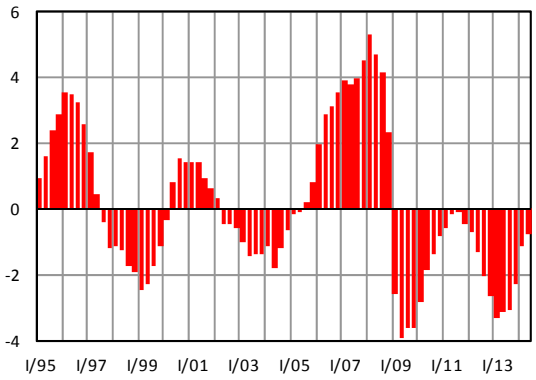
B Economic Cycle

B.1 Position within the Economic Cycle

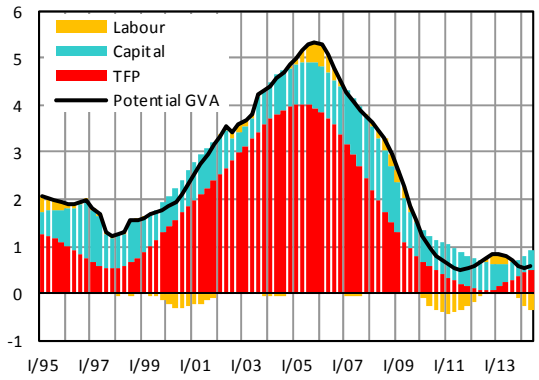
Potential product, specified on the basis of a calculation by means of the Cobb–Douglas production function, indicates the level of economic output to be achieved with average utilization of production factors. Growth of potential product expresses possibilities for long-term sustainable growth of the 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 actual product and potential product. The concepts of potential product and output gap are used to analyze the economic cycle and to calculate the structural balance of public budgets.

