



MAGYAR NEMZETI BANK

**QUARTERLY  
REPORT  
ON INFLATION**

**NOVEMBER 2008**



**Quarterly Report  
on Inflation**

**November 2008**



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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 rate 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 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 clear insight into the operation of monetary policy and to enhance transparency, the Bank publishes the information available at the time of making its monetary policy decisions. The Report presents the inflation forecasts prepared by the Monetary Strategy and Economic Analysis and Financial Analysis, as well as the macroeconomic developments underlying these forecasts. The Report is published biannually, with partial updates to the forecasts also prepared twice a year. The forecasts of the Monetary Strategy and Economic Analysis and Financial Analysis are based on certain assumptions. Hence, in producing its forecasts, the 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 staff in the MNB's Monetary Strategy and Economic Analysis and Financial Analysis under the general direction of Ágnes Csermely, Director. The project was managed by Mihály András Kovács, Deputy Head of Monetary Strategy and Economic Analysis, with the help of Zoltán Gyenes, Gergely Kiss 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 10 November and 24 November 2008. The projections and policy considerations, however, reflect the views of staff in the Monetary Strategy and Economic Analysis and the Financial Analysis and do not necessarily reflect those of the Monetary Council or the MNB.



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# Summary

## **The uncertainty surrounding Hungary's macroeconomic prospects is orders of magnitude greater than in the past**

The November projection was produced in a much more uncertain financial and macroeconomic environment compared with previous years. Therefore, we departed from the past practice of building the forecast around a central estimate. The Report provides a range for each variable, defined on the basis of two equal paths.

The distribution of risks around the range is even more difficult to quantify than in the past, which we did not undertake to plot using the technique of earlier Reports (a fan chart based on past forecast errors). Our aim is to provide a broadly accurate picture of the likely direction of changes in the economy, thereby helping economic agents to adjust to expected future developments.

## **Rapid disinflation, temporary decline in economic performance**

Provided that the basic assumptions (the most important of which include an exchange rate of EUR/HUF 260 and oil prices around USD 80 per barrel) hold true, the projection in the Report is that inflation will fall rapidly over the forecast horizon. Accordingly, consumer price inflation is likely to amount to slightly above 3 per cent in 2009 and below 2 per cent in 2010. Over the forecast period, economic growth declines temporarily, followed by a very slow recovery.

There are three major factors behind the significant difference compared to the previous forecast for economic activity. First, there has been marked deterioration in the outlook for growth in Hungary's main export markets in recent months. Second, in our view, domestic banks' lending activity is likely to contract much more sharply than assumed in August. And finally, the government measures aimed at reducing the fiscal deficit are also expected to contribute to a temporary decline in GDP growth.

In the current projection, inflation falls sharply as the prospects for the real economy deteriorate and domestic absorption tapers off. The fiscal deficit and the external financing requirement of the economy both may fall further in the current adverse economic environment.

## **The pick-up in domestic economic activity has already stopped**

Hungary's economic activity picked up steadily towards the middle of 2008, fuelled by increases in government consumption and in-kind benefits, in addition to household consumption expenditure, as well as by the outstanding performance registered in the field of agriculture. Performance then clearly worsened from the third quarter, as the general deterioration in the global economic environment was gradually reflected in economic data.

## **Inflationary pressure from the labour market has not diminished**

Despite the adverse economic conditions, domestic wage growth dropped back only slowly in Q3, with significant sectoral differences. Wage inflation fell sharply in manufacturing, which has been hit by the marked deterioration in the external business environment. By contrast, wage inflation did not moderate in the services sector, where the effects of the increase in the minimum wage for skilled workers were strongest. Taking into account the fact that productivity growth has also slowed, inflationary pressure from the labour market eased only to a negligible degree and thus remained elevated throughout the period.

**A fall in imported inflationary pressure and weak demand have led to a slowdown in consumer price inflation**

In 2008 Q3, imported inflationary pressure in the domestic economy diminished significantly, due to the appreciation of the forint to historical highs against the euro, along with a decline in international commodity prices.

This decline in imported price inflation was also reflected in producer and consumer prices: there was a significant slowdown in the rate of increase in consumer prices of food as well as of industrial goods. In addition, service sector firms were unable to fully pass higher costs through to their prices. These factors have acted in combination to cause a significant fall in consumer price inflation in recent months.

**Escalation of the financial crisis has caused a radical change in the outlook for global real economic prospects**

The global economic environment has changed significantly since August. A number of large financial institutions in developed countries have reported much greater-than-expected losses in recent months, as a result of which they have had to receive major injections of capital from governments, in addition to the liquidity support provided earlier. All of this has led to a broader loss of confidence amongst financial market participants, triggering a decline in risk appetite and severe operational disruptions in the financial markets. In addition to a panicked sell-off, the pronounced deterioration in the outlook for global economic activity has also contributed to the steep declines on the capital markets. According to the latest forecasts, the majority of developed economies are facing either a temporary or a more prolonged economic recession. But the deterioration in economic prospects has also brought about a correction in commodity markets, with a sharp decline in oil prices since they reached their peak in July.

**Looking ahead, bank lending growth is expected to fall sharply**

The financial crisis is likely to lead to sustained decline in the assets-to-capital ratio of financial institutions. De-leveraging may also occur through a sharp cut-back in lending activity. This may be more evident in Hungary than the general trend for Europe, as foreign currency-denominated loans account for the larger part of new loans extended recently, and the financial sector in Hungary can only access foreign currency funding at much tighter conditions, compared with euro area countries and earlier periods.

**Declining budget and external deficit**

The 2009 draft budget envisages a significant reduction in government expenditures, amounting to close to 2 percentage points of GDP. The reduction mainly affects spending on public sector wages, expenditures of government units and financial transfers to households. The reduction in expenditures will facilitate a more rapid decline in the 2008-2009 fiscal deficit than previously targeted, but the trend is unlikely to continue into 2010, assessing the aggregate impact of the currently known measures.

In addition to the reduction in the general government deficit, household savings may increase substantially, due to tighter credit standards. Reflecting these factors, Hungary's external financing requirement is likely to fall further, despite a deterioration in corporate profitability.

**Economic growth is likely to fall back temporarily, followed by a tentative recovery**

In the current projection, economic growth recedes temporarily, due to a decline in the export markets, tightening credit condition and fiscal adjustment. The anticipated recession in Europe is likely to drag down Hungarian export growth to a significant degree. Weaker lending activity is expected to make it harder for firms and households to finance investment and consumption.

Finally, the measures drawn up in the 2009 draft budget may restrain aggregate demand, both directly and via a reduction in transfers to households.

The above factors will likely lead to a decline in household consumption and investment activity in 2009, accompanied by a substantial improvement in the sector's propensity to save. Deteriorating prospects for economic activity and declining net borrowing are expected to constrain corporate investment as well. Nevertheless, a few major one-off factors may slow the general decline in activity. Import growth is likely to slow sharply, driven by the fall in domestic absorption. As a result, the contribution of net trade to GDP growth may be positive, despite the significant deceleration in exports.

### **Inflation is projected to fall rapidly**

Weaker economic activity is expected to be associated with a sharp reduction in employment and a significant moderation in private sector wage growth. On the forecast horizon, one key question is the corporate sector's ability to adjust quickly and flexibly to the decline in productivity by restraining wage growth, given the poor outlook for economic activity. The more flexible the adjustment of wages is, the less likely it is that employment will fall back.

Provided that the basic assumptions hold true, inflation may fall rapidly in the next quarters. While adverse global economic conditions may reduce imported inflationary pressure, service sector price inflation may fall significantly, reflecting the weakening in domestic economic activity. As a result of these factors inflation may be slightly above 3 per cent in 2009 and below 2 per cent in 2010.

# Summary of projections

(The forecasts are conditional: they represent the scenarios, valid only if all of the assumptions presented in Chapter 3 materialise; unless otherwise indicated, it represents percentage changes on the previous year.)

	2006	2007	2008	2009	2010
	Actual		Projection		
<b>Inflation (annual average)</b>					
Core inflation <sup>1</sup>	2.4	6.0	5.2	2.7–3.0	1.3–1.8
CPI	3.9	8.0	6.2	3.1–3.4	1.5–1.9
<b>Economic Growth*</b>					
External demand (GDP-based)	3.9	3.8	2.3	(–0.4)–0.3	(–0.2)–1.5
Fiscal impact on demand <sup>2</sup>	0.4	–3.6	–1.9	(–0.6)–(–0.1)	(–0.5)–0.3
Household consumption expenditure	1.9	0.7	0.4–0.5	(–3.6)–(–1.1)	0.4–1.2
Gross fixed capital formation	–6.2	1.5	(–0.9)–(–0.5)	(–3.5)–1.1	(–0.2)–2.8
Domestic absorption	1.8	–1.0	1.2	(–2.7)–(–0.4)	0.2–1.2
Exports	18.6	15.9	6.2–6.4	0.0–1.6	2.0–5.8
Imports <sup>3</sup>	14.8	13.1	6.6–6.7	(–1.2)–1.5	1.8–4.9
GDP**	4.1	1.1	1.0–1.1	(–1.7)–(–0.2)	0.5–2.0
<b>Current account deficit<sup>3</sup></b>					
As a percentage of GDP	7.5	6.4	7.0–7.2	4.0–4.9	4.3–4.4
In EUR billions	6.8	6.5	7.7–7.8	4.3–5.4	4.8–4.9
<b>External financing requirement<sup>3</sup></b>					
As a percentage of GDP	6.9	5.3	5.7–5.8	1.8–2.8	1.7–1.8
<b>Labour market</b>					
Whole-economy gross average earnings <sup>4</sup>	8.2	8.0	8.7	0.9–1.4	4.4–5.6
Whole-economy employment <sup>5</sup>	0.7	–0.1	–1.2	(–1.3)–(–0.9)	(–1.8)–(–0.8)
Private sector gross average earnings <sup>6</sup>	9.4 (8.1)	9.1 (8.2)	9.3 (8.5)	5.0–5.7	4.3–5.5
Private sector employment <sup>5</sup>	1.2	0.9	–1.1	(–1.4)–(–0.9)	(–2.2)–(–1.0)
Unit labour costs in the private sector <sup>5,7</sup>	4.4	7.3	4.6	4.7–4.8	2.0–2.8
Household real income***	–0.7	–3.0	0.8	(–1.6)–(–0.5)	1.1–1.7

<sup>1</sup> For technical reasons, this indicator may temporarily differ from the index published by the CSO; over the long term, however, it follows a similar trend.

<sup>2</sup> Calculated from the so-called augmented (SNA) balance; a negative value represents a narrowing of aggregate demand.

<sup>3</sup> Due to the high level of Net Errors and Omissions (NEO) the current account deficit/external financing requirement for the 2004–2007 period, may be higher than suggested by official figures.

<sup>4</sup> Calculated on a cash-flow basis.

<sup>5</sup> According to the CSO LFS data.

<sup>6</sup> According to the original CSO data. The numbers in brackets refer to wages excluding the effect of whitening and the changed seasonality of bonuses.

<sup>7</sup> Private sector unit labour cost calculated with a wage index excluding the effect of whitening and the changed seasonality of bonuses.

\* The CSO revised the national accounts data in October. We publish these revised data for the annual actual figures in the summary table. However, as the quarterly profile is not yet available, we have used the previous data release in the projections.

\*\* Figures refer to the calendar-year adjusted data.

\*\*\* MNB estimate.

# **1 Evaluation of the available macro-economic information**





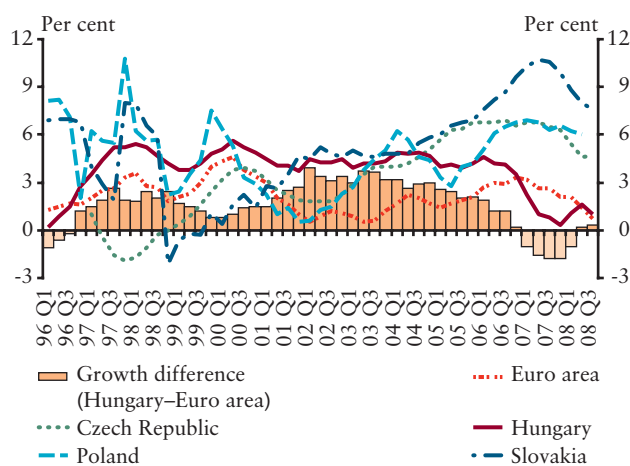
# 1.1 Deteriorating global economic environment

Since the middle of 2007, the global economic environment has gradually become increasingly bleak. Since September this process has accelerated, mainly due to negative news from the banking sector and the financial markets.<sup>1</sup> While developments in the real economy only follow the developments on the financial markets with a certain degree of lag, the real economic indicators for Europe for the last two quarters already reflect substantial deterioration in business conditions. Euro area output declined in the second and third quarters on a quarterly basis, in an unprecedented development for the euro area. The global slowdown in economic activity resulted in weaker output across the Eastern European region as well, while Hungary reacted most sensitively to the deteriorating business cycle conditions in the region. Along with the different domestic cycle, weaker Hungarian industrial export production also played role in this performance.

According to the confidence indicators available to date for the fourth quarter of 2008, economic activity has continued to decline across the euro area. The German IFO index suggests that economic participants expect an even poorer short-term economic environment than was observed during the European recession in 2001-2002.

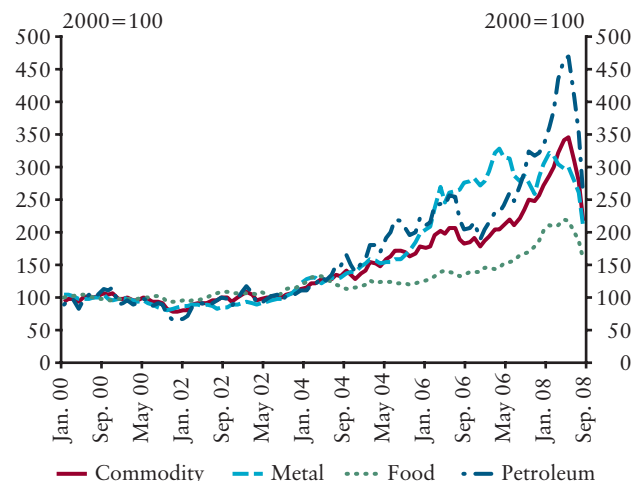
Global commodity prices have also declined due to a combination of the global economic slowdown, worsening economic expectations, the general wave of selling on the financial markets, and last but not least the better yield in agricultural production compared to the previous year. In USD terms, commodity prices have dropped by about 40 per cent from their peaks in July to October, while the price of food and oil products has fallen by 25 per cent and 45 per cent, respectively.<sup>2</sup>

**Chart 1-1**  
International economic activity (GDP)



Source: Eurostat.

**Chart 1-2**  
Global commodity prices\*



\* Denominated in USD. The commodity index is the weighted average of the food, crude oil and metal product groups.

