

QUARTERLY REPORT ON INFLATION

September 2012



MAGYAR NEMZETI BANK

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Act CCVIII of 2011 on the Magyar Nemzeti Bank defines the primary objective of Hungary's central bank as to achieve and maintain of price stability. Low inflation allows the economy to function more effectively, contributes to higher economic growth over the longer term and helps to moderate cyclical fluctuations in output and employment.

In the inflation targeting system, since August 2005 the Bank has sought 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 developments in inflation every three months, in order to establish 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, Financial Analysis and Financial Stability departments, as well as the macroeconomic developments underlying these forecasts. The Report is published quarterly. The forecasts produced by the Monetary Strategy and Economic Analysis and Financial Analysis departments are based on the assumption of endogenous monetary 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 departments and Financial Stability department. Chapters 1 to 4 and 6 and 7 were prepared under the general direction of Director Ágnes Csermely, while chapter 5 was prepared under the general direction of Director Áron Gereben. The project was managed by Barnabás Virág, Senior Economist of Monetary Strategy and Economic Analysis. The *Report* was approved for publication by the Executive Board of the MNB.

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Other contributors to the analyses and forecasts in this *Report* include various staff members of the Monetary Strategy and Economic Analysis and the Financial Analysis departments.

The *Report* incorporates valuable input from the Monetary Council's comments. The projections and policy considerations, however, reflect the views of staff in the Monetary Strategy and Economic Analysis and the Financial Analysis departments and do not necessarily reflect those of the Monetary Council or the MNB.

The projections are based on information available in the period to 19 September 2012.

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The statement of the Monetary Council about the overview of economic developments and monetary policy assessment

MONETARY POLICY OVER THE PAST QUARTER

Factors pointing in the direction of an easing and a tightening of monetary policy have been present simultaneously since the outset of the financial crisis. The sharp decline in and persistent weakness of domestic demand would warrant a reduction in interest rates. However, continued cost shocks to the price level prevented any sustained fall in inflation, and therefore a cautious approach to interest rate policy was warranted. The global financial market environment and unfavourable movements in domestic asset prices also limited the room for manoeuvre in monetary policy from time to time.

According to the Council's assessment in June, the factors pointing to an increase or a reduction in interest rates offset each other. In its June press release, the Council had indicated that a cautious approach to monetary policy was warranted by the risk environment and inflation remaining persistently above target and that interest rates could only be reduced after upside risks to inflation subsided.

There has been a sharp deterioration in the outlook for both inflation and the economy over the past quarter. But the global financial market environment improved and, as a result, perceptions of the risks associated with Hungarian financial assets fell markedly. Considering these factors, the Council in August voted to reduce the policy rate by 25 basis points, after maintaining it in July. In its August press release, the Council had indicated that monetary policy could only be eased to the extent that supply shocks to the economy and the upward impact on prices of the Government's measures did not lead to the build-up of second-round inflationary effects.

ECONOMIC DEVELOPMENTS

Financial market sentiment has improved and the outlook for economic activity deteriorated around the world over the past quarter. Sentiment in international financial markets improved considerably in the summer months. Positive international investor sentiment mainly reflected announcements related to euro-area crisis management, but expectations about a new round of quantitative easing by the US Federal Reserve also contributed to an increase in risk appetite. Despite the signs of improvement in financial markets, however, business survey indicators point to a further slowdown in most economic regions of the world; and there is a risk that the euro-area economy will fall back into recession this year. In the Monetary Council's judgement, the actions taken by euro-area governments will live up to expectations over time and economic activity in Europe will pick up gradually from 2013.

The contrast between improved perceptions of risks and very subdued economic activity has been reflected in domestic economic developments recently. In the favourable international environment, premia on Hungarian financial assets fell markedly. However, the contraction in economic output continued in the second quarter, although less sharply than in the previous period. The decline in GDP reflected the effects of both external and domestic factors. Actions to reduce private and public debt accumulated during the pre-crisis period, tight lending conditions and the uncertain economic environment continue to act as a significant drag on domestic demand. Production picked up as the large investment projects in the

automotive industry were completed, but the slowdown in Hungary's external markets offset some of the expansionary effect of new capacities on exports. The extremely poor harvest results in agriculture are likely to cause a further deterioration in the outlook for growth this year.

In the Monetary Council's judgement, the outlook for domestic economic growth has deteriorated recently and output is expected to grow only slowly in 2013. Exports will remain the main driving force behind growth, supported by the expected recovery in activity in Europe. Domestic demand will remain persistently weak, reflecting falling real incomes, continued balance sheet adjustment and tight lending conditions. Consumption and investment are likely to continue to decline next year. As a result of persistently high unemployment and low investment activity, the potential growth of the economy is likely to remain weak next year.

Labour market activity has strengthened recently, reflecting the effects of measures taken by the Government over the past few years. However, corporate demand for labour remained low as economic activity continued to weaken, with the Government's public work programmes being the only source of growth in employment. Earnings growth has picked up sharply this year after being subdued in previous years. The administrative wage increases at the beginning of the year were an important factor contributing to the pick-up in earnings growth; however, the wage inflation indicators rose, even after excluding the effect of the minimum wage increase. The introduction of the wage compensation scheme for companies has temporarily reduced upward pressure on costs from strong earnings growth; however, rising unit labour costs, associated with deteriorating sales opportunities, have led to cost-push inflationary pressures and restrained employment growth, particularly in sectors producing for the domestic market. The Monetary Council will closely monitor developments in the factors driving the recent sharp increase in earnings growth.

The Monetary Council's view is that the increase in unemployment during the crisis reflected in part permanent, structural problems; however, even taking this factor into account, slack in the labour market is likely to remain in the period ahead. With the outlook for economic activity remaining weak, growth in demand for labour is expected to be slow. Therefore, nominal earnings growth may moderate as the effects of the minimum wage increase wear off. The job protection action plan, to be implemented next year, is likely to result in a reduction in the employment costs of employees affected by the programme. In the Monetary Council's judgement, the measures will be sufficient only to cushion the effects of weak activity, and private sector employment is likely to grow at a subdued pace at best.

As the outlook for growth deteriorated, the annual consumer price index remained persistently close to the levels seen at the beginning of the year. High inflation reflects, in part, the effects of the increase in indirect taxes by the Government and the unfolding food price shock. Other measures of inflation, which exclude these effects and capture underlying inflation developments, also rose, with the pass-through of cost shocks into prices being greater than previously expected. Looking ahead, the unfolding food price shock and new government measures are likely to cause the consumer price index to remain at an elevated level through higher excise duties and rises in companies' production costs. Rising labour costs, increases in taxes on production and higher commodity prices, as well as the downward impact of weak demand on prices all play a role in shaping developments in underlying inflation.

In aggregate, inflation (i.e. the annual rate of increase of consumer prices) is expected to remain significantly above the 3 per cent target for most of the forecast period, with the target only likely to be met in the second half of 2014.

In the Monetary Council's view, Hungary's external financing capacity may continue to increase in the coming years. The improvement in the country's external balance reflects rising EU transfers, in addition to the continuous increase in the surplus on the balance of goods and services; however, the deficit on the income account has been increasing. The investment projects in the automotive industry brought into production will make a significant contribution to growth in net exports, while weak demand will contribute to the high goods surplus through lower imports.

While meeting the deficit target, fiscal policy is likely to bear down on domestic demand this year and next. Although the measures announced as part of the job protection programme have led to a significant amount of fiscal easing in the 2013 government balance, the Monetary Council assumes that the Government will remain committed to meeting the deficit targets, and therefore expects fiscal adjustment to continue. The measures included in the technical assumptions of the

projection are likely to raise the consumer price index in 2013 while restraining demand; however, they are necessary to achieve a gradual reduction in Hungary's risk premia.

A sustainable decline in the fiscal deficit is key to the further reduction in government debt. The Monetary Council continues to consider it crucial that an agreement between the Government and the European Union and the International Monetary Fund is reached as soon as possible in order to reduce the risks associated with financing the government debt and ensure that risk premia fall.

MONETARY POLICY CONSIDERATIONS

The outlook for the economy and, consequently, the room for manoeuvre in monetary policy are surrounded by a significant degree of uncertainty. The Council's monetary policy actions are influenced mainly by the future outlook for inflation, the position of the economy in the current cycle and by perceptions of the risks associated with the economy.

In the Council's assessment, the economy's production capacities may have been damaged and the rate of potential economic growth fell significantly as the crisis dragged on. Even as growth remained weak, the output gap closed gradually during the crisis. There is uncertainty in the Monetary Council about the extent to which existing spare capacity in the economy is able to restrain increases in labour costs and prices. Developments in underlying inflation and rises in wages suggest that the disinflationary impact of subdued demand may have weakened recently. However, a number of factors contributed to increases in wages and inflation, and therefore it is difficult to distinguish demand-pull effects from cost-push effects. Consequently, the role of permanent and cyclical factors in the economic downturn can be determined only with a considerable degree of uncertainty. If supply capacity is damaged to a smaller extent, then the disinflationary impact of weak economic activity is greater, and the inflation target can be met by maintaining looser monetary conditions.

Another important question in terms of monetary policy decisions is the extent to which continued cost shocks to the economy alter economic agents' inflation expectations. If agents expect inflation to remain persistently higher, then the second-round effects of the cost shock may be stronger, nominal wages may increase and underlying inflation may rise. In that case, tighter monetary conditions are necessary to offset unfavourable developments.

Changes in the financial market environment may also have a significant influence on monetary policy decisions. In terms of future developments in risk perceptions, the Monetary Council judges that there is a chance of both an improvement and a deterioration in the current situation. Greater-than-expected success in European crisis management and domestic economic policy measures to mitigate the risks to debt financing may help reduce risk premia. However, a failure or significant delay in reaching an agreement between Government and the European Commission and the IMF may lead to a sharp rise in risk premia.

A majority of Monetary Councils members judge that there continues to be a significant margin of spare capacity in the economy. Therefore, weak domestic demand dampens the direct inflationary impact of cost shocks. The inflation target is likely to be met as the direct effects of cost shocks wear off. The measures to address the European sovereign debt crisis will contribute significantly to the improvement in the global financial market environment, which in turn will result in a sustained fall in domestic risk premia. Overall, expected developments in inflation and financial markets as well as persistently weak demand warrant an easing of current monetary conditions. The Council will consider a further reduction in interest rates if the improvement in financial market sentiment persists and medium-term upside risks to inflation remain moderate.

| Summary table of baseline scenario (our forecast is based on endogenous monetary policy) | | | |
|--|------|-------------|--------------|
| | 2011 | 2012 | 2013 |
| | Fact | Projection | |
| Inflation (annual average) | | | |
| Core inflation ¹ | 2.7 | 5.2 | 4.9 |
| Core inflation without indirect tax effects | 2.5 | 2.7 | 3.1 |
| Consumer price index | 3.9 | 5.8 | 5.0 |
| Economic growth | | | |
| External demand (GDP based) ² | 2.7 | 0.7 | 1.3 |
| Household consumption expenditure | 0.0 | -1.0 | -0.8 |
| Gross fixed capital formation | -5.5 | -5.9 | 0.0 |
| Domestic absorption | -0.6 | -3.1 | -1.0 |
| Export | 8.4 | 2.1 | 6.9 |
| Import | 6.3 | 0.6 | 5.8 |
| GDP | 1.6 | -1.4 | 0.7 |
| External balance | | | |
| Current account balance | 1.4 | 2.1 | 3.6 |
| External financing capacity | 3.5 | 4.7 | 6.7 |
| Government balance³ | | | |
| ESA balance | 4.2 | -3.7 (-2.8) | -2.7 (-2.4)* |
| Labour market | | | |
| Whole-economy gross average earnings ^{4, 7} | 5.0 | 4.4 | 4.6 |
| Whole-economy employment ⁵ | 0.8 | 1.2 | 0.8 |
| Private sector gross average earnings ⁶ | 5.4 | 7.3 | 4.8 |
| Private sector employment ⁵ | 2.3 | -0.2 | 0.5 |
| Unit labour costs in the private sector ^{5, 7} | 6.7 | 5.2 | 4.8 |
| Household real income ⁸ | 2.2 | -4.0 | -1.3 |

¹ From May 2009 on, calculated according to the joint methodology of the CSO and MNB.
² In line with the changes in Hungarian export structure by destination countries we revised the weights in our external demand indicator.
³ As a percentage of GDP. Data in parenthesis include cancellation of free central reserves.
⁴ Calculated on a cash-flow basis.
⁵ According to the CSO LFS data corrected by fostered workers.
⁶ According to the original CSO data for full-time employees.
⁷ Private sector unit labour costs calculated with a wage indicator excluding the effect of whitening and the changed seasonality of bonuses.
⁸ MNB estimate. In our current forecast we have corrected the data of household income with the effect of changes in net equity because of payments into mandatory private pension funds.
* In our baseline forecast we assumed a hypothetical fiscal adjustment that is consistent with the Government's intentions set out in the Convergence Programme of Hungary. The size of the assumed adjustment is equal with the size of fiscal stimulus (+1,4% of GDP) was announced in July 2012.

The staff forecast is founded on an endogenous interest rate path and is based on the Monetary Policy Model developed by the MNB.¹ In the model, the reactions of monetary policy are predominantly influenced by the deviations of inflation expected over the time horizon relevant for monetary policy from the medium-term inflation target and by our picture of the cyclical position of the economy. Staff calibrated the sensitivity of the reaction function to individual variables on the basis of past decisions of the Monetary Council and international experiences. The forecasts of the staff are based on assumptions in a number of areas. Considering that the applied assumptions are surrounded by a high degree of uncertainty, the Council also takes into account further information, in addition to the results of the model. Accordingly, the interest rate path implied by the model may provide valuable information for the decisions of the Monetary Council, although it does not necessarily coincide with the decisions of the Council at all times.

¹ For more details on the model, see Chapter 6.1 of the March 2011 issue of the *Quarterly Report on Inflation* and the following study: ÁGNES HORVÁTH, CSABA KÖBER AND KATALIN SZILÁGYI (2011), MPM – The Magyar Nemzeti Bank’s monetary policy model, *MNB Bulletin*, June.

1 Inflation and real economy outlook

Due to external and domestic factors, macroeconomic developments have been characterised by deteriorating business conditions and rising inflation in recent months. Despite the deteriorating demand environment, inflation data proved to be higher than our expectations. The dual trends of weak growth and high inflation may prevail over the majority of the forecast horizon, while the risk assessment of the Hungarian economy may become more favourable than we assumed in June. The effects of the government measures for meeting the fiscal targets and the cost shocks that occurred last quarter will keep inflation persistently above the target next year as well. Inflation is expected to sink to below 3 per cent in 2014 H2. The steadily high inflation points to the tightening of monetary policy conditions, while the persistently weak economic growth and the decline in the risk premium on domestic assets would call for easing. These effects offset each other over the majority of the baseline scenario. Accordingly, our forecast assumes that the actual level of the interested rate is maintained for a longer period.

In early 2012, the Hungarian economy fell into recession, and only moderate economic growth is expected for next year as well. Weak real economic performance partly reflects the slowdown in global economic activity and partly the impact of domestic factors. Hungary's external demand may pick up from the end of the year again, but growth may continue to be restrained in the following years as well, due to the protracted crisis management of developed economies. Nevertheless, Hungary's growth will continue to rely on exports. Domestic demand will remain persistently weak, due to the declining real income, the protracted balance sheet adjustment and the generally tight credit supply. Due to the uncertain demand outlook and regulatory risks that weaken investors' confidence, corporate investment activity will continue to be weak. Against the background of persistently restrained investment activity, potential economic growth may have continued to decline this year, and no shift is expected in the coming years either. Our forecast suggests that Hungary's growth will be increasingly influenced by cyclical effects. Accordingly, output will fall short of its potential level over the entire forecast horizon.

Corporate sector labour demand may remain persistently subdued, owing to the weak economic activity and unfavourable profitability. The job protection programme of the Government may primarily help to retain the existing jobs, and therefore – following this year's slight decline – employment in the private sector may only grow at a subdued rate in 2013 as well. Although unemployment remains steadily high, this partly reflects structural factors, and therefore the wage-reducing effect of loose labour market conditions may diminish. As a result of administrative measures, nominal wage growth accelerated considerably this year. Due to these high wage dynamics and deteriorating economic activity, unit labour costs continued to rise. Government compensation measures may offset the cost-increasing effects of administrative measures over the short run, but over the long run the high unit labour costs may result in inflation risks, especially in labour-intensive sectors.

Data in recent months showed higher-than-expected inflation. The acceleration in inflation was primarily attributable to the first-round effects of commodity price increases, although – in spite of the weak demand – stronger-than-expected price increases were observed in the measure of core inflation as well. Core inflation remained at the level observed early in the year, indicating that the price-reducing effect of subdued demand may have weakened to some extent. Despite deteriorating growth prospects, global commodity prices have increased significantly in recent months. As a result of globally weak harvest results, agricultural product prices increased especially strongly. The increase in commodity prices first adds to the prices of non-core inflation items, before then gradually appearing in core inflation as well. Against the background of a negative output gap over the entire forecast horizon, no major second-round effects are expected. Inflation may well exceed 3 per cent for a significant part of the forecast period, and may be in line with the inflation target only in 2014.

The net external financing capacity of the Hungarian economy may continue to increase in the coming years. The improvement in Hungary's external balance position is attributable to the continuously growing surplus on the balance of goods and services as well as to increasing inflows of EU transfers. Against the background of sustained high external financing capacity, the large net external debt – a major source of vulnerability in recent years – may continue to decrease.

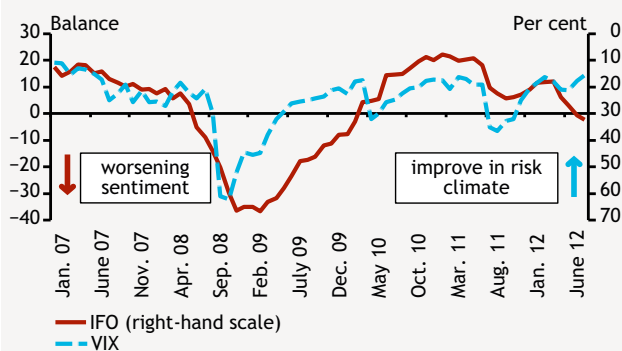
The steadily high inflation and weak economic growth would call for opposite interest rate paths, while the decline in the risk premium on domestic assets considerably expanded the room for manoeuvre in monetary policy in recent months. Although in our baseline scenario persistently weak demand and the improvement of the risk assessment point to the easing of monetary policy conditions, the considerable deterioration in inflation outlook does not allow for the easing of monetary policy conditions. Accordingly, our forecast assumes that the actual level of the interested rate is maintained for a longer period.

1.1 Situation assessment – starting position of the economy

Economic data for the past months were dominated by the dual trends of improving financial market sentiment and weakening prospects for economic activity. Increasing global risk tolerance considerably improved the risk perceptions of emerging markets, including that of the Hungarian economy. Despite the financial market optimism, the factors determining growth continued to be weak and resulted in a standstill or reversal of recent years' slow growth both globally and in the Hungarian economy. In parallel with the weak demand outlook, no major shift was experienced in the labour market. High unemployment data partly reflect structural factors, and therefore labour market conditions may be less loose than previously expected. In line with this, the wage-reducing effect of high unemployment is smaller. Although demand side inflationary pressure continued to be subdued, the price-reducing effect of weak demand may have weakened. Besides this, the first-round effects of the increase in unprocessed food prices and the latest indirect tax increase in the course of the year also contributed considerably to the pick-up in inflation seen in recent months. Annual inflation remained steadily close to the high level observed early in the year. Tax-adjusted inflation also exceeded the 3 per cent target to some extent.

Chart 1-1
Change in the VIX and IFO indicators that present emerging market's business climate

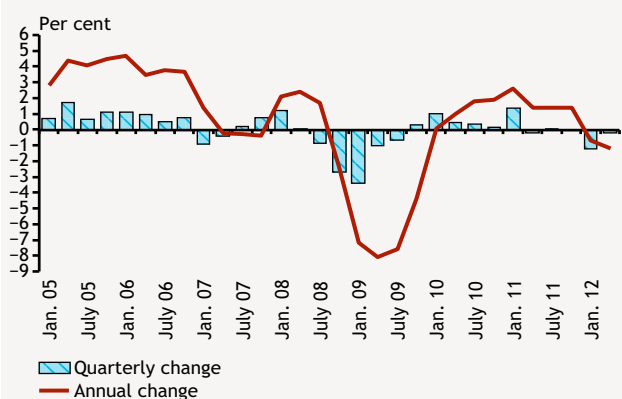
(January 2007–August 2012)



Global financial market sentiment improved considerably in the summer months. Investors' optimism was mainly borne by announcements related to the management of the European crisis, but the expectations of further quantitative easing by the Fed also contributed to an increase in risk tolerance. Despite the improving financial market developments, the most important business cycle indicators point to further deceleration in growth in most economic regions (Chart 1-1). Following the slow recovery in recent years, the euro area may slip into recession this year again, while signs of economic slowdown are being seen in emerging economies as well, after buoyant growth in earlier years. Global commodity prices are increasing in spite of the deteriorating growth prospects, which points to stronger cost-side inflationary effects.

Chart 1-2
Changes in domestic GDP

(2005 Q1–2012 Q2)



The dual trends of improving risk perceptions and restrained real economy performance were observed in domestic developments as well. With stronger capital flows to emerging countries, the risk assessment of Hungary also improved considerably. In this favourable financial market atmosphere, the EUR/HUF exchange rate appreciated steadily to the range of 280-285 forints.

Following a significant fall in Q1, the decline in Hungarian economic output continued in Q2 as well, albeit to a lesser extent (Chart 1-2). Although demand-side inflationary pressure remained subdued, the annual consumer price index was steadily close to the high level observed early in the year. The increase in annual inflation experienced in recent months has been caused mainly by the rise in

unprocessed food prices and the latest excise tax increases that entered into force in the middle of the year. At the same time, the stagnation in underlying inflation since the beginning of the year underlines the declining disinflationary effect of weak demand.

Both domestic and external factors contributed to the continued decline in GDP. The reduction in private and government debt accumulated prior to the crisis, the generally tight lending conditions and the uncertain economic environment are restraining domestic demand. As planned, the Mercedes factory launched production around mid-year, but the slowdown in Hungary's external markets reduced the export-stimulating impact of the new capacities. The extremely poor harvest results may exacerbate the decline in households' real income this year, via falling incomes from agriculture.

Chart 1-3
Wage growth in the private and public sectors
(January 2005–June 2012)

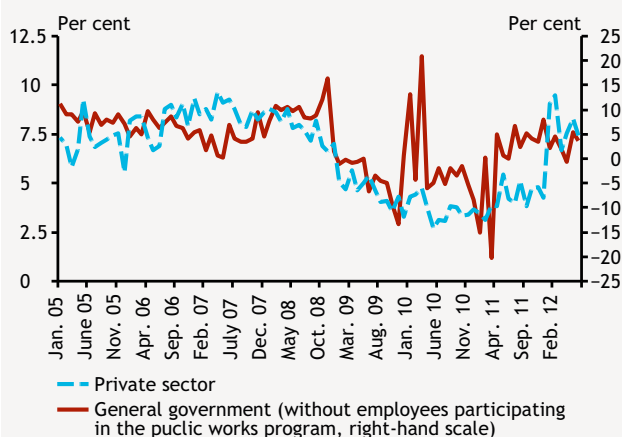
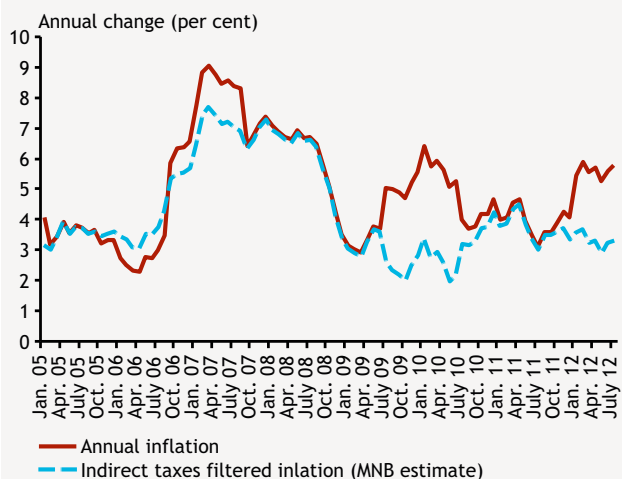


Chart 1-4
Inflation developments

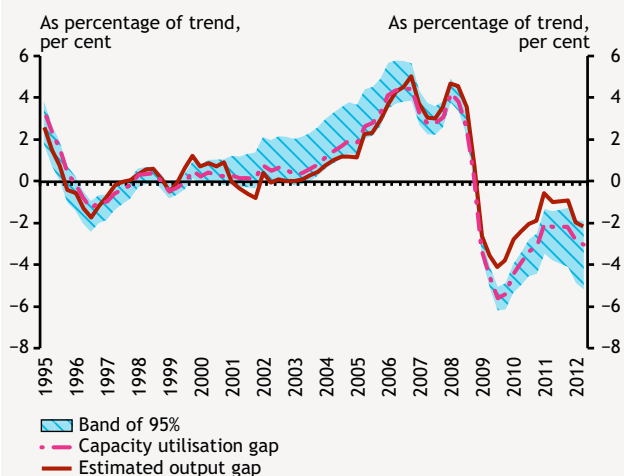


According to the statistics of the Labour Force Survey, employment also increased during the summer months, in parallel with a continued increase in activity. In our opinion, the expansion of employment is mainly attributable to the public work programmes, while private sector labour demand continued to be restrained. This is indicated by the fact that institutions' workforce figures, which show a closer co-movement with economic cycles, reflected a slight decline in the past months. Although unemployment has been declining in the past months, it is still high; in our opinion this can be linked increasingly to structural factors. In line with this, the wage-reducing effect of high unemployment may have weakened since the crisis. As a result of the administrative pay rises early in the year, wage outflows in the private sector accelerated considerably, which – accompanied by the decline in productivity – led to an increase in unit labour cost (Chart 1-3). The introduction of the wage compensation system diminishes the cost-increasing effects of the high growth in wages over the short run, but as this effect fades, cost pressure on inflation may rise, especially in labour-intensive sectors.

The increase in consumer prices accelerated in the summer months. Annual inflation rose to nearly 6 per cent (Chart 1-4). The effect of indirect tax increases implemented by the Government continues to be a determinant of the inflation rate, which is high in international comparison, but inflation excluding tax effects also exceeded the medium-term target. Inflationary pressure from the demand side continues to be modest. The prices of consumer durables are declining, while – disregarding the tax effect – market services continue to be characterised by restrained price increases. At the same time, the strong exchange rate depreciation at the end of last year was reflected in price increases for several core inflation items (non-durable

Chart 1-5
Output gap estimates

(1995 Q1–2012 Q2)



goods, processed foods). The poor harvest results led to a strong price increase of unprocessed foods, the direct effects of which were already reflected in the figures for recent months. Commodity price increases will entail more intense general cost-side inflationary effects in the autumn months, which may be offset by a stronger EUR/HUF exchange rate.

In a deteriorating demand environment, the economy continues to be characterised by significant free capacities. At the same time, unemployment remains at a high level and investment activity remains persistently low, underlining the structural causes of the subdued economic performance as well. Against the background of a slower-than-expected growth in potential output, the disinflationary effect of subdued demand is somewhat weaker than our earlier estimates, which may have appeared in the stronger price increase of processed foods and non-durable goods. The output gap, which has been narrowing gradually since 2010, may widen again this year due to both domestic and external factors. Accordingly, with a stronger exchange rate, the disinflationary effect of the real economy may also help to offset the inflationary effects of rising raw material costs (Chart 1-5).

Box 1-1

The effect of administrative measures on the wage index of the private sector

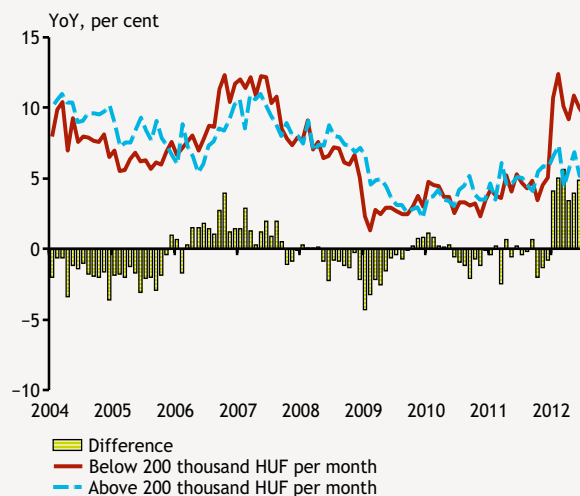
In 2012 H1, the annual indices of both gross average earnings and regular earnings increased considerably in the competitive sector. The assessment of wage developments is made difficult by the fact that wage dynamics are greatly influenced by the administrative measures entering into force this year, which may have had different effects on wage payments depending on wage levels. This box quantifies the effect of administrative measures on the wage index. A more precise determination of the effect may provide a more refined picture of the underlying wage developments.

Examining the employed broken down by sectors as well as by blue-collar and white-collar jobs we found that the wage index of those who earn more than HUF 200 thousand per month on average is markedly different from the wage index of those who earn less than HUF 200 thousand per month on average (Chart 1-6).

The administrative measures (mandatory minimum wage and guaranteed wage minimum increase, recommended wage increase bands necessary for recourse to wage compensation) primarily affected those who earn less than HUF 200 thousand per month. The very high (around 10 per cent) wage indices experienced in this group are primarily attributable to this effect. Although the measures entered into force already as of January, the majority of

Chart 1-6
Changes in wages for groups earning above and below HUF 200 thousand per month in the private sector

(annual growth rates, based on seasonally adjusted monthly data, January 2004–June 2012)



companies that employ more than 50 people implemented the necessary wage increases only in May. This may be attributable to the fact that the application deadline for the wage compensation expired in May, and the expected wage increases were allowed to be paid retroactively as well.

Meanwhile, wage increases in the higher income category were around 5 per cent this year. This increase also represented an acceleration in wages compared to 2011. In the case of employees with above-average wages, the wage acceleration against the backdrop of declining productivity may call attention to the weaker wage-reducing effect of labour market slack. The underlying reason is that high unemployment could increasingly be explained by structural problems.

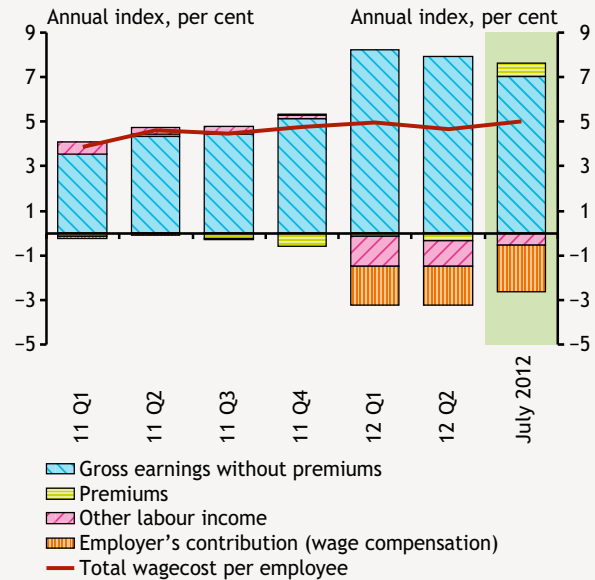
Companies may offset the cost increasing effect of high wage costs through several channels. Therefore, a more refined picture of the developments in total labour cost can only be obtained after the analysis of these factors.

Decomposing total labour costs into the effects of regular earnings, bonuses and other labour income as well as wage compensation leads to the conclusion that, in addition to the wide recourse to the wage compensation, companies mostly tried to cut their wage costs by reducing fringe benefits (Chart 1-7). To date, adjustment has been weak in the case of bonuses but the exact measurement of this adjustment channel will become possible only at the end of this year when the majority of bonuses are paid.

