



**MAGYAR NEMZETI BANK**

**QUARTERLY REPORT  
ON INFLATION**

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*Act LVIII of 2001 on the Magyar Nemzeti Bank, which entered into effect on 13 July 2001, defines the primary objective of Hungary's central bank as the achievement and maintenance of price stability. Low inflation allows the economy to function more effectively, contributes to better economic growth over time and helps to moderate cyclical fluctuations in output and employment.*

*In the inflation targeting system, from August 2005 the Bank seeks to attain price stability by ensuring an inflation near the 3 per cent medium term objective. The Monetary Council, the supreme decision-making body of the Magyar Nemzeti Bank, performs a comprehensive review of the expected development of inflation every three months, in order to establish the monetary conditions that are consistent with achieving the inflation target. The Council's decision is the result of careful consideration of a wide range of factors, including an assessment of prospective economic developments, the inflation outlook, money and capital market trends and risks to stability.*

*In order to provide the public with a clear insight into the operation of monetary policy and enhance transparency, the Bank publishes the information available at the time of making its monetary policy decisions. The Report on Inflation presents the inflation forecasts prepared by the Economics and Monetary Policy Directorate, as well as the macroeconomic developments underlying these forecasts. The Report is published biannually, while twice a year partial updates of the forecasts are also prepared. The forecasts of the Economics and Monetary Policy Directorate are based on certain assumptions. Hence, in producing its forecasts, the Economics and Monetary Policy Directorate assumes an unchanged monetary and fiscal policy. In respect of economic variables exogenous to monetary policy, the forecasting rules used in previous issues of the Report are applied.*

The analyses in this *Report* were prepared by the Economics and Monetary Policy Directorate's staff under the general direction of Ágnes CSERMELY, Deputy Director. The project was managed by Mihály András KOVÁCS, Deputy Head of Economic Analysis, with the help of Zoltán Gyenes, Gergely Kiss, Szabolcs Lőrincz and Barnabás Virág. The *Report* was approved for publication by Ferenc Karvalits, Deputy Governor.

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The *Report* incorporates valuable input from the Monetary Council's comments and suggestions following its meetings on 7 May 2007 and 21 May 2007. However, the projections and policy considerations reflect the views of the Economics and Monetary Policy Directorate staff and do not necessarily reflect those of the Monetary Council or the MNB.

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## Overview

*Gradual consolidation, the inflation target might be achieved within the policy horizon*

This May issue of the *Report* contains a forecast for 2009 for the first time, as it was deemed necessary in order to be able to provide a better assessment of the developments taking shape over the 5- to 8-quarter forecast horizon relevant for monetary policy. In this forecast which covers close to three years, we expect gradual consolidation once the direct impacts of the fiscal adjustments fade. Inflation is projected to start a gradual decline in the second quarter of 2007 and, according to our baseline forecast, the inflation target will be reached at the horizon relevant for monetary policy. After this year's considerable slowdown, the economy is expected to recover, although the GDP growth rate will not be able to reach its potential by the end of the horizon. Primarily in this year, we predict substantial improvements in fiscal indicators and external balance indices, due to the government measures implemented recently.

*Slower disinflation up to the end of 2008*

Relative to our February forecast, we expect the disinflationary process to slow down until the end of next year. One reason for this is the upward trend in oil prices seen in recent months, which is likely to generate greater and longer lasting inflationary impacts due to the cuts in the gas price compensation scheme. Another factor pointing towards higher inflation is the rapid wage growth seen in the private sector. This very strong growth in wages in recent months – which can only be attributed to whitening to a lesser degree – is certainly not consistent with price stability over the medium term.

The tightening of monetary conditions in recent months will only be able to offset these impacts to a certain degree. As the output gap will remain negative over the entire forecast horizon, the real economy will have a disinflationary effect.

*Wages well above productivity in the service sector*

Based on trend indicators, which are adjusted for the impact of the regulatory environment (including the changing seasonal pattern of bonus payments and whitening), within the private sector as a whole, there is a distinct difference between the inflationary impact of wage dynamics in the manufacturing sector and in the service sector. In the manufacturing sector, the high rate of productivity is consistent with the wage dynamics observed. By contrast, in the service sector wages tend to generate increasing cost pressure, and consequently reduce the rate of profitability in the corporate sector. Over the medium run, there are potentially three main channels for adjustment; namely prices, wages and employment. In the baseline scenario, over the near term we expect to see strong wage adjustment and modest price pressure; this view is supported by the modest increase in the prices of wage dynamics would not decline to the extent we have expected market services during the first few months of this year. Nevertheless, the risk of wage dynamics higher than our expectation still persist, and this would mean greater price increases than our baseline scenario. This outcome carries inflationary risks especially if it is related to persistently higher price and wage expectations.

*Substantial slowdown in growth in 2007*

The starting point of the forecast of the real economy is robust external economic activity and the weaker-than-expected domestic demand in the second half of 2006. We continue to believe that the Hungarian economy will slow down even further in 2007, due primarily to declining household

consumption. Once the impacts of fiscal measures fade, the economy may slowly recover and domestic components play a greater role in growth.

*Vibrant export growth, turning point in investment*

Thanks to the favourable external environment, exports will remain strong in the coming years, as was the case last year. In our forecast we still project consumption smoothing by households, while their incomes will continue to fall this year, although not quite as much as we previously expected. In the following years the growth rate of consumption is expected to increase in line with a renewed increase in household incomes.

Following last year's decline, investment is expected to gradually recover this year, but significant growth is unlikely before 2009 in spite of the fact that the absorption of EU funds is expected to grow.

*Lower-than-expected budget deficit in 2007 and 2008, increasing risks in 2009*

According to our forecast, the accrual-based budget deficit (ESA deficit) may come in below the deficit target indicated in Hungary's convergence programme for both 2007 and 2008, due largely to the stronger-than-expected growth in revenues. Our baseline forecast in 2009 is slightly in excess of the government's objectives, with an approximately symmetrical risk distribution.

*Improving external balance*

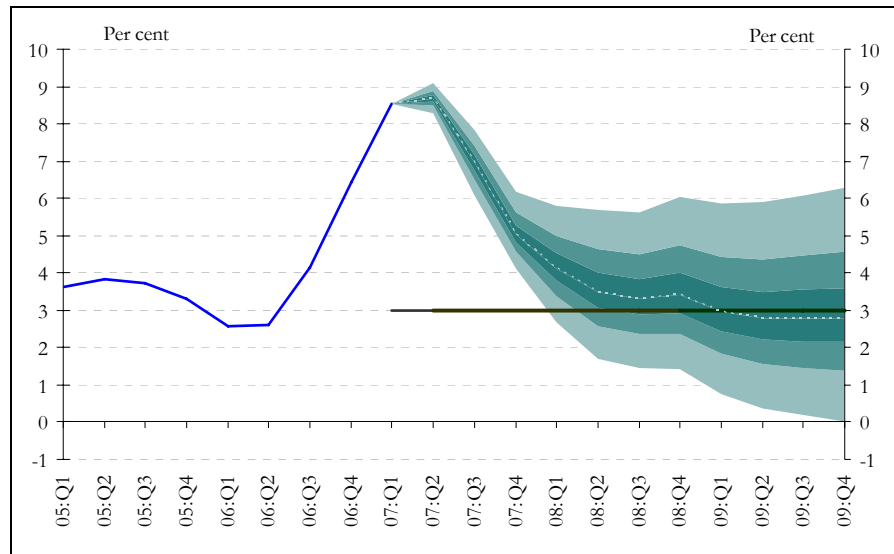
External balance indicators are likely to improve further in the coming years. This year's reduction in external financing requirement is attributed mainly to the sharp decrease in the budget deficit, while the private sector's financing requirement may increase in the wake of consumption smoothing and a more intense investment environment.

During the 2008–2009 period we forecast a smaller reduction in the external financing requirement. On the one hand, the rate of reduction in the budget deficit will be slower than the rate we have seen this year, and on the other hand the financing requirement of the corporate sector may increase as the economy continues to pick up, and these two impacts can be off-set only by growing household savings.

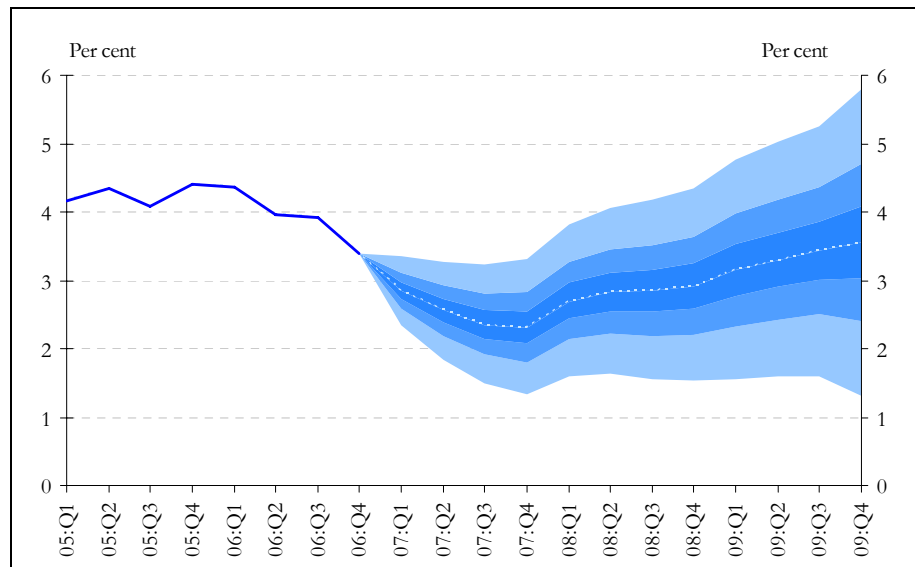
*Upside risks in inflation*

In summary, it can be stated that in line with the main scenario, a significant decline in inflation may begin in the second half of this year, bringing the price index to a level consistent with the inflation target over the relevant monetary policy horizon of 5–8 quarters. Consistent with our previous forecasts, the baseline scenario is surrounded by significant bi-directional uncertainties and, on the whole, the risks are on the upside. The adjustment of the labour market constitutes the major risk factor pointing toward higher inflation, if it is related to higher price and wage expectations. If the disinflationary impact of the negative output gap is stronger than our forecast, or if there is a greater decline in demand components, this may result in lower inflation. The distribution of risks relating to the GDP forecast is symmetrical in our view in both years.

**Inflation forecast fan chart**



**GDP forecast fan chart**



## Summary table of the main scenario

(The forecasts are conditional: the main scenario reflects the most probable scenario only if all the assumptions presented materialise; unless otherwise specified, percentage changes on a year earlier)

	2005	2006	2007	2008	2009
	Actual		Projection		
<b>Inflation</b> (annual average)					
Core inflation <sup>1</sup>	2.2	2.4	5.7	3.4	3.1
Consumer price index	3.6	3.9	7.3	3.6	2.8
Economic growth**					
External demand (GDP-based)	2.0	3.8	3.0	2.4	2.4
Impact of fiscal demand <sup>2</sup>	0.8	0.8	-3.4	-1.6	-0.3
Household consumption	2.1	1.2	-0.8	0.6	1.8
Gross fixed capital formation	6.7	-1.8	2.3	4.6	5.9
Domestic absorption**	0.8	0.5	0.0	1.7	3.2
Exports	10.7	18.0	15.3	11.8	9.5
Imports <sup>3, **</sup>	6.5	12.6	12.2	10.7	9.4
GDP <sup>3</sup>	4.1 (4.3)*	3.9 (4.0)	2.5	2.8	3.4
Current account deficit <sup>3, **</sup>					
As a percentage of GDP	6.8	5.8	4.7	4.4	4.2
EUR billions	6.0	5.2	4.9	4.9	4.9
External financing requirement <sup>3, **</sup>					
As a percentage of GDP	6.0	5.0	3.3	2.3	1.8
Labour market					
Whole-economy gross average earnings <sup>4</sup>	8.9	8.7	7.2	6.2	5.0
Whole-economy employment <sup>5</sup>	0.0	0.6	-0.6	-0.1	0.1
Private sector gross average earnings	6.9	9.5	8.6	7.1	6.3
Private sector employment <sup>5</sup>	0.3	1.3	0.0	0.1	0.1
Private sector unit labour cost	2.2	5.8	5.9	4.6	3.2
Household real income	3.6***	0.1***	-2.8	2.3	2.3

<sup>1</sup> For technical reasons, the indicator that we project may temporarily differ from the index published by the CSO; over the longer term, however, it follows a similar trend. <sup>2</sup> Calculated from the so-called augmented (SNA) type indicator; a negative value means a narrowing of aggregate demand. <sup>3</sup> As a result of uncertainty in the measurement of foreign trade statistics, from 2004 actual current account deficit and external financing requirement may be higher than suggested by official figures or our projections based on such figures. <sup>4</sup> Calculated on a cash-flow basis. <sup>5</sup> According to the CSO labour force survey.

\* In 2005 calendar effects caused a downward distortion of GDP by some 0.2 percentage points. In order for trends in growth to be assessed, these effects must be applied to adjust the original data; corrected values are shown in brackets.

\*\* Our projection includes the impact of the Hungarian Army's Gripen purchase, which raises the current account deficit and increases community consumption and imports.

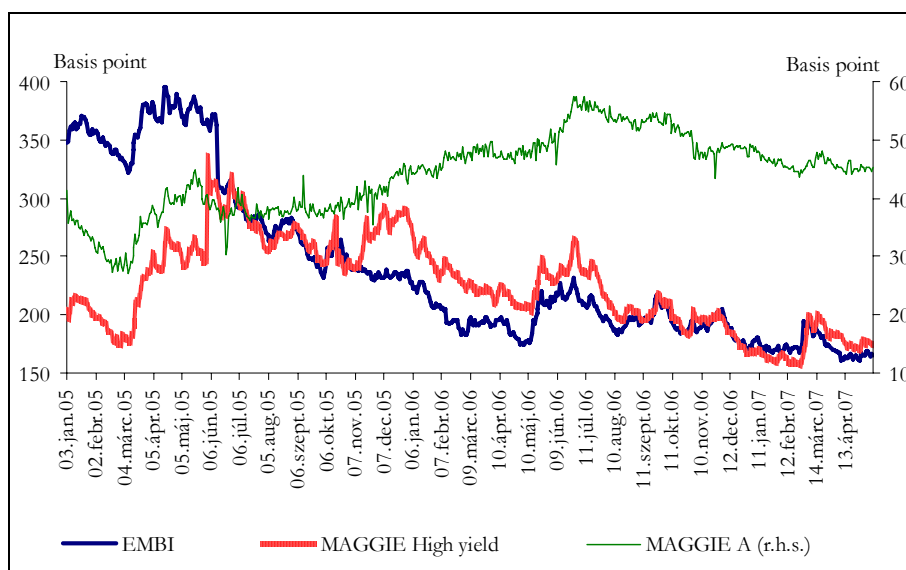
\*\*\* MNB estimate.



# 1. Financial markets

Apart from some temporary disturbances, the environment for international investments remained favourable over the last six months by historical standards. Investors' high risk appetite continues to be supported by low interest rates in the developed markets, and the dynamic growth of emerging markets with improving fundamentals and an attractive yield environment. The relative stability seen in the global money and capital markets is also attributed to the fact that the monetary tightening cycle in the advanced economies did not cause any major surprise and that the economic outlook did not go through any substantial changes.

Chart 1-1 Bond and credit indices

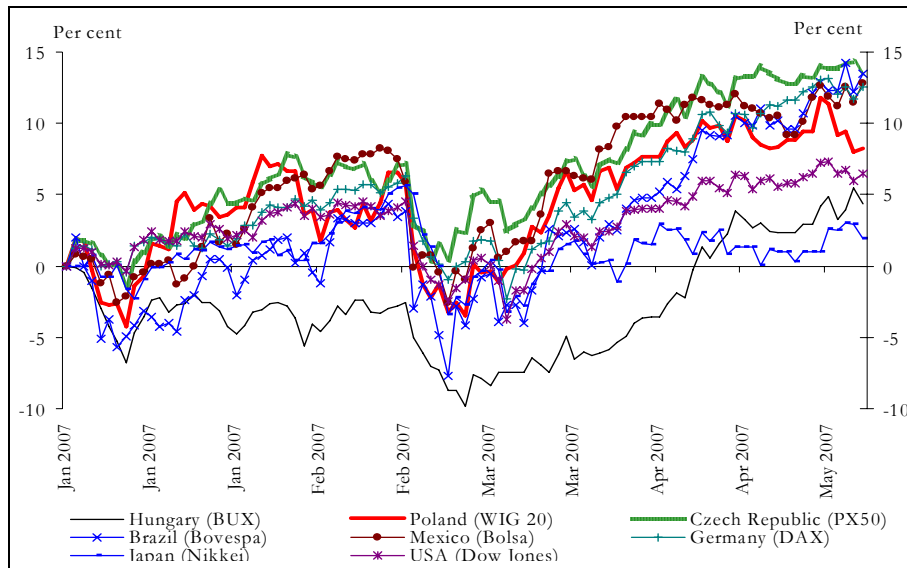


On the other hand, the negative shocks in risk appetite had a global impact during the aforementioned half-year period. The primary source of these shocks was the less favourable growth outlook of the US economy and the deteriorating attractiveness of carry trade strategies. Towards the end of February bad news emerged about the Chinese and the American economies, and the dispute about Iran's nuclear programme flared up again. Consequently, a significant capital reallocation took place, moving funds from risky investment instruments to less risky ones.

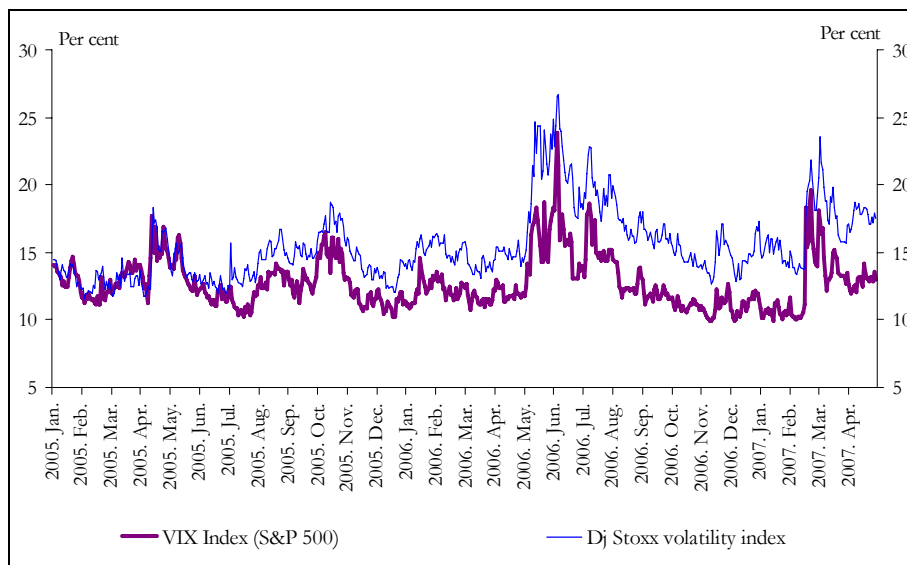
On the stock markets major adjustments took place. The implied stock market volatility quotations nearly doubled from an all-time low, and approached the levels seen during the money and capital market turbulence last May. The sudden drop in risk appetite, however, resulted in significantly less adjustments in the foreign exchange market, and the volatility of exchange rates rose slightly relative to the stock markets. In the foreign exchange markets the high-yield currencies (Brazil real, South African rand, Turkish lira) were hit the hardest, and together with the substantial gain of the Japanese yen this indicated the scaling back of carry trade positions.

As it turned out, the adjustments in the money and capital markets were only temporary. Asset prices recovered relatively quickly and were soon back up to the levels prior to the sell-off. Subsequently, the interest premium on risky debt instruments once again dropped to an all-time low, or close to it. All in all, the magnitude of the adjustments and the path leading to it shows that the willingness of investors to undertake risk could be vulnerable under the present circumstances, and that there is only limited room for any further improvement in risk appetite.

**Chart 1-2 Stock market indices (1 January 2007=0)**



**Chart 1-3 Implied stock market volatility**



The global economic outlook nonetheless remains favourable. Analysts expect the global economy to grow around 5 per cent this year, as in the past years. However, the rate of growth in the various regions may differ from what it has been in recent years. The most important change from the perspective of financial markets is that the growth rate in the euro area is expected to reach the growth rate of the American economy. The majority of market participants expect to see the rate of economic expansion in the US slow down somewhat this year from the long-term rate, while the euro area is predicted to grow a little above potential.

The pricing of money market instruments is consistent with somewhat looser monetary policy from the Fed around the end of this year and with a continuation of the monetary tightening cycle by the ECB. Due to the expansion of the euro area economy and the steady rise in forward reference euro interest rate expectations, the euro appreciated sharply during the last six months vis-à-vis the currencies of the developed economies, reaching an absolute high against the yen and the dollar.

Chart 1-4 Trends in emerging market currencies and the euro-dollar (1 November 2006=0)

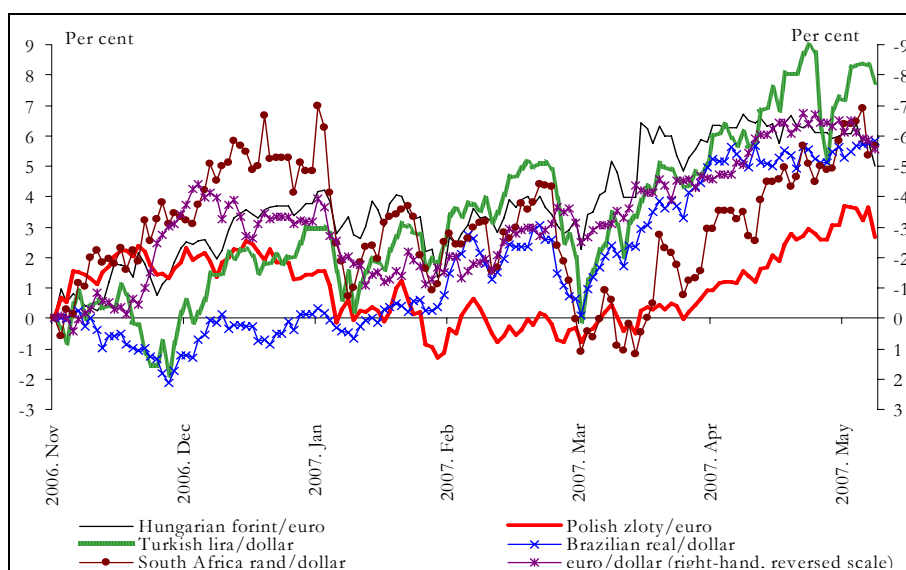
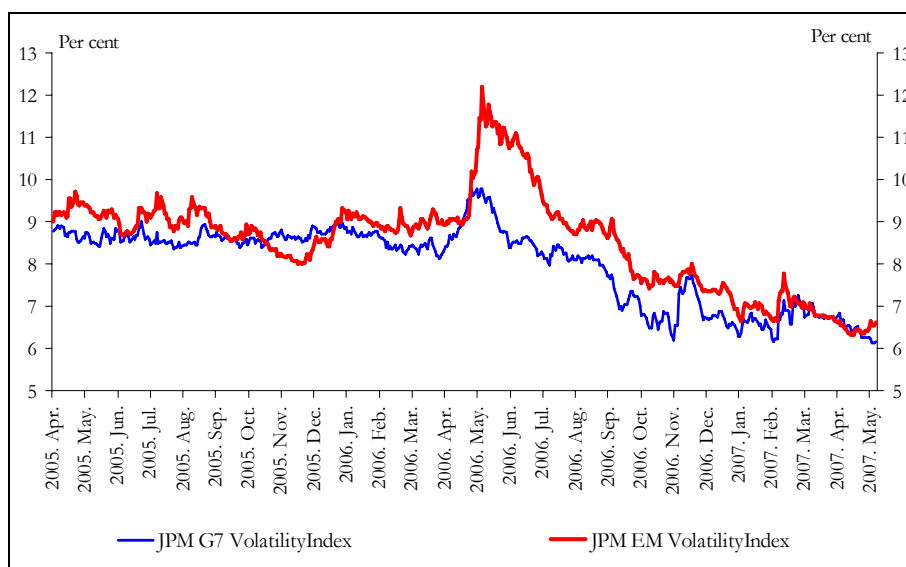


Chart 1-5 Volatility of exchange rates in the developed markets (G7) and in the emerging markets (EM) as calculated by JP Morgan



Looking ahead, from the perspective of the environment for international investments, the uncertainty surrounding the US economy constitutes the greatest risk. On the one hand, if the rate of slowdown is higher than forecasted, it could trigger a renewed reallocation of capital to less risky instruments (above all to developed market government bonds), which in turn could lead to significant adjustments in stock market prices and in exchange rates of high-yield currencies in emerging markets. In spite of the fact that inflation trends in the US have improved slightly in the past six months, the level of inflation is still higher than what is considered desirable by the Fed. Therefore, on the other hand, any unfavourable developments on the inflation front may once again trigger inflation fears and higher interest rate expectations, similar to last May, and that could have a negative impact on asset prices in the emerging markets.

