

GLOBAL ECONOMIC OUTLOOK - MAY

Monetary Department
External Economic Relations Division

2016

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Cut-off date for data

13 May 2016

CF survey date

9 May 2016

GEO publication date

20 May 2016

Notes to charts

ECB and Fed: midpoint of the range of forecasts.

The arrows in the GDP and inflation outlooks indicate the direction of revisions compared to the last GEO. If no arrow is shown, no new forecast is available. Asterisks indicate first published forecasts for given year. Historical data are taken from CF.

Forecasts for EURIBOR and LIBOR rates are based on implied rates from interbank market yield curve (FRA rates are used from 4M to 15M and adjusted IRS rates for longer horizons). Forecasts for German and US government bond yields (10Y Bund and 10Y Treasury) are taken from CF.

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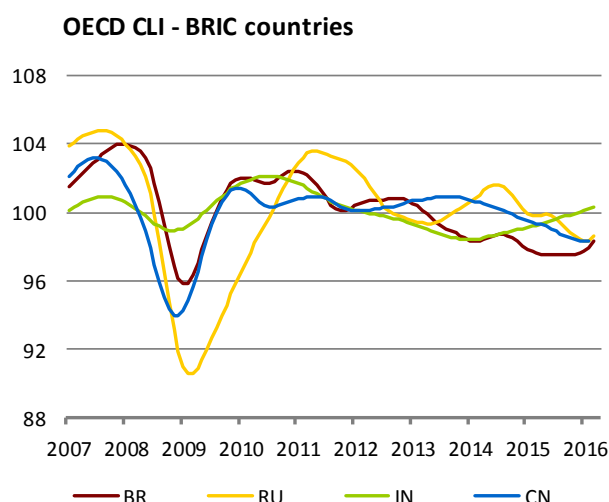
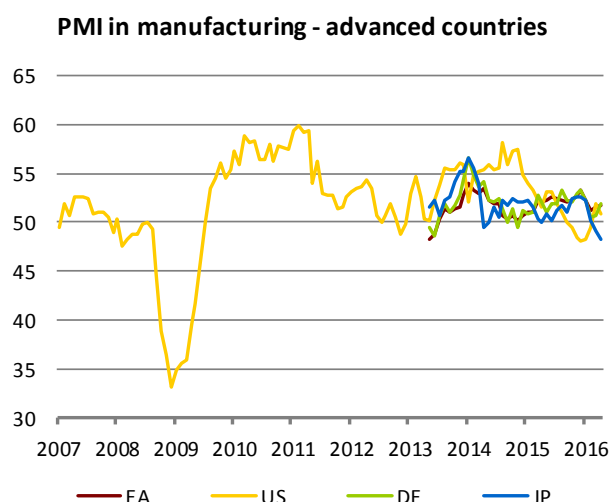
The May issue of Global Economic Outlook presents the regular monthly overview of recent and expected developments in selected territories, focusing on key economic variables: inflation, GDP growth, leading indicators, interest rates, exchange rates and commodity prices. In this issue we also look at one of the most frequently addressed topics in applied economics: competitiveness. We focus on comparing the competitiveness of the countries monitored in this monthly publication using several aggregate indicators. A multi-criteria assessment reveals the USA to be the most competitive country among the monitored countries in the period under review. Other developed territories such as Germany, Japan, the euro area and the Czech Republic also rank highly.

The currently fastest-growing advanced economy, the USA, recorded a further slowdown in its economic growth outlook. It is still expected to grow faster than the euro area and its economically strongest member, i.e. Germany, but the difference in GDP growth rates is narrowing. The latest data also confirm that economic growth in the euro area is no longer being driven by Germany, which should in fact record the same rate of growth as the euro area this year and even slightly lower growth next year. The Japanese economy is still short of achieving the goals of "Abenomics" and its growth outlooks have been lowered to just 0.5%, where they are expected to stay in 2017. New data on inflation in the main global economies this year also mostly saw downward revisions compared to the previous month. For the euro area and especially Japan, consumer price inflation is expected to remain only just at non-negative levels. Of the economies under review, only the USA is thus expected to record inflation visibly above the "magic" level of 2% at the end of 2017.

The GDP growth outlooks for emerging BRIC countries were mixed as usual. Those for the Indian economy stabilised just above 7.5% until the end of next year. The outlooks for China are similar; its economic growth is expected to stabilise around 6.5%. Inflation in China is slowly heading below 2%. Inflation in India is also expected to decrease, although from levels several percentage points higher. In contrast to China, this can be interpreted as a move in the right direction. Compared to these two economies, the economic developments in Brazil and Russia are considerably different. The Russian economy will again be unable to avoid slumpflation (an economic slump accompanied by relatively high inflation) this year, but it currently seems that next year could see a return to economic growth amid visibly lower inflation. By contrast, the prospects for the Brazilian economy are not very optimistic. This probably partly reflects the changes in the political situation in Brazil. A further drop in Brazil's economic growth to almost -4% is expected this year. Analysts currently believe that next year will see a return to positive, albeit modest, growth and a decline in inflation slightly below 6%.

The outlooks for euro area interest rates remain very low, staying in negative territory at the shorter end of the yield curve, with de facto no sign of visible growth until the end of 2017. In the case of the USA, it can be expected that the Fed will not increase interest rates in the first half of this year owing to the worse outlooks for the US economy. According to CF, the US dollar will appreciate against all the monitored currencies at the one-year horizon. The market outlook for the oil price moved slightly upwards again compared to the previous month and remains slightly rising along its entire path. The Brent crude oil price is expected to reach approximately USD 48 a barrel at the one-year horizon. Natural gas prices based on long-term contracts, which are indexed to oil prices usually with a lag of 6 to 9 months, are not expected to rise until the final quarter of this year.