Using a time series estimation technique similar to methodology applied in VAT pass-through estimations, the effect of administrative wage increases may be close to 4 percentage points in this year's wage index in the private sector. It is important to note that, in addition to direct effects, this figure may also include wage increases that were implemented by companies already as indirect effects of the administrative measures (e.g. cushioning of the wage congestion around the average wage). The effect of wage increases implemented directly only due to the administrative measures may be closer to the value of around 2.5 per cent, calculated as the quotient of the wage compensation utilised and the total wage bill.

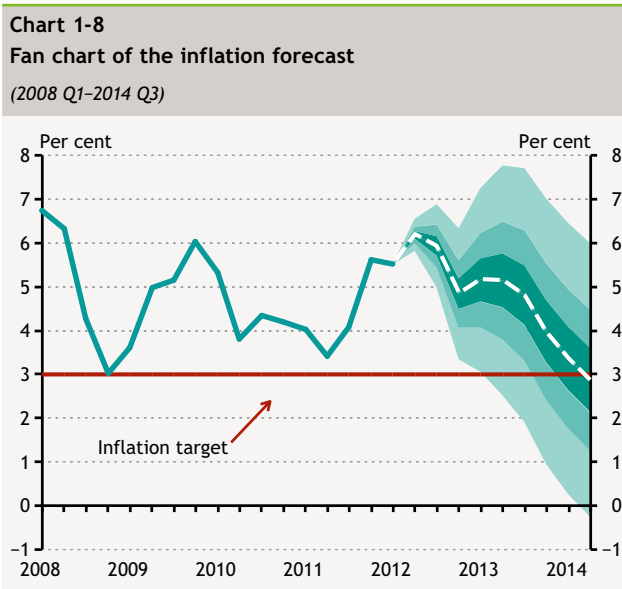
Overall, in our opinion, developments underlying corporate waging may be characterised by annual dynamics of around 5 per cent, excluding the administrative measures. These dynamics are somewhat higher than in previous years, and against the background of deteriorating productivity they resulted in an increase in unit labour costs this year.

Chart 1-7
Decomposition of the change in total wage cost
(2011 Q1–July 2012, based on seasonally adjusted data)



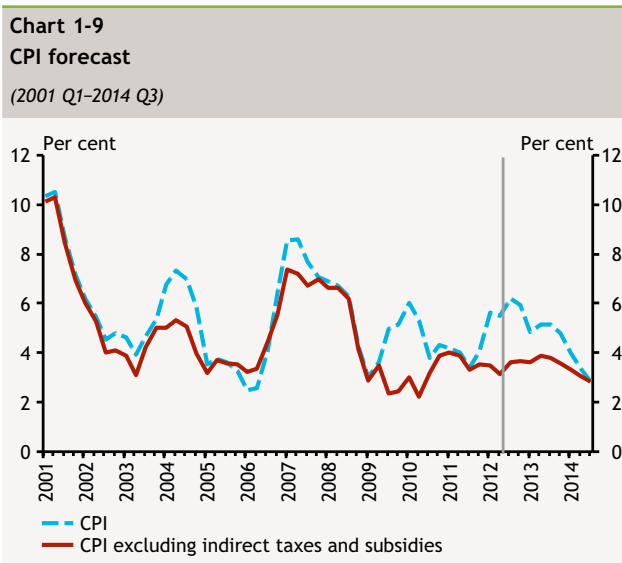
1.2 Inflation forecast

Inflation may significantly exceed the 3 per cent inflation target for most of the forecast period. Weak domestic demand restrains inflation over the entire forecast horizon, but the commodity price shocks will result in strong cost-side inflationary pressure. The food price shock adds to the inflation of non-core inflation items over the short run and will gradually pass through into core inflation as well starting from the end of this year. In addition to the cost-side effects, further government measures will also add to the 2013 consumer price index due to increases in excise taxes and the rationalisation of price subsidies. In the baseline scenario, against the background of a weak demand environment, the cost shocks are not expected to result in permanent feed-through effects. Accordingly, inflation will return to the target in 2014 H2, as these shocks gradually fade.



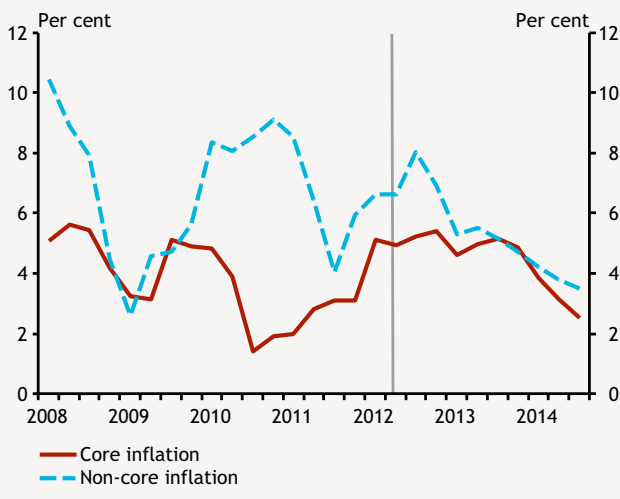
Our baseline scenario for inflation is determined by the significant increase in commodity prices, the accelerating labour costs increase, the latest government measures and the effects of persistently weak demand (Chart 1-8).

In recent months, despite the global economic slowdown and the deterioration in the prospects for business activity, an increase in global commodity prices has been observed. The spring decline in oil prices proved to be temporary. Food prices also rose significantly, as a result of the unfavourable weather. Commodity price increases appear in consumer prices at different paces. Energy price increases result in an immediate rise in domestic fuel prices, whereas a food price shock adds to the inflation of unprocessed food. Over the short term, it is mainly the prices of non-core inflation items which are expected to increase. From the autumn months, the increase in costs will be reflected in rising core inflation as well. Higher energy prices are generally incorporated into production costs, whereas the increase in unprocessed food prices mainly passes through into processed food prices.



In addition to commodity price increases, higher unit labour cost may imply an increase in inflation as well. Although nominal wage dynamics may be restrained again as of 2013 as the effects of the minimum wage increase have faded, the higher wage level will result in a rise in wage costs. The resulting effects will be considerably dampened by the Government's compensation measures over the short run, but companies may face accelerating unit labour cost increases in the persistently weak demand environment. The increase in labour costs may strengthen cost-side inflationary effects, especially in the case of labour-intensive sectors.

Chart 1-10
Forecast for core inflation and non-core inflation
 (2008 Q1–2014 Q3)



In 2013, further government measures (reduction of pharmaceutical subsidies, telephone tax, single insurance tax, financial transaction tax, introduction of electronic road toll) will also contribute to rising inflation. Some of the measures result in consumer price increases in the short run already. Some of them appear in the consumer prices only gradually, through increases in corporate production costs (Chart 1-9).

Core inflation excluding tax changes may amount to around 3 per cent in 2013. The price-reducing effect of weak demand will prevail over the entire forecast horizon. Accordingly, as the effect of cost shocks and fiscal measures fade, no major second-round effects are expected. Core inflation may follow a declining trend again (Chart 1-10). As a result of all these factors, inflation may be well above 3 per cent this year and in 2013 as well, and may be in line with the inflation target only in 2014, at the end of the forecast period.

Table 1-1
Details of the inflation forecast

| | | 2011 | 2012 | 2013 |
|-----------------------------|----------------------------|------------|------------|------------|
| Core inflation | | 2.7 | 5.2 | 4.9 |
| Non-core inflation | Unprocessed food | 4.3 | 6.1 | 4.9 |
| | Gasoline and market energy | 13.8 | 12.3 | 2.8 |
| | Regulated prices | 4.0 | 5.1 | 6.4 |
| | Total | 6.4 | 7.1 | 5.2 |
| Consumer price index | | 3.9 | 5.8 | 5.0 |

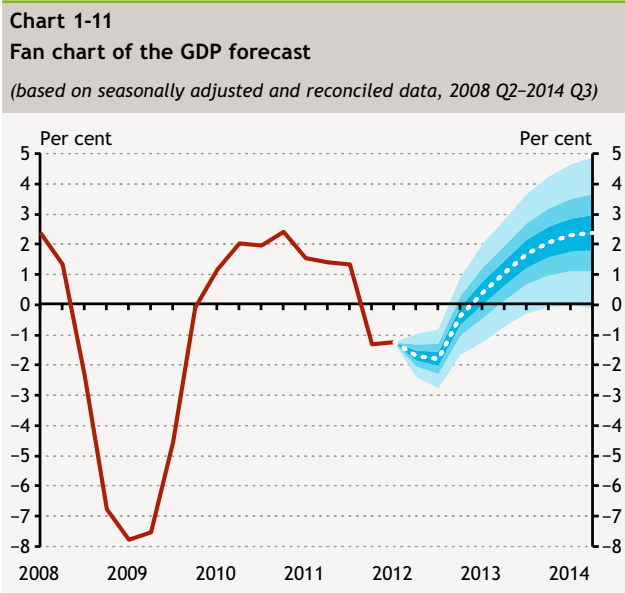
Box 1-2

Technical forecast assumptions regarding the package of measures ensuring the attainability of the deficit target

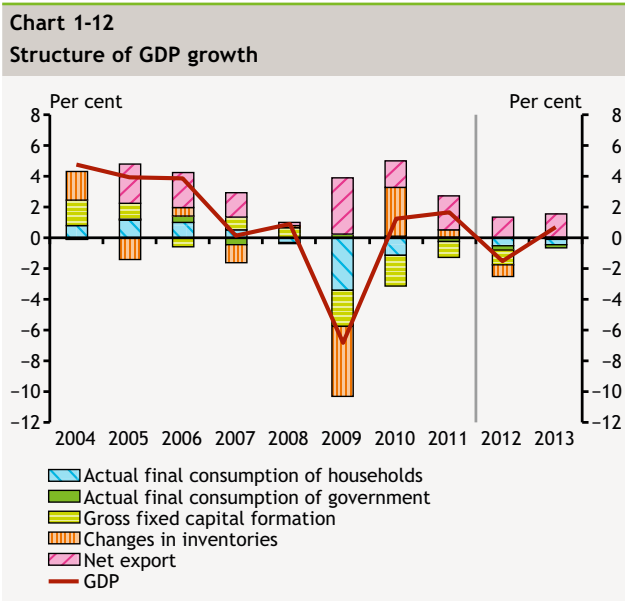
According to our expectations, most of the fiscal adjustment planned by the Government may be implemented, and the deficit may be below 3 per cent in 2012. At the same time, the measures announced in the past quarter will result in a considerable easing in the 2013 budget. Compared to our forecast in the June issue of the *Quarterly Report on Inflation*, there was a fiscal easing amounting to more than 1 per cent of GDP, which is largely attributable to the fiscal deficit effect of the job protection action plan and the new form of the transaction tax. Based on the fiscal measures known at present, in 2013 the 3 per cent deficit will probably be exceeded considerably, which – in our opinion – contrasts with the Government’s commitment to deficit targets. Therefore, our forecast is based on the technical assumption that in the future the Government will neutralise the deficit increasing effect of the measures taken in the past period. Accordingly, along our technical assumption we expect a hypothetical adjustment that is based on expenditure and revenue side measures on a fifty-fifty basis. Along this path, with a fiscal adjustment of 1.4 per cent as a proportion of GDP, next year’s deficit may be reduced to 2.4 per cent of GDP, which corresponds to our earlier forecast.

1.3 Real economy outlook

According to our forecast, Hungarian economic output will decline this year and will probably only grow slowly in 2013 as well. Growth continues to be driven by exports, but expansion in this field is also expected to be slower than in the past, due to the deteriorating prospects for international economic activity. Domestic demand is likely remain persistently subdued. Consumption and investment may continue to decline both this year and next as a result of domestic agents' protracted balance sheet adjustments, tight lending conditions and the uncertain economic environment. With unemployment remaining at a high level and investment activity persistently slack, potential economic growth will likely remain subdued over the entire forecast horizon.

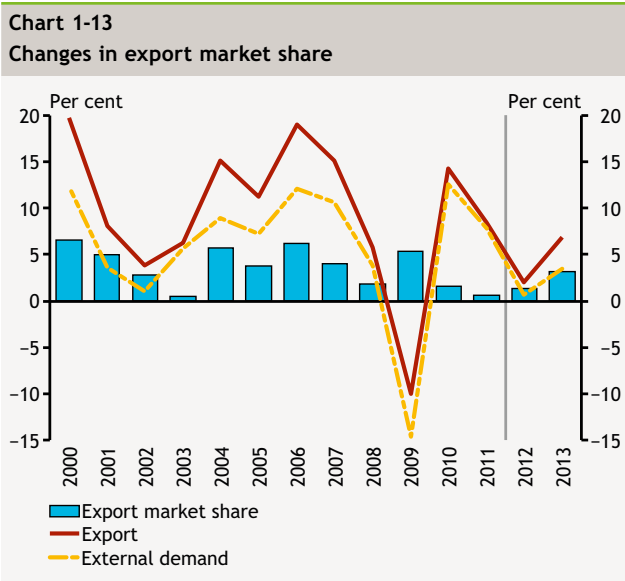


In 2012 H1, the Hungarian economy entered into recession, from which it may recover gradually during the forecast period. Both external and domestic factors played a role in the economic downturn in 2012. International economic activity weakened significantly, due to the protracted debt crisis in the euro area and the problems facing the European banking system. Domestic demand continues to be subdued as a result of households' unfavourable income position, the uncertain economic environment, tight lending conditions and government measures aiming at improving the fiscal balance. All these factors may result in a major decline in GDP, and only subdued growth is expected for next year as well (Chart 1-11).

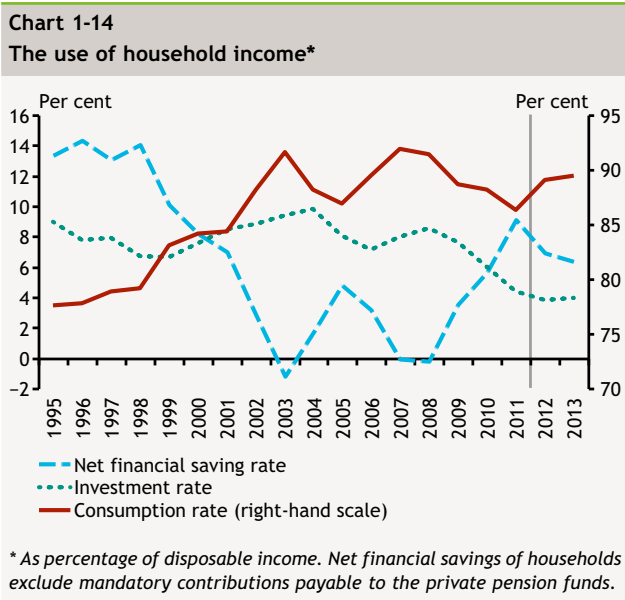


The international environment was determined by the dual trends of improving financial market sentiment and deteriorating macroeconomic prospects. While global risk tolerance increased, the prospects for business activity of Hungary's trading partners deteriorated in recent months. Tensions within the euro area are expected to be successfully resolved, and the demand-reducing effect of government measures to restore fiscal balance is expected to decline gradually. As a result, euro-area growth may pick up again from the second half of this year, although the rate of growth will be much lower than observed before the crisis. In line with developments in international economic activity, any major increase in Hungarian exports will probably take place only from 2013 (Chart 1-12). In our forecast, we expect some increase in the market share of Hungarian exports as a result of the development of new capacities in the automotive sector (Chart 1-13).

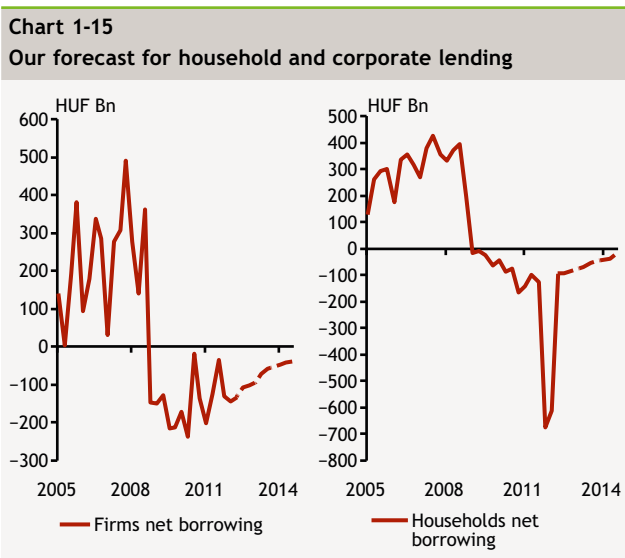
Although the factors determining the capacity of the banking sector to lend eased to some extent (mainly on the liquidity side), the deterioration in banks' portfolio quality and in the prospects for business activity will result in a



decline in willingness to take risks, and consequently in a strengthening of supply constraints. Lending conditions are expected to tighten in the corporate segment in the future as well, which may also be exacerbated by the passing on of the financial transaction tax as of 2013. Due to weak economic activity, credit demand will also be subdued. Accordingly, our overall forecast picture regarding the developments in corporate lending has deteriorated. The negative effects prevailing in the household segment as well (continued balance sheet adjustment, worsening income position) may be offset by the slow easing of the tight credit conditions resulting from early repayments. This easing may be supported by the demand stimulating effect of the state interest rate subsidy programme as well (for more details, see Box 1-3). Overall, developments in lending to the private sector have deteriorated since the previous *Quarterly Report on Inflation*; no significant increase is expected in the household or corporate segments over our forecast horizon (Chart 1-15).



Households' real income may continue to fall in parallel with inflation remaining at a high level and low labour demand. In the coming quarters, consumption may continue to slacken as a result of declining real incomes and tight lending conditions. Against the background of uncertain economic prospects, precautionary considerations may continue to be strong; therefore, the net savings rate may remain at a permanently high level compared to pre-crisis years (Chart 1-14).



Looking ahead, whole-economy investment will be stimulated only by public investment financed from EU funds, while private investment may continue to decline. Corporate investment is limited by the deteriorating prospects for business activity, tight lending conditions and the growing tax burden of the corporate sector. The historically low corporate investment rate affects the growth potential of the economy as well. Households' investment in real estate is limited by the decline in real incomes and low lending activity as well.

Box 1-3

Impact of the new state interest rate subsidy scheme on our lending forecast

At end-2011, the Government introduced a 'home-creation' interest rate subsidy scheme to ease the acquisition of housing and the refinancing of problem loans. Any private person may have recourse to this interest subsidy: until end-2014 for building and buying new homes as well as for purchasing used ones, and until end-2012 for purchasing properties with mortgage default, or for defaulting debtors' moving into smaller homes as well as for refinancing of non-performing foreign currency loans. The interest rate subsidy is available for five years and its extent declines gradually year by year. Furthermore, the extent of the subsidy varies according to the purpose of use and other conditions as well (Table 1-2)

Upon introduction of the programme in 2011, the applied interest rate that can be charged under the scheme concerned was maximised. It is calculated by adding 3 percentage points to the benchmark government securities yields, which meant 10-11 per cent under the terms of 2012 H1. However, the maximised offer price proved to be low compared to the risks: the highest chargeable interest rate was 2-3 percentage points below the average of the market housing loan conditions advertised in 2012 H1, and thus no product appeared in banks' supply could be utilised with state subsidy. In order to fill in this gap, an amendment to the relevant law made the conditions more favourable in July 2012: the maximum chargeable interest rate was raised to 130 per cent of the reference yield + 3 percentage points. As a result, the upper limit for the subsidised scheme increased to the level of lending rates under the current market conditions, i.e. to around 12 per cent; of which the interest rate reduced by the subsidy and to be paid by the customer is 9 per cent on average during the period of the subsidy (but it changes annually in line with the extent of the interest rate subsidy).

Accordingly, the effective forint interest rate to be paid by customers in the period of the subsidy is close to the levels prevailing in 2010, and it is expected to result in an increase in new disbursements. Consequently, the interest rate subsidy programme may contribute to a pick-up in the market of housing loans, which slowed down extremely following the period of early repayments, however, only to a moderate extent over the short term. On the one hand, although this measure stimulates demand for credit, it cannot counterbalance the negative effect of the weak income position of households, which essentially influences lending developments in this sector. On the other hand, new disbursements will be partly related to refinancing, and thus the scheme will result in effective new lending only to a lesser extent. Therefore, the scheme's impact on GDP growth is expected to remain moderate.

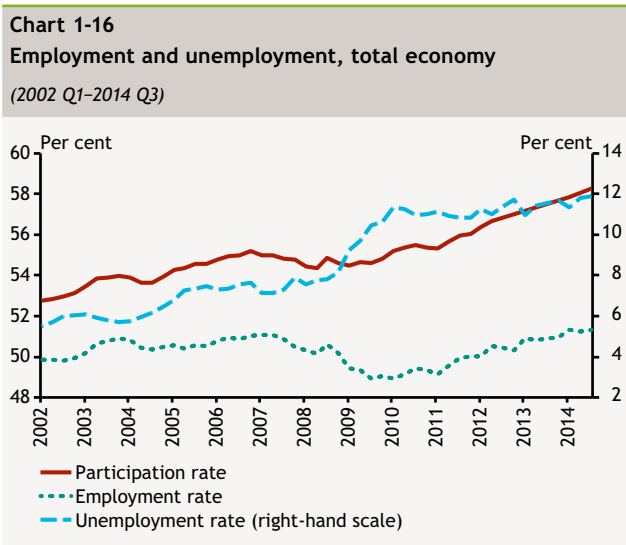
Table 1-2
The most important conditions of the 'home-creation' interest rate subsidy

| Purpose of application | Market value limit (million HUF) | Credit limit (million HUF) | Other conditions | Extent of subsidy* (per cent) | | | | |
|--|----------------------------------|----------------------------|---|-------------------------------|--------|--------|--------|--------|
| | | | | 1st yr | 2nd yr | 3rd yr | 4th yr | 5th yr |
| Building or buying new homes | 30 | 10 | Additional 10 ppt. in case of 3 or more children | 60 | 55 | 50 | 45 | 40 |
| Purchasing used homes, renovation | 15 | 6 | Purchasing at latest in 1 year | 50 | 45 | 40 | 35 | 30 |
| Purchasing property with mortgage default - Budapest | 15 | 10 | - | 50 | 50 | 45 | 40 | 35 |
| Purchasing property with mortgage default - other | 10 | 7 | - | | | | | |
| Moving into smaller homes for defaulting debtors | less than the original | less than the outstanding | - | 50 | 45 | 40 | 35 | 30 |
| Refinancing non-performing FX loans - Budapest | 20 | - | At least one child; only for contracts not terminated | 50 | 45 | 40 | 35 | 30 |
| Refinancing non-performing FX loans - other | 15 | - | | | | | | |

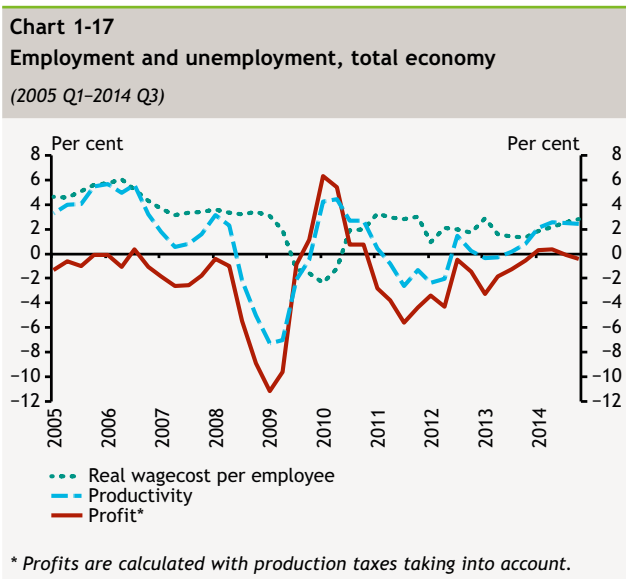
* In proportion of the concerning benchmark yield.
Source: Government Decree No. 341/2011.

1.4 Labour market forecast

In line with the government measures taken in recent years, growth in activity is expected to continue in the labour market. Corporate sector labour demand, however, may remain subdued due to the weak prospects for economic activity and the unfavourable profitability position of companies. Following this year's slight decline, private sector employment will likely only grow at a subdued rate in 2013 as well. The growth in activity may mainly take place via the increase in public employment. Although the rise in unemployment is partly attributable to structural reasons, the labour market environment will continue to be loose. Accordingly, nominal wage growth will be more restrained after the effects of the nominal wage increase fade. At the same time, in the weak demand environment, with deterioration in productivity the higher wage level will result in a rapid increase in unit labour costs.



The measures taken by the Government aiming at the expansion of activity will result in a further increase in labour supply over the forecast horizon. However, corporate demand for labour may remain persistently low due to the weak economic activity and the strained profit situation of companies (Chart 1-16). Over the short run, the unfavourable effect of the minimum wage increase on employment may be reduced by the compensation provided by the Government. The job protection programme entering into force next year will considerably reduce the costs of employment of the employees concerned, softening the impact of weak economic activity on employment. Overall, following this year's slight decline, employment in the private sector is expected to increase slightly in 2013.



As a result of the administrative pay rises, nominal wage growth accelerated considerably this year. The increase in unemployment observed during the crisis reflects permanent structural problems as well, but even taking account of this, the labour market environment may remain loose over the forecast period, keeping wage-setting under control. In addition, due to the lacklustre growth prospects, corporate profitability may be persistently weak, and therefore, nominal wage dynamics may be more restrained even after the effect of the nominal wage increase fades (Chart 1-17).

Table 1-3
Changes in our projections compared to the previous Inflation report

| | 2011 | 2012 | | 2013 | |
|--|------|-------------|-------------|-------------|--------------|
| | Fact | Projection | | | |
| | | June | Actual | June | Actual |
| Inflation (annual average) | | | | | |
| Core inflation ¹ | 2.7 | 4.9 | 5.2 | 3.0 | 4.9 |
| Core inflation without indirect tax effects | 2.5 | 2.4 | 2.7 | 2.4 | 3.1 |
| Consumer price index | 3.9 | 5.3 | 5.8 | 3.5 | 5.0 |
| Economic growth | | | | | |
| External demand (GDP-based) ² | 2.7 | 0.4 | 0.7 | 1.5 | 1.3 |
| Household consumer expenditure | 0.0 | -1.0 | -1.0 | -0.5 | -0.8 |
| Government final consumption expenditure | -0.5 | -3.4 | -2.9 | -2.9 | -2.2 |
| Fixed capital formation | -5.5 | -4.1 | -5.9 | 0.0 | 0.0 |
| Domestic absorption | -0.6 | -2.4 | -3.1 | -0.7 | -1.0 |
| Export | 8.4 | 4.4 | 2.1 | 8.4 | 6.9 |
| Import | 6.3 | 3.1 | 0.6 | 7.5 | 5.8 |
| GDP | 1.6 | -0.8 | -1.4 | 0.8 | 0.7 |
| External balance | | | | | |
| Current account balance | 1.4 | 2.8 | 2.1 | 4.0 | 3.6 |
| External financing capacity | 3.5 | 5.4 | 4.7 | 7.3 | 6.7 |
| Government balance³ | | | | | |
| ESA balance | 4.2 | -3.6 (-2.7) | -3.7 (-2.8) | -2.8 (-2.4) | -2.7 (-2.4)* |
| Labour market | | | | | |
| Whole-economy gross average earnings ^{4, 7} | 5.0 | 3.8 | 4.4 | 3.6 | 4.6 |
| Whole-economy employment ⁵ | 0.8 | 0.9 | 1.2 | 0.2 | 0.8 |
| Private sector gross average earnings ⁶ | 5.4 | 6.3 | 7.3 | 4.1 | 4.8 |
| Private sector employment ⁵ | 2.3 | -0.3 | -0.2 | 0.0 | 0.5 |
| Private sector unit labour cost ^{5, 7} | 6.7 | 5.8 | 5.2 | 5.3 | 4.8 |
| Household real income ⁸ | 2.2 | -3.2 | -4.0 | -0.9 | -1.3 |

¹ From May 2009 on, calculated according to the joint methodology of the CSO and MNB.

² In line with the changes in Hungarian export structure by destination countries we revised the weights in our external demand indicator.

³ As a percentage of GDP. Data in parenthesis include cancellation of free central reserves.

⁴ Calculated on a cash-flow basis.

⁵ June: according to the CSO LFS data, September: according to the CSO LFS data corrected by fostered workers.

⁶ According to the original CSO data for full-time employees.

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

⁸ MNB estimate. In our current forecast we have corrected the data of household income with the effect of changes in net equity because of payments into mandatory private pension funds.

* In our baseline forecast we assumed a hypothetical fiscal adjustment that is consistent with the Government's intentions set out in the Convergence Programme of Hungary. The size of the assumed adjustment is equal with the size of fiscal stimulus (+1,4% of GDP) was announced in July 2012.

Table 1-4
MNB basic forecast compared to other forecasts

| | 2012 | 2013 | 2014 |
|---|--------------------------|--------------------------|-----------------|
| Consumer Price Index (annual average growth rate, %) | | | |
| MNB (September 2012) | 5.8 | 5.0 | - |
| Consensus Economics (August 2012) ¹ | 5.3 – 5.6 – 6.1 | 2.5 – 3.9 – 6.2 | 3.2 |
| European Commission (May 2012) | 5.5 | 3.9 | - |
| IMF (April 2012) | 5.2 | 3.5 | 3.0 |
| OECD (May 2012) | 5.7 | 3.6 | - |
| Reuters survey (September 2012) ¹ | 5.5 – 5.7 – 6.0 | 3.0 – 4.2 – 6.3 | 2.5 – 3.5 – 4.3 |
| GDP (annual growth rate, %) | | | |
| MNB (September 2012) | -1.4 | 0.7 | - |
| Consensus Economics (August 2012) ¹ | (-1.8) – (-1.1) – (-0.5) | (-0.5) – (0.7) – (1.3) | 2.2 |
| European Commission (May 2012) | -0.3 | 1.0 | - |
| IMF (April 2012) | 0.0 | 1.8 | 2.0 |
| OECD (May 2012) | -1.5 | 1.1 | - |
| Reuters survey (September 2012) ¹ | (-1.8) – (-1.0) – (-0.0) | (-0.5) – (0.7) – (1.3) | - |
| Current account balance (per cent of GDP) | | | |
| MNB (September 2012) | 2.1 | 3.5 | - |
| European Commission (May 2012) | 2.2 | 3.7 | - |
| IMF (April 2012) | 3.3 | 1.8 | -1.1 |
| OECD (May 2012) | 2.7 | 3.8 | - |
| Budget Balance (ESA-95 method, per cent of GDP) | | | |
| MNB (September 2012) ⁴ | -3.7 (-2.8) | -2.7 (-2.4)* | - |
| Consensus Economics (August 2012) ¹ | (-2.5) – (-2.9) – (-3.6) | (-2.2) – (-2.8) – (-3.5) | - |
| European Commission (May 2012) | -2.5 | -2.9 | - |
| IMF (April 2012) | -3.0 | -3.4 | -3.2 |
| OECD (May 2012) | -3.0 | -2.9 | - |
| Reuters survey (September 2012) ¹ | (-2.5) – (-2.9) – (-3.5) | (-2.5) – (-3.2) – (-3.9) | - |
| Forecasts on the size of Hungary's export markets (annual growth rate, %) | | | |
| MNB (September 2012) | 0.7 | 3.5 | - |
| European Commission (May 2012) ² | 2.1 | 4.8 | - |
| IMF (April 2012) ² | 2.2 | 4.1 | - |
| OECD (May 2012) ² | 2.5 | 5.0 | - |
| Forecasts on the GDP growth rate of Hungary's trade partners (annual growth rate, %) | | | |
| MNB (September 2012) | 0.7 | 1.3 | - |
| Consensus Economics (August 2012) ³ | 0.7 | 1.5 | - |
| European Commission (May 2012) ² | 0.8 | 1.9 | - |
| IMF (April 2012) ² | 0.9 | 1.9 | - |
| OECD (May 2012) ² | 1.1 | 1.9 | - |
| Forecasts on the GDP growth rate of euro area (annual growth rate, %) | | | |
| Consensus Economics (September 2012) ³ | -0.5 | 0.2 | - |
| European Commission (May 2012) | -0.3 | 1.0 | - |
| IMF (April 2012) | -0.3 | 0.9 | - |
| OECD (May 2012) | -0.1 | 0.9 | - |

¹ For Reuters and Consensus Economics surveys, in addition to the average value of the analysed replies (i.e. the medium value), we also indicate the lowest and the highest values to illustrate the distribution of the data.