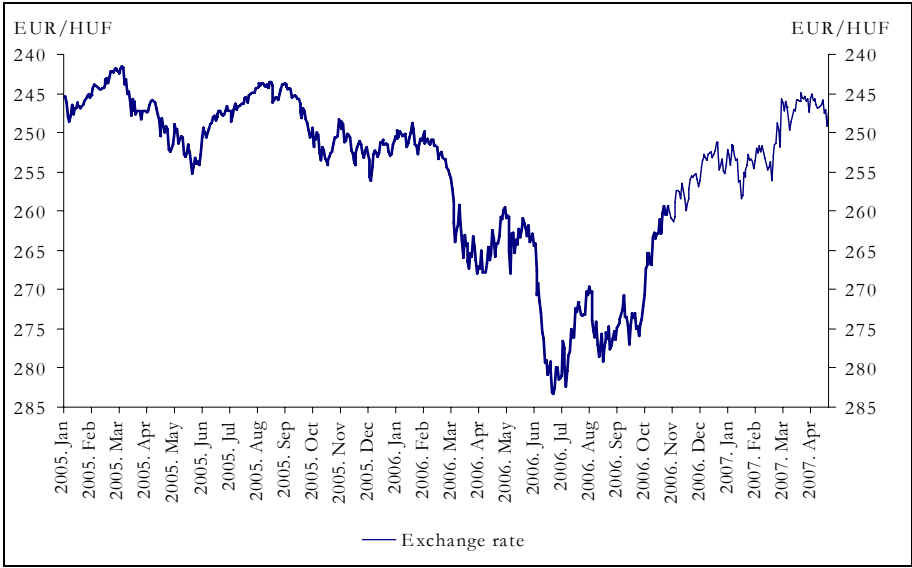
On the whole, financial markets expect to see favourable environment for international investments, dynamic global economic growth and a gradual reduction in the current imbalances. However, looking at the prices of risky instruments, it appears that investors' demand for these instruments rose to unusual highs even by historical comparison, which means that the risk

appetite of investors could be very sensitive to unfavourable economic and geo-political developments.

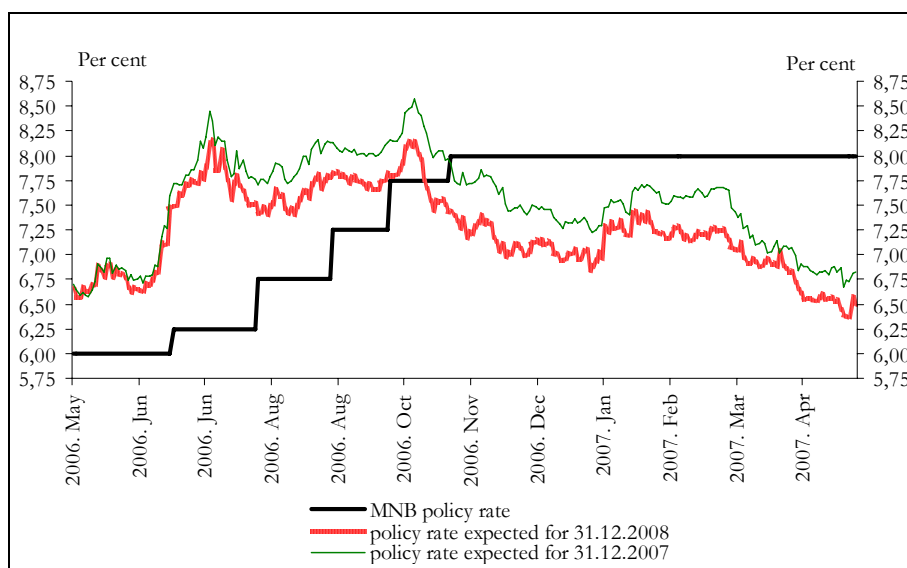
Amidst the favourable external conditions, starting from the end of November there was a shift in investors' sentiment toward Hungarian instruments. The forint exchange rate appreciated from EUR/HUF 260 in late November to EUR/HUF 245-250 by April. In addition to the favourable environment for international investments, macroeconomic developments in Hungary also played a decisive role in the forint gaining strength and hence in the improving confidence of investors in Hungary.

During the last half-year period we have seen a positive change in Hungarian macroeconomic balance indicators. In the fourth quarter of 2006 the current account deficit turned out better than what analysts had expected, and the general government deficit in 2006 and during the first four months of 2007 also reflected more favourable numbers than what had been anticipated by the Ministry of Finance. All in all, investors appear to have been convinced that the economy has embarked on a path of reducing the significant internal and external imbalances. At the same time, the gradual reduction in the uncertainty related to the rise in inflation over the past six months, and its stabilization at the level expected by the central bank and the market participants alike, triggered appreciation of the forint and stronger rate cut expectations. Based on the yield curve, at the end of November investors were expecting the base rate to settle at 7.5 per cent by the end of 2007, and at 7 per cent by the end of 2008; by mid May these expectations had dropped to 6.75 per cent for the end of 2007 and 6.5 per cent for the end of 2008.

Chart 1-6 EUR/HUF exchange rate



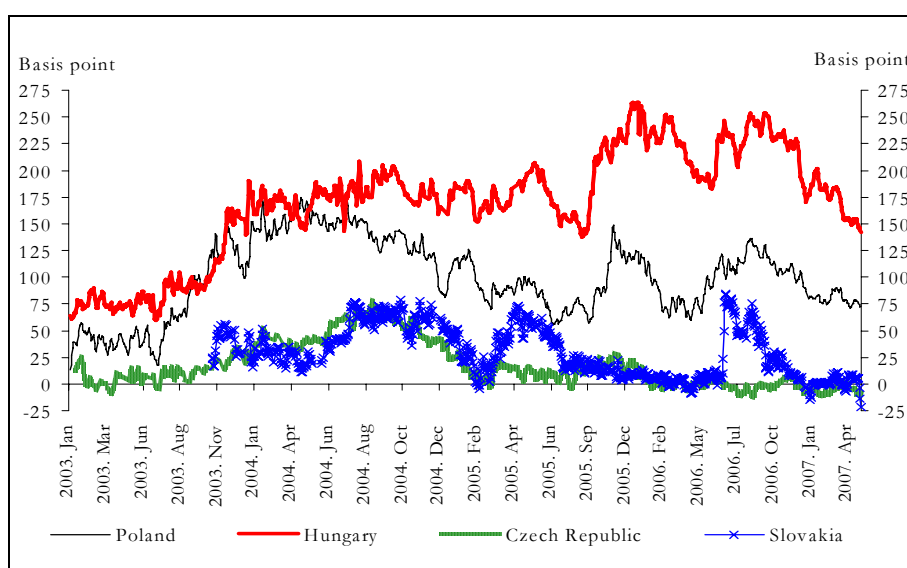
**Chart 1-7 Central bank base rate and the base rate estimated from the yield curve for the end of 2007 and 2008**



Late last year and in the first months of this year, due to the decline in uncertainty from domestic political turmoil and steps taken by the credit rating institutions, the exchange rate settled in at EUR/HUF 251-259. S&P improved its rating of Hungarian debt servicing capacity from negative to stable, while Moody's downgraded its rating from A1 to A2. In the latter case, however, the extent of the downgrade was below market expectations, and therefore, on the whole it had a positive impact on the markets.

At the same time, the fact that required premiums on long-term forint investments did not decrease substantially was a sign that investors were taking a more cautious position. The markets adopted a wait-and-see approach, for at this time the first results of the macroeconomic adjustments were not yet visible and because there was considerable uncertainty as to how high inflation might rise. However, the drop in the prices of Hungarian instruments triggered by negative shocks in the demand of investors for risky instruments in late February was minor and temporary, thanks in part to favourable sentiment of investors toward the region, and also to improving confidence in macroeconomic developments in Hungary.

**Chart 1-8 Five-year forward premium above euro yields on currencies of the region 5 years ahead**

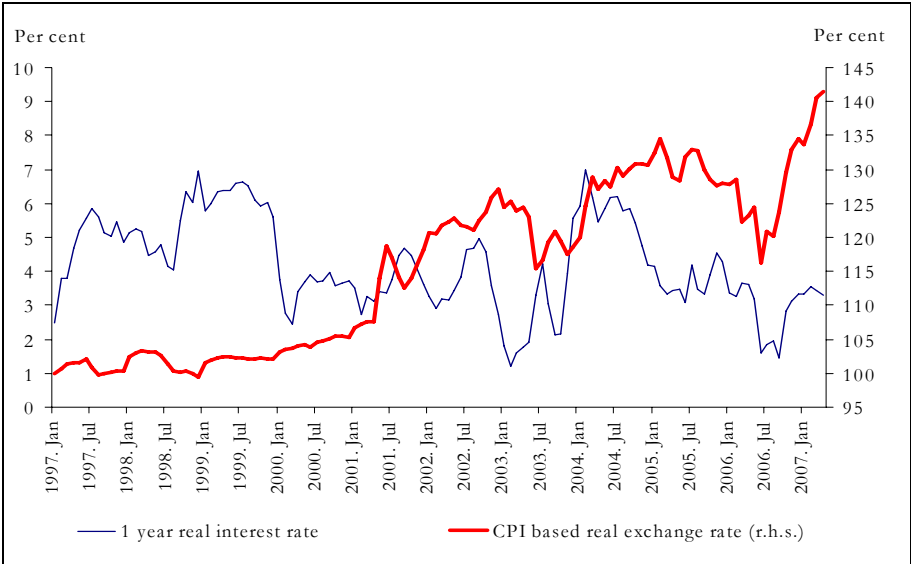


In early March, the demand for forint investments started to increase again quickly. The lower level of premium settled in April, which may indicate that in investors' view the sustainability of macroeconomic adjustments has increased considerably since last November, thereby boosting their confidence in forint instruments. On the other hand, the fact that the premium is still considered high within the region indicates a great degree of uncertainty surrounding the Hungarian convergence process.

Beside the aforementioned factor, the revaluation of the Slovakian currency exchange rate band also led to forint appreciation, causing the Hungarian currency to break out of the EUR/HUF 251-259 trading range of the previous months. There was talk among market participants about the possibility of the Hungarian exchange rate band being abolished. According to market information, the majority of investors did not expect any shift in the Slovakian exchange rate band, and several of them took on a speculative position instigated by the rumours floating about the abolishment of the Hungarian exchange rate band. Consequently, the exchange rate appreciated all the way up to EUR/HUF 245. In the month of March the forint positions of foreign investors increased by close to 400 billion forints, and their holdings of government bonds reached an all-time high.

In line with market expectations, the central bank held its reference interest rate at 8 per cent throughout this past half-year period. At the same time, market participants gradually reduced their expectations for the year-end base rate essentially in parallel with the appreciation of the forint and with inflation following the projected path. According to Reuters surveys the number of analysts expecting any further increase in the interest rate dropped from month to month, while the projected date for the first interest rate cuts was also brought forward on several occasions. Monetary conditions became stricter during the past half-year period due primarily to appreciation of the nominal exchange rate. However, the one-year forward real interest rate dropped slightly in recent months in response to the reduction in short-term yields, while the level of real interest rate is at 3–4 per cent, as seen in previous years.

Chart 1-9 Monetary conditions

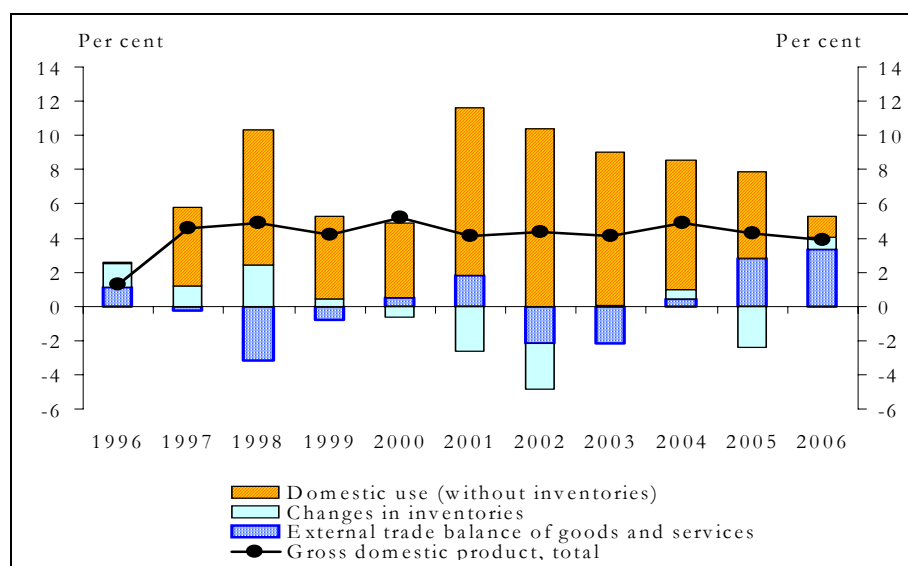


## 2. Inflation and the major factors behind its development

### 2. 1. Economic activity

In 2006, the rate of economic growth reached 3.9 per cent (4.0 per cent adjusted for the calendar effect), close to the average recorded in previous years.<sup>1</sup> GDP growth, however, slowed during the year in the wake of fiscal adjustments, while the composition of growth is characterised by increasing duality. Growth in internal demand was somewhat less dynamic, whereas net exports – thanks to increasingly robust external economic activity – were better than expected last year. There was a decline in consumption despite outstanding wage growth, and investments slowed down in spite of favourable export conditions, while lacklustre demand in the government sector was below expectations as well, considering the fact that 2006 was an election year. The historically high contribution of net exports to growth was the result of stronger exports driven by favourable international economic activities, combined with slower growth in imports prompted by weaker internal demand.

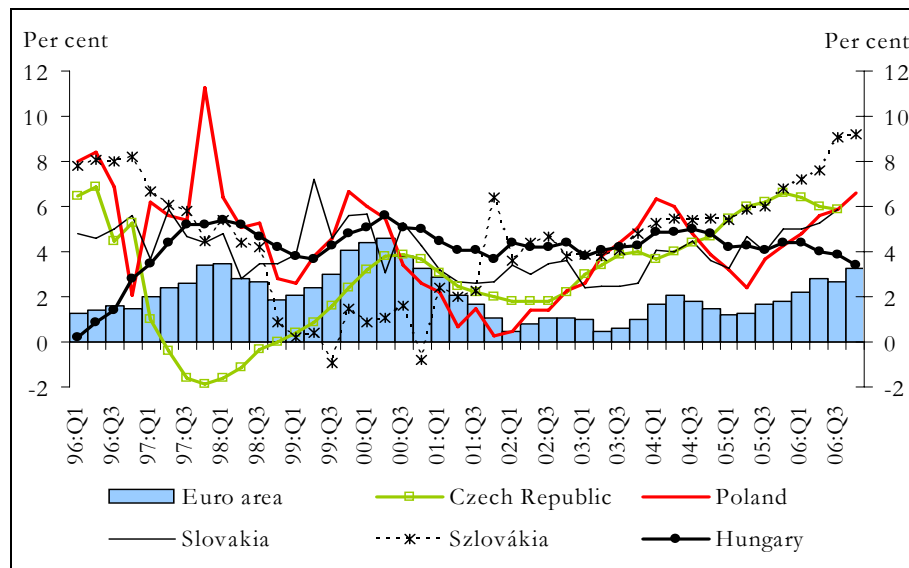
**Chart 2-1 Contribution of domestic expenditures and net exports to real GDP growth**  
*(annual volume indices)*



Good performance in external markets, however, was insufficient to offset the unfavourable developments in Hungary. From the second half of the year it became apparent that Hungary's economic growth was losing momentum compared to other countries in the region, and our advantage relative to the economic growth of the euro area vanished.

<sup>1</sup> The preliminary Q1 GDP data for 2007 was published by the Central Statistical Office after the information set for the Report had been closed. The data shows 2.9 percent (3.0 percent without calendar effects) real GDP growth for the first three months of the year compared to corresponding period of the previous year. Bearing in mind the uncertainty of the preliminary data, the growth number is in line with our expectations, hence, at least until the details are known, our overall conjunctural assessment of the Hungarian economy remains largely unchanged.

**Chart 2-2 Economic growth in the Central and Eastern European region\***



\* *Volume indices of real GDP*

The dualistic nature of growth is well illustrated by the fact that over the last two years the growth rate of domestic income in real terms (RGDI) remained below the growth rate of real GDP (gross domestic product), primarily due to a decline in the terms of trade triggered by rising energy prices.<sup>2</sup> This difference is considered high compared to previous figures and also relative to other countries in the region. In addition, it is consistent with the fact that domestic absorption in Hungary was at an all-time low and the component of GDP growth driven by the export sector was higher than the historical average.

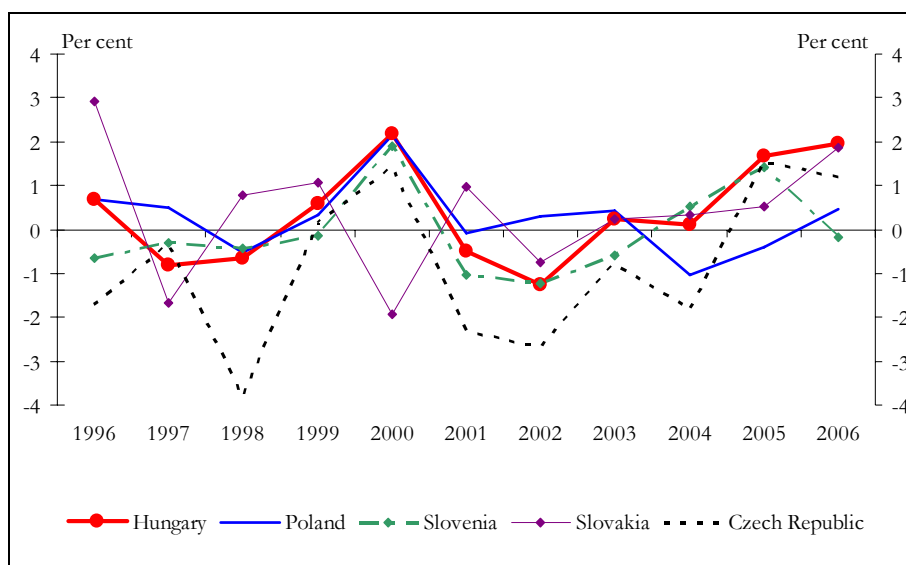
<sup>2</sup> GDI is calculated by the following formula:

$$GDI^{real} = GDP^{real} + \left\{ (X - M) / [(P_x + P_m) / 2] - (X / P_x - M / P_m) \right\} ,$$

where X and M stand for exports and imports at current costs,  $P_x$  and  $P_m$  are the deflators of exports and imports. When GDP grows faster than GDI, it means that – in real terms – the income of domestic economic agents grew slower than what is indicated in the GDP growth rate.



Chart 2-3 The difference of GDP and GDI in the region\*

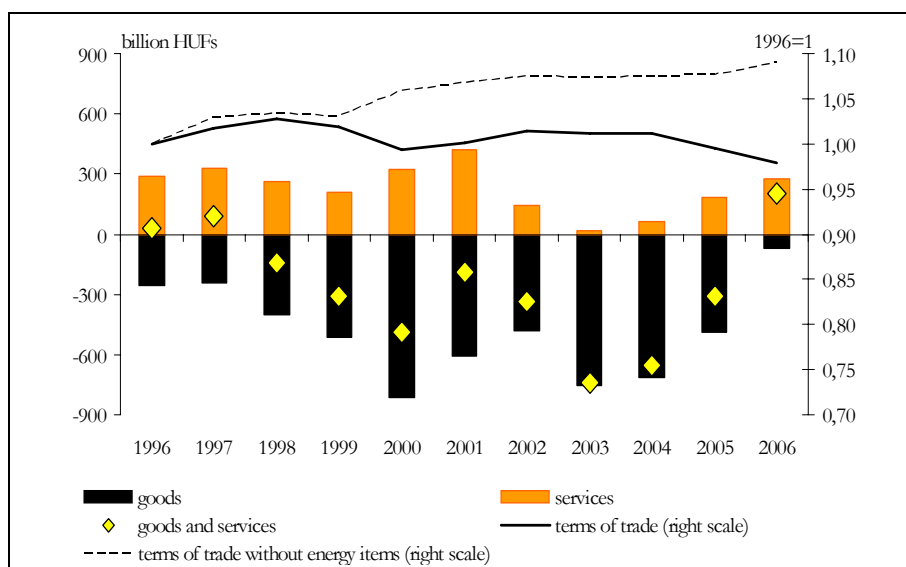


\* Differences of annual volume indices in percentage points

### Hungarian exports are dynamic, but can they be sustained?

The unexpected growth in external demand triggered a stronger-than-expected increase in exports. At the same time, the foreign trade balance of goods and services was positive for the first time in many years.

Chart 2-4 Trade balance of goods and services in current prices and the developments of the terms of trade

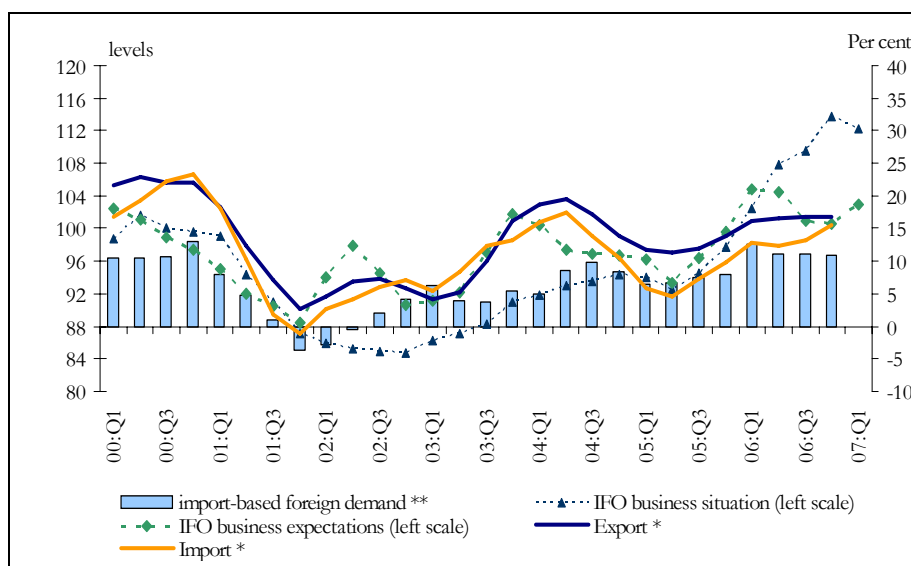


Hungary's foreign trade balance improved despite the deterioration in the terms of trade caused by higher imported energy prices. The favourable shift in volumes – i.e. export volumes were significantly higher than imports – compensated for this impact. However, the improvement in

the trade balance was not exclusively caused by the efficiency of the export sector, as weak import demand due to sluggish domestic demand was also a contributing factor.<sup>3</sup>

The principal reason for the upturn in exports was the unexpectedly high import demand from the German economy and its closest partners. Business confidence indicators (e.g. IFO) reflecting the views and expectations of managers in Germany have been at historic highs for several months.

**Chart 2-5 Export and import of goods, import-based foreign demand and IFO business indicators**



\*Year on year volume indices from trend  
 \*\* Year on year volume index

Accordingly, foreign trade data from the early part 2007 also indicate the robust expansion in exports. At the same time, according to the latest information there are some signs of stronger import dynamics well, which may foreshadow a pause in the improving trend of foreign trade balance.

In order to determine the degree of sustainability of Hungarian export dynamics, we should compare it to other countries' performance in the region, over a longer time horizon. The results of our analysis point to question marks as to how competitive Hungarian exports are in international markets: while our market share in terms of volume is considered favourable (similarly to our competitors), our relative export prices have declined since the turn of the millennium (see box below).

**Box 2-1 How good is Hungarian export performance in a regional comparison?**

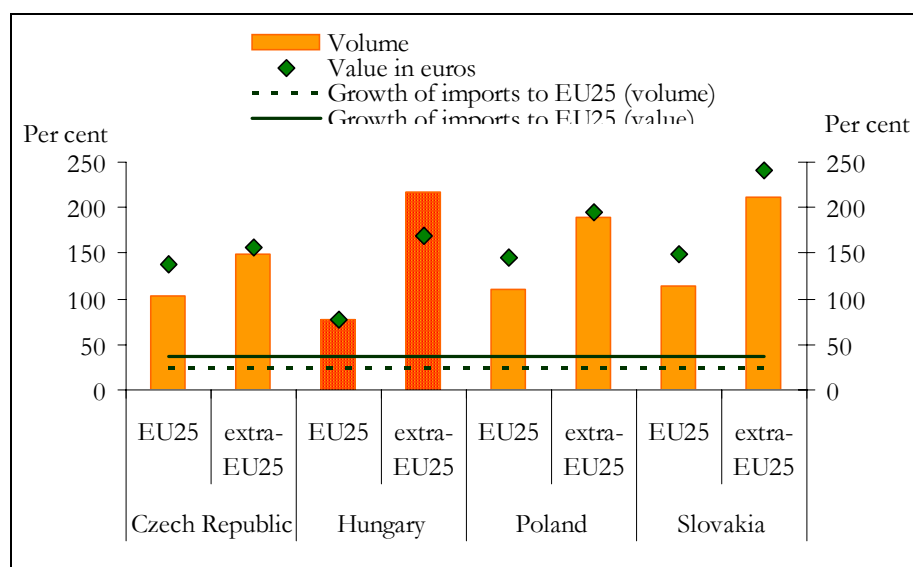
Over the past two years, the export output of the Visegrád Four has been far better than expected, thanks to buoyant economic activity in Europe. In late 2006 and early 2007, the rate of growth in exports of goods and services surged up to 20 per cent on average throughout the region, with Hungary taking second place behind Slovakia. Taking the perspective of a longer timeframe, apart from the brisk economic activity in Europe, entry into new markets also enhanced the dynamic growth of exports. On general principle, sales of goods to markets outside the EU-25 increased considerably, in other words, the

<sup>3</sup> It must be noted that, however, that even though the foreign trade balance has been improving continuously since 2004, its development must be judged with caution due to the methodological problems originating from the underestimation of imports and overestimation of exports. The degree of uncertainty is around 2-3 per cent of GDP. For more details on this issue, please see Box II-1 and IV-5 in the Inflation Report of August 2005.

volume of export sales shifted from the relative slow growing Western European markets to markets outside the EU-25, mostly to Eastern European markets (Chart 1).

