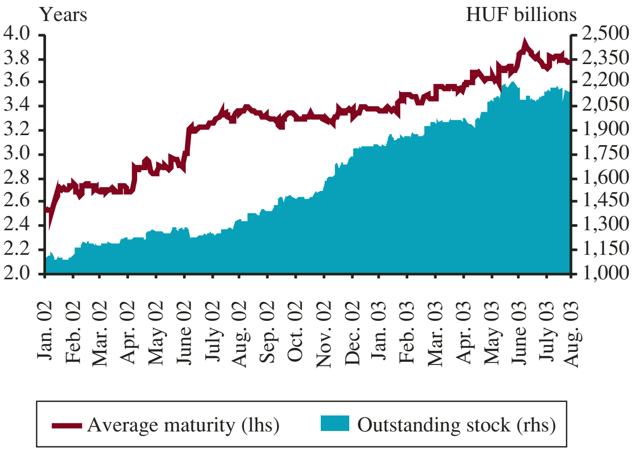
Components of foreign exchange market demand and supply *(HUF billions)**

	2002				2003		
	Q1	Q2	Q3	Q4	Q1	April	May
I. Current Account	–117	–176	–70	–306	–207	–145	–75
II. Capital Account	13	15	6	13	–25	0	0
III. Direct investment (excluding revenues from privatisation)	27	80	19	28	–164	15	–20
IV. Demand for forints arising from conversion of domestic foreign currency deposits	60	–62	26	–40	87	–27	–35
1. Firms	25	–70	13	–41	62	–28	–24
2. Households	35	8	13	0	24	1	–11
V. Net portfolio investments (1+2+3)	217	11	113	350	295	21	162
1. Government securities	144	33	236	310	177	38	163
2. Equities	14	–16	–25	–36	48	6	3
3. Forint deposits	59	–7	–98	76	70	–24	–4
VI. Corporate foreign currency credit (1+2)	–230	–182	–167	–79	19	27	–19
1. Domestic	45	55	70	–23	95	4	13
2. Foreign	–275	–237	–237	–56	–75	23	–31
VII. Net forint demand of other credit institutions	26	119	114	138	45	19	26
VIII. Other	11	125	28	152	92	51	115
IX. Net demand for forints of participants outside the banking sector (I. + II. + ... + VIII.)	**7**	**–70**	**68**	**256**	**142**	**–39**	**155**
X. Change in banks' on-balance-sheet long forint positions	–7	70	–68	–256	371	–49	–274
XI. Net central bank intervention (IX. + X.)	**0**	**0**	**0**	**0**	**513**	**–88**	**–119**

** Positive values denote forint demand and negative values denote forint supply.*

Chart 4-9

Government securities held by non-residents



Following rapid rises in May, non-resident holdings fell by nearly HUF 100 billion in June, with the majority of sales occurring in the five days following the shift in the exchange rate band. However, investors resumed buying large amounts of government securities in July, bringing their end-of-month total holdings (HUF 2,160 billion) nearly up to the level seen at end-May.

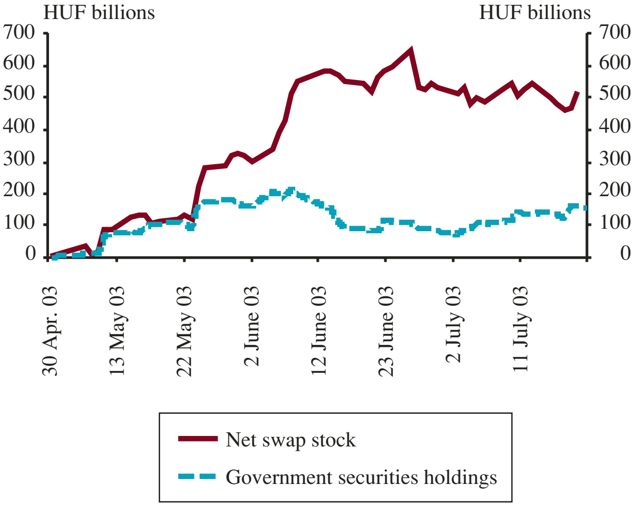
In addition to the government securities holdings, it seems worthwhile to take a look at non-resident derivatives positions, with special regard to swaps, which greatly influence the assessment of changes in non-residents' forint positions. Swap transactions may cover various investor strategies. They may partly reflect speculative synthetic positions against the forint, such as short futures, and partly positions opened by non-resident holders of government securities in order to hedge against exchange rate risk. Even though these two investor strategies cannot be separated, in respect of demand and supply created in the foreign exchange market they are identical.

Simultaneously with the rise in government securities holdings seen prior to May, swaps also increased, reflecting non-resident intentions to finance bond purchases with swaps. This means that they did not wish to open exchange rate positions. From end-May, when the exchange rate began weakening, swaps started to increase faster than government securities, possibly reflecting further efforts to hedge existing holdings and build speculative positions against the forint. Following the band shift and simultaneously with a drop in the stock of government securities, the amount of swaps increased, which may indicate that due to increased uncertainty about the exchange rate and the fact that large-scale sales of government securities trigger major price changes, some of the investors decided to use swaps to hedge against exchange rate risk rather than sell.

In the period from May to July, non-resident swap holdings increased by over HUF 500 billion, which implies that non-resident investors' exchange rate exposure had fallen sharply during the past three months, despite the increase in government securities.