² Values calculated by the MNB; the projections of the named 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. Certain institutions do not prepare forecast for all partner countries.

³ Aggregate based on Euro area members included in our external demand indices.

⁴ As a percentage of GDP. Data in parenthesis include cancellation of free central reserves.

* In our baseline forecast we assumed a hypothetical fiscal adjustment that is consistent with the Government's intentions set out in the Convergence Programme of Hungary. The size of the assumed adjustment is equal with the size of fiscal stimulus (+1.4% of GDP) was announced in July 2012.

Sources: Eastern Europe Consensus Forecasts (Consensus Economics Inc. [London], August 2012); European Commission Economic Forecasts (May 2012); IMF World Economic Outlook Database (April 2012); Reuters survey (August 2012); OECD Economic Outlook, No. 91 (May 2012).

2 Effects of alternative scenarios on our forecast

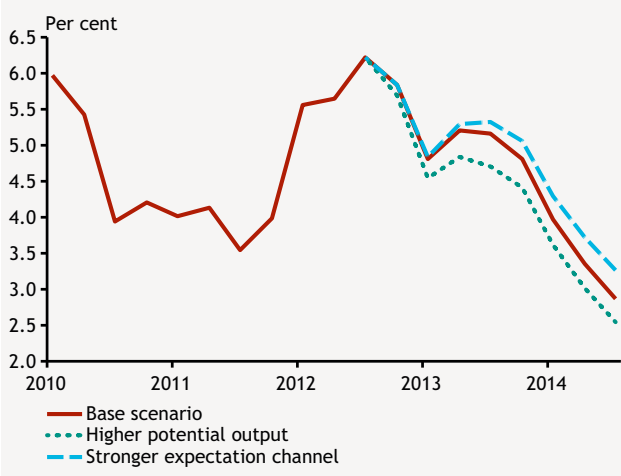
The Monetary Council selected two scenarios that it believes to capture the risks around the baseline forecast. These scenarios depict the uncertainty related to developments in inflation and to the cyclical position. Continued cost shocks and permanently above-target inflation raise the possibility that due to high inflation expectations the path-through of these shocks into prices and wages is stronger, which results in a higher nominal path. This possibility is examined by the first scenario. The other scenario analyses the effects of higher potential output than what is assumed in the baseline scenario. The higher nominal path results in a tighter monetary policy and inflation reaching the target more slowly. In contrast, higher potential output allows looser monetary policy, and is associated with a higher growth path.

In Hungary, the inflation has exceeded permanently and substantially its target, and values above 5 per cent are expected in the short term as well. This high inflation is partly attributable to frequent and considerable cost shocks: food and oil price increases as well as inflationary tax measures followed one another in Hungary in recent years. However, as the inflation target has been missed continuously, the possibility arises that continued cost shocks have increased inflation expectations and result in stronger second-round effects. International experience also shows that persistent deviations from the target add to inflation expectations,² which only start to decline when inflation gets close to the target again. The unfolding food and commodity price shock and next year's tax measures will increase inflation again, i.e. the expectation problem caused by cost shocks may potentially remain in place.

If the path-through of cost shocks into prices and wages is stronger, inflation and nominal wages may also be higher than expected in the baseline scenario. The higher nominal path calls for a tightening of monetary conditions. Growth is somewhat lower than in the baseline scenario, and inflation will reach the target more slowly.

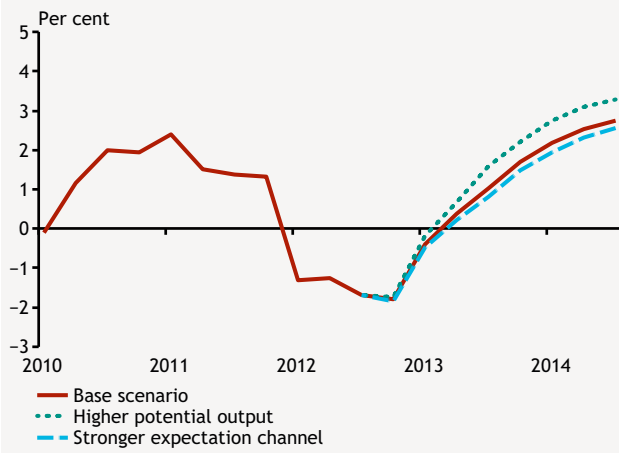
In recent years inflation has been typically influenced by two-directional developments. The cost shocks added to inflation, which was offset by the effect of the loose labour market and the weak domestic demand. The disinflationary effect of domestic demand depends on the cyclical position. However, the estimations of the output gap and potential output are surrounded by high uncertainty. Measurement problems have only increased since the crisis.

Chart 2-1
The impact of the risk scenarios on our inflation forecast
(2010 Q1–2014 Q3)



² See the relevant analysis of the Bank of England in its 2011 Q2 Quarterly Bulletin.

Chart 2-2
The impact of the risk scenarios on our GDP forecast
 (2010 Q1–2014 Q3)



There is a general agreement that the crisis damaged output potential to a considerable extent. However, the uncertainty concerning its magnitude and the future path of potential output remains high. Based on our estimations using several methods, and comparing them to international evidence, the potential growth path assumed in the baseline scenario does not appear extreme. Nevertheless, it cannot be ruled out that we overestimate the damaging effect of the crisis and its short and longer-term consequences. With higher potential growth and a wider output gap, the price reducing effect of domestic demand is stronger and the labour market is looser. The looser labour market and wider output gap together result in lower inflation. The more favourable inflation path is consistent with lower interest rates, i.e. this scenario allows monetary policy to be looser than the one in the baseline scenario. The growth path is more favourable than in the baseline scenario, mainly because of the benevolent assumption on potential growth (Charts 2-1 and 2-2).

3 Macroeconomic overview

3.1 The international environment

Global economic growth decelerated slightly in Q2. Economic activity declined both in the developed and developing countries and euro-area output fell. Inflation risks fell in Q2, which allowed several central banks to ease monetary conditions. As of July, both food prices and the world market price of oil increased strongly, narrowing the room for manoeuvre of central banks pursuing an inflation targeting policy.

International financial market sentiment continues to be influenced most strongly by developments in the European debt crisis and expectations about the relevant economic policy reactions. The financial market optimism of recent months is primarily attributable to investors' expectations concerning the management of the crisis. The decision and implementation risks related to measures related to crisis management declined slightly.

3.1.1 DEVELOPMENTS IN GLOBAL ECONOMIC ACTIVITY

Growth in developed and developing economies decelerated slightly in Q2 and euro-area output declined (Chart 3-1). Growth in the US and Japan fell slightly in Q2, whereas the economy of the euro area contracted by 0.2 per cent. Global prospects were greatly influenced by the fact that uncertainty about fiscal policy and the banking sector in

Chart 3-1
GDP growth in major economies
(quarterly change in seasonally adjusted data; 2006 Q1–2012 Q2)

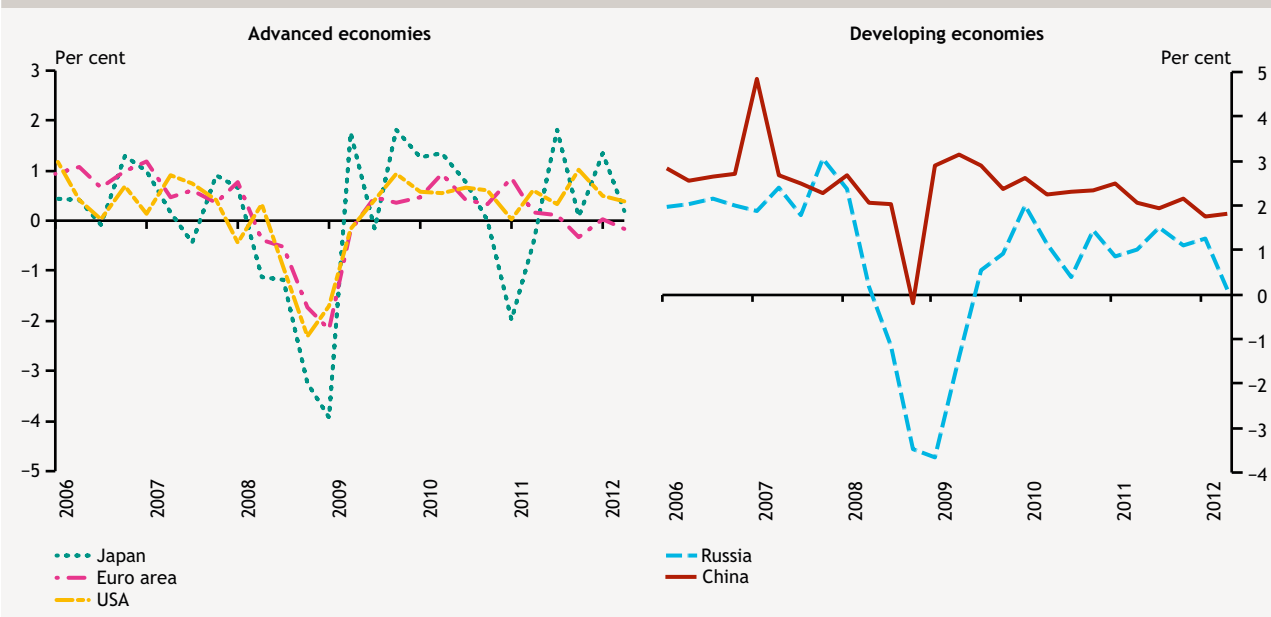
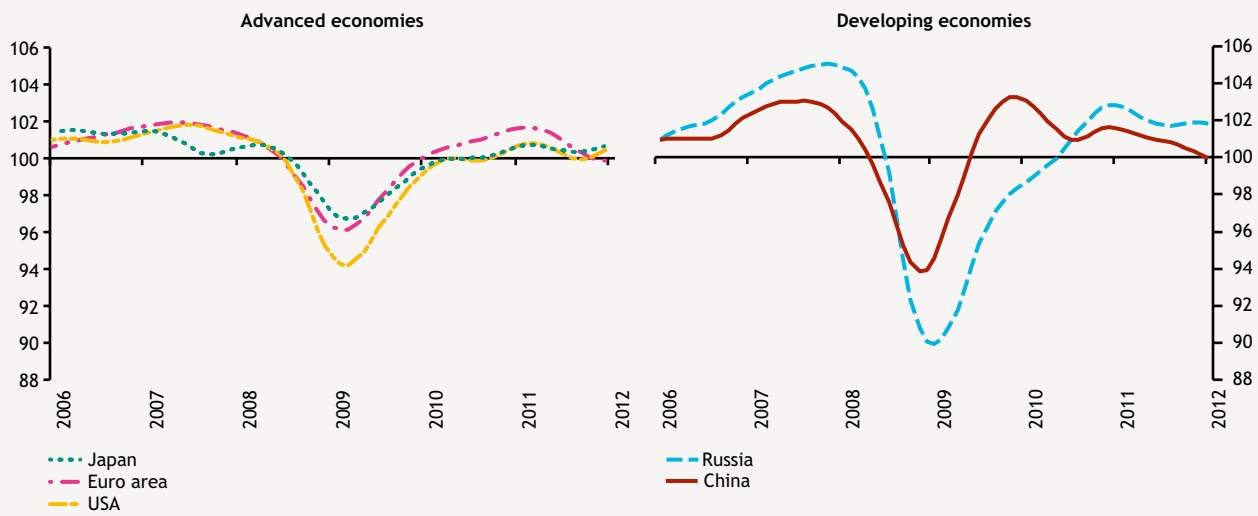
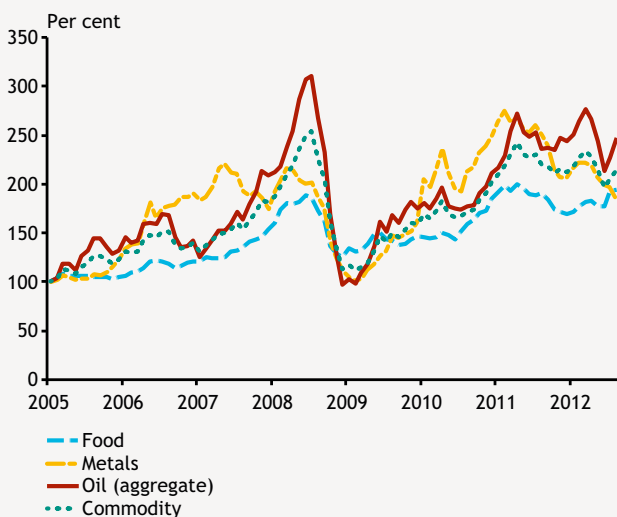


Chart 3-2
Business cycle indicators in major economies
 (January 2006–July 2012)



the euro area intensified again in the middle of the year, but then eased considerably by August as a result of several announcements. The deterioration in growth prospects determined labour market developments as well. The increase in employment in developed countries stalled, while euro-area unemployment continued to grow. The unemployment rate declined only in Germany. Growth in the German economy continued in Q2, mainly reflecting the recovery in construction and the performance of exports to non-euro-area countries. Economic growth in China, which is a remarkable contributor to the world economy, decelerated slightly, due to the slacker investment growth and weakening exports to the euro area.

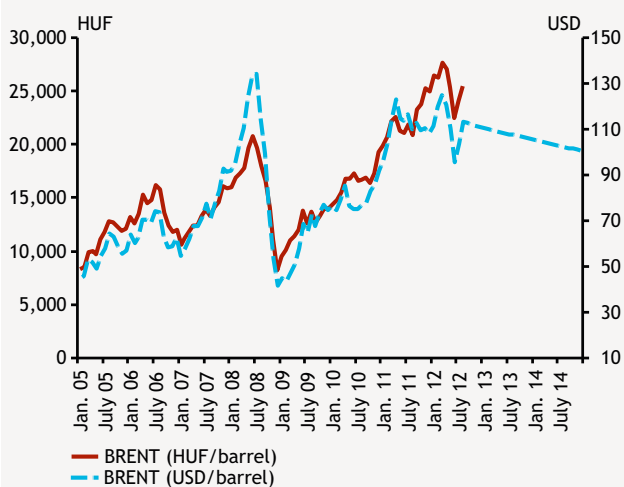
Chart 3-3
Relative commodity prices
 (USD, 2000=100; January 2005–August 2012)



Short-term economic indicators reflect a slowdown in global economic growth. Both the confidence indicators in the euro area and the USA (Ifo, EABCI, Michigan) and the leading indicators (OECD CLI, CPB, Eurocoin, PMI) foreshadow easing global activity (Chart 3-2).

Global economic growth may accelerate in 2013, but risks continue to be high, and the expected economic performance of individual regions may vary considerably. The escalation of the euro-area debt crisis and persistently high oil prices represent a downside risk to global growth. According to the forecasts of major international institutions, the US economy is expected to grow by more than 2 per cent next year. At the same time, the result of the elections and the effects of the fiscal measures expected for next year pose additional downside risks to growth. The prospects for the euro-area economy are unfavourable; following this year's downturn, only moderate growth is expected for next year as well. Growth in emerging countries has been strong,

Chart 3-4
Change in oil price assumptions
 (January 2005–December 2014)

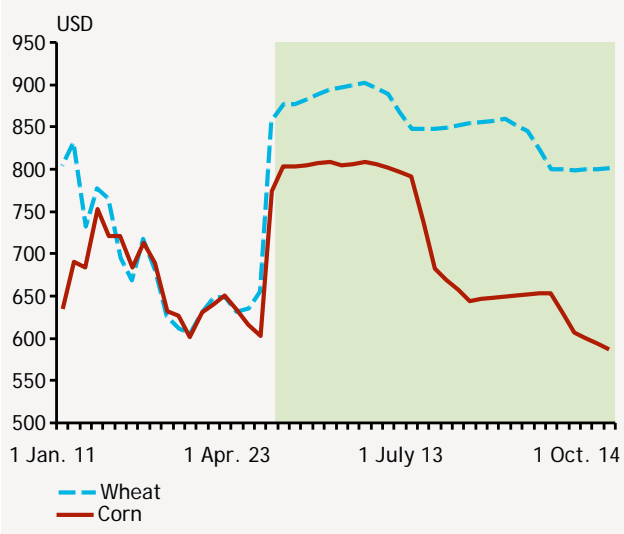


despite the perceptible slowdown, and their economic performance may continue to improve in 2013 as developed countries continue to recover. Of the emerging countries, growth in China carries the greatest risk, as a possible slowdown in Chinese economic activity may be felt globally as well, due to the size of the economy.

Economic performance has varied considerably in our region. Growth was recorded for the economies of Poland, Romania and Slovakia, but those of the Czech Republic and Hungary contracted. Continued fiscal adjustment in the euro area and the recession point to a further downturn in Hungary’s external demand.

Overall, economic activity deteriorated slightly in the developed world, but a modest pick-up is expected to take place in the second half of the year. Prospects for business activity deteriorated in the euro area, Hungary’s major export market.

Chart 3-5
Spot and futures prices of wheat and corn
 (January 2011–December 2014)



3.1.2 GLOBAL TRENDS IN INFLATION

Developments in commodity price were mixed following Q1. Energy prices fell by 25 per cent in Q2, before increasing again from July and then stabilising at the the Q1 oil price levels by mid-August (Chart 3-4). The strike in the oil industry in Norway and the oil embargo against Iran from July may have contributed to the increase. In addition, expectations related to quantitative easing strengthened in financial markets, possibly also resulting in speculation that commodity prices would rise. Food prices rose considerably, after declining slightly early in the year. The increase in food prices is attributable to the bad production conditions and the poor weather. July and August data suggest that a food price shock is unfolding (Chart 3-5). This is indicated by the surge in wheat and corn prices and the developments in futures prices this year and in 2013. The increase in food prices together with the current oil prices may pose an upside risk to inflation for the rest of the year.

Trends in inflation were in line with the commodity price changes both in the developed and developing countries. In the euro area, the consumer price index fell until July, but then increased to 2.6 per cent in August, due to the rising energy prices (Chart 3-6). Longer-term inflation expectations continue to be well-anchored. Inflation in the USA was falling steadily and by July the rate had moved well below the 2 per cent target which was announced in January. Nevertheless, long-term inflation expectations continue to be stable. The increase in consumer prices in the UK economy was slowing since the beginning of the year, reaching 2.4 per cent by June. Market participants were surprised by the increase in inflation in July. With the

Chart 3-6
Inflation in major economies

(January 2006–August 2012)

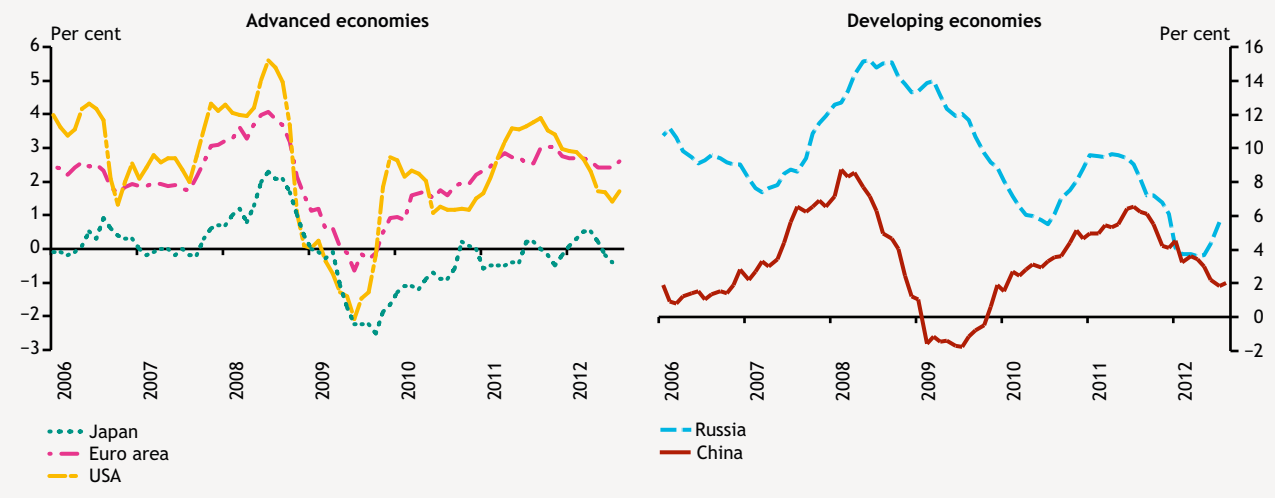
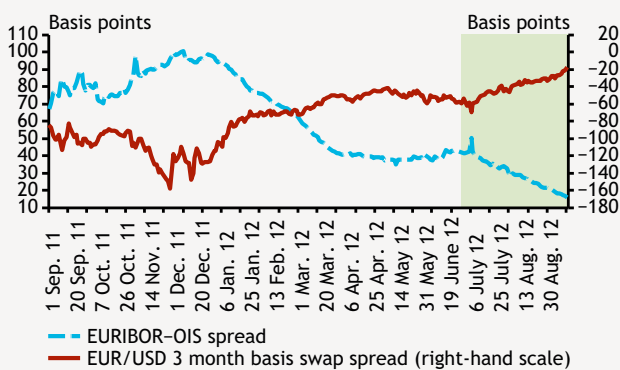


Chart 3-7
Changes in interbank and swap market spreads

(September 2011–September 2012)



deceleration in economic growth and falling energy prices, Chinese inflation declined to 1.8 per cent in July, but rebounded to 2 per cent in August.

3.1.3 MONETARY POLICY AND FINANCIAL MARKET DEVELOPMENTS

Weakening growth prospects and the decline in oil prices created scope for monetary easing in several countries. In July, the ECB reduced the interest rate on its main refinancing operations by 25 basis points to 0.75 per cent. According to the explanation, inflationary pressures had declined over the policy horizon, and inflation expectations remained anchored and were consistent with the price stability definition of the ECB. The Fed announced a new asset purchase programme in September aiming to buy mortgage-backed securities (MBS) in the volume of USD 40 bn. The asset purchase programme supplements the two earlier tools, the 'Operation Twist' (extending the average maturity of the securities in the balance sheet of the Fed) and its policy of reinvesting principal payments from its holdings of agency debt in agency MBS. These two programmes will be continued through the end of the year. The three programmes together will increase the volume of the long-term securities in the Fed portfolio by USD 85 bn per month. According to the forecast of the Fed, inflation will remain at the target, economic growth will pick up, and unemployment may decrease below 7 per cent by end 2014. Furthermore, the federal funds rate is likely to remain at the current zero-level target range until mid-2015. The Monetary Policy Committee of the Bank of England increased the volume of its asset purchase programme by GBP 50 bn to GBP 375 bn (26.9 per cent of GDP) in July and established a new non-conventional tool ('Funding for Lending Scheme',

Chart 3-8
Developments in major stock market indices

(September 2011–September 2012)

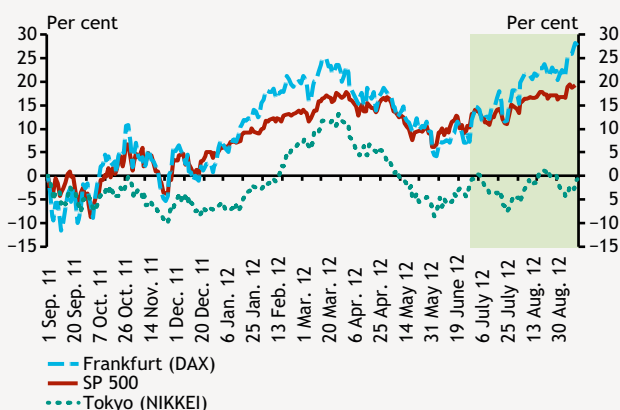
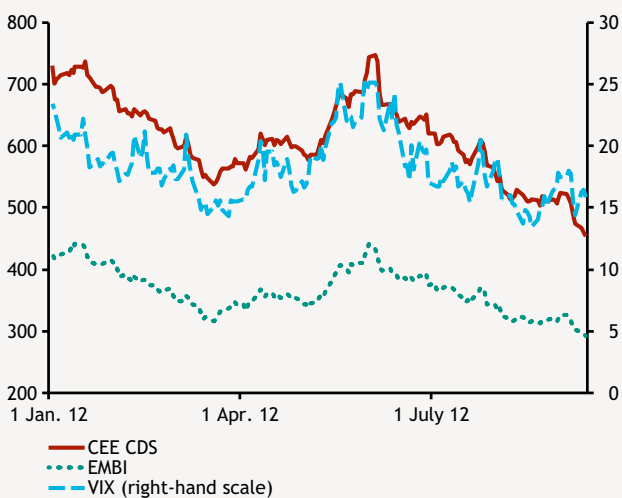
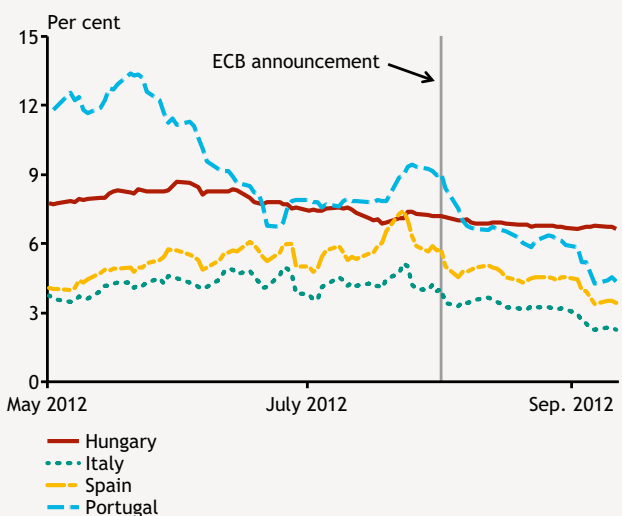


Chart 3-9
Changes in risk indices
 (January 2012–September 2012)



Source: Thomson Reuters, MNB.

Chart 3-10
Three-year yields in the periphery and in Hungary



Source: Thomson Reuters, MNB.

FLS) together with the Treasury which may provide the option of borrowing government bonds for other assets. The tool is expected to strengthen banks' lending activity as funding is linked to their lending performance.

Most of the central banks in the region pursued a wait-and-see policy. Before the August decision of the MNB, the Czech central bank cut the base rate by 25 basis points to 0.5 per cent in July. According to their explanation, economic activity data falling short of expectations did not indicate domestic inflationary pressure in the economy, whereas inflation may decline to below the target as the effects of the VAT increase fade. Following an unexpected interest rate increase in May, the Polish central bank left its policy rate unchanged, which was justified by inflation remaining above the target. The Romanian central bank did not change the policy rate in the past months due to the upside risks to inflation.

After the financial market uncertainty in the first two quarters, global market sentiment turned positive from end-July, with the further announcements related to the management of the crisis playing an important role in this (Chart 3-9, and further details in Box 3-1). First, in July 2012 the Council of the European Union decided to permit the deceleration of the pace of the Spanish fiscal consolidation. Second, the August announcement by the ECB that it was planning to develop a bond purchase programme focusing on short-term government securities also improved investor sentiment. As a result, premia in periphery countries declined spectacularly; yields on medium-term (e.g. three-year) securities fell extremely sharply (Chart 3-10). These developments were globally amplified by the fact that market expectations related to the major central banks' quantitative easing led to a change in investor sentiment. Consequently, capital flowed to riskier countries. At the same time, there is a general market consensus that renewed optimism is mostly related to the market expectations of the ECB's steps and not to concrete measures; accordingly, the risk of a possible correction is high. The persistence of the decline in yields largely depends on future decisions related to European crisis management, on the functioning of the crisis funds, the continuation of the Greek programme and the results of the Spanish financial programme.

Box 3-1**Factors behind the improvement of financial market sentiment despite the deteriorating macroeconomic indicators**

In recent years, strong correlation has been observed between global macroeconomic prospects and developments in financial market and capital market indicators. Developments in the past quarter were contradictory in this respect. While global macroeconomic figures tended to indicate deteriorating prospects, international financial market sentiment started to improve perceptibly as of end-July. Demand for emerging market assets increased considerably, which was also reflected in premia on domestic assets and the developments in the exchange rate of the forint. The positive sentiment may have been strengthened by several factors.

Serious debates are going on regarding the conditions of a possible external financial package intended for the recapitalisation of Spanish banks. According to reports, no fiscal targets will be linked to the Spanish bank rescue package; moreover, Spain given an extension to meet the deficit target (the original deadline of 2013 for reducing the deficit to below 3 per cent was modified to 2014). Concerning the looser conditions of the Spanish financial package, investors came to the conclusion that European decision-makers also perceived the risks of excessive fiscal tightening; this development was generally greeted by investors.

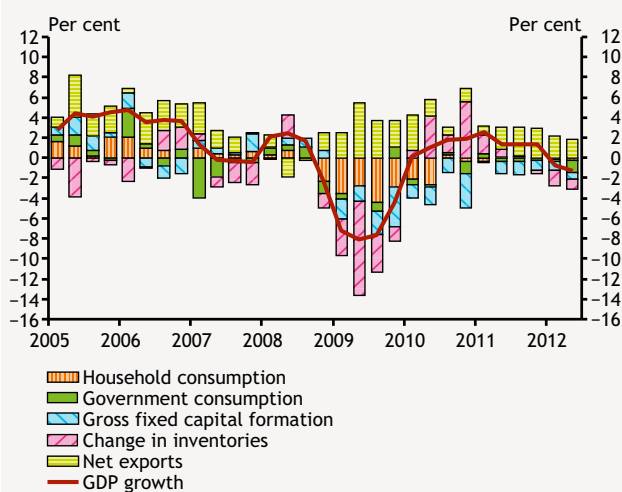
The monetary policies of developed country central banks (close-to-zero base rate and quantitative easing) reduced the yields on government securities of less risky countries to an all-time low. Especially high expectations preceded the news related to a possible third asset purchase programme of the Fed. The application of a further programme was discussed at each meeting of the Federal Open Market Committee, and finally the quantitative easing was announced after their September meeting. The monetary policies of central banks in developed countries may encourage some of the institutional investors (insurance corporations, pension funds or even banks) to invest their money in riskier assets offering higher yields. Accordingly, capital may flow into riskier assets and countries.

With its announcements in early August and in September, the ECB took steps towards playing a more determined role in crisis management. With its commitment to purchasing shorter-term periphery bonds, the ECB may take on a role that has been expected by investors for a long time. Although long-term yields in the periphery continue to reflect the uncertainty of the situation, three-year government securities yields and five-year CDS spreads have declined considerably since the second half of July. Countries that apply for assistance from the EFSF/ESM funds and meet their undertakings set out therein may participate in the ECB's OMT (Outright Monetary Transactions) programme. In the case of the countries under the EFSF programme, a further condition is the appearance as an issuer in the primary market. This instrument may be successful over the longer term, because it may complement the operation of the EFSF/ESM crisis funds. If the adjustment programmes are implemented as planned, no bankruptcy based on self-fulfilling fear may develop due to the unrealistically high yield spreads. On the other hand, in connection with the ESM fund the limited nature of its effective lending capacity arose, which may be offset by the 'unlimited' volume of the OMT scheme. Successful application of this instrument requires the establishment of the ESM fund, a pre-condition of which was the positive decision of the German Constitutional Court in September.