Hungary took the lead in shifting the main stream of the export of goods to markets outside the EU-25. While the overall volume of Hungarian exports grew at a rate similar to our competitors between 2000 and 2006, it showed the slowest growth rate in the EU-25 and the fastest growth rate outside this area. This phenomena is consistent with the conclusions set forth in the studies conducted concerning the foreign trade integration within the region, notably that Hungary's integration in foreign trade with the EU-15 – unlike other countries in the region – came close to reaching an equilibrium at the turn of the millennium, which could also be the reason for the slower export dynamics in the EU markets.<sup>4</sup>

**Chart 2-6 growth of export of goods in the region between 2000 and 2006**  
(growth percentage in euro value and volume)



Source: Eurostat.

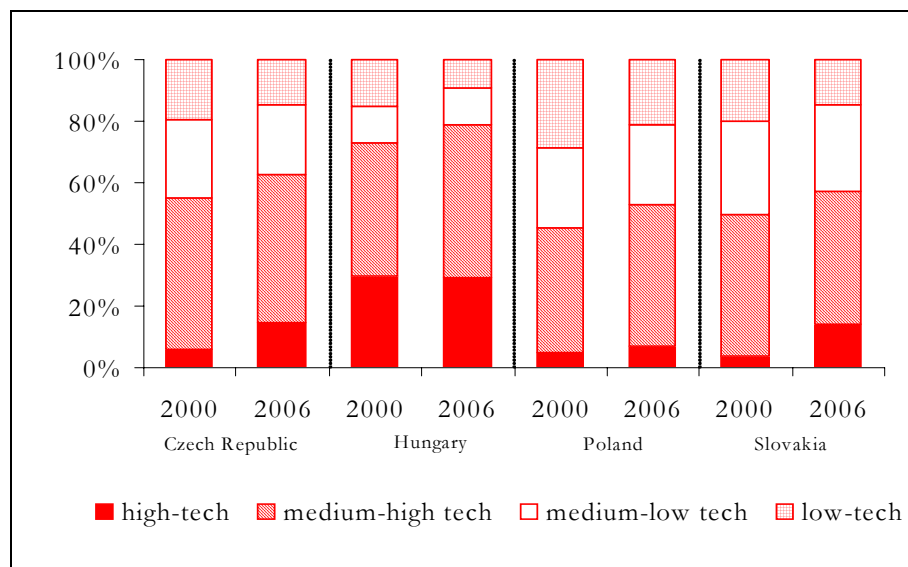
Looking more closely at the export performances in the region, which appear favourable on the whole, it is found that trends in Hungary are on a path somewhat different from the three competitors, which could also raise doubts concerning the sustainability of the good export performance, particularly because contrary to the dynamic growth in volume Hungarian export sales paint a gloomier picture measured in terms of current prices. Measured in euro, between 2000 and 2006 Hungary was the last in the region in terms of growth in exports, which means that the relative export prices decreased compared to our competitors. While the export price indices went up in the other three countries of the region, the unit price of Hungarian exports stagnated on the EU-25 markets, and decreased in markets outside the EU-25.

At this juncture, it is important to point out that changes in the export unit price index could reflect the common price trends in the destination market relative to a specific product structure, and/or a shift in the product structure of the country toward higher priced products. On general principle, the world market prices of goods supplied in foreign trade were decreasing during the period under review, due mostly to increasingly strong globalisation pressure. In this light, trends in Hungarian export prices did not come as a surprise. However, lower world market prices have a different effect on the various products. While Hungary specialised in products whose prices had been typically declining (office machines and telecommunications equipment), the product structure of other countries in the region contained goods fetching higher prices (e.g. motor vehicles).

<sup>4</sup> See Jakab-Kovács-Oszlay: Where foreign trade integration is headed?, MNB Working Papers 2000/1, or Bussiere *et al.*: Trade Integration of Central and Eastern European Countries. Lessons from a Gravity Model, ECB Working Paper No. 545.

Furthermore, another factor contributing to the relative decline of Hungarian export prices is that the product structure of other countries in the region comprises more advanced (meaning higher priced) products. A review of the export product structure of our competitors in the region supports the conclusion that this type of composition could well be the reason behind the relative export price trends under review. Between 2000 and 2006, the product structure of our competitors shifted toward a more advanced product line, and especially in the Czech Republic and in Slovakia the ratio of high-tech export goods increased considerably. On the other hand, the Hungarian product structure in the high tech segment failed to improve any further, due in part to the fact that it started off from the highest level in the region.

**Chart 2-7 Changes in the export structure in the region according to technological development**  
(in percentage of the euro value of all export sales)



Sources: Eurostat, Comext database. Technological classification based on the OECD's classification.

The phenomena illustrated above carry a variety of messages regarding the sustainability of Hungary's export. The good news is that the difference between the export growth rate in terms of volume, that is considered good by regional comparison, and the unfavourable growth rate at current prices (in other words, the lower relative export prices) are attributed, for the most part, to world market trends, and also to current developments in other countries of the region concerning technological convergence, that took place in Hungary before the turn of the millennium. In spite of all these factors, the Hungarian export structure retained its leading position in the region in 2006, and it showed signs of flexibility in exploring sales opportunities outside the EU-25 markets.

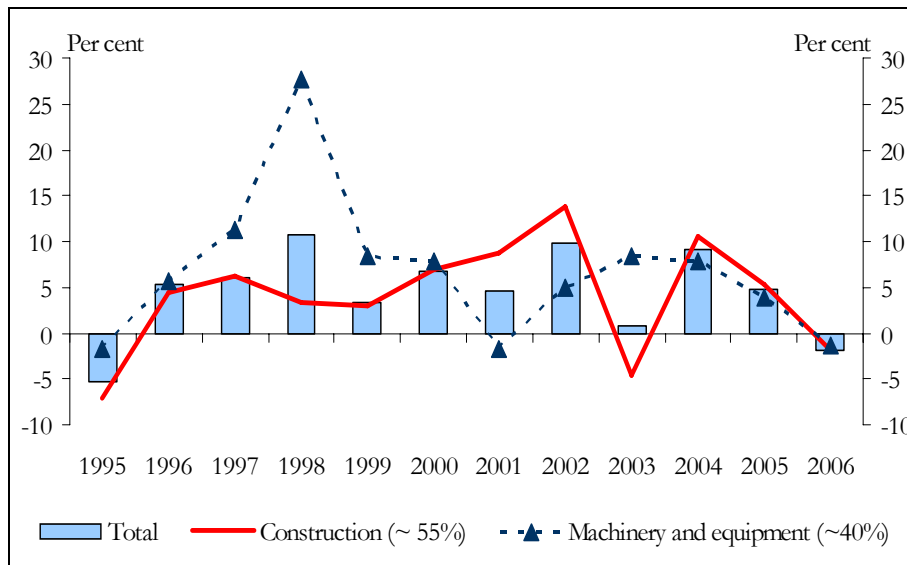
Nevertheless, the phenomena illustrated above also raise questions about the future of the export sector in Hungary. It should definitely be noted that the volume of high tech products in exports did not increase during the past six years. Although the product structure of Hungarian exports is considered advanced by international standards, there is still room for improvement as demonstrated by the examples of more developed nations (such as Ireland first and foremost).<sup>5</sup> Furthermore, regional trends indicate that we can expect increasing competition in the product structure from the emerging countries of the region in our traditional markets. Although we could shift our main stream of export sales from the EU-25 markets to markets outside the EU-25, according to previous experience the markets outside the EU are able to receive lower priced products (meaning goods of presumably lesser technology and lower quality), therefore, the product structure of Hungarian exports could be drawn in an unfavourable direction.

<sup>5</sup> See: OECD Science, Technology and Industry Scoreboard 2005.

## Investments: temporary dip or long-term decline?

In 2006, there was a fall in the volume of investments for the first time in more than ten years. This downward process started in the second quarter, before the announcement of the fiscal adjustment and was widespread across different breakdowns. The two main types of investments, construction and machinery, declined in tandem, and estimates of the various sectors indicate downward trends in the corporate and the household sector, with a significant slowdown observed for the government sector as well.

**Chart 2-8 Volume indices of total investments and its main components\***



\*Average shares of components are shown in parentheses. Annual 2006 data are weighted averages of 2006 quarters.

In the wake of fiscal adjustments, the slower investment activity in the non-tradable corporate sector (mostly in services) is consistent with slowing domestic demand expectations. The driving factor behind the decline in the volume of household investments – apart from falling real incomes due to fiscal adjustment – is the general depression seen in the real estate market. The moderate investment activity of the government-related sectors is the direct result of the cutback on fiscal expenditures.

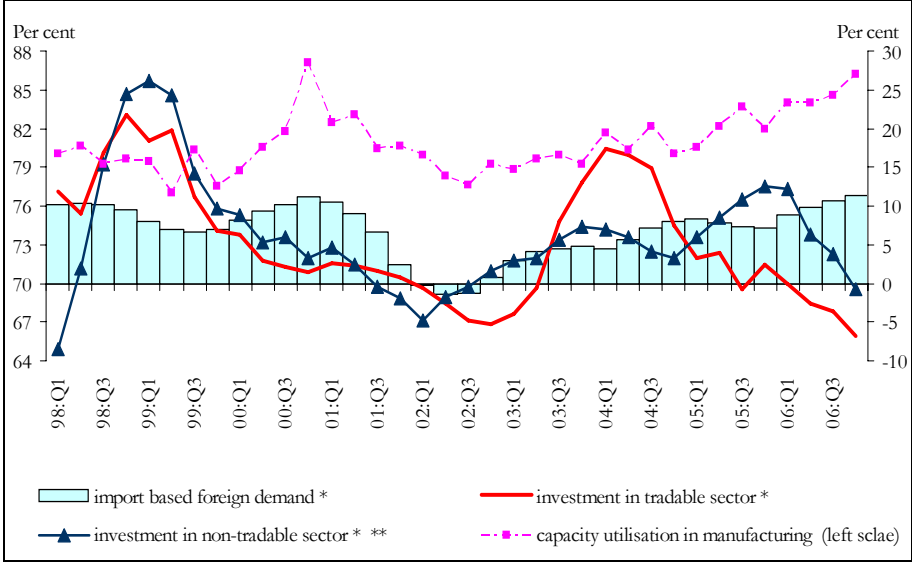
However, the declining willingness of industrial companies, which rely mostly on external demand, to embark on new investments is surprising in light of favourable external demand conditions. For a long time, economic agents underestimated the current robust economic activity in terms of strength and durability. Consequently, they focused on improving their capacity utilisation rather than increasing their investments. This phenomena was observed in other countries of the region and also in our export markets. However, in line with the improving business outlook, the investments dynamics in these countries began to increase over recent quarters, while in Hungary, the trend is just the opposite, both in overall economy investments as well as in the manufacturing industry.

The frail investment climate can be explained by the fact that Hungary consistently fell behind the other countries of the region in competitiveness rankings.<sup>6</sup> Additionally, the unsustainable fiscal path prior to the adjustment and the ensuing corrections that had been unknown for a long time, caused a considerable amount of uncertainty for the corporate sector in terms of planning. The fiscal adjustment mitigated this uncertainty to some extent, however, over the short run, it

<sup>6</sup> For more information consult our publication entitled “Report on Convergence (December 2006)”.

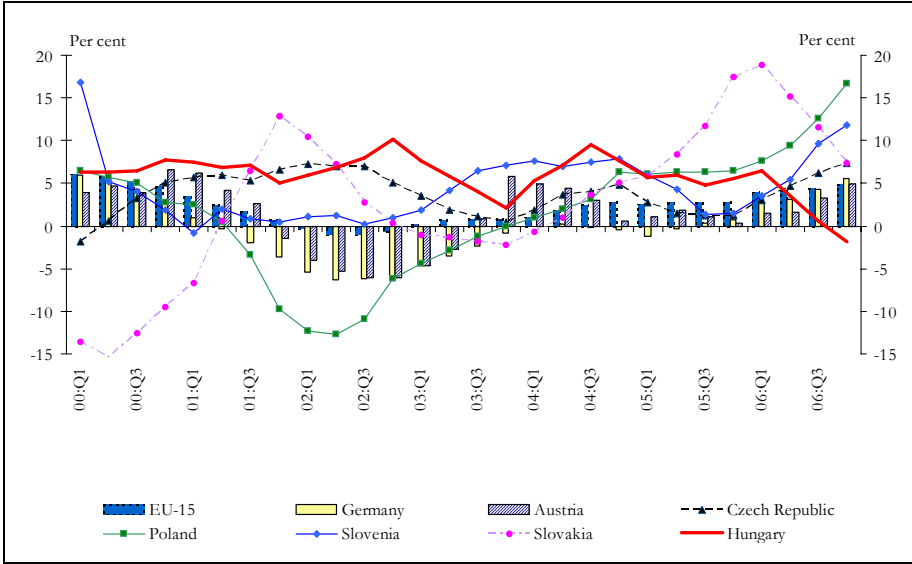
certainly has increased the costs of companies. The overall effect of these impacts – as presented by the data available so far – had an unfavourable overall impact on the expansion of capacities in the corporate sector.

**Chart 2-9 Investments of the tradable sector and its capacity utilisation, foreign demand and investments of the non-tradable sector**



\* Annual average volume indices  
 \*\* Without transportation, telecommunication and energy industries

**Chart 2-10 Annual average volume indices of gross fixed capital formation in the region and in the main export markets**



However, from the beginning of 2007, investment indicators (such as increasing volumes in construction and in the imports of machinery<sup>7</sup>) might signal an upturn in the dynamics of investments. These factors, coupled with a minor decrease in the historically high capacity utilisation and the still favourable external environment, point to a slight correction in

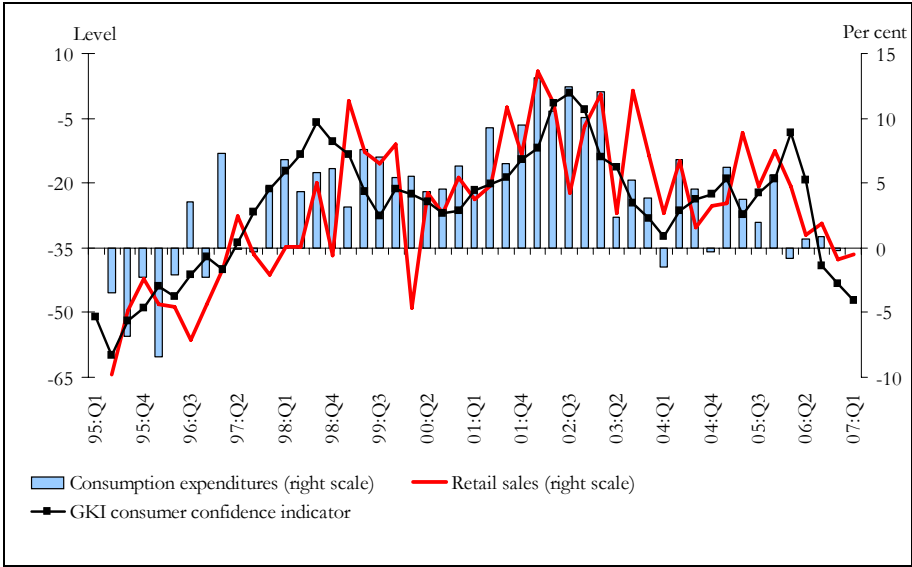
<sup>7</sup> Dynamic imports of machinery and transport vehicles cannot be solely explained by government-related, unique purchases (such as Combino trams and Gripen military aircraft), as machinery imports are buoyant even without these items.

investments. However, looking ahead, the pace of growth is expected to be lower than previously seen during past international economic upturns, due to increased burdens of the corporate sector and on account of signs that Hungary is losing some of its competitive edge.

**Declining household consumption: to what extent?**

Last year, the rate of growth of household consumption expenditures gradually declined, dropping to 1.5 per cent, which was well below the average of previous years. At the same time, it is difficult to assess the timing and extent of the decline for methodological reasons.<sup>8</sup> Consequently, household demand should be assessed on the basis of a combination of several indicators (retail sales, confidence indicators, etc.). Based on these, the slowdown in consumption dynamics started during the second half of last year, due to a significant fall in income prospects, and also due to considerably lower current real incomes, on account of higher taxes and the sudden surge of inflation towards the end of the year.

**Chart 2-11 Consumption and its indicators \***



*\* Consumption expenditures and retail sales are seasonally adjusted, annualized quarterly percentage changes of volumes*

The data reflected slower growth in retail sales for both durable and non-durable goods, in line with the sharp decline in consumer confidence indices during the period under review. The slowdown in sales of non-durable goods started somewhat later, during the second half of last year, justifying the idea that demand for these types of goods is more closely related to current real incomes.

At the same time, the fact that households’ real incomes have been declining since the middle of last year while consumption expenditure continued to grow at a moderate rate, indicates that there has been consumption smoothing on the part of households. This view is supported by the fact that households continued to borrow, while their financial assets continued to shrink.

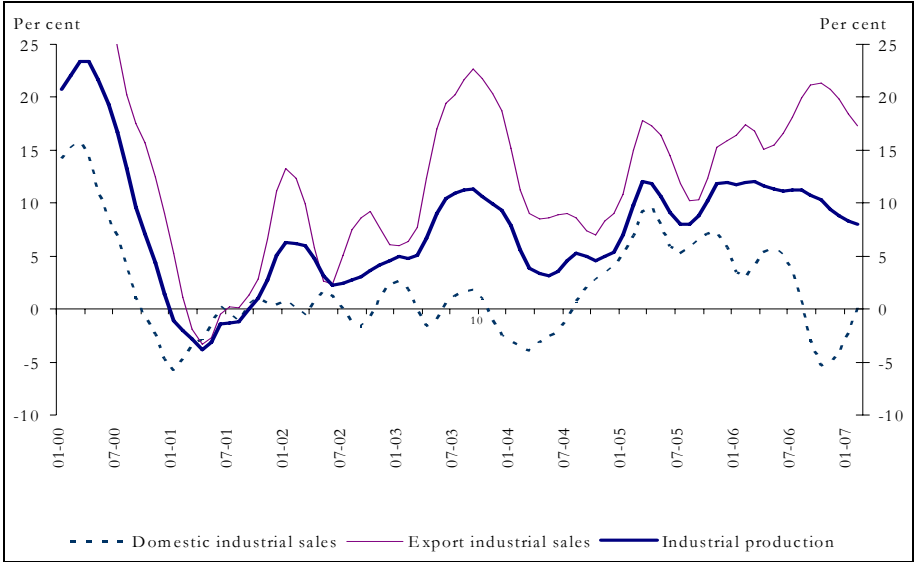
<sup>8</sup> In our view, there is a gap between the incomes and the expenditures of Hungarian households in 2006, for which no feasible explanation is available. Possible reasons behind this gap could be the whitening of the economy, and higher – yet unobserved (typically from imports) – consumption or savings. The former hypothesis could be supported by any reduction in *other incomes* that can only be observed sometime in the future, while the latter is supported by the strong purchases of foreign currencies on the part of the households.

Apart from the developments among households and in the corporate sector, another factor behind the slower domestic demand was that the government also cut back its consumption expenditures in 2006 – in contrast with past experience during election years – and this was felt both in transfers in kind and public consumption.<sup>9</sup>

**Output: increasing divergence between industries relying on domestic and external demand**

Similar to the expenditure side of GDP, the production side is also characterised by duality. The export-oriented industrial sectors show signs of dynamic growth in production and in value added, while the growth rate is decreasing in the sectors supplying goods and services mainly for the domestic market. The strong growth in industrial export sales is consistent with strong exports and high capacity utilisation, and also with the increase in employment as well as working hours in the major export sectors (mainly machinery).

**Chart 2-12 Annualized monthly volume indices of trend industrial production and sales**

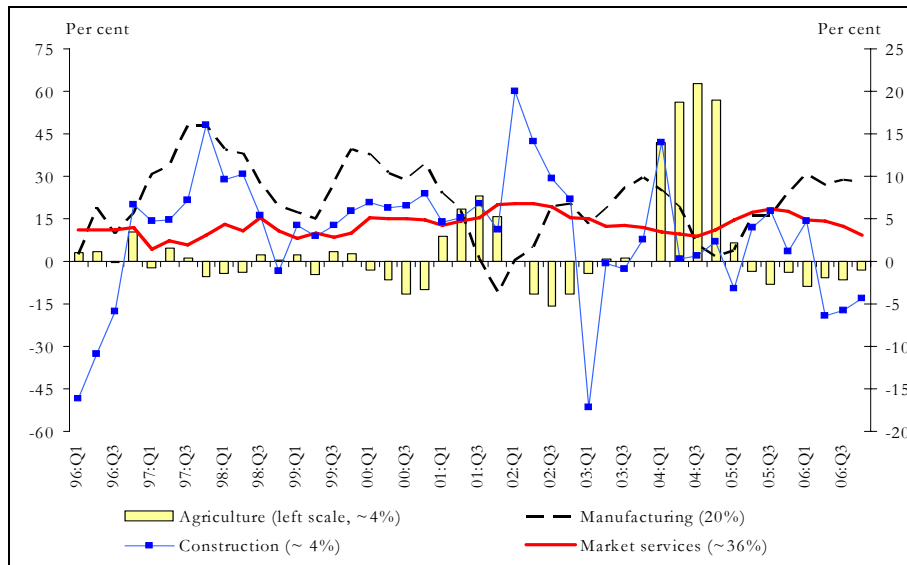


Looking at value added of different sectors of the economy, the most dynamic growth can be observed in the export-oriented manufacturing. On the other hand, *market services* has grown at a rate close to the historical average, showing signs of slower growth toward the end of the year. The value added contribution of *construction* and the *agricultural sector* declined compared to the previous year. The drop in the construction industry is attributed mostly to the reduction in construction investment (real estate and infrastructure), while the decline in the agricultural sector is part of the correction process following the record high growth of production in 2004.

<sup>9</sup> The decline was rather significant. More specifically, the fall was over 5% in public expenditures, almost twice as much as we expected in February.



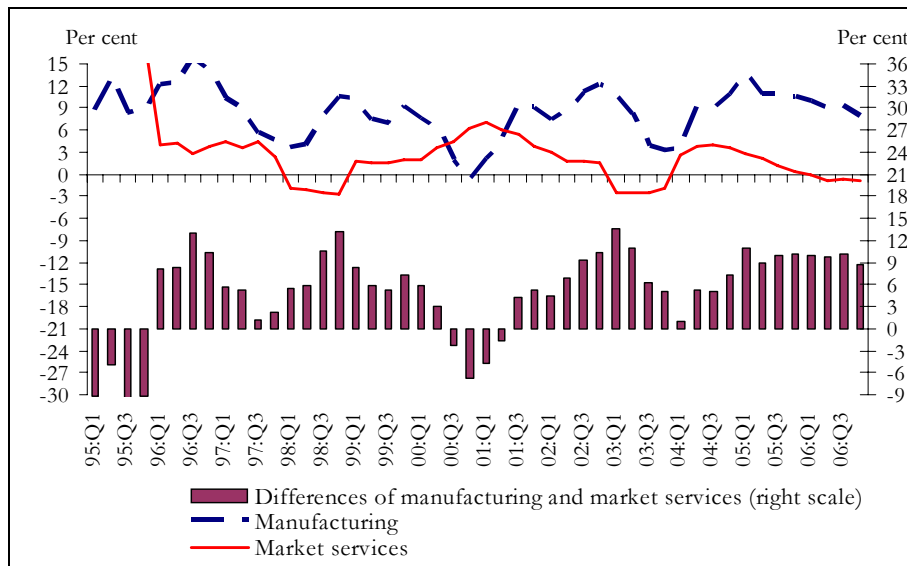
**Chart 2-13 Developments of real value added in major sectors \***



\* Annual volume indices of seasonally adjusted real series. The average GDP shares of the sectors are shown in parantheses.

The dual nature of growth can also be observed in the productivity differences of the tradable and non-tradable sector. The difference of labour productivity between manufacturing and services has grown over the past quarters and was at a high level throughout 2006. The reason for this development is that employment has grown in the services sector, while manufacturing saw a decline followed by a stagnation, and the evolution of value added was just the opposite.

**Chart 2-14 Annual changes of labour productivity in manufacturing and market services \***



\* Annual changes of real value added over employment

## 2. 2. Labour market

Based on the data from the last three to four months, an unexpected turning point is on the verge of materialising in activity and unemployment: although employment is stagnating, as we projected, a decline has started in both activity and unemployment, the latter of which was previously highly volatile. According to seasonally adjusted data, the rate of activity is 55 per cent while unemployment stands at 7.3 per cent.<sup>10</sup>

After the sudden surge in the second half of 2006, wage dynamics showed the first modest signs of losing momentum in February 2007. Payments of bonuses that were brought forward to avoid higher taxes dropped off, and the dynamics of regular wages also appear to be broken in the month of February.<sup>11</sup> In spite of the fact that the high actual data depict an unfavourable picture relative to our projection, if the turning point is confirmed by future data, it appears that the government measures affecting the labour market generated a one-off shock and are unlikely to result in any inflationary pressure over the long run.

