B Economic Cycle

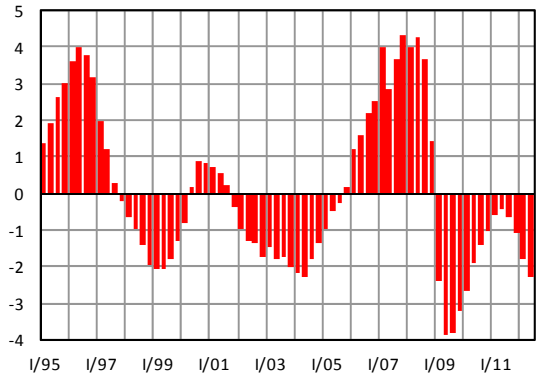
Sources of tables and graphs: CNB, CZSO, EC, Eurostat, own calculations

B.1 Position within the Economic Cycle

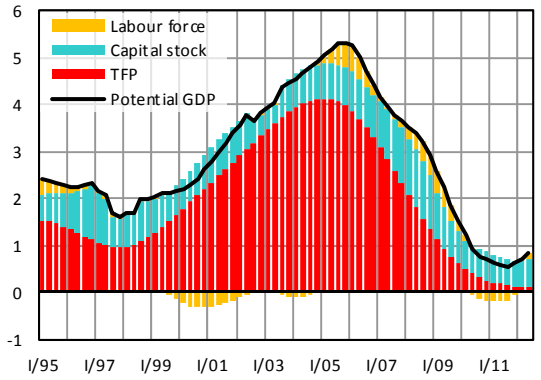
Potential product (PP), specified on the basis of a calculation by means of the Cobb–Douglas production function, indicates the level of GDP to be achieved with average utilisation of production factors. Growth of PP expresses possibilities for long-term sustainable growth of the economy without giving rise to imbalances. It can be broken down into contributions from the labour force, capital stock, and total factor productivity. The output gap identifies the cyclical position of the economy and expresses the relationship between GDP and PP. The concepts of potential product and output gap are used to analyse economic development and to calculate the structural balance of public budgets.

Under current conditions, when abrupt changes in the level of economic output have occurred, it is very difficult to distinguish the influence from deepening of the negative output gap from a slowing in PP growth. The results of these calculations display high instability and should be treated with caution.

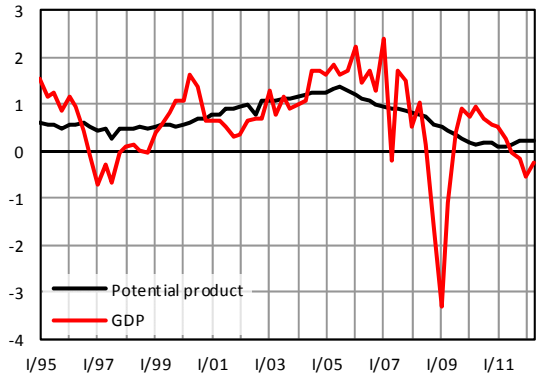
Graph B.1.1: **Output Gap**
in % of potential GDP



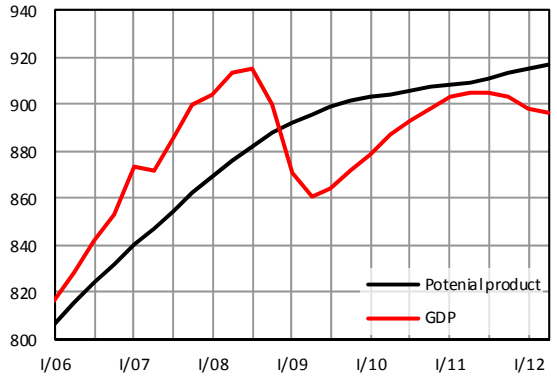
Graph B.1.2: **Potential Product Growth**
in %, contributions in percentage points



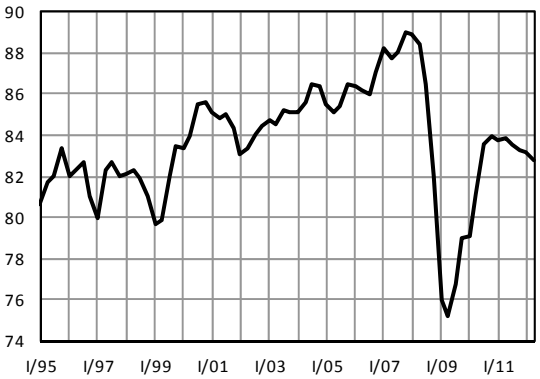
Graph B.1.3: **Potential Product and GDP**
QoQ growth in %