Leading indicators for countries monitored in the GEO

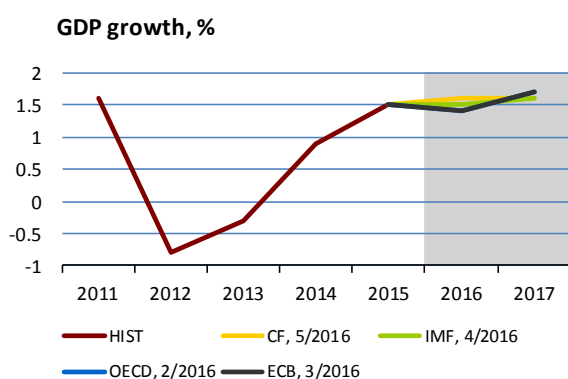


Zdroj: Bloomberg, Datastream

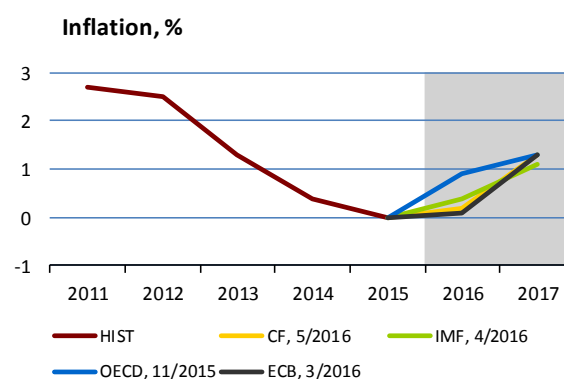
II.1 Euro area

The euro area economy is expected to grow at the same pace as in 2015 this year. The May CF slightly increased its growth estimate for this year. The euro area is also expected to grow at least at the same rate in 2017. According to Eurostat's flash estimate, GDP rose by 0.6% compared to the previous quarter in Q1. This represents an acceleration of economic growth. In year-on-year terms, GDP growth was flat at 1.6%. The current account surplus continued to rise, reaching 3.2% of GDP in 2015 Q4 in annual cumulative terms. However, the latest data from industry excluding construction are not very favourable, with industrial production continuing to decline month on month in March. In year-on-year terms industrial production was flat. The PMI leading indicator in manufacturing stayed at slightly expansionary levels in April, which may conversely indicate a change for the better in the future. In March, real retail sales also fell month on month and their year-on-year growth slowed to 2%.

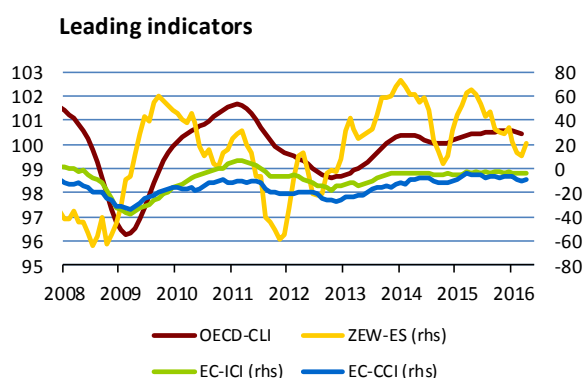
Consumer price inflation is expected to be flat just above zero this year and accelerate above 1% in 2017. Prices fell by 0.2% year on year in April, due solely to a drop in energy prices as in previous months. Inflation excluding energy and food prices stood at 0.7% despite slowing. Annual M3 growth has long been stable at 5%. Short-term money market interest rates and their outlook remain negative as a result of the ECB's accommodative monetary policy. The yield on the ten-year German government bond fell slightly further in May, but CF expects it to rise to 0.6% at the one-year horizon.



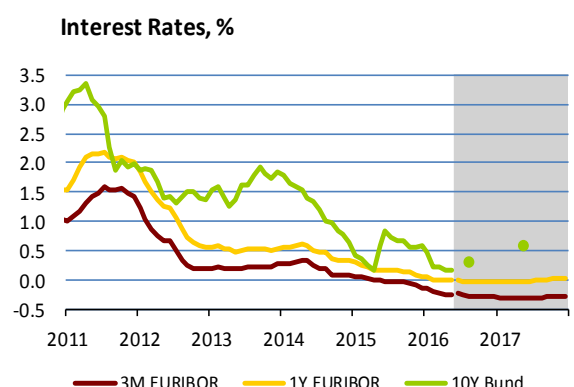
	CF	IMF	OECD	ECB
2016	1.6	1.5	1.4	1.4
2017	1.6	1.6	1.7	1.7



	CF	IMF	OECD	ECB
2016	0.2	0.4	0.9	0.1
2017	1.3	1.1	1.3	1.3



	OECD-CLI	EC-ICI	EC-CCI	ZEW-ES
2/16	100.5	-4.1	-8.8	13.6
3/16	100.4	-4.2	-9.7	10.6
4/16		-3.7	-9.3	21.5

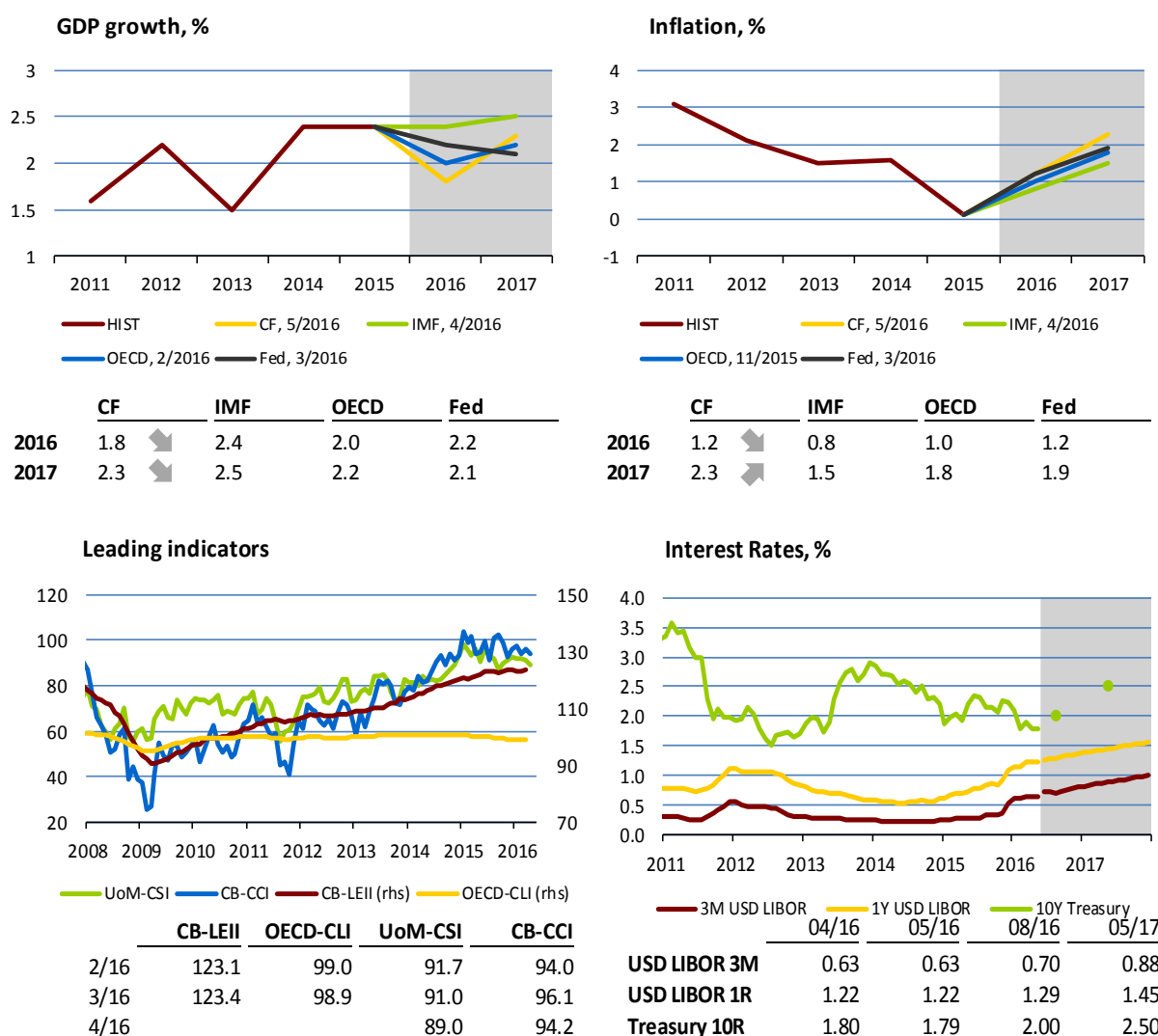


	04/16	05/16	08/16	05/17
3M EURIBOR	-0.25	-0.25	-0.27	-0.31
1Y EURIBOR	-0.01	-0.01	-0.03	-0.02
10Y Bund	0.18	0.16	0.30	0.60