### Turning point in activity?

In our forecast released in November we predicted the labour market to loosen further, employment to stabilise with a slight increase in activity, and more volatile unemployment still showing a rising trend. The reasons for this may be found in the changes seen in the demographic composition of the workforce (elderly workers replaced by a younger generation showing signs of higher activity thanks to their higher and better quality education), as well as the implementation of capital-labour substitution that is especially typical for transition countries.

However, the data from the last three to four months point in a different direction: a turning point appears imminent both in the level of activity and employment (unemployment continues to show a high degree of volatility), although relying on quarterly data it appears that only our assessment of activity is robust at the time being. Since November, the number of active workers decreased by approximately 32,000 while the population remained practically the same, and this development is reflected in decreasing unemployment and also in the decline in employment. Accordingly, the labour market – in contrast with our previous expectations – will become tighter as far as supply is concerned,<sup>12</sup> as along with low labour demand, instead of becoming

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<sup>10</sup> Among population aged 15-74.

<sup>11</sup> According to seasonally adjusted data, the annualised monthly growth rate of gross average wages of full-time workers was at 7.9 per cent in February in the private sector, while regular wage dynamics stood at 10.2 per cent.

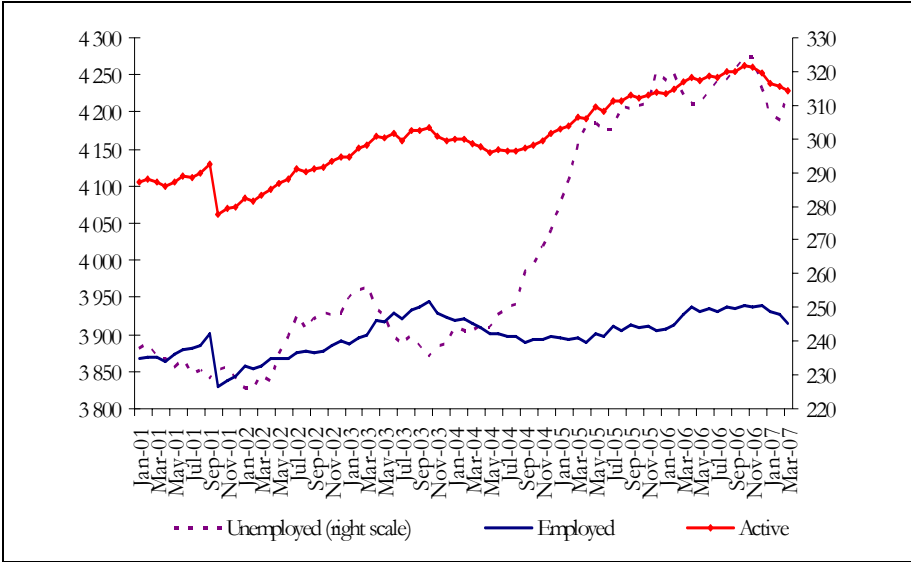
<sup>12</sup> According to experts, the categorisation of employment survey by way of international standards might not be accurate in terms of the categories of economics that concerns us the most. For example, the definition of unemployment includes any worker who “did not work during the reference week, and who

- do not have a job from which they took a temporary leave of absence;
- was actively looking for a job during the period of four weeks prior to the survey;
- can take up employment within two weeks if able to find suitable work (availability).”

(Labour market survey methodology 2006, CSO, Budapest, 2006, page 12) The category of “registered unemployed worker” used by the Bureau of Employment offers a better and more accurate definition of the jobless from an economic perspective, for it covers – unlike the labour market survey – all workers who registered themselves in the local employment centres as job-seekers. On the other hand, from a chronological approach this indicator appears less volatile, for it has been rising continuously since May 2006. Apart from the last few months, it more or less followed the rate of unemployment published by the CSO up until November when they started to drift apart. This could be an indication that the unemployment of recent periods does not necessarily mean a tighter labour market.

unemployed, people in their active years are exiting the labour market. This means that those not employed generate a smaller wage moderating effect on the labour market than previously.<sup>13</sup>

**Chart 2-15 Activity, employment and unemployment (thousand people, seasonally adjusted monthly data)**



We are unable to determine at this time whether this is a real turning point or just a temporary setback that may fit into the noisiness of the processes; the government measures and the expectations of households regarding the economy could, however, offer a feasible explanation. In the latest period, in relation to fiscal adjustment, several factors affected the labour market.

Both employers and employees were hit by the increased taxes and mandatory contributions. These higher burdens could result in lower demand for labour through higher labour costs, in losing faith in finding a job and consequently diminishing willingness on the part of job-seekers to find employment, and in (persistently) declining desire to enter into any work-related relationship due to meagre prospects in terms of real wages. Downsizing in the public sector may have exacerbated these processes, which – together with retirement conditions becoming stricter – may have ended up in the decline of the activity of job losers.

Moreover, the level of employment, apart from showing signs of stagnation of perhaps some decline, shows an extremely heterogeneous picture at the sectoral level. The decline in the whole economy is basically due to the decreasing workforce demand of the public sector, some small private sub-sectors less significant from a conjunctural point of view, small enterprises and the self-employed.

On the other hand, the demand for workers in the market services sector continues to grow, with the sharpest increase seen in January. Responsibility for all these events undoubtedly lies in the following sub-sectors: trade and repair, real estate and commercial services, financial operations and other services. In principle, these are the very sub-sectors that were affected the most by the regulatory measures introduced for the whitening of the economy in terms of workforce (in addition to incomes). This theory is supported by the brief analysis of the Ministry of Finance,

<sup>13</sup> Conceding to the traditional presumption of categorisation, according to which the inactive workers are less attached to the labour market, and that any worker who is capable to generate wage bargaining procedures are considered unemployed, any reduction in the unemployment ratio, meaning the weakening of the bargaining position aiming to cut wages, could have an unfavourable impact on wages in general.

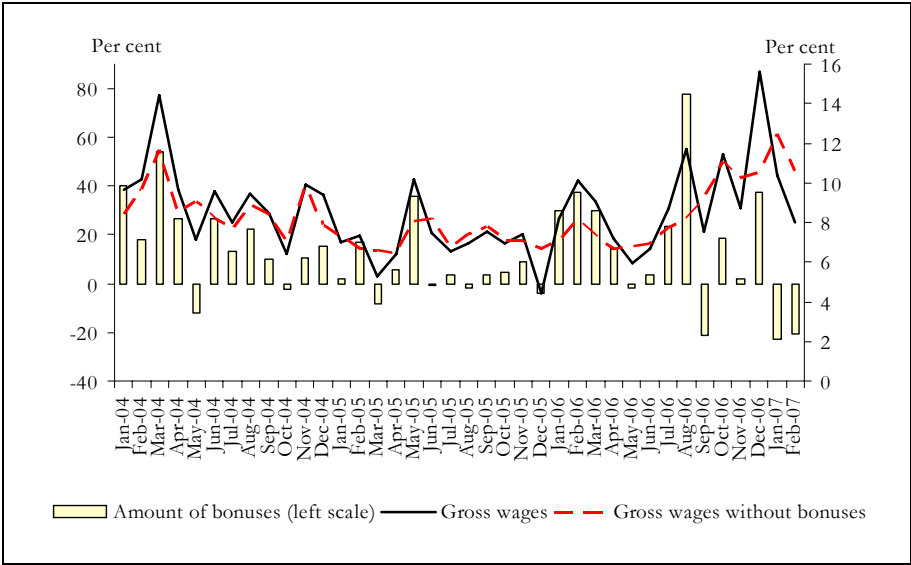
according to which these are the sectors where the reduction in the number of private entrepreneur “made up” for the increase in the number of employees at companies with over 5 people.<sup>14</sup>

In the manufacturing industry, at the same time, the decreasing tendency that was previously blamed on structural changes or on the capital-labour substitution, came to a stop and levelled out by now.<sup>15</sup>

**Wage dynamics accelerate and then lose pace**

In the second half of 2006, the dynamics of payments of premiums and, in the subsequent months, the regular wages indicated increased wage pressure. The labour-related tax and contribution increases, adopted in two stages, (September 2006 and January 2007) altered the seasonal nature of payments of bonuses in the second half of 2006 and during the early stages of this year. As we have mentioned previously, in all likelihood these payments were brought forward from September to July or August in an effort to avoid the payment of extra taxes. The data from January and February regarding payments of bonuses support this concept as well. However, since the November Report we were able to ascertain to some extent that bringing the payments forward and the high bonuses are not the only reason behind the strong dynamics of gross average wages (see box below).

**Chart 2-16 Gross average wages and payments of bonuses in the private sector, and annual growth rates (seasonally unadjusted monthly data)**



<sup>14</sup> See also footnote 18 on this issue.

<sup>15</sup> There is a slight increase in the number of working hours, which indicates an uncertain yet favourable outlook on the part of the relevant operators. (This is due primarily to the machinery industry and its good export output.)

## **Box 2-2 From the gross average wage-index of the CSO to trend wages reflecting the economic cycle**

There are two obstacles to analysing the wage data of previous months: the changed seasonal nature of payments of bonuses, and the “whitening” of certain types of remuneration. We have developed a correction procedure for both of these problems, and we have used the resulting adjusted series, as they are easier to understand for the purposes of economics, in our analysis and forecast.<sup>16</sup>

### **Earlier payment of bonuses**

In our opinion, the corporate sector reacted to the tax increases the government announced last summer by bringing the payment dates of certain bonus payments forward, in an effort to mitigate their tax liabilities. There were two possible shifts. The first one was the payment of some of the traditionally high year-end bonuses to employees in August so as to ease the impact of higher taxes as of September. The other was the presumed payment of some of the bonuses, which are otherwise due in the beginning of 2007, at the end of 2006, with a view to mitigating the impact of taxes going up once again in January. These events also caused substantial changes in the seasonal nature of the wage series, that was considered relatively stable in previous years.

The aforesaid altered seasonal pattern makes the process of seasonal adjustment more difficult and distorts the economic interpretability of the adjusted data. Consequently, we applied the following corrections. From the core data from the period between August 2006 and January 2007 we subtracted the bonuses, then we re-distributed the aggregate amount of six-months bonuses among these same months. In the process of re-distribution we relied on data derived from the historically characteristic seasonal pattern. The seasonal adjustment of the resulting “shuffled” series is no longer a problem, and it can be better interpreted economically.

### **“Whitening” of wages**

According to anecdotal information, there is an increase in wages in recent months prompted, perhaps, by the stricter approach the tax authority has adopted and by other regulatory measures the government has introduced. These wages are now more realistic in terms of actual payments, in other words they are in the process of “whitening”. We used regression methods to quantify whitening of the regular wages. In essence, this means that we pulled wage indexes of the sectors showing extremely high wage dynamics in the second half of 2006 back to the level of other sectors boasting similar but more disciplined wage dynamics. This adjusted wage index is referred to as whitening-filtered index, and the difference between the two indicators is known as the estimated impact of whitening.<sup>17</sup>

In connection with the estimate we have made two assumptions: (1) The impact of whitening started to show after the second half of 2006, and not before; (2) whitening is industry-specific, meaning that certain industries are hardly affected by it, if at all. The first assumption is based on the fact that potential whitening is attributed to the government measures announced and/or introduced during the summer (actions against pretended contracts, tighter control, double contributions on minimum wages). What lies behind the second assumption on the one hand is that the concealing of actual wages is considered common practice – relying on anecdotal information – only in certain industries, primarily in the service and construction sectors.<sup>18</sup> On the other hand, the growth rate of real wages surpassed the growth of productivity during the period in question only in these industries.

<sup>16</sup> After our forecasts were completed we made the necessary re-adjustments, therefore, the figures contained in the main table of the Report for 2007-2009 indicate the original and unadjusted forecasts consistent with the data published by the CSO. As in the forecast we used the adjusted series, it also means that it does not offer a projection for whitening; it contains only the previous impact of whitening as we have estimated it for the period to which the forecast pertains.

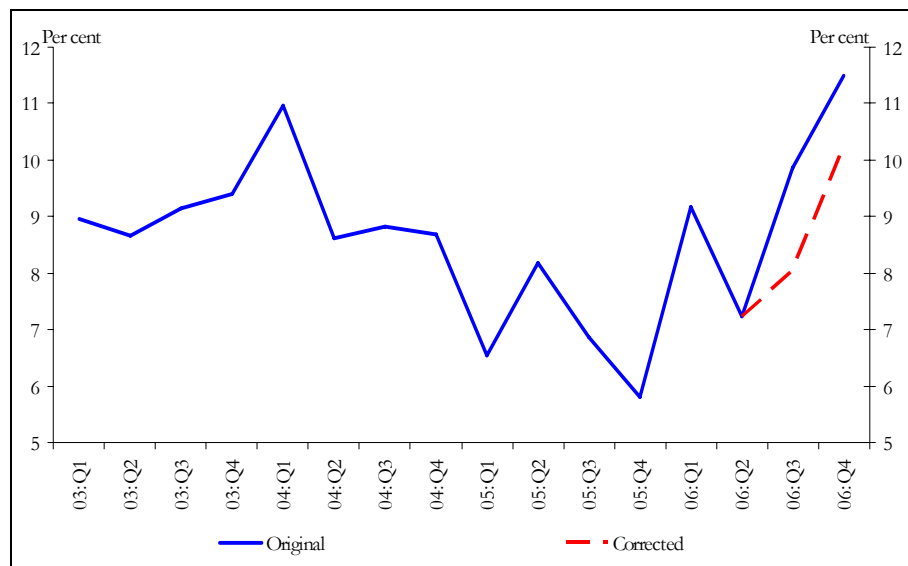
<sup>17</sup> Here we report our analysis of quarterly data. We have also made all of the calculations described below with monthly data, upon which our estimate of whitening did not change significantly.

<sup>18</sup> The Ministry of Finance holds a similar view, adding that in the construction, retail and real estate sectors the reduction in the number of private entrepreneurs in 2006 roughly coincides with the number of new employees hired in these very same sectors, for which whitening could well be the reason. (Refer to “Report based on the EKSZ 104 (7) article concerning the measures adopted for the implementation of the recommendations set forth by the Council of Ministers of Economy and Finance on 10 October 2006” (Jelentés az EKSZ 104(7) cikke alapján a Gazdasági és

We chose the following three industries: the three major industries from the service sector (trade-repair, transportation-warehousing, real estate-commercial services) plus healthcare services; from the manufacturing sector the industries entitled “Miscellaneous and other manufacturing”; plus the construction industry. The service segments selected comprise 82 per cent of the entire sector in terms of employment, while all of the sub-sectors selected comprise 48 per cent within the private sector in terms of employment.

The difference between the original wage series and the resulting series of adjusted regular wages comprises the estimate for the degree of whitening. We employed the same level of whitening in the complete gross average earnings-series, with bonuses included, and came to the conclusion that the original 9.5 per cent whole wage increase in 2006 in the annual average dropped to 8.8 per cent following the adjustment.<sup>19</sup>

**Chart 2-17 Original and whitening-filtered gross average earnings**  
Annual growth rates of seasonally adjusted series

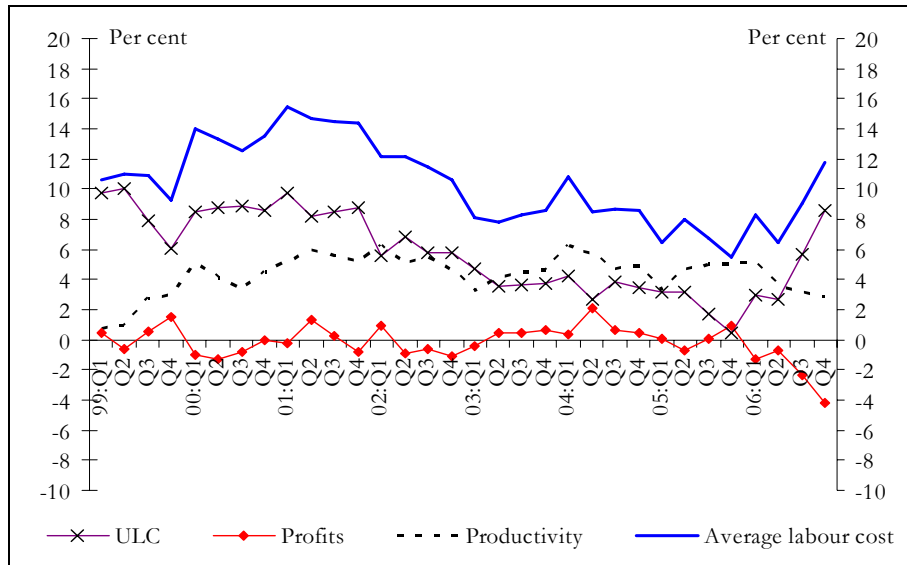


Apart from higher taxes, regulatory measures were introduced for stricter rules in connection with the control of tax payments, which also had the capacity to generate a major impact on the labour market, particularly on regular wages. These measures were designed to combat pretended contracts, and for the whitening of wages and employment in general, becoming relevant as of the second half of 2006. The impacts of these measures on wage dynamics are also addressed in the box above. However, according to our estimates this effect, namely whitening, cannot be held fully accountable for the strong dynamics of regular wages, as it also remains high after filtering out the impacts of whitening (see chart in box).

Pénzügyminiszterek Tanácsa által 2006. október 10-én kiadott ajánlás megvalósítása érdekében hozott intézkedésekről), *Ministry of Finance*, April 2007.)

<sup>19</sup> As suggested by the Monetary Council, we have also carried out an adjustment using a larger set of “whitening” industries. Here – besides all the industries previously mentioned – we included manufacturing of non-metallic mineral products; manufacturing of wood and paper, publishing and printing; hotels and restaurants. These provide an additional 7% of private sector employment. The results were not particularly sensitive with respect to the change: the adjusted yearly average growth rate did not change significantly, only the fourth quarter year-on-year index decreased by 0.1 percentage point. We did not detect whitening in the case of the wood and paper, publishing and printing industry.

**Chart 2-18 Labour costs and productivity in the private sector, annual growth rates**  
 (seasonally adjusted quarterly data, including the impacts of whitening and forward payments of bonuses)

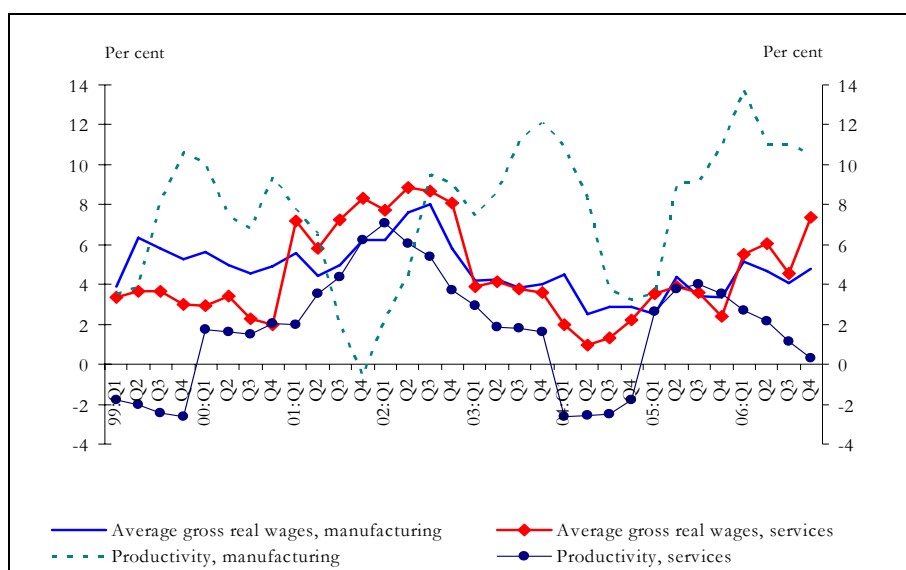


The chart above also illustrates this phenomenon, which is clearly showing up in the relation between wage dynamics (with the impacts of wage pressure, forward payments and whitening filtered out) and productivity which has remained well lower than wage dynamics in recent years. In this respect, there is a substantial deviation between the manufacturing industry and the market services sector. In spite of the fact that in manufacturing productivity easily surpasses the unit labour costs, which are still negative, but which show signs of a slight increase in recent months, the cost of labour has been rising rapidly among services, which appear to dominate the dynamics of the private sector, and this gradually degrades profitability in conjunction with decreasing productivity. In turn, this has the capacity to drive prices up in the future, and thereby causing inflation pressure.<sup>20</sup> The situation is better in the manufacturing industry, however, it too has some negative elements, notably, if wages fail to follow the downward trend of productivity – due, for example, to the impact of *skill mismatch* resulting in weak supply on the labour market – some tightness may occur in this sector as well, resulting in inflationary risks.

<sup>20</sup> Downsizing could be an alternative solution for deteriorating profitability, of which we have seen no signs yet in institutional statistics, however, in the labour market survey the shift toward workforce reduction could be an indication of such.

**Chart 2-19 Average gross real wages and productivity in the manufacturing industry and in the market services sector, annual growth rates**

(seasonally adjusted quarterly data, series adjusted with the impacts of whitening and forward payments of bonuses, – see box)



In the November *Report* we outlined two scenarios. We are still not certain as to which one is more applicable based on the information available at this time. According to one scenario, some economic agents will handle the tax measures as a simple shock, and if the workers have bargaining power at wage agreements (and the tightening of the labour market, as explained above, points in this direction), they will adapt in 2006 to a somewhat higher nominal path, by way of bonuses offered as a welfare compensation. Although this may be incorporated into regular wages during 2007 – as a one-off change –, such one-off adaptation will merely result in temporary wage pressure over the short term. On the other hand, in the second scenario, agents increase their inflation expectations, which could be incorporated over the long run into the growth rate of regular wages and cause inflation pressure. Nevertheless, we are still uncertain as to which of these two scenarios apply, however, based on the information we have received since November we feel that the first – and more favourable – version is more likely. Although, the actual data on earnings is higher than we predicted, there is no sign in the consumer price index for the first quarter of 2007 of any higher expectations, whereas the data from February concerning wages indicate slower wage dynamics, and a possible turning point. Another important indicator is found in the survey of the Hay Group for wage increases during 2007, where the companies surveyed declared that they will offer some compensation to their employees in connection with the higher costs of living (see box text below).

**Box 2-3 A Survey on corporate wage policies**

The Hay Group, a consulting firm, regularly conducts surveys among large corporations concerning the driving forces in their wage policies. The purpose of the survey is to provide information to the participating companies concerning developments in their market environment (of course, only at the aggregate level: none of the companies have access to information specific to a particular company). For this very reason it is vital for the consultant to ensure that the information supplied is authentic and reliable; any company supplying false information could even be excluded from further exchange of information.

Firms participating in the sample are typically large, multinational companies. The sectoral breakdown essentially covers the whole Hungarian private sector. During the 2000-2007 period under review, 60 to



100 companies replied to the questions on average. The average participant has a workforce of 1,000-1,200 persons and a net annual revenue of HUF 30-80 billion. Consequently, the model can not be considered representative as pertaining to the Hungarian economy on the whole, it is able to provide a reliable view of an important segment nonetheless.

In this brief study we would like to convey some conclusions of the survey as regards wage policies. The Hay Group asks the participating companies on a yearly basis about their estimated and planned schedule of wage increases, and about the ratio these wages represent in connection with work performance, or with any compensation provided in connection with the costs of living and any surge in inflation.

The chart below indicates the annual growth rate in the gross average earnings in the private sector as published by the CSO, and the annual average wage increases in the corporations participating in the Hay Group survey,<sup>21</sup> including the two major components, notably the performance factor and the inflation/costs of living factor. The years covered do not coincide with the calendar years, for the consultant firm commonly approaches the participating companies during the middle of the year. The data pertaining to 2007 was gathered this February, concerned with the wage increases scheduled and/or actually implemented between May 2006 and April 2007. It is important to point out that, according to the answers supplied, the majority of companies decides on wages on maximum two occasions each year, one of which almost always takes place in January. Accordingly, the data for 2007 already contains the most important wage increase for this year among the companies interviewed.

We wish to emphasise four important facts about the chart: (1) The wage dynamics shown in the Hay Group survey are systematically lower what is indicated in the CSO data. (2) The difference, however, is constant over time, meaning that the results of the survey clearly reflect the turning points seen in the official statistics. (3) As for the various components, the inflation/costs of living factor leads the way, as it provides the variability of the series. (4) The wage dynamics returning to a growing path in 2007 is the result of the inflation component.