Source: IMF.

<sup>1</sup> Financial market developments are addressed in detail in Section 2.

<sup>2</sup> In EUR terms, the price decrease was less substantial, as the appreciation of the US dollar against the euro amounted to nearly 15 percent in the same period.

## 1.2 Hungarian economic activity rebounds briefly, then weakens

Despite the deteriorating global business environment, Hungarian economic growth data until the second quarter of 2008 reflected a moderate upturn. This upswing, however, was largely due to temporary factors, while the developments influencing the longer-term outlook indicated a more negative picture. Within the economic sectors, agricultural output contributed most strongly to growth, primarily due to crop yields that significantly exceeded historical averages. The value added of government-related services also slightly surpassed the level observed in the previous year, primarily owing to a better base effect in the wake of last year's deterioration. In addition, industrial value added increased substantially, although waning momentum was already apparent in the monthly indices for industrial production. At the same time, weakening was observed in sectors more closely linked to domestic economic processes. The gradual

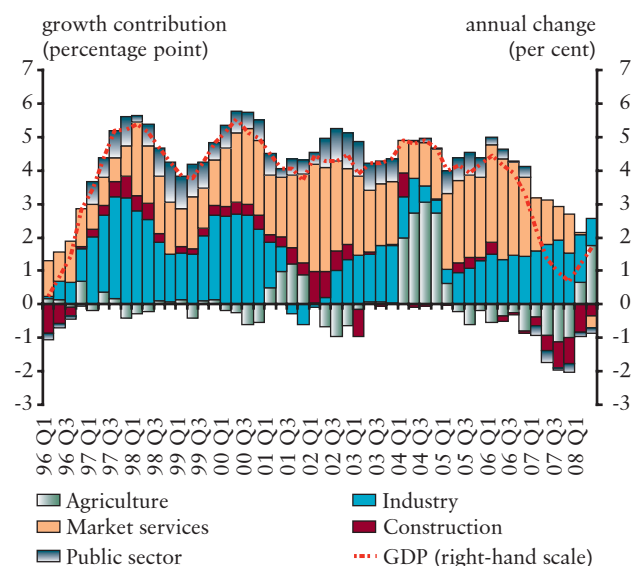
decline in construction industry output started as early as the beginning of 2007. Remarkably enough, the added value of market services stagnated as well, a phenomenon which had not been seen since 1995.<sup>3</sup>

The positive development of temporary factors is evident in the consumption structure of domestic economic growth in the second quarter. The most significant growth affected inventories, mainly due to the upsurge in agricultural output. In addition, household consumption expenses continued to grow moderately, partly on account of the borrowing boom of households which lasted until September, and partly due to growth in households' disposable income in the first half of the year, which once again exceeded inflation. On the other hand, the structure of consumption growth is uneven. Retail sales continued to fall relative to consumption expenditure, suggesting that households mainly curtailed their spending on durable goods in the period under review.<sup>4</sup> After a period of one and a half years, the contribution of the general government's consumption expenses was positive once again, due primarily to an increased use of medical services, which was probably a temporary factor. By contrast, net export growth decreased significantly resulting from the combined effect of a modest uptick in domestic consumption and sagging external demand.

In addition to the aforementioned, growth in gross fixed capital formation also decelerated, albeit the picture is rather diverse across the different sectors. Investments in the private sector grew vigorously, which is particularly apparent after the exclusion of the high base effect of the extremely high rubber industry investment in the previous year. At the same time, this implied a boost in machine industry investments. By contrast, household and government investments declined, which in turn resulted in a decrease in construction-type investments.

According to the preliminary release, annual GDP growth stalled in 2008 Q3, and moreover, it fell slightly compared with the previous quarter. Although detailed figures are not yet available, the monthly indicators suggest that the weakness of the industrial sector may have been an

**Chart 1-3**  
Contribution of the output of main national economic sectors to GDP growth\*



\* Considering that time series with chain-type indices are not additive, aggregation errors were distributed between the individual items according to their weight. While dynamics calculated from the resulting adjusted time series are less reliable from a quantitative perspective (as they differ from the original data), the chart still accurately reflects prevailing trends.

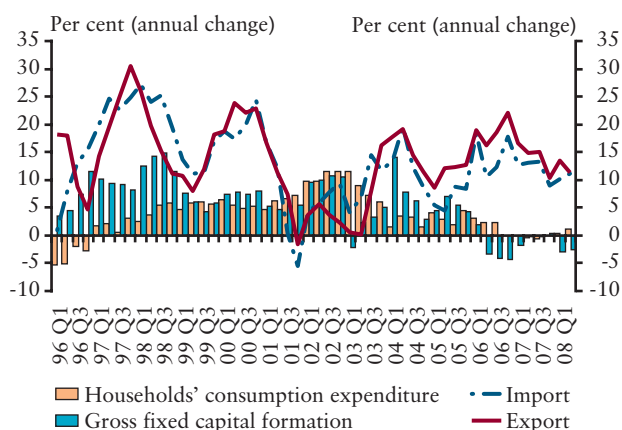
<sup>3</sup> Slowing growth rates have not generally tended to characterise market services. The most dramatic slowdown was observed in the sectors of financial activities, real estate and other economic services, which can be fundamentally attributed to the global financial crisis and to waning growth in house construction.

<sup>4</sup> As opposed to the index measuring the consumption expenses of households, statistical data of retail sales do not include purchases of services. Therefore, if the growth of consumption expenditure surpasses retail sale growth, we may assume that the share of durable goods in total consumption has decreased compared to services.



Chart 1-4

## Annual growth in main consumption items of GDP



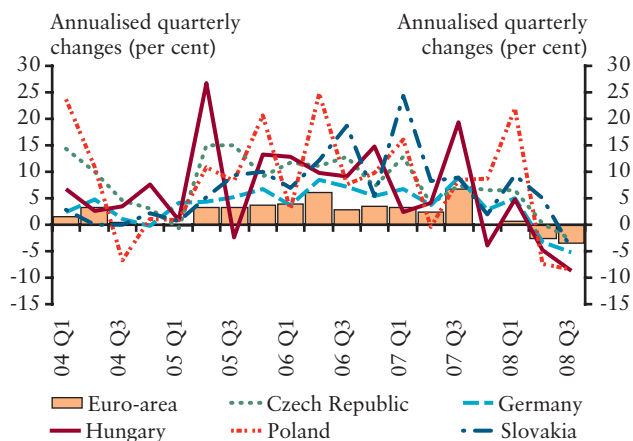
important factor explaining this decline in performance. However, other sectors, which for various reasons are strongly sensitive to the financial crisis, such as construction, finance as well as retail and wholesale trade, may also have contributed.

The continued decline in European industrial activity was very quickly reflected in the production figures of the Hungarian industrial export sector deeply integrated into the EU economy. Hungary responded more sensitively to the deterioration in the external environment than most of the other CEE countries, in which country-specific factors may have also played a role. One such factor may have been the forint strengthening to a historical peak in Q3. As currencies across the region appreciated in nominal terms up to September, movements in the exchange rate may only explain the economy's poor performance if there is evidence that the domestic industry has responded more sensitively to the exchange rate shock than elsewhere in the region.

Chart 1-5

## Industrial production in the region and the euro area\*

(Seasonally adjusted data)



\* Source: Eurostat, CSO; adjusted by MNB

However, the more likely explanation is that capacity problems, discussed in previous *Reports*, and other competitiveness factors may have been in the background of weak performance.<sup>5</sup>

Another important factor contributing to the change in the macroeconomic environment may have been the direct involvement of the domestic financial sector in the crisis. In addition, although lending activity had continued to be strong up to the third quarter, the simultaneous deterioration in the outlook for growth and incomes may have prompted economic agents mainly to hold back on large expenditures. This tendency was reflected primarily in the declines in construction output and retail sales of consumer durable goods, according to monthly data.

<sup>5</sup> As noted in previous *Reports*, Hungarian export prices had been very uncompetitive in past years compared with other countries of the CEE region; and investment activity in manufacturing appeared to have been subdued. These factors, coupled with the shortage of skilled labour, may be placed at a competitive disadvantage compared with other countries of the region.

# 1.3 Gradually decreasing wages, contradictory employment data

According to the data released since the publication of August Report, the gradual decline in private sector wages, which started at the beginning of the year, continued. It is noteworthy, however, that only the manufacturing industry is affected by this decline in wages; as wage dynamics in the sectors of market services remained at the formerly observed high levels.

According to our analysis, changes in the wage index of companies with more than 250 employees reflect the long-term trends prevailing across the private sector fairly well. The wage decline that started at the beginning of the year continued in the last quarter in this part of the corporate sector, both with respect to regular wages and gross average earnings.

According to the labour force survey conducted by the CSO, the number of employees in the private sector increased by around 25,000 in Q3. As these data stand in contrast to developments in the macroeconomic environment, this rise in employment is only expected to be temporary. This assumption is confirmed by the fact that this growth – measured between May and July based on a monthly frequency – already lapsed into stagnation during the last two months. In the meantime, the dynamics of labour market activity have surpassed growth in employment, and as a net

result, the unemployment rate continued to rise to around 8 per cent.

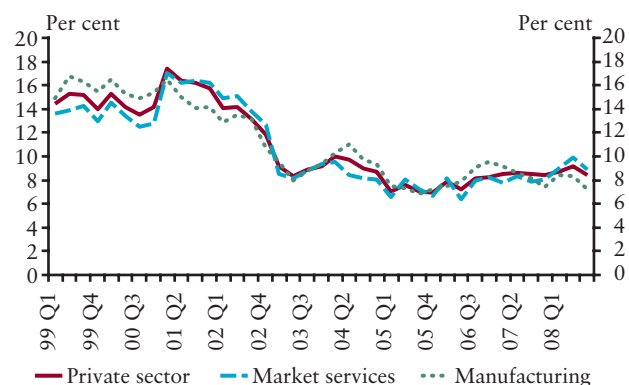
In overall annual terms, the decline in average labour costs was not as strong as the decline in productivity in the previous quarter, and thus nominal unit labour costs rose again, with the result that inflationary pressure from the labour market increased slightly.

**Chart 1-7**  
Development of wages at companies with over 250 employees\*



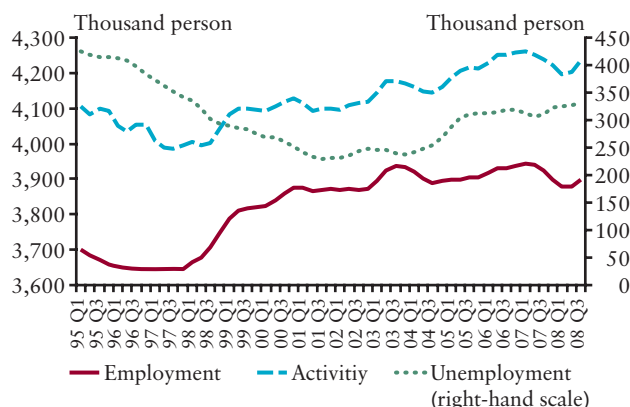
\* Annual index, based on uncorrected data which has not been adjusted for seasonal effects.

**Chart 1-6**  
Gross average earnings in the private sector\*



\* Yearly index, data adjusted seasonally for whitening and the changed seasonality of bonuses.

**Chart 1-8**  
Number of employees in the national economy

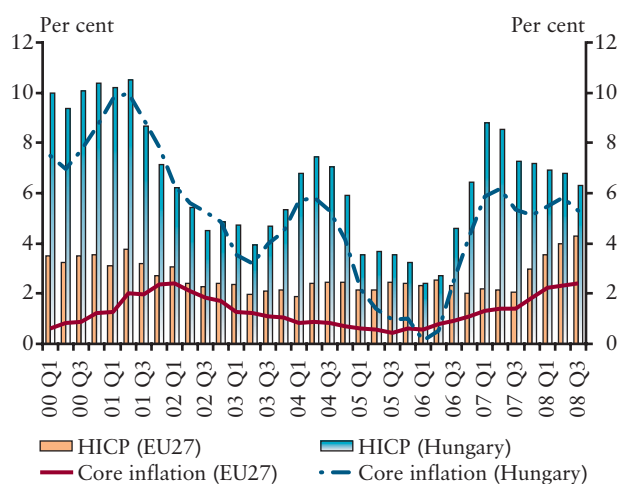


Source: Labor Force Survey.

## 1.4 Disinflation continues

According to the annual indices, the consumer price index and core inflation dropped to 6.3 per cent and 5.6 per cent, respectively, in the third quarter of 2008. This occurred despite rising inflation in the EU: hence the level of Hungarian inflation moved closer to the European average.

**Chart 1-9**  
Inflation developments  
(Annual change)

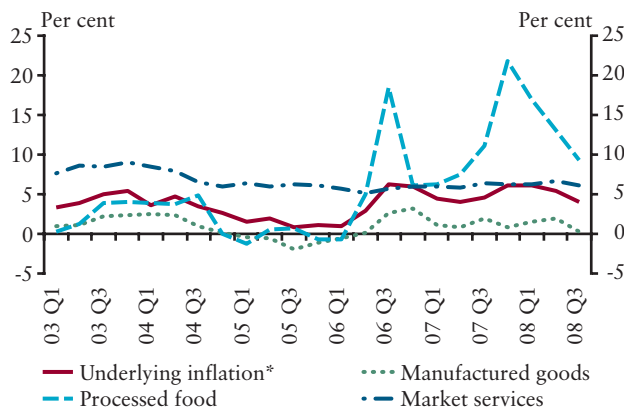


Source: Eurostat.

Disinflationary trends are also underlined by indices showing quarterly changes. Our analyses indicate that the index best capturing inflationary trends dropped to 4 per cent.<sup>6</sup> This disinflationary trend is found in a wide range of products and services. During the third quarter, the disinflation process accelerated, and in September and October it was exceptionally strong.

Several factors contributed to this decline in inflation, and amongst these factors the turnaround in commodity prices may have had the greatest impact. In respect of commodity prices, decreasing agricultural commodity prices have been particularly strong disinflationary factors in certain regions, including Hungary. Domestic prices of unprocessed foods

**Chart 1-10**  
Changes in the individual components of inflation\*  
(Annualised quarterly change)



\* The trend inflation index excludes the effects of indirect tax changes in tradables, processed foods and market services.

have already been declining for half a year, but the disinflationary trend in processed food prices was very gradual until September. Since then, a marked downturn in prices has been observed.

Until recently, the forint was characterised by a historically strong exchange rate, which supported disinflation, particularly in the case of tradable goods. On the whole, prices in this product category did not increase in the third quarter, whereas in September and October prices started to increase again due to the weakening of the HUF.