Graph B.1.4: **Levels of Potential Product and GDP**
in bill. CZK of 2005



Graph B.1.5: **Capacity Utilisation in Industry**
in %



Graph B.1.6: **Total Factor Productivity**
YoY growth in %

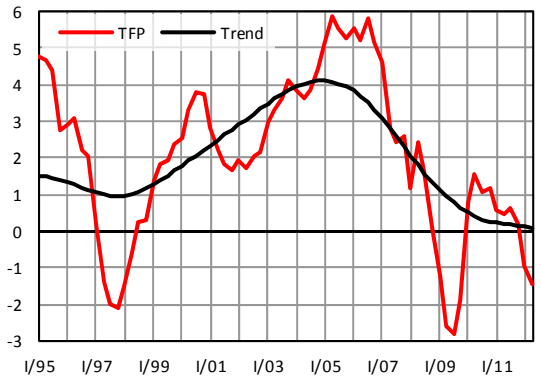


Table B.1: **Output Gap and Potential Product**

		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 H1
Output gap	*per cent*	**-1.8**	**-1.9**	**-0.4**	**1.9**	**3.7**	**3.3**	**-3.3**	**-1.7**	**-0.7**	**-2.0**
Potential output	*growth in %*	**4.2**	**4.7**	**5.2**	**4.9**	**3.9**	**3.2**	**2.1**	**0.9**	**0.6**	**0.8**
Contributions:											
TFP	*perc. points*	**3.7**	**4.0**	**4.1**	**3.6**	**2.7**	**1.7**	**0.9**	**0.4**	**0.2**	**0.1**
Fixed assets	*perc. points*	**0.5**	**0.7**	**0.8**	**0.9**	**1.1**	**1.2**	**0.8**	**0.6**	**0.6**	**0.6**
Participation rate	*perc. points*	**-0.2**	**-0.2**	**0.2**	**0.2**	**-0.2**	**0.0**	**0.3**	**0.2**	**0.2**	**0.4**
Demography [1)]	*perc. points*	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.4**	**0.1**	**-0.2**	**-0.4**	**-0.3**

[1)] *Contribution of growth of working-age population (15–64 years)*

Since the deep recession at the turn of 2008 and 2009, the Czech economy has constantly shown a negative **output gap**. With the modest recovery after the end of the recession, the gap was gradually reduced to –0.5% in Q2 2011, although the onset of a shallow recession in H2 2011 caused the production gap to deepen once again to –2.3% in Q2 2012.

Due to a relatively long period without significant economic growth, YoY growth in **potential product** fell below 1% in 2011 according to our calculations. We believe, however, that this estimate undervalues the reality.

The PP component most seriously affected is **total factor productivity** (TFP). TPF was 2.5% lower in Q2 2012 than at the peak of the cycle in Q3 2008 and has been decreasing QoQ for five quarters in a row. Its trend component, derived using the Hodrick–Prescott filter, grew by a negligible 0.1% YoY. The fact that the labour production factor is entered into the calculation according to the number of employed persons (which is stagnating) and not according to the number of hours worked (which has fallen dramatically – see Chapter C.3) may play a certain role here.

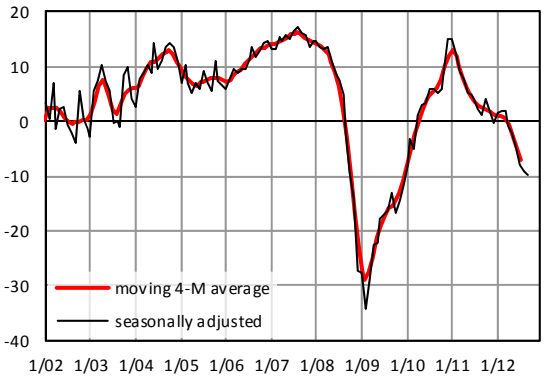
A drop in investment activity led to a decline in **capital stock's** contribution from 1.2 p.p. in 2008 to 0.6 p.p. in 2010, 2011, and the first half of 2012.