Chart 4-10

Non-residents' cumulated swap and government securities holdings *(30 April 2003 = 0)*

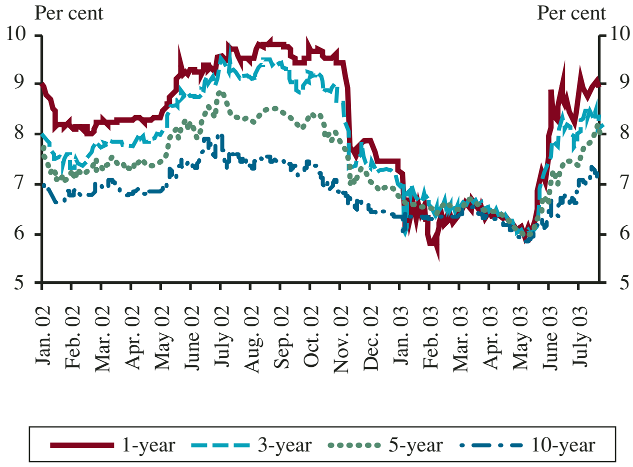


4.4 LONG-TERM YIELDS AND INFLATION EXPECTATIONS

In the period from May to beginning of August 2003, there was an upsurge in yields on maturities of over one year. The rise in yields appeared to be strongest in the section with shorter maturities. Benchmark yields on government securities maturing in one to three years increased by 200–260 basis points and those on 5–10 year government securities by 100–170 basis points in the reference period. This caused a major shift in the shape of the yield curve, with its virtually horizontal shape seen in the first six months assuming a strong negative slope as in previous years, with the differential between one-year and ten-year benchmark yields rising to over 200 basis points.

Chart 4-11

Benchmark yields in the government securities market

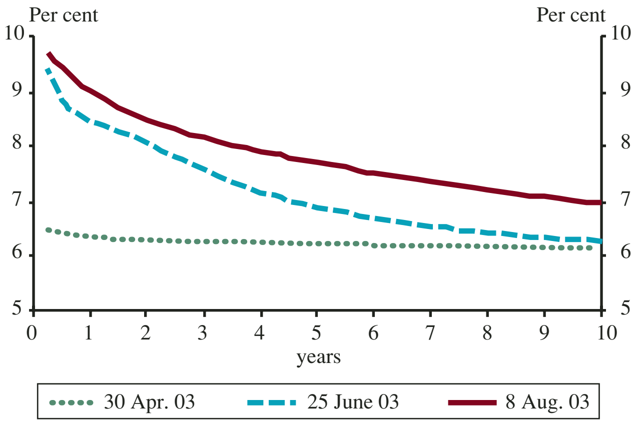


The yield changes are primarily due to the country-specific developments described in the previous sub-section and, to a lesser extent, to changes in euro yields. Changes in the global risk appetite only had a negligible impact on the yield curve in the reviewed quarter.

Yields on securities across maturities over one year followed the decline in euro yields until end- May. However, at end-May yields started to move in strong correlation with the exchange rate of the forint. In the majority of cases, the rise in yields was accompanied by

Chart 4-12

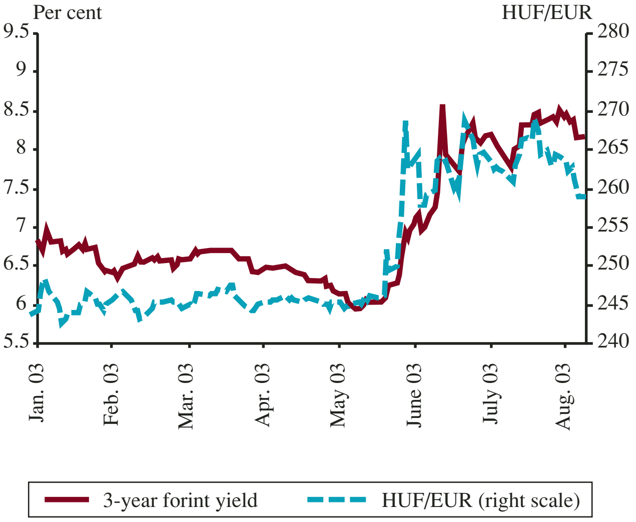
Zero-coupon yield curves*



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

Chart 4-13

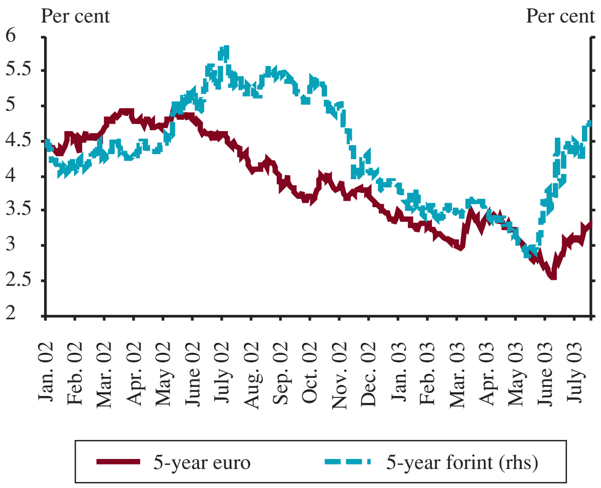
Three-month benchmark yield and the exchange rate of the forint



a weakening in the exchange rate. This indicates that changes in yields are predominantly governed by changes in the exchange rate risk premium required by non-resident investors and/or changes in depreciation expectations. These two factors are difficult to distinguish between on the basis of the information available. The Reuters survey reveals that simultaneously with the shift in the level of exchange rate expectations, they continued to follow an appreciating trend. This implies that the increase in uncertainty was the decisive factor in the rise in required yields, in addition to a rise in euro long yields first seen in mid-June. It should be noted that in addition to the higher volatility in the exchange rate, yields have also started to fluctuate considerably in the past few months, which clearly reflects widespread uncertainty.