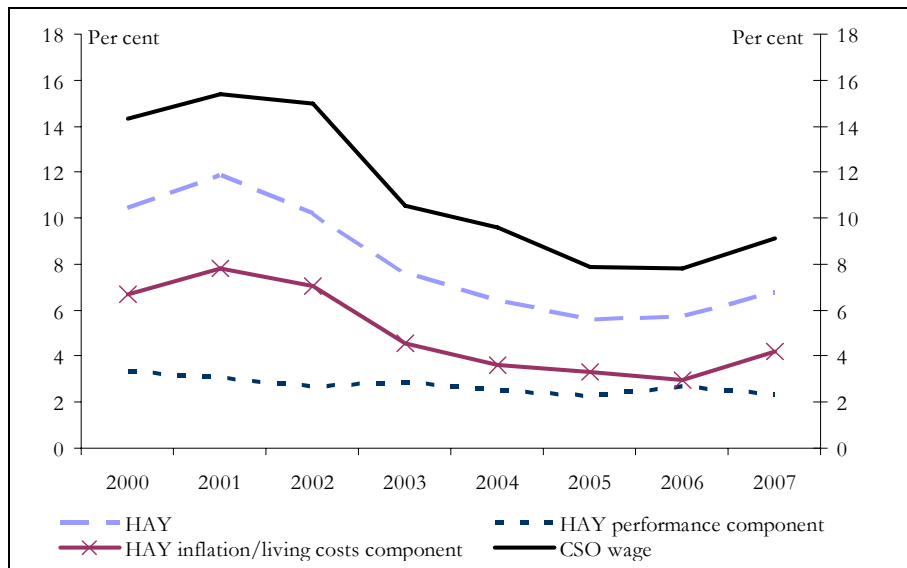
All this may be an indication that the reason behind the higher wage dynamics seen in recent months is either the one-off compensation for the higher costs of living or the rise in inflation expectations. For this reason, among others, in the baseline path of our forecast published in the *Report* we assumed that the rise in wage dynamics seen in the CSO data is a mainly real (meaning that “whitening” is not the only cause behind it<sup>22</sup>), but rather only one-off compensation from the firms for the higher costs of living for their employees. However, it cannot be ruled out that the rise in inflation expectations also have a role, therefore, in the risk distribution of our fan chart higher wage dynamics plays an important role.

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<sup>21</sup> The questionnaire inquires about the increases in regular wages and fixed bonuses.

<sup>22</sup> See Box 2-2 pertaining to our assessment of whitening.

**Chart 2-20 Wage surveys, Hay Group and CSO**  
(annual average growth rates)

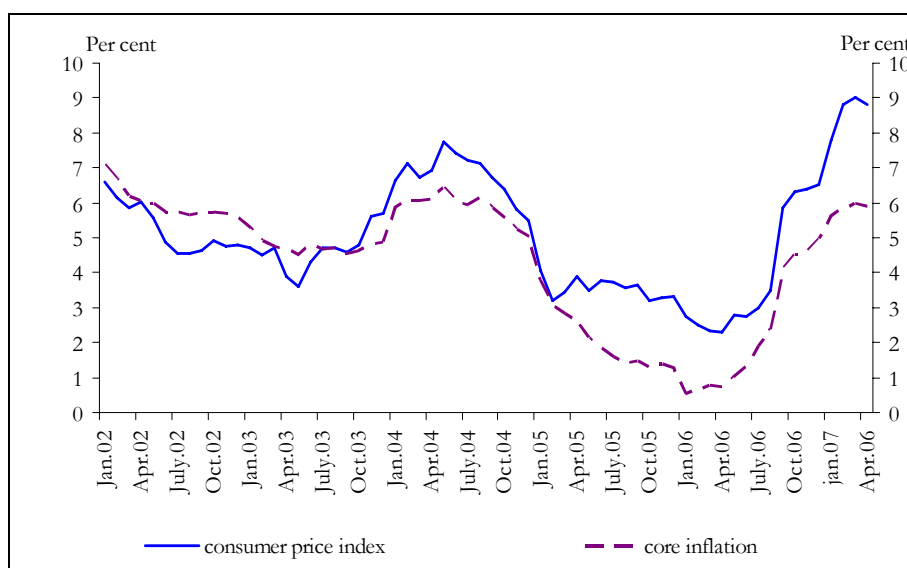


Note: The years covered do not coincide with the calendar years, as they start in the following months: 2000: from the previous September, 2001-2003: from the previous July, 2004-2007: from the previous May. CSO data is available up to February of 2007.

### 2. 3. Inflation trends

In the first quarter of 2007, the consumer price index stood at 8.5 per cent, while core inflation was at 5.8 per cent following the adjustment for the visitation fee, constituting a rise 2.2 and 1.1 percentage points, respectively, compared to the previous quarter. The high index of the first quarter is attributed mainly to the substantial increase of regulated prices at the end of last summer and then again this year, and the impact of higher VAT rates spilling over from September 2006.

**Chart 2-21 Consumer price index and core inflation**  
(yearly changes)



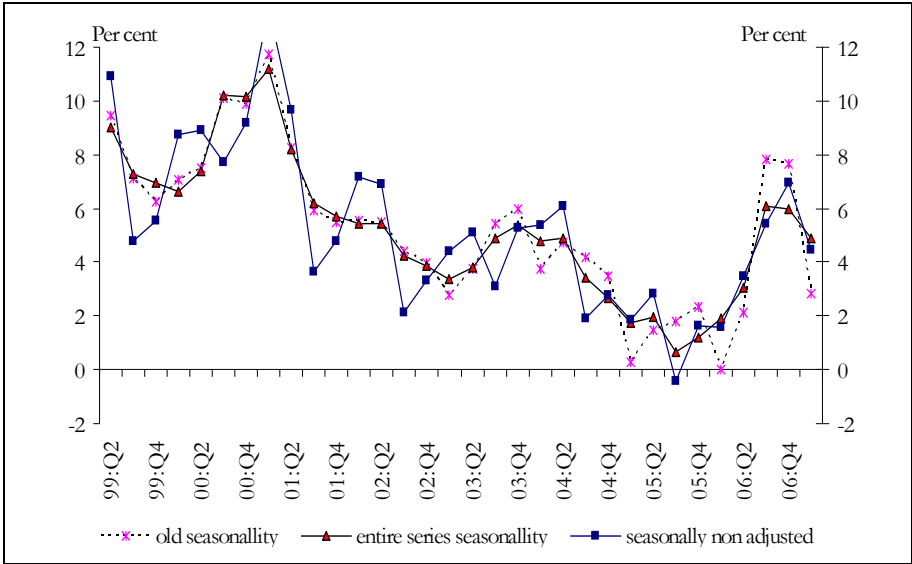
As far as core inflation is concerned, the annualised quarterly index shows a decline compared to the second half of 2006, however, in terms of the overall level it is higher than during the period

between 2005 and the middle of 2006.<sup>23</sup> At the same time, trend inflation in the first quarter is surrounded by a great deal of uncertainty. On the whole, we feel that the persistent component of inflation at this time was between 3 to 5 per cent, in all likelihood closer to the higher limit (see box below).

**Box 2-4 Where did trend inflation stand during the first quarter?**

With a view to preparing a trend inflation series, the MNB compiles a core inflation series to filter out the impacts of tax rate changes.<sup>24</sup> The quarterly (seasonally unadjusted, annualised) index produced in this fashion stood at 4.4 per cent in the first quarter of 2007. Additionally, the series has to be seasonally adjusted with a view to determining trend inflation. However, the seasonal effect of the series have changed in recent years, and this has a substantial impact on the estimated value of trend inflation. Changes in the seasonal effect is not limited to Hungary, as throughout the EU and in some of the neighbouring countries, price cuts at the beginning of the year and also during the summer are becoming more and more popular.

**Chart 2-22 Core inflation adjustments**



The chart above calls attention to the speed of changes in the seasonal effect and to the uncertainty in the projection of trend inflation on account of changes in the seasonal effect. If we were to calculate the seasonal effect based on the entire time spectrum (1999 Q1 – 2007 Q1), the estimated value of trend inflation comes to 4.9 per cent, meaning that it is higher than the original unadjusted index. This comes as a surprise as Hungarian series traditionally show greater price increases at the beginning of each year, in other words, we were expecting the seasonally adjusted index at least not to be higher than the original value.

If we were to determine the seasonal effect of the series relying on the periods before 2003 only (in other words, we were to presume the history of massive price hikes in January to continue), the estimated value of trend inflation for the first quarter of 2007 is 2.8 per cent. However, such adjustment is almost certain to underestimate trend inflation as the changes in seasonal effect appear well substantiated in light of the

<sup>23</sup> The April consumer price index shows further rapid decrease relatively to the past quarter. Because the moderation was influenced by some particular items, we consider the tendency temporary, and thus our views on trend inflation have remained unchanged.

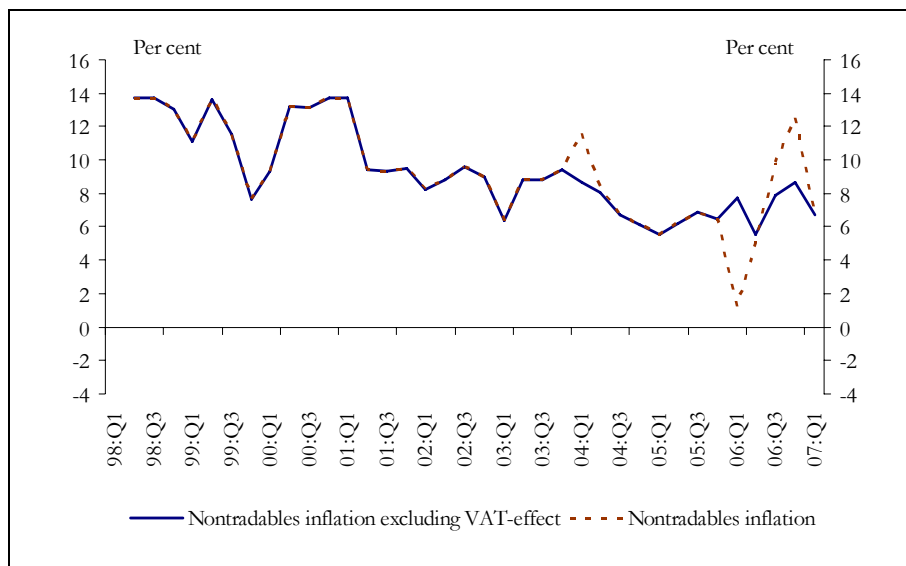
<sup>24</sup> The core inflation index does not contain unprocessed foods from the CPI items, nor products with regulated prices. The index calculated by the MNB differs from the core inflation indicator of the CSO, due to the filtering of impacts induced by tax changes, and also to the fact that the MNB (on account of access to information or the lack of it) remains behind the CSO in terms of accuracy in connection with products with regulated prices.

partial aggregates. Furthermore, the chart above clearly illustrates that if the series is adjusted in this fashion, it contained residual negative seasonal effects in the first quarter of recent years, in other words it tends to underestimate trend inflation in the first quarters. On account of the uncertainty factor in the projections, trend inflation cannot be accurately determined for the first quarter of 2007, as it was somewhere between 3 to 5 per cent, potentially closer to the upper boundary of this range.

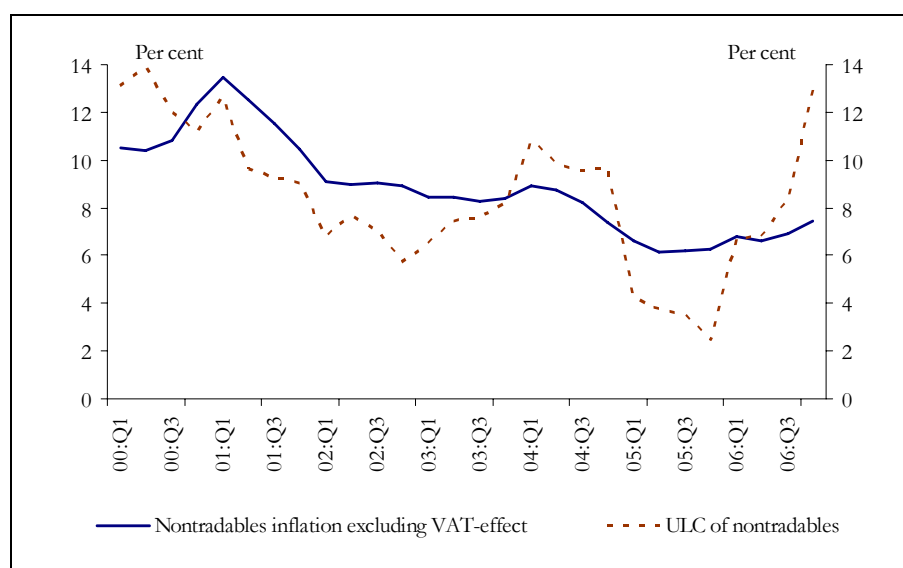
### Unchanged trend in market services

In the case of market services the trend remained unchanged. The index showing annualised monthly changes, with the effect of VAT rate changes and visitation fee filtered out, remained in the 6–8 per cent range. Presumably, this trend is attributed to the massive increase in wage costs and to stagnating productivity, which, on the other hand, could emerge in the future in the form of price pressure on the cost side.

**Chart 2-23 Inflation in market services**  
(annualised quarterly changes)



**Chart 2-24 Inflation in market services and unit labour costs**  
(yearly changes)



### Contradicting trends among the segments of core inflation involved in international trade

As for other segments of core inflation, analysis is rendered difficult by the fact that there are no excessive figures at the quarterly level, the path appears to be just the opposite of our projections at the monthly level. Furthermore, while some items turned out as expected, the price development of other products significantly differ from path explained by previous trends. Following the January figures, which were particularly favourable, the prices of industrial products and processed foods were climbing rapidly and incessantly, whereas in the partial segments of products in foreign trade the trend is different.

As for processed foods, we have identified additional price increases during the quarter, that are deemed consistent with regional tendencies. Presumably, the price increase in unprocessed foods also play a role in the continued climb of the index of processed foods.

While deflation continued among durable goods, the prices of non-durable goods kept on rising during the quarter. The result of these two impacts was a moderate price increase among industrial products. As far as durable goods are concerned, the stronger forint exchange rate could be the reason behind deflation, while the higher prices of non-durables are attributed to individual items among others.<sup>25</sup> As the prices remain higher even with these individual items isolated, this product category appears to be immune for the time being from the impact of the higher forint exchange rate spilling over.

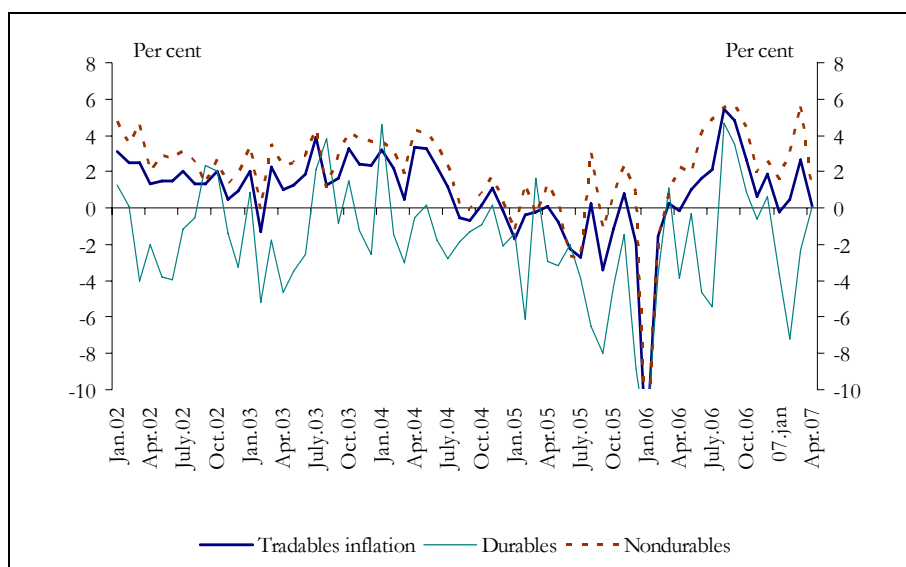
In our view, the most realistic explanation for this phenomenon can be the following. During the increase of VAT in September of 2006 market participants decided to bring forward part of their planned price increases, and – contrary to the former seasonality – implemented the remaining part in the second half of 2007 Q2. The sharp increases seen in September and October appear to support this argument, as well as the lower indices until February 2007.<sup>26</sup> The weak side of this argument, however, is that the findings of the study conducted to assess the impacts of the 2004 VAT increase do not support the hypothesis of price increases being brought forward. We do

<sup>25</sup> The non-durable goods with the highest price increases are: clothing items, coffee, home repair goods and soft drinks.

<sup>26</sup> Among other things, this could also be reason for the changes in the seasonal effect of core inflation, that is addressed in detail in the box below.

not have sufficient information to decide whether this process is temporary or long lasting, and therefore we will have to wait for information in the months ahead.<sup>27</sup>

**Chart 2-25 Inflation of industrial goods**  
(annualised change for one month)



### Items outside of core inflation point towards higher inflation

During the quarter substantial increases were implemented in regulated prices. While in line with government policy, price increases in imported energy weakly reflected in household prices in the past, energy prices now rose considerably due to the reduction of subsidies. The price of district heating went up 30 per cent, the price of gas by 22.5 per cent and electricity by 5.3 per cent. Due to a change in the subsidy system, prices of pharmaceutical products rose in January and February, approximately by 20 per cent on aggregate. However, let us point out that in March the price of natural gas and central heating showed some decline, due to the subsidies awarded by that time. The price index of motor fuels declined during the quarter on account of low oil prices. Prices of market energy products did not change, in other words, they did not keep up with the changes in regulated prices, presumably because in this case the rate of subsidy was changed, while the price of the product did not.

As for unprocessed foods we have identified two contrasting impacts. On the one hand, the price of pork dropped considerably compared to the previous quarter, while on the other hand the price of potatoes remained extremely high, which is consistent with regional tendencies.

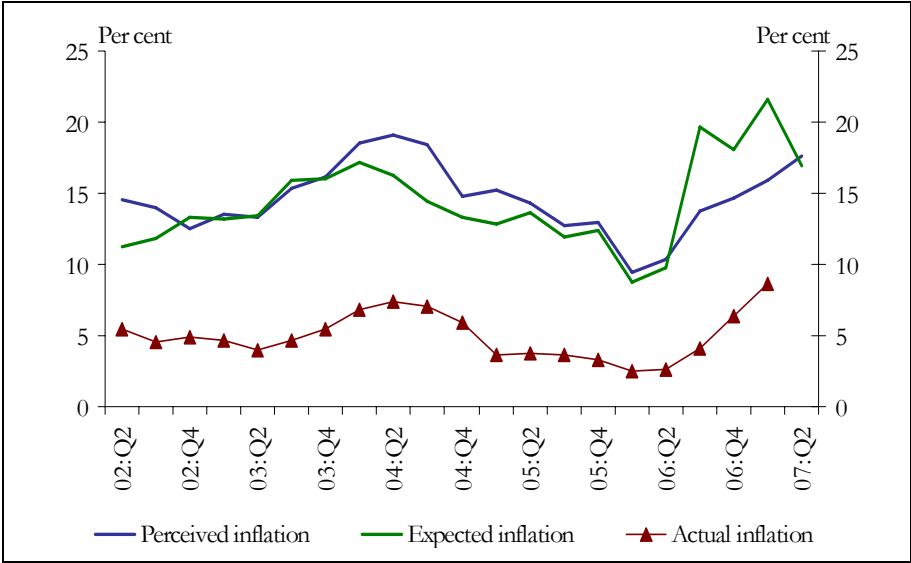
### Lower inflation expectations on the part of households

In terms of inflation expectations we see some positive changes. The index showing expectations for 12 months ahead is now declining after reaching an all-time high during the last quarter, although it is still considered extremely high. Thus, the risk of an increase in forward-looking inflation expectations still could not be ruled out over the forecast horizon. Inflation measured

<sup>27</sup> There could be other hypotheses in connection with the prices of non-durable goods. One is that the prices of non-durables went up throughout the region in general principle (European imported inflation trends etc.). However, we did not find such correlation between Hungarian and regional non-durable goods.

over the last 12 months is still high, presumably due for the most part to the government measures implemented recently, and to the significant increases in regulated prices.

**Chart 2-26 Household inflation expectations**  
(for the next 12 months)



### 3. Outlook for inflation and the real economy

According to the main scenario of our forecast, the impacts of the demand and cost shocks resulting from the fiscal measures will eventually fade, and by 2008 and 2009, instead of one-off impacts, gradually the supply and demand conditions in the goods and the labour markets will be the driving force behind inflation and economic growth. Based on the most recent data our macroeconomic projection has cleared up somewhat: the duality resulting from the difference between internal and external demand continues to characterise economic activity over the short run, while there are signs in the labour market indicating that the faster wage growth may reflect a one-off compensation for the decline in real wages. On the other hand, uncertainty relating to inflation expectations continues to prevail.

#### Box 3-1 Assumptions underlying the central projection

Consistent with the practice followed over a longer period, the staff of the MNB have produced a conditional macroeconomic projection. Accordingly, monthly averages for April have been used for the following variables: the EUR/HUF and EUR/USD exchange rates; the MNB's base rate and long-term interest rates; and April's average futures price for Brent crude oil. Interest expenses, estimated on the basis of the market yield curve, have been used in the calculation of the budget deficit. The 2007 Budget Act, the convergence programme and official government announcements have been used to derive an estimate for the effect of government measures. In addition to these, another assumption for the central projection has been that inflation expectations are anchored around the 3 per cent inflation target. Macroeconomic information received up to the end of the day on 11 May 2007 has been incorporated in the forecast.

**Table 3-1 Changes to the assumptions relative to February\***

	2007. február		Aktuális		
	2007	2008	2007	2008	2009
Jegybanki alapkamat (%)**	8,00	8,00	8,00	8,00	8,00
Forint/euro árfolyam	253,8	253,8	247,6	246,0	246,0
Dollár/euro árfolyam (cent)	130,0	130,0	134,0	135,0	135,0
Brent olajár (dollár/hordó)	57,2	60,7	65,8	70,3	69,6
Brent olajár (forint/hordó)	11 157	11 846	12 132	12 797	12 685

\* Annual averages, based on the monthly average exchange rate in October 2006 and the crude oil futures price.

\*\* End-of-year values.

Our main scenario for 2007 and 2008 did not change significantly as far as the outlook for inflation and economic growth is concerned, and this is our first forecast for 2009. The output gap remains negative over the entire forecast horizon, while inflation will be on a downward path from the second quarter, after reaching its peak during the first quarter of 2007, and is expected to approach the mid-term inflation target at the five to eight quarters monetary policy horizon. The main scenario of our forecast is built on the assumption of anchored inflation expectations, while the impact of a possible co-ordination problem appears in distribution of risks.

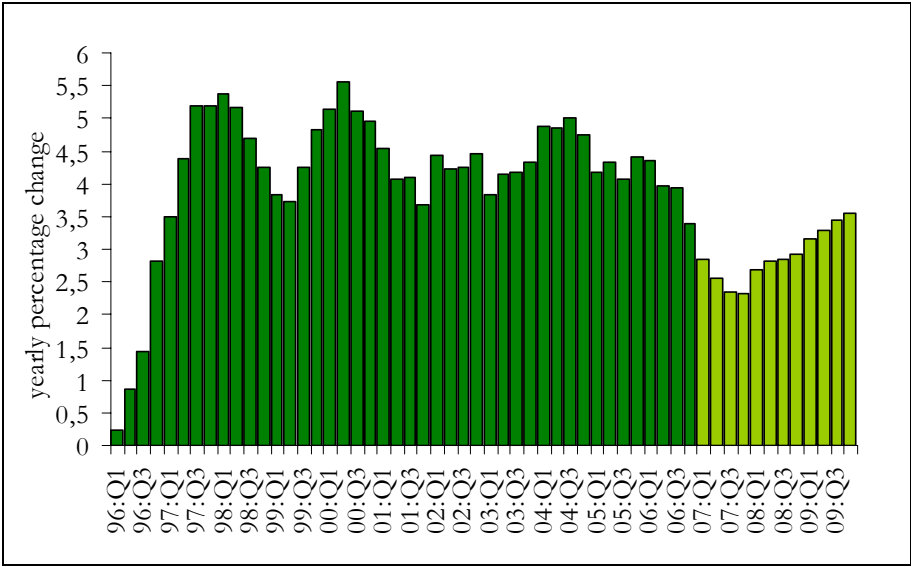
#### Goods market: negative output gap over the forecast horizon

The growth rate of Hungarian economy will remain below potential over our entire forecast horizon. After the low in 2007, the growth rate could accelerate in 2008 and 2009 to approach its potential, but the output gap is projected to remain negative throughout. The internal and external components of growth are expected to rebalance as the impacts of fiscal adjustment



measures on internal demand continue to diminish; the role of net export gradually fades and, simultaneously, the importance of consumption expenditure and investments grows.