II.2 United States

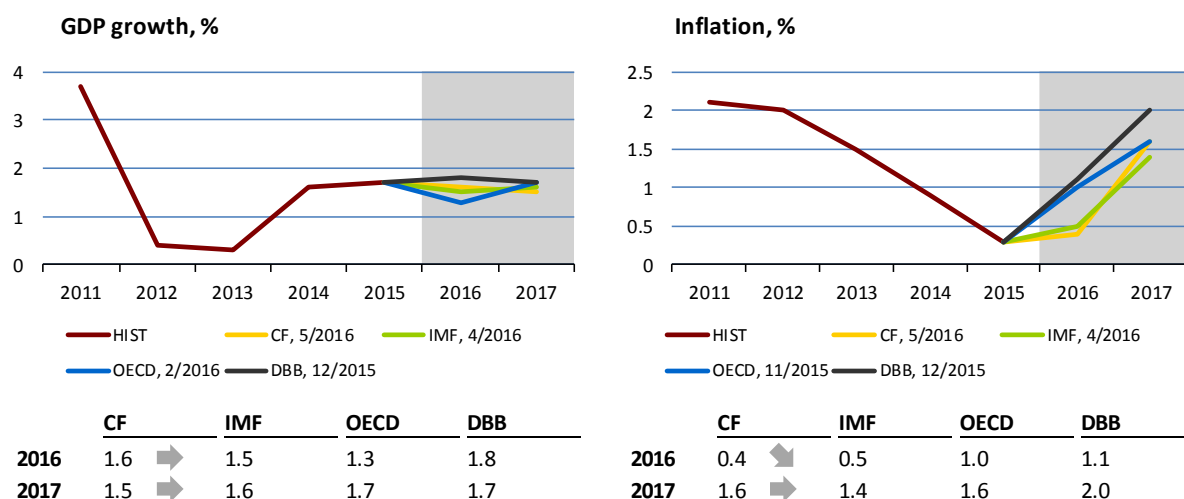
The US economy slowed considerably in 2016 Q1, with GDP growth falling to 0.5% (in annualised quarterly terms), the lowest figure in two years. Private consumption grew at 1.8% (in annualised quarterly terms), but capital expenditure and inventories declined compared to the previous quarter. Industrial production and exports continued to be affected by the appreciating dollar and still low oil prices. According to the data released so far, no marked acceleration in growth can be expected in Q2. The PMI leading indicator published by ISM fell slightly in April, owing mainly to a decline in the inventories component, but remains in the expansionary band (50.8). A deterioration is also visible on the labour market. Growth in non-farm payrolls in April (160,000) lagged far behind expectations (200,000). The data for the previous two months were also revised downwards (by 19,000). The unemployment rate remains at a record low (5%) and the participation rate edged down to 62.8%. Consumer confidence declined slightly in April, but retail sales exceeded expectations (rising by 3% year on year). A cooling was also visible on the housing market, where the numbers of new house sales and newly issued building permits fell again in March.

Inflation pressures decreased in March. Annual consumer price inflation fell to 0.9% and core inflation slowed to 2.2%. New data, especially from the labour market, fuelled doubts about whether the US economy is performing strongly enough for the Fed to continue tightening monetary policy. Comments made by a number of Fed representatives hint at higher rates as early as June, but according to a Reuters survey the markets are not expecting any further action until September. More than 65% of CF panellists in the April survey believed that rates would not be raised at the June meeting. The change in expectations led to a decline in the implied rate path and a weakening of the US dollar, which approached a 15-month low in early May. The May CF lowered the GDP growth forecast for both 2016 and 2017 as well as the inflation outlook for this year. By contrast, CF expects inflation to accelerate more markedly next year.



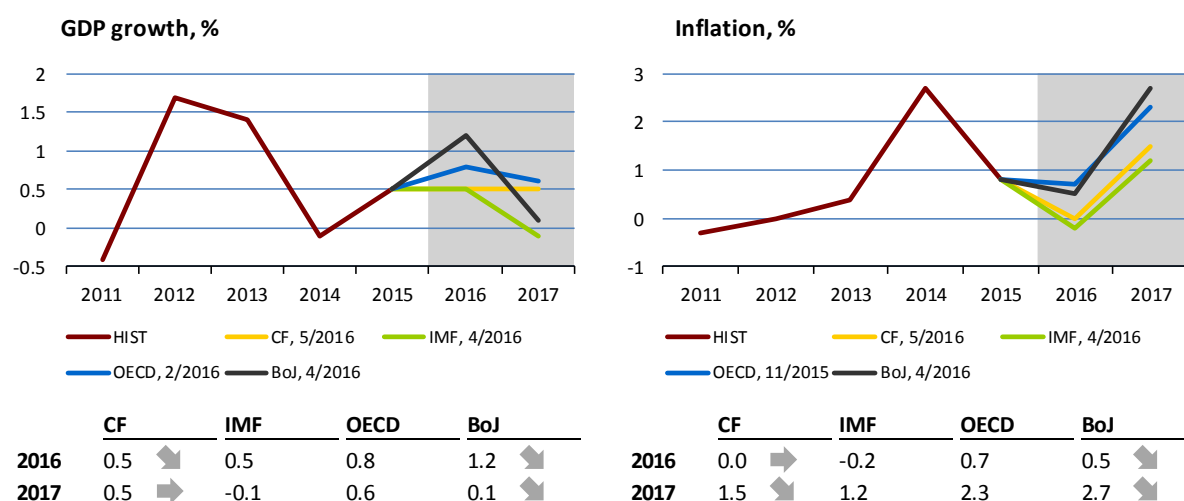
II.3 Germany

The rate of growth of the German economy increased in 2016 Q1 compared to the previous quarter in both quarter-on-quarter and year-on-year terms (from 0.3% to 0.7% and from 1.3% to 1.6% respectively), mainly because of a surge in household and government consumption. The faster growth was also fuelled by favourable weather, which fostered a rise in construction output. A rise in all leading indicators in March and April suggests continued strong growth in the period ahead. The May CF predicts GDP growth of 1.6% in 2016 as a whole and a similar pace of growth next year. Inflation turned negative again in April, with consumer prices falling by 0.1% year on year following an increase of 0.3% in March. The decrease in inflation was due mainly to a stronger fall in energy prices and slower growth in food and services prices. The decline in industrial producer prices deepened to -3.1% in March. CF lowered its estimate of German inflation in 2016 as a whole (to 0.4%) but left its prediction for next year unchanged (at 1.6%).