Chart 4-14

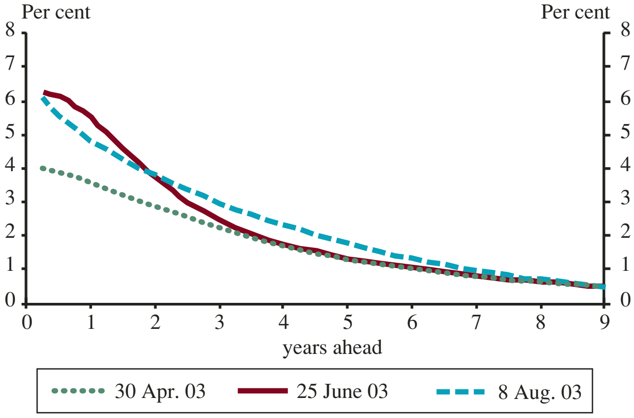
Five-year forint and euro benchmark yields



However, events also influencing the exchange rate affected expectations differently over the individual time horizons. Information on expectations relating to longer-term interest rates and interest rate convergence is available in the form of the course of forint/euro implied forward differential. This suggests that the increase in yields is primarily due to a shift in expectations for terms shorter than five years, while the implied forward differential remained on the whole stable on longer-than-five year horizons. Changes in implied forward differentials starting at fixed dates are a good source of information on expectations relating to the date of joining the euro. The one-year forward differential starting in 2010 remained roughly the same at end-July as it was in early May, which implies that there was no deterioration in long-term expectations despite the uncertainty prevalent on the money markets. Apart from a temporary rise in the aftermath of the shift in the exchange rate band, the yield differential relating to 2008 did not rise either until mid-July. However, on the days following the announcement of the timetable for EMU entry and next year's budgetary proposals on 16 July, it rose by approximately 45 basis points, reflecting increased uncertainty about the proposed date of entry in 2008. It should be noted that the level of the yield differential starting in 2008, approximately 200 basis points, appears to be exceptionally high in the context of the past 18 months, exceeding the typical value for end-2002 by nearly 100 basis points at the beginning of August.

Chart 4-15

One-year forint/euro implied forward differential*



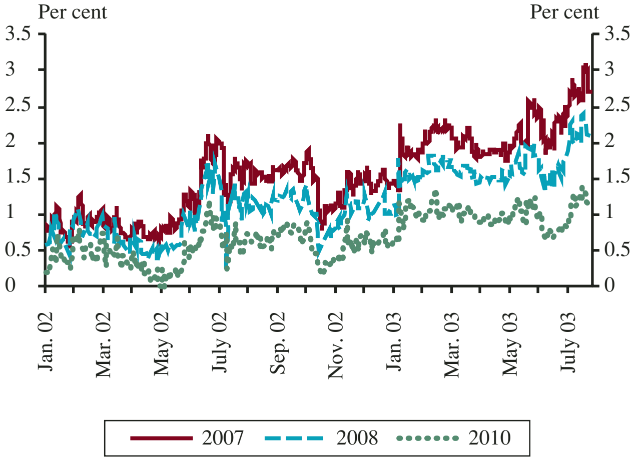
* *Zero-coupon yield curve fitting with the Svensson method.*

The Reuters survey is another source of information on developments in expectations relating to the adoption of the euro. The results of the survey for the period until mid-July show no significant change in the expected date of EMU entry, with 2008–2009 remaining the projected date, which is, however, nearly a year later than the expectation in January. The expectations reflected in the changes in forward differentials coincide with the results of the Reuters survey, as the yield differential relating to 2008 did not start to rise before the second half of July.

Chart 4-16

One-year implied forward differentials

(Starting on 1 January of each year)



In connection with the Reuters survey it should be noted that, compared with the number of those responding to the rest of the questions in the poll, significantly fewer, only 6 to 8, mainly Hungarian, macroanalysts responded to the question about the date of adopting the euro.

The Reuters survey also provides information on developments in inflation expectations. Macroanalyst expectations for December 2003 remained on the whole unchanged since the April survey, with the average of the forecasts being 5% in end-July.[24]

By contrast, the inflation expected by analysts in end-July for the end of next year rose slightly by 60 basis point to 4.7% in December 2004. The increase took place mainly in the second half of July, reflecting the potential impacts of the 16 July announcement of changes in taxation and the budgetary proposals. All in all, the impact of the developments since the May survey, in particular the weakening of the exchange rate and changes in taxation, on the rate of inflation expected at end-2004, remained relatively moderate.

Chart 4-17

Distribution of most likely dates of EMU entry

(A Reuters survey)

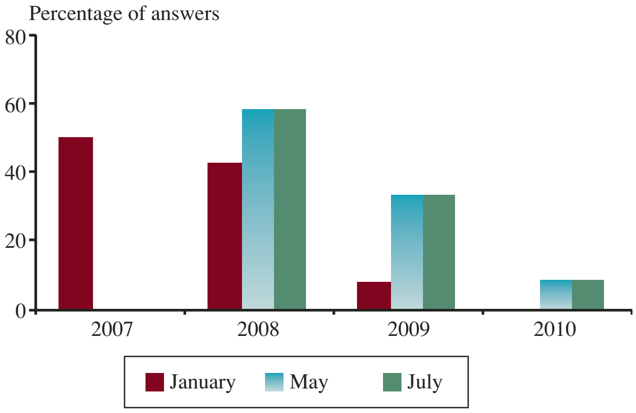


Chart 4-18

Changes in macroanalysts' inflation expectations

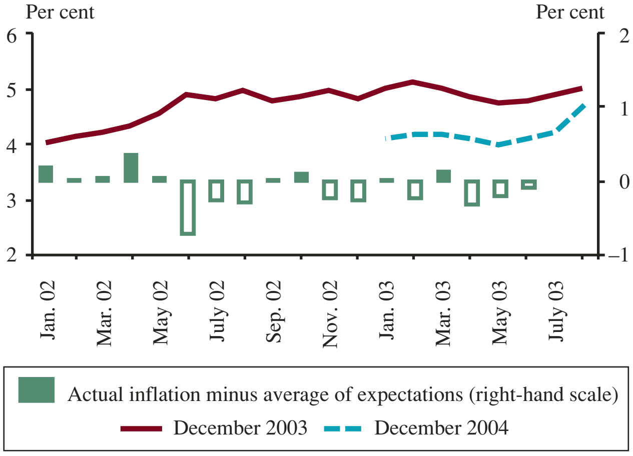
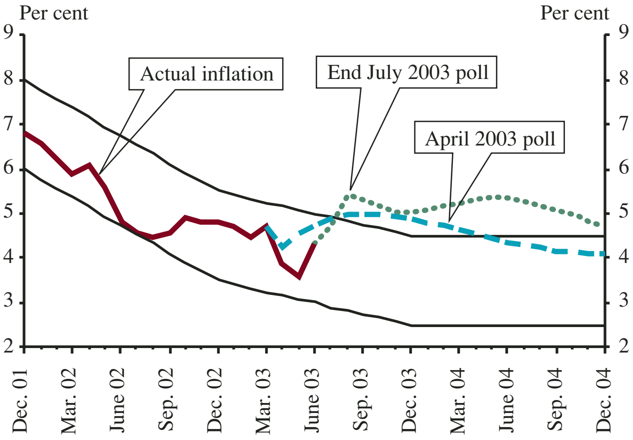