**Chart 3-1 quarterly growth rate of GDP**



**External economic activity is expected to remain strong**

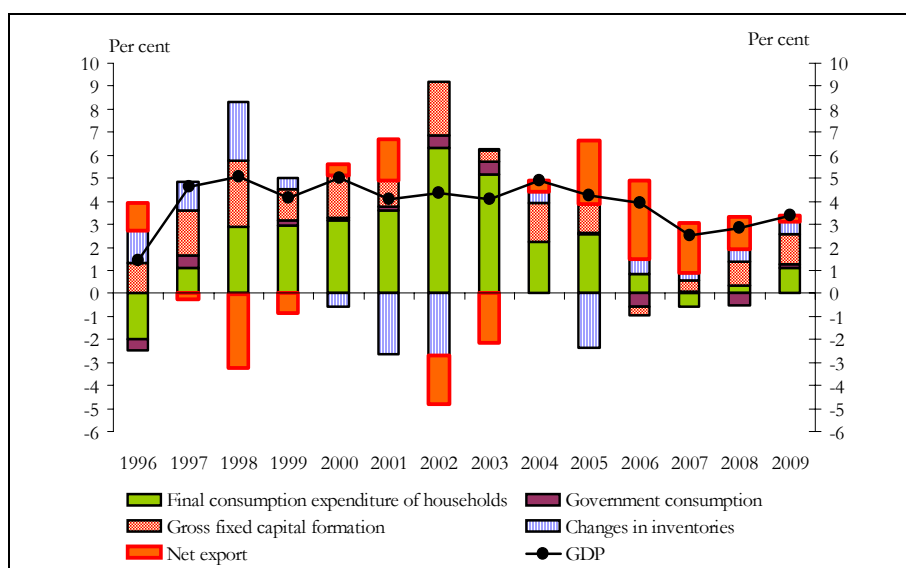
In respect of exports we expect dynamic growth on account of strong external economic activity, as the major confidence indicators (IFO, EABCI) suggest robust growth in external demand. Foreign trade data from the beginning of 2007 show extraordinary growth in exports and a sharp increase in import growth, which is somewhat contradictory to our projection for weaker internal demand, yet it is consistent with our view relating to the turning point of investment dynamics. There is a risk factor, however, insofar as the relative decline of market share, calculated at current prices compared to competitors in the region, suggests problems in terms of price competitiveness.<sup>28</sup>

In consequence of the above, we expect to see positive growth contribution on the net export side over the entire forecast horizon, which will, however, diminish over time in line with the increasing growth of internal demand. While in 2007 net exports are expected to be the driving force behind economic growth, by 2009 the contribution of this factor will be close to neutral.<sup>29</sup>

<sup>28</sup> See in details our box in chapter 2.1

<sup>29</sup> As we already indicated in the previous chapter, there is a great deal of methodological uncertainty in connection with imports and with its contribution to growth.

Chart 3-2 GDP growth rate and contribution of the various factors\*



\*Due to the methodological uncertainties surrounding import statistics, the growth contribution charts - and especially the contribution of net exports- are to be handled with care.

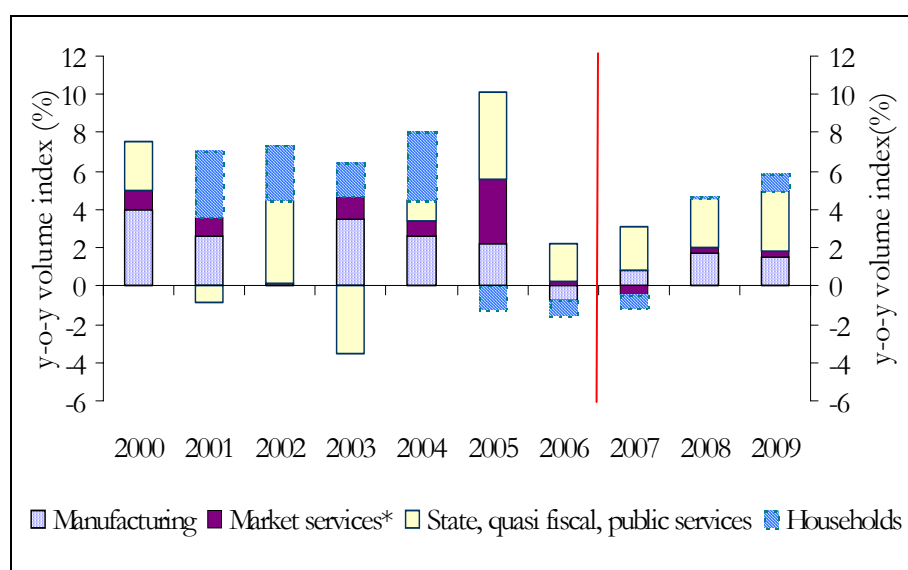
### A turning point in investments

After the decline in the volume of investments during the last three quarters of 2006, we expect a trend reversal in the first half of 2007, which may be followed over the next two years by moderate, but accelerating growth. High capacity utilisation also suggests a turning point, as well as foreign trade volume, reflected by strong machinery imports in early 2007, which are principally considered to be for investment purposes and a rebound in production in the construction industry. However, the expansion in investment dynamics may be somewhat moderate compared to previous upturns in business activity. As indicated by the data of previous years, the response of exporting companies to external economic activity in terms of new investments is weaker than in previous periods.<sup>30</sup>

The number of new building permits suggests that the real estate investments of households are expected to increase after the second half of 2008. As the utilisation of EU funds is expected to grow, it supports our projection for a moderate, but positive expansion in investment dynamics at the national level.

<sup>30</sup> As discussed in previous analyses (see, for example, Analysis of convergence, December 2006), as far as corporate investments are concerned, structural problems may occur. Consequently, there is good chance to presume that investments will be less sensitive to favourable external economic activity.

**Chart 3-3 Contribution of the various sectors to the volume index of gross fixed capital formation**



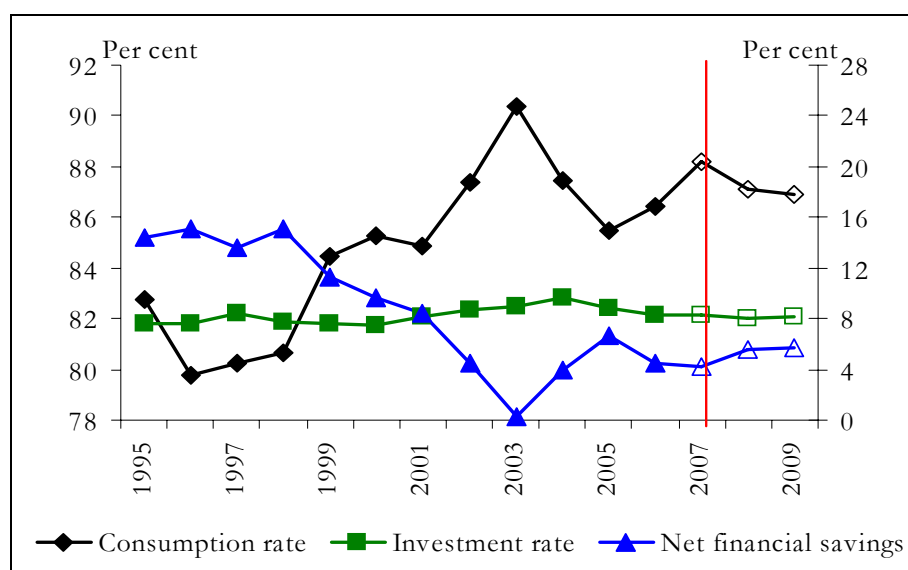
\* Not including the transportation, telecommunications and energy sectors, which are represented in the state sector.

2000-2006: MNB estimate, as of 2007: MNB forecast.

### **Slowdown in the decline of incomes, consumption smoothing**

The demand-reducing impact of the fiscal adjustment measures will be the strongest in 2007, resulting in a decline of household incomes. Households will partially adapt to this through their consumption expenses and by smoothing their consumption over time. The consumption expenditures of households is expected to fall back at a rate lower than the reduction in disposable income, which will be covered from their net financial assets, either through a decline in their financial savings or from growing indebtedness. As suggested by actual data on consumption and income, and also by forecasts, consumption smoothing already started during the second half of 2006: during the second half of the year households did not cut back on consumption expenditures due to their loss of real income in response to the government measures. We expect that during the 2007–2009 period household consumption will decline initially, and then it will regain momentum and even surpass the level we have indicated in our previous forecasts. This can be explained by higher wages and transfers of subsidies projected as a result of compensation by employers for the decline in real wages due to inflation.

**Chart 3-4 Consumption, investment rates and financial savings of households**  
(as a percentage of personal disposable income)



\* After 2005 the above rates are based on MNB estimates, as the detailed assessment of the CSO on household income is not yet available.

### Labour market: temporary surge in wages, lower labour demand and activity

#### *Higher wage path under the assumption of anchored expectations*

Our wage path projection adopted under the presumption of anchored inflation expectations is built on the principle that the high wage dynamics conveyed in the actual data indicate temporary, but realistic growth for the most part (see the box on the subject of whitening in the previous Chapter). As regards the private sector, higher dynamics result in loss of profits, which the companies affected are expected to counter through lower future wage dynamics and through the reduction of employment. In our main scenario – on account of lower internal demand – we presume that the price pressure induced by the loss of profit will only be moderate. In consequence of the above, the dynamics reflected in the nominal wage path could be consistent with the mid-term inflation target by the end of the forecast horizon, however, at the same time, it represents an upward risk factor if inflation expectations are not anchored as we have predicted.

In the private sector – relying on the latest data available – we expect to see the wage path rise in the early stages of the forecast horizon, however, it is projected to embark on a downward path from the second half of 2007. We have examined three possibilities – including two extreme scenarios – which could explain the higher wage dynamics reflected in the actual data, which are of key importance from the perspective of the forecast as well.

According to one of the extreme scenarios, the sole reason behind the rising trend of wages during the last half-year period is the whitening of the labour market. Accordingly, the exceptional wage dynamics seen in recent months is reduced to a statistical phenomena, without any significant wage pressure to speak of. The other extreme scenario views the surge in wages as a lasting process, and includes less anchored inflation expectations as the reason.

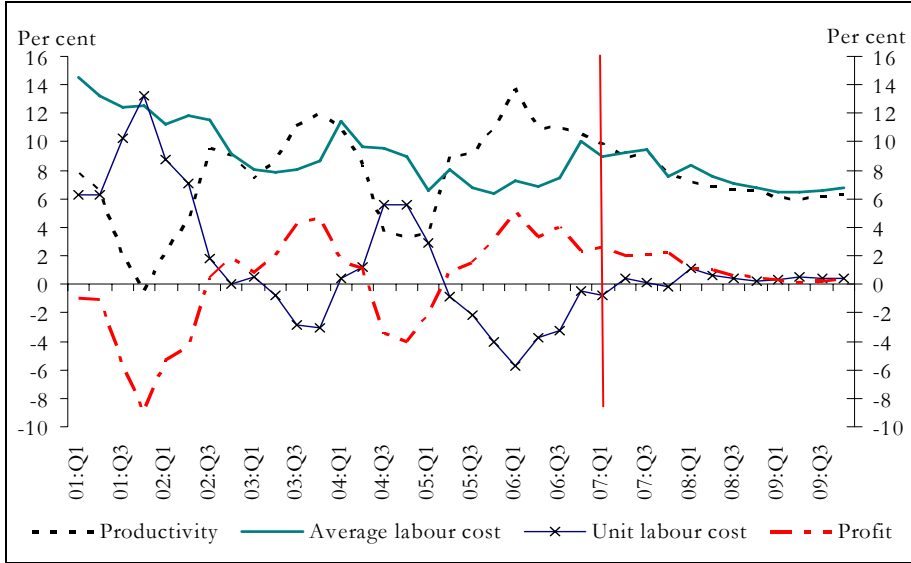
We did not include either of the above two extreme scenarios in the main scenario. As we have shown in Chapter 2.2, the process of whitening in the economy cannot be the reason for the recent surge in wages in itself. As far as the anchoring of inflation expectations is concerned, the high wage dynamics and the relatively moderate price dynamics seen in the market services sector

suggest, even though the data received thus far still appear to be insufficient, any problem in anchoring of inflation expectations is less likely, although it remains a possible option nonetheless. In line with the above, surveys continue to support high inflation expectations, although latest data refers to some correction. We have shown the uncertainty relating to expectations in the distribution of risks contained in the forecast.

In the main scenario of wage projection we worked on the assumption that the initially high growth rate of wages is realistic, but only temporary, because it reflects compensation to workers for the decline in real wages. This latter scenario is supported by several factors. The survey of the Hay Group on large companies (see box in the previous Chapter) suggests that employers will offer some compensation to their employees in connection with the higher costs of living, however, this concept is obscured by the fact that according to the results of the survey, the possibility of wage increases consistent with higher inflation expectations cannot be ruled out. Furthermore, the apparent break in the rise of labour market activity and the simultaneous stagnation in the number of jobs benefit the bargaining position of employees at the macro level.

In harmony with the above, after the high growth rate seen in 2007, according to the main scenario of our forecast wage dynamics in the private sector will gradually return to a lower level between 6 to 7 per cent by 2009. On the other hand, it is important to point out that the unit labour cost path is considerably different over the entire forecast horizon in the manufacturing industry and in the market services sector, despite the similar wage dynamics. According to the main scenario of our forecast, productivity growth will be consistent with the rise in wages in the manufacturing industry, which will result in moderate price-setting along a favourable profit path.

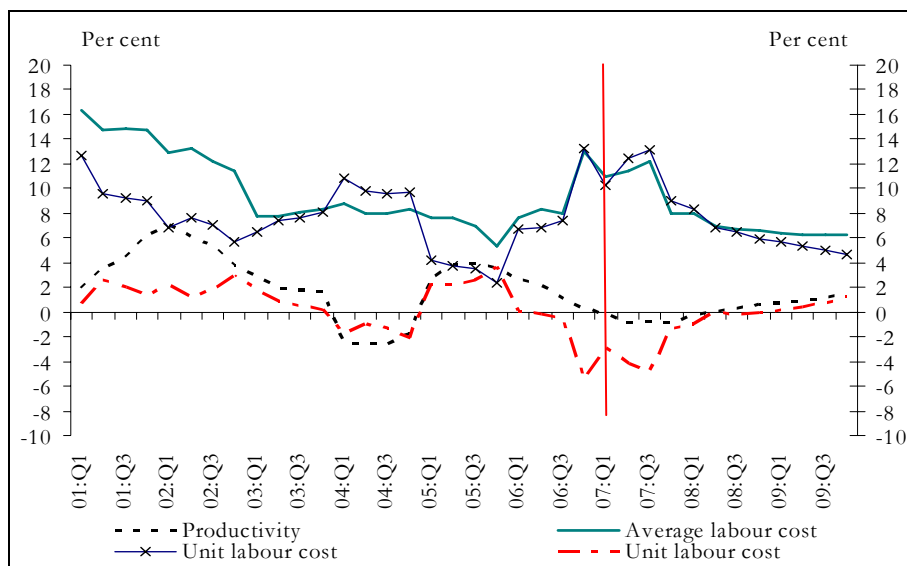
**Chart 3-5 Components of unit labour costs in the manufacturing industry\***  
(compared to the same quarter of the previous year)



\* Estimates based on indicators with the impacts of the whitening of the economy isolated.

On the other hand, as far as market services are concerned, the significant slowdown in the growth rate of productivity results in steady labour cost pressure, which in turn will cause the prices of services to decline at a slower pace, in spite of sluggish internal demand, and this will be felt in the adjustment of wages and in the lower number of jobs. The possibility of a slower-than-expected decline in wage dynamics in this sector – which could force companies to increase prices at a faster pace than indicated in the main scenario – represents an upward risk to inflation.

**Chart 3-6 Components of unit labour costs in the market services sector\***  
(compared to the same quarter of the previous year)



\* Estimates based on indicators with the impacts of the whitening of the economy isolated.

As far as wage dynamics in the public sector are concerned, we continued to rely on the figures contained in the convergence programme, but we also took into consideration the OKÉT agreement concluded at the beginning of 2007. Consequently, according to our forecast the payment of wages in the public sector will diminish somewhat by 2007–2009, and settle at around 3 per cent as a trend value; however, we also foresee increasing uncertainty for 2009.

**Table 3-2 Wage projection on a national level**

	2006	2007	2008	2009
Private sector				
Average wage	9.5	8.6	7.1	6.3
Unit labour cost	5.8	5.9	4.6	3.2
Public sector*				
Average wage	6.4	2.7	3.1	0.9
National economy				
Average wage	8.7	7.3	6.3	5.0

\*Based on CSO cash-flow data, accrual-based data as estimated by MNB and forecast, adjusted by carrying 13th month wages over to another year.

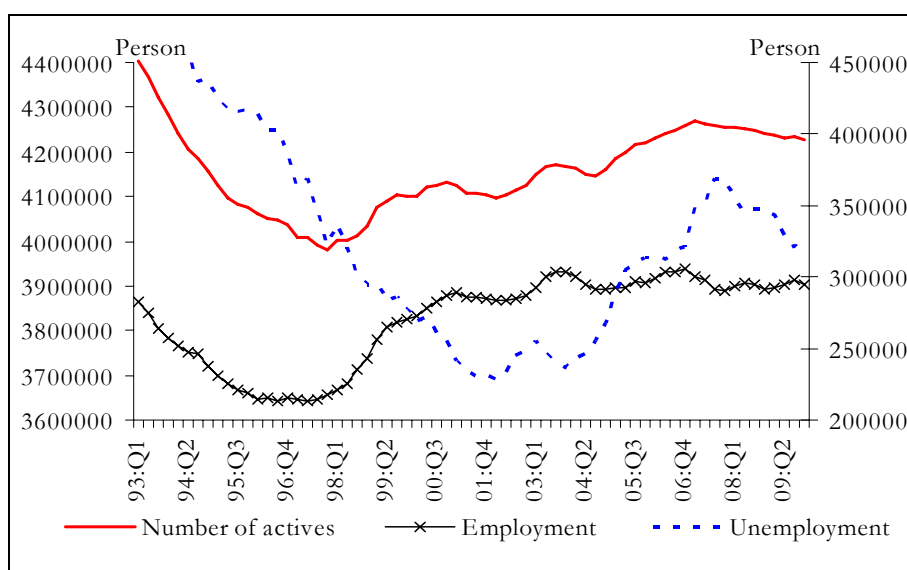
#### *Looser labour market with question marks*

In 2007, we expect the number of employed to decline in the wake of the fiscal adjustment measures, and it should then level out in 2008 and 2009. Simultaneously, supply in the labour market is also expected to drop gradually, due mostly to conjunctural reasons. As we explained in Chapter 2.2, the labour market data from the previous four months suggest that some of the workers who lost their jobs will withdraw directly to inactivity. In our projection we assume that the level of activity declines somewhat on the forecast horizon. Restrictions in retirement policy however counteract to a more pronounced decline.

The magnitude of withdrawals from the labour market generates uncertainty in determining the prospective degree of tightness in the labour market. If this process becomes permanent, the

decline in employment will result in a lesser amount of loosening in the labour market leading to more persistent wage inflation pressures.

**Chart 3-7 Changes in the number of actives, employed and unemployed**



### **Inflation gradually approaches the medium-term objective**

Overall, the main scenario of inflation has not change significantly relative to our latest forecast. Nevertheless, we expect the disinflationary process to slow down to some extent. The main scenario of our forecast assumes that inflation expectations are anchored by the medium term inflation target. This assumption is supported by the fact that price dynamics remained relatively moderate at the time of more than 10 per cent wage increase seen in the market services sector. At the same time, the findings of surveys of inflation expectations call for caution, even though – according to the latest information – they indicate declining expectations among the households after the recent historic highs.

**Table 3-3 Inflation forecast main scenario**

	2007, Q1	2007, Q2	2007, Q3	2007, Q4	2008, Q1	2008, Q2	2008, Q3	2008, Q4	2009, Q1	2009, Q2	2009, Q3	2009, Q4
Core inflation	6.4	6.8	5.6	4,3	3.7	3.4	3.1	3.2	3.2	3.0	3.0	3.0
Consumer price index	8.5	8.7	6.9	5,0	4.1	3.5	3.3	3.4	3.0	2.8	2.8	2.8
Core inflation, annual average	5.7				3.4				3.1			
Consumer price index, annual average	7.3				3.6				2.8			

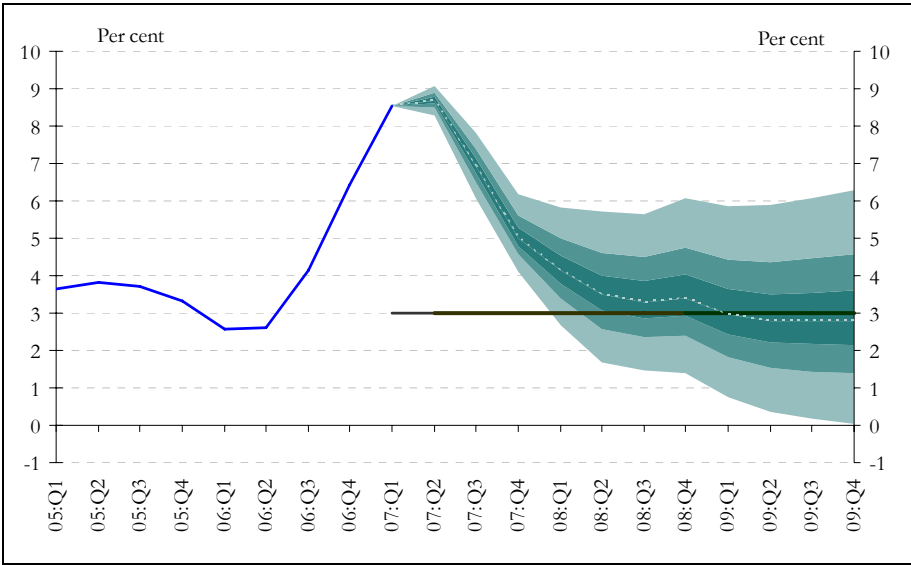
According to our forecasts, inflation will reach its peak during the first quarter of 2007, after which it will gradually return to the medium-term inflation target as the impact of fiscal measures manifested in higher prices eventually fade. After the rate of 7.3 per cent in 2007, the annual average rate of inflation will be 3.6 per cent in 2008 and 2.8 per cent in 2009. The difference between the annual average of core inflation and the consumer price index in 2008 is explained by the more than 5 per cent hike in regulated prices (including the predicted 20 per cent increase in gas prices), while in 2009 it is explained by our technical assumption – concerning forward oil prices – in terms of motor fuels and market energy prices.

The key factors in the core inflation process on the cost side (energy prices, wages) would suggest a prolonged and slowly declining inflation path, however, in the short run the stricter monetary conditions introduced during the last half-year period allow inflation to drop slightly faster, while during 2008 and 2009 the impact of expectations that were deemed anchored in the main scenario, and the delayed disinflationary effect of the negative output gap will be dominant.

**Forecasting uncertainty**

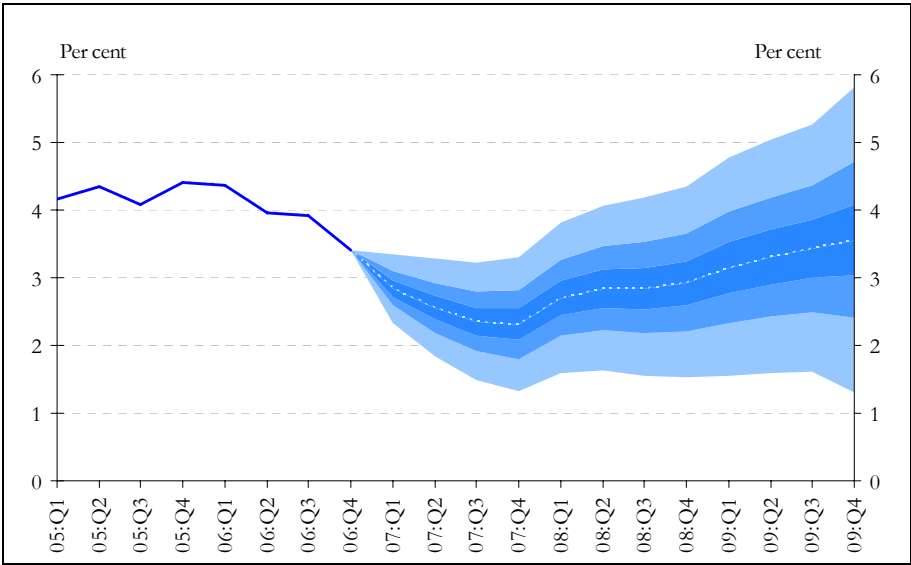
The main scenario of our inflation forecast is surrounded by two-sided but – on the whole – upside risks. The upside risks originate mostly from uncertainty factors on the cost side, including, first and foremost, less strongly anchored inflation expectations. The uncertainty factors on the demand side – the larger-than-expected disinflationary effect of the slowdown in the economy – indicate downside risks, although to a lesser degree.

**Chart 3-8 Inflation forecast fan chart**



The demand and cost side uncertainty factors surrounding the GDP forecast main scenario resulted, on the aggregate, in symmetrical risk distribution.

**Chart 3-9 GDP forecast fan chart**





## 4. Background information and balance

### 4. 1. Background information to our projections

Our view on basic inflationary trends has not changed considerably relative to the February update of the full-fledged November *Report*, although developments in the labour market do appear less favourable as far as inflation is concerned. Nevertheless, we did not incorporate our dilemma in connection with the latter fully into the baseline scenario, due to the inevitable adjustment of the corporate sector, we expect fast moderation of wage dynamics. We consider any potentially sustained acceleration in wage dynamics as a risk factor for the time being.<sup>31</sup>

In line with our previous opinion and with the February *Report*, after inflation reaches its peak during the first half 2007 as expected, the consumer price index will gradually return to the mid-term inflation target. However, for 2007 we foresee only a slightly lower inflation, compared to February, and the rate of decline will slow further down subsequently. In this Chapter we look into the factors behind the difference between our current forecast as compared to the forecast update published in February.

According to our current forecast, inflation is expected to peak in 2007 a little below previous levels; therefore, the annual average growth rate of consumer prices is 7.3 per cent in our baseline scenario, and then inflation will slow down and drop to 3.6 per cent in 2008. In early 2009, the rate of increase in consumer prices is projected to reach the 3 per cent inflation rate at the one-and-half-two-year horizon relevant for monetary policy. The somewhat different path of inflation is attributed to changes in our key assumptions and in our view on the world, prompted by information on macroeconomic developments.