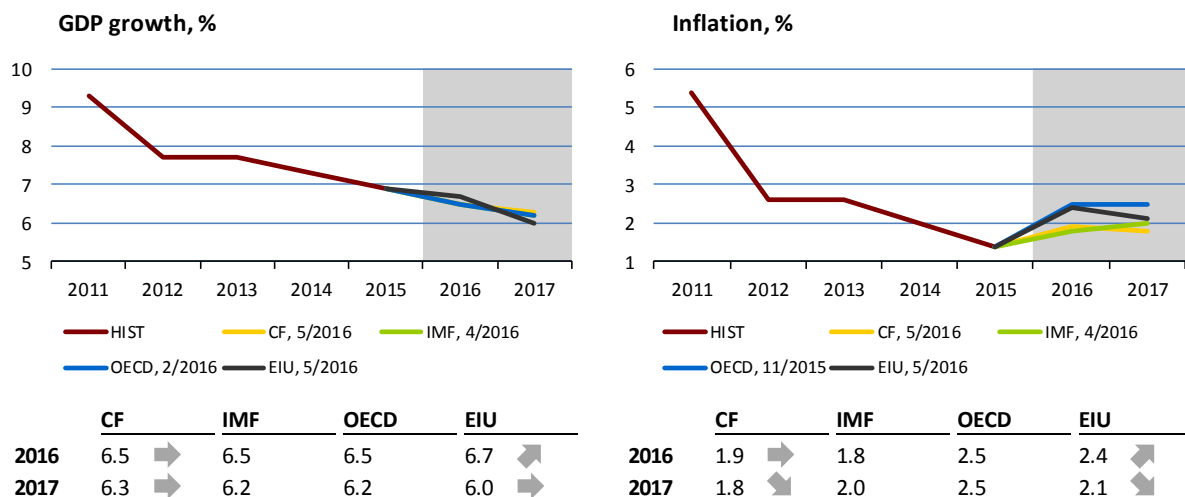
II.4 Japan

The publication of the GDP growth figures for 2016 Q1 is anxiously awaited. A fall into recession, as suggested by recent data, would mean that the goals of "Abenomics" have still not been achieved. Following a marked decline in February, annual industrial production growth was flat close to zero in March, while the PMI leading indicator of manufacturing activity has been falling since the end of last year and was in the contractionary band in April (48.2). Consumer demand is also weak, with retail sales declining by 1.1% year on year in March. Consumer confidence likewise failed to improve. Inflation pressures remain contained, while the domestic currency has been strengthening against the US dollar for months now. The appreciation of the yen poses a significant risk of non-fulfilment of the inflation target. However, the central bank has not introduced any new measures. The May CF again lowered its forecast for economic growth in 2016 and inflation in 2017. The new BoJ outlook also expects lower GDP growth and inflation in both periods monitored.



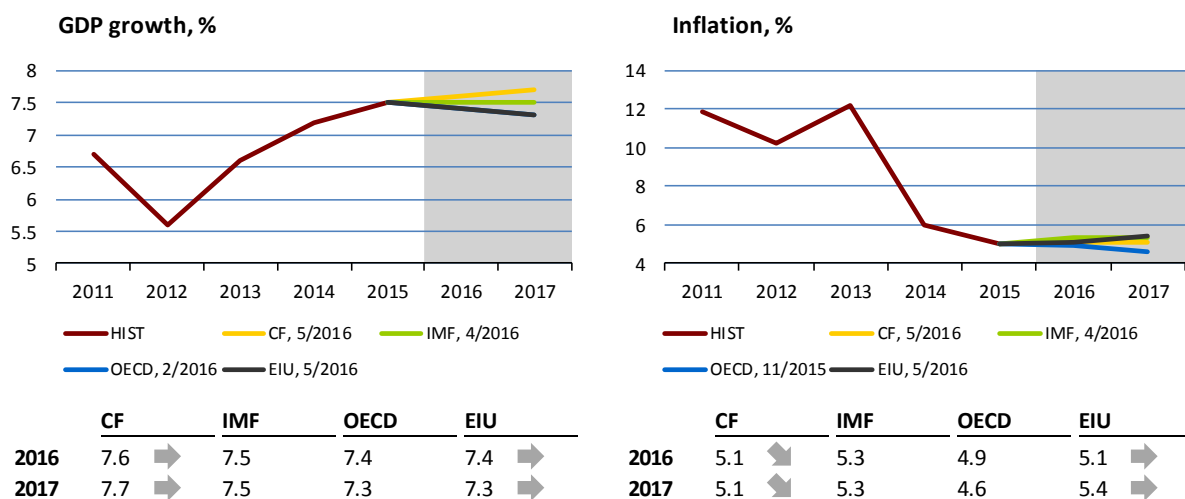
III.1 China

Chinese industrial production rose by 6.8% year on year in March. No comparable figure has been recorded since mid-2015. However, the PMI CAIXIN leading indicator again moved slightly further from the boundary between expansion and recession, reaching 49.7 in April. After the seasonal effects of the floating start of the new lunar year faded out, nominal exports fell again in April, albeit only slightly (by 1.8% year on year) compared to the declines observed last year. However, the dynamics of nominal imports are even worse, as they declined by almost 11% in the same month, roughly comparable with the developments in 2015 H2. The May CF left its outlook for this year unchanged and expects GDP growth of 6.5% and inflation of 1.9%. Next year, GDP growth will slow by a further 0.2 pp and inflation will moderate by 0.1 pp.