3.2 Aggregate demand

Following a significant decline in the first quarter, the contraction in Hungary's gross domestic product continued in the second quarter, although to a lesser extent. Both external and domestic factors contributed to the deterioration in demand conditions. The reduction in private and government debt accumulated prior to the crisis, the generally tight lending conditions and the uncertain economic environment are acting as a drag on domestic demand, while the slowdown experienced in Hungary's external markets may reduce export dynamics. The general deterioration in the demand environment and weak domestic demand in particular continue to have a considerable disinflationary impact, offsetting the feed-through effects stemming from commodity price increases.

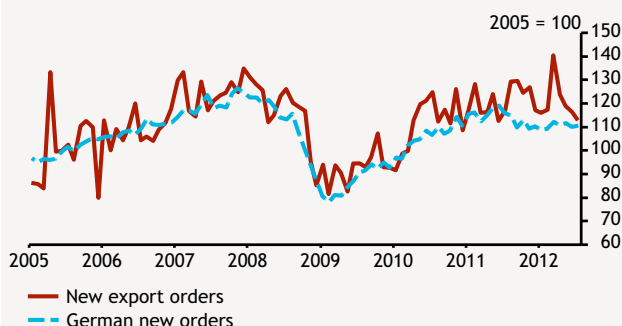
Chart 3-11
Structure of annual change in domestic GDP
(2005 Q1–2012 Q2)



The downturn in the performance of the Hungarian economy continued in 2012 Q2. Thus, gross domestic product declined in the second consecutive quarter, after stagnating at the end of last year, fulfilling the condition of a technical recession. Both domestic and external factors contributed to the continued slackening of the aggregate demand environment (Chart 3-11). The reduction in debt accumulated prior to the crisis may restrain private sector demand for years to come. Against the background of weak labour market conditions, the effect of the considerable decline in real incomes is increasingly reflected in households' consumption and investment decisions. Although the outflow of banks' external funds slowed down in the middle of the year, lending conditions continue to be tight. In addition to the weak domestic demand conditions, external factors also deteriorated this year as Hungary's export markets slowed.

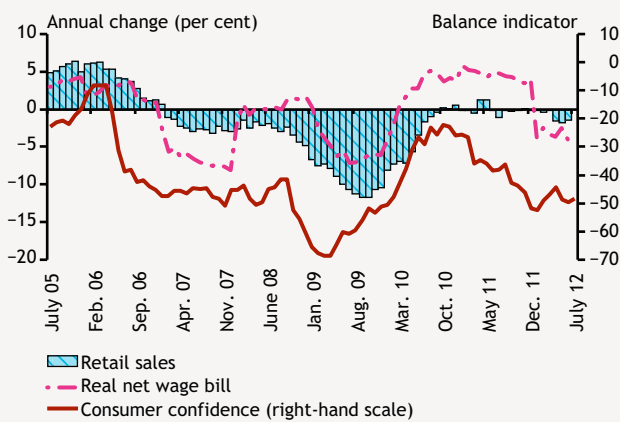
3.2.1 FOREIGN TRADE

Chart 3-12
New Hungarian export orders and German new orders
(January 2005–July 2012)



Macro data for Q2 indicated that international economic activity would be less favourable than previously expected. Consequently, our picture of external demand worsened. Although GDP data in Germany – Hungary's main export market – were more favourable than expected, the upswing was mainly related to domestic consumption. Industrial production, which is a determinant factor influencing Hungarian exports, is weakening in the German economy as well, inducing slower growth in the volume of Hungarian goods exports (Chart 3-12). Slower growth in goods exports was offset somewhat by the slight upturn in the export of services, with the strong exchange rate depreciation at the end of last year possibly also making a contribution in this regard. Similarly to the first quarter, net exports made a

Chart 3-13
Changes in retail sales, earnings and the consumer confidence index



significant positive growth contribution, thanks to slightly rising exports and stagnating imports.

Over the short run, the domestic outlook deteriorated slightly compared to previous months. New industrial export orders have decreased in the last few months, after rising sharply in March and April. Confidence indicators suggest that growth in Hungary's export markets may be subdued in Q3 as well, although its negative impact on exports may be offset by the further strengthening of the Mercedes factory's production expected during the autumn months.

3.2.2 HOUSEHOLD CONSUMPTION

Household consumption moderated mildly in H1. Available retail trade data suggest that household purchases have decreased to a greater extent (Chart 3-13), while the decline in household consumption has been more significant in the case of manufactured goods, but more moderate in respect of services and food products. Household real income has been declining since the beginning of the year, and its negative impact on consumption may become more and more pronounced. The administrative wage increases implemented at the beginning of the year only offset the effect of tax measures in the case of those whose earnings are below the average, while rising inflation is eroding real incomes in general. This year, the sectors which are of key importance in terms of households' entrepreneurial incomes (agriculture, construction, trade) showed extremely weak economic performance, due partly to sector specific shocks and this has further exacerbated the decline in real incomes (Chart 3-15). The improvement in the household confidence indicator at the beginning of the year proved to be temporary. The indicator stagnated at a low level in Q2, which continues to suggest cautious behaviour by households.

Chart 3-14
Net quarterly change in outstanding domestic loans to households; breakdown by loan purpose

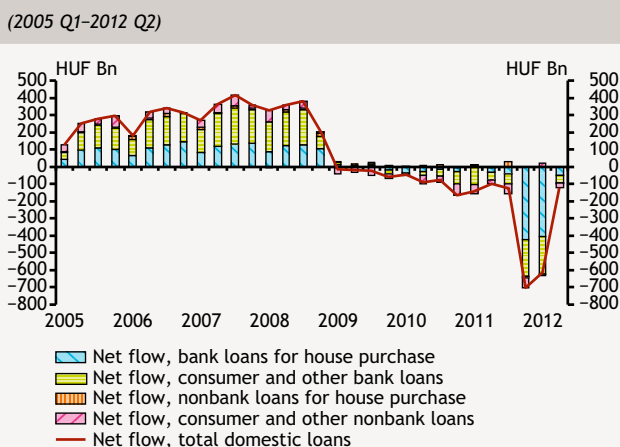
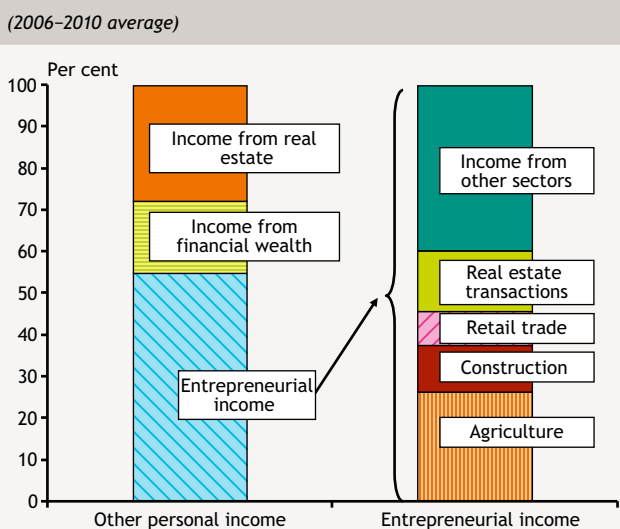


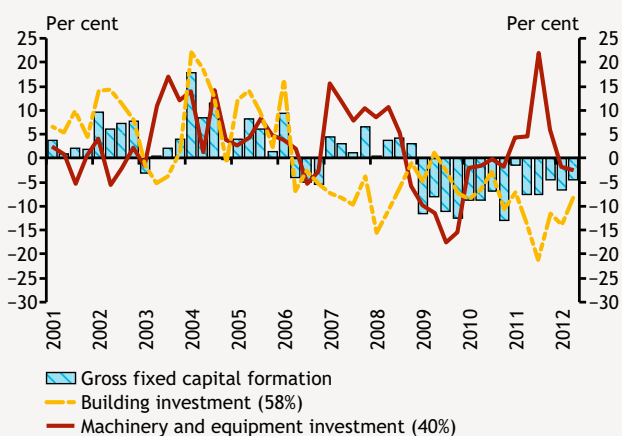
Chart 3-15
Structure of other household incomes



Developments in lending to the household sector did not improve with the end of the early repayment scheme, as the decline in outstanding loans continued in 2012 Q2. Households continue to be net repayers. The continued decline in the stock of lending is basically attributable to the extremely low level of new loans: gross lending by the banking sector was at a historical low in the quarter (Chart 3-14).

Conditions on bank lending to households were exceptionally tight during the early repayment period. Price terms did not become more favourable following the end of the early repayment scheme. According to the latest lending survey, in addition to supply constraints, loan demand was also weaker than expected by banks. The demand of households

Chart 3-16
Whole-economy investment in machinery
 (2001 Q1–2012 Q2; year-on-year)



with foreign currency debt for lending continues to be reduced by their strained income position: actual recourse to the exchange rate limit was negligible until June. The majority of the households concerned are expected to enter the scheme only in the second half of the year.

In the coming quarters, in addition to tight lending conditions and uncertain economic prospects, the fall in real income may continue to drive developments in household consumption.

3.2.3 PRIVATE INVESTMENT

Private sector investment was subdued in Q2 as well. Similarly to previous quarters, this may be attributable to the uncertainties related to the demand outlook and the regulatory environment, in addition to the increasingly tight lending environment (Chart 3-16).

Corporate investment continued to be characterised by the dual trends seen last year. Underlying investment developments are weak in the majority of sectors, with this only offset by the effect of the large investment projects implemented in the manufacturing sector. The sector's investment activity remained close to the high level of last year as a result of the ongoing Audi and GM projects. Aside from the automotive industry, most sectors are characterised by weak investment activity, and thus the expansion of the capital stock continues to be extremely restrained.

In 2012 Q2, the decline in corporate lending continued in a volume similar to that of the previous period. Outstanding short and long-term corporate loans declined. The weakness in corporate lending is explained by both demand and supply factors. On the one hand, the supply of bank credit continued to be characterised by the already strict lending conditions and further tightening. On the other hand, with the deterioration in economic activity, the supply side may also have been an obstacle to lending. With the low level of investment, demand for long-term loans continues to be subdued, whereas short-term borrowing may also have declined, due to the fall in industrial production (Chart 3-18).

Based on housing market data, household investment continued to decline in Q2. Households' weak income position and tight lending conditions continue to be the underlying reasons for this. Following stagnation for several quarters, the number of building permits declined slightly again in Q2 (Chart 3-17). Accordingly, the number of dwellings completed may reach a historically low level in the coming quarters. No turnaround is expected this year. Looking ahead, household investment may be stimulated to

Chart 3-17
Construction of new housing and the number of building permits issued quarterly
 (2001 Q1–2012 Q2)

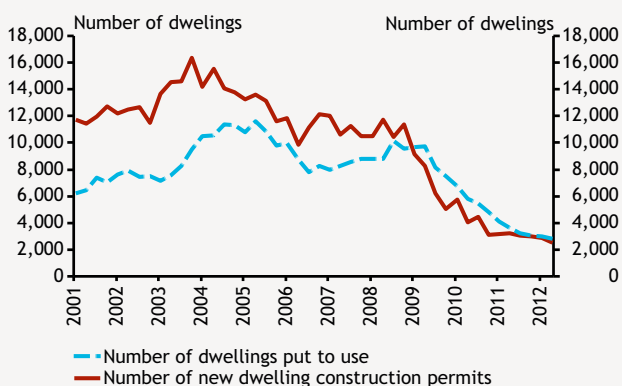


Chart 3-18
Net quarterly change in outstanding domestic loans to corporations; breakdown by maturity
 (2005 Q1–2012 Q2)

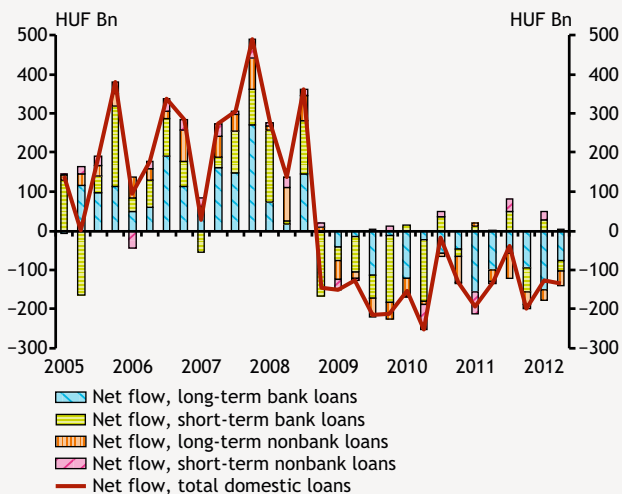
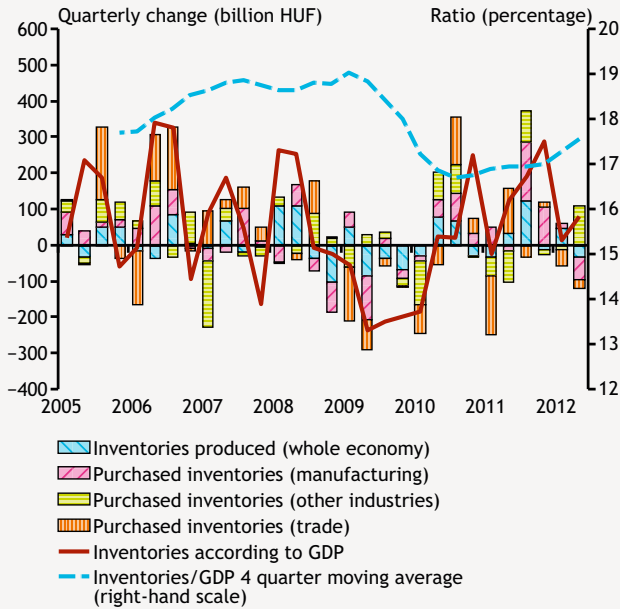


Chart 3-19
Changes in inventories at current prices and according to GDP, and inventory level as a proportion of nominal GDP
 (2005 Q1–2012 Q2)



some extent by the state-subsidised housing loans that are becoming available from Q3. Based on the gradual introduction, the size of the programme and the conditions, the expansion is likely to be subdued. The subsidy is available for used homes as well, so the effect of the measure may only partly affect the market of newly constructed dwellings.

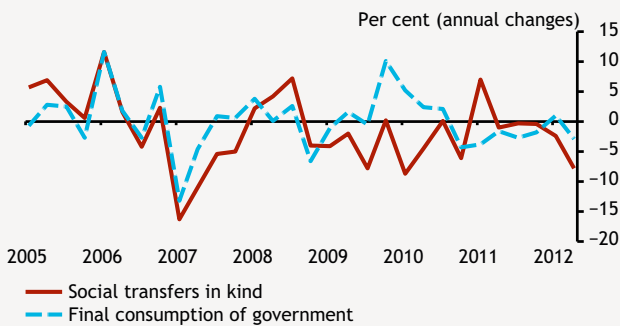
3.2.4 INVENTORIES

Uncertain growth prospects and tight corporate lending conditions continue to justify the maintenance of the tight inventory management typical since the crisis in the private sector. Accordingly, in the majority of the sectors a decline in the inventories was observed. Due to unfavourable weather conditions, the weak agricultural performance expected for this year may also contribute to the decline in inventories. A significant build-up of inventories was observed only in the energy production branches (Chart 3-19).

3.2.5 GOVERNMENT DEMAND

Government consumption demand is determined by the fiscal adjustment measures launched earlier and taken additionally this year. Accordingly, government consumption expenditure decreased in Q2. The volume of pharmaceutical and transport subsidies declined to an especially large extent. The funding of government investment continues to be characterised by strong duality: the ratio of investment implemented from budgetary sources is declining, which is offset by an increase in the use of EU funds. However, the withdrawal of the EU was slower than expected in the last few quarters, contributing to the larger-than-expected decrease in government investment.

Chart 3-20
Changes in government consumption
 (2005 Q1–2012 Q2)

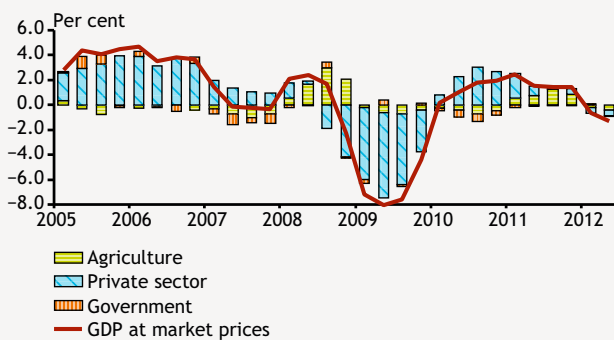


3.3 Production and potential output

Economic output contracted in 2012 Q2. Against the background of a general deterioration in macroeconomic conditions, one-off effects affecting the output of some sectors may also have appeared in the weak Q2 GDP figure. Due to the slowdown in economic growth in Hungary's export markets, the output of the export-oriented sectors is insufficient to offset the downturn in the sectors producing for the domestic market. As a temporary effect, this year's weak agricultural harvest results may cause a significant reduction in this year's GDP.

The trend decline in the investment rate over the past six years and the increase in long-term unemployment point to a slowdown in potential growth. The decelerating expansion of production capacities in the economy may gradually reduce the disinflationary impact of weak demand, adding to the second-round inflation risk of cost-push shocks.

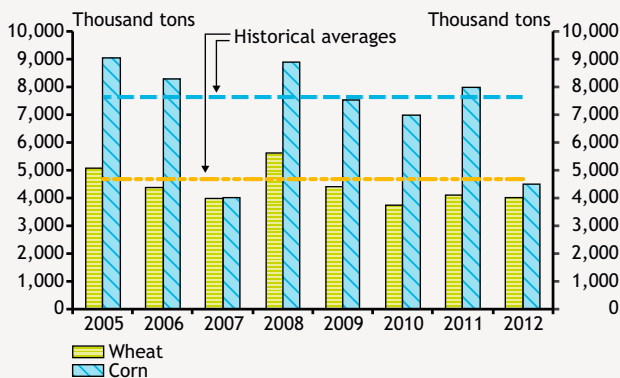
Chart 3-21
Structure of annual change in domestic GDP*
(2005 Q1–2012 Q2)



* The value added of sectors at basic prices.

Chart 3-22
Corn and wheat crop results

(only estimates are available for 2012)



Source: Hungarian Central Statistical Office.

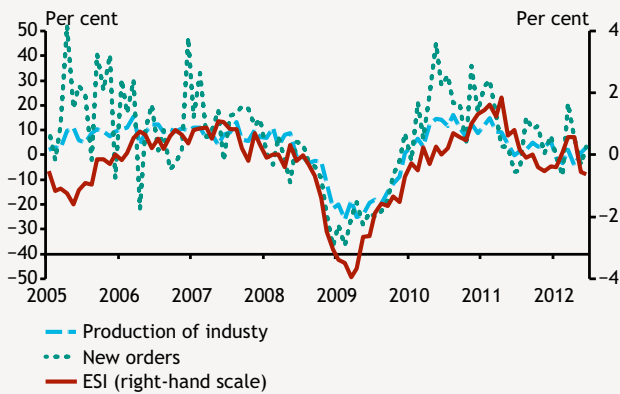
After the start of the year, the decline in economic output continued in Q2. During this period, on yearly basis, Hungarian GDP decreased by 1.3 per cent. The decrease in the production with the macroeconomic environment was general in most sectors. The slowdown in Hungary's export markets resulted in a fall in output even in the export-oriented production sectors which had previously shown continuous growth. The performance of the sectors producing for the domestic market continues to be poor. Construction has not bottomed out this year either, and value added in agriculture may be weak historically as well this year, due to the drought (Chart 3-21). Value added in market services may have declined in Q2 as well, which – in addition to the fall in retail trade turnover – was corroborated by the developments in the activity of financial services.

Last year, the results in *agricultural* production were more favourable than average. This year, however, considerably a smaller harvest is expected as a result of frost damages and the dry weather. Harvest estimates for and results of major crops indicate that the performance of the sector may fall significantly short of not only last year's favourable base, but also the historical average (Chart 3-22).

Against the background of deteriorating external market conditions, industrial production declined in Q2 as well, and so this sector could not support the growth in Q2. Significant improvement of our export markets can not be expected in the short run, so the value added of the industry may shrink further (Chart 3-23). This is also supported by the data in July, which signal a further decrease in industrial production. In March, the Mercedes factory launched its production.

Chart 3-23
Industrial production, new orders and the ESI confidence indicator*

(January 2005–June 2012)



* The ESI series is normalized.

Chart 3-24
Production of selected sectors of the machine industry

(March 2010–July 2012)

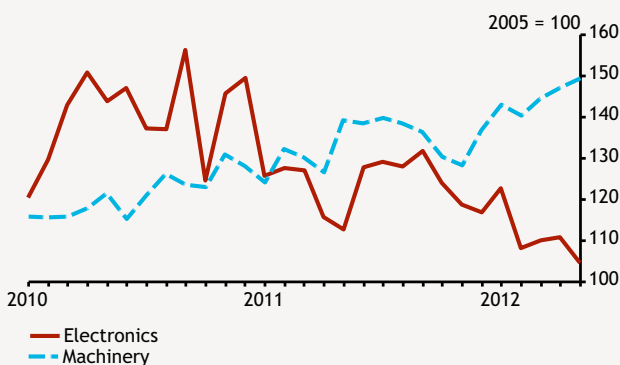
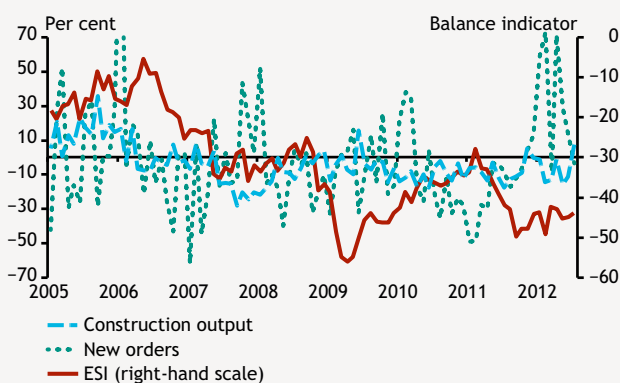


Chart 3-25
Construction output, new orders and the ESI confidence indicator

(January 2005–July 2012)



Although the related effect is significant, it was offset by the general deterioration in external market sentiment and other temporary factors. The capacity reduction in the electronics sector has not come to an end, and thus it may reduce the performance of industry in the coming months as well (Chart 3-24). The restart of some refineries which was stopped (temporarily) in Q2 and the expansion of production expected in the Kecskemét plant of Mercedes may soften the magnitude of the downturn of the sector for the remainder of the year. The performance of the *transport* sector, which is closely related to industrial production and external demand, also continued to slow in the first half of the year.

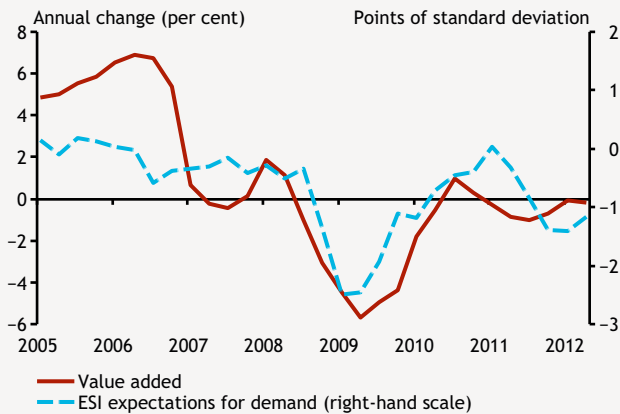
Construction output continued to decline in H1. Although the latest data in July showed a significant correction in the output of the sector, with the sluggish growth in new orders we can not expect any marked turnaround. This year, the market of new dwellings may bottom out at a historically low level, and no recovery is expected in the near term. Infrastructure projects financed from EU funds may improve the overall picture slightly in the next quarter. For the time being, their impact has only appeared in the increasing new orders, thus it may increase production perceptibly only in the coming quarters (Chart 3-25).

Following stagnation in Q1, *retail* sales declined in Q2. Purchases by non-residents may also have contributed to the improvement in the performance of the sector observed early in the year, which is mostly attributable to the weakness of the forint exchange rate at the beginning of the year. With the gradual appreciation of the exchange rate, this effect may have become weaker and weaker, and so the impact of still tight household lending conditions and declining real incomes became the main factors behind developments in retail trade. Looking ahead, sales expectations point to a further deterioration in the demand environment (Chart 3-26). Output of the *tourism and catering* sector may have continued to pick up in Q2. In addition to the favourable weather conditions, the hotel developments implemented in recent years also contributed to this.

The profit of the *financial sector* from traditional banking business and thus the sector's added value were reduced by several factors in the first half of this year. Deposit withdrawals by households at the beginning of the year reduced domestic funds, while on the assets side the early repayment programme that took place until February resulted in a considerable reduction in households' outstanding foreign currency loans. The activity of the sector in new lending proved to be even weaker than our earlier expectations. As a one-off factor, the profit-

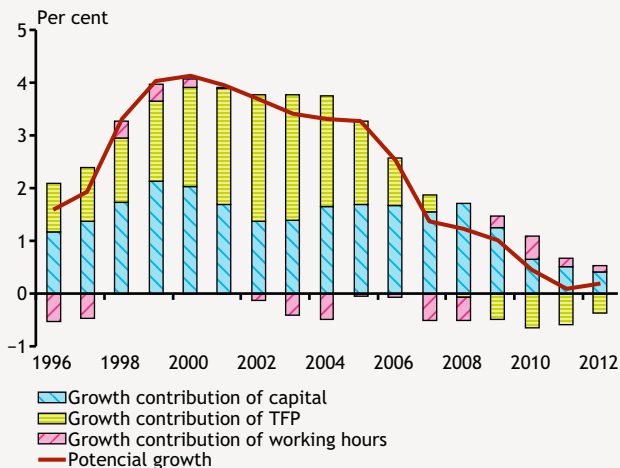
Chart 3-26
Value added of market services and expectations for future demand*

(2005 Q1–2012 Q2)



* The confidence indicator is the weighted average of confidence indicies of the retail and other services weighted by the value added shares.

Chart 3-27
Developments in potential growth



reducing effect of the early repayment programme that took place early in the year was also accounted for at the beginning of the year.

Our view of the potential level of output has not changed significantly since the June issue of the *Quarterly Report on Inflation*. The new capacity-increasing investment projects implemented in the automotive industry were unable to fully offset the broad-based decline in investment. Accordingly, the growth rate of the capital stock may have continued to decline this year. Labour market activity increased continuously in the past two years. This pick-up in labour supply, however, was not associated with a corresponding increase in employment. The unemployment rate remained at a persistently high level in recent years, which may continue to pose a risk in terms of the renewed employability of those concerned. Overall, the developments observed both in the labour market and capital accumulation indicate a sustained deceleration in potential growth (Chart 3-27).

Box 3-2

What explains the recent weakness of industrial production?

In 2009, Mercedes-Benz established an assembly plant in Kecskemét; production started at end-March 2012. According to the plans, also revealed in the press, 40,000 cars may be assembled this year and 100,000 next year. In parallel with the running-in of production, the number of employees also increased and may reach 3,000 people by the end of the year. Based on the volumes of the investment and the expected output, this single plant has a considerable effect at the aggregate level as well. However, the data for recent months confirmed this only to a limited extent, surprising analysts from month to month. The question is whether the worse than expected data can be attributed to the lower stimulating effect of the Mercedes plant, or to other effects.

To answer this question we first examined the performance of the automotive industry in the region. The region remains attractive for large European automotive manufacturers. In 2004 the region accounted for 9 per cent of the cars manufactured in the European Union; in 2011 this share was already close to 20 per cent. This trend may continue in the coming years. In the past two years, the

growth rate of domestic vehicle manufacturing lagged behind the average of the region. On the other hand, since the installation of new capacities earlier this year the relative position of Hungary has improved (Chart 3-28). At the same time the improvement was not outstanding. In the same period, new capacity has been created in the Slovakian automotive industry, which has improved much more dynamically. This can signal that although the output of the Mercedes factory has appeared in the statistics as expected both in terms of magnitude and timing (a hypothesis supported by press information), but decreasing production in the rest of the automotive industry offset this. According to statistics, falling demand has had severe effect on the production of the biggest domestic exporter, the Suzuki factory, which may have had notable effect on the whole sector.

Meanwhile, the considerable shifts in global competitiveness have affected numerous domestic companies (i.e. Nokia, Sanyo, Flextronics, Dunaferr) negatively, to which they reacted with layoffs and production cuts. Besides, domestic and international business activity has generally been falling, reducing production dynamics. This effect is present in the wide range of the sectors in the industry (Chart 3-29). Growth was recorded only in vehicle manufacturing and the food industry; other sectors were characterised by downturn or stagnation. As a result of continued balance sheet adjustment in the private sector, declining real incomes and continued weak lending activity, domestic demand cannot provide considerable support to industrial production. At the same time, the decline in business activity is becoming more pronounced on our most important export markets as well.

To conclude, the short term outlook in the industry has been worsening in the recent months, thus the sector cannot give a notable boost to economic growth until the end of this year. We expect a turnaround in external demand at the end of the year, which that can result in a revival of industrial production. Early next year further capacities start to operate in the automotive industry (first in the Opel and later in the Audi factory), which can give further momentum to the sector.

Chart 3-28
The change of production in the automotive industry in the region

(January 2010–June 2012)

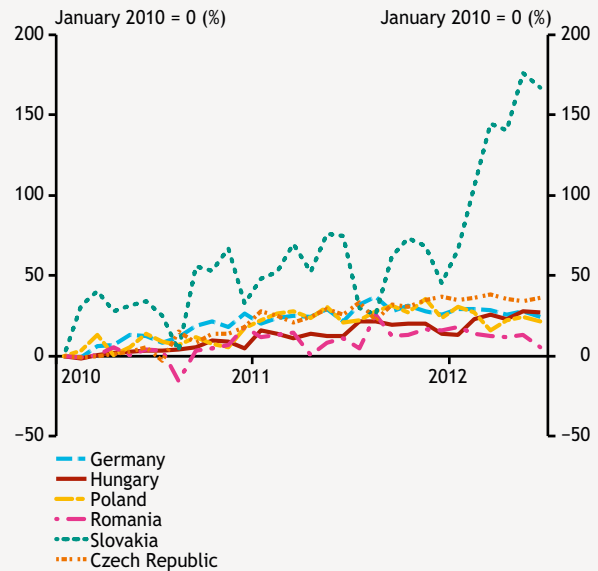
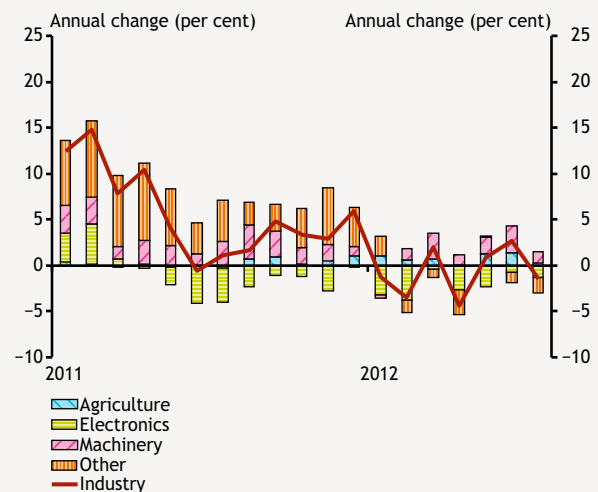


Chart 3-29
The contribution of main sectors to industrial production growth

(January 2011–July 2012)

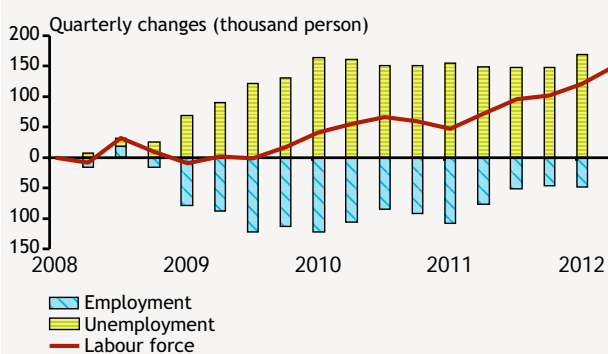


3.4 Employment and labour market

Labour market activity has continued to expand in recent quarters. In addition to the increase in activity, employment also grew, resulting in a slight decline in the unemployment rate. The increase in employment is mainly attributable to the public work programmes, while private sector labour demand continues to be weak. To a great degree, the historically high unemployment figures reflect structural factors, and thus labour market conditions may be less loose than previously assumed. In line with this, the wage-reducing effect of the high unemployment may be less pronounced.