**Table 4-1: Key factors behind the difference in the current forecast relative to the February *Report***

	2007	2008
Import prices	↓	↓
Regulated prices	↓	↑
Oil price movements*	↑	↑
Labour market developments	↑	
Unprocessed food prices	↑	↑
Total	↓	↑

\*Not incorporating the effect on regulated prices.

Regarding our assumptions, the rule-based assumption we have made for the forint exchange rate is 3 per cent (February: 254, May: EUR/HUF 246), in consequence of which our forecast for 2007 and 2008 turned out somewhat lower due to import prices.

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<sup>31</sup> Macroeconomic information received up to the end of the day on 11 May 2007 has been incorporated in the forecast.

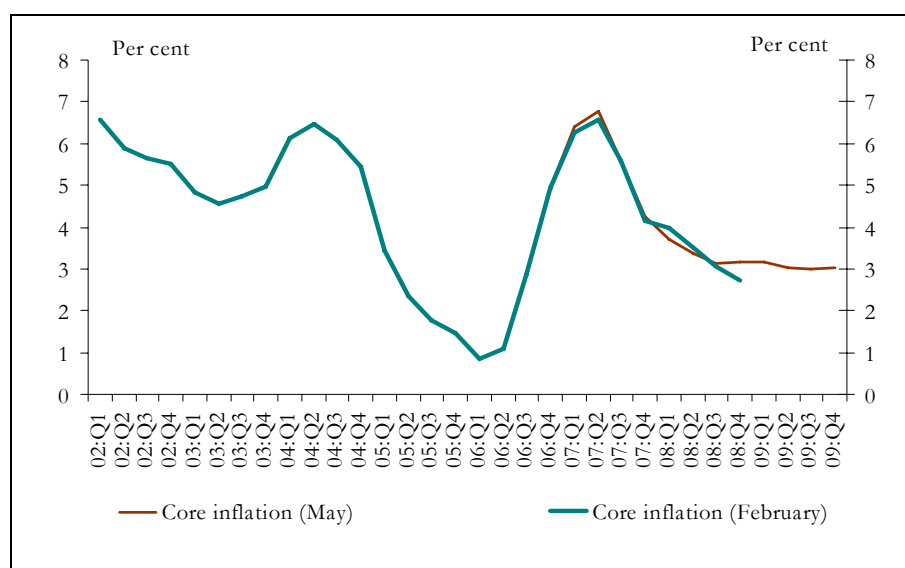
**Table 4-2: Changes in our main assumptions relative to the February update of the *Report*\***

	February 2007		Actual		
	2007	2008	2007	2008	2009
Central bank base rate (per cent)**	8.00	8.00	8.00	8.00	8.00
EUR/HUF exchange rate	253.8	253.8	247,6	246,0	246,0
EUR/USD exchange rate (US cents)	130.0	130.0	134,0	135,0	135,0
Brent oil price (USD/barrel)	57.2	60.7	65,8	70,3	69,6
Brent oil prices (HUF/barrel)	11 157	11 846	12 132	12 797	12 685

*Annual averages, based on the average exchange rate of April 2007, or on the forward oil price path*

*\*\* Year-end figures.*

**Chart 4-1: Changes in our core inflation forecast\***  
(annual changes)



On the other hand, our latest projection for global oil prices in euro – which directly affects motor fuel prices and market energy prices – is decisively higher than in February. This factor - together with regulated gas and district heating price changes as a consequence - causes inflation to be 0.3 percentage points higher in 2007, and 0.4 percentage points higher in 2008.<sup>32</sup>

Changes in our predictions pertaining to other regulated prices point towards lower inflation in 2007. It covers the impact generated by price movements of pharmaceutical products which were below expectations, and the fact that more households are applying for gas price compensation. However

The inflation data received since the February *Report* hardly had any impact on our forecast. CPI in the first quarter of 2007 was 0.1 percentage points below our November forecast, while core inflation for the same period was 0.1 percentage points above our projection. The higher prices of certain unprocessed foodstuff (potatoes, fruits) also increased the forecast.

<sup>32</sup> A box in the August 2004 issue of the *Report* contained an analysis of the effects of oil price movements on the Hungarian economy. As was discussed in detail, an increase of 10 per cent in oil prices raises the consumer price level by around 0.4 per cent, if rises in the costs of imported energy are built into administered prices. In general, however, household energy prices are likely to increase at a more rapid pace than import costs in the period ahead, given that gas price subsidies have fallen recently and the compensation fund is expected to be reduced looking forward. However, as our view of the domestic subsidy system has remained broadly constant, the change in the projection for administered prices since February reflects exclusively movements in the costs of imported energy, consistent with the analysis in the August 2004 *Report*.

As regards our forecast concerning the labour market, in February we were uncertain about several factors. In connection with the high wage dynamics shown in the actual data we were unable to determine the role played by the whitening of the economy, the impact of (one-off) compensation for the costs of living, and effect of the increase in inflation expectations. Upon analysing the data received since then, we have come to the conclusion (see the first Box in Chapter 2.2) that the impact of whitening, even though it can be measured, cannot be the only reason behind higher wage dynamics. Furthermore, as the questionnaire-based survey conducted by the Hay Group indicates, companies plan to implement higher wage increases in 2007 than in the previous year, claiming the higher costs of living as the main reason (see the second box text in Chapter 2.2).

The outlook on economic growth is dominated by changes in two key factors. On the one hand, we expect exports to grow faster due to a better-than-expected external economic activity. However, since imports also turned out better than projected, our forecast for net exports did not vary considerably on account of the favourable external economic activity.

Simultaneously, higher wages and cash transfers increase our forecast for household consumption. The data received indicate somewhat lower consumption than what we expected, and the higher payments of wages mainly result in an increase in our forecast for 2008. Therefore, all things considered, in our opinion this year the economy will slow down consistent with our February update, while we have slightly raised our forecast for GDP growth next year, due mostly to the higher-than-expected growth rate of consumption.

**Table 4-3: Changes in our forecasts compared to February 2007**

	2006	2007		2008		2009	
	Actual	Projection					
		February***	Current	February***	Current	February***	Current
<b>Inflation (annual average)</b>							
Core inflation <sup>1</sup>	2,4	5,6	5,7	3,3	3,4	x	3,1
Consumer price index	3,9	7,4	7,3	3,4	3,6	x	2,8
<b>Economic growth</b>							
External demand (GDP-based)	3,8	2,5	3,0	2,2	2,4	x	2,4
Impact of fiscal demand <sup>2</sup>	0,8	x	-3,4	x	-1,7	x	-0,4
Household consumption	1,2	-0,9	-0,8	0,5	0,6	x	1,8
<i>Memo: Household consumption expenditure</i>	1,5	x	-0,6	x	1,2	x	2,2
Fixed capital formation	-1,8	2,3	2,3	4,3	4,6	x	5,9
<i>Domestic absorption*</i>	0,5	0,5	0,0	1,6	1,7	x	3,2
Export	18,0	12,1	15,3	10,2	11,8	x	9,5
Import* <sup>3</sup>	12,6	9,4	12,2	9,0	10,7	x	9,4
GDP	3,9	2,5	2,5	2,6	2,8	x	3,4
<b>Current account deficit<sup>3</sup></b>							
As a percentage of GDP*	5,8	↓ (5,5)	4,7	4,3 ↓	4,4	x	4,2
EUR billions*	5,2	↓ (5,2)	4,9	4,3 ↓	4,9	x	4,9
<b>External financing requirement<sup>3</sup></b>							
As a percentage of GDP*	5,0	↓ (4,1)	3,3	2,6 ↓	2,3	x	1,8
<b>Labour market</b>							
Whole-economy gross average earnings <sup>4</sup>	8,7	x	7,2	x	6,2	x	5,0
Whole-economy employment <sup>5</sup>	0,6	x	-0,6	x	-0,1	x	0,1
Private sector gross average earnings	9,5	↔ (7,3)	8,6	↔ (7,0)	7,1	x	6,3
Private sector employment <sup>5</sup>	2,3	↔ (0,3)	0,0	↔ (0,5)	0,1	x	0,1
Private sector unit labour cost	5,8	x	5,9	x	4,6	x	3,2
Household real income	0,1	↓ (-3,8)	-2,8	↔ (1,7)	2,3	x	2,3

<sup>1</sup> For technical reasons, the indicator that we project may temporarily differ from the index published by the CSO; over the longer term, however, it follows a similar trend. <sup>2</sup> Calculated from the so-called augmented (SNA) type indicator; a negative value means a narrowing of aggregate demand. <sup>3</sup> As a result of uncertainty in the measurement of foreign trade statistics, from 2004 actual current account deficit and external financing requirement may be higher than suggested by official figures or our projections based on such figures. <sup>4</sup> Calculated on a cash-flow basis. <sup>5</sup> According to the CSO labour force survey.

\* Our projection includes the impact of the Gripen purchase, which raises the current account deficit and increases community consumption and imports.

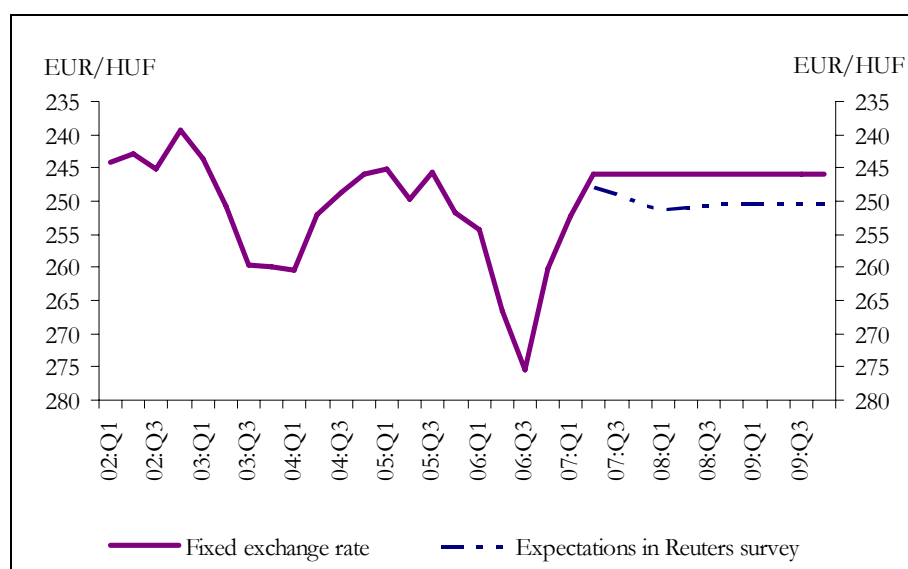
\*\* MNB estimate.

\*\*\*The arrows indicate the direction of changes installed in the February update compared to the November forecast.

### *The impacts of an alternative interest and exchange rate path*

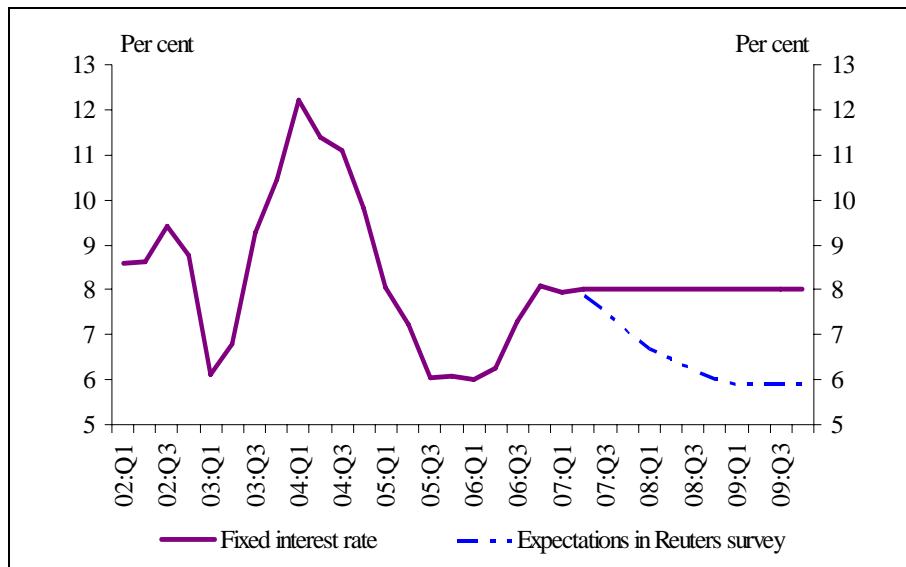
We examined the impact on our forecast if we were to use the April Reuters survey and rely on the exchange and interest rate expectations it contains for the inflation forecast. Compared to the projections made in the base forecast, according to analysts by the end of 2007 and for the following two years the exchange rate will be 1.9 per cent lower (EUR/HUF 251), while in the case of central bank base rate they predict a cut of 100 basis points by the end of 2007, and another 100 basis points by the end of 2008. Applying these presumptions for the purposes of our forecast, they will result in an increase of 0.1 percentage point in the annual average consumer prices index for 2007, and an increase of 0.2 and 0.1 percentage point in inflation for 2008 and 2009, respectively. The change in the growth rate for GDP would be a less, notably, an increase of 0.1 percentage point for next year and a half of a percentage point for 2009.

**Chart 4-2: Exchange rate path according to the Reuters survey conducted in April and under the presumption of a fixed exchange rate\***



\*Inverted scale.

**Chart 4-3: Central bank base rate path according to the Reuters survey conducted in April and under the presumption of a fixed interest rate**



***Comparing our forecast to the projections of other institutions***

As far as inflation is concerned, for 2007 most international institutions – whose latest forecasts were prepared several months ago – predicted lower rates than MNB, whereas the average of analysts prognosis surveyed by Reuters in April hardly differs from that of the MNB. On the other hand, for 2008 the MNB forecast is among the lower figures, but still within the rates projected by the analysts.

Our view on economic growth for 2007–2008 is similar to that of the majority of forecasters. In our opinion the current account deficit in 2007 will be lower than predicted by most international forecasters, while the median of the Reuters survey is the same as the MNB forecast. As for 2008, there is no considerable difference among the various forecasts. As far as the general government deficit is concerned, MNB takes a positive stand for both years as regards the ESA-95 deficit indicators.

**Table 4-4: MNB's baseline forecast compared to other projections**

	2007	2008
<b>Consumer Price Index (annual average growth rate, %)</b>		
MNB (May 2007)	7,3	3,6
Consensus Economics (March 2007) <sup>1</sup>	6.2 - 6.9 - 7.3	3.3 - 3.7 - 4.5
OECD (November 2006)	6,7	4,1
European Commission (Spring 2007)	7,5	3,8
IMF (April 2007)	6,4	3,8
Reuters-survey (April 2007) <sup>1</sup>	6.3 - 7.2 - 7.7	3.2 - 3.6 - 4.0
World Bank (January 2007)	6,2	-
<b>GDP (annual growth rate. %)</b>		
MNB (May 2007)	2,5	2,8
Consensus Economics (March 2007) <sup>1</sup>	1.8 - 2.4 - 3.0	2.4 - 3.0 - 3.7
OECD (November 2006)	2,2	3,0
European Commission (Spring 2007)	2,4	2,6
IMF (April 2007)	2,8	3,0
Reuters-survey (April 2007) <sup>1</sup>	2.2 - 2.5 - 2.8	2.8 - 3.1 - 3.6
World Bank (January 2007)	2,2	-
<b>Current account deficit (billion EUR/USD)</b>		
MNB (May 2007) (EUR)	4,9	4,9
Consensus Economics (March 2007) <sup>1</sup> (USD)	4.6 - 6.5 - 7.5	4.0 - 6.3 - 8.2
Reuters-survey (April 2007) <sup>1</sup> (EUR)	4.2 - 4.9 - 6.0	3.6 - 4.7 - 6.4
<b>Current account deficit (percent of GDP)</b>		
MNB (May 2007)	4,73	4,4
OECD (November 2006)	6,3	5,6
European Commission (Autumn 2006)	3,5	2,2
IMF (April 2007)	5,7	4,8
World Bank (January 2007)	5,9	-
<b>Budget Deficit (ESA-95 method. percent of GDP)</b>		
MNB (May, 2007)	6.0	4.0
Consensus Economics (March 2007) <sup>1</sup>	6.4 - 6.8 - 7.5	3.6 - 4.7 - 6.0
European Commission (Spring 2007)	6,8	4,9
Reuters-survey (April 2007) <sup>1</sup>	5.5 - 6.4 - 7.1	3.7 - 4.5 - 5.0
World Bank (January 2007)	5,1	-
<b>Forecasts on the size of Hungary's export markets</b>		
MNB (May 2007)	6,8	5,5
OECD (November 2006) <sup>2</sup>	6,3	7,4
European Commission (Spring 2007) <sup>2</sup>	8,1	7,3
IMF (April 2007) <sup>2</sup>	6,3	6,5
<b>Forecasts on the GDP growth rate of Hungary's trade partners</b>		
MNB (May 2007)	3	2,4
OECD (November 2006) <sup>2</sup>	2,6	2,6
European Commission (Spring 2007) <sup>2</sup>	3,2	2,9
IMF (April 2007) <sup>2</sup>	2,8	2,7

MNB projections are so-called 'conditional' projections. Therefore, they cannot always be directly compared to other projections.

<sup>1</sup> In addition to the averages of polled analysts' responses (the values in the middle), the smallest and largest values are also indicated for the Reuters and Consensus Economics surveys in order to illustrate dispersion.

<sup>2</sup> Values calculated by the MNB; the projections of the named institutions regarding individual countries are considered with the weights used for calculating the MNB's own external demand indicators. This way, the forecast may differ from the numbers published by the aforesaid institutions

<sup>3</sup> Our projection takes account of the negative effect on the current account resulting from the Gripen fighter procurement.

Source: Consensus Economics Inc. (London), Eastern Europe Consensus Forecasts (March 2007); European Commission Economic Forecasts, Spring 2007; IMF World Economic Outlook (April 2007); Reuters poll April 2007, World Bank EU-8 Quarterly Economic Report (January 2007); OECD Economic Outlook (November 2006)

## 4. 2. Developments in general government deficit indicators

According to our forecast, the accrual-based budget deficit (ESA deficit) could be lower than the deficit target set forth in the convergence programme of Hungary in 2007 and 2008, but without additional measures the dynamics of fiscal adjustment are expected to slowdown in 2009. On account of the fading dynamics of adjustment, according to our baseline forecast the deficit for 2009 will be slightly higher than the Government's target in the Convergence Program.

In the beginning, cutting the deficit will definitely depend on increasing government revenues based on a broader tax base and higher rates in existing taxes. In the wake of these measures, 2007 revenues (from taxes and social security contributions) increased significantly relative to GDP, but these measures also result in the reduction of tax bases, and therefore, in lower consumption and less disposable income. Consequently, government revenues after the initial increase will begin to decline relative to GDP, in other words, after 2008 the revenue side will cease to be of help in reducing the budget deficit any further.<sup>33</sup>

On the expenditure side, the effects of adjustment will appear gradually. Of the initial measures, cutting expenditures in the social security system, decreasing government subsidy schemes and the wage freeze implemented in the public sector are the most significant. During the first two years of fiscal adjustment, apart from the long-term measures outlined for cutting expenditures, the rapid reduction of, or eliminating the so called one-off expenditure items (motorway construction, State Railways (MÁV) capital injection and Gripen fighter purchases) also have a substantial role in cutting the deficit. The aggregate impact of the latter items in 2008 is estimated at 1.0 per cent of GDP. Apart from the one-off items, the planned gradual reduction of the schemes of price subsidies (pharmaceutical products, gas, public transport, etc.) will also have long-term effects, and contributes to the reduction of expenditures over the entire time horizon, and eventually to stabilising deficit at a lower level.

The uncertainty in our baseline forecast is high relative to the historical standards; on the one hand, the uncertainty in macroeconomic developments is higher than usual, furthermore, the implementation of measures could be influenced by the control of the Constitutional Court, as well as the reaction of the local government system, and the extent and pace of deficit adjustment measures implemented by the local authorities.

**Table 4-5 Fiscal deficit indicators (as a percentage of GDP)**

	Preliminary	Forecast		
	actual	2007	2008	2009
<b>1) GFS balance</b>	<b>-9,4</b>	<b>-6,1</b>	<b>-4,2</b>	<b>-3,8</b>
2) o/w Primary balance	-5,6	-2,3	-0,5	-0,2
3) Corrections on ESA basis	0,2	0,1	0,3	0,3
<b>4) ESA balance (1+3)</b>	<b>-9,2</b>	<b>-6,0</b>	<b>-4,0</b>	<b>-3,5</b>
5) Quasi-fiscal expenditure and other adjustments	-0,7	-0,9	-1,1	-1,1
<b>6) Augmented (SNA) balance (4+5)</b>	<b>-9,9</b>	<b>-6,8</b>	<b>-5,1</b>	<b>-4,6</b>
7) Augmented (SNA) primary balance	-6,1	-2,8	-1,2	-0,9
<b>8) Fiscal demand impact</b>	<b>0,8</b>	<b>-3,4</b>	<b>-1,6</b>	<b>-0,3</b>
<i>Memo:</i>				
<b>ESA balance</b> as forecast in the Convergence Programme, December 2006	10,1	6,8	4,3	3,2

In our baseline scenario we relied upon the measures contained in the convergence programme to be carried in full by 2008-2009, our baseline forecast does not address the risks of

<sup>33</sup> Let us note that the Government's convergence programme also took this into account.



implementation of the measures, as any failure of implementation of the proposed measures would bring about a totally different fiscal and macroeconomic path.

#### **Box 4-1 Assumptions applied in our forecast**

In the process of making our forecast for the entire period we assumed that the savings appearing on the expenditure side of the central government will be spent, however, we also assumed that the government will use any surplus revenues to reduce the deficit.

We prepared our assessment of the impacts generated by all known measures intended to increase revenues using our own calculations, in line with the macroeconomic forecast of the MNB (measures affecting taxes, tax bases and social security contributions).

As for the measures which were announced but have not yet been implemented, we assumed that the measures will be carried out as planned, and that they will have the effect of the magnitude indicated in the convergence programme.

As for the measures outlined for cutting expenditures, that were announced and carried out, for most of the open-ended expenditure items (e.g. pensions; local government investment, etc.) we prepared our own forecast.

In the case of public wages we assumed that the three-year wage agreement will be carried out in full. As for the other expenditure items of government agencies and chapter-administered appropriations we assumed that they will expand in 2008 and 2009 consistent with changes in GDP, adjusted by the changes known to us in “extra” one-off expenditure items (e.g. MÁV capital injection, motorway construction, etc.).

For the interest balance we made our own estimate using the forward yield curve and the financial plan of ÁKK Rt.

We also relied on the assumption that the new types of taxes that were introduced as temporary measures will remain in effect until the end of 2009 (special tax for companies, individuals, and credit institutions).

In connection with the forecasted financial balance between the European Union and the Hungarian government we incorporated the latest forecast published by the Ministry of Finance into our baseline scenario. Using this forecast, we made our own calculations to determine the estimated amounts of investments of the general government, and the estimated costs of co-financing.

As regards the estimated balance of local governments, in the baseline scenario we assumed the budget (adjustment) cycle to expire relying on previous experience, and that by the end of the period the deficit of the sub-sector to return to the usual level at around 0.2 per cent of GDP. We indicated any potential for higher deficit among the risk factors.

As for the Budapest metro project we did not incorporate the impact of financing from European Union resources, which constitutes significant downside risks.

#### **Government revenues during the 2007–2009 period**

The programme for the consolidation of the budget, and the convergence programme relies heavily during the initial years of the adjustment period (2006 and 2007) on higher tax and social security contribution revenues relative to GDP, and on broader tax base and higher tax rates in existing taxes.

Last year, during the final quarter tax revenues turned out better than expected. According to the Ministry of Finance, the most important reason for this increase is the whitening of the economy.

Leaving this route open, we wish to point out that the higher revenues were less of a surprise according to our prognosis.<sup>34</sup>

At the same time, in our forecast we assumed that extra revenues in the base year (2007) will begin to decline relative to GDP due, fundamentally, to tax bases (real wages and consumption) failing to expand parallel with GDP.

As the growth rate of the private and public consumption in the years under review is expected to remain below the growth rate of GDP at current prices, the rate of VAT revenues relative to GDP will decline by about 0.3 percentage points in both of those years. According to our macroeconomic forecast, the growth rate of wages will fall behind the growth rate of GDP, therefore revenues from social security contributions and personal income taxes will also decline by around 0.2 percentage points of GDP over the next two years.

In the case of corporate taxes, this impact is considerably more moderate, as we assumed that the growth of corporate profits will be in tune with the GDP growth rate, whereas in connection with certain types of corporate taxes (gambling tax, mining fee, simplified entrepreneurial tax) our projection indicates that the dynamics of tax revenues will remain behind the GDP growth rate. As for excise taxes, the tax base of motor fuels, which comprise the largest segment, is expected to expand only in volume, whereas the excise tax rate of tobacco products will reach the level required by Community legislation during the period under review; therefore, the stable real value of this particular tax revenue cannot be maintained. Additionally, we do not foresee any further increase in the level of tax burden for the other types of taxes. According to our baseline forecast in the next two years any decline in tax and social security contribution revenues would increase the deficit by approximately 1.0 percentage point of GDP.