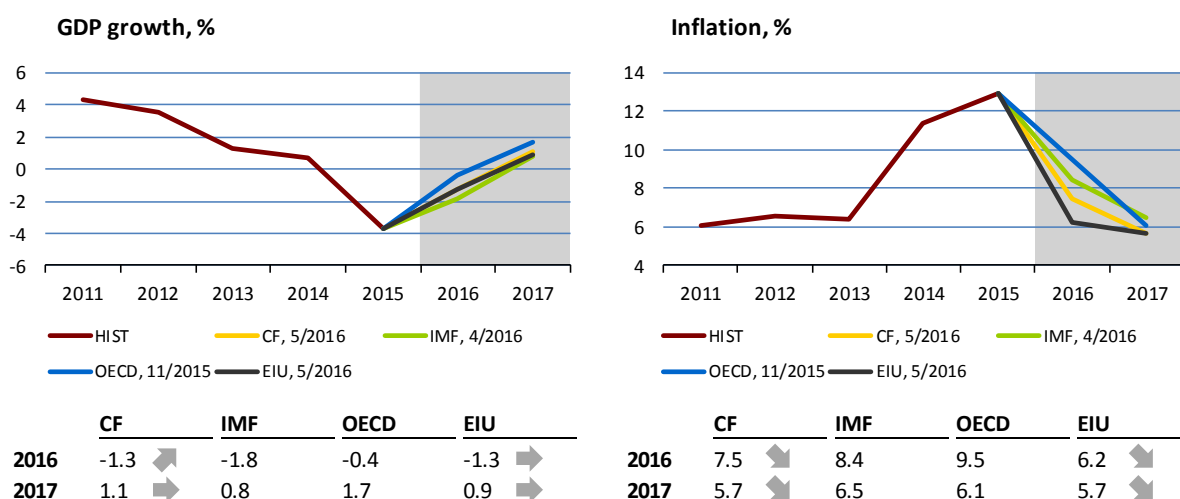
III.2 India

India became the top destination for foreign direct investment in 2015, thanks mainly to the "Make in India" programme, which is creating favourable conditions for investment in all areas. However, industrial production unexpectedly rose by just 0.1% year on year in March, mainly because of a drop in production of electrical equipment. The PMI in manufacturing declined to 50.5 points in April. This was due to an only slight increase in output and stagnating new orders. The GDP growth outlooks remain unchanged for this fiscal year and the next. Inflation in India rose to 5.4% in April, 0.6 pp higher than a month earlier. Prices of legumes saw the sharpest increase, followed by prices of sugar and spices. CF lowered its prediction for both fiscal years, by 0.1 pp and 0.2 pp respectively. The EIU left its inflation forecasts unchanged.



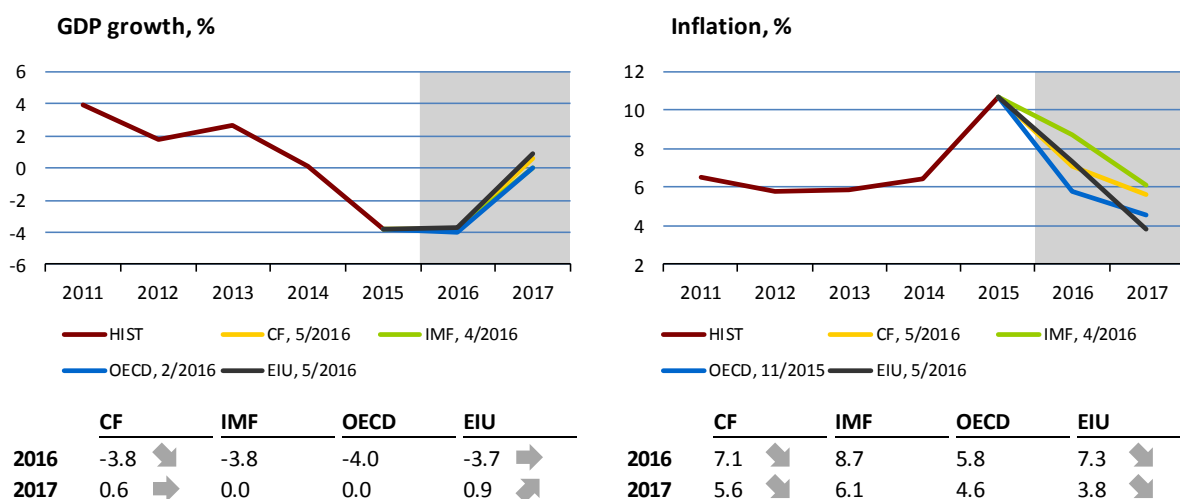
III.3 Russia

According to the Russian statistical office's second estimate, published in April, Russian GDP fell by 3.7% in 2015, a slightly more optimistic outcome than last year's CF outlooks, which had expected a decrease of around 3.9% in January–December on average and even 4% in December. The most recent IMF outlook for 2015 had predicted a decline in economic performance of 3.8% and OECD had expected a drop of 4%. Although the result is marginally better, Russia's economic situation remains difficult. Industrial production declined again in March (by 0.5%) and unemployment rose slightly. In addition, the decrease in nominal exports deepened to almost 33% year on year, but the drop in imports slowed. Inflation pressures weakened slightly in March. Producer price inflation slowed to 0.8% and headline inflation to 7.2%. The Central Bank of Russia lowered its GDP contraction outlook for 2016 Q1 to 1.7%–2.5%. According to the May CF, GDP will fall by 1.3% in 2016 as a whole. Consumer prices will grow by 7.5%.



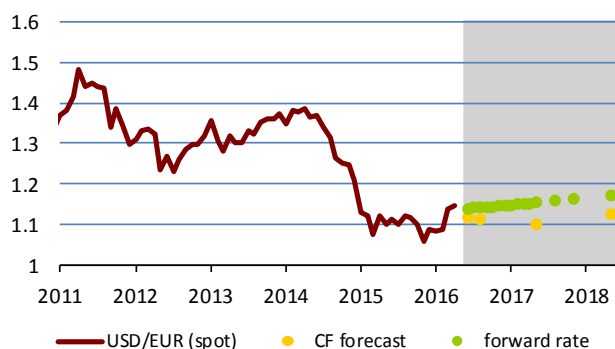
III.4 Brazil

The Brazilian Senate decided to start the process of impeaching President Dilma Rousseff, who will now wait out of office for the Senate's final verdict (for a maximum of 180 days). The political instability, a deeper-than-expected economic crisis and persisting uncertainty regarding any improvement in the outlooks for growth, public finances and government debt prompted Fitch to downgrade Brazil's rating deeper into speculative territory. Moreover, the outlook remains negative. Industrial production fell by 11.4% year on year in March and the PMI in manufacturing hit a record low of 42.6 in April. A sharp drop in new orders and, in turn, output is causing firms to cut production and employee numbers. CF and the EIU expect GDP to decline by 3.8% and 3.7% respectively this year. Next year they expect the economy to return to growth of 0.6% and 0.9% respectively. Inflation went down by 0.1 pp to 9.3% in April, mainly because of slower growth in prices of housing, electricity and transport. The inflation outlooks for both years were lowered due to the gradual decrease in the inflation rate.