The administrative pay rises early in the year resulted in an acceleration of wage growth, but excluding this effect the underlying processes of wage-setting may be characterised by more restrained dynamics than the average of pre-crisis years. Against the background of rising production costs, loose labour market conditions may reduce the second-round inflationary risks appearing through the labour market.

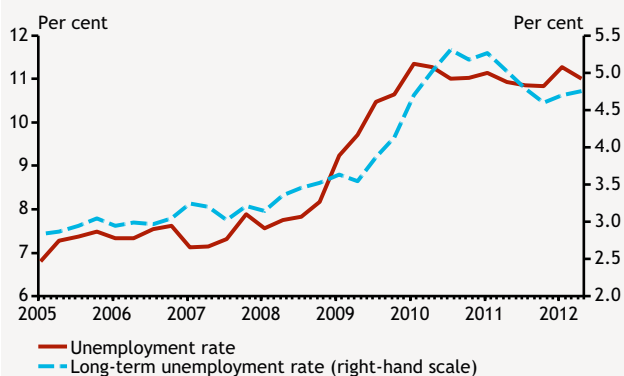
Chart 3-30
Changes in activity compared to 2008 Q1
(2008 Q1–2012 Q2)



In line with the trend seen in recent years, labour market activity continued to increase in 2012 Q2. As a result of stimulatory government measures (mainly the tightening of retirement conditions and unemployment benefits), the activity rate has increased by 2 percentage points compared to the pre-crisis level, reaching 57 per cent (Chart 3-30).

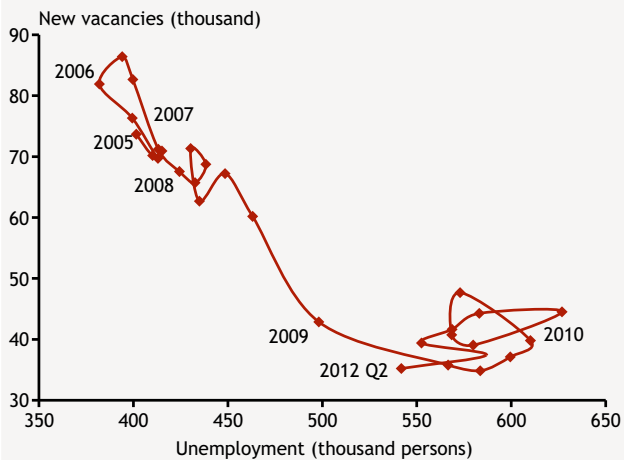
Available statistics concerning employment developments have painted quite varying pictures in recent quarters. According to labour survey data, the number of people employed in the total economy continued to grow in Q2. In our opinion, this is attributable to the increase in the number of subsidised jobs, while – in line with the deteriorating prospects for business activity – private sector companies are characterised by even more cautious labour demand than in previous months. Employment in the private sector did not change substantially in H1. However, the institutional survey data, which react more sensitively to the cyclical shifts in the economy, registered a fall in employment (details of this problem are discussed in Box 3-3).

Chart 3-31
Unemployment rates
(2005 Q1–2012 Q2)



At the whole-economy level, the decline in demand of the private sector was offset by an increase in public employment. Although the number of employed at government institutions remained unchanged in the past quarter, the expansion of public work programmes resulted in an increase in the weight of public employment. Unlike in previous years, a greater portion of those employed in public work are employed in full-time programmes.

Chart 3-32
Beveridge curve*
 (2005 Q1–2012 Q2)



* The Beveridge curve shows the number of new (not subsidised) vacancies relative to (registered) unemployment.

Against the background of increasing activity and rising employment, the unemployment rate declined slightly in Q2 (Chart 3-31). The significant volatility observed in the number of registered unemployed early in the year was caused by timing effects stemming from the closing of public work programmes at the end of the year and their relaunch at the beginning of the year. In recent years, the proportion of people who have been searching for a job for more than one year has increased, which indicates the deepening structural reasons of the unemployment.

The unemployed-to-vacancy ratio continues to be high. The Beveridge curve moved to the left in the past quarter, due to the decline in the number of registered unemployed. As those leaving their jobs mainly found employment in one of the forms of public employment or retired into inactivity, the labour market can still be considered loose, although – compared our formal estimates – it has decreased (Chart 3-32).

Box 3-3

Contradictions in employment figures? The interpretation of this year's employment data

The CSO publishes two types of statistical surveys to measure employment in the private sector. One of them is the Labour Force Survey (LFS), which is based on the questioning of individuals, the other is the institutional statistics (IS), which are based on data provided by enterprises and budgetary institutions. Over longer horizons, the two statistics usually paint nearly the same picture of developments in private sector employment. However, in the short-run, there may also be differences between the two surveys. Our forecast is based on the LFS, as these statistics represent the domestic labour market as a whole, contrary to the institutional survey, which only covers institutions employing more than 4 people.

There have been substantial differences between the two surveys in recent years, making the assessment of the current situation of the domestic labour market particularly difficult. While private sector employment already moved from the low levels during the crisis already in 2010 according to the IS, the LFS showed stagnating employment until early 2011. Then the increase in the number of employed in 2010 shown in the institutional statistics came to a halt, and stagnated until early 2012, when it started to decline again. In contrast, based on the LFS figures, following an upswing in 2011, until the latest published actual figures (2012 Q2) companies in the private sector continuously increased their staff; moreover, in 2012 Q2 they did it with dynamics not seen since the crisis.

Although the LFS represents the domestic labour market as a whole, it is the IS that shows closer co-movement with simultaneous developments in economic activity. Based on historical observations, the employment figures of the LFS follow the changes in economic activity only with a lag of two or three quarters. These conclusions are valid for the recent years as well, when there was greater harmony between developments in GDP and the figures of the IS. However, even these correlations cannot explain the surge in the LFS in 2012 Q2, as based on these statistics the increase in private sector employment seemed to come to a halt already in 2012 Q1, and GDP figures for the first half of this year indicated a deterioration in economic performance.

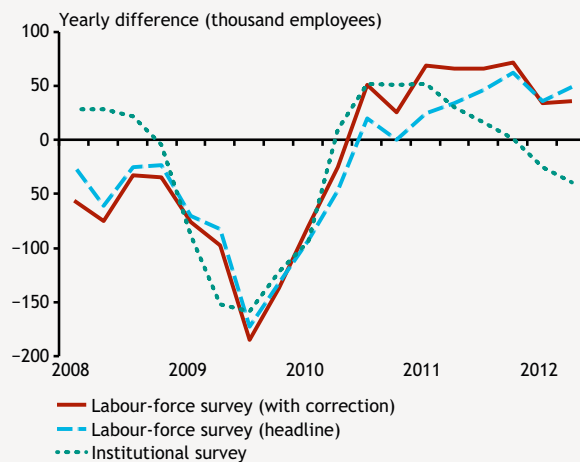
In addition to the ones described above, there are further differences as well resulting from the methodologies of the two types of statistical surveys. However, based on our analyses, most of these methodological differences do not provide a satisfactory explanation to the differences observed between the two statistics in the past two quarters; therefore, a solution to the dilemma has to be found somewhere else.

A methodological feature of the LFS is that it is able to capture the number of people employed in public work programmes only with high uncertainty; consequently, their classification into sectors is also uncertain. Accordingly, it may happen that some of the public workers are shown under the private sector; therefore, public workers are included in the public sector in our forecast.

Participants in public sector employment are kept on record much more precisely in the IS through the institutions that employ them. Therefore, in order to produce a private sector employment indicator that reflects greater compliance with the developments in economic activity, in this round we took account of the changes in the number of public workers on the basis of the institutional statistics. By deducting the number of public employees that does not contain the public workers from the whole-economy level number of employees of the LFS, the corrected number of employees in the competitive sector can be produced on the basis of the remainder principle. On the one hand this indicator is increasing after the second half of 2010. On the other hand, following the deteriorating growth figures, the adjusted indicator produced by this method indicates a slower growth in employment in the recent quarters, better approximating the similar statistics of the IS (Chart 3-33). However, considering that this correction is still unable to explain the whole gap between the two statistics, this difference may also have further statistical reasons.

Chart 3-33
Employment in the business sector according to different statistical surveys

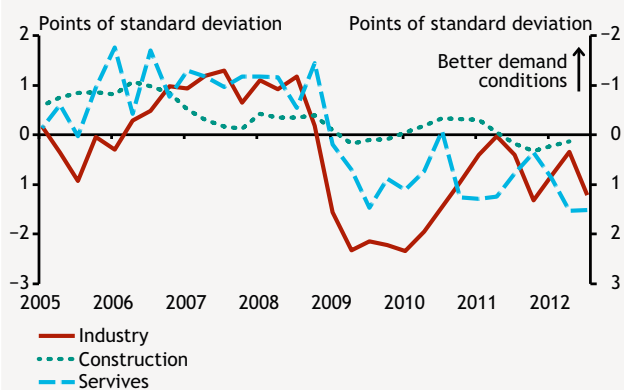
(2008 Q1-2012 Q2)



3.5 Cyclical position of the economy

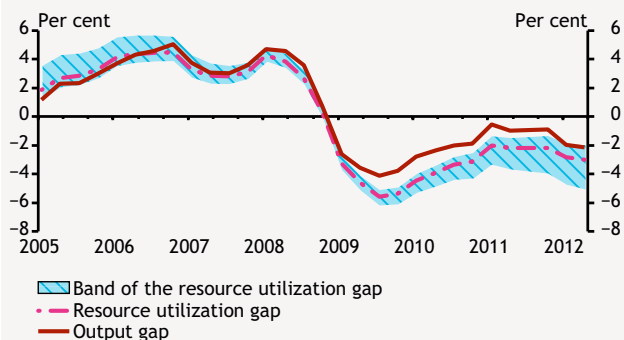
In the slack demand environment, the economy may continue to be characterised by a significant amount of spare capacity. As a result of persistently high unemployment and permanently low investment activity, the potential growth of the economy may have continued to decelerate, which may offset the disinflationary impact of weak demand. Over the short run, demand conditions are expected to continue to deteriorate. Accordingly, the output gap, which was gradually closing until the second half of last year, may widen again.

Chart 3-34
Demand constraints in the main sectors according to the ESI survey*
(2005 Q1–2012 Q3)



* Insufficient demand as the main obstacle ahead of production, standardized, on an inverse scale.

Chart 3-35
Changes in the output gap*
(2005 Q1–2012 Q2)



* The band of output gap estimates is derived from various methodologies for measuring the output gap. The resource utilization gap is derived from data indicating capacity utilization in the private sector.

The dual trends of a recession in the real economy and rising inflation and gross wages continued to strengthen in Q2. The rising inflation was mainly attributable to cost shocks and indirect tax measures, whereas the pick-up in wage growth is mainly caused by administrative measures. Filtering out these effects, underlying developments show a lower value, however compared to last year, regarding both the price level and the wages, accelerating dynamics can be observed. The effect of the weak demand conditions on prices and wages can be smaller than our former estimates.

Against the background of deteriorating demand conditions, the economy may be still characterised by significant spare capacities with regard to all factors of production. This is also reflected in the low levels of the indicators measuring capacity utilisation (Chart 3-34).

According to our estimate, the output gap may have been around 2 per cent in 2012 H1. Capacity utilisation indicators and the weak growth figures at the beginning of the year also indicate that the cyclical position of the economy may deteriorate, following two years of slow improvement. The opening of the output gap may be caused mainly by further weakening in external demand, while the protracted balance sheet adjustment results in a trending decline domestic demand.

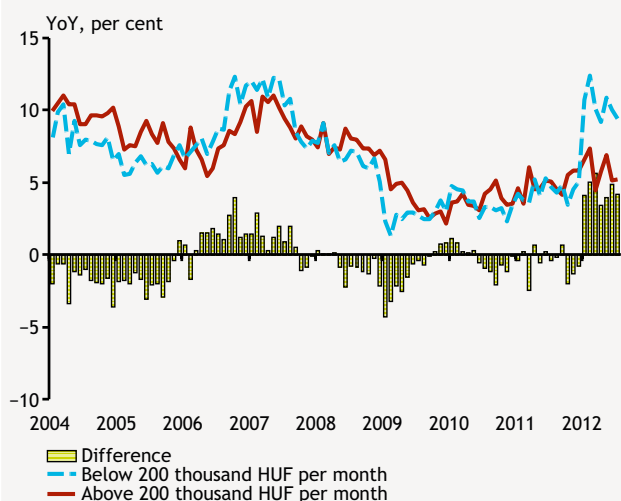
Looking forward, a further opening of the output gap is expected over the short run as a result of external and internal factors (Chart 3-35). Weak external demand may increase spare capacities in the export sector. Tight lending conditions, fiscal adjustment and deteriorating real incomes continue to restrain domestic demand. In our opinion, these effects are mainly of cyclical origin, and may primarily impair the cyclical position of consumption.

3.6 Costs and inflation

As a result of the administrative wage increases at the beginning of the year, the wage index of the private sector accelerated considerably, but even after filtering out this effect there was a rise in the underlying wage developments. Companies adjusted to the increase in wage costs by making use of the government wage compensation and cutting fringe benefits. Exceeding the inflation target, inflation figures have been close to 6 per cent in recent months. The cost shocks and indirect tax increases were the main factors contributing to this rise in inflation, while demand-side inflationary pressure remained subdued, albeit the price-reducing effect of this may be smaller than in the past. Of products sensitive to demand, the prices of market services showed low dynamics, while developments in tradables over the period were determined by weak demand and the earlier weak forint exchange rate.

Over the short run, unprocessed food prices, which are rising as a result of the unfavourable weather, and oil prices, which are remaining at a high level, point to an increase in inflationary pressures. The price-increasing effects of these factors may be mitigated by the forint exchange rate, which was stronger in the past period, and by weak domestic demand.

Chart 3-36
The index of average gross earnings among employees below and above 200 thousand HUF*
(January 2004–July 2012)



* Annual growth rates, based on seasonally adjusted monthly data.

3.6.1 WAGES

Private sector wage growth accelerated significantly in H1. Regular earnings increased by an average 8 per cent in H1, which is attributable to the administrative measures entering into force at the beginning of the year. At various wage levels, the measures had different effects on companies' wage-setting. There was a marked difference between wage developments of those who earn below and above the average wage (Chart 3-36).³

The administrative measures⁴ mainly caused a sudden rise in the wage index of those with lower earnings, i.e. below HUF 200,000 per month on average. Although the measures entered into force as of January, the majority of companies employing more than 50 people implemented the necessary wage increases only in May. By contrast, among those not affected by the measures, the wages of those who earn more than HUF 200,000 per month showed more restrained dynamics, in line with the weak labour demand conditions.

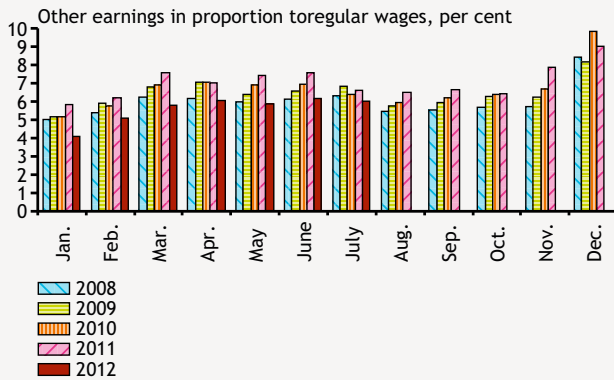
Inflationary pressures from the labour market may be offset by several factors. Companies continue to cut back irregular pay. Other labour income in the private sector (primarily the cafeteria payments) is more than 10 per cent below the payments observed last year (Chart 3-37). In addition, the

³ Due to the 2011 personal income tax measures, the wage indices of those with high and low earnings parted from one another already at the beginning of last year.

⁴ Mandatory minimum wage, guaranteed wage minimum increase, mandatory recommended wage increase bands for recourse to wage compensation.

Chart 3-37
Other labour income as a proportion of the gross wage bill in the private sector

(January 2008–July 2012)

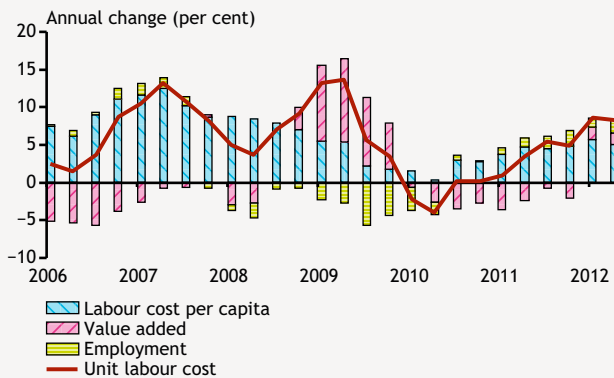


widespread use of public wage compensation dampens the cost increase as well. Besides these factors, rising labour costs as a result of administrative measures and declining productivity caused further acceleration in unit labour cost in the first half of the year. The increase in unit labour cost exceeds the pre-crisis average, which can cause tensions for companies, especially for those producing for the domestic market, as they operating in permanently weak demand environment (Chart 3-38).

Average gross earnings of government sector employees declined in the first half of this year. The main underlying reason is the composition effect stemming from the high number of public employees; the exclusion of public employees from the calculation results in positive wage indices.

Chart 3-38
Changes and components of unit labour cost in private sector

(2006 Q1–2012 Q2)



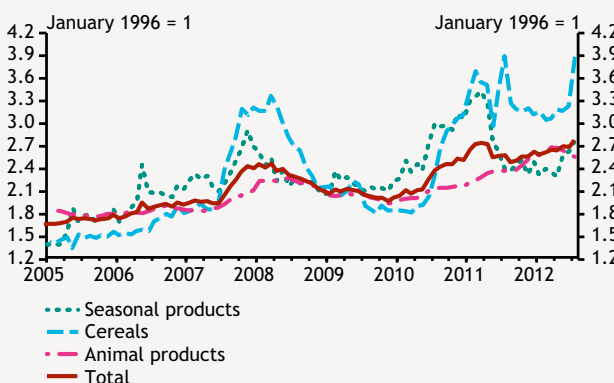
3.6.2 PRODUCER PRICES

The prices of agricultural products have been rising since the beginning of the year. Via the surge in egg prices, the stricter rules introduced in animal husbandry at the beginning of the year resulted in a drastic increase in the prices of animal products, whereas in recent months rising seasonal food prices have contributed to the increase in producer prices. In July, a significant increase was seen in prices of cereals products (Chart 3-39).

In the year to date, unfavourable weather conditions affected developments in agricultural production not only in Hungary, but internationally as well. Therefore, looking ahead, further producer price increases are expected, which is also indicated by the high futures grain prices for the coming months.

Chart 3-39
Agricultural producer prices*

(January 2005–June 2012)



* Seasonal products: fruit, vegetables, potato; cereals: wheat, oil seeds; products of animal origin: pork, poultry meat, egg, milk. Weighting was based on the estimated size of the effects on the consumer price index.

As a result of the increases in world market prices and the appreciation of the forint exchange rate, the dynamics of industrial producer prices has remained practically unchanged in recent months (Chart 3-40).

3.6.3 CONSUMER PRICES

In the summer months of this year, the inflation continued to accelerate. In August, the consumer price index increased to 6 per cent. The increase in recent months was caused by rising unprocessed food inflation and the indirect tax increases which entered into force in the middle of the year (excise tax, telecommunication tax). In recent months, the inflation figures have been slightly less favourable than our projection (Chart 3-41).

Indirect tax increases (VAT and excise tax increases at the beginning of the year) and cost shocks represented a

Chart 3-40
Industrial producer prices
 (January 2005–July 2012)

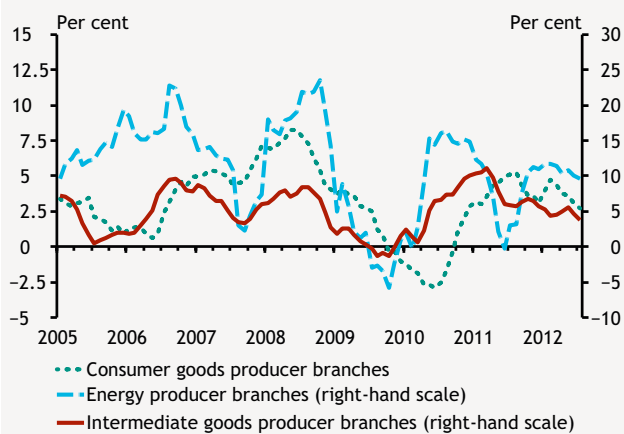


Chart 3-41
Decomposition of the consumer price index
 (January 2005–August 2012)

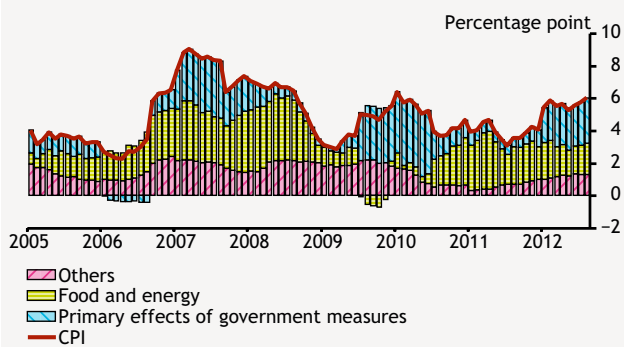
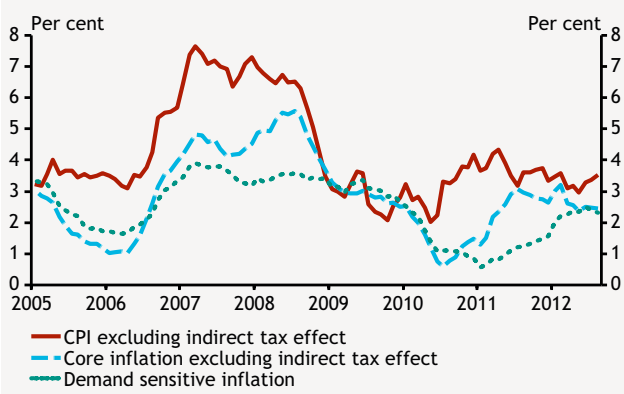


Chart 3-42
Development of consumer price index and core inflation excluding indirect tax effect and demand sensitive inflation
 (January 2005–August 2012)



significant contribution to inflation in previous months, while – following last year’s rise – no further increase was observed in inflation of the component is sensitive to demand (Chart 3-42).⁵ Domestic demand pressure is considered low. This picture is also confirmed by our indicators measuring short-term inflation developments. Following an increase early in the year, they indicated subdued pressure in recent months (Chart 3-43).

Tradables inflation was determined by the earlier weak forint exchange rate and weak demand. As a result of the significant depreciation of the exchange rate at the end of last year, the prices of non-durable goods have increased in recent months. In addition, annual inflation was influenced by one-off factors⁶ as well. Durable goods inflation continues to be negative. In spite of earlier cost increases, this product group is characterised by subdued price developments, which may be explained by the weak demand environment. The appreciation of the forint exchange rate in recent months may be reflected in tradables prices in the coming months.

Since February, monthly inflation of *market services* excluding tax changes has been more favourable, compared to the usual seasonality. As a result, the annual index of market services showed a slight decline. The changes in the prices of market services may reflect the price-reducing effect of weak domestic demand.

In line with producer prices, the prices of food products, which are sensitive to cost shocks, increased sharply in recent months, resulting in accelerated food price inflation again. The rising prices of *processed food* prices may be explained by the fact that producer prices and fuel prices remained at a high level. Within this product group, it was mainly processed meat products that contributed to the price increase. Changes in the prices of *unprocessed food* were affected by this year’s unfavourable weather, and prices of seasonal products (vegetables and fruits) rose significantly. As a result of the unfavourable weather conditions, a further price-increasing effect may appear from the side of producer prices.

After May, HUF-denominated oil prices fell which caused a reduction in fuel prices until August. Since August, as a result of rising global oil prices, fuel prices have started to rise again. Despite the rising commodity costs, regulated prices remained subdued. As a consequence of administered

⁵ A more detailed overview can be found in chapter 6, among special topics.

⁶ An exceptionally high price increase was observed in June, which is mostly the consequence of one-off effects. Following a decline in May, the prices of flight tickets (recorded by the CSO in the item ‘other travels’) showed adjustment, and the prices of recreation abroad rose to a greater extent than the usual seasonality. The foreign component represents a significant portion in the changes in the prices of these two items, and they are sensitive to the exchange rate. Therefore, in the MNB’s classification of the consumer price index they are included in the category of non-durable tradable goods.

Chart 3-43
Range of underlying inflation indicators
 (January 2005–August 2012)

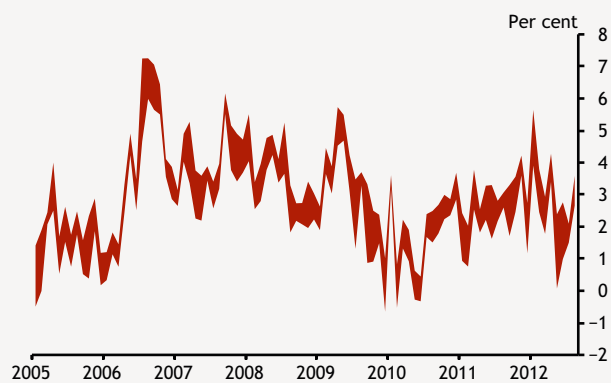
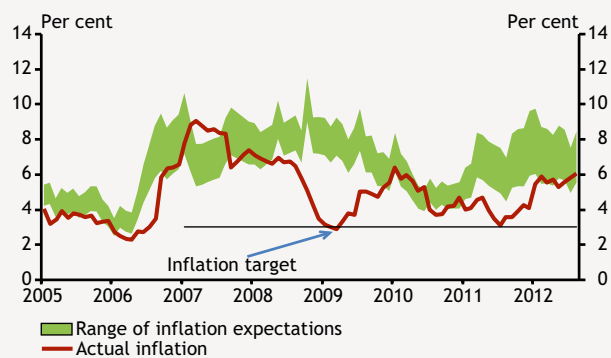
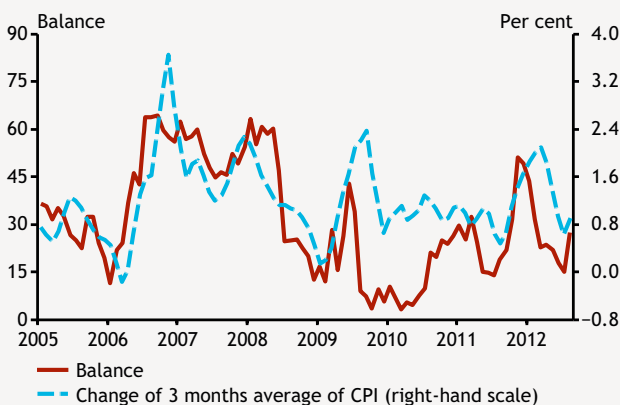


Chart 3-44
Households' inflation expectations
 (January 2005–August 2012)



Source: MNB calculations based on data from the EU Commission.

Chart 3-45
Expected changes in retail sales prices in the next 3 months* and actual inflation
 (January 2005–August 2012)



* The balance is the difference between the proportion of corporations expecting price increase and price decrease.

measures in recent years, the item's contribution to the consumer price index is historically low as well. Among medicinal products the transformation of support system caused an increase in subsidised medicine prices.

Overall, inflation in the period under review was kept at a high level by cost shocks and the tax measures implemented at the beginning of the year. Moderate price increases were observed in a wide range of products. Looking ahead, demand-side inflationary pressures may remain low in the coming months, but due to weak expansion of supply capacity its price reducing effect may be lower than our earlier estimations. In line with this, high oil prices and the unfolding food price shock may entail a deterioration in inflation developments. This effect may be partly offset by a stronger exchange rate.

3.6.4 INFLATION EXPECTATIONS

Following an increase at the beginning of the year, households' perceptions in connection with the expected inflation environment declined. The appreciation of the exchange rate, lower oil prices characterising the first half of this year and the overheads rising moderately may have contributed to the decline. Despite the decline, households' inflation perceptions continue to be at a high level (Chart 3-44). Uncertainty of perceptions related to the expected inflation environment also increased in accordance with the strong volatility of inflation seen in recent quarters.

From the perspective of short-term developments in consumer prices, the expectations of the retail trade sector regarding sales prices are a key factor. In line with subdued domestic demand, expectations declined in H1. The increase observed last month may be explained by the rise in commodity prices (Chart 3-45).

Box 3-4

The pass-through of the food price shock into consumer prices

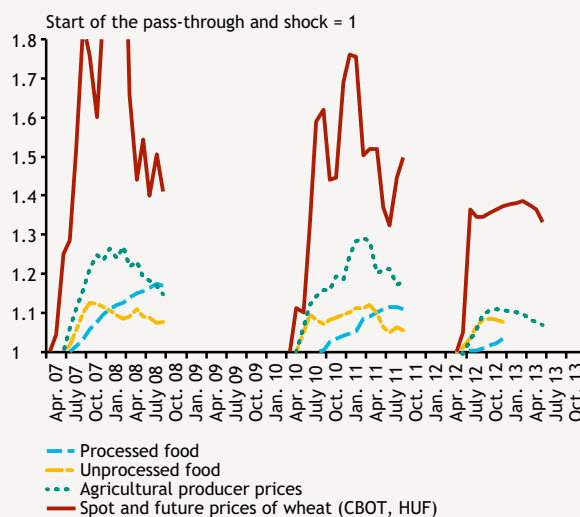
As a result of the unfavourable weather conditions, global agricultural crop harvests were well below expectations this year. Therefore, food prices increased sharply in commodity markets in July, and have remained at high levels since then. Information received from the main exporting countries indicates that wheat and especially corn harvests fall remain well below expectations. In Hungary, the picture is somewhat more favourable in the case of wheat; the crop is only slightly lower than last year. At the same time, the corn harvest may decline dramatically, by one-quarter compared to 2011. The price of wheat rose by some 30-40 per cent in a few days' time in international markets, while the dollar price of corn already exceeds even the 2007-2008 record levels. Based on crop results and commodity exchange prices, a new food price shock is developing after 2007-2008 and 2010-2011.

According to earlier experiences, food price shocks first appear in the agricultural producer price index, and they simultaneously add to the consumer prices of unprocessed foods. The price level of unprocessed foods typically reaches its peak in early autumn, and a stronger decline may start after several months of stagnation, if and when better harvest is collected next year. The price increase of food commodities may start to feed through into the prices of processed food during the autumn months, and prices may follow a significantly rising trend until the next harvest (Chart 3-46).

A regional comparison of food price developments shows that commodity price increases usually appeared in domestic consumer prices to a greater extent than in other countries, and the decline following the fading of the shock also proved to be weaker (Chart 3-47). Although for the time being the shock seems to be smaller than the previous ones, it may still generate a serious upward pressure on inflation. In addition, the unfavourable harvest may also have a negative contribution to Hungary's GDP growth. Based on commodity market prices, the current food price shock may be two-thirds of the one in 2010-2011; accordingly, its impact on inflation may also prove to be weaker. Therefore, while food prices contributed to inflation by some 1.5 percentage points in 2011, they may increase the 2013 consumer price index to a lesser extent, by around 1.0 percentage point.