The **labour supply** has been markedly affected by the decrease in the number of working-age inhabitants, which stems from the process of population ageing as well as from a significant drop in immigration versus the situation recorded during 2006–2008. In the first half of 2012, the contribution of demographic development to potential GDP growth was negative, at –0.3 p.p. Nevertheless, the size of the labour force is not decreasing because the positive participation trend, measured as the ratio of labour force to the number of inhabitants aged 15–64, has accelerated and, with a contribution of 0.4 p.p., has become the second most significant factor in potential GDP growth.

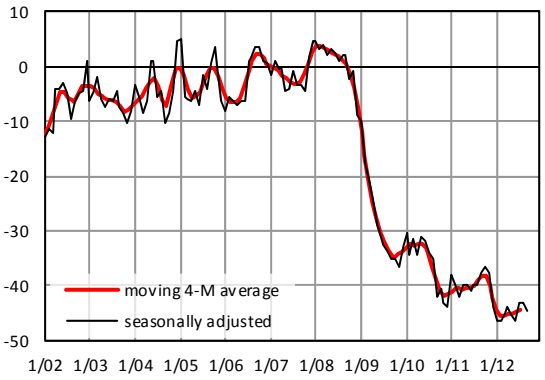
B.2 Business Cycle Indicators

Business cycle indicators express respondents' views as to the current situation and short-term outlook and serve to identify in advance possible turning points in the economic cycle. Their main advantage lies in the quick availability of results reflecting a wide range of influences shaping the expectations of economic entities.[3]

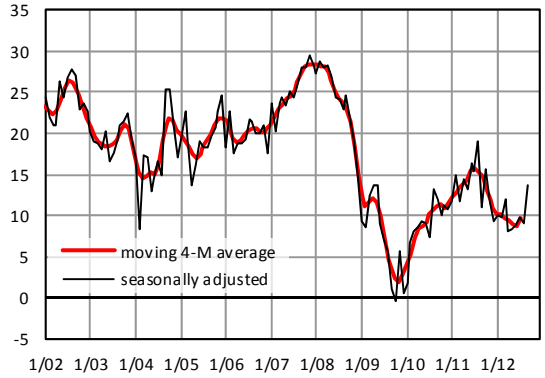
Graph B.2.1: **Industrial Confidence Indicator**



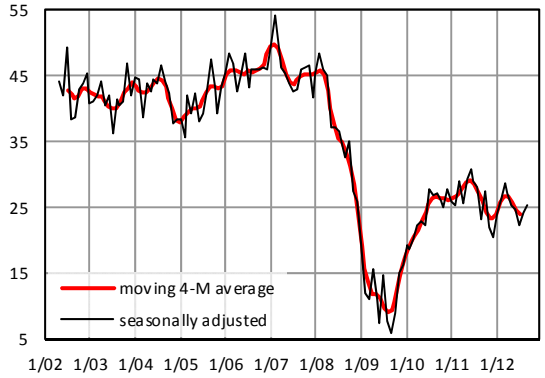
Graph B.2.2: **Construction Confidence Indicator**



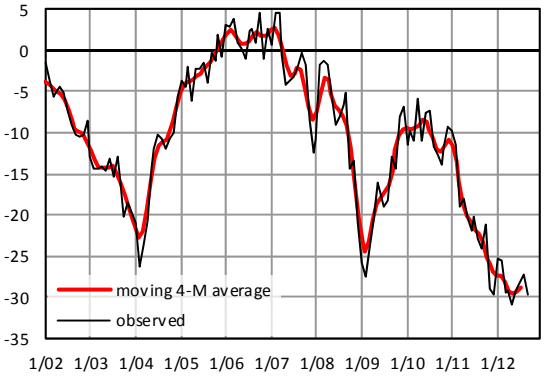
Graph B.2.3: **Retail Trade Confidence Indicator**