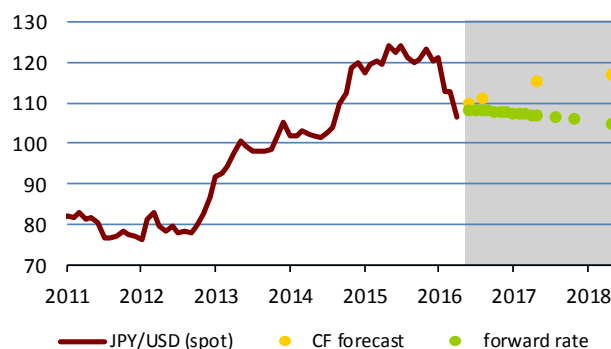
IV. Outlook of exchange rates

The US dollar (USD/EUR)



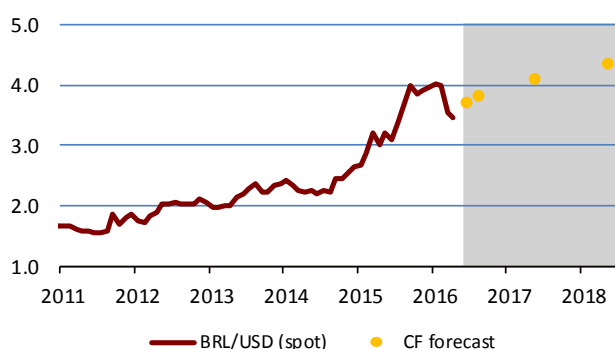
	9/5/16	06/16	08/16	05/17	05/18
spot rate	1.138				
CF forecast		1.118	1.112	1.102	1.125
forward rate		1.139	1.142	1.154	1.173

The Japanese yen (JPY/USD)



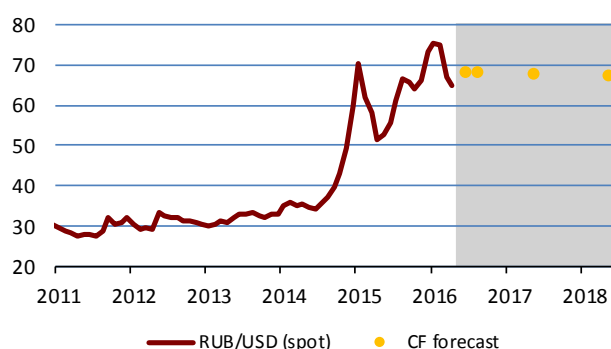
	9/5/16	06/16	08/16	05/17	05/18
spot rate	108.3				
CF forecast		109.9	111.1	115.3	117.1
forward rate		108.2	108.0	106.8	104.8

The Brazilian real (BRL/USD)



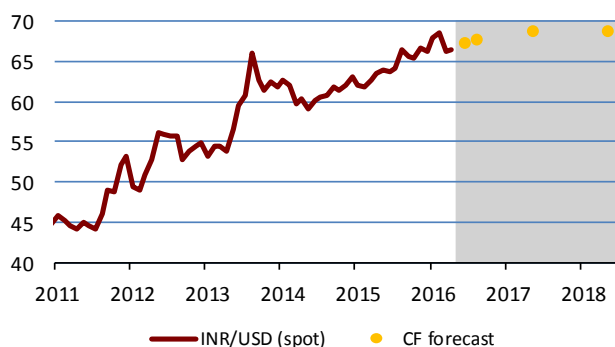
	9/5/16	06/16	08/16	05/17	05/18
spot rate	3.517				
CF forecast		3.714	3.834	4.110	4.349

The Russian rouble (RUB/USD)



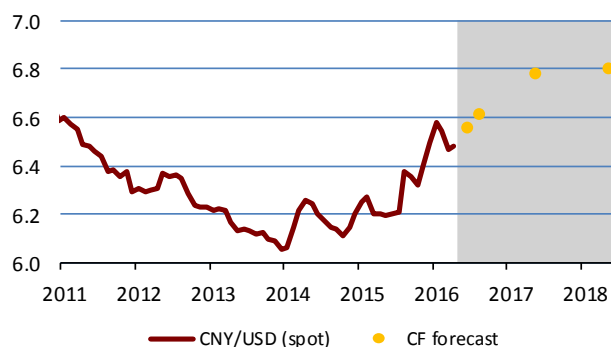
	9/5/16	06/16	08/16	05/17	05/18
spot rate	66.45				
CF forecast		68.25	68.09	67.57	67.28

The Indian rupee (INR/USD)



	9/5/16	06/16	08/16	05/17	05/18
spot rate	66.53				
CF forecast		67.29	67.70	68.63	68.73

The Chinese renminbi (CNY/USD)



	9/5/16	06/16	08/16	05/17	05/18
spot rate	6.507				
CF forecast		6.562	6.614	6.779	6.802

Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

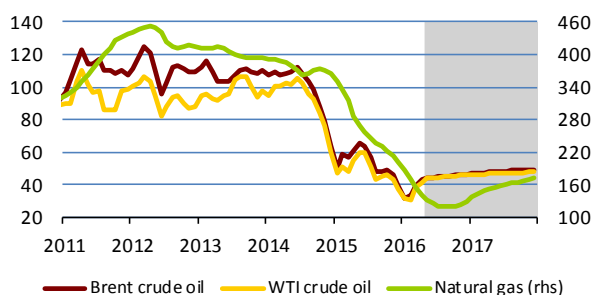
V.1 Oil and natural gas

Although the meeting of oil producers in Doha in mid-April did not result in the expected agreement to freeze production growth, the oil price held firm and later even continued to rise. It received short-term support from sizeable shortfalls in extraction (due among other things to a strike by oil workers in Kuwait and a large fire close to the Canadian oil sands). An accelerating decline in US oil production (owing to a still falling shale rig count), decreasing production in Nigeria, Libya and Venezuela and robust growth in demand (especially for petrol in China, India and the USA) are steering the oil market towards equilibrium, which could be achieved in the second half of next year. The Brent crude oil price thus exceeded USD 48/bbl in late April. However, the strong price volatility recorded during the first half of May reflects the still large uncertainty about future developments.

In its May forecast, the EIA strongly revised the expected average Brent price upwards – for this year by USD 6 to USD 41/bbl and for next year by USD 10 to USD 51/bbl. Its expected price of USD 57/bbl in 2017 Q4, when the EIA predicts a sharp price acceleration, is considerably higher than the market forecast based on the futures yield curve of 9 May, which implies an average price of USD 42.6/bbl this year and steady growth to an average of USD 48.3/bbl in 2017. By contrast, the May CF is virtually in line with the market curve, expecting the Brent crude oil price to reach USD 48.7/bbl at the one-year horizon.

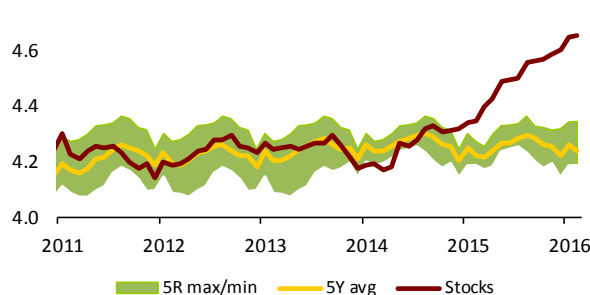
The natural gas price rose slightly in the USA, where underground storages are being filled more slowly than expected, but fell further in Europe, reflecting the previous drop in oil prices in long-term contracts.