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



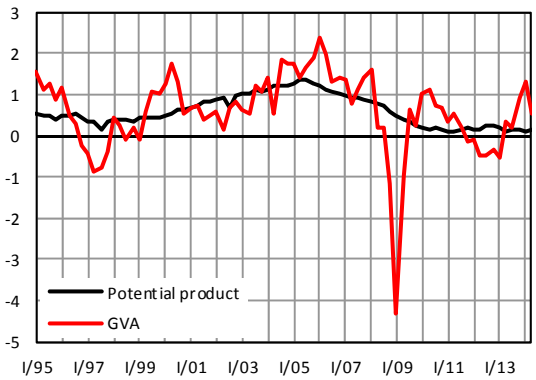
Source: CZSO, own calculations

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



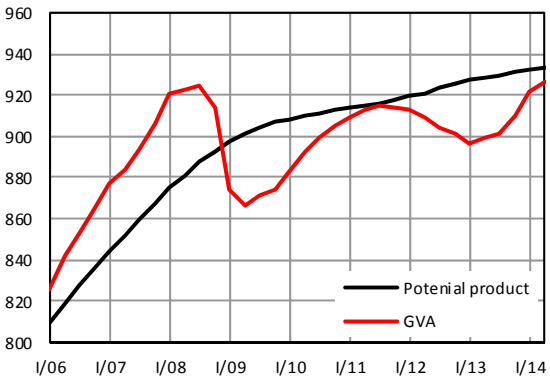
Source: CZSO, own calculations

Graph B.1.3: **Potential Product and GVA**
QoQ growth rate, in %



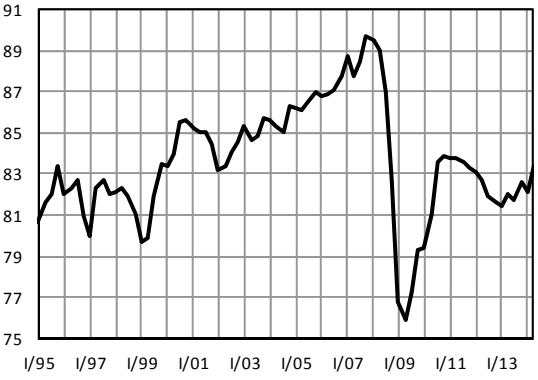
Source: CZSO, own calculations

Graph B.1.4: **Levels of Potential Product and GVA**
in bill. CZK of 2010



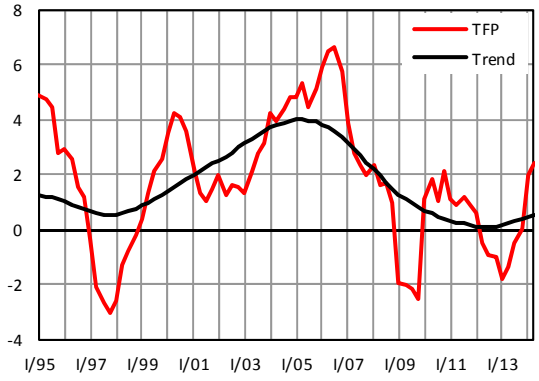
Source: CZSO, own calculations

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



Source: CZSO

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



Source: CZSO, own calculations

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

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 H1
Output gap	*per cent*	**0.2**	**2.9**	**4.1**	**4.1**	**-3.4**	**-1.7**	**-0.3**	**-1.7**	**-3.0**	**-1.0**
Potential product [1)]	*growth in %*	**5.2**	**4.9**	**4.0**	**3.3**	**2.1**	**0.9**	**0.5**	**0.7**	**0.7**	**0.6**
Contributions:											
– Trend TFP	*perc. points*	**4.0**	**3.6**	**2.8**	**1.9**	**1.0**	**0.5**	**0.2**	**0.1**	**0.3**	**0.5**
– Fixed assets	*perc. points*	**0.9**	**1.0**	**1.2**	**1.3**	**0.9**	**0.7**	**0.7**	**0.6**	**0.4**	**0.4**
– Demography [2)]	*perc. points*	**0.2**	**0.2**	**0.3**	**0.3**	**0.1**	**-0.2**	**-0.4**	**-0.5**	**-0.5**	**-0.5**
– Participation rate	*perc. points*	**0.2**	**0.2**	**-0.2**	**0.0**	**0.3**	**0.2**	**0.3**	**0.8**	**0.9**	**0.5**
– Usually worked hours	*perc. points*	**0.0**	**-0.1**	**-0.1**	**-0.1**	**-0.2**	**-0.2**	**-0.2**	**-0.3**	**-0.3**	**-0.3**

Source: CZSO, own calculations
1) Based on gross value added
2) Contribution of growth of working-age population (15–64 years)

The transition to the new national accounts standard ESA 2010 (for more details, see Box C.1) had only a limited impact on the results of the analysis of the business cycle, the course of which remained basically unchanged. In the period from the beginning of 1995 to the first quarter of 2014, the average growth rate of potential product (and also real GVA) decreased from 2.6% to 2.5%, while the average contribution of TFP decreased by 0.2 pp and the contribution of capital stock, in contrast, increased by 0.1 pp. These changes were distributed more or less equally across the whole time series.

Thanks to the recent economic recovery, the negative **output gap** narrowed from –3.3% at the end of the recession in the first quarter of 2013 to –0.8% in the second quarter of 2014 (see Graph B.1.1). So far, the negative output gap has been reflected in the economy by high registered unemployment, below-average capacity utilization and slow growth of prices and wages.

Any forecast for future development of the output gap is always associated with a considerable degree of uncertainty. Yet it is possible to infer that if the Macroeconomic Forecast is accurate, the negative output gap should close during 2015. In the years of the outlook, the economy might already find itself with a positive output gap.

The expected development of the output gap is primarily caused by the low growth in **potential product.** Due to long periods of recession or sluggish economic growth, growth of potential product has slowed considerably, and it was 0.6% YoY in the second quarter of 2014.

This slowdown was mainly caused by **total factor productivity**. Its trend component, derived from the Hodrick-Prescott filter, has almost switched to stagnation in 2012. With respect to the end point problem, however, any apparent signs of improvement at the end of the time series will have to be confirmed in the following periods.

The long-lasting and deep slump in gross fixed capital formation in 2008–2013 has led to a drop in the contribution of **capital stock** from 1.3 pp in 2008 to 0.4 pp in 2013 and in the first half of 2014. Recovery in investment activity from the beginning of 2014 will manifest itself in the contribution of capital stock only with delay.

The **labour supply** is affected by a long-term decrease in the working-age population caused by the population ageing process (see Chapter A.5). In the first half of 2014, **demographic development** slowed potential product growth by 0.5 pp.