Chart 4-19

Changes in macroanalysts' inflation expectations versus the target range*



** The path of forecasted inflation was obtained by fitting the smoothest curve consistent with Reuters consensus (end year, average, next month).*

---

[24] Reuters conducted an ad hoc survey in end-July, with the aim of capturing the impact of the 16 July announcements on the forecasts of the main macroeconomic variables.

5 Special topics

5.1 HOW ARE THE ANNOUNCED CHANGES IN INDIRECT TAXES LIKELY TO AFFECT INFLATION?

The recently disclosed budgetary proposals call for substantial changes in indirect taxation as of 1 January 2004.[25] The standard 25% VAT rate is to be reduced to 23%, whereas reduced 12% and 0% rates are to rise to 15% and 5%, respectively. Concurrently, purchased heat and electricity as well as passenger transport, hitherto charged at reduced VAT rates, will be reclassified under standard ones. Books, hitherto under a reduced VAT rate, will be charged the lowest rate. Higher excise duty on goods damaging health and the environment will have to offset the loss in budgetary revenues caused by the reduction in the VAT rates they have been under.[26]

Since the introduction of the inflation-targeting regime in Hungary, changes in indirect taxation have never reached the scope that the ones outlined in the budgetary proposals for 2004. Changes of such significance are likely to produce a one-off instance of considerable upwards pressure on prices. As the Government's tax measures are not based on demand and supply in the economy, they obscure general developments in inflation. Therefore, for the purposes of analyses and in order to facilitate monetary policy decision-making, it is expedient to calculate an indicator of inflation which filters out the one-off effect of changes in indirect taxation from the CPI.

Inflation could be calculated for a scenario where the proposed changes in indirect taxation do not materialise at all. The indices thus calculated could be directly compared with the Bank's projections in the *Report* in May. If this approach were adopted, i.e. the proposed changes in indirect taxation were ignored, the Bank's projection in August for inflation in December 2004 would be 4.4%. This index exceeds the one projected in May by 0.5 percentage point. The difference can be attributed mainly to a weaker forint exchange rate and a higher wage inflation projection.

At the same time, however, changes in indirect taxation may also affect corporate profit rates. In some sectors, it may prove difficult to pass on the increase in indirect taxes to customers in full. In other words: a decrease in net sale prices may be able to provide for the possibility of a more modest increase in gross prices than what would be justified by changes in taxation. In other sectors, however, the lowering of indirect taxes may boost profitability through raising net prices. Thus, in addition to a one-off instance of exerting upwards pressure on prices, changes in indirect taxation may have a few indirect effects, which depend on economic agents' expectations as well as developments in demand and supply. Nevertheless, the corporate sector's decisions on net prices constitute parts of general developments in inflation. Therefore, it stands to reason that a net inflation indicator should be calculated for purposes of analyses that is free of the direct effects of changes in indirect taxation, but allows for the direct effects originating from economic agents' responses to the measures.[27] As a result, the Bank's projected inflation for December 2004 is 4.8%. What follows provides a detailed discussion of this projection.

However, before direct and indirect effects are quantified, and so that such quantification can be substantiated, a brief summary of relevant economic hypotheses and a few international examples are presented.

General theoretical approach

Let us take a simple, static and stylised macro-model as our basis. If the goods market balance is calculated on the basis of gross prices, any change in VAT rates will cause a shift to the left in the (domestic) supply curve, i.e. the same gross prices can buy fewer (domestic) goods.[28] As a result, gross prices rise while net prices fall. The quantity sold (Y) also declines. The initial extent of price changes depends on the price elasticity of the supply and demand curves.

---

[25] The exact title of the document about budgetary proposals in 2004 published on the website of the Ministry of Finance: "Some details of the revenue and expenditure side of the budget in 2004", see http://www.p-m.hu/enghome.htm.

[26] This analysis covers the changes in indirect taxation brought about by changes in VAT rates, the reclassification of certain goods subject to different VAT rates and excised duties increases intended to offset the lowering of standard VAT rates. Changes in the price level produced by the lowering of excise duty on gasoline and the raising of same on tobacco have been included in the basic projection.

[27] For an example of a net inflation index, see the British *RPIY index.*

[28] Microeconomic textbooks usually present the effects of VAT-changes graph net prices on the vertical axis. In that case, if there is an increase in the VAT-rate it is not the supply, but the demand schedule shifts leftwards. However, the transmission effects are the same in both cases. See. e.g. Mas-Colell, A., Whinston, M. D. and Green, J. R., "Microeconomic Theory", Oxford University Press, 1995, pp. 323–324.

This also affects the labour market. If labour supply is inelastic in the short run, any change in VAT rates, having raised the gross price level, will lower labour demand. Real wages calculated on the basis of a given gross price reduce labour demand (the value of the marginal product of labour). Nominal wages grow less than gross prices.

Labour market implications reduce real wages, with labour use and output remaining unchanged. As domestic consumption declines, the trade balance should improve.

In the capital market a shift to the left in the goods market supply curve also generates a shift to the left in capital demand. Given a small open economy, the capital supply curve is completely flat. As in the labour market, in the capital market, too, there is a shift in the capital demand curve, inducing a dip in the capital stock. However, as the user cost of capital is determined abroad, it remains unaltered. As changes in the capital stock are insignificant, aggregate effects are negligible.