Chart 3-46
Pass-through of food price shocks in the periods of 2007-2008, 2010-2011 and 2012-2013*

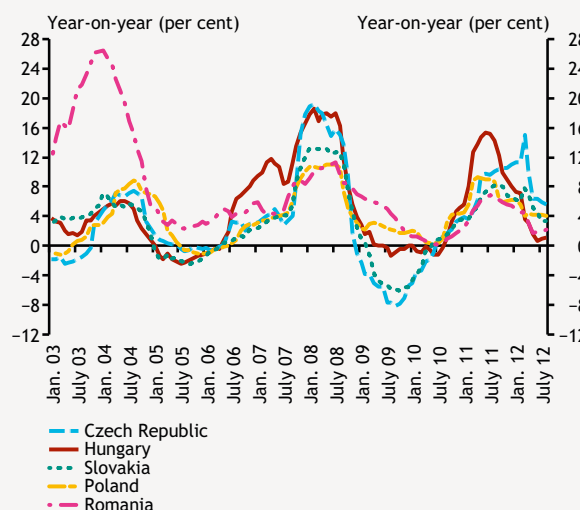
(seasonally adjusted data; forecast as of September 2012)



* The future price of wheat is calculated at a constant HUF/USD exchange rate.

Chart 3-47
Processed food price increases in the region

(annual changes excluding VAT; based on HICP data, January 2003-August 2012)



4 Financial markets and interest rates

4.1 Domestic financial market developments

Since end-June 2012, the risk perception of Hungary has improved considerably, primarily as the result of a material improvement in the international investment sentiment. This was mainly due to the progress in euro-area crisis management and the expansion of the quantitative easing programme of the Fed. Only minor shifts of varying directions were observed in the country-specific component of the risk perception of Hungary, which were mostly influenced by the latest developments related to the IMF talks and the 2013 budget bill. All this had a positive overall impact on domestic asset prices and on the exchange rate of the forint as well: the latter appreciated by a total of 3 per cent in the past three months, although it slightly underperformed compared to movements in the exchange rate of the zloty, which serves as a basis for regional comparison. In parallel with that, Hungary's CDS and foreign exchange bond spreads also declined considerably (by 100-150 basis points), although at the end of the period under review Hungary diverged somewhat from regional trends in a negative direction. Reference yields of HUF-denominated government securities also fell considerably, while non-residents' government securities holdings rose to a new record level of HUF 4,700 billion. As a result, non-resident market participants already hold 45 per cent of the total holdings of HUF-denominated treasury bills and bonds.

4.1.1 RISK ASSESSMENT OF HUNGARY

Over the past three months, the risk assessment of Hungary improved considerably. This was mainly attributable to a significant improvement in the international investment environment. Dissimilar trends were experienced in the country-specific component of Hungary's risk assessment: while there was a minimal improvement until end-August, domestic factors have influenced the developments in a slightly negative direction in the period since then.

The considerable improvement in the international environment can mainly be ascribed to developments related to crisis management in the euro area. At the end-June EU summit, several measures were adopted that reduced the pressure on periphery countries and their banking systems. The atmosphere was further improved by the launch of the new bond purchase programme of the European Central Bank as well. In addition, the expansion of the quantitative easing programme of the Fed also contributed to the increase in risk appetite. At the same time, the deterioration in the real economy outlook and the concerns related to the fiscal positions of Greece and Spain had an effect in the opposite direction, although this effect was moderate.

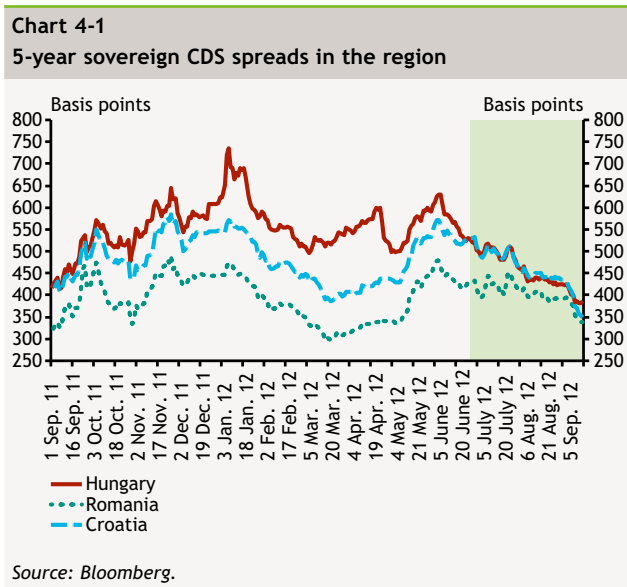
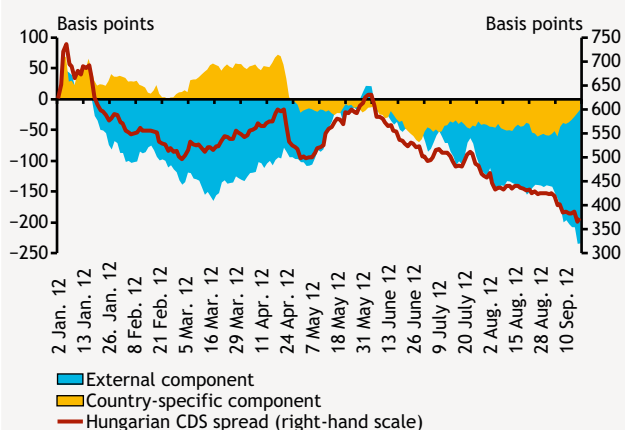


Chart 4-2
Factors of the domestic 5-year sovereign CDS spread*

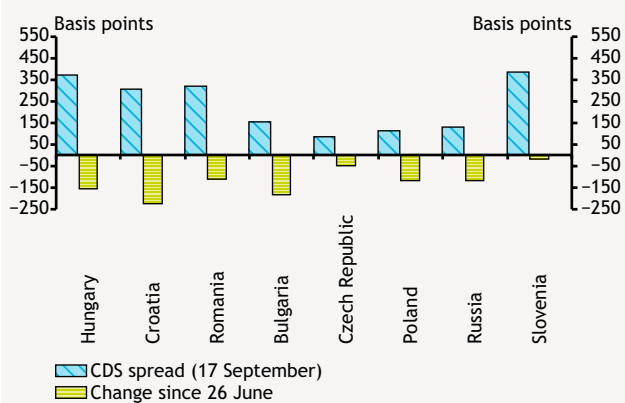


* For the methodological description of the decomposition applied, see the following MNB Bulletin article: Kocsis and Nagy (2011): Variance decomposition of sovereign CDS spreads.
Source: Bloomberg.

Spreads on risky assets declined in the favourable global atmosphere; the fall in government securities yields and CDS spreads of euro-area periphery countries was especially remarkable. In parallel with that, stock market indices showed a material increase, whereas most of the main risk indicators (FX and stock market volatility indicators and composite spreads) reached multi-annual lows.

The effect of country-specific developments was much weaker. According to the results of our CDS decomposition methodology (Chart 4-2), the adoption of the Central Bank Act in July and the ensuing start of the talks with the IMF contributed to the risk perception of Hungary rather positively. At the same time, through most of the period the country-specific component tended to stagnate, and in the first half of September the uncertainties related to the IMF talks and the 2013 budget resulted in a slight deterioration in Hungary's relative assessment.

Chart 4-3
Changes in 5-year CDS spreads in the region



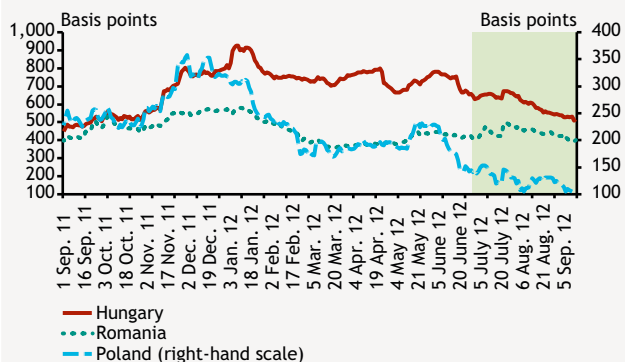
Source: Bloomberg.

The five-year Hungarian CDS spread declined from 522 basis points early in the period close to the level of 370 basis points by the end of the period. Until the end of August the Hungarian spread practically moved together with the spreads of the countries in the region with a similar risk assessment, before slightly departing from them in September: the spreads of Croatia, Slovenia and Romania declined to a greater extent in this period (Chart 4-3).

The spread on Hungarian FX bonds compared to German yields fell considerably: declines of 100-150 basis points were observed, depending on maturity and denomination (Chart 4-4).

4.1.2 DEVELOPMENTS IN FOREIGN EXCHANGE MARKETS

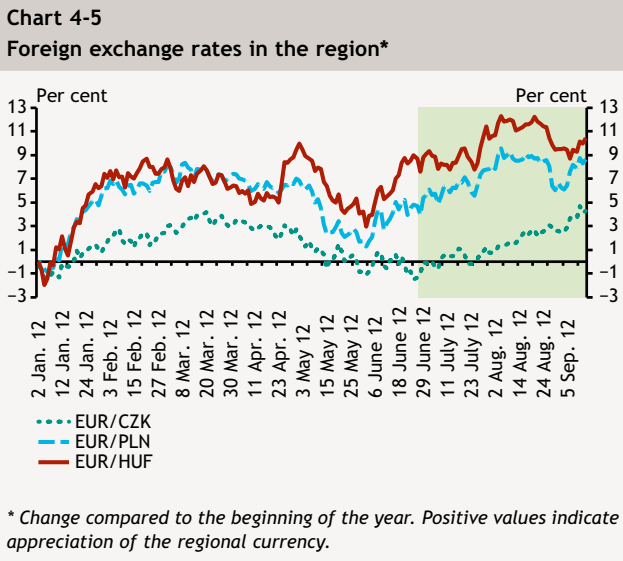
Chart 4-4
5-year EUR-denominated currency bond spreads in the region



Source: Thomson Reuters.

Movements in the EUR/HUF exchange rate were also more influenced by the international atmosphere in the past three months. Of the events in Hungary, it was practically only the news and statements concerning the IMF talks that had a material impact. Accordingly, the exchange rate of the forint mostly moved together with the exchange rate of the Polish zloty, which serves as a reference, but the two currencies slightly departed from one another as of early September. Thus, appreciating some 5 per cent from its end-June levels, the exchange rate of the forint against the euro sank below the level of 275. Then, following volatile trading, it weakened from here to a level exceeding 280 by the end of the period under review. Overall, this represents nearly 3 per cent appreciation over the past three months (Chart 4-5).

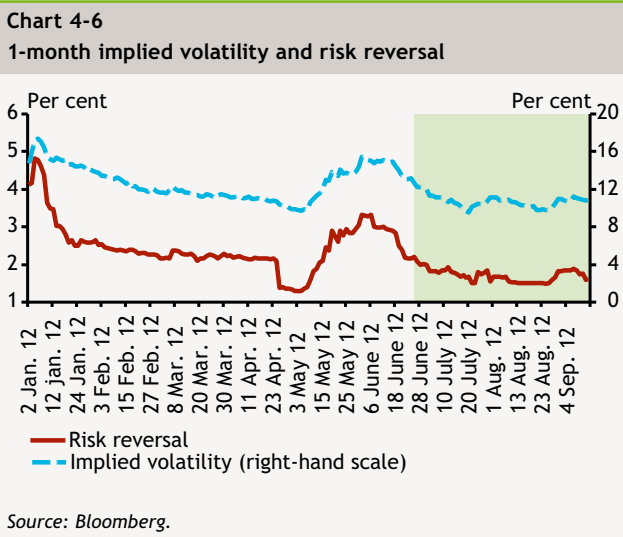
In parallel with the strengthening of the forint, forward-looking risk indicators of Hungary calculated from FX



market option quotes also showed an improvement (Chart 4-6).

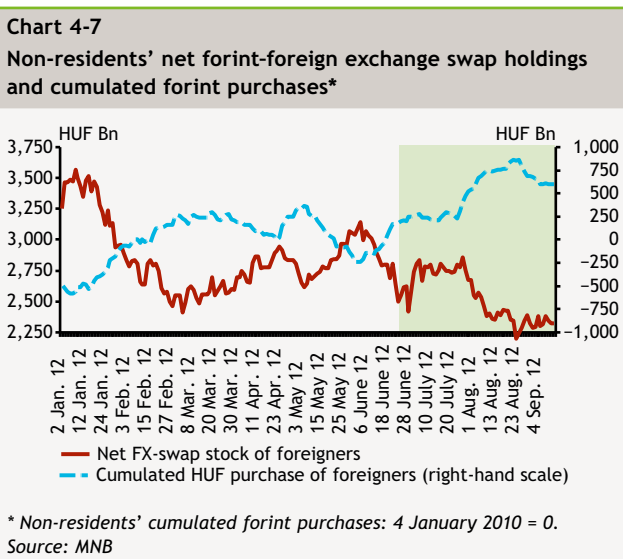
Although the domestic FX swap market was characterised by calm and balanced trading for most of the period, by the end of June significant tensions evolved in the short segment of the domestic swap market for a short time. Some market participants sold their short-term forint assets (mainly MNB bill holdings) for a transitional period and used the resulting forint liquidity in the domestic FX swap market, which resulted in a major decline in the implied forint yields of short-term transactions. As the month came to a close, this tension was quickly corrected and the spreads of short-term swap transactions also declined considerably.

The above developments did not have any major impact on the pricing of longer-term transactions. Accordingly, the three and six-month spreads continued to slowly decline over the past three months.



The net position of the non-resident sector declined considerably (by some HUF 300 billion) in the FX swap market, which was almost entirely attributable to a decline in the foreign exchange liquidity providing swap stock (Chart 4-7). This may be the result of two contrasting processes: while the shift in the forint exchange rate in a favourable direction resulted in a decline in the holdings, non-resident players' net forint asset (mainly government securities) purchases may have resulted in an increase in foreign exchange liquidity providing swap stock. Overall, amid significant fluctuations, there was hardly any change in non-residents' forint liquidity providing stock in the period under review.

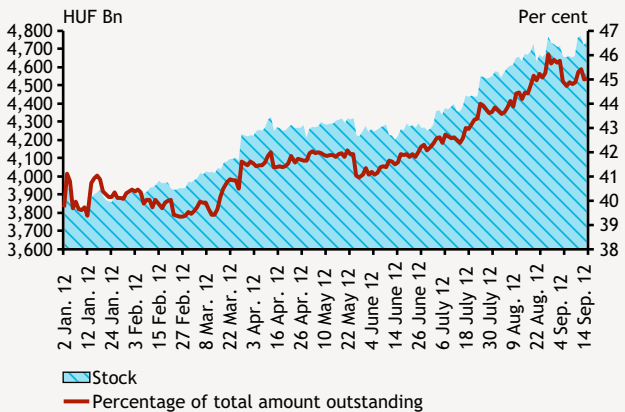
4.1.3 GOVERNMENT SECURITIES MARKET AND CHANGES IN YIELDS



The primary government securities issues in recent months met with increased investor demand. The securities offered at most of the discount treasury bill and bond auctions of the Government Debt Management Agency (ÁKK) were sold amid significant excess demand and with a gradually declining yield level. On several occasions, the Debt Management Agency increased the accepted quantity compared to the announced one, while the offered amounts were cut only rarely. Market interest picked up mainly for medium-term government bonds in the past period.

Non-residents' government securities holdings continued to increase from end-June: with net purchases amounting to nearly HUF 500 billion, the sector's total holdings exceeded HUF 4,700 billion. As a result, non-resident market

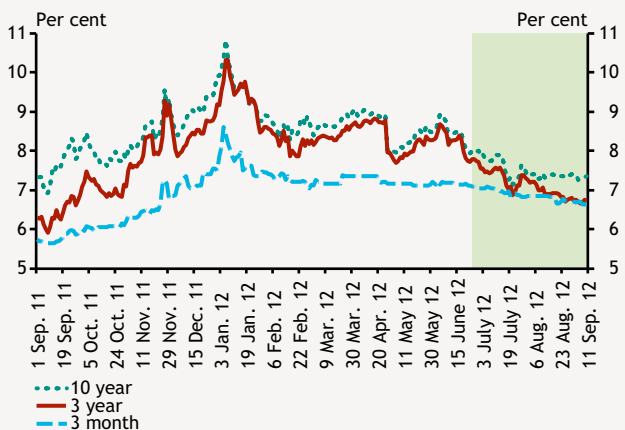
Chart 4-8
Non-residents' government securities holdings



Source: MNB.

participants already hold 45 per cent of total holdings of forint-denominated treasury bills and bonds (Chart 4-8).

Chart 4-9
Development of government securities market reference yields



Source: ÁKK.

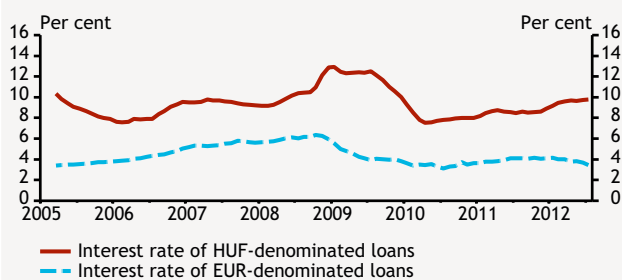
The favourable market sentiment was well reflected in the developments in government bond market yields as well: since end-June yields in the government bond market declined gradually, to various extents and with different volatilities depending on maturities. At the short end of the yield curve, the yield on three-month treasury bills declined by nearly 50 basis points, broadly in line with the expectations concerning the central bank base rate. The strongest decline was observed in the middle of the curve; the three-year reference yield fell by some 110 basis points to 6.7 per cent. A smaller 60-70 basis point decline was observed in the case of longer-term securities. Accordingly, the yield on the 10-year Hungarian government bond is at around the level of 7.3 per cent (Chart 4-9).

In the money market, FRA quotes, which reflect interest rate expectations, also decreased. As a result, currently the market is pricing a further gradual decline of the base rate.

4.2 Credit conditions in the financial intermediary system

The lending survey⁷ draws a mixed picture of lending conditions: in the household segment following broad-based tightening some adjustment took place, while tightening continues in the corporate segment. Interest rates on HUF-denominated corporate loans rose slightly, whereas those on EUR loans declined between April and July 2012. In the household segment, the rise in mortgage lending rates came to a halt, but the interest rate is at an extremely high level, which is also reflected in low new loan volumes. The real interest rate on one-year government securities declined slightly as a result of the continued decrease in government securities yields.

Chart 4-10
Interest rates on corporate loans by denomination*
(March 2005–July 2012)

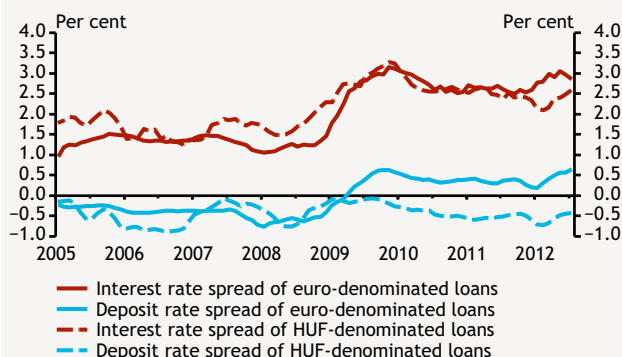


* 3-month moving average of monthly interest rate data.
Source: MNB.

4.2.1 CREDIT CONDITIONS OF CORPORATE LOANS

The interest rate on forint-denominated corporate loans smoothed by the three-month moving average increased slightly, from 9.7 per cent in April to 9.8 per cent in July (Chart 4-10), while the interbank rate (three-month BUBOR) declined by 0.1 percentage point. Accordingly, the spread on the interbank rate rose from 2.4 percentage points to 2.6 percentage points (Chart 2). The interest rate level dropped in the case of EUR-denominated loans, from 3.8 per cent to 3.5 per cent, but this was offset by decreasing interbank rate (three-month EURIBOR) resulting in flat interest rate spread around 2.9 percentage points (Chart 4-11).

Chart 4-11
Interest rate spreads on corporate loans by denomination*
(January 2005–July 2012)



* The spread on the moving average of the 3-month BUBOR and EURIBOR, respectively.
Source: MNB.

Corporate credit conditions were reported to have tightened in 2012 Q2. A net 30 per cent of banks⁸ indicated tightening both in the case of large and medium-sized companies as well as small and micro companies, which is a higher ratio compared to the previous quarter. Based on banks' responses, further tightening of corporate lending conditions is expected over the next half year. Respondents cited deteriorating economic prospects and industry specific problems as factors contributing to tightening. The role of weakening lending capacity declined markedly. Moreover, the liquidity situation already indicates an easing of credit conditions.

4.2.2 CREDIT CONDITIONS OF HOUSEHOLD LOANS

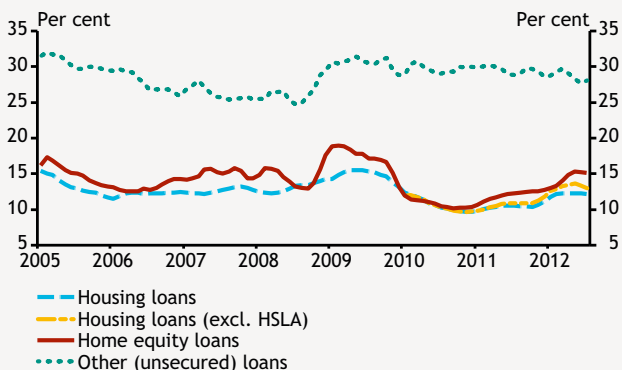
The increase in mortgage lending rates at end-2011 and in 2012 Q1 came to a halt. In the case of housing loans, the annual percentage rate of charge (APR) smoothed by the

⁷ http://english.mnb.hu/Kiadvanyok/hitelezesi_felmeres/SLO-on-bank-lending-practices-august-2012

⁸ The difference between tightening and easing banks weighted by market share. The ratio does not show the magnitude of tightening/easing.

Chart 4-12
Changes in credit conditions and factors contributing to changes in the corporate segment*

(APR, January 2005–July 2012)



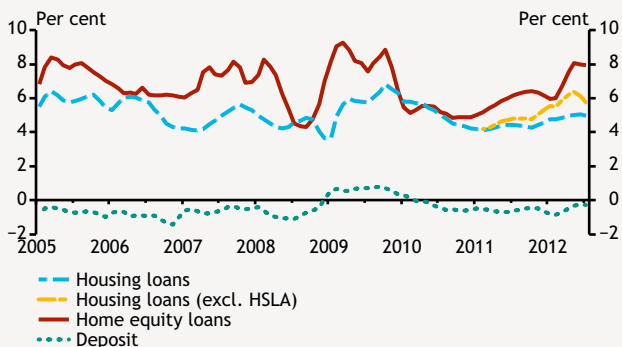
* 3-month moving average. HSLA is the abbreviation of Home Savings and Loan Associations. Prior to 2009 HUF denominated mortgage lending was marginal.
 Source: MNB.

three-month moving average was around the level of 12 per cent between April and July 2012 (Chart 4-12), which corresponds to a 5 per cent interest rate spread on the BUBOR (Chart 4-13). By contrast, in the case of traditional commercial bank transactions (excluding home savings and loan associations), the APR declined from 13.5 per cent to 12.9 per cent, while the interest rate spread was down from 6.2 per cent to 5.9 per cent. However, these levels can still be considered extremely high, which is also reflected in the extremely low new loan volumes.

Within consumer loans, the earlier interest rate increase of home equity loans stopped at a level of around 15 per cent. As a result, the interest rate spread rose from 7.5 percentage points in April to 7.9 percentage points in July. The interest rate on unsecured consumer loans continued to decline from 29 per cent in April to 28 per cent in July 2012 (Chart 4-12), owing primarily to hire purchase loans.

Chart 4-13
Smoothed spreads over the 3-month BUBOR*

(January 2005–July 2012)

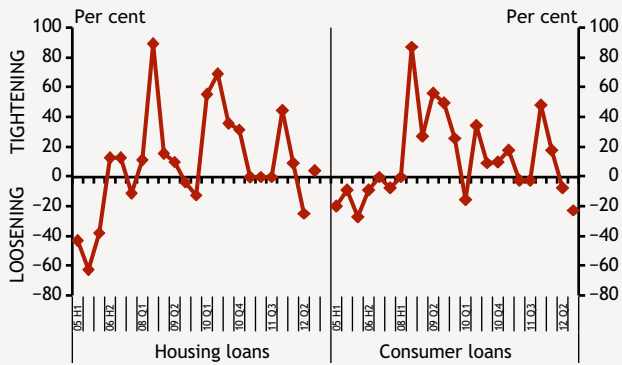


* 3-month moving average. HSLA is the abbreviation of Home Savings and Loan Associations. Prior to 2009 HUF denominated mortgage lending was marginal.
 Source: MNB.

In the case of housing loans, the high interest rate level may be somewhat reduced by the state interest rate subsidy programme, which provides a gradually declining state subsidy for the debtor for five years. The programme was amended in mid-July, as the maximum level of the interest rate that can be charged on these subsidised loans was raised, making the scheme more attractive for the banks that had been passive in the first half of the year. As a result, the maximum interest rate might be 13 per cent, of which the client pays the portion remaining after the deduction of the interest rate subsidy for five years, which is around 9 per cent in the beginning (in the first year), and amounts to around 10-10.5 per cent towards the end of the interest rate subsidy period.

In accordance with the expectations presented in the previous lending survey, in the case of housing loans 25 per cent of banks in net terms, whereas in the case of consumer loans 7.5 per cent of them reported that they had eased their credit conditions (Chart 4-14). The easing was mainly reflected in the higher allowed payment-to-income ratio and the loan-to-value (LTV) ratio. This represented some adjustment of the extensive tightening experienced at end-2011. At the same time, for 2012 H2 banks expected further adjustment only in consumer loans.

Chart 4-14
Changes in credit conditions to the household sector*



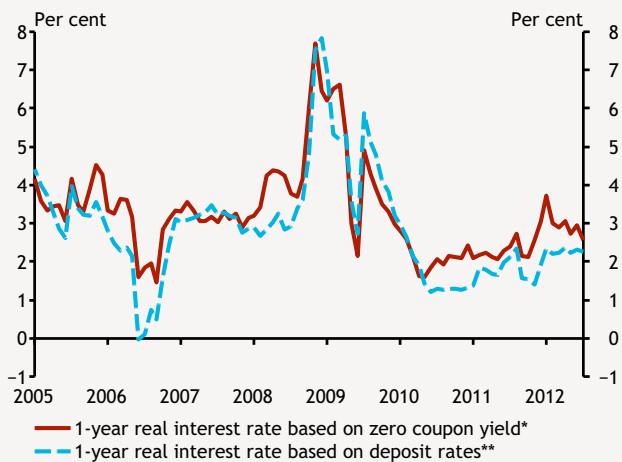
* Net percentage balance of respondents tightening/easing credit conditions weighted by market share.
Source: MNB based on banks' responses.

4.2.3 DEVELOPMENTS IN REAL INTEREST RATES

Since the previous Quarterly Report on Inflation, the one-year real interest rate calculated on the basis of the government securities yield continued to decline, from 2.7 per cent in May 2012 to 2.6 per cent in July (Chart 4-15). The change was mainly attributable to the continuing decrease in the one-year government securities yield, while inflation expectations remained almost unchanged. The real interest rate calculated from deposit rates with maturities of up to one year remained practically unchanged in the period under review and continued to be around 2.3 per cent. The real interest rate level remains higher than the average of the previous two years, although it can be considered historically low.

Chart 4-15
Forward-looking real interest rates

(January 2005–July 2012)



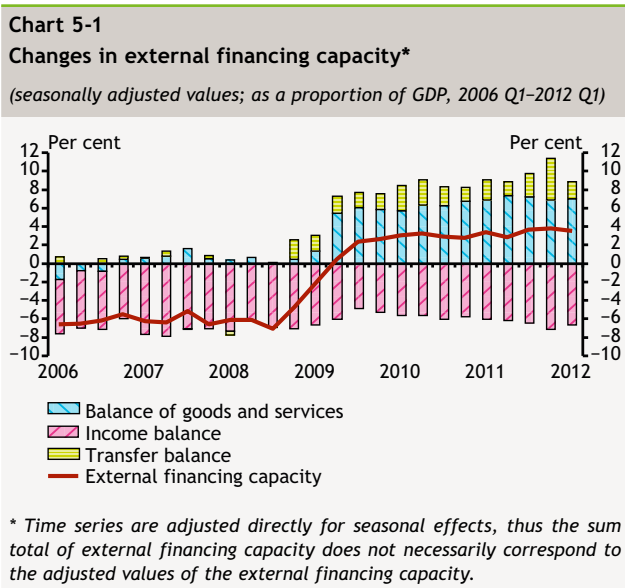
* Based on the one-year forward-looking inflation expectations of analysts calculated by the MNB using the 1-year zero coupon yield and the Reuters poll.

** Based on the one-year forward-looking inflation expectations of analysts calculated by the MNB using deposit rates with maturity up to 1 year and the Reuters poll.

5 External position of the economy

5.1 External balance and financing

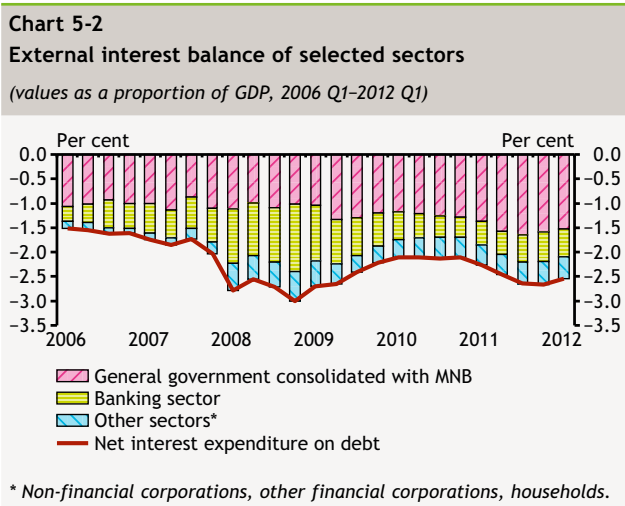
The external surplus of the Hungarian economy declined slightly in 2012 Q1, amounting to nearly 3.5 per cent of GDP. The decline was primarily attributable to the decrease in the use of EU transfers. By contrast, the indicator calculated from the financial account indicated a small financing requirement. In terms of the structure of external financing, the outflow of debt type liabilities and the inflow of non-debt type funds continued. A further adjustment of Hungary's external debt indicators was observed in Q1, which was also supported by the appreciation of the exchange rate, in addition to the continued outflow of funds. Partially available Q2 data indicate a further increase in the external surplus, in parallel with which the outflow of funds may also have continued.



5.1.1 CHANGES IN THE EXTERNAL BALANCE OF HUNGARY

The external financing capacity of the Hungarian economy declined slightly in Q1, but continued to be significant. The combined current and capital account surplus was around 3.5 per cent of GDP (Chart 5-1). Despite the slowdown in external economic activity, the surplus of foreign trade remained significant, which may have primarily reflected the effect of subdued domestic demand. In Q2, based on foreign trade data, net exports may have already significantly been supported by a pick-up in vehicle production and – as indicated by retail sales – the continued decline in consumption.