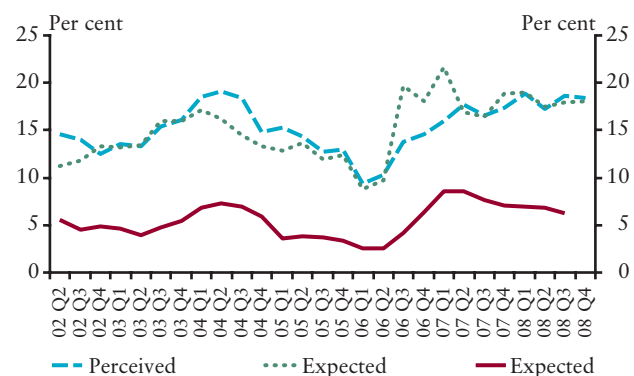
Slack demand at domestic levels may have been an additional factor facilitating the disinflationary trend. According to our analyses, this factor may have strongly contributed to the fact that there was no further increase in inflation in market services in the third quarter, despite the preceding increase in energy and food prices. In fact, there was a slight decline in the level of inflation. It is worth noting that the decline in inflation accelerated during the quarter, and – disregarding one-off distorting effects – by September inflation had dropped to 4 per cent from the previous level 6 per cent.<sup>7</sup>

<sup>6</sup> The trend inflation index excludes the effects of indirect tax changes in tradables, processed foods and market services.

<sup>7</sup> In September, education services became cheaper, as the number of university students financed by the state increased relative to the number of students financing their own education. If we had not excluded this one-off effect from the data, the annualised monthly inflation of market services would have been 2 per cent for September.

Despite falling inflation, the inflation perception and inflation expectations of households did not weaken. This indicates that the risks associated with inflation expectations are still present in the Hungarian economy. One possible reason for this phenomenon could be that the disinflationary trend observed in the past one and a half years was not drastic enough to substantially modify households' perception of inflation. It is also possible that general negative sentiment about the economic situation and the economic outlook explain the high levels of inflation perception/expectations. Nevertheless, the experiences of several countries suggest that in many cases the inflation-related attitude of households do not lead the changes in inflation, but rather lag behind them.<sup>8</sup>

**Chart 1-11** Inflation perception and expectations of households



Source: Median survey.

<sup>8</sup> See for example Bakshi-Yates (1998): "Are UK Inflation Expectations Rational", *Bank of England Working Paper Series No. 81*.

## **2 Financial markets and lending**





## 2.1 Deteriorating global market sentiment, more active central bank measures

During the recent months another bout of risk aversion and loss of confidence – observed since the outbreak of the sub-prime mortgage market crisis – took place. This resulted in an additional, much more significant fall in the price of risky assets. One new phenomenon is that, in order to reduce leverage investors are striving to jettison assets they perceive to be risky, irrespective of the price and the magnitude of the losses realised. The developments are characterised by strong uncertainty, which is also reflected in the increased volatility seen in almost all markets.

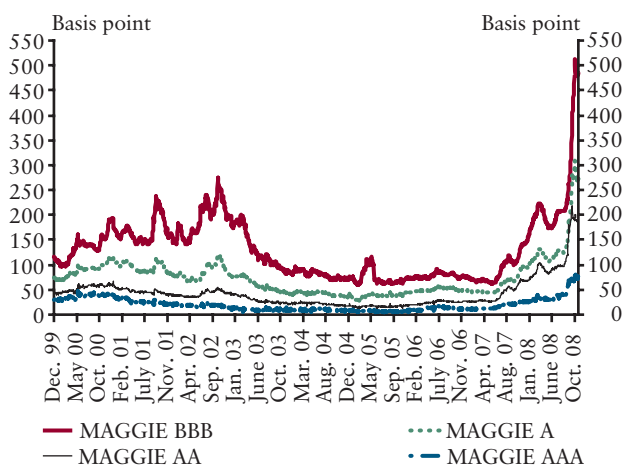
A renewed decline in risk appetite occurred in September, as a result of bad news on overseas financial institutions. Despite its near-bankruptcy situation, at first Lehman Brothers only received a liquidity injection from the Federal Reserve, but did not receive a lifeline similar to the one granted to Bear Stearns. This resulted in a strong erosion of banks' confidence in one another, as well as a further jump in interbank market interest rate premiums and a fall in equity market prices. Financial difficulties faced by other banks and the largest American insurance company (AIG) also contributed to the deterioration of the situation. Overall, these events resulted in fundamental changes in the functioning of the financial intermediary system. At end-September, markets were temporarily calmed by the US government initiative to offer a USD 700 billion rescue

package, but over the longer term this did not lead to a turnaround in investor sentiment.

In parallel with the flight from risky assets, there was an increase in demand for short-term US government securities, which are considered to be the safest. As a result, the yield on such instruments sank to nearly 0 per cent. Meanwhile, as a consequence of banks' lack of confidence, the interest rate on interbank loans increased sharply, which resulted in an unprecedented widening of the interest rate spread between the two. The mounting lack of confidence passed through to the European interbank market as well, where developments similar to those overseas took place, although to a smaller

Chart 2-1

### Changes in risk indicators\*



\* Indicators reflecting spreads on EUR-denominated debt in a breakdown by credit rating.

Source: J.P. Morgan.

Chart 2-2

### Fed's interest rate target and 3-month USD interbank and government security yields

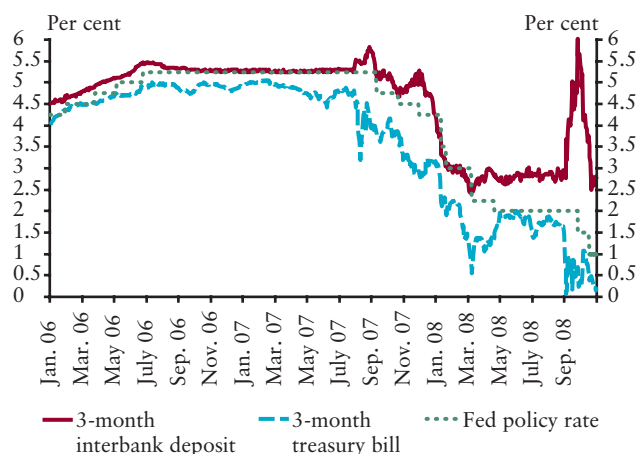
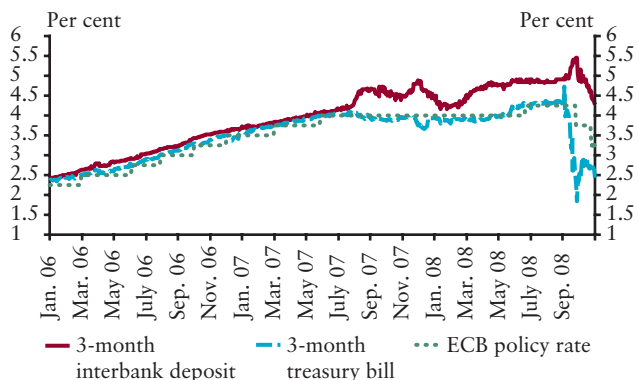


Chart 2-3

### ECB's policy rate and the 3-month EUR interbank and government security yields



extent; the spread between the interbank market yield and the yield on German government securities expanded to a historical peak here as well.

As time went by, in addition to the declining willingness to take risks, fears of recession surrounding the US economy, the developed European countries and the emerging market countries which depend on these economies through foreign trade (such as Hungary) started to increasingly dominate as an underlying reason for falling equity indices. This trend is confirmed not only by the profit projections of the largest corporations, but also by a number of consumer and corporate confidence surveys. Banks, research institutions and supranational organisations revised their growth projections significantly lower.

Large central banks attempted to reduce the pressure in the interbank money markets by additional liquidity-boosting measures. The Fed concluded agreements, first with the largest central banks, and then with the central banks in some emerging market countries as well, to provide dollar liquidity for the banks of the given country. Both the Fed and the ECB

expanded the scope of securities eligible as collateral in several steps, as well as first increasing, then providing unlimited dollar and euro liquidity against collateral for banks operating in the USA and the euro area, respectively. From a certain point of view, central banks took over the role of the interbank market. In addition, on 8 October, the largest central banks reduced their interest rates in a harmonised manner.

Governments also strived to forestall the crisis by taking various steps. First, the news about the USD 700 billion rescue package introduced in the USA (buying up the troubled assets held by banks and capital allocation to financial institutions), then the obligations undertaken by the leaders of the largest European countries resulted in temporary rebounds in the markets. In numerous countries, the amount of deposit insurance was raised, certain bank debts were guaranteed and banks' capital was increased by the state. Considering the deteriorating outlook for business conditions, the governments of several countries also tried to help companies with fiscal measures in order to reduce mass layoffs.



## 2.2 Flight from risky assets had a particularly negative impact on Hungary

In 2008 H1, despite gloomy global market sentiment, demand for the currencies and bonds of emerging market countries did not decline (as seen in the appreciation of their currencies and the decline in the risk premium of their foreign exchange bonds, as opposed, for example, to the developments in equity prices), but starting from September, the radical deterioration in investors' risk tolerance affected price developments in emerging market assets to a great degree as well.

The situation of European emerging market currencies was rendered even more difficult by the currency crisis in Iceland, which highlighted the risk of significant capital outflows from countries struggling with major imbalances. Under these circumstances, due to its high external and government debts as well as its low growth, investors also considered Hungary to be a vulnerable country, despite the fact that some of its balance indicators (current account and state budget deficit) have improved considerably in recent years. In this situation, Hungary's vulnerability was exacerbated by the developed state of the domestic government securities market, as well as the strong integration of the domestic banking sector with the financial intermediary system of the euro area, which facilitated the rapid sale of assets and withdrawal of capital.

In the span of two days in mid-October, the EUR/HUF exchange rate increased from 265 to 282. There would have been no fundamental reasons for further substantial depreciation of the domestic currency, but presumably speculative transactions also played a major role in the weakening of the forint. Therefore, in order to make speculation against the forint more expensive and to prevent it, the central bank increased the base rate by 300 basis points, and narrowed the interest rate corridor to  $\pm 50$  basis points. In parallel, the government initiated negotiations with the International Monetary Fund and the European Commission on setting up a credit line to ensure the foreign exchange financing of the country, should it not be completely feasible via the market due to a drying up of foreign exchange sources. The EUR 20 billion credit line reduced the country risk for investors, which – presumably together with the increase in the base rate and the improvement of the global market sentiment in the last days of October – resulted in a remarkable strengthening of the forint. Both in the periods of depreciation and appreciation, the movements of the forint typically exceeded the increase

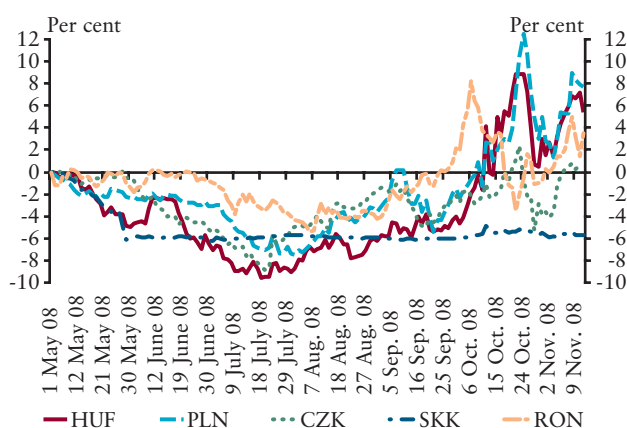
or decrease in the exchange rates of the other currencies in the region.

Between early-September and mid-November, non-residents sold almost HUF 1,900 billion in the foreign exchange market, which, together with the large increase in their FX swap holdings indicates that they took synthetic positions expecting a significant depreciation of the forint and covered the forint exchange rate exposure of their existing assets to an increasing extent, instead of undertaking the exposure.

A similar trend was observed in the development of Hungary's CDS price. With the increase in risk aversion, the

**Chart 2-4**

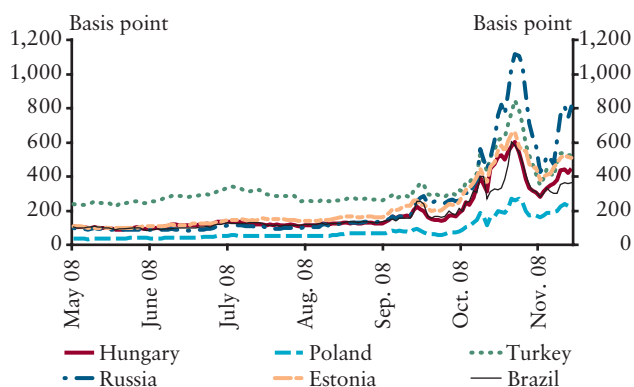
**Exchange rates of currencies in the region\***



\* Changes in per cent, 1 May 2008=0, the positive value indicates the depreciation of the local currency's exchange rate.

**Chart 2-5**

**Developments in CDS spreads in some emerging countries**



Hungarian CDS spread rose above 600 basis points (27 October) along with the spread of developing countries, but to a greater extent than some of them. Following the improvement in market sentiment and the announcement of

the credit line, there was a significant moderation and also an improvement relative to other developing countries until early November (to 290 basis points), and then the spread started to rise again.

## 2.3 The MNB tried to overcome liquidity troubles in the domestic markets by introducing new instruments

The confidence crisis was reflected in the turmoil on the domestic interbank forint and foreign exchange loan/deposit markets as well. In accordance with international practice, the MNB strived to provide additional liquidity to the banking sector by expanding its instruments, and to facilitate the redistribution of liquidity as an intermediary.

Although under normal market circumstances the primary redistribution of liquidity is typically implemented in the uncovered interbank forint market, this market was unable to effectively perform this task in recent weeks. The inadequate functioning of the interbank forint market and the lack of interbank confidence and limits is reflected by the fact that credit and deposit facilities are used simultaneously at the MNB on the two edges of the interest rate corridor.<sup>9</sup> The MNB attempted to facilitate banks' access to forint liquidity with two new forint lending instruments and government securities auctions from 21 October and 17 October, respectively.

Domestic interbank market problems were exacerbated by the fact that in addition to the inadequate redistribution of forint liquidity, banks faced the lack of foreign exchange liquidity as well. As a result of the global liquidity shortage, increased sovereign risk and the lack of confidence, some domestic banks encountered difficulties in obtaining foreign exchange. In order to solve this problem, in mid-October the MNB introduced two-way O/N FX swap tenders, thereby practically playing an intermediary role between banks with euro surplus and those which are short of it, as they do not engage in transactions with one another due to their reduced limits. For those domestic financial institutions which cannot obtain sufficient FX liquidity in the interbank market or through the aforementioned MNB tenders, the MNB – also in the form of FX swap transaction – provides euro liquidity,

received from the ECB on the basis of a EUR 5 billion framework agreement. The FX swap instruments introduced by the MNB contributed significantly to the fact that banks which could not obtain enough foreign exchange on the swap market were not compelled to buy foreign exchange on the spot market, which would have resulted in depreciation of the forint and the opening of banks' foreign exchange position (an increase in their exchange rate exposure).