Falling real wages (as well as slightly declining capital demand), on the other hand, lower aggregate income, which, in turn, causes a shift to the left in the goods market demand curve. This somewhat slows the initial growth rate of gross prices. As a result, the economy passes from a goods market balance denoted by point E to an equilibrium denoted by point E'.

In sum, there is a shift to the left in the aggregate supply and aggregate demand curves, with gross prices on the rise and domestic consumption on the decline. This static model is, however, unable to handle an important channel: in a dynamic model all this may affect inflation and wage expectations. Nor can the emergence of a wage-price spiral be ruled out.

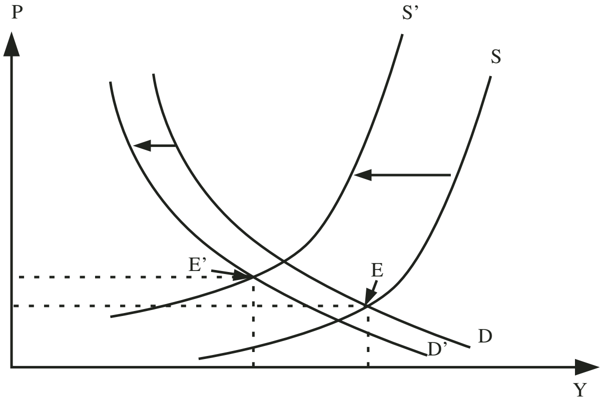
International experience

International literature suggests that financial policy can affect prices through four channels: government spending on goods and services, direct and indirect taxes and higher fiscal tightening affecting the cost of labour. Investigations involving quite a few models show that changes in indirect taxation exert the most profound impact on inflation.

Greece lowered indirect taxes in 1998 and 1999, generating an approximately 0.9-percentage point decline in inflation in the euro area during the reference period between April 1999 and March 2000.

Chart 5-1

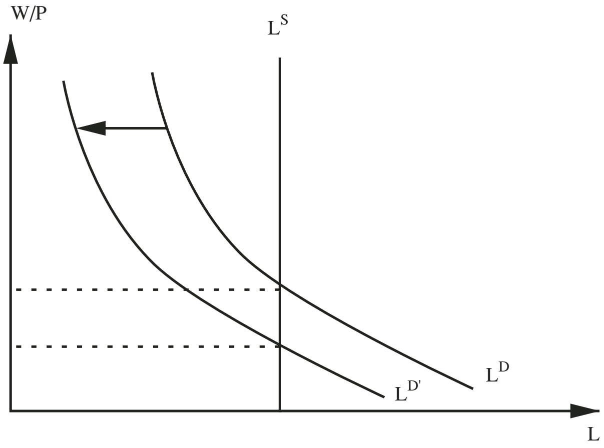
Impact of higher indirect taxes on the goods market*



** Y: output, S: supply curve, D: demand curve, P: prices (incl. taxes).*

Chart 5-2

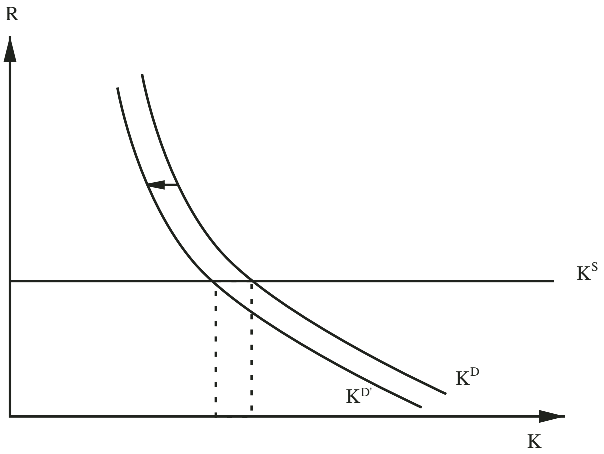
Impact of higher indirect taxes on the labour market*



** L: labour, L^D: labour demand, L^S: labour supply; W/P: real wage.*

Chart 5-3

Impact of higher indirect taxes on the capital market*



** K: capital, K^D: capital demand, K^S: capital supply; R: user cost of capital.*

The bulk of the increase in VAT rates (the reduced 10% rate was raised to 14%) in Slovakia in January 2003 was immediately reflected in consumer prices. By contrast, a simultaneous lowering (the standard VAT rate was lowered from 23 to 20%) was not in reflected the first few months.

There was a 1.5-percentage point increase in VAT rates in the Netherlands in 2001, producing a nearly 1-percentage point rise in consumer prices.

Quantification of the impact of the changes taking effect in 2004 in Hungary

Direct effects

The direct effects of changes in indirect taxation are denoted by the weighted average of changes in rates. Based on this, the price level may rise by 1 percentage point in the first months of 2004.

The table below reveals that any rise in the VAT rates charged on certain goods and services with regulated prices *alone* will raise the CPI by over 0.8 percentage point in 2004.

However, this sets a rigid lower threshold to the estimates, as any modification in the system of VAT rates leads to rises in the prices of goods with non-regulated prices, on the whole. Given a symmetric spillover representing the limit of economic rationality, in the case of market-priced goods, a 1.6% reduction in the prices of goods subject to standard VAT rates (amounting to approximately 40% of CPI) is offset by a 2.7% rise in reduced VAT rates (goods amounting to approximately 25% of CPI). Finally, in the case of reclassified goods, tax measures are likely to increase consumer price level by nearly 0.15 percentage point.