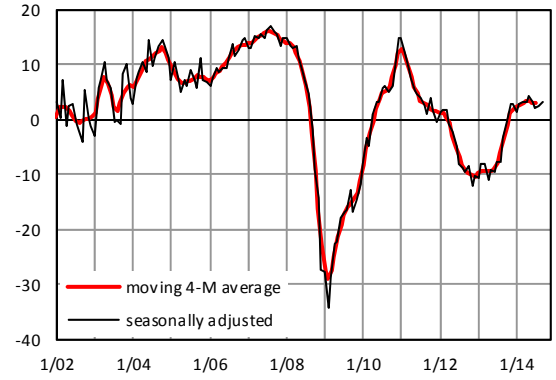
The negative impact of the decline in the population aged 15-64 years on the labour supply is largely compensated by an increase in the **participation rate** (ratio of the labour force to the population aged 15–64 years). Our calculations show that in the long run the rate of participation in the Czech economy has an anti-cyclical character. Therefore, the decrease in its contribution to potential product growth from 0.9 pp in 2013 to 0.5 pp in the second quarter of 2014 reflects the economic cycle development. In the following period, there should not be any further decrease, as the structural factor of the participation rate (increase in the number of inhabitants in the age groups with naturally high participation) should start to prevail.

In the Czech Republic, regular average working time is shortening. This autonomous process, which is a consequence of the country now approaching the standards of more developed countries, has been intensified recently by the expansion of part-time jobs and a more flexible use of occasional work. The lower number of **hours** usually **worked** slowed potential product growth by 0.3 pp in the first half of 2014.

B.2 Business Cycle Indicators

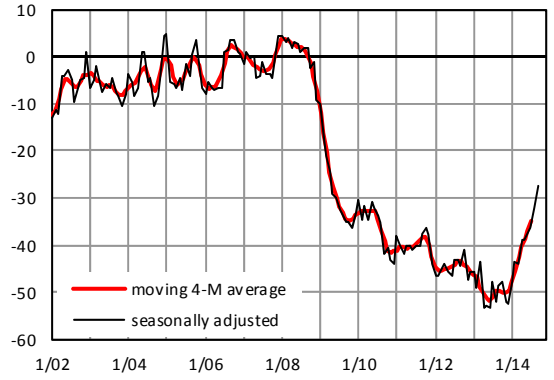
Business cycle indicators express respondents' views as to the current situation and short-term outlook and serve to identify in advance possible turning points in the economic cycle. Their main advantage lies in the quick availability of results reflecting a wide range of influences shaping the expectations of economic entities.2