The global decline in risk appetite was also reflected in non-residents' sales of government securities on the secondary market. In October, non-residents sold government securities worth approximately HUF 600 billion, which had not happened in previous years. As a result of this selling pressure, yields on government securities increased considerably. The largest increase was observed in the 3-5 year segment of the curve, where yields have increased by 450 basis points since end-August. The yield spread compared to interest rate swap yields and the bid-ask spreads significantly exceeded the levels seen during the March turbulence, which illustrates the strong functional disorders and on some days an almost complete standstill of the bond market. The MNB's purchases of government securities presumably contribute to normalisation of the functioning of the secondary market.

Although there has been some improvement in the functioning of the markets, the normal course of business has not been restored. As a result of this dysfunctionality, inconsistent yield levels can be observed in some markets. Deterioration of the information content of yields makes it difficult to identify the path of the central bank base rate expected by the market. However, the central bank measures jointly facilitated the more effective orientation of the market interest rate level.

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<sup>9</sup> Similar developments were observed in the case of the ECB regarding the use of instruments on the two sides.

## 2.4 Despite substantial weakening of the forint, monetary conditions did not loosen

The forward-looking real interest rate has increased considerably in recent months. This is primarily the result of an increase in the risk premium of the forint, the increase in yields stemming from the selling pressure and the illiquidity of the markets, as well as the subsequent 300 basis point increase in the central bank base rate. The rise in the nominal yield level did not entail an increase in expected inflation, because, as a consequence of the deteriorating growth prospects and the recent declines in energy prices, the expected magnitude of price increases has declined, despite the higher EUR/HUF exchange rate, which is reflected in the forecasts of both the central bank and analysts.

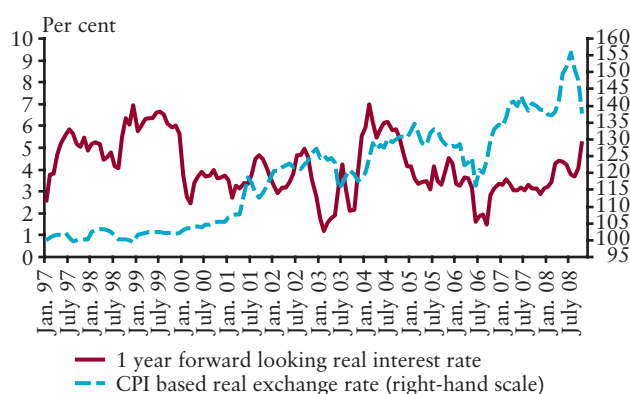
Changes in the real exchange rate were primarily determined by the developments in the nominal forint exchange rate, which has been rather volatile in recent months. While the forint appreciated significantly in real terms before end-August, the global decline in risk appetite resulted in considerable weakening of the forint until mid-October: the EUR/HUF exchange rate increased from 230 to above 280. This was followed by some correction at end-October, with the forint appreciating back to the level of 255. As mentioned earlier, a temporary improvement in global market sentiment, the 300 basis point increase in the central bank base rate and the credit facility set up for Hungary by the International Monetary Fund, the European Union and the World Bank may have all played a role in this strengthening. However, the domestic currency then weakened again on the back of international sentiment, which turned unfavourable again, and downgrades of Hungary's ratings. The overall depreciation of the forint in nominal terms in the last quarter was stronger than the inflation differential between Hungary and the euro area which points to real appreciation, and this resulted in a substantial depreciation in real terms.

With the deepening of the financial crisis, a significant decline in the domestic credit supply took place, due to increasing interest rates and quantity constraints. Several banks recently tightened the price and non-price conditions for lending. In addition, an increasing number of financial

institutions have decided to suspend their foreign exchange based schemes, which were dominant in recent years. An eventual expansion of more expensive forint loans may result in further tightening of financial conditions. Overall, the tighter credit conditions are not fully reflected by the real exchange rate and the real interest rate, usually considered relevant indicators of monetary conditions. As a result of a decline in foreign exchange lending, the role of the interest rate channel in general may strengthen in monetary transmission.

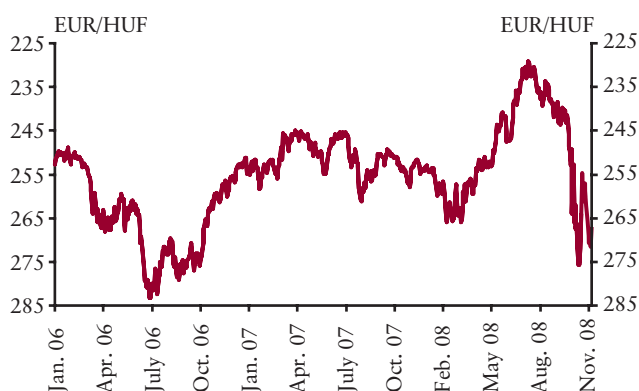
**Chart 2-6**

**Developments in monetary conditions**



**Chart 2-7**

**Changes in the HUF/EUR exchange rate**



## 2.5 Tighter lending conditions expected

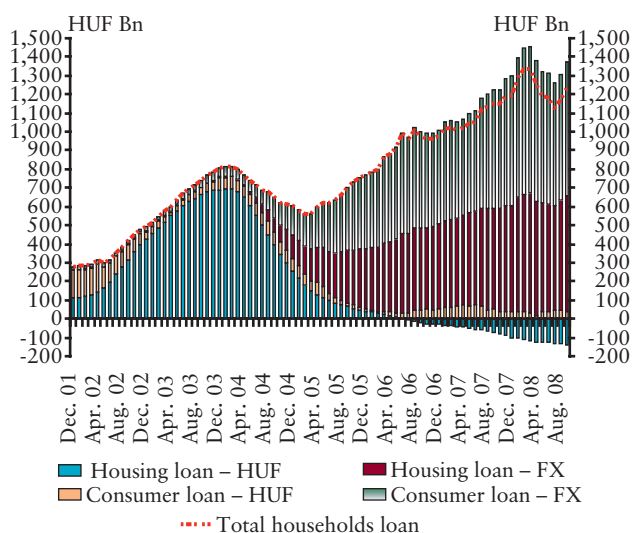
Although data available in September indicated a relatively stable growth path, the negative events of October in both the global and the domestic economic environment profoundly changed economic participants' access to credit. We will first provide a brief overview of domestic banks<sup>10</sup> lending activities up to September, followed by a description of the processes prevailing from October.

Growing demand for loans was observed in the third quarter both the corporate and households sector, which boosted net borrowings; thus the deceleration experienced in the second quarter was followed by an adjustment. As a result of accelerating lending dynamics, growth in corporate loans surpassed the growth rate of nominal GDP once again, while in the case of households this had already been the case. Foreign exchange continues to make up a large slice of lending, especially in terms of credit growth.

In the household segment, after foreign exchange loans gained ground in 2004, net borrowings were consistently on the rise until 2008, and then started to decline slightly. Several explanations may account for this phenomenon: on the one hand, as a result of the growing indebtedness of households, the number of creditworthy customers may have

**Chart 2-8**

### Net borrowings of households\*



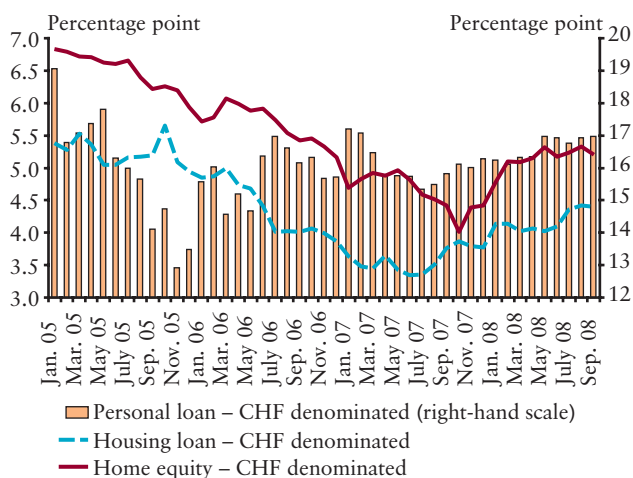
\* Annual growth (adjusted for exchange rate effects).

Source: MNB.

declined; on the other hand, indebtedness may have also been behind the decreasing willingness of credit institutions to grant loans. However, in our opinion the latter had a smaller impact.

**Chart 2-9**

### Interest rate premium of household loans relative to the 3-month base rate\*



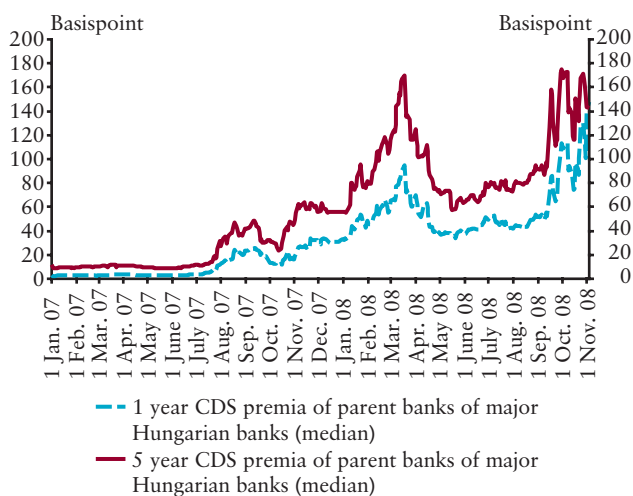
\* APR - CHF LIBOR; 3-month moving average.

Source: MNB.

Another factor that may have contributed to the rebound in credit demand in the third quarter is the fact that credit institutions only partially passed the increased costs of financing triggered by the sub-prime crisis on their customers. We assume that market participants expected soaring credit costs in the long run, so they partially brought their borrowings ahead. As to the reason behind the partial passing of costs, credit institutions may have preferred credit rationing to incorporating the increased costs in their pricing, therefore they tightened their credit standards and credit conditions instead.

The negative developments during October in both the global and domestic economic environment profoundly changed the future prospects. Soaring financing costs can be explained by several factors. Firstly, the parent banks of domestic banks faced a significant widening of their CDS spreads. Secondly – further intensifying the implications of the above – a

<sup>10</sup> Financial accounts data would be more suitable for describing the lending process in its entirety, but their availability is considerably delayed. Lacking such data, the analysis focused on the lending information of the domestic banking sector. For households this does not imply a constraint, as the sector has no material borrowings from foreign banks, however, domestic bank loans constitute only a half of the total borrowings of the corporate sector.

**Chart 2-10****1-year and 5-year CDS spreads of domestic banks' parent banks**

Sources: Thomson Datastream, Bloomberg, Reuters.

substantial increase in Hungarian sovereign CDS spreads also occurred during the same period.

The third factor affecting financing costs is the drying up of swap markets (USD-HUF, EUR-HUF, EUR-CHF), and their growing implied financing costs. Since Hungarian banks obtained a large part of the funds required for foreign exchange lending through swap contracts, this factor plays a decisive role. As banks – and most analysts – considered renewal risks very low in the past, the maturity of swap contracts was typically much shorter than the instruments they financed. Banks face deteriorating profitability since the renewal of swap positions has become more difficult, more expensive or even impossible, while the widening foreign exchange position puts upward pressure on exchange rate risks. As liquidity risks grow, banks may attempt to reduce maturity transformation by decreasing their long-term lending, which leads to lower credit supply. The typically pro-cyclical behaviour of banks also undermines the credit opportunities of economic participants as banks – in order to avoid the accumulation of losses through depreciation and to protect their capital position in a deteriorating economic environment – may resort to credit rationing: they may freeze lending to debtors with worse credit ratings, or as a last resort, might even suspend lending altogether.

As a result of the drastically changed environment, several Hungarian commercial banks announced in October that due to the spill-over effects of the sub-prime crisis and to the lack

of foreign exchange liquidity, they would limit or terminate the disbursement of foreign exchange-based loans, and to make up for the higher external costs of funds, they would raise the interest rates payable by customers.

In the case of Swiss franc loans, which used to be the most popular among households, nearly all banks terminated the practice of extending them with preferential interest rates or foregoing upfront charges. Of those that did not suspend CHF lending altogether, several banks raised their interest rates significantly, by 200-350 basis points. As the magnitude of this interest raise substantially exceeds the growth of financing costs, this action may in fact be the pricing out of CHF-based products. This assumption is supported by the fact that the interest rate increase for existing customers was a mere fraction of the rates defined for new contracts. In addition to the changes in pricing, banks severely tightened their non-price related conditions as well. They discontinued several existing products including only mortgage-based lending; in mortgage lending they decreased the LTV ratio; and they apply a higher discount for determining the collateral value of real estate. Further weakening the supply side, banks now accept only a limited number of new credit applications through the broker distribution channel, whose share amounted to around 50 per cent recently.

As noted above, the most probable overall result of the supply side 'credit crunch' will be a significant fall in household lending. We expect that credit rationing will play an increasingly important role, while the predominantly smaller banks that have not re-priced their loans thus far have insufficient infrastructure to make up for the shrinking lending opportunities provided by larger banks. Regarding housing loans, state-subsidised forint loans may become competitive again. The Hungarian public is extremely sensitive to payment burdens, and a steep interest rate increase is likely to inhibit the willingness of households to borrow, putting downward pressure on demand, while the average amount of loans may also shrink as the ratio of instalments relative to income grows substantially. Moreover, under conditions marked by increased exchange rate volatility, households will be reluctant to become indebted in foreign currency, but they will not be able to afford the higher interest rates on forint loans.

Although a part of the October data already reflects the first signs of substantial tightening in credit conditions, we expect the November data to be more revealing, since data for October also reflect the effects of earlier loan contracts.

### **3 Inflation and real economic prospects**







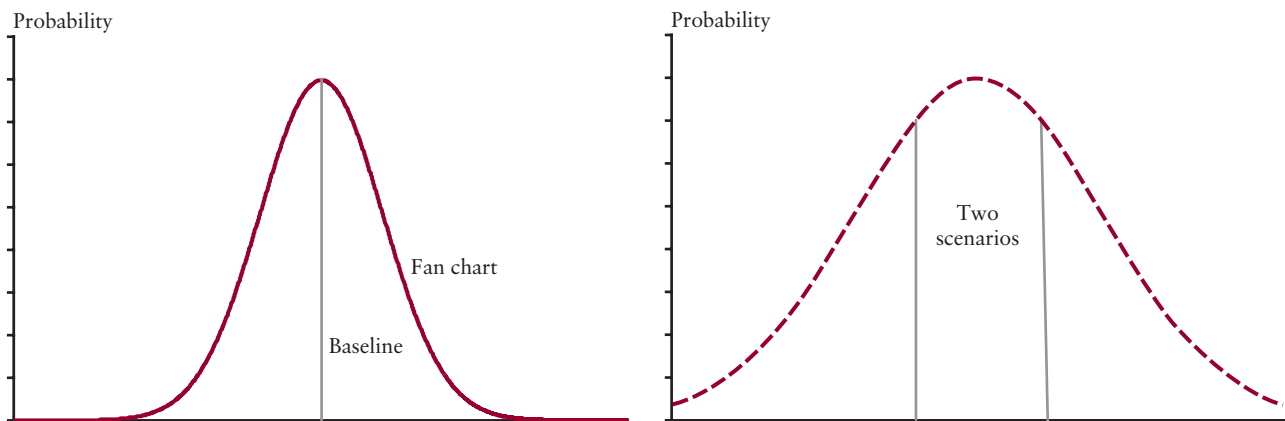
Our November forecast is markedly different from earlier projections, in several respects.<sup>11</sup> The major shocks in recent months not only change the expected macroeconomic path, but also call for the introduction of a new methodology to address the uncertainty surrounding the forecast as a result of these shocks. Since our expectations regarding the economic outlook have become significantly more uncertain, we have suspended the practice of structuring our projections around a preferred baseline scenario. At this time, our forecast indicates a range for each variable, which was defined on the basis of two equally ranked scenarios. The risk distribution surrounding the range is even harder to quantify than before, and thus we were not able to illustrate it by means of the technology used in previous *Reports* (a fan chart based on historical projection errors).