Table 5-1

Impact of the changes in indirect taxes on goods and services with regulated prices on price levels *(Per cent)**

	Weight in the CPI**	VAT rate		Effect on price level	Weighted effect on price level***
		2003	2004		
Purchase of heat and electricity	4.7	12	23	9.8	0.46
Local transport excluding taxis	0.7	12	23	9.8	0.07
Travel to work, school	0.5	12	23	9.8	0.05
Other travel	0.5	12	23	9.8	0.05
Pharmaceutical products****	2.1	0	5	5.0	0.10
Meals at schools, kindergartens and nurseries	0.6	12	15	2.7	0.02
Natural and manufactured gas	2.0	12	15	2.7	0.05
Regulated services for dwellings	2.3	12	15	2.7	0.06
Postal services	0.1	Free of tax		0.0	0.00
Lottery, football pools and other gambling	0.5	Free of tax		0.0	0.00
Rent	0.1	Free of tax		0.0	0.00
Telephone	2.5	25	23	–1.6	–0.04
Regulated goods and services total	**16.6**				**0.83**

* *The range of goods with regulated prices included in this table is interpreted in a narrow sense, meaning that the CSO groups which include both market-priced goods and goods with regulated prices have been de-aggregated. This accounts for the differences between the weight of the MNB-defined group of goods with administered prices and that of the 'total' column in the above table.*

** *For the groups of goods (e.g. medicine, telephone rates and rents) which include both market-priced goods and goods with regulated prices, expert projections of weight have been provided.*

*** *Figures may not add up due to rounding.*

**** *In the case of medicine, additional subsidy for certain drugs to offset increased VAT rates cannot be ruled out. However, for lack of detailed data, such subsidy cannot be allowed for.*

Changes in effective VAT rates provide good approximation of the nearly 1 percentage point rise in prices brought about by the direct effects of changes in indirect taxation. 'Effective VAT rates' means the average VAT burden on the consumer basket, which will rise by nearly 1 percentage point to 19.7% from early 2004.[29]

Table 5-2

Estimated direct rises in price levels caused by changes in indirect taxation *(Per cent)*

	Weight in CPI*	VAT rate in 2003	VAT rate in 2004**	Change
Goods and services reclassified under standard tax rate	8.0	12	23	9.8
Goods subject to the lowest tax rate***	2.4	0	5	5.0
Goods and services subject to reduced tax rate	29.6	12	15	2.7
Goods and services subject to standard tax rate	41.6	25	23	–1.6
Goods and services reclassified under the lowest tax rate	0.6	12	5	–6.3
Goods and services whose indirect tax rate are unchanged****	17.9			0.0
Total	**100.0**	**18.7**	**19.7**	**0.9**

* *Figures may not add up due to rounding.*
** *In the case of certain items, it also comprise rises in excise duties offsetting the lowering of VAT rates.*
*** *The budgetary proposals state that a certain portion of the price rise originating from the VAT rate on medicine will be compensated for by the budget. For lack of a detailed implementation decree, however, a full direct impact of the rise in VAT rates has been calculated.*
**** *Raised excise duty on goods damaging health and the environment offsets a reduction in their prices caused by increased VAT rates.*

Indirect effects

As was mentioned, changes in indirect taxation may also affect corporate profit rates. Expert estimates in a breakdown by types of goods have been provided to assess the direction and extent of such indirect effects. While providing such estimates, three major factors should be borne in mind: the intensity of market competition, the price elasticity of demand and the transparency of prices.

- Spillovers of changes in VAT rates to prices hinge primarily on the intensity of competition on the market of the goods and/or services in question. With intense competition, a drop and a certain amount of rise (e.g. in the case of durable goods) in VAT rates are reflected in prices.

- It is safe to assume that the prices of the goods (e.g. telephone rates) which households can keep track of easily and the net and gross prices of which goods households are familiar with will be affected favourably by any reduction in the highest VAT rates.

- In the case of certain sophisticated goods, the price elasticity of demand is low, as it is hard for consumers to identify the impact of quality. Tax increases are reflected in the prices of such goods, whereas the impact of tax reduction is restricted.

In respect of goods and services whose indirect taxes will decline, the indirect effect is estimated to stand at 0.6 percentage point. This means that companies will only build indirect tax cuts in their gross prices to a small extent, which in turn means that net prices will rise. By contrast, in the case of goods and services whose indirect taxes will grow, net prices will fall by 0.2 percentage point, the reason for that being that tax increase will only in part be passed on to consumers. Overall, the indirect effects of changes in indirect taxation are likely to amount to 0.4 percentage point. This means that net inflation will rise to the same extent relative to the scenario where the announced changes in indirect taxation do not materialise at all.

Table 5-3

Estimates of the primary impact of changes in indirect taxation on price level *(Per cent)*

	Direct impact	Indirect impact	Overall impact
Goods and services whose indirect taxes will fall	–0.7	0.6	–0.1
Goods and services whose indirect taxes will rise	1.7	–0.2	1.5
Total	1.0	0.4	1.4

---

[29] In the case of certain items, effective VAT rates for 2004 also comprise rises in excise duties offsetting the lowering of VAT rates.

Table 5-4

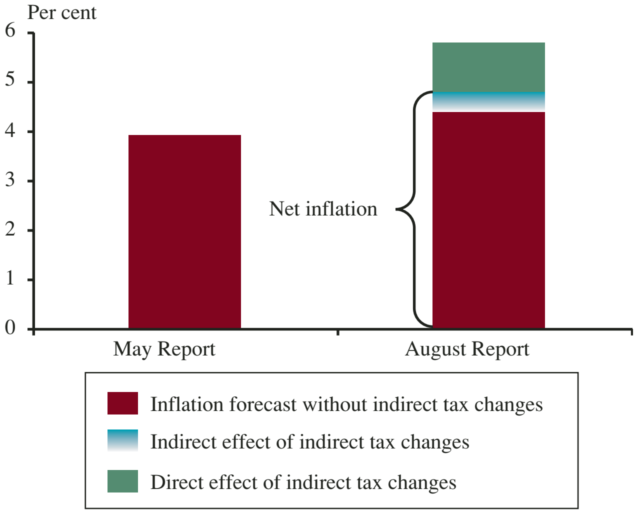
Estimated rises in price levels caused by changes in indirect taxation as per MNB grouping *(Per cent)*

	Weight	Effect on price level	Weighted effect on price level*
Core inflation estimate	68.1	0.4	0.3
Unprocessed food	6.3	2.1	0.1
Market-priced energy	1.5	6.2	0.1
Motor fuel	4.7	-0.4	0.0
Regulated prices	19.4	4.6	0.9
CPI	100.0	1.4	1.4

** Figures may not add up due to rounding.*

Chart 5-4

Impact of changes in indirect taxation on inflation projection for December 2004



Direct and indirect effects considered, the proposed changes in indirect taxation are likely to raise consumer price level by 1.4 percentage points in January 2004. Accordingly, the Bank's projection for inflation at year-end 2004 is 5.8%. Net inflation only comprising indirect effects would rise to 4.8% by year-end 2004.