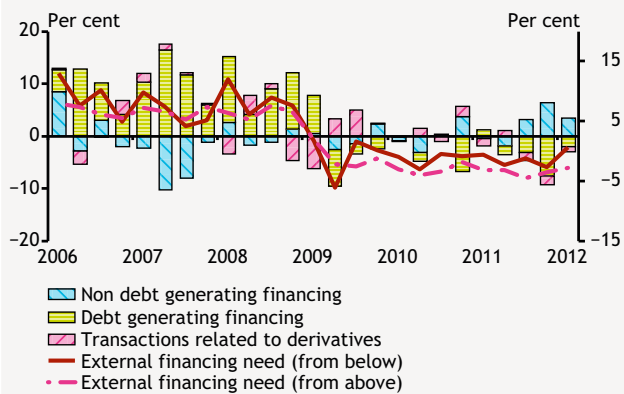
At the same time, a significant adjustment primarily affecting current transfers was observed in Q1 in the balance of transfers, which is mainly influenced by EU transfers. Following the high use of net EU transfers in Q4, which exceeded EUR 1.7 billion, domestic agents used only EUR 0.7 billion of EU funds in Q1.



The decline in the balance of transfers was partly offset by the slight decline in the deficit on the income balance. This is primarily attributable to the decrease in interest expenditures transferred abroad. In Q2, the deterioration in the income account was also a result of the fact that after 2009 MOL paid dividends again, a part of which was transferred to its foreign owners.

Chart 5-3
Structure of external financing*

(transactions as a proportion of GDP, 2006 Q1–2012 Q1)



* The financing requirement calculated by a bottom-up method corresponds to the total of the external financing requirement and the BOP balance of statistical errors and residuals.

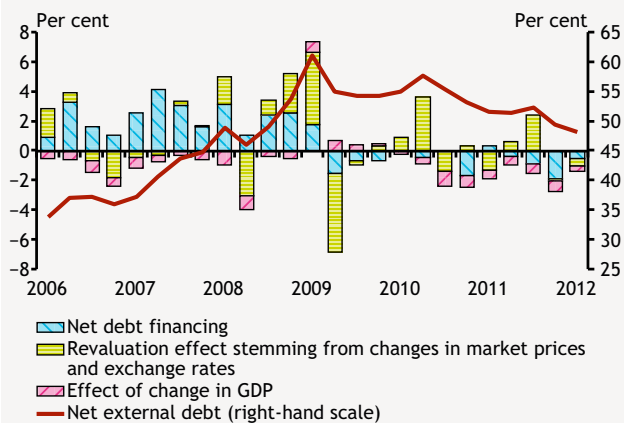
5.1.2 DEVELOPMENTS IN FINANCING

While, according to the indicator calculated using a top-down approach and based on real economy data, the external surplus of the economy continued to increase in Q1, the indicator calculated from (financing) data shown in the financial account indicated a minimal financing need. Accordingly, the error of the balance of payments was significant in Q1, which may also have been attributable to the fact that only very limited information is available on households' transactions abroad (Chart 5-3).

The expansion of non-debt type funds (FDI and portfolio equity) more than offset the net outflows of debt type liabilities. The inflow of non-debt type funds observed in recent quarters is mainly related to portfolio investments rather than to net foreign direct investments. However, the inflow of funds in Q1 no longer resulted from the decline in external assets, which had been typical earlier, but the amount of shares held by non-residents increased.

Chart 5-4
Breakdown of changes in net external debt

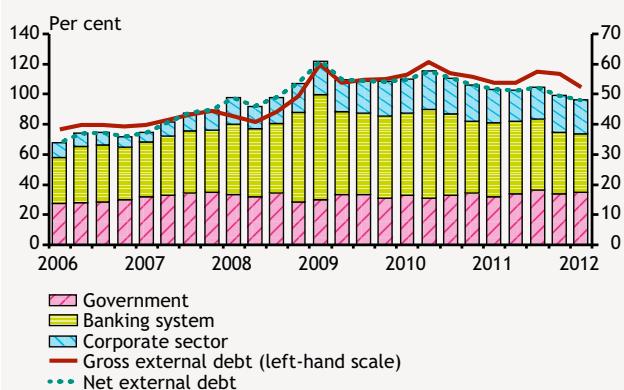
(values as a proportion of GDP, 2006 Q1–2012 Q1)



The outflow of banks' funds decelerated in Q1. One of the explanations for the slower decline is that most of the fund withdrawal related to early repayments (around EUR 4 billion) had already taken place in the previous quarter. At the same time, there was an unfavourable shift in the maturity structure: short-term liabilities increased in parallel with a decline in long-term debts. Examining the other sectors, the net external debt of consolidated general government remained practically unchanged (Chart 5-4). External debts of the state were reduced by the repayment of the IMF-EU loans and the decline in the MNB's repo liabilities. However, the net external debt of the sector remained unchanged, as foreign exchange reserves also declined by a nearly similar amount. Meanwhile, minor withdrawals of funds were experienced in the case of the corporate sector (Chart 5-5).

Chart 5-5
Breakdown of net external debt by sectors

(values as a proportion of GDP, 2006 Q1–2012 Q1)



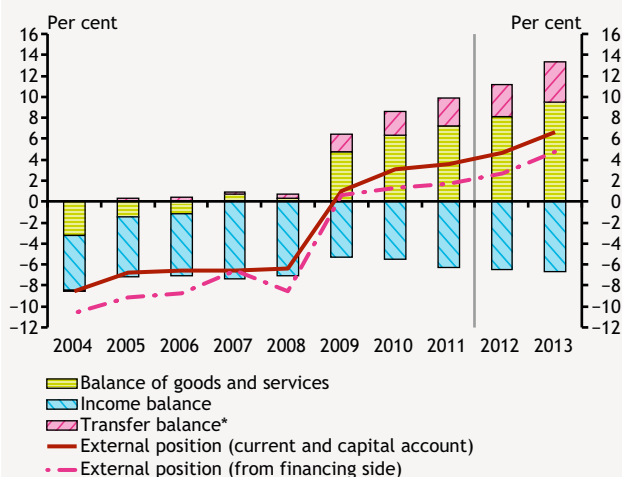
Hungary's external debt indicators, which are important in terms of risk perceptions about the country, continued to decline at the beginning of the year. The gross external debt-to-GDP ratio and the net external debt sank to 105 per cent and 48 per cent, respectively. In addition to the outflow of funds, the adjustment was supported by the exchange rate as well: the exchange rate of the forint appreciated by nearly 10 per cent in Q1.

The continued outflow of foreign funds may contribute to a further decline in Hungary's external debt indicators in Q2. In addition to the accelerated decline in banks' gross debts and the repayment of maturing IMF-EU loans, the adjustment of the gross external debt may also have been facilitated by revaluation effects.

5.2 Forecast for Hungary's external balance position

The net external financing capacity of the Hungarian economy may continue to increase in the coming years. The improvement in Hungary's external balance position is attributable to the continuously growing surplus on the balance of goods and services as well as to increasing inflows of EU transfers, while the rising deficit on the income balance points to a moderation. Automotive investment projects that are launching production may gradually play a decisive role in the dynamic expansion of net exports. In addition, restrained domestic demand through subdued imports may also contribute to the high trade surplus. Examining the saving positions of the sectors – taking account of a fiscal adjustment that assumes the achievement of the deficit target – it can be established that the savings position of general government may improve, while the private sector's projected net financing capacity may become stable at a high level. Within the private sector, while households' net financial savings may decline slightly in the coming years with the disappearance of one-off items, financing capacity is expected to continue to increase in the case of companies.

Chart 5-6
Changes in external financing capacity
 (as a proportion of GDP)



* The sum of current transfers and the capital account balance.

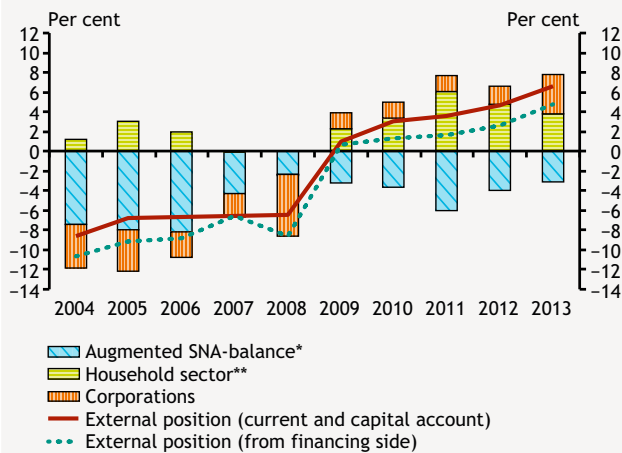
The saving position of the Hungarian economy may continue to improve in the coming years. The combined current and capital account surplus may be around 5 and 7 per cent of GDP in 2012 and 2013, respectively (Chart 5-6). The increasing trade surplus plays a decisive role in the continued improvement in Hungary's external balance position. Despite deteriorating external demand, net exports will keep the external surplus high over the entire forecast horizon. Both the large automotive investment projects and the subdued domestic demand of the economy support these developments. At the same time, in 2013 external demand may fall short of the expectations outlined in our previous forecast, pointing to an external financing capacity that is lower than our earlier forecast, but still remains considerable.

The improvement in Hungary's external balance position will be moderated by the slow but gradual deterioration expected in the income balance in the coming years. At the same time, compared to the previous *Quarterly Report on Inflation*, the decline in EUR yields points to a more favourable income balance, since future interest expenditures transferred abroad may also decline as well.

EU transfers may contribute significantly to the net financing capacity of the country in the coming years as well. However, as a result of the lower actual data received, our forecast has been revised downwards slightly.

Examining the expected savings developments from the side of the sectors, with the private sector's position

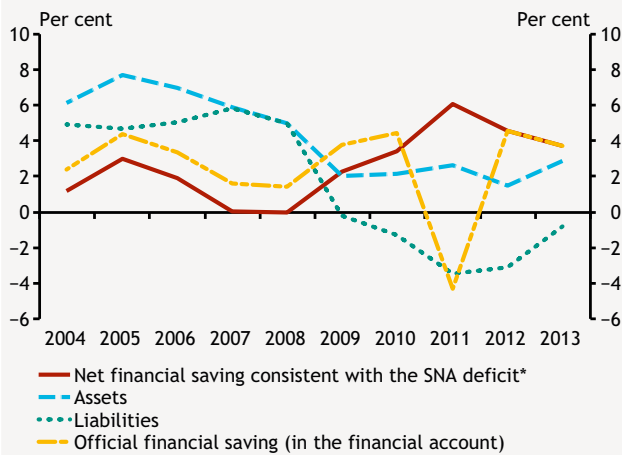
Chart 5-7
Changes in financing capacities of sectors
 (as a proportion of GDP)



* In addition to the central government, the augmented general government includes local governments, ÁPV Ltd., institutions discharging quasi-fiscal duties (MÁV, BKV), the MNB and authorities implementing capital projects initiated and controlled by the government but formally implemented under PPP schemes. The augmented SNA deficit takes into account private pension savings.

** Net financing capacity of households consistent with the SNA deficit does not contain the pension savings of those who return to the public pension system. The official financing capacity (shown in the financial account) is different from the data in the chart.

Chart 5-8
Changes in households' net financing capacity
 (as a proportion of GDP)



* Does not include pension savings of those who return to the public pension system.

stagnating at a high level, the declining general government deficit points to an increase in net financing capacity (Chart 5-7).

In parallel with the disappearance of one-off items and a pick-up in lending, households' net financial savings may decline slightly. Households' consumption-saving decisions continue to be considerably influenced by balance sheet adjustments due to the high outstanding debt. Although the interest rate subsidy programme may stimulate borrowing, no significant upswing is expected in lending activity, due to the unfavourable prospects for business activity (Chart 5-8).

The net saving position of the corporate sector may continue to increase, which may primarily reflect subdued investment activity. The utilisation of EU transfers, which is expected to increase, may improve not only the balance of transfers but also the financial position of companies.

According to our latest forecast, the external surplus of the economy may continue to grow, i.e. the outflow of foreign funds may continue. Accordingly, the improvement in the external balance may be reflected in the decline in external vulnerability indicators as well. The decline in debt indicators that are important in terms of the risk perception of Hungary may also be supported by a stronger exchange rate as well.

5.3 Fiscal developments

Overall, continued strict fiscal management is expected for 2012; according to our forecast, the deficit will only slightly exceed the Government's target.⁹ At the same time, the measures announced in the past quarter resulted in a considerable loosening in the 2013 fiscal balance. Compared to the budget bill submitted in June and presented in our forecast, Parliament may decide on a fiscal stimulus exceeding 1 per cent of GDP. Should the Government fail to offset the budgetary effects of the measures, next year's deficit may be around 3.5-4 per cent of GDP. Since a deterioration in balance of this magnitude contrasts with the Government's commitment to deficit targets and the EU regulations concerning fiscal discipline, in our forecast we assumed a hypothetical fiscal adjustment that is consistent with the Government's intentions set out in the Convergence Programme of Hungary. According to our calculations, next year's deficit may be reduced to 2.4 per cent of GDP with a fiscal adjustment equalling 1.4 per cent of GDP.

5.3.1 GOVERNMENT MEASURES ANNOUNCED AFTER THE PUBLICATION OF THE JUNE ISSUE OF THE QUARTERLY REPORT ON INFLATION

In the June issue of the *Quarterly Report on Inflation*, we projected accrual-based deficits of 2.7 and 2.4 per cent for 2012 and 2013, respectively, which slightly exceed the deficit target.

There has been no major change in our forecast for 2012. As a result of macroeconomic and fiscal developments as well as the measures affecting this year, the deficit increased slightly, by 0.1 percentage point of GDP, to 2.8 per cent.

However, the measures announced in the meantime resulted in a significant fiscal loosening for 2013. According to our calculations, compared to the information base of the June issue of the *Quarterly Report on Inflation*, the *net deficit increasing effect*¹⁰ of the Government's measures announced in recent months *may amount to 1.4 per cent of GDP* (Table 5-1).

The total effect of the *job protection action plan* is estimated to amount to 0.8 per cent of GDP, i.e. the accrual based fiscal revenue may decline by this much without

⁹ In our analysis, we assume the cancellation of the free fiscal reserves.

¹⁰ Net deficit effect means that our calculations also take into account the first-round (direct) effects of the measures on the revenues from taxes and contributions. At the same time, the net deficit effect does not contain the effects of the so-called second-round fiscal deficit resulting from the macroeconomic effects of the measures.

Table 5-1
Estimated effect of the fiscal measures announced after the publication of the June issue of the Quarterly Report on Inflation*

(HUF billion; percentage of GDP)

| New measures | Bn HUF | GDP % |
|---|-------------|-------------|
| A) Job protection plan | | |
| Targeted tax allowances | -99 | -0.3 |
| Lump-sum tax on entrepreneurs | -40 | -0.1 |
| Cash-flow corporate income tax on small enterprises | -144 | -0.5 |
| Effects on social contribution tax allowance related to the wage compensation | 40 | 0.1 |
| Total effect on the balance | -243 | -0.8 |
| B) Revenue measures | | |
| Transaction tax | -203 | -0.7 |
| Changes in VAT | 2 | 0.0 |
| Increase in excise duties | 47 | 0.2 |
| Public health product tax | 3 | 0.0 |
| Total effect on the balance | -152 | -0.5 |
| C) Change in expenditure | | |
| Health-care services | 30 | 0.1 |
| Change in other expenditure appropriations | 39 | 0.1 |
| Tax and contribution content of extra spending | -25 | -0.1 |
| Investment related to the E-tolls for highways | 42 | 0.1 |
| Total effect on the balance | 86 | 0.2 |
| D) Other effect | | |
| Court decision on concession** | 40 | 0.1 |
| Total effect on the balance | 40 | 0.1 |
| Total effect (A+B-C+D): | -441 | -1.4 |

* In the case of the so-called targeted preferences only the impact affecting the competitive sector was taken into account.

** Due to the court decision related to the concession of telecommunication, we assume that the concession revenue planned for 2012 can be realized in 2013.

second-round effects.¹¹ The package intends to support job creation in a targeted way by reductions in contributions¹² as well as by the introduction of new tax systems for small- and micro-sized enterprises (cash-flow corporate income tax on small enterprises and lump-sum tax on entrepreneurs). The reductions in contributions are estimated to affect 590,000-600,000 people. The introduction of the cash-flow corporate income tax on small enterprises may affect some three-quarters of people employed by the companies that meet the conditions announced to date. The lump-sum tax on entrepreneurs may affect 175,000 tax-payers. More than half of those who are expected to choose this tax are entrepreneurs or are subject to corporation tax now; a smaller portion of them may come from among those who now pay a simplified entrepreneurial tax. Upon estimating the deficit increasing effect of the action plan we also took account of the savings developing in connection with the social contribution tax allowance related to the wage compensation.¹³

Revenue from the *financial transaction tax* will be much lower than what was indicated in the submitted bill. First, the agreement concluded with the Banking Association maximised the amount of the tax that can be imposed on a transaction. Second, tax revenue from treasury turnover is overestimated. We do not consider the financial transaction tax imposed on the MNB a balance improving measure with a permanent effect. Namely, the cost of the tax is expected to appear in the MNB's profit/loss account, adding to the loss of the Bank. Accordingly, in a consolidated approach the measure fails to improve the fiscal position of the budget already in 2013; it can only be considered a temporary source of financing. Moreover, in the opinion of the European Central Bank and the European Commission this tax is incompatible with the EU norms relating to monetary policy. In view of the arguments listed above, in our forecast we assumed that the MNB's payment obligation will not enter into force.

The new measures affecting health-care spending will improve the balance by a total of 0.1 percentage point of GDP compared to our June forecast. Based on the effects of the 2012 increase in wages, we took into account higher health-care expenditures than the submitted bill already in June. The funds for the additional expenditures will be provided by revenue raised by the excise tax increase, which entails a balance-improving effect.

¹¹ The estimate of the balance effect of the package of measures is very uncertain because it is difficult to estimate the effect of the significant changes in the tax and contribution system on the behaviour of companies and employees.

¹² The preferences focus on five target groups: the age group of people below 25, the age group of those over 55, the long-term unemployed, unskilled labour and those who are returning to the labour market from maternity benefit.

¹³ For the target groups the new reductions in contributions partly or completely replace the support related to the wage compensation system; the expected savings are estimated to amount to HUF 35 billion.

Table 5-2

Additional impact of the health package on the balance, the change compared to the June issue of the Quarterly Report on Inflation

(HUF billion; percentage of GDP)

| New measures | Bn HUF | GDP % |
|---|-----------|------------|
| 1) Total change in revenue | 48 | 0.2 |
| Increase in excise duties | 47 | 0.2 |
| Public health product tax | 3 | 0.0 |
| VAT on medical appliances | -2 | 0.0 |
| 2) Total change in expenditure | 20 | 0.1 |
| Health-care services | 30 | 0.1 |
| Tax content of the extra spending | -10 | 0.0 |
| 3) Total effect on the balance (1-2) | 28 | 0.1 |

Table 5-3

Total effect of fiscal and macroeconomic developments on the 2013 ESA balance forecast

(as a percentage of GDP)

| | GDP % |
|--|------------|
| Change in net interest expenditure | 0.1 |
| Expected compensation for losses for the MNB | -0.1 |
| Change in the primary balance (base-year effect, macroeffects) | 0.0 |
| Total effect on the balance | 0.0 |

5.3.2 FISCAL PATH CONSISTENT WITH THE MACROECONOMIC FORECAST

The aforementioned significant fiscal loosening is inconsistent with our expectation that the Government is committed to strict fiscal management and wants to achieve its deficit target undertaken in the Convergence Programme. Therefore, our macroeconomic forecast is based on the assumption that the Government will offset its already announced measures that result in fiscal loosening with a new package in the near future. In our forecast, we assumed a hypothetical package of measures that includes only government steps that can be found in the Convergence Programme or that comply with the objectives specified therein.

With the application of the above mentioned conditions, our forecast for 2013 remains unchanged, i.e. the deficit will amount to 2.4 per cent of GDP, as it was presented in the June issue of the *Quarterly Report on Inflation*. However, the composition of the deficit has changed slightly because we offset half of the loosening perceived on the revenue side with a hypothetical adjustment that reduces expenditures.

5.3.3 CHANGES IN THE CYCLICALLY ADJUSTED FISCAL POSITION

As a result of the fiscal adjustment that is being implemented in 2012, the cyclically adjusted augmented SNA balance, which describes the 'underlying' fiscal position, will decline to below 3 per cent of GDP. With the assumption of the hypothetical package, the deficit indicator may continue to improve by 2013, approaching 2.5 per cent of GDP (Table 5-4).

This indicator takes into account how large a balance improving effect it may have if tax revenues catch up with their medium-term trend estimated by us, and it also reflects the fiscal costs currently included in the accounting of state-owned companies (e.g. public transport).

Table 5-4

General government balance indicators

(as a percentage of GDP)

| | 2011 | 2012 | 2013 |
|--|-------------|-------------|-------------|
| ESA-balance* | 4.2 | -2.8 | -2.4 |
| Effect of the hypothetical adjustment** | - | - | 1.4 |
| Augmented SNA-balance | -6.0 | -3.4 | -3.1 |
| Cyclical component (MNB method) | -0.4 | -0.5 | -0.5 |
| Cyclically adjusted augmented SNA-balance | -5.7 | -2.8 | -2.5 |

* The complete cancellation of the available free reserves was assumed upon the calculation of the balance indicators.

** Assumption of fiscal adjustment which is consistent with the most likely macroeconomic scenario.

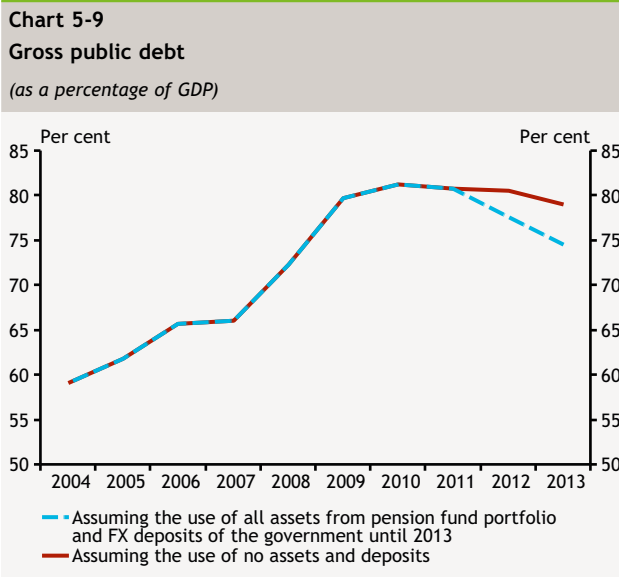
At the same time, cyclically adjusted balance indicators do not provide a comprehensive picture of the medium-term position of the budget. The effects of numerous measures (e.g. earlier actions affecting the pension system) and developments (e.g. an unavoidable increase in government investment of own financing) that will affect the fiscal deficit in the coming years are not reflected in the structural balance indicator. Moreover, the expected increase in interest expenditures stemming from the renewal of current debt beyond the forecast period is also not reflected by these indicators. Considering the above effects, further balance improving measures may become necessary for the fiscal adjustment to be sustainable over the medium term.

5.3.4 EXPECTED DEVELOPMENTS IN THE DEBT PATH IN THE CASE OF A FISCAL ADJUSTMENT

The government debt-to-GDP ratio calculated at constant exchange rates is expected to decline in two years from its end-2011 level of 80.8 per cent by almost 2 percentage points in 2012-2013, if the budget deficit follows the path described above. In addition to the deficit, the rate of decline in debt largely depends on the method of financing and changes in the exchange rate.

At present, a large amount of financing reserves is available for the budget in forint and foreign currency deposits as well as in the portfolio taken over from private pension funds. If the Government wants to maintain these financing reserves, assuming constant exchange rates, the debt can decline moderately in 2012 and more significantly in 2013 – due to the assumed budgetary adjustment – resulting in a debt ratio of 79 per cent of GDP by 2013. Using the financing reserves for debt reduction might even reduce the debt ratio by further 4 percentage points over the forecast horizon.

As a result of the high proportion of foreign currency debt, the debt ratio is very sensitive to developments in the exchange rate of the forint. As indicated earlier as well, compared to the level of EUR/HUF 311 at end-2011, each appreciation of HUF 10 would result in a decline in debt equal to 1.3 per cent of GDP. Accordingly, by end-2012 the current exchange rate of EUR/HUF 285 would result in a 77 per cent debt ratio in 2012, which can be decline to 76 per cent of GDP by 2013 (Chart 5-9).



6 Special topics

6.1 Underlying inflation developments from a monetary policy perspective

The consumer price index shows price changes in a representative consumer basket; from a welfare aspect this is the most accepted and relevant inflation indicator. Price stability-oriented central banks typically determine their inflation target using this indicator.

In the case of central banks that consider inflation as a primary objective, the focus of monetary policy is typically forward-looking: decision-makers react to expected future developments instead of currently available data. The underlying reason is that the effect of monetary policy appears in the main macroeconomic variables with a delay; typically, it is the strongest after 2-3 quarters. Accordingly, the offsetting of temporary shocks to inflation that do not have a material impact on the medium-term inflation outlook would entail a real economy sacrifice that is unnecessary in terms of the maintenance of price stability.

Central banks pursuing forward-looking decision-making take into account incoming data to the extent that they contain useful information about expected future developments. In the case of the consumer price index, current actual figures may reflect the effects of several factors that are temporary in nature or reflect relative price changes that do not have a material impact on the medium-term inflation outlook. These components of the price index may be disregarded upon the assessment of actual inflationary pressure prevailing in the economy, i.e. upon the evaluation of the underlying inflation developments.

Inflation indicators that exclude certain components provide the most information on underlying inflation developments if:

- the changes in the excluded items do not follow a trend, their fluctuations are caused by one-off shocks that broadly offset each other over the longer term, i.e. the average price change of the excluded items equals the change in the overall price index over the longer term, and
- the price change of the excluded items is not expected to result in second-round effects in terms of the overall price index through becoming embedded in wage and price setting decisions. The more credible the central bank's commitment to low inflation, the lower the chance of the occurrence of second-round effects.

In this case the indicators that exclude noisy/volatile items may be good predictors of expected inflation, reflecting the internal stickiness of inflation and the cyclical position of the economy well. In practice, it is difficult to decide which components of the consumer price index can clearly be considered noise and do not influence the medium-term inflation outlook. The indicators of underlying developments used in central bank practice typically exclude certain items on the basis of the statistical characteristics of a given range of products or the components of the price index.¹⁴

One of the most widely used indicators is core inflation, which excludes volatile energy and food prices. This indicator is based on the consideration that the prices of energy and (unprocessed) food move significantly and often in opposite directions within a short period of time. These shifts are often caused by supply type shocks (e.g. price decision of a

¹⁴ For more details see PÉTER BAUER (2011), *Inflációs trendmutatók*, [Inflation trend indicators], *MNB-tanulmányok*, 91.

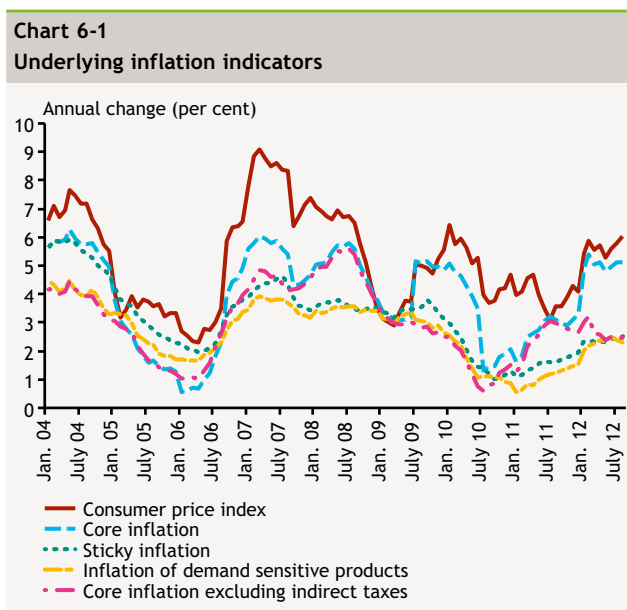
producers' cartel, extreme weather conditions, etc.) that are not directly related to fundamental economic developments and may change direction even over the short run.

It is typical of the indicators of fundamental developments adjusted on a statistical basis that they exclude items on the basis of statistical characteristics typical of a given period instead of excluding a pre-determined range of products. For example, an indicator like this can be one that excludes the items that show the highest or lowest price changes in a given month or products that are repriced the most frequently. The exclusion of the latter products is based on the consideration that inflation of products with 'stickier' price changes that are repriced less frequently is more forward-looking, and thus may provide more information with regard to the future. These indicators may be suitable for excluding from the price index the effects of relative price changes that affect the medium-term inflation outlook to a lesser extent, but trigger a considerable shift in current actual data.

In cases when the consumer price index is distorted by the effect of government tax measures, several central banks (e.g. the Czech National Bank) apply inflation indicators that exclude the effects of indirect taxes (e.g. value added and excise type taxes) as operative targets or for communications purposes. In the case of indirect taxes, the source of the shock that causes a change in the price level can clearly be identified, in the case of a one-off tax measure a trend-like change can be excluded and there is little likelihood of a feed-through of the price level change through corporate cost structures and of the evolution of second-round effects. In the cases of frequent changes in indirect taxes, due to the aforementioned characteristics, the price indices that exclude taxes may present a good basis for decision makers. However, it is important to mention that the exclusion of the effect of indirect taxes is only possible with uncertainty, as eventually it depends on the decisions of the price-setting companies what portion of the change in taxes they pass on to the consumers under the existing demand conditions.

Evaluation of the indicators of underlying inflation developments in Hungary

The MNB uses several indicators to capture underlying inflation developments. The difficulty in selecting the adequate indicator of underlying developments is that inflation in Hungary in recent years has been exposed to a series of price level shocks, and most of them resulted in increases. If price level shocks that trigger price increases occur with higher probability than ones with the opposite sign in the future as well, the exclusion of the items concerned may result in a downward bias when measuring underlying inflation developments. It may also be a problem that due to the frequent missing of the inflation target, in the case of Hungary it cannot be automatically assumed that the one-off shocks adding to the price level of the excluded items do not entail second-round effects.

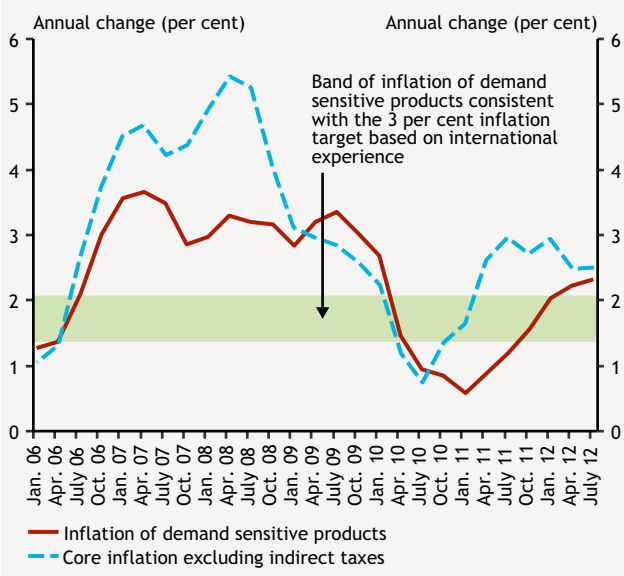


In addition to the overall consumer price index, Chart 6-1 depicts alternative indicators that capture underlying inflation developments: core inflation, produced by excluding the prices of unprocessed food and energy; core inflation excluding the effect of indirect taxes; and inflation of products whose prices change rarely¹⁵ and of the ones that are sensitive to demand.¹⁶ Inflation of products whose prices change rarely shows the price changes of a range of products with low price setting frequency, which is able to forecast medium-term inflation developments well. The indicator of demand sensitive products also excludes changes in processed food prices from core inflation adjusted for tax changes, which may be justified by the fact that price changes of the latter product group largely depend on the typically strongly volatile price changes of unprocessed food.

¹⁵ REIFF, Á. AND J. VÁRHEGYI (2012), *Sticky Price Inflation Index, an Alternative Core Inflation Measure*, mimeo.