Before presenting our forecast in detail, we briefly describe the two paths, and the differences between our

assumptions below. Above all, it is important to stress that the basic assumptions we generally use for our projections – base rate, EUR/HUF exchange rate, oil prices – are exactly the same in both versions. We defined the two scenarios on the basis of two main points of uncertainty. On the one hand, we are uncertain about the longer-term prospects for global economic activity. In the optimistic scenario we predict a faster recovery from the slowdown already emerging, expecting our trading partners to gradually rebound from the middle of 2009. By contrast, our pessimistic scenario expects a recession until 2010. The second point of uncertainty concerns development in domestic lending. In the optimistic scenario we project merely a gradual slowing of lending dynamics, while the pessimistic scenario is founded on the premise of a dramatic decrease in the borrowing of both households and the corporate sector.

### Chart 3-1

#### Risk distribution in the current and previous projections



<sup>11</sup> Our forecast is based on information available up to 5 p.m., 14 November 2008.

**Box 3-1: Our basic assumptions**

In line with the previous practice of our Reports, our forecast applies certain fixed, basic assumptions regarding the expected path of the base rate, the EUR/HUF exchange rate and oil prices. We fixed the central bank base rate at 11.5 per cent, which reflects the level to which it was raised on 22 October. For the exchange rate, we used the average October EUR/HUF exchange rate, which is around 11 per cent weaker than the exchange rate applied in our previous forecast. Looking at

forward oil prices, we can observe a significant change as well, albeit in the opposite direction. Denominated in euro, oil prices decreased by 25-30 per cent, depending on maturity. It should be noted that in parallel with the decrease in spot oil prices in recent months, the curve of the oil forward price path changed as well: as the price reduction was smaller across longer maturities, the curve of the oil forward path became steeper.

**Table 3-1****Changes in our basic assumptions compared to the August Report\***

	August 2008			November 2008			Change compared with August (per cent)		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
Central bank base rate (per cent)**	8.5	8.5	8.5	11.5	11.5	11.5	3.0	3.0	3.0
HUF/EUR	242.8	231.9	231.9	250.4	257.9	257.9	3.1	11.2	11.2
USD/EUR (cent)	155.4	157.7	157.7	147.5	133.5	133.5	-5.1	-15.4	-15.4
Brent oil price (USD/barrel)	122.4	138.2	137.1	101.8	80.7	86.7	-16.9	-41.6	-36.8
Brent oil price (EUR/barrel)	78.1	87.6	87.0	68.1	60.4	64.9	-12.8	-31.1	-25.3
Brent oil price (HUF/barrel)	18,974	20,324	20,167	17,052	15,584	16,751	-10.1	-23.3	-16.9

\* Yearly averages, looking ahead on the basis of average exchange rates prevailing in October 2008, and the oil forward price path.

\*\* End-of-year values based on our fixed interest base rate, changes compared to August are expressed in percentage points.

## 3.1 Temporary economic deterioration followed by slow recovery

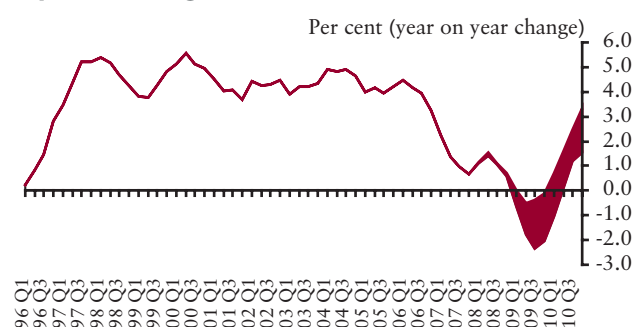
In recent months, growth prospects have deteriorated markedly for all components. While the first half of 2008 saw a revival in economic activity, the third quarter showed a decline on a quarterly basis. Looking ahead we expect a further decline in GDP, but due to the low base from last year the annual growth rates will show a decrease only early next year. This may be followed by a moderate recovery in 2010, although economic growth will remain subdued over the entire forecast horizon.

On the whole, we expect GDP dynamics to fall significantly below their potential growth rate over the entire forecast horizon, and therefore, contrary to our previous expectations, the negative output gap will continue to widen continuously until 2010. Following the 1 per cent growth this year, cumulated economic growth will remain under 2 per cent for the next two years, even according to our optimistic scenario, while the pessimistic scenario predicts a decline of around 1.5 per cent in 2009, followed by modest growth of about 0.5 per cent in 2010.

Our outlook for economic growth has drastically changed compared to the previous Report, for three main reasons. First, our expectations regarding the path of external economic activity are much more pessimistic than previously. Second, aggregate demand is reduced substantially – by nearly 2 per cent of the GDP – based on the new measures defined in the Budget Act for 2009. Finally, in the wake of

Chart 3-2

### Expected changes in the GDP\*



\* The edges of the illustrated bands indicate the two scenarios.

the financial crisis, our expectations regarding the borrowing opportunities of economic agents are much bleaker than before.

In our forecast for external demand, we ascribed great weight to the strong international slowdown seen in the last few weeks. The global tensions on interbank markets and lending are significant contributing factors behind this slowdown. In contrast with the brisk growth observed in the first quarter of the year in the euro area, the latest data and indices reflecting short-term expectations portend a very gloomy outlook for Hungary's most important trading partner. In view of the above, we projected a short-term stagnation of the GDP-based external demand in both scenarios.

Table 3-2

### Our external demand projections compared to forecasts of international institutions\*

		Total			Euro area		
		2008	2009	2010	2008	2009	2010
MNB	November 2008	2.1	(-0.4) - 0.3	(-0.2) - 1.5	1.2	(-0.8) - (-0.2)	(-0.6) - 1.1
	August 2008	2.5	1.9	2.1	1.6	1.4	1.7
IMF*	November 2008 (update)	1.9	0.0	x	1.2	-0.5	x
	October 2008	2.6	1.1	2.2	1.3	0.2	1.3
	April 2008	2.2	1.9	2.8	1.4	1.2	2.1
OECD*	June 2008	2.5	2.0	x	1.7	1.4	x
	December 2008	2.6	2.5	x	1.9	2.0	x
EB*	Autumn 2008	2.5	0.9	1.7	1.2	0.1	0.9
	Spring 2008	2.6	2.3	x	1.8	1.6	x
EKB	September 2008	x	x	x	1.1 - 1.7	0.6 - 1.8	x
	June 2008	x	x	x	1.5 - 2.1	1.0 - 2.0	x

\* GDP-based external demand, values calculated by the MNB; the projections of the specified institutions for the relevant countries are adjusted with the weighting system of the MNB, which is also used for the calculation of the bank's own external demand indices. Therefore, these figures may deviate from the figures published by the specified institutions.

As noted above, the two scenarios differ with respect to long-term prospects. In the first case, economic activity will start to pick up from the second half of 2009 for our trading partners; this scenario is broadly consistent with the forecasts published by international institutions. On the other hand, since all analyses focusing on European economic activity indicate substantial downside risks in the projections, in our second scenario we predicted that shrinking loan supply would result in a sustained slowdown in European growth, leading to a recession that would last until 2010.

Relative to both the double-digit growth rates seen in previous years and our own earlier projections, growth in exports drops off significantly in both scenarios. In contrast with the 6 per cent rate projected for this year, export dynamics are forecast to fall to the 0-2 per cent range next year, and to the 2-6 per cent range by 2010. In both scenarios, we predicted that growth in imports would fall behind that of exports across the entire forecast horizon due to slack domestic demand, and consequently the contribution of net exports to growth is expected to be positive in 2009 and 2010.

Conditions for economic growth in Hungary are significantly influenced by the effects of the government measures included in the draft Budget Act for 2009, which were announced at the end of October – these measures include freezing nominal wages in the public sector, eliminating the 13th month salary, and tightening the regulations for the 13th month pension payment. With respect to these government measures, we should note that we expect the nominal wage freeze in the public sector to be sustained, and by 2010 we project similar wage growth rates in the public sector as in the private sector.

Tighter credit conditions are expected to restrain investment activity by the corporate sector and households the most. The tighter conditions will also have a significant impact on the consumption expenditure of households. We cannot deny the possibility that tighter credit will make the financing of production considerably more expensive for certain

participants of the SME sector, and thus it may even render the performance of normal business functions impossible.

As for corporate investments, fewer borrowing opportunities combined with deteriorating international prospects and poor internal demand portend fairly weak corporate investment activity, which should generally trend lower. This can only be partially offset by the regrouping of EU funds (the SME package of the government) and by other one-off factors, such as the large auto industry investment project to be implemented in the city of Kecskemét. On the whole, we expect a slight increase in national economic investments across our forecast horizon in the optimistic scenario. Our pessimistic outlook, however, indicates a decline not only in 2009, but in 2010 as well.

With respect to the response of households to the tightening of credit conditions, we should be prepared for a strong reaction, as households had largely relied on borrowing – mostly foreign exchange loans in recent years – both for their consumption and investments. According to the first scenario, lending will decelerate only gradually until it reaches its expected sustainable value by the end of 2009. Based on the average of the years (2000-2001) preceding the positive shocks (state subsidised housing loans, foreign currency abundance), we defined this value as 4 per cent of disposable income. In this scenario, households' investment and consumption propensity will decrease only gradually. In the second scenario, however, we assume a drastic fall in short-term lending and expect net household borrowings to be practically at zero for half a year, after which borrowing can start a long-term gradual recovery process from this level. In this case, the household investment rate may plunge drastically, dropping close to the rates that characterised the first half of the 1990s, and we expect a stronger adjustment in the sector's propensity to consume as well. Households will partly adjust to the decline of net borrowings by reducing their available funds, but on the whole we expect to see evidence of a more cautious attitude in the behaviour of the sector. As a result, we project growth in net financial savings in both scenarios.

**Table 3-3****Household consumption and savings rate\***

	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Consumption rate	89.7	89.6-89.7	88.0-89.1	87.1-88.1
Investment rate	7.4	7.2-7.3	5.2-6.6	5.1-6.3
Financial saving rate	2.9	3.1	4.3-6.9	5.6-7.8

\* Proportionate to disposable income, per cent.

**Table 3-4****Details of the GDP forecast**

	2007	2008		2009		2010	
	Actual	August	November	August	November	August	November
Household consumption expenditure	0.7	0.6	0.4-0.5	1.5	<b>(-3.6)-(-1.1)</b>	2.7	<b>0.4-1.2</b>
Social transfers in kind	-10.8	-0.9	<b>1.3</b>	0.7	<b>0.8</b>	3.2	<b>0.9</b>
Final consumption of households	-1.8	0.3	<b>0.5-0.6</b>	1.3	<b>(-2.7)-(-0.7)</b>	2.8	<b>0.5-1.1</b>
Final consumption of government	-2.2	-3.1	<b>-1.7</b>	0.9	<b>-1.8</b>	2.0	<b>0.6</b>
Total consumption	-1.8	-0.1	<b>0.4-0.5</b>	1.3	<b>(-2.6)-(-0.9)</b>	2.7	<b>0.5-1.0</b>
Gross fixed capital formation	1.5	2.1	<b>(-0.9)-(-0.5)</b>	5.4	<b>(-3.5)-1.1</b>	6.3	<b>(-0.2)-2.8</b>
Changes in inventories							
Gross capital formation	1.6	4.7	<b>3.3-3.7</b>	6.2	<b>(-2.9)-1.0</b>	5.5	<b>(-0.8)-1.6</b>
Domestic use	-1	1.0	<b>1.2</b>	2.5	<b>(-2.7)-(-0.4)</b>	3.4	<b>0.2-1.2</b>
Export	15.9	10.1	<b>6.2-6.4</b>	7.4	<b>0.0-1.6</b>	8.7	<b>2.0-5.8</b>
Import	13.1	8.8	<b>6.6-6.7</b>	7.4	<b>(-1.2)-1.5</b>	8.9	<b>1.8-4.9</b>
GDP	1.1	2.2	<b>1.0-1.1</b>	2.6	<b>(-1.7)-(-0.2)</b>	3.4	<b>0.5-2.0</b>

According to our forecast, following this year's growth rate of under 1 per cent, the disposable income of households may decline again in 2009, similar to 2006 and 2007, and will only start to pick up again in 2010, with a growth rate of 1.3-1.8 per cent. This decline in income can be attributed partly to government measures and partly to the deteriorating economic environment.

Following a slight increase in consumption in 2008, we expect a relapse in consumption next year, and project only minimal growth in 2010 as well. Consumption will

decline, similar to 2007, by 1-3 per cent next year. Both scenarios forecast a modest recovery in 2010. Considering that the rate of borrowing is higher in the financing of housing investments than in consumption, the contraction in lending will result in a bigger downturn in household investment than in household consumption. Even in the optimistic scenario, due to the combined effect of deteriorating and increasingly uncertain income prospects and the drying up of borrowing opportunities, housing investment is expected to fall by more than 10 per cent next year.

## 3.2 Substantial layoffs and decelerating wage dynamics

Developments on the labour market will also be determined by the effects of the subdued economic growth in the next two years. According to our forecast, the corporate sector will be forced to make significant adjustments as the profitability of the corporate sector was in a weak position from the start: profits realised from labour have been declining for two years. The key issue is how flexible wages will be under the conditions of sustained weak economic growth. Based on our experience from the past years, wage dynamics do not tend to slow significantly in the private sector even in periods of substantial layoffs, and thus, looking ahead, the sector faces a great deal of uncertainty as to the relative importance of the wage channel and that of staff numbers during the adjustment.