Net inflation does not comprise, however, a potential secondary effect, namely that economic agents' expectations, too, may change and that wage adjustment (higher inflation) to a higher price level may commence. This potential secondary effect features among the risks of the current inflation projection.

5.2 PRINCIPLES OF THE RULES-BASED FISCAL FORECAST

The purpose of making a projection is to determine the impact of fiscal policy on the basis of specific assumptions and within certain limits of probability. Should these assumptions be highly uncertain, the projection will also be uncertain, and the risks involved can only be defined within an excessively wide interval. One source of great uncertainty is when there is no approved Budget Act available, and the deficit should be reduced while earlier decisions exert upward pressure. In such a situation it seems useful to present an extreme, risk-based scenario, showing the size of the expected deficit if no changes were made and only the effects of earlier decisions were applied. The difference between this scenario and another, more likely scenario would then reflect the assumed impact of policy.

How is forecasting done?

There are basically three different types of fiscal forecasts: (1) rules-based forecasts, (2) "most likely" expert forecasts and (3) conditional, "normative" forecasts. Normative forecasting offers the least leeway for judgement, as it means simply accepting that next year's deficit will equal the approved value. Regardless of this, it is necessary to make estimates for off-budget items. In contrast, the expert estimate gives ample scope for judgement using a wide range of information. The following section gives a description of rules-based forecasting, which lies in between the two other types of forecasts.

Rules-based forecasting may be based on various principles. For the purpose of making risk-based forecasts by taking account of pre-determined events, a number of specific rules have to be applied. This means, following the international standards (e.g. OECD principles[30]), that in addition to the effects of automatic budgetary measures (such as indexation), only the effects of *policy measures* approved officially (e.g. statutorily) and/or specified in detail should be considered. This will enable forecasters to show the size of the full 'fiscal risk' uncovered by policy measures in meeting a specific deficit target. In addition, via a comparison with a likely scenario it will also reveal how much the likely policy measures may reduce the risk.

In addition to the effect of policy measures, it should also be considered that the government cannot assert full control in every area. Thus, for instance, local government authorities and, to a limited extent, budgetary units may undershoot or overshoot the government's expenditure estimates. Furthermore, there exist some open-ended subsidies that may be, and are indeed, overshot every year depending on the number of users. In the treatment of these items, we have not exclusively used government intentions as a starting point but also our own estimates prepared on the basis of historical trends *(see Autonomous fiscal developments)*.

The Bank also makes its own forecasts for revenues from taxes and contributions and the indexation of pensions, relying on its own *macroeconomic projection*.

The three factors necessarily correlate with one another. The larger the extent of the approved policy, the greater the chance that it will be partially offset by fiscal developments (for instance, budgetary units will use more carry-over funds, or local authorities will choose to accumulate debt, etc.). Furthermore, policy measures have both direct and indirect effects on macroeconomic variables, such as wages, consumption and investment. Extra spending, for instance, will also improve revenues via causing an increase in taxes. This is why the August 2002 *Report* uses data on the expenditure set out in the hundred-day programme in net terms, after deduction of taxes. To the extent that the rules-based approach does not consider an announced but not yet enacted adjustment, its likely macroeconomic impact (higher GDP, balance of payments deficit, etc.) is also ignored in the Bank's projections. In other words, the total projection will be conditional.

What does rules-based forecasting mean in practice?

Forecasting should start with a review of statutory and other pre-determined measures for the following year. Pre-determined measures comprise indexation of pensions, the full-year effect of measures passed in the previous year (such as wage increases during the year, surviving spouses pension, etc) and effects unfolding over a longer period of time (e.g. the newly adopted corporate investment tax credit). Statutory measures include, for instance, a pre-approved reduction in personal income tax and the gradual adoption of 13th month pension payment. The greatest change is expected to be brought by joining the EU. First, Hungary will be required to make a contribution. Second, the Budget will lose a major part of its revenues from customs duties. On the other hand, Hungary will receive transfer payments from the EU, which will have to be stated automatically as expenditure, together with the co-financing to be provided by the Budget. By contrast, current agricultural subsidies from the EU will not be provided through the Budget.

---

[30] See http://www.oecd.org/document/40/0,2340,en_2649_34595_1850792_1_1_1_37443,00.html

However, there are a number of areas which are not affected by determined events or statutory decisions. What approach should be used there?

- In respect of revenues, macroeconomic developments determining the tax base should be used as a starting point when there are no measures. However, as these developments are not independent of the Bank's fiscal forecasts, efforts should be made to coordinate these forecasts through iterative steps.

- As far as current expenditure, in particular spending on wages, goods and services, is concerned, it is justified to start from 'common' trends seen over previous years. These are expenses that arise continuously in connection with specific tasks to be carried out, and in this sense it can be ruled out that these items would increase or decrease significantly without the involvement of policy.

- As far as much more volatile investment spending is concerned, the impact of the election cycle, especially with regard to local government, should also be considered. The two years following the election witnessed similarly low levels of investment spending, while the next two years saw a pick-up in this area.

- It is difficult to forecast developments in the quasi-fiscal items that influence demand, as a large number of them are linked to investment projects and corporate losses. There seems to be some regularity in their fluctuations. In some years they remain relatively stable, but in a pre-election year they rise sharply. They take low or negative values when the quasi-fiscal debt generated outside the Budget has to be accounted for subsequently (e.g. in 2002) or when they can be reduced by a better-than-approved official deficit (e.g. in 2000), making some room of manoeuvre for the following years.