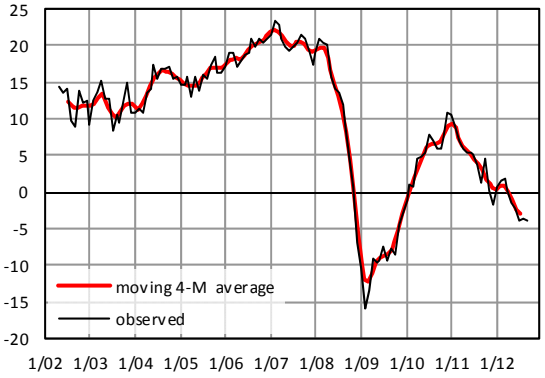
Graph B.2.4: **Selected Services Confidence Indicator**



Graph B.2.5: **Consumer Confidence Indicator**



Graph B.2.6: **Aggregate Confidence Indicator**



[3] *For the business cycle research methodology, see CZSO: http://www.czso.cz/eng/redakce.nsf/i/business_cycle_surveys.*

Business cycle indicators continued to develop in a predominantly negative manner during Q3 2012.

Most respondents evaluated total and foreign demand in **industry** in Q3 2012 negatively, with a slight decrease in negative assessments in the case of foreign demand in September 2012. The economic situation of businesses was assessed more pessimistically in Q3 as compared with the previous quarter. The three-month and six-month outlooks for the economic situation for the entire Q3 may be regarded as slightly poorer than for Q2 2012. The assessment of total and foreign demand in a three-month outlook also worsened slightly. The three-month outlook for employment clearly declined, which corresponds to the development of the outlook for overall demand and the economic situation of business.

Assessments as to the outlook for total demand in **construction** were unequivocally negative in Q3 2012, and on approximately the same level as in Q2.

According to respondents in **retail trade**, the assessment of the current economic situation and its three-month outlook slightly improved in Q3 2012. Its six-month outlook, on the other hand, more or less stagnated in comparison with Q2.

The assessment of the current economic situation in selected **services** sectors improved marginally in Q3 2012. Evaluation of the economic situation on a six-month horizon and the expected development of the number of employees in the coming 3 months essentially stagnated in comparison to Q2.

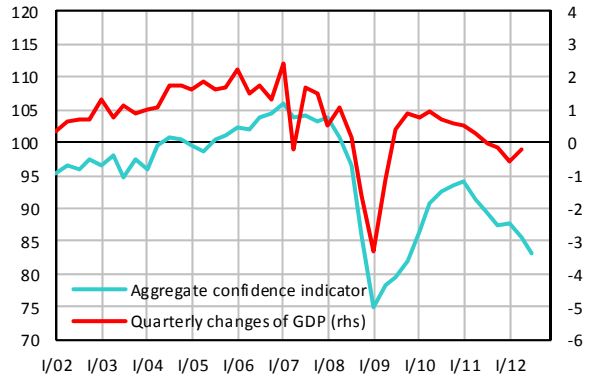
Consumer confidence continued to display extremely low values.

The **composite confidence indicator** showed a further QoQ decline in Q3 2012 (Graph B.2.6).

Using regression analysis, we quantified the relationship between the composite confidence indicator and the QoQ index of gross domestic product (GDP). The relationship between QoQ increments of GDP and lagged values of the composite indicator is a relatively loose one. Without the lag, the correlation between these two time series is ca 60%. The regression relationship between QoQ increments of GDP and the composite indicator (without lag) thus allows using at least the existing composite indicator published in advance of the quarterly national accounts. Below, we present only a qualitative graphical appraisal. It is clear that the composite confidence indicator is signalling further QoQ decline in GDP for Q3.

Graph B.2.7: **Aggregate confidence indicator and QoQ GDP growth**

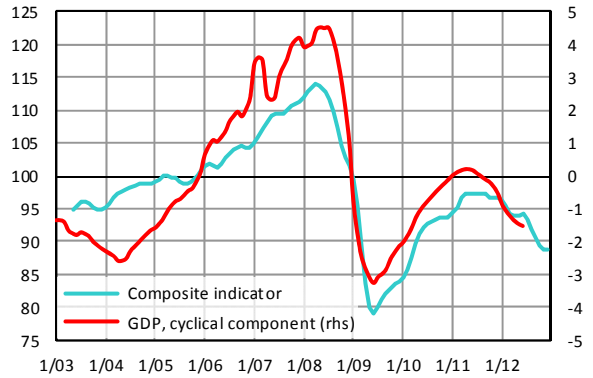
2005=100 (lhs), QoQ GDP growth in % (rhs)



For Q2 2012, the composite leading indicator correctly signalled a drop in the relative cyclical component of GDP, which was then confirmed by data published in September 2012. For Q3 2012, the indicator is signalling further decline of the relative cyclical component of GDP. Since the trend dynamics can reasonably be regarded as constant in the short term, the conclusion for QoQ GDP dynamics in Q3 is in accordance with the observations resulting from the comparison of QoQ changes in GDP and the composite confidence indicator. According to the composite indicator, the relative cyclical component should remain more or less level in Q4.