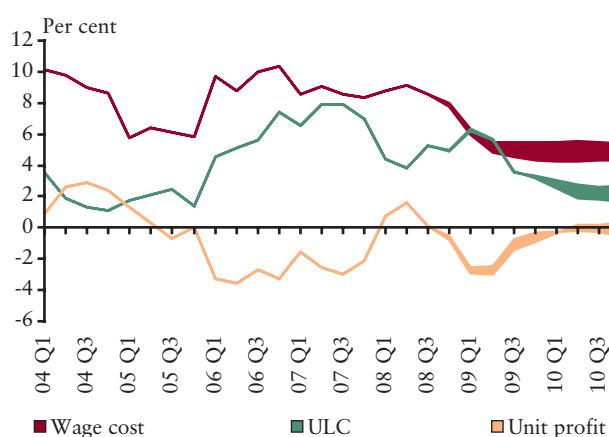
We forecast a substantial wave of layoffs in the private sector by 2010; even the optimistic scenario predicts that in the period 2009-2010 over 60,000 employees may be made redundant in the private sector, while according to our pessimistic scenario the number of layoffs may exceed 100,000 employees by 2010.

In parallel with the job cuts, nominal wage dynamics may also sink to historical lows in the private sector. However, in light of our past observations of wage rigidity, we do not expect a drastic plunge in wage dynamics at this time, either. In fact, for next year, we project a wage increase below 6 per cent in both scenarios. In the first scenario, wage dynamics may drop to 5-6 per cent by 2010, while the second scenario projects wage growth near 4 per cent.<sup>12</sup> A common feature in both scenarios is the expected growth of real wages in the private sector across the entire forecast horizon, considering that inflation may decrease significantly.

The question arises as to the possible effect of the public sector wage cuts on private sector wages, as these cuts are expected to result in a nearly 8 per cent reduction in real wages next year. In order to answer this question, in addition to existing wage rigidities, we should examine the long-term relationship between private and public sector wages. Wages in the two sectors may have a measurable, mutual impact on one another if the employees in the two sectors are close

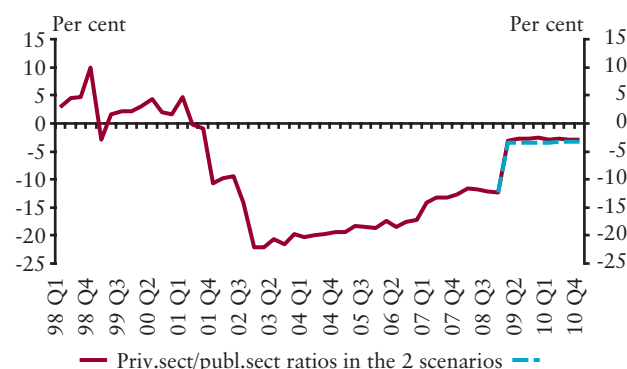
substitutes. In this case, however, it is the proportion of wages in the private and public sector which establishes the connection between private and public employees. If private sector wages are persistently higher than public sector wages, it will trigger a labour flow from the public to the private sector, which will reduce the rate. The reverse will be true if our starting point is the opposite.

**Chart 3-3**  
Components of unit labour costs in the private sector\*



\* The edges of the illustrated bands indicate the two scenarios.

**Chart 3-4**  
The ratio of private to public sector wages\*



\* Ratio of HUF levels in per cent.

<sup>12</sup>In addition to the wage dynamics of individual employees, the national economic wage growth rate indicated in the CSO statistics includes changes in the composition of employees as well. As the weight of low-wage jobs is on the decline, looking ahead, this latter effect should be around 1 per cent in the wage index, according to our calculations derived from past years' processes. This means that the wage growth rate of average employees will fall behind the wage dynamics indicated in the statistics by 1 percentage point over our entire forecast horizon.

However, as the chart below illustrates, looking back over a longer period of time in the wake of the government measures staged for 2009, the ratio of private and public wages will return to a level, observable before the substantial wage increases in 2002.<sup>13</sup> Consequently, we did not expect a very close relationship between the wage dynamics of the two sectors over our forecast horizon.

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<sup>13</sup> It is important to note however, that the question is more complex than the illustration above, as the simple ratio of average wages does not control for changes in the quality of labor.

### 3.3 Strong disinflation: inflation is expected to be nearly on target in 2009 and below target in 2010

According to our calculations, strong disinflation can be expected over the entire forecast horizon in both scenarios, provided that our basic assumptions hold true. As opposed to our previous projections, we now project that inflation will approach the medium-term target as early as next year, and for 2010 we expect a further decline in inflation, with the consumer price index then expected to be around 2 per cent.

Changes in our basic assumptions and deteriorating macroeconomic prospects have both had a significant impact on our inflation outlook. Since our August forecast the EUR/HUF exchange rate and oil prices have changed significantly, with great volatility. In parallel with exchange rate depreciation of over 10 per cent which is applied in our forecast, oil prices have plummeted and global inflation risks substantially decreased. The net effect of the two processes on the inflation path is nearly neutral; however, over a longer time horizon they put slight upward pressure on inflation.

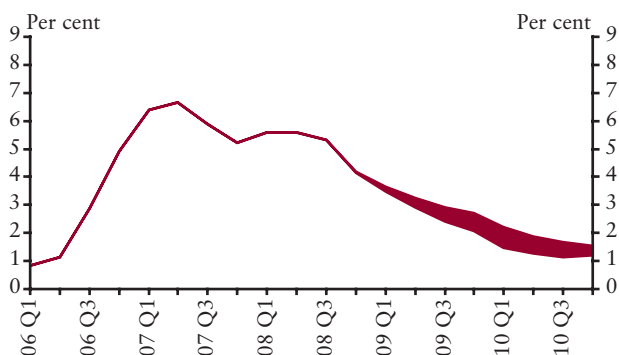
Unfavourable domestic economic processes primarily impact core inflation in respect of the consumption basket. In our forecasts published in recent quarters, we have focused particularly on the disinflationary effect of the negative output gap. As a result of deteriorating economic prospects and lower household real income, this disinflationary effect

has become even stronger in our current forecast. Despite the risks stemming from persistently high inflation expectations, we now project such a wide output gap that by 2010 it may result in a decrease of core inflation by 3.5-4 per cent compared to 2008 – provided that our basic assumptions hold true. Therefore, in 2010 inflation may actually drop to below 3 per cent, the level of price stability.

Over a shorter-term perspective, global inflation processes will play a decisive role in the expected decline of inflation. On the one hand, decreasing energy and unprocessed food prices mitigate cost-side price pressures on core inflation items; on the other hand, these effects are also directly reflected in product groups outside of core inflation.

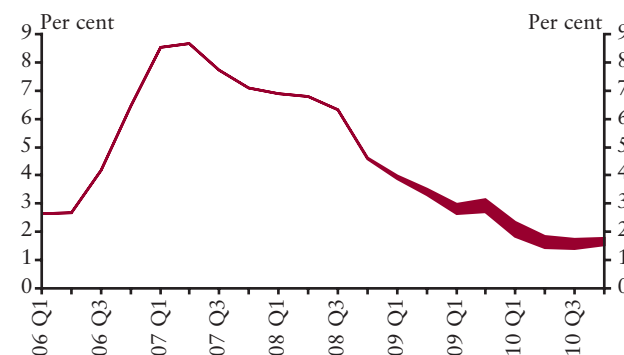
The latter effect is confirmed by the fact that relative to our August forecast, our projections for 2009 show a significant narrowing of the gap between CPI and core inflation. Commodity and food prices, which were rising continuously in the first half of the year, started to fall sharply due to the deteriorating global economic prospects, which in addition to decreasing energy prices also led to a decrease in the prices of domestic unprocessed foods. Looking ahead, lower oil prices will significantly dampen the growth rate of regulated prices (gas prices, district heat supply).<sup>14</sup>

**Chart 3-5**  
Projection range for changes in core inflation\*



\* Year-on-year indices in per cent. The edges of the illustrated bands indicate the two scenarios.

**Chart 3-6**  
Projection range for changes in the consumer price index\*



\* Year-on-year indices in per cent. The edges of the illustrated bands indicate the two scenarios.

<sup>14</sup> Since the increase in natural gas prices in 2008 was significantly lower than the growth of import prices, we expect another price increase at the beginning of 2009. However, according to our basic assumptions the price of imported natural gas may decline in the second half of next year, which will allow a reduction of consumers gas prices to the end-of-year level of 2008.



**Table 3-5****Changes in our forecast compared to August**

	2007	2008		2009		2010	
	Actual	Projection					
		August	Current	August	Current	August	Current
<b>Inflation</b> (annual average)							
Core inflation <sup>1</sup>	6.0	5.1	<b>5.2</b>	2.8	<b>2.7 - 3.0</b>	2.7	<b>1.3 - 1.8</b>
Consumer price index	8.0	6.3	<b>6.2</b>	4.1	<b>3.1 - 3.4</b>	3.0	<b>1.5 - 1.9</b>
<b>Economic growth*</b>							
External demand (GDP-based)	3.8	2.5	<b>2.1</b>	1.9	<b>(-0.4) - 0.3</b>	2.1	<b>(-0.2) - 1.5</b>
Impact of fiscal demand <sup>2</sup>	-3.7	-1.5	<b>-1.8</b>	-0.1	<b>(-0.6) - (-0.1)</b>	-0.8	<b>(-0.5) - 0.3</b>
Household consumer expenditure	0.7	0.3	<b>0.4 - 0.5</b>	1.4	<b>(-3.6) - (-1.1)</b>	2.8	<b>0.4 - 1.2</b>
Fixed capital formation	1.5	2.1	<b>(-0.9) - (-0.5)</b>	5.4	<b>(-3.5) - 1.1</b>	6.3	<b>(-0.2) - 2.8</b>
Domestic absorption	-1.0	1.0	<b>1.2</b>	2.5	<b>(-2.7) - (-0.4)</b>	3.4	<b>0.2 - 1.2</b>
Export	15.9	10.1	<b>6.2 - 6.4</b>	7.4	<b>0.0 - 1.6</b>	8.7	<b>2.0 - 5.8</b>
Import	13.1	8.8	<b>6.6 - 6.7</b>	7.5	<b>(-1.2) - 1.5</b>	8.9	<b>1.8 - 4.9</b>
GDP**	1.1	2.2	<b>1.0 - 1.1</b>	2.6	<b>(-1.7) - (-0.2)</b>	3.4	<b>0.5 - 2.0</b>
<b>Current account deficit<sup>3</sup></b>							
As a percentage of GDP	6.4	-	<b>7.0 - 7.2</b>	-	<b>4.0 - 4.9</b>	-	<b>4.3 - 4.4</b>
EUR billions	6.5	-	<b>7.7 - 7.8</b>	-	<b>4.3 - 5.4</b>	-	<b>4.8 - 4.9</b>
<b>External financing requirement<sup>3</sup></b>							
As a percentage of GDP	5.3	-	<b>5.7 - 5.8</b>	-	<b>1.8 - 2.8</b>	-	<b>1.7 - 1.8</b>
<b>Labour market</b>							
Whole-economy gross average earnings <sup>4</sup>	8.0	8.8	<b>8.7</b>	6.5	<b>0.9 - 1.4</b>	6.5	<b>4.4 - 5.6</b>
Whole-economy employment <sup>5</sup>	-0.1	-1.6	<b>-1.2</b>	-0.6	<b>(-1.3) - (-0.9)</b>	0.1	<b>(-1.8) - (-0.8)</b>
Private sector gross average earnings <sup>6</sup>	9.1 (8.2)	10.2 (8.5)	<b>9.3 (8.5)</b>	7.2	<b>5.0 - 5.7</b>	6.5	<b>4.3 - 5.5</b>
Private sector employment <sup>5</sup>	0.9	-1.7	<b>-1.1</b>	-0.7	<b>(-1.4) - (-0.9)</b>	0.2	<b>(-2.2) - (-1.0)</b>
Private sector unit labour cost <sup>5,7</sup>	7.3	3.7	<b>4.6</b>	4.1	<b>4.7</b>	3.1	<b>2.0 - 2.8</b>
Household real income***	-3.0	1.3	<b>0.5 - 0.7</b>	2.0	<b>(-0.6) - (-1.8)</b>	2.7	<b>1.3 - 1.8</b>

<sup>1</sup> For technical reasons, this indicator may temporarily differ from the index published by the CSO; over the long term, however, it follows a similar trend.

<sup>2</sup> Calculated from the so-called augmented (SNA) balance; a negative value represents a narrowing of aggregate demand.

<sup>3</sup> For the 2004-2007 period due to the high level of Net Errors and Omissions (NEO) the current account deficit/external financing requirement may be higher than suggested by official figures.

<sup>4</sup> Calculated on a cash-flow basis.

<sup>5</sup> According to the CSO LFS data.

<sup>6</sup> According to the original CSO data. The numbers in brackets refer to wages excluding the effect of whitening and the changed seasonality of bonuses.

<sup>7</sup> Private sector unit labour costs calculated with a wage indicator excluding the effect of whitening and the changed seasonality of bonuses.

\* For October the CSO published annual national accounts data under its regular yearly revision. Annual actual data already reflect the revised values, however, since their quarterly development is not known at this time, we used earlier data for these purposes of our forecast.

\*\* The table contains data excluding calendar effects.

\*\*\* MNB estimate.