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



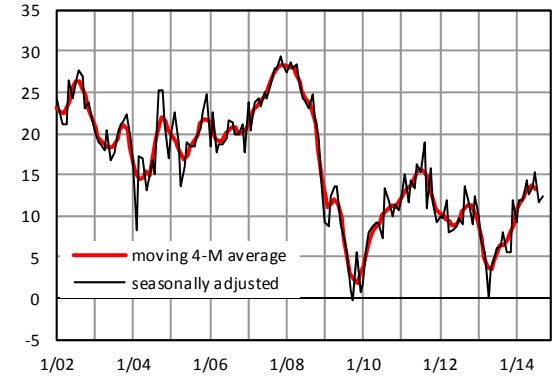
Source: CZSO

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



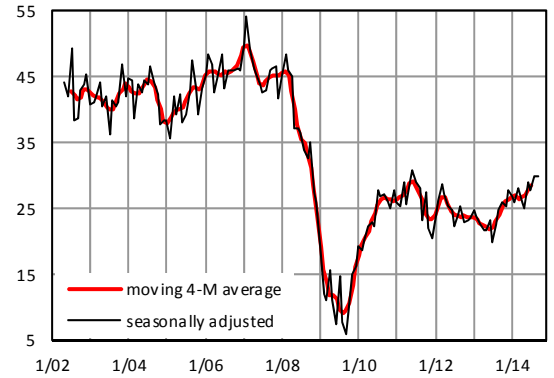
Source: CZSO

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



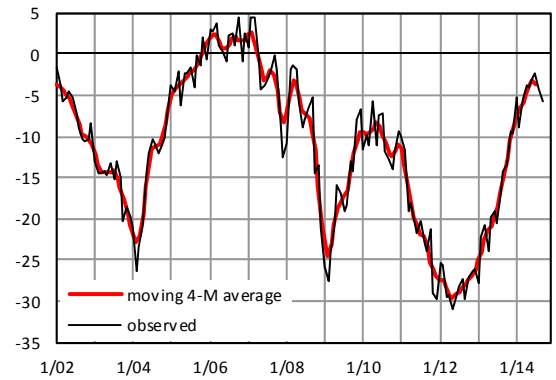
Source: CZSO

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



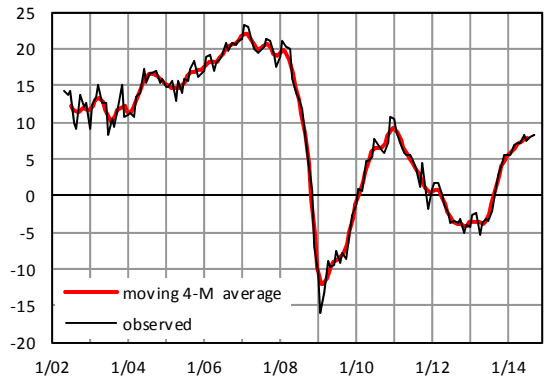
Source: CZSO

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



Source: CZSO

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

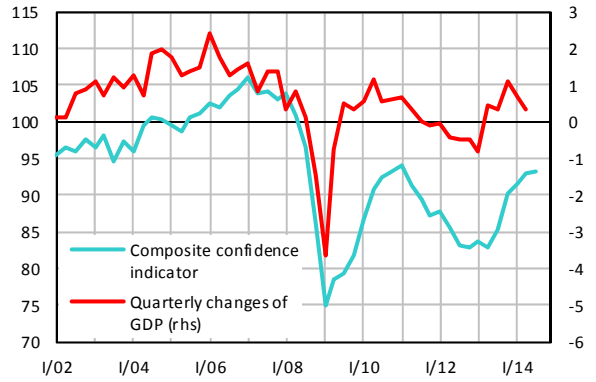


Source: CZSO

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

Graph B.2.7: **Composite confidence indicator and QoQ GDP Growth**

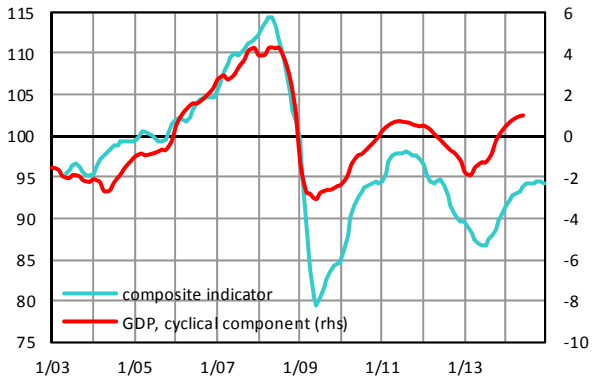
2005=100 (lhs), QoQ GDP growth in % (rhs)



Source: CZSO

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

average 2005=100 (lhs), in % of GDP (rhs)



Source: CZSO, own calculations

Note: synchronized with cyclical component of GDP based on statistical methods (Hodrick-Prescott filter)

Information emanating from the business cycle survey analysis is less favourable compared to the July Macroeconomic Forecast.

In the period between the second and third quarters of 2014, confidence indicators did not generally show any substantial changes. Confidence indicators stagnated or decreased slightly in industry and trade, although respondents' assessments in both sectors are predominantly positive. On the other hand, construction and selected market services showed a slight increase. In market services, the positive assessments of respondents continue to predominate, while negative assessments continue to far outweigh positive ones in construction.

Consumer sentiment in the aforementioned period deteriorated, meaning respondents' assessments continued to be largely negative. However, with regard to the previous development of the time series, this might be considered for the time being as correction to the long-term growth in the value of the given indicator.

In contrast, the composite and business indicators showed a further slight increase in their values.

Although the link between the values of the composite confidence indicator and QoQ changes in real GDP is not particularly strong (without any lag their correlation is approximately 60%), it does at least enable us to utilize the fact that the composite indicator is published in advance of quarterly national accounts. Therefore, only a qualitative assessment is presented in Graph B.2.7. The composite confidence indicator implied that GDP would grow in QoQ terms in the third quarter of 2014.

The composite leading indicator implied that quarterly GDP growth would be positive and that the relative cyclical component of GDP would improve in the second quarter of 2014, which was confirmed by the released data.

The indicator signals stagnation of the relative cyclical component in the third and fourth quarters of 2014. This is consistent with the quarterly GDP growth rate between the values of the first and second quarters of 2014, taking into account the fact that short-run dynamics of the trend can be regarded as constant and that at present the trend is stagnating.