Outlook for prices of oil (USD/barrel) and natural gas (USD / 1000 m³)

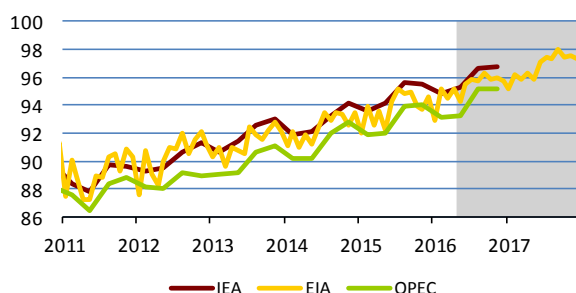


	Brent	WTI	Natural gas
2016	42.62 ↗	41.80 ↗	136.89 ↗
2017	48.28 ↗	47.04 ↗	158.05 ↗

Total stocks of oil and oil products in OECD (bil. barrel)

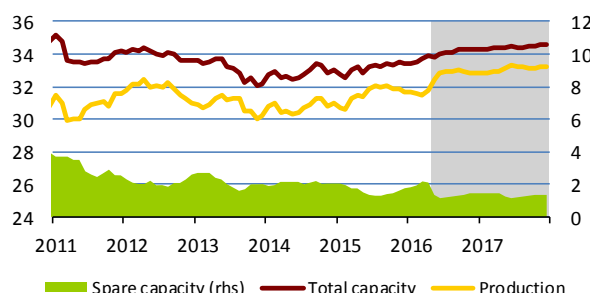


Global consumption of oil and oil products (mil. barrel / day)



	IEA	EIA	OPEC
2016	95.87 ↗	95.24 ↗	94.20
2017		96.78 ↗	

Production, total and spare capacity in OPEC countries (mil. barrel / day)



	Production	Total capacity	Spare capacity
2016	32.43 ↗	33.97 ↗	1.55 ↗
2017	33.09 ↗	34.42 ↗	1.33 ↗

Note: Oil price in USD/barrel, price of Russian natural gas at German border in USD / 1,000 m³ (IMF data, smoothed by the HP filter). Future oil prices (grey area) are derived from futures and future gas prices are derived from oil prices using model. Total oil stocks (commercial and strategic) in OECD countries including average, maximum and minimum in past five years in billions of barrels. Global consumption of oil and oil products in millions of barrels a day. Production and extraction capacity of OPEC in million barrels a day (EIA estimate).

Source: Bloomberg, IEA, EIA, OPEC, CNB calculation

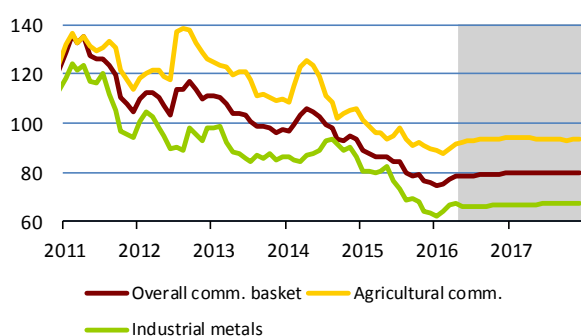
V.2 Other commodities

Following strong growth in March, the average monthly non-energy commodity price index kept rising in April and the first half of May, mainly as a result of a similar trend in the food commodity price index. The industrial metals price index also increased in April, but was back below the March level in the first half of May.

Industrial commodity prices were again supported by rising oil prices and a weakening dollar in April (albeit less so than in March). A worse outlook for Chinese and US industry acted in the opposite direction, with the PMI falling slightly in both countries in April. Prices of aluminium, copper and nickel (as well as rubber and cotton) thus increased in April, but quickly lost some of these gains in the first half of May. Following growth throughout Q1, prices of tin, zinc and iron ore stayed close to this year's highs in April and early May.

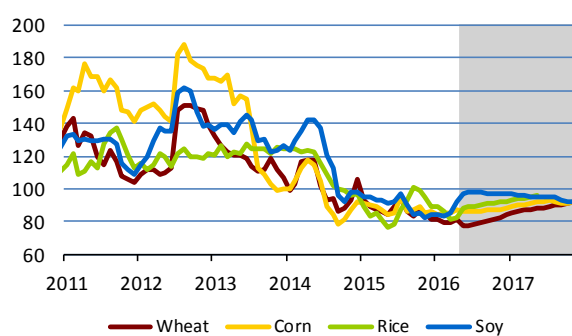
Grain prices were strongly affected by weather, as heavy rain is threatening the soy harvest in Argentina and drought could damage the maize harvest in Brazil. Wheat prices fluctuated strongly around a horizontal trend in April and declined in the first half of May. Prices of maize, rice, sugar, cocoa and especially soy went up in April, but only rice and soy prices stayed at these levels in the first half of May. In line with the expected seasonal pattern, prices of lean hogs returned to growth in mid-April but are expected to decline in the second half of the year. By contrast, prices of live cattle fell sharply during April. However, still high stocks are leaving no room for sharper future price growth for most commodities.

Non-energy commodities price indices



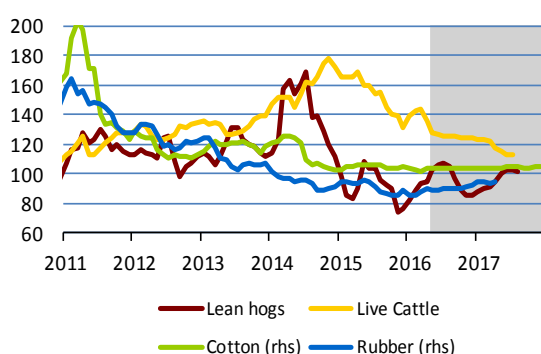
	Overall	Agricultural	Industrial
2016	78.1 ↗	92.0 ↗	65.9 ↗
2017	79.9 ↗	93.8 ↗	67.2 ↗

Food commodities



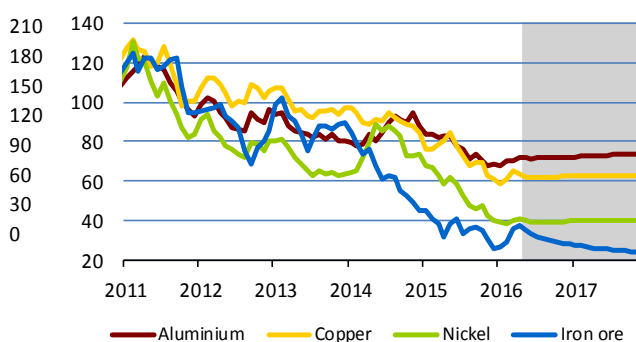
	Wheat	Corn	Rice	Soy
2016	80.4 ↗	86.5 ↗	88.8 ↗	93.6 ↗
2017	89.2 ↗	91.5 ↗	94.6 ↗	94.7 ↗

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2016	95.1 ↗	130.6 ↗	65.1 ↗	44.4 ↗
2017	96.6 ↗	118.3 ↗	66.6 ↗	51.4 ↗

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2016	71.3 ↗	62.1 ↗	39.5 ↗	31.3 ↗
2017	73.1 ↗	62.7 ↗	40.0 ↗	25.7 ↗

Note: Structure of non-energy commodity price indices corresponds to composition of The Economist commodity indices. All prices are given as indices, 2010 = 100 (charts) and percentage changes (tables).
Source: Bloomberg, CNB calculations.