**Table 3-6****MNB forecast compared to other institutions**

	2007	2008	2009	2010
<b>Consumer Price Index (annual average growth rate, per cent)</b>				
MNB (November 2008)	8.0	6.2	3.1 - 3.4	1.5 - 1.9
Consensus Economics (October 2008) <sup>1</sup>	-	6.2 - 6.3 - 6.6	3.1 - 3.9 - 4.8	-
OECD (June 2008)	8.0	6.3	3.7	-
European Commission (Autumn 2008)	7.9	6.3	3.9	2.9
IMF (November 2008)*	7.9	6.3	4.5	4.1
Reuters-survey (October 2008) <sup>1</sup>	-	6.2 - 6.3 - 6.3	3.1 - 3.8 - 4.8	2.3 - 2.9 - 3.3
<b>GDP (annual growth rate, per cent)</b>				
MNB (November 2008)	1.1	1.0 - 1.1	(-1.7) - (-0.2)	0.5 - 2.0
Consensus Economics (October 2008) <sup>1</sup>	-	1.7 - 1.9 - 2.5	1.0 - 1.6 - 2.6	-
OECD (June 2008)	1.3	2.0	3.1	-
European Commission (Autumn 2008)	1.1	1.7	0.7	1.8
IMF (November 2008)*	1.1	1.8	-1.0	0.6
Reuters-survey (October 2008) <sup>1</sup>	-	1.7 - 2.0 - 2.7	0.8 - 1.2 - 1.5	-
<b>Current account deficit (per cent of GDP)</b>				
MNB (November 2008)	6.4	7.0 - 7.2	4.0 - 4.9	4.3 - 4.4
OECD (June 2008)	5.0	4.4	4.1	-
European Commission (Autumn 2008)	6.4	6.3	5.1	5.5
IMF (November 2008)*	6.4	6.2	2.0	1.5
<b>Budget Deficit (ESA-95 method, per cent of GDP)</b>				
MNB (November 2008)	5.0	2.9	2.2 - 2.7	2.3 - 3.1
Consensus Economics (October 2008) <sup>1</sup>	-	3.3 - 3.6 - 4.3	2.9 - 3.3 - 4.5	-
OECD (June 2008)	5.5	4.1	3.5	-
European Commission (Autumn 2008)	5.0	3.4	3.3	3.3
IMF (November 2008)*	4.9	3.4	2.5	2.0
Reuters-survey (October 2008) <sup>1</sup>	-	3.4 - 3.5 - 3.6	2.9 - 3.1 - 3.5	-
<b>Forecasts on the size of Hungary's export markets (annual growth rate, per cent)</b>				
MNB (November 2008)	8.2	5.3	(-1.4) - 0.4	0.1 - 3.1
OECD (June 2008) <sup>2,3</sup>	5.8	6.0	5.9	-
European Commission (Autumn 2008) <sup>2</sup>	7.2	4.5	2.1	3.9
IMF (October 2008) <sup>2</sup>	6.4	3.3	0.8	-
<b>Forecasts on the GDP growth rate of Hungary's trade partners (annual growth rate, per cent)</b>				
MNB (November 2008)	3.8	2.1	(-0.4) - 0.3	(-0.2) - 1.5
OECD (June 2008) <sup>2,3</sup>	3.5	2.5	2.0	-
European Commission (Autumn 2008) <sup>2</sup>	3.6	2.5	0.9	1.7
IMF (October 2008) <sup>2</sup>	3.6	2.6	1.1	2.2
<b>Forecasts on the GDP growth rate of euro area (annual growth rate, per cent)</b>				
MNB (November 2008)	2.7	1.2	(-0.8) - (-0.2)	(-0.6) - 1.1
OECD (June 2008)	2.6	1.7	1.4	-
European Commission (Autumn 2008)	2.7	1.2	0.1	0.9
IMF (October 2008)	2.6	1.3	0.2	1.3

The projections of the MNB are 'conditional', which means that they cannot always be directly compared with the projections of other institutions.

<sup>1</sup> For Reuters and Consensus Economics surveys, in addition to the average value of the analysed replies (i.e. the median value), we also indicate the lowest and the highest values to illustrate the distribution of the data. <sup>2</sup> Values calculated by the MNB; the projections of these institutions for the relevant countries are adjusted with the weighting system of the MNB, which is also used for the calculation of the bank's own external demand indices. Therefore, these figures may deviate from the figures published by the specified institutions. <sup>3</sup> Since OECD did not publish any data on Romania, our OECD forecast excludes Romania.

\* The figures refer to the IMF Staff Report for Hungary, published in November 2008.

Sources: Eastern Europe Consensus Forecasts (Consensus Economics Inc. (London), October 2008); European Commission Economic Forecasts (Autumn 2008); IMF World Economic Outlook (October 2008); Reuters survey (October 2008); OECD Economic Outlook (June 2008).

## **4 State budget and external balance**





## 4.1 Changes in state budget deficit indicators

The fiscal consolidation which started in 2006 has continued in 2008. As a result, the general government deficit is set to decline by more than 6 per cent of GDP in two years; consequently Hungary may already meet the Maastricht criterion regarding the deficit this year. Despite the unfavourable macroeconomic changes, in 2009 the decline in the deficit may continue at an even faster pace than the one specified in the convergence path, due to tightening on the expenditure side, which strongly offsets lost revenues. According to our forecast the modified 2.6 per cent deficit target set by the government for 2009 can be achieved. However, without further measures, the declining trend in the deficit is expected to come to a halt in 2010.

With regard to fiscal policy, positive developments similar to the ones in 2007 occurred in the first three quarters of 2008. As a result of slightly higher revenues compared to the budget plan and keeping expenditures under tight control, the deficit is expected to be considerably lower than the value indicated in the convergence programme.

However, based on the major deterioration in macroeconomic prospects resulting from the credit market crisis, we expect much lower revenues at end-2008, to which fiscal policy is trying to adjust by reducing the expenditure side. The deterioration in international investment sentiment and the difficulties in budget funding have forced the Hungarian government to improve the fiscal balance in 2008

and 2009 to an even greater extent than it had planned previously. Our calculations suggest that the budget deficit may reach 2.9 per cent of GDP in 2008, which is well below not only the original 4 per cent target of the convergence programme, but also the government's latest 3.4 per cent forecast. In 2009, the deficit may decline to 2.2-2.7 per cent of GDP. The measures announced this autumn are still insufficient to assure a continued decline in the deficit after 2009, and thus the 0.5 percentage point structural approximation to the medium-term fiscal objective required by the Stability and Growth Pact.

In contrast to other European countries, which have already reached or are closer to a balanced fiscal position, stimulating growth by increasing the budget deficit is not a realistic option for Hungary in the current situation. Moreover, in the decelerating phase of the economic cycle, fiscal policy and implementing further cuts in expenditures while revenues are declining will have a strongly procyclical effect in 2009 and 2010. Following the earlier declining, but still positive values, the cyclical component of the budget balance will turn negative from 2009, i.e. the cyclically adjusted deficit will be lower than the official ESA deficit.<sup>15</sup> In the first scenario, budget deficit is to decline by 0.6 percentage point between 2008 and 2010, although the cyclically adjusted balance, which also takes account of the deteriorating economic growth, shows an even more significant improvement of 1.3 percentage points. The difference is even more evident in the

**Table 4-1**

### Changes in budget deficit indicators

(as a percentage of GDP)

	2006	2007	I. scenario			II. scenario		
			2008	2009	2010	2008	2009	2010
I. Cash flow balance (GFS)	-9.3	-5.5	-3.5	-2.5	-2.7	-3.5	-3.0	-3.5
II. ESA-balance of the general government	-9.3	-5.0	-2.9	-2.2	-2.3	-2.9	-2.7	-3.1
III. Augmented SNA deficit of the general government	-9.6	-5.9	-4.2	-3.9	-3.3	-4.2	-4.3	-4.1
IV. Cyclically adjusted balance of the general government			-2.9	-1.8	-1.7	-3.1	-2.1	-2.1

<sup>15</sup> The cyclically adjusted deficit is the sum of the official deficit indicator and the cyclical component. If the cyclical component is negative, it means that the increase in the key tax bases (consumption and wage bill) lags behind its long-term trend, i.e. in this case tax revenues are also below their trend. In the case of a negative cyclical component, the fiscal deficit is higher than the cyclically adjusted deficit, i.e. when growing along the trend. The change in the cyclical balance shows the real size of the effect of fiscal policy excluding macroeconomic changes, i.e. it takes into account the automatic changes stemming from macroeconomic developments. According to another interpretation, the cyclically adjusted balance is nothing else but an indicator of how big the balance would be if tax bases changed in line with their trend.

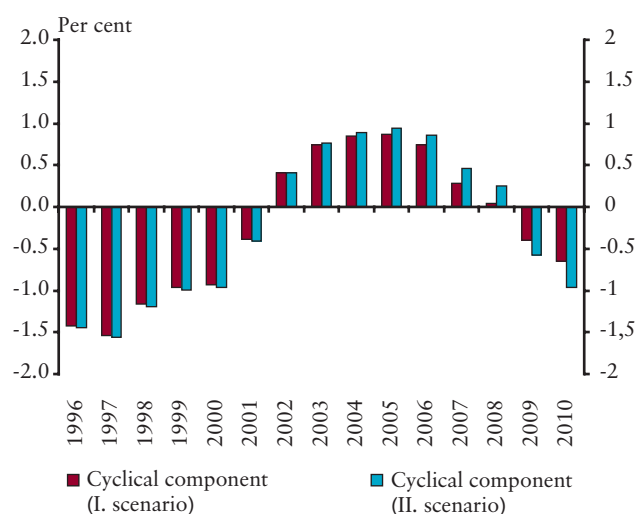
second scenario, as in this case the official deficit is expected to increase slightly between 2008 and 2010, but excluding the deficit-increasing effect of the deceleration in economic growth the cyclically adjusted state budget position would show a 1.0 percentage point decline.

The effect of the automatic stabilisers in the budget is illustrated in Chart 1. Between 1996 and 2001, fiscal policy reduced the deficit in a way that in the meantime its revenues lagged behind the trend as a result of the below-trend increase in determining tax bases (wages and consumption). By contrast, between 2002 and 2008, as a result of positive business cycle conditions, revenues temporarily improved the deficit. From 2009, the main macroeconomic variables important from a budgetary aspect are expected to grow below their trend rates again, which will entail that the cycle will impair the official indicators of the fiscal balance in 2009 and 2010.

**Chart 4-1**

### Cyclical components of the budget according to the two scenarios

(As a percentage of GDP)\*



## SUBSTANTIAL DECLINE IN REVENUES DUE TO UNFAVOURABLE MACROECONOMIC DEVELOPMENTS

The budget deficit for 2008, which is lower than set in the convergence programme, is mainly the result of higher-than-expected revenues, the lower expenditures of budgetary institutions and the freezing of the balance reserves, while interest expenditures and pension expenditures exceeded the target. In 2008, in terms of the central budget, approximately half of the improvement in the balance compared to the original target results from lower expenditures, while the

other half stems from higher revenues. In 2008, revenues of the central budget are expected to be HUF 100 billion higher than the estimate, although looking ahead we expect a decline in tax revenues.

Compared to both the May and August issues of the Report, our expectations regarding the increase in the key tax bases have declined considerably, resulting in a drastic fall in tax revenues in 2009 and 2010. Compared to 2008, the GDP-proportionate tax and social security contribution revenues will fall by around 0.5 percentage point in 2009. Compared to our earlier assumption, both scenarios examined by us indicate a significant decline in the gross wage bill and consumption, which will result in a notable decline in the main revenue items (personal income tax, social security contributions, VAT). Compared to the May and August macroeconomic scenarios, the gross whole-economy wage bill is expected to fall by approximately 4-5 percentage points in 2009, and only a slight increase is presumed for 2010 as well. The decline in the wage bill and revenues originating from it is partly related to the elimination of the 13th month salaries in the government sector. In May and August, we assumed a nearly 6 per cent increase for the other key tax base, i.e. nominal household consumption for 2009. Now, we expect that this growth rate will decline to the vicinity of 2 per cent even under favourable circumstances. However, in an unfavourable context, household consumption might even contract by up to 0.5 per cent.

The erosion of VAT revenues related to consumption already started in 2008 H2, and this adverse trend is expected to continue next year as well. In the scenario based on less favourable business conditions (Scenario II), with the relative similarity of the wage path, a considerable decline in consumption is expected. Therefore, in 2009 the related revenues will be below the ones justified by the more favourable scenario of business conditions (Scenario I). There is a significant difference between the two scenarios, mainly in terms of revenues, amounting to approximately 0.5 per cent of GDP in 2009 and 0.8 per cent in 2010.

## EXPENDITURE MEASURES TO OFFSET LOST REVENUES: A FURTHER IMPROVING DEFICIT PATH

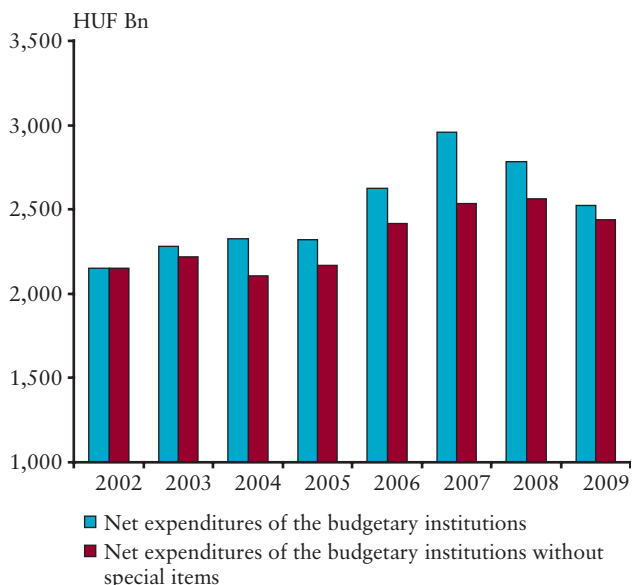
The three largest and most important items determining the expenditure side of the budget are the expenditures of the budgetary chapters and institutions, pension expenditures and interest expenditures paid on government debt, which together cover nearly three quarters of the consolidated expenditures of the state budget.

In order to offset revenues lost due to the strong deterioration of the macroeconomic path, the government has included several new expenditure-side measures in the Budget Act. In addition to the nominal freezing of public employees' wages, the 13th month salary will be eliminated and there will be significant tightening with regard to the 13th month pensions. Appropriations to budgetary institutions will be cut considerably, and there will be some minor measures in the field of certain social benefits. As a result of the worsening macroeconomic path and the expenditure-side measures offsetting these effects, the government amended the deficit target from the originally planned 3.2 per cent to 2.6 per cent in 2009.

Between 2005 and 2007, expenditures of budgetary institutions increased sharply, although a major part of the increase is due to individual developments such as the sudden rise in the gas price compensation in 2006, spending on motorway construction or the capital transfer for MÁV (Hungarian State Railways) in 2007. Excluding these major individual items, budgetary institutions' expenditures related to fundamental developments practically stagnated in nominal terms in 2008.<sup>16</sup> In the first 10 months of the year, strict discipline prevailed on the expenditure side of the budget. As a result, budgetary institutions' expenditures and

**Chart 4-2**

**Net expenditures of budgetary institutions excluding certain individual items**



*Individual items: costs of motorway constructions, energy compensation (gas price compensation), MÁV capital transfer (in 2007).*

the use of reserves together may be HUF 100 billion below the estimate in 2008.

Compared to the value expected for 2008, in 2009 the net expenditure target for budgetary institutions (including stability reserves) will be nearly HUF 260 billion lower in nominal terms. Taking into account the approximately HUF 140 billion decline in the already known individual items (motorway construction and gas price compensation) and the approximately HUF 100 billion decline in expenditure resulting from the cancellation of the 13th month salary for public employees working within the central budget, regarding the other items this means a stagnation in nominal terms. This assumption means a strict budget control, similar to the first three quarters of 2008. Overall, the total expenditure level will decline by 1.2 per cent of GDP. For 2010 we expect an overall slight nominal increase, which means a continued decline in proportion to GDP.

As a result of the announced measures and changes in macroeconomic conditions, pension expenditures as a proportion of GDP are expected to decline slightly in 2009, while from 2010 they may again exceed the 2008 level. The main underlying reason is the rising wage index, which is expected to offset the impact of the decreasing inflation. In addition to the automatic effect stemming from the macroeconomic path, concrete measures were also taken, primarily aimed at reducing 13th month pension payments. In 2009, only pensioners above the legal age limit will be entitled to receive the 13th month old-age pension, with a cap on the maximum monthly payment at HUF 80,000. The part of the five-year pension correction programme due next year will only be implemented from September, in order to reduce next year's expenditures. We assume that the measures affecting the 13th month pension will remain in force in 2010 as well.