Graph B.2.8: **Composite Leading Indicator**

average 2005=100 (lhs), in % of GDP (rhs)
synchronized with cyclical component of GDP based on statistical methods (Hodrick-Prescott filter)



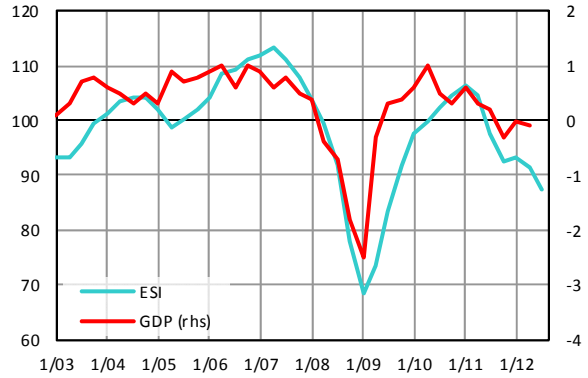
B.3 Business Cycle Indicators in the EU

In the Czech Republic's main trading partner countries, the composite confidence indicator published by the European Commission declined further in Q3 2012. Similar development also occurred on the level of the EU as a whole. Worsening of the assessments in industry and in the services sector, which have an aggregate weight of 70% in the indicators, contributed most. For Q3 2012, the indicator signals further QoQ decline in GDP within the EU27.

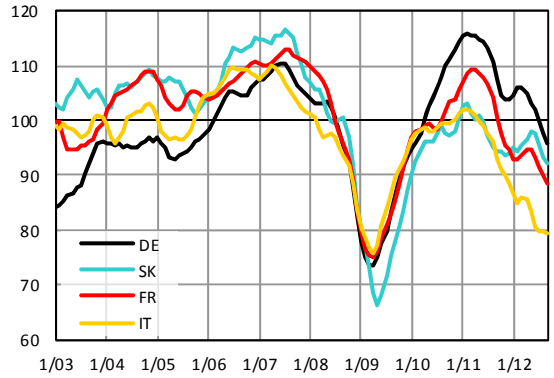
Consumer confidence decreased markedly in Q3 2012, even in the hitherto respectably positioned Germany. The composite confidence indicator has fallen sharply in Italy and in France. For Q3, the composite indicator signals a slowdown in QoQ GDP growth in Germany and Slovakia and acceleration of the decline in France.

The composite leading indicator signals a decline in the relative cyclical component by the end of 2012 both in the EU and in Germany. Considering the stable dynamics of potential product in the short term, the substantial decrease in the relative cyclical component can be attributed to the QoQ decline in GDP.

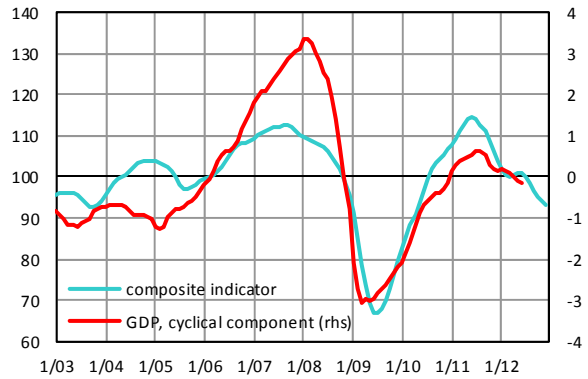
Graph B.3.1: **Aggregate confidence indicator and GDP growth in EU27**
indicator – quarterly averages,QoQ growth in %, sa data



Graph B.3.2: **Aggregate confidence indicator, selected trading partner countries**
3-month moving averages



Graph B.3.3: **EU – composite leading indicator**
monthly data, 2005=100, cyclical component in % of trend GDP



Graph B.3.4: **Germany – composite leading indicator**
monthly data, 2005=100, cyclical component in % of trend GDP