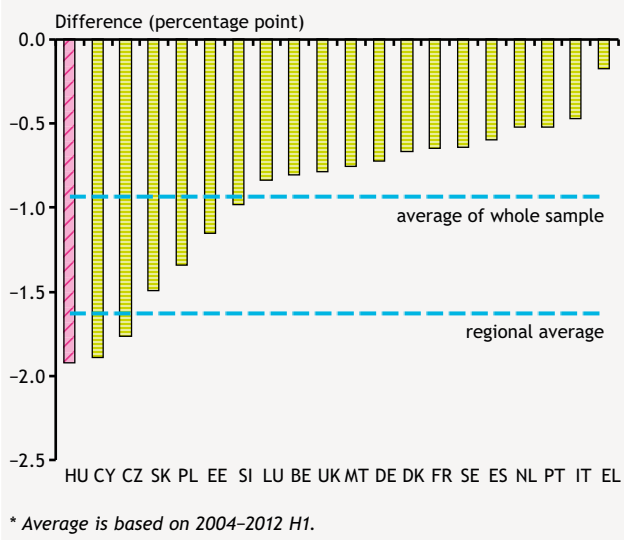
¹⁶ The latter two indicators also exclude tax changes.

Chart 6-2
Band of price changes of demand sensitive products consistent with the 3 per cent inflation target



In terms of forecasting, it is an important issue whether the increase in the overall consumer price index observed in the recent period can be considered only temporary or whether it affects the underlying inflation developments and thus the medium-term inflation outlook as well. Based on our indicators, it can be established that – apart from the price increasing effects of the indirect tax increases and of the products with volatile prices – underlying inflation developments reached a higher level compared to the bottom they hit in 2010 during the crisis. At the same time, the surge in the consumer price index observed in recent months is not attributable to underlying developments. The increase in underlying developments took place despite the fact that no pick-up was experienced in domestic demand.

Chart 6-3
Average difference between demand sensitive products and HICP inflation in EU Member States*



* Average is based on 2004–2012 H1.

From a monetary policy perspective, in addition to the dynamics of underlying inflation developments it is also a key issue what level of the underlying inflation indicators is consistent with the target defined as a 3 per cent increase in the overall consumer price index. To answer this question it is necessary to determine the typical magnitude of the difference between the consumer price index and the underlying inflation indicators. Adjusting the target defined in the consumer price index for this difference results in a hypothetical target measure that may help decide whether underlying inflation developments are consistent with price stability.

We used international experiences to determine the typical level of the aforementioned difference. The band depicted in Chart 6-2 shows the adjusted target measure calculated with the average difference between HICP¹⁷ inflation and the indicators that capture inflation of demand sensitive products, based on the historical data of EU Member States. In the countries under review, average inflation of demand sensitive products is typically lower than the change in HICP. The difference varies across countries and in time; it is usually lower in developed EU countries and higher in the countries of the Central and Eastern European region (see Chart 6-3). The band in the chart depicts this high uncertainty.

Based on our calculations, it can be concluded that although the underlying inflation indicators are significantly lower than inflation measured on the basis of the full consumer basket, at present they exceed the level that is consistent with the 3 per cent inflation target. The increase in underlying inflation may be attributable to the cost increase that affects a wider range of products and may partly stem from higher commodity prices, tax measures affecting corporate costs and wage increases that exceed productivity growth. However, it also cannot be excluded that the pricing practice of companies is changing due to the permanently high level of inflation, and the price-level containing effect of the negative cyclical position of the economy is weakening.

¹⁷ Harmonised index of consumer prices calculated according to the standard methodology of Eurostat.

6.2 A production function-based estimate of the potential growth rate of Hungary

Subsequent to the outbreak of the financial crisis in the autumn of 2008, Hungary's economic output fell significantly. Gross domestic product continues to lag behind its pre-crisis level; furthermore, the average growth rate has been slower over the past years than it used to be. Examining the factors determining output, our analysis assesses the extent to which developments in output are cyclical and the extent to which they can be attributed to structural causes, i.e. slowdown in potential growth.

There has been heated debate globally over the impact of the financial crisis on potential output. Central banks aiming at price stability also attach high importance to the issue of changes in production potential, because the difference between actual and potential output (i.e. the output gap) provides information on inflationary pressure from the demand side.

Some analysts argue that, in the wake of the financial crisis, trend output has lowered. This is due, in part, to the eroding impact of the crisis on the supply side and, in part, to the fact that the former trend only reflected a pre-crisis bubble rather than actual potential output. Lower potential output seems to offer an explanation for a number of puzzles. GDP growth is unusually slow in numerous countries (e.g. the US and the euro area) even after 3 to 4 years after the recession. Furthermore, inflation has also failed to decline at a rate that a permanently wide negative output gap would justify.

Other economists claim that the root cause of a protracted crisis is demand-side problems that arise from balance sheet adjustments made in response to the financial crisis. With their debts repaid, economic agents will consume less and cut back on their capital expenditure more heavily for a significant length of time. They do not, however, think that this inevitably leads to the erosion of supply potential. The fact that robust disinflation fails to materialise is attributable to well anchored inflation expectations and the pass-through of higher energy prices into headline inflation.

In our analysis potential output is defined as output produced through the equilibrium use of all the resources (production capacities) available in the economy, i.e. output that is sustainable without triggering an acceleration in inflation.¹⁸ Several different methods can be used to examine developments in potential output. Besides being popular and relatively simple, the production function approach that we have selected also helps measure the growth contribution of the individual production factors (labour, capital and productivity).

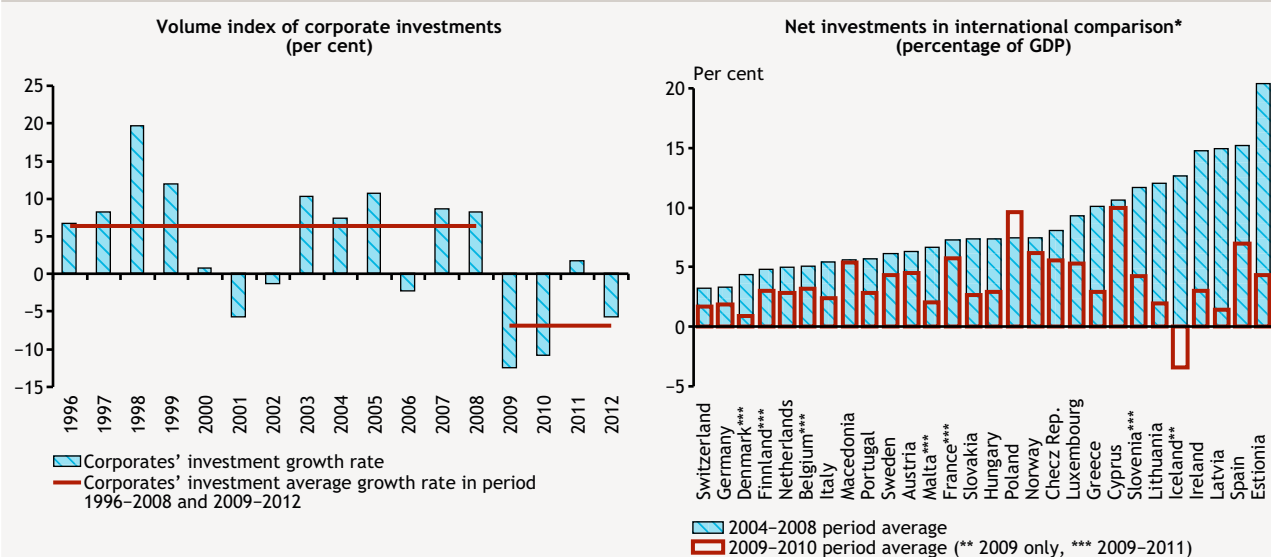
In our analysis, first we overview the developments in both the actually employed and potentially employable production factors in the period between 1995 and 2012. Subsequently, based on this, we provide an estimate for potential growth.

6.2.1 CAPITAL STOCK

Similar to countries converging to the most advanced economies, fixed capital formation is the main source of economic growth in Hungary as well. Investing into means of production leads to larger production capacity and the adoption of the most state-of-the-art technologies. For the purpose of this analysis, the amount of capital available for production means capital stock in the corporate sector, the underlying reason being that a large part of the capital stock in the government

¹⁸ This definition is similar to that of international institutions. According to the OECD definition, "potential GDP is a level of output that an economy can produce at a constant inflation rate". According to the IMF definition, "representing an economy's supply side, potential output is the maximum output an economy can sustain without generating a rise in inflation".

Chart 6-4
Developments in corporate investment



* Net investment rate = (Gross fixed capital formation - Use of fixed capital) / GDP, at current prices.

and the household sectors comprises capital goods (infrastructure and real property) that cannot be directly employed in production.

Fixed capital formation in the corporate sector has slowed down remarkably since the outbreak of the crisis (Chart 6-4, left panel): significantly outpacing the rate of GDP growth, corporate investment increased by an average annual 6 per cent before the crisis; by contrast, it fell by an average annual 7 per cent during the years immediately following the crisis. Subdued investment performance is due to several different factors. The bleak domestic and international prospect for growth urged corporations to postpone increasing their production capacity in the short run, similar to the early 2000s, when global economy underwent a slight recession. In the current financial crisis, banking sector woes have led to a significant and permanent drop in lending to corporations, which, in turn, put a brake especially on SME investment. Finally, an uncertain macro-economic and institutional environment also urged corporations to put off capital investment or cancel it altogether.

Concurrently with lacklustre investment activity, the depletion of the accumulated capital stock is also likely to have accelerated. The pre-crisis depreciation rate was an annual 6 to 6.5 per cent derived from disaggregated corporate investment data. However, the crisis also triggered a sharp rise in the number of corporate bankruptcies, which is likely to have increased the intensity of depletion of the aggregate capital stock. In order to quantify this, we relied on corporate tax return data and the Opten bankruptcy database. Having compared the share of the corporations either under a bankruptcy proceeding or going out of business before and after the crisis in the capital stock, we found that roughly an annual 0.5 percentage point more capital had been disappeared from production in the years following the crisis. Based on these calculations, we assume that the rate of depletion of capital was approximately 0.5 percentage point higher, due to a higher number of bankruptcies, after the crisis than in the years leading up to it.¹⁹

In response to a fall in investment rates and a higher rate of depreciation, the growth rate of the corporate capital stock fell significantly. A pre-crisis annual increase of over 4 per cent was followed by a drop to below 1 per cent in the annual growth rate of capital after the outbreak of the crisis.

Although there are several factors of uncertainty surrounding our estimates for the capital stock (e.g. the depreciation rate, the proportion of the capital affected by bankruptcies and an initial stock of capital), dynamics of our implicit

¹⁹ The secondary market of the means of production in Hungary is underdeveloped in an international comparison (see Report on Financial Stability, April 2012), therefore, we assume that the capital held by corporations placed under a bankruptcy proceeding will be phased out of production.

consumption of fixed capital series is very similar to the dynamics suggested by the national accounts data published by the Central Statistical Office. Our current estimate reveals that investment can, for the time being, provide the fixed assets utilised in the corporate sector as a whole, i.e. the capital stock has grown, albeit modestly, even after the crisis. This also holds true in an international comparison (Chart 6-4, right panel): after the crisis, GDP-proportionate net investment has declined in most countries, although, except for one country, it has remained in the positive domain everywhere. However, certain sectors which have been hit harder by the crisis, e.g. the manufacture of non-metallic materials used in the construction industry, have seen their capital stock melt down gradually.

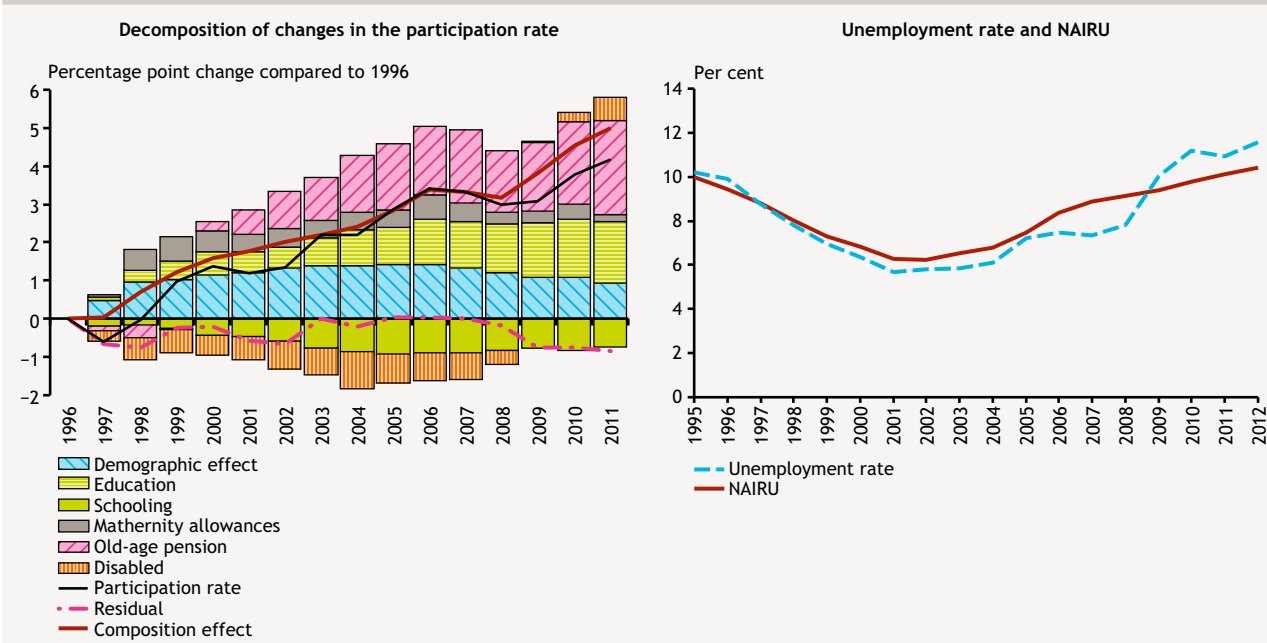
6.2.2 LABOUR

In this analysis labour input is defined in terms of hours worked, and is expressed as the product of the number of the working age population (15 to 74 years of age), the participation rate, the rate of employment (1-unemployment rate) and the average weekly hours worked. It is the *trend* values of the working age population and the other above-listed factors that determine the amount of potential labour input.

Population changes have had a negative contribution to potential output for a long time now. Due to the current demographic processes, the number of the working age population has been declining consistently since 1994; between 1995 and 2012 it fell by over 200,000.

This is, however, counterbalanced by a robust rise in the participation rate. The underlying reason for this is that although the participation rates of age/sex/education etc specific groups were rather stable, a significant change in their number has, overall, raised the rate of participation significantly since 1997.²⁰ This can be attributed to the tightening of the rules applied to old-age and disability pensions and a rise in the share of skilled persons as a result of better education over the long term (Chart 6-5, left panel). Due to the composition effects discussed above, the participation rate has risen from 52.2 per cent in 1995 to 56.7 per cent in 2012; nevertheless, it is still low in international comparison.

Chart 6-5
Developments in the participation rate and structural unemployment



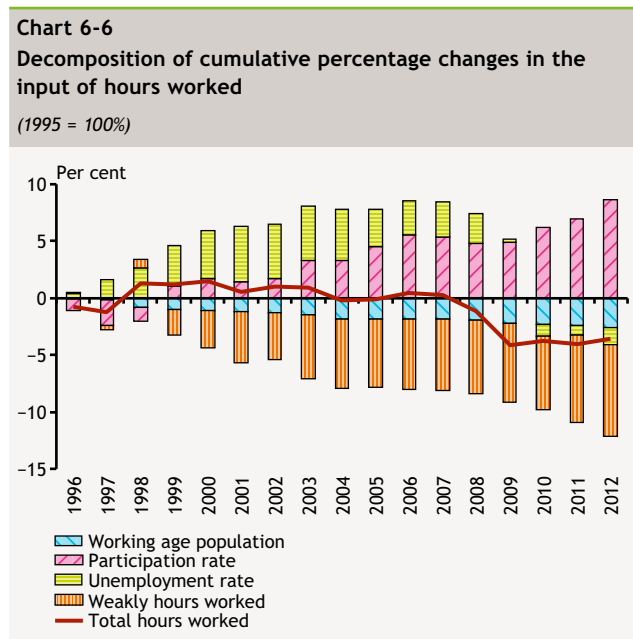
²⁰ For the purposes of the analysis, trend activity is that part of developments in the participation rate which can be explained by a change in the composition of working age population. See: KÁTAY, G. AND B. NOBILIS (2009), Driving Forces Behind Changes in the Aggregate Labour Force Participation in Hungary, *MNB Working Papers*, 2009/5.

Falling unemployment contributed to a rise in the quantity of labour input in production before the early 2000s; however, both the actual and equilibrium rates consistent with stable inflation and wage dynamics (NAIRU)²¹ of unemployment have been rising since 2004 (Chart 6-5, right panel). The rise in the NAIRU since 2000s is due to several factors:

- A shift in demand for skilled labour is faster than the pace of change in the average educational level of the population. This is clearly reflected in the fact that there has been a marked rise in the rate of unskilled unemployment since 2005, and increase in long-term unemployment has also been experienced primarily in this group.
- Since the political transition, the geographical distribution of production has changed considerably, to which low-mobility labour force has been unable to adjust itself. The flagship sectors of economic growth are concentrated in the central region and Transdanubia; the dismantling of the food and textile industries has hit regions in the Alföld adversely. Starting in the early 2000s, the divergence between the individual regional unemployment rates reflects regional differences in labour demand and supply.
- In response to an increase in the minimum wage in 2001–2002, the Kaitz index (the ratio of the minimum wage to the average wage) rose sharply, and then remained at a consistently high level. An increase in the price of low-skilled labour provided another push to demand for skilled labour. Furthermore, the increase in labour taxes between 2003 and 2009 put a brake on rise in labour demand as a whole, also contributing to higher unemployment.
- Finally, the system of welfare benefits did not encourage job-seeking; expenses on labour market programmes (e.g. training, job rotation and job sharing) are very low as a proportion of GDP compared with those in OECD countries; furthermore, except for public sector employment, such expenses have been dwindling consistently since 2002–2003.

Although, overall, the government measures taken since the crisis do encourage employment, a long-drawn-out crisis may amplify the sectoral, educational and geographical differences of labour demand and supply. The likelihood of finding a job is lower during a crisis. The long-term unemployed may lose their skills and abilities, which, in turn, carries the risk that they will be unable to find employment even when the economy recovers.

While the transformation of the system of social transfers supports a more abundant labour supply, the effects of the 2012 increase in the minimum wage and the changes to the tax system on labour demand are hard to assess with any degree



of certainty. Changes to the personal income tax system narrow the tax wedge for those in higher income brackets; on the other hand, the 2012 increase in the minimum wage makes the employment of low-skilled persons even more expensive. Over the short term, this can be alleviated through wage compensation, and in the long run, through tax benefits encouraging the employment of disadvantaged groups.

The combined effect of the above conflicting impacts is difficult to assess; we assume that, overall, a protracted crisis will feed high trend unemployment; the government measures aimed at encouraging job-seeking will only be able to reduce unemployment gradually.

Finally, developments in the weekly hours worked reduced labour input over the entire horizon of the analysis, the underlying reason for which is that part-time employment has been gaining ground to an increasingly large extent.

²¹ The non-accelerating inflation rate of unemployment (NAIRU) is determined with a state-space model, which pegs slowdown/acceleration in inflation to developments in the output gap; the latter determines labour market tightness through Okun's law. See: Tóth, M. B. (2010), *Measuring the Cyclical Position of the Hungarian Economy: a Multivariate Unobserved Components Model*, mimeo, MNB.

Chart 6-6 shows the decomposition of the contribution of the above factors to cumulative changes in the input of the hours worked. Based on the chart, it is safe to say that the participation rate increased the number of the hours worked; by contrast, average hours worked lowered it. Furthermore, changes in unemployment have made a negative contribution to changes in labour input in production since the mid-2000s.

6.2.3 POTENTIAL GROWTH

The hardest and most uncertain part of calculating potential growth is determining the share of cyclical and permanent losses in the deterioration in productivity experienced during the crisis.

Having adopted the methodology of the European Commission (see D'Auria et al., 2010)²², we used resource utilisation factor calculated by Rácz (2012)²³ to filter the cyclical part of the productivity. The resource utilisation factor comprises information derived from a number of confidence and resource utilisation indicators and macroeconomic time series reflecting cyclical behavioural patterns, and hence may be suitable for identifying whole-economy capacity utilisation. Our results suggest that trends in productivity have made a negative contribution to potential growth since 2009. There are several different reasons underlying the reduction in productivity:

- The financial crisis has restrained financial intermediation and hence the financing of production; as a consequence, production can only be resumed in a less profitable manner. Furthermore, the drying-up of external funding may hinder the remodelling of less profitable production into more profitable operations and the implementation of investment aimed at improving productivity.
- The programmes aimed at encouraging labour market participation have led to a gradual rise in the labour supply of low-skilled job-seekers since 2010, which has reduced aggregate productivity.
- Compared with the average of the OECD countries, Hungary's innovative capabilities are weak due, among others, to low R&D expenditure, the absence of venture capital, the low penetration of the modern channels of information flow (e.g. broadband and wireless Internet and e-government) and the quantitative and qualitative limits of the human resources that can participate in R&D.
- Finally, a lower investment rate has also put a brake on the adoption of the technologies embodied in capital goods, which is likely to have led to a setback in measured productivity.

We used the potentially available production factors and trend productivity to determine potential output growth (Chart 6-7, left panel). Potential output grew by over 3 per cent on average between 1996 and 2007, which was due, almost exclusively, to a rise in the capital stock and improved productivity. Concurrently, labour contributed to potential growth only to a limited extent, with contribution shuttling between the negative and positive domains. Due to a sharp fall in investment in the years immediately following the crisis, the contribution of capital to growth has been very low. Labour has had positive contribution since 2009, the underlying reason for which was a higher rate of participation; on the other hand, this favourable impact was dampened by a rise in equilibrium unemployment. As a combined outcome of trends in the potentially available production factors and productivity, potential growth was approximately 0.5 per cent between 2010 and 2012.

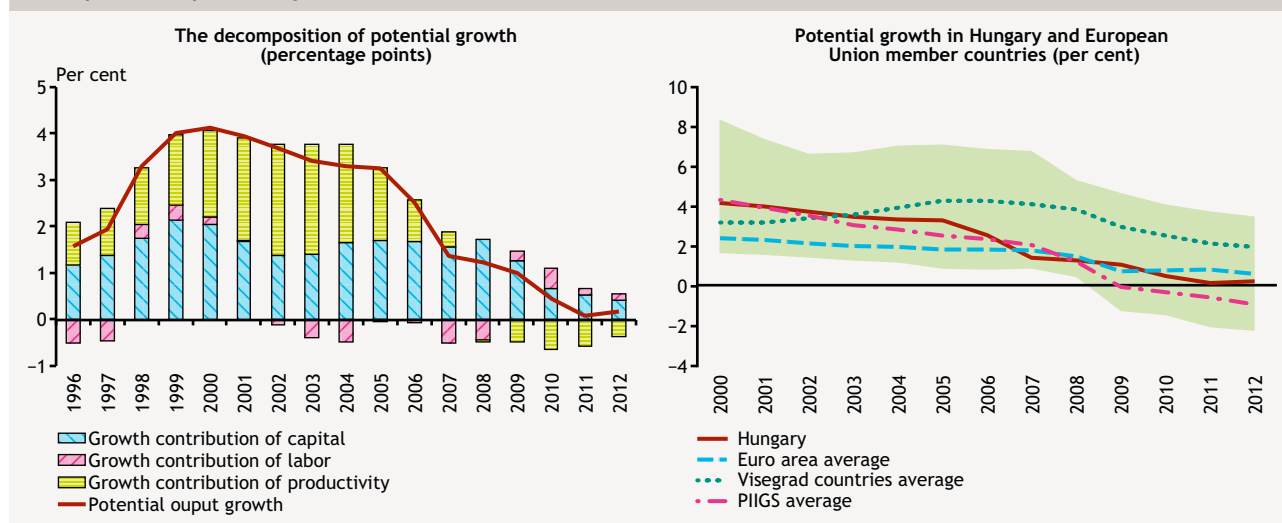
We have compared our calculations with the European Commission's estimate for potential growth made in the spring of 2012 (Chart 6-7, right panel). Similar to our calculations, the European Commission's estimate also reflects a marked slowdown, which started in the second half of the 2000s. Furthermore, its view on growth potential is also similar. The Commission's international comparison also reveals that Hungary's potential growth has been falling behind the average of the Visegrád countries since 2004, and convergence with the euro area came to a halt in 2007 and has made no progress ever since. Hungary's potential growth seems to be approximating the processes of those countries that have been hit by the financial crisis relatively hard.

²² D'AURIA, F., C. DENIS, K. HAVIK, K. MC MORROW, C. PLANAS, R. RACIBORSKI, W. RÖGER AND A. ROSSI (2012), The Production Function Methodology for Calculating Potential Growth Rates and Output Gaps, *European Economy, Economic Papers*, 420, DG ECFIN, Brussels.

²³ RÁ CZ, O. M. (2012), Using Confidence Indicators for the Assessment of the Cyclical Position of the Economy, *MNB Bulletin*, June.

Chart 6-7

Developments in potential growth



6.2.4 SUMMARY

In our analysis we used the production function approach to examine growth contribution and developments in potential output in Hungary between 1995 and 2012. Our calculations reveal that before the outbreak of the crisis the main source of growth was fixed capital formation and improved productivity; labour contributed to growth only to a limited extent. Between 1995 and 2008 the capital stock doubled; in contrast, the input of the hours worked remained unchanged. In the years following the crisis, in response to a permanent drop in the investment rate, fixed capital accumulation slowed down considerably, and productivity also declined.

As regards potential growth, our calculations show that, in the period under survey, the maximum rate of potential growth was around an annual 4 per cent in the early 2000s. Subsequently, the rate of potential growth declined gradually until 2005; it started to fall significantly in 2006. As a result, by 2007–2008 the annual rate of potential growth had slowed down to an annual 1.5 per cent. The crisis had eroded this relatively low potential growth further, as a result of which the annual growth rate of potential output was around 0.5 per cent between 2010 and 2012. The immediate underlying reasons for low potential growth are slower fixed capital accumulation in response to subdued investment activity and, partly because of this, failure to improve productivity. Although potentially available labour input has been on the rise due mainly to measures encouraging the rate of participation, its growth contribution is only a few decimal percentage points at best. Looking ahead, a pick-up in corporate investment activity and the restoration of productivity are expected to boost growth potential. Towards this end, the restoration of the lending capacity of the domestic financial system is also indispensable.

7 Technical annex: decomposition of the 2012 and 2013 average inflation

Table 7-1
Decomposition of the inflation to overlapping and incoming effect*

| | Effect on CPI in 2012 | | | Effect on CPI in 2013 | | |
|--|-----------------------|-----------------|--------------|-----------------------|-----------------|--------------|
| | Overlapping effect | Incoming effect | Yearly index | Overlapping effect | Incoming effect | Yearly index |
| Administered prices | 0.1 | 0.5 | 0.6 | 0.3 | 0.9 | 1.2 |
| Market prices | 0.7 | 2.0 | 2.7 | 0.7 | 1.9 | 2.6 |
| Indirect taxes and government measures | 0.5 | 1.9 | 2.4 | 0.2 | 0.9 | 1.2 |
| CPI | 1.4 | 4.4 | 5.8 | 1.2 | 3.7 | 5.0 |

* The tables show the decomposition of the yearly average change of the consumer price index. The yearly change is the sum of the so called overlapping and incoming effects. The overlapping effect is the part of the yearly index, which can be explained by the preceding year's price changes, while the incoming effect reflects the changes in the recent year. We decomposed these indices to the sub-aggregates of the consumer price index; and we calculated inflationary effects of the changes in the indirect taxes, the administered prices, and market prices (not administered prices excluding indirect tax effects). The figures have been calculated using the technical effect of the VAT hike.

Table 7-2
Detailed decomposition of our inflation forecast to overlapping and incoming effects*

| | 2012 | | | | | 2013 | | | | |
|----------------------|----------------------------|---------------------------------|-------------------------|------------------------------|--------------|----------------------------|---------------------------------|-------------------------|------------------------------|--------------|
| | Average overlapping effect | Overlapping indirect tax effect | Average incoming effect | Incoming indirect tax effect | Yearly index | Average overlapping effect | Overlapping indirect tax effect | Average incoming effect | Incoming indirect tax effect | Yearly index |
| Food | -0.4 | 0.1 | 4.8 | 1.2 | 5.8 | 1.7 | 0.0 | 3.7 | 0.0 | 5.4 |
| non-processed | -3.3 | 0.0 | 8.1 | 1.6 | 6.2 | 0.6 | 0.0 | 4.3 | 0.0 | 4.9 |
| processed | 1.2 | 0.2 | 3.1 | 1.0 | 5.6 | 2.2 | 0.0 | 3.4 | 0.0 | 5.7 |
| Traded goods | 0.9 | 0.2 | 0.6 | 1.3 | 2.9 | 1.0 | 0.0 | 0.3 | 0.0 | 1.4 |
| durables | -0.3 | 0.0 | -1.7 | 0.8 | -1.2 | -0.8 | 0.0 | -0.2 | 0.0 | -0.9 |
| non-durables | 1.2 | 0.2 | 1.4 | 1.5 | 4.4 | 1.3 | 0.0 | 1.1 | 0.0 | 2.4 |
| Market services | 1.0 | 0.0 | 1.7 | 1.8 | 4.5 | 0.6 | 0.4 | 2.1 | 0.8 | 4.0 |
| Market energy | 3.0 | 0.0 | 4.2 | 1.6 | 9.0 | 0.1 | 0.0 | 2.4 | 0.0 | 2.6 |
| Alcohol and tobacco | 0.2 | 2.8 | 2.3 | 6.7 | 12.4 | 1.7 | 1.4 | 3.0 | 8.8 | 15.4 |
| Fuel | 5.2 | 1.2 | 4.8 | 1.6 | 13.4 | -2.0 | 0.0 | 5.0 | 0.0 | 2.9 |
| Administered prices | 0.6 | 0.7 | 2.5 | 1.2 | 5.2 | 1.6 | 0.2 | 4.6 | 0.0 | 6.4 |
| Consumer price index | 0.8 | 0.5 | 2.5 | 1.9 | 5.8 | 1.0 | 0.2 | 2.8 | 0.9 | 5.0 |
| Core inflation | 0.9 | 0.5 | 1.6 | 2.1 | 5.2 | 1.2 | 0.3 | 1.9 | 1.4 | 4.9 |

* The tables show the decomposition of the yearly average change of the consumer price index. The yearly change is the sum of the so called overlapping and incoming effects. The overlapping effect is the part of the yearly index, which can be explained by the preceding year's price changes, while the incoming effect reflects the changes in the recent year. We decomposed these indices to the sub-aggregates of the consumer price index; and we calculated inflationary effects of the changes in the indirect taxes, the administered prices, and market prices (not administered prices excluding indirect tax effects). The figures have been calculated using the technical effect of the VAT hike.

Publications of the Magyar Nemzeti Bank

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MNB Bulletin / MNB-szemle

http://english.mnb.hu/Root/ENMNB/Kiadvanyok/mnben_mnbszemle

http://english.mnb.hu/Kiadvanyok/mnben_mnbszemle/mnben_szemle_cikkei

In Hungarian and English; published three or four times a year.

The aim of the short articles published in the Bulletin is to provide regular and readily comprehensible information to professionals and the public at large about underlying developments in the economy, topical issues and the results of research work at the Bank, which are of interest to the public. Private sector participants, university professors and students, analysts and other professionals working at central banks and international organisations may find the Bulletin an interesting read.

MNB Occasional Papers / MNB-tanulmányok

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http://english.mnb.hu/Kiadvanyok/mnben_mnbfuzetek

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