Despite the declining financing requirements, the significantly rising yield curve will result in an increase in interest expenditures both in 2009 and 2010. By end-October, benchmark yields on government bond had increased markedly at all maturities, i.e. by approximately 300 basis points compared to the summer period, while the average October yield level was also around 100-200 basis points above the summer average. As a result of the declining financing requirement, the changing financing structure and the rising yield level, interest expenditures are expected to increase by approximately HUF 60 billion in 2009 compared to 2008 and using the October average yield curve.

<sup>16</sup> The structure of expenditures of budgetary institutions, however, changed in an extremely heterogeneous manner in 2008: while the purchase of goods and services increased somewhat faster than inflation, and wage expenditures as well as other transfer-like expenditures practically remained at nominal levels, investment – excluding the costs of motorway construction – fell by a drastic 40 per cent in the first three quarters of 2008, compared to the same period of 2007.

## RISKS SURROUNDING THE FISCAL PATH

On the revenue side, the risks surrounding our forecast basically relate to the development of macroeconomic variables, while mainly in the case of budgetary institutions and interest expenditures on the expenditure side.

In case of the basic processes of budgetary institutions, also taking account of past dynamics, we perceive significant risks. Based on these risks, the expenditure level would be somewhat higher than the target. On the one hand, purchases of goods and services in recent years always grew faster than inflation. If we assume maintaining at least the real value, this would lead to a remarkable nominal increase. On the other hand, the average growth rate of investment and other expenditures (e.g. transfers) exceeded 10 per cent between 2002 and 2007, but excluding individual items as well the average growth was 1 per cent even in non-election years. Accordingly, in 2009 expenditures would increase by at least 0.2-0.3 per cent of GDP compared to the basic forecast, even if we take into account this very moderate path.

Of course, calculating using the historical average of earlier years, the risks are much more significant. They may even reach 1 per cent of GDP, although in the current situation –

taking into account the fiscal tightening and the pressures stemming from the changing of the external environment – we do not consider this realistic. The appropriations of budgetary institutions conceal significant risks in 2010 as well, although the ‘fiscal ceiling’ legislation may contribute to keeping the expenditures within limits.

In our central forecast, for the projection of the interest expenditures, we basically took into account the average level of yields in October. If yields change compared to the average October increase, that may obviously have an effect on interest expenditures as well. As a rule of thumb, a 100 basis point parallel shift in the yield curve, i.e. one which affects all maturity segments, moves the government’s interest expenditures by 0.15 per cent of GDP on average in the first year. The debt management agency can obviously react to the change in the yield by changing the forint/foreign exchange ratio or by changing the financing structure of forint debt (changing the average maturity of debt), which all influence the magnitude of interest expenditures. Moreover, it is important to mention, that the higher proportion of the foreign exchange financing leads to lower interest expenditures of the budget on the one hand, but on the other hand it could cause losses in the central bank due to the increase of the sterilisation costs, which can result in higher budget expenditures later.

**Table 4-2**

### Nominal growth rates of expenditure items of budgetary institutions in various comparisons

	Historical average 2002–2007	2008 Q1-Q3	Expected 2009
1. Wage bill	9.9%	2.2%	-7.5%
2. Purchase of goods and services	10.2%	8.4%	] 0%
3. Investments and other expenditure without special items	7.7%	-8.9%	



## 4.2 External balance

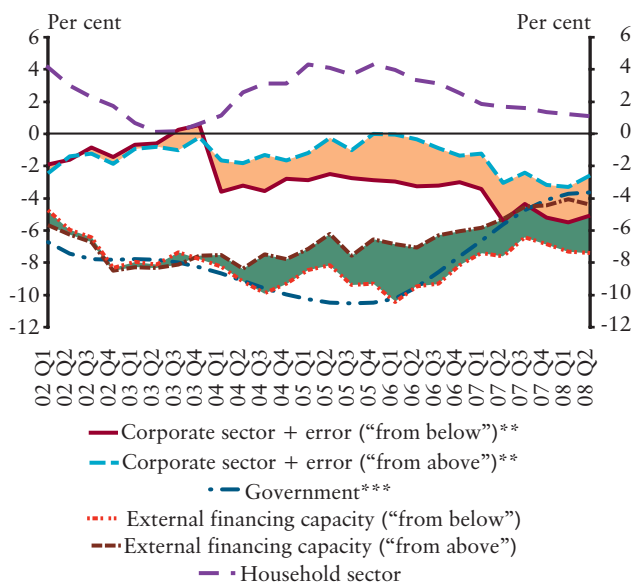
According to preliminary data, the combined current and capital account balance, i.e. the external financing requirement was around 4.2 per cent of GDP in 2008 H1, which roughly corresponds to the end-2007 level.<sup>17</sup> The fact that the improvement in external equilibrium came to a halt is mainly attributable to the changes in external economic conditions. As a result of the weakening external economic activity, the improvement in the trade balance did not continue in H1, although foreign trade transactions still reduced the current account deficit considerably. At the same time, the deficit of the income balance increased slightly as a result of an increase in net interest expenditures, presumably due to the increased costs of external funding. In H1, EU transfers worth approximately EUR 850 million were received by Hungary, which contributed to a reduction of the external imbalance.

Besides the external financing requirement remaining at an unchanged level, there was no important change in the financing situation of domestic sectors in 2008 H1 either. Although the financing requirement of the consolidated general government continued to decline, following the drastic adjustment in previous years, the decline in the deficit decelerated. At the same time, the decline in fiscal imbalance was mainly offset by the declining net savings of households, which in H1 took place simultaneously with still intensive borrowing. Corporations' financing requirement remained practically unchanged.

Our external equilibrium forecast has been compiled according to the two scenarios presented in the real economy chapter. The macroeconomic assumptions are completely identical with the ones described therein, but the scenario containing drastic credit slowdown has also been completed with external funding costs remaining permanently at high level. This leads to an increase in the external financing requirement through the increase in debt burdens, as all domestic sectors are able to finance consumption or investment over their income only at a higher cost. With the assumptions of the two scenarios, there may be considerable differences in the developments in the financing capacity of domestic sectors on the whole forecast horizon, but as a result of opposing effects, external financing requirement differs significantly only in 2009.

Chart 4-3

### Changes in the financing capacity of individual 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 and by the Gripen purchases.

\*\* 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 Ltd., institutions discharging quasi-fiscal duties (Hungarian State Railways [MÁV], Budapest Transport Company [BKV]), the MNB and authorities implementing capital projects initiated and controlled by the government and formally implemented under PPP schemes.

Compared to the previous year, the GDP-proportionate external financing requirement in 2008 may slightly increase, and it can reach 5.7 per cent. Although we expect a sharp decline in households' borrowing and thus an increase in net savings in the last months of the year, data available for Q3 have not indicated the start of the adjustment process yet. Consequently, the financing capacity of households may fall short of the level in 2007. The SNA deficit of the consolidated general government may stabilise at around 4 per cent of GDP, which also means a significant, nearly 2 percentage point improvement compared to the previous year. However, the considerable narrowing of sales

<sup>17</sup> In September 2008, the MNB and the CSO made significant revisions in several points of the Balance of Payments data going back to 2004. Overall, the revisions increased the official GDP-proportionate external financing requirement (calculated "from above") by approximately 1-1.5 percentage points. The external financing requirement calculated "from below" did not change significantly, thus the value of 'Errors and Omissions' declined considerably. Despite the remarkable difference in levels, the dynamics of the time series hardly changed. Consequently, our assessment of previous years' improving external balance situation did not change either.

opportunities – mainly the economic recession experienced in export markets – may significantly reduce the profitability of corporations, which may result in a major increase in the sector's financing requirement even against the background of slack investment activity. Consequently, as a result of the deteriorating macroeconomic environment, the external imbalance may increase despite the significant fiscal adjustment.

For 2009, we project a considerable improvement in the external equilibrium situation in both scenarios. The gradual narrowing of borrowing in the *first scenario* results in a fall in consumption and restrained investment dynamics, which may lead to an increase in the financing capacity of households and corporations. With regard to the structure of the Balance of Payments, this may appear in an increase of the surplus of the trade balance, which is mainly attributable to the considerable fall in import demand.

In the *second scenario*, drastic credit tightening causes a strong decline in consumption and investment, simultaneously with a permanent recession in our export markets as well. On the one hand, the decline in borrowing justifies a sudden increase in the savings of the household

sector. However, corporations' financing position may also deteriorate as a result of the permanent European recession, and due to a decline in determining tax bases (consumption, corporate profit) the state budget deficit may also increase.<sup>18</sup> Overall, however, this scenario may result in an even more significant decline in the external financing requirement. From the real economy side, a major part of the improvement in the external equilibrium may be reflected in an improvement of the trade balance as well.

According to the assumptions of the first scenario, the improvement in the external equilibrium may continue in 2010, while in the second scenario the decline in external deficit may stop. In the first case, the gradually declining borrowing reaches the long-term equilibrium value by early 2010, while exports may benefit from the external demand, which is becoming slightly more dynamic. In the second scenario, net borrowing, following a drastic fall, will also increase to its equilibrium level by 2010, but our export markets will face permanent recession, thus the surplus of the real economy balance may decrease. In this scenario, in addition to the permanent fall in external demand, the increase in the costs of external financing also points to an increase in the external financing requirement.

Table 4-3

## GDP-proportionate net financing capacity of individual sectors

	2005	2006	2007	2008	2009	2010	2008	2009	2010
	Estimate			First scenario			Second scenario		
I. Consolidated general government*	-9.4	-9.6	-5.9	-4.1	-3.8	-3.3	-4.1	-4.3	-4.1
II. Households	4.4	3.4	1.7	0.7	2.9	3.9	1.0	5.5	4.5
Corporate sector and "error" (= A - I. - II.)	-1.7	-0.7	-1.1	-2.3	-1.9	-2.3	-2.7	-3.0	-2.2
A) External financing capacity. "from above" (=B+C)**	-6.7	-6.9	-5.3	-5.7	-2.8	-1.7	-5.8	-1.8	-1.8
B) Current account balance**	-7.5	-7.5	-6.4	-7.0	-4.9	-4.3	-7.2	-4.0	-4.4
– in EUR billions **	-6.7	-6.8	-6.5	-7.7	-5.4	-4.9	-7.8	-4.3	-4.8
C) Capital account balance	0.8	0.6	1.1	1.4	2.1	2.6	1.4	2.1	2.6
D) Net errors and omissions (NEO)***	-1.8	-2.3	-1.6	-3.0	-2.4	-2.3	-3.0	-2.4	-2.4
External financing capacity "from below" (=A+D)	-8.5	-9.3	-6.9	-8.7	-5.2	-4.0	-8.8	-4.2	-4.2

\* In addition to the fiscal budget, the consolidated general government includes local governments, the ÁPV Ltd., institutions discharging quasi-fiscal duties (MÁV, BKV), the MNB and authorities implementing capital projects initiated and controlled by the government and formally implemented under PPP schemes.

\*\* During the 2004-2007 period, due to the high level of Net Errors and Omissions (NEO) the current account deficit/external financing requirement may be higher than suggested by official figures.

\*\*\* In our forecast for the 'errors and omissions' item of the balance of payments we assumed that the cumulated figure for the last four quarters will remain unchanged.

<sup>18</sup> The ESA deficit – as it was described in the fiscal chapter – may decline in both scenarios in 2009. However, the 2009 SNA deficit of the consolidated general government is increased significantly by the costs of the M6 motorway, which is being built according to the PPP scheme. This may even cause a deterioration of the SNA balance in the second scenario.

**Table 4-4****Structure of the GDP-proportionate current account***(relative to GDP, per cent, unless otherwise indicated)*

	2005	2006	2007	2008	2009	2010	2008	2009	2010
	Fact/Preliminary fact			First scenario			Second scenario		
1. Balance of goods and services*	-1.2	-0.9	1.4	1.3	3.1	3.8	1.2	4.1	3.9
2. Income balance	-5.6	-6.2	-7.3	-7.7	-7.4	-7.4	-7.7	-7.4	-7.7
3. Balance of current transfers	-0.6	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.7	-0.6
<i>I. Current account balance (1+2+3) *</i>	-7.5	-7.5	-6.4	-7.0	-4.9	-4.3	-7.2	-4.0	-4.4
<i>Current account balance in EUR billions *</i>	-6.7	-6.8	-6.5	-7.7	-5.4	-4.9	-7.8	-4.3	-4.8
<i>II. Capital account balance</i>	0.8	0.6	1.1	1.4	2.1	2.5	1.4	2.1	2.6
<b>External financing capacity (I+II) *</b>	<b>-6.7</b>	<b>-6.9</b>	<b>-5.3</b>	<b>-5.7</b>	<b>-2.8</b>	<b>-1.7</b>	<b>-5.8</b>	<b>-1.8</b>	<b>-1.8</b>

\* During the 2004-2007 period, due to the high level of Net Errors and Omissions (NEO) the current account deficit/external financing requirement may be higher than suggested by official figures.

## FINANCING THE CURRENT ACCOUNT DEFICIT

In 2008 H1, the 'bottom-up' external financing requirement amounted to EUR 4.6 billion, which corresponds to 7.4 per cent of GDP, taking seasonal effects into account.<sup>19</sup> Compared to 2007, the structure of financing of the balance of payments changed in a favourable direction from investors' perspective, as following the previous year's outflow of non-debt creating funds, one-third of net external borrowing was financed by non-debt items in 2008 H1. The increase in non-debt creating financing is mainly attributable to the strong FDI inflow and the partial selling of MOL's own shares bought up earlier, while institutional investors' purchases of foreign shares again resulted in significant capital outflows.

The tensions of external financing experienced in recent months only slightly affected the financing side of the Balance of Payments in 2008 H1. The role of short-term debt increased in external funding, and the structure of gross external debt at remaining maturity also shifted in the direction of shorter maturities. The banking sector's short term borrowing as well as the shortening of credit institutions' and corporations' longer-term credits played a decisive role in the increase of external debt maturing within one year. However, it is important to note that the narrowing of liquidity experienced in international financial markets resulted in an increase in short-term external debt in most countries of the region.

<sup>19</sup> Although as a result of the revision Net Errors and Omissions (NEO) declined significantly for 2004-2007, its value increased again in 2008 H1, amounting to approximately EUR 2 billion. Consequently, the financing requirement calculated from below continues to significantly exceed the official indicator.

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## MNB OCCASIONAL PAPERS 2007–2008 (English language issues)

*MNB Occasional Papers include empirical (applied) researches of central bank areas, summarize theories on different themes and present international results, in addition they introduce analyses assisting the better understanding of central bank decisions.*

**Occasional Papers 59.** HORNOK, CECÍLIA–ZOLTÁN M. JAKAB–MÁTÉ BARNABÁS TÓTH (2007): Adjustment of global imbalances: Illustrative scenarios for Hungary

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