5.3 ESTIMATES OF THE OUTPUT GAP IN HUNGARY

Potential output (potential GDP) and output gap are important means of business cycle analyses in a great number of countries. The evaluation of the cyclical position of fiscal policy, the moves made by monetary policy and inflationary pressure in the economy are often analysed in the light of potential output and output gap. Potential GDP reflects long-term trends in output. The difference between actual and potential GDP (output gap) reveals whether the relevant economy is above or below a longer-term growth path.[31] Therefore, in the future, so as to evaluate the business cycle, the Bank will also include the study of the output gap as a means of analyses.

It is not so much the abundance of methods to assess potential output as the selection of the appropriate theoretical framework to investigate it that renders the assessment of potential output difficult. It follows that both the notion and the extent of the output gap vary greatly.

As potential output is a phenomenon that can be neither observed nor measured in reality, a great number of assessment methods can be employed to estimate it. For the purpose of convenience, let us assume that approaches to assessing potential output fall into two major categories: one is the category of mono-variable time series approaches and the other is that of multivariable structural models. The potential application of both methods is currently being investigated at the Economics Department. The research of time series approaches has been completed.[32]

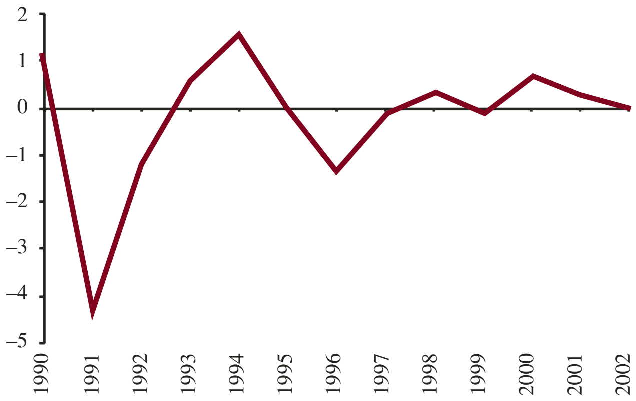
As addressing the issue of structural breaks, common in transition economies, is of critical importance when potential output is assessed, expert opinions have been invited and formal tests carried out to identify the breaking points in the time series of Hungarian GDP.

To assess the potential output, six different mono-variable methods have been employed, from which a consensus-based estimate has been deduced.[33] In addition to the application of standard econometric tests, while selecting the various methods, we strove to minimise a feature of estimates that was disadvantageous in terms of analysis, i.e. the fact that each new item of information transforms the past. This is the most conspicuous in the case of the most recent observations, which form the basis of central bank analyses and projections. It follows that the method that has to be the least frequently revised represents the greatest weight in consensus-based estimates.[34]

As the output gap thus calculated approximates the result based on expert opinions and model simulations very closely, it is used to assess the actual state of the business cycle in the Bank's current *Report*.

Chart 5-5

Output gap in Hungary *(Annual data)**



** Difference between levels of actual and potential GDP in percentage.*

---

[31] Note, that output gap measures the ratio of the *level* of actual and potential GDP. Hence, at a certain time period the sign of the gap does not contain the information on the difference between actual and potential *growth rate*. The latter can be calculated from the *change* in output gap.

[32] A summary of time series methods is presented in 'Assessing potential GDP with time series methods', an MNB manuscript by Zs. Darvas and G. Vadas (2003). For the purposes of the Quarterly Projection Model, based on 'Assessing capital stocks in Hungary: methodology and results', an MNB manuscript by G. Pula, potential GDP has also been assessed on the basis of the production function. Based on preliminary results, the results of time series methods and estimates based on the production function are similar.

[33] They include deterministic segmented trends, the Hodrich-Prescott and the band-pass filters, the Beveridge-Nelson decomposition, latent variable models and Wavelet transformation.

[34] A similar consideration can be identified in Orhanides and Norden's 'The reliability of output gap estimates in real time' published by the Federal Reserve in 1999.

The chart above reveals that at the start of the period following the regime change, especially in 1991 and 1992, output gap was rather negative as a result of the recession at that time. In both 1993 and 1994, the performance of the economy exceeded potential output, only to be followed by a nearly 1% negative output gap in 1995 and 1996, for which the underlying reason was the stabilisation package adopted in that period. Following the introduction of this package of adjustment measures in 1995, the economy remained on a relatively even path until 2002, with a roughly zero output gap.

It should be noted that this was brought about by two conflicting developments in 2001 and 2002: while external demand, and consequently, exports and corporate investment considerably slowed, domestic demand (mainly due to an increasingly expansionary fiscal policy and massive wage increases) had an invigorating effect, offsetting the former unfavourable development in terms of growth.

BOXES AND SPECIAL ISSUES IN THE *QUARTERLY REPORT ON INFLATION*

1998

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

March 1999

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

June 1999

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

September 1999

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

December 1999

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

March 2000

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

June 2000

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

September 2000

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

December 2000

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

March 2001

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

August 2001

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

November 2001

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

February 2002

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

August 2002

The exchange rate pass-through to domestic prices – model calculations 50
How important is the Hungarian inflation differential vis-à-vis Europe? 51
How do central banks in Central Europe forecast inflation? 52
An analysis on the potential effects of EU entry on Hungarian food prices 53
A handbook on Hungarian economic data 54
The economic consequences of adopting the euro 55

November 2002

What do business wage expectations show? 40
Should we expect a revision to 2002 GDP data? 41

February 2003

The speculative attack of January 2003 and its antecedents 39
1. Macroeconomic effects of the 2001–2004 fiscal policy æ model simulations 43
2. What role is monetary policy likely to have played in disinflation? 46
3. What do detailed Czech and Polish inflation data show? 48
4. The impact of world recession on certain European economies 50
5. Inflation expectations for end-2002, following band widening in 2001 52

May 2003

1. Tax and price approximation criteria affecting inflation 77
2. Revisions to the forecast of external demand 79

August 2003

1. How are the announced changes in indirect taxes likely to affect inflation? 71
2. Principles of the rules-based fiscal forecast 76
3. Estimates of the output gap in Hungary 78

Quarterly Report on Inflation
August 2003

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