All things considered, according to our baseline forecast tax and contribution revenues, comprising the cornerstone of revenues for the central budget and for the social security system, are expected to decline between 2007 and 2009 consistently with the indications of the convergence programme, although from a level of revenues higher than assumed in the programme. As a long-term prospect for bolstering economic growth, the only viable option for fiscal policies is to decrease tax revenues relative to GDP, this process in itself is not considered to go against a successful fiscal adjustment programme. The future reform of the tax system could provide the necessary stimulus for economic growth, provided that such reform is designed not to increase the tax burden on incomes, but it is rather aimed at introducing a broader tax bases and hence distributing the tax burden more evenly, and consequently reducing the tax burden on incomes.

### **Government expenditures during the 2007–2009 period**

The drop in government expenditures between 2007 and 2008 is still significant, however, it is attributed for the most to changes (decline) to one-off expenditure items, and their aggregate impact is estimated 1.0 per cent of GDP.<sup>35</sup> The wage agreement relating to the public sector – if it is carried out in full – could reduce the deficit by approximately 0.5 percentage points in 2007 and in 2008 in total. According to our calculations, the part of the wage agreement pertaining to 2009 contains a slight increase in real wages for public employers; we have shown the tension in this agreement as a risk factor for 2009 (see later).

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<sup>34</sup> As for the details, the general government's revenues from corporate taxes, excise taxes and social security contributions were higher than projected, revenues from personal income taxes turned out as expected, while cash-based VAT revenues fell below expectations, whereas accrual-based VAT revenues came close to our projections.

<sup>35</sup> Major one-off items: the one-off expenditures from the Gripen purchases reduce the deficit by 0.3 percentage point, motorway construction by 0.7 percentage point, and MÁV capital injection by 0.3 percentage point, however, changes in the costs of the Budapest metro project will increase the expenditures by 0.3 percentage point compared to 2007.

In the case of government agencies and chapter-administered appropriations we agree with the expenditure target set out by the Ministry of Finance for 2007; however, we would like to point out that events of the first few months of this year indicate a slightly asymmetrical distribution of risks pointing towards higher expenditures. For the next two years we assumed unchanged real costs and other expenditures relative to GDP.

Substantial fiscal adjustment took place in connection with the subsidies of pharmaceutical products. The measures adopted bring lasting savings upon revising the extent of subsidies in addition to changing the pricing mechanisms pertaining to the subsidies provided for the various products as well.

As for pension expenses, we believe that the implementation of an earlier government decision relating to small pension payments has the capacity to offset, and to some extent reverse the cost-saving effect of the Swiss index of previous years, combined with the expected decline in the number of and the changes in the composition of pensioners. Changing the basis for the calculation of pension payments – changes in the substitution rate and in the valorisation of incomes – points towards lower pension payments. This impact, however, will be dominant only over the long term, as it is suggested by the fact that pension payments relative to GDP in 2009 will be a little higher than the 2006 level. We do not foresee any substantial savings between 2007 and 2009 in connection with the changes implemented in the early retirement system.

Major fiscal adjustments are taking place in the field of public services. The key elements of the adjustment are increasing revenues and decreasing price subsidies. These measures are looked upon as lasting adjustments in several areas (natural gas, utilities), and consistent with our forecast regarding regulated prices, our forecast contains permanent reduction in real terms in connection with this types of subsidies.

### **Deficit forecast and risk assessment for 2007**

The 6 per cent baseline forecast relative to GDP we made for the ESA deficit is built on the presumption that the so-called balance reserves targeted in the budget act – comprising about 0.4 per cent of GDP – will be allocated completely.<sup>36</sup>

Our forecast pertaining to the ESA deficit – relative to the November forecast – indicates a lower deficit approximately by 1 percentage point of GDP. (In November, our baseline scenario projected 6.5 per cent deficit, subject to ultimately freezing the balance reserve of around 0.4 per cent of GDP.) This major revision of our forecast is justified partly by the unexpectedly favourable budgetary trends in 2006 – exceeding our expectations –, partly by our forecasting rules. One example of the latter is the changes made in the forecast of the targeted pharmaceutical product subsidies.<sup>37</sup>

Our baseline forecast for cash-based deficit is 0.9 percentage point below our November main scenario relative to GDP. Fundamentally, it is the revenue side that took a different path than we previously anticipated. The remaining 0.1 percentage point difference is caused by changes in accrual-based corrections. Changes in our forecast relating to the cash-based balance are enumerated in the table below. Let us note that our baseline forecast assumes the implementation of the Ministry of Finance's forecast (published in April) regarding the expenditures of public

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<sup>36</sup> The budget act authorises the Government to release and refill the reserves blocked during the year if there is any surplus above the projected revenues for the budget .

<sup>37</sup> In the beginning of November, the new Act on Supply of Medicinal Products was not yet approved therefore we could not apply the Government's plans in our baseline forecast in accordance with our forecasting rules. Following the adoption of the Act, and taking into account the changes in the drug subsidies our deficit forecast was shifted downwards by 0.25 percentage point of GDP.

government agencies and chapter-administered appropriations, which is the most dominant factor in the expenditure side of the budget. This is a direct consequence of our forecasting rules, on the other hand, in light of the developments during the first four months we are of the opinion that the forecast laid down by the Ministry of Finance is feasible.

**Table 4-6: Changes in our forecast for the cash-based deficit for 2007**  
(as a percentage of GDP)

1. Change in tax and social contribution receipts	0,55
2. Change in other revenue	0,30
3. Net expenditure of institutions	-0,25
4. Pension, pharmaceutical and health expenses	0,15
5. Other expenditure, net	0,10
6. Change in interest balance	0,05
<b>7. Total changes (1+..+6)</b>	<b>0,90</b>

In connection with our baseline forecast for 2007 we have also prepared the usual risk range. For our baseline scenario ESA-balance we forecasted a risk range of 1.3 per cent of GDP. Risk factors pointing towards higher deficit are related mostly to the expenditure side, including the risks in the higher deficit of local governments. Implementation of the proposed freezing of wages in the public sector is questionable as far as local governments and their institutions are concerned, as the central government has no direct influence concerning the wage policies of these authorities. Our baseline forecast was compiled based on the assumption that the balance reserves will be spent; therefore, if the unfavourable trends contained in our risk assessment materialize in the remaining months of the year, the ultimate freezing of balance reserve could assure the fulfilment of the 6.8 per cent accrual-based budget deficit as indicated in the convergence programme.

In our view, the tax and social security contribution revenues can be the main driver of a lower-than-forecasted risk, where extra tax revenues from taxes on consumption are likely; furthermore, a potential source of a lower-than-forecasted deficit is related to extra tax revenues generated through improvements in the efficiency of tax collection procedures.

**Table 4-7 Uncertainty in our deficit forecast for 2007 (as a percentage of GDP)**

<i>Lower deficit</i>	<i>Central projection for GFS deficit: -6.1 per cent</i>	<i>Higher deficit</i>	
Higher tax and contribution receipts than in central projection	0,3	Lower tax and contribution receipts than in central projection	-0,3
Lower pension expenditure	0,1	Above-target expenditure of budgetary units and chapters	-0,2
Lower expenditure on pharmaceuticals	0,1	Higher-than-planned expenditure of social security (pensions, pharmaceuticals)	-0,2
More favourable balance of extrabudgetary funds	0,1	Higher local government deficit	-0,2
		Higher-than-planned debt assumption	-0,2
		Less favourable balance of extrabudgetary funds	-0,1
<i>Effect of favourable developments on balance</i>	0,6	<i>Effect of unfavourable developments on balance</i>	-1,2
GFS deficit under favourable scenario	-5,5	GFS deficit under unfavourable scenario	-7,3
<i>Change in the balance reserves</i>	0,0	<i>Change in the balance reserves</i>	+0,5
Corrections on ESA basis	0,1	Corrections on ESA basis	0,1
ESA deficit under favourable scenario	-5,4	ESA deficit under unfavourable scenario	-6,7

Our risk assessment contains the usual macroeconomic risks,<sup>38</sup> and it does not cover the “extra” risk as to the development of the fiscal path if certain government measures were found unconstitutional. These types of extra risks could be as high as 0.8 per cent of GDP, which would increase significantly the risks imminent in the implementation of the convergence programme. If this scenario were to occur, it would bring about another fiscal path with different macroeconomic impacts.

### Trends in our baseline forecast in 2008-2009

According to our baseline forecast, the reduction of ESA-deficit will remain extremely dynamic in 2008, however, the dynamics will fall back considerably in 2009. It is apparent that expenditure cuts determine the pace of reducing the deficit, including the massive changes (decline) in the one-off expenditure items. The level of revenues relative to GDP from the major taxes will be lower, that – ceteris paribus – tend to increase the deficit.

**Table 4-8: Components of changes in the cash-based deficit during 2008 and 2009<sup>39</sup>**  
(as a percentage of GDP)

<b>1. Total revenue (2+3+4+5)</b>	<b>-0,4</b>	<b>-0,5</b>
2. Taxes on consumption	-0,3	-0,3
3. Corporate taxes	0,0	-0,1
4. PIT	-0,1	-0,1
5 Contribution receipts	-0,1	-0,1
<b>6. Total expenditure (7+..+13)</b>	<b>2,2</b>	<b>0,8</b>
7. Price and housing subsidies	0,2	0,1
8. Net expenditure of budget institutions	0,3	-0,2
9. One-off items	1,0	0,3
10. Pharmaceuticals and health care	0,2	0,1
11. Pensions	-0,1	0,1
12. Interest expenditure	0,1	0,1
13. Other expenditure, net	0,7	0,2
<b>14. Balance of local government</b>	<b>0,1</b>	<b>0,1</b>
<b>15. Balance of extrabudgetary funds</b>	<b>0,0</b>	<b>0,0</b>
<b>16. Total changes (1+6+14+15)</b>	<b>1,9</b>	<b>0,4</b>

The use of EU funds will reduce the investment expenditures of the general government, for the estimated costs of co-financing are low. As for pension expenses, the extra expenditures stemming from the government measures already announced for the pension payment corrections will neutralise the cost-saving effect of the Swiss index during both years on aggregate. In the process of drawing up our prognosis, we assumed that the number of pensioners will increase significantly due to changes in the conditions for retirement effective from 2008. The substantial shift in the net expenditures of budgetary institutions is attributed, in part, to the implementation of the wage agreement (salary-base increase), while we predicted increases in the expenditures related to the PPP schemes. The extremely high figure of

<sup>38</sup> Our expert risk assessment does not contain the risk related to the changes in the usage of the so-called cash surplus accounts during the course of this year. According to our estimate the so called cash surplus accounts, which are subject to liabilities, stand at around HUF 400 billion. If the Government was to release the cash surplus accounts during the course of the year, it would mean a sum of HUF 100 to 120 billion according to our estimation, that would be spent this year (0.4-0.5 per cent of GDP).

<sup>39</sup> Negative figures in the table mean to increase the deficit and vice versa.

miscellaneous net expenses in 2008 is tied primarily to the decreasing central government subsidies provided to local governments.

**Distribution of risks for 2008 and 2009**

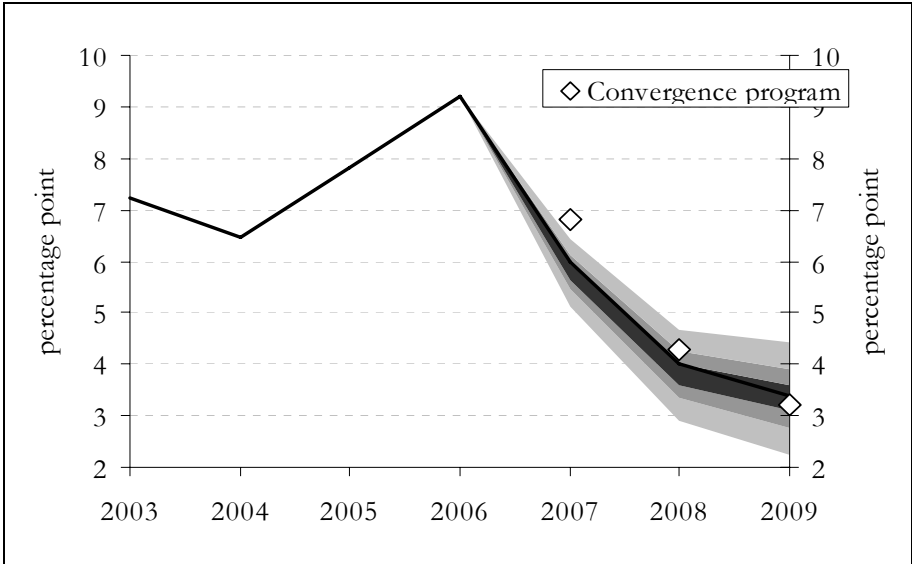
According to the distribution of risks in line with the baseline scenario the fiscal deficit is likely to be lower than the targets of the convergence programme in 2007 and in 2008. In 2009 our baseline forecast is slightly higher than in the Convergence program, with approximately symmetrical risks.

In our calculations we distinguish two types of risks: macroeconomic risks and expert risks, which are not related to the macroeconomic risks directly.<sup>40</sup>

Overall, we perceive minor downside risks originating from the macroeconomic processes. A higher inflation path resulting from the possible stagnation of inflation expectations could have a role in increasing budget revenues through the expansion of tax bases, and therefore, in reducing the budget deficit. Additionally, the other macroeconomic variables indicate symmetrical risks.

Among expert items, which do not depend directly on the macroeconomic variables, we see risks slightly on the upside. The expenditures of the government agencies and chapter-administered appropriations constitute a major risk factor that points towards higher deficit, especially developments in the wages in the public sector, and the degree of adjustment of local governments to the fiscal consolidation. On the other hand, the potential co-financing of the Budapest metro project by the EU, improvements in the efficiency of tax collection, and discharging some of the investment expenditures of the general government to PPP scheme point toward lower deficit.

**Chart 4-4 Fiscal forecast fan chart**



**Box 4-2 Methodology of the fiscal fan chart**

There are new methodological instruments for the forecasting the budget deficit. The existing system of expert forecasting, that is consistent with the macroeconomic path, now includes model calculations, allowing the incorporation of risk distribution factors in our baseline forecast.

<sup>40</sup> Expert risks could be e.g. the expenditures of the government agencies, budgetary institutions, real costs and investment expenditures of the local governments, which are not influenced directly from the macroeconomic trends.

Due to methodological reasons, the asymmetry of distribution around the baseline forecast is manifested in the difference between the modus of distribution and the baseline forecast.

In the calculations we relied only on macroeconomic and implementation risks; we did not assume the announced government measures to change, or that any part of them will be withdrawn, or that new sections will be appended. We indicate the degree of uncertainty surrounding the forecast for the general government deficit on an annual level. Interpretation of the ranges and the probability of the areas they cover (thirty, sixty and ninety per cent) is consistent with the interpretation of the ranges contained in the inflation and GDP fan charts.

We prepared the distribution of uncertainty with model simulations, as it ensures that the distribution of items which are tied to macroeconomic variables – on the revenue side particularly VAT, personal income taxes, corporate taxes and social security contributions, and on the expenditure side pensions – is consistent with the distribution of the determining variables (inflation, GDP, wages). In the cases of inflation and GDP we used the probability factors contained in the fan charts drawn up for these variables, while for the other macroeconomic variables we relied on symmetrical uncertainty factors and the variance calculated from the historical forecasting errors. As for the other items of the whole general government deficit – the most important of which are the expenditures of the central budget – the distribution of uncertainty was determined by the experts who prepared the baseline forecast.

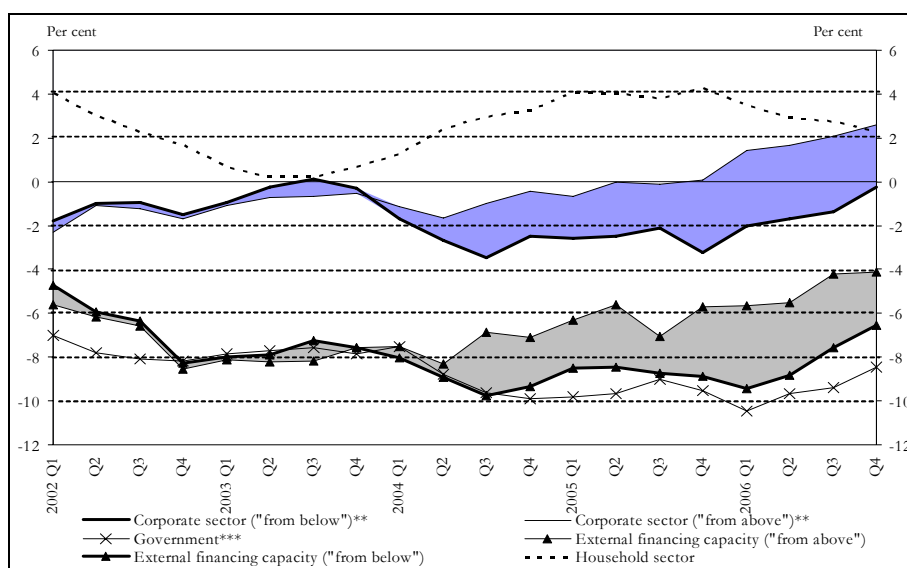
### **4. 3. External balance**

In 2006, according to preliminary data, the sum of the current account and capital account balance, meaning the external financing requirement dropped significantly compared to the previous year, and amounted to 5 per cent of GDP. Due to the methodological uncertainty in connection with the Balance of Payments statistics, the external financing requirement determined from the financing side is still considerably higher; however, regarding its dynamics over the year the “bottom-up” external balance indicator is also showing an improving tendency.

Most of the decline in the external financing requirement can be attributed to the second half of the year in accordance with developments in the real economy: rapid growth of exports together with robust external demand and the slowdown in the growth of internal demand – presumably due in part to the fiscal adjustment measures – all point towards the reduction of the external financing requirement. This is also reflected by the seasonally adjusted real economy balance, which was growing continuously in 2006 and closed with a 600 million euro surplus for the year.

The massive reduction in the external financing requirement during the second half of the year took place while the savings of households were also declining, the general government deficit was slightly decreasing in connection with the austerity measures and the financing requirement of the corporate sector (as a residual item) also dropped considerably. The continued reduction in the financing capacity of households during the second half of the year can be related to the reduction in the disposable income of the sector and to the consumption smoothing behaviour of households. Thanks to the measures announced in the convergence program, the financing requirement of the consolidated general government relative to GDP shifted from the 10 per cent level seen in the previous quarters, and it showed a discernible decline. Basically, the combined financing requirement of the two sectors did not change, but the robust external economic activity and the substantial decline in the investment activity of companies generated a considerable decrease in the financing requirement of the corporate sector.

**Chart 4-5 Developments in the financing capacity of the sectors\***



\* Adjusted by the difference caused by imports brought forward on account of EU accession and by the import increasing impact generated by customs warehouses terminated due to EU accession.

\*\*The financing capacity of the corporate sector is determined as a residual item, therefore, it contains the errors of other statistics as well.

\*\*\*In addition to the fiscal budget, the consolidated general government includes local governments, the ÁPV Rt., institutions attending to quasi-fiscal duties (Hungarian State Railways [MÁV], Budapest Transport Limited [BKV]), the MNB and authorities implementing capital projects initiated and controlled by the government and formally implemented under PPP schemes.

As a result of the fiscal measures, in 2007 the GDP-proportionate financing requirement of the consolidated general government is expected to drop by 3 percentage points, to 6.8 per cent. The financing capacity of households is likely to drop below 2 per cent of GDP, on account of the decrease in real incomes and consumption smoothing behaviour. The profitability of the corporate sector could fall due to increasing wage costs and to higher taxes and contributions, which is expected to raise the sector's financing requirement together with slightly increasing investment dynamics. In 2007, about half of the deficit reducing effect of the fiscal adjustment measures may be reflected in the reduction of the external financing requirement, dropping to approximately 3.3 per cent of GDP. In 2008, the financing requirement of the general government is expected to drop by another 1.7 percentage points, parallel with an additional 1 per cent reduction in the external imbalance, and with a slight increase in the net savings of households and the decline in the financing capacity of the corporate sector induced by recovering investment activity.



**Table 4-9: Net financing capacity of the sectors relative to the GDP**  
(in percentage of GDP, unless otherwise indicated)

	2002	2003	2004	2005	2006	2007	2008	2009
	Estimation					Forecast		
I. Consolidated general government*	-8,6	-8,3	-8,4	-9,2	-9,9	-6,8	-5,1	-4,6
II. Households	2,7	0,2	2,4	4,2	2,9	1,8	2,1	3,0
Corporate sector and "error" (= A - I.- II. )	-0,8	0,1	-2,1	-1,1	2,0	1,7	0,7	-0,2
A. External financing capacity, "from above" (=B+C) )**	-6,7	-8,0	-8,1	-6,1	-5,0	-3,3	-2,3	-1,8
B. Current account balance** - in EUR billions **	-7,0	-7,9	-8,4	-6,9	-5,8	-4,7	-4,4	-4,2
C. Capital account balance	0,3	0,0	0,3	0,8	0,8	1,4	2,1	2,4
D. Net errors and omissions (NEO)***	0,3	0,3	-1,7	-2,1	-3,0	-3,0	-3,0	-3,0
External financing capacity "from below" (=A+D)	-6,4	-7,7	-9,8	-8,2	-8,0	-6,3	-5,3	-4,8

\* In addition to the fiscal budget, the consolidated general government includes local governments, the APV Rt., institutions attending to quasi-fiscal duties (Hungarian State Railways [MÁV], Budapest Transport Limited [BKV]), the MNB and authorities implementing capital projects initiated and controlled by the government and formally implemented under PPP schemes.

\*\* During the 2004–2006 period, uncertainty in the measurement of foreign trade statistics points toward higher current account deficit and higher external financing requirement.

\*\*\* In our forecast for the "errors and omissions" line of the current account we assumed that the cumulated GDP-proportionate figure for the last four quarters will remain unchanged.

Regarding the structure of the current account balance, improvements in the real economy balance could remain the driving force to reduce the deficit even further. If the favourable economic activity in Europe continues - as forecasted - then the balance may improve by an additional 1.5 percentage points during the 2007–2008 period due to substantial growth in exports and to low domestic absorption. The GDP-proportionate deficit of the income balance is expected to remain unchanged. In spite of the decreasing external financing requirement, the growth of the external debt of the national economy is likely to stop only in 2009. Hence, the GDP-proportionate payments on the debt burden could remain unchanged as a result of the increasing volume of outstanding debt and of the declining interest payments due to the broader weight of foreign exchange financing. Nevertheless, in the deficit of the income balance relating to non-debt generating items we foresee a slight decrease on the medium term, as the GDP-proportionate income from non-debt capital investments made by large domestic corporations in connection with their foreign acquisitions may rise slightly from the current low level. Due to the increasing volume of European Union funds, the capital account balance may improve by approximately 1.5 per cent of GDP by 2009.

**Table 4-10 GDP-proportionate structure of the current account balance**

	2001	2002	2003	2004	2005	2006	2007	2008	2009
	Fact/Preliminary fact						Forecast		
1. Balance of goods and services **	-1,5	-2,3	-3,8	-2,7	-0,8	0,7	1,9	2,2	2,3
2. Income balance	-5,4	-5,4	-4,9	-6,0	-6,2	-6,8	-6,8	-6,8	-6,7
3. Balance of current transfers	0,8	0,7	0,8	0,3	0,2	0,3	0,3	0,3	0,2
I. Current account balance (1+2+3)**	-6,1	-7,0	-7,9	-8,4	-6,9	-5,8	-4,7	-4,4	-4,2
Current account balance in EUR billions**	-3,6	-5,0	-5,9	-6,9	-6,1	-5,2	-4,9	-4,9	-4,9
II. Capital account balance	0,6	0,3	0,0	0,3	0,8	0,8	1,4	2,1	2,4
<b>External financing capacity (I+II)**</b>	<b>-5,5</b>	<b>-6,7</b>	<b>-8,0</b>	<b>-8,1</b>	<b>-6,1</b>	<b>-5,0</b>	<b>-3,3</b>	<b>-2,3</b>	<b>-1,8</b>

\* The prognosis includes in 2006–2007 the import resulting from the Hungarian Army's Gripen fighter lease, amounting to close to 0.3 per cent of the GDP.

\*\* During the 2004–2009 period, uncertainty in the measurement of foreign trade statistics point toward higher current account deficit and higher external financing requirement.

## **Financing of the current account deficit**

During the second half of 2006, the “bottom-up” external financing requirement was around EUR 3 billion, which represents 7.4 per cent of GDP, taking into account the seasonality as well. The EUR 500 million in net non-debt generating financing is considered very low compared to previous periods; therefore, the majority of the total financing requirement was covered by debt-generating funds. However, the unfavourable developments in the financing structure from the standpoint of investors during the second half of 2006 are also the cause of contradicting tendencies, some of which may be attributed to one-off effects:

- The historically low EUR 560 million net inflow of direct investment comprises a substantial working capital inflow, which, however, was offset for the most part by the record high capital export, amounting to EUR 1.8 billion, in connection with the expansion of domestic banks abroad.
- The negative balance of portfolio investments in stocks also materialized in an environment characterised by significant internal and external activity. On the one hand, the trend of capital export that was seen during the decline in the stock exchange index during May and June turned around in the second half of the year, and foreign investors once again purchased portfolio shares worth EUR 600 million; while local institutional investors, on the other hand, increased their investment in foreign shares by close to EUR 660 million.

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