International comparison of competitiveness using composite indicators¹

Country competitiveness is a phrase that has been used increasingly often in recent decades. In simple terms, it means the ability to succeed in international competition and is usually defined not only by quantitative, but also by qualitative characteristics. The aim of this article is to offer a view of the competitiveness of the countries monitored in this monthly publication using several composite indicators that measure and assess this phenomenon.

1 Introduction

Competitiveness can be defined in many ways and have various meanings. It can be described most simply as the ability to succeed in international competition. The World Economic Forum (2016) defines competitiveness as the set of institutions, policies and factors that determine the level of productivity and prosperity of an economy. By contrast, the International Institute for Management Development (2016a) defines competitiveness of countries on the basis of an analysis and assessment of their ability to create and maintain a competitive environment for enterprises. The OECD defines a country's competitiveness as its ability to deliver sustainable growth of the economy and the economic level in conditions of internal and external equilibrium (OECD, 2013).

Several levels of international competitiveness can also be identified. CESifo (2016b), for example, defines two levels. The first – microeconomic – level means competition between firms on world markets and is defined primarily as price competition between individual companies, which is determined on the basis of costs and size of production. The indicators expressing the microeconomic level may thus include a firm's profitability or market share. However, qualitative factors such as innovation, reliability and quality of services are also often of key importance. The second – macroeconomic – level deals with the global competitiveness of individuals (countries) that participate in the international division of labour. At this level, the attractiveness and competitiveness of an economy reflects, for example, labour market flexibility, labour costs, the tax burden on companies in the economy and the research environment. This type of competitiveness is most often assessed using the real effective exchange rate. As well as the competitiveness of national economies, the macroeconomic level can be defined as the competitiveness of groups of countries – geographical regions and international groupings (e.g. the EFTA, the OECD and BRIC). Besides that, competition can be viewed from the perspective of regions of individual states (e.g. Spanish or Italian provinces) or individual economic sectors. However, comparable national and sectoral statistics are not available for most countries, so it is often only possible to conduct a bilateral analysis (e.g. US states vs. Canadian provinces, regions of France vs. federal states of Germany) or a detailed analysis of regional and sectoral indicators of a selected country (e.g. the level of sophistication of exports from Chinese provinces).

In addition to being multifaceted and carrying many meanings, the term "competitiveness" has changed over time. Initially, competitiveness was identical to export performance and labour productivity, but nowadays it is associated with factors focusing on raising the incomes and general living standards of the people of various countries and is gaining in importance with increasing globalisation. The next section briefly describes methods for measuring competitiveness. Given the large number of existing methodologies, it does not specify the individual formulas and gives only examples, referring to the original sources, where detailed information can be found. Section 3 concentrates on composite competitiveness indicators and uses them to compare and assess the competitiveness of the countries regularly monitored in GEO. Conclusions are presented in the last section of the article.

2 Measuring and assessing competitiveness

The many meanings and broad definition of international competitiveness are one of the reasons why there are so many methods for measuring and assessing it. Apart from measurable indicators (based, for example, on costs or output) enabling individual countries to be compared objectively, one can use indicators that are not clearly quantifiable but still provide sufficient information about a country's competitiveness. They include, for example, indicators of the quality of institutions and the institutional environment, which are often based on subjective, survey-based assessments (International Institute for Management Development, 2016a).²

Various indicators can be used to get an idea of the competitiveness of individual countries. There is a wide range of price-cost indicators, such as the GDP deflator, unit labour costs and the real effective exchange rate. The BIS publishes nominal and real exchange rates for more than 60 countries.³ The ECB provides an

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² However, survey-based assessments are very subjective and may cause less confident nations to give themselves a worse score, lowering their reported level of competitiveness.

³ <http://www.bis.org/statistics/eer.htm>

online database of Harmonised Competitiveness Indicators⁴ calculated on the basis of the consumer price index, the GDP deflator and unit labour costs for euro area countries. Competitiveness can also be measured using basic macroeconomic indicators expressing the level of economic prosperity and performance – the GDP level, the employment level and others. In addition, trade performance can be monitored using indicators of foreign trade and its structure. The French research centre CEPII⁵ calculates indicators of international trade, market potential, specialisation, trade protectionism and revealed comparative advantage (RCA). RCA statistics for EU Member States and other economies, including BRIC countries, are also published by the European Commission.⁶ The ECB also analyses competitiveness at the microeconomic and macroeconomic level and compiles its own database of competitiveness indicators in partnership with central banks, including the CNB, as part of the CompNet (Competitiveness Research Network) project.⁷ The World Bank analyses trade competitiveness using various indicators of international trade and its decomposition.⁸ Tariff barriers, which directly affect countries' competitiveness, are published by the WTO (together with the ITC and the UNCTAD).⁹ In addition, the WTO offers a database of non-tariff barriers covering various types of protectionism (customs duties, embargoes, quotas, sanitary and qualitative conditions, technical barriers to trade and others).

Each of the indicators described above concentrates on just one relatively narrow economic segment or measures competitiveness on the basis of just one criterion. The more information is generated by individual indicators, the more difficult it usually is to draw an overall picture and compare individual countries. For this reason, the most suitable indicators for compiling rankings of international competitiveness are composite (i.e. multi-criteria) indicators, which are much more complex and contain both measurable aspects (time series) and qualitative aspects (questionnaires and assessments). Multi-criteria indicators are calculated on the basis of a large amount of data and quantify competitiveness in a broader sense. They therefore focus on fundamental factors of economic growth and on the assessment of prerequisites for further economic development. From this point of view, a multi-criteria competitiveness index seems to be a suitable complement to the key economic fundamentals. A number of composite competitiveness indicators are analysed in detail below. Among the most important and most frequently used are the competitiveness indices of the World Economic Forum, the Swiss International Institute for Management Development and the German research institute CESifo. The OECD's competitiveness indicator based on relative consumer prices weighted by trade competitiveness is presented for comparison.

3 Competitiveness of the countries monitored in GEO¹⁰

World Economic Forum (WEF)

One of the best-known multi-criteria approaches to measuring competitiveness is the World Economic Forum's Global Competitive Index (GCI), which has been published annually since 1979. The GCI combines 114 competitiveness-characterising indicators grouped into 12 pillars. The pillars – institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication and innovation – are organised into three sub-indices (basic requirements, efficiency enhancers and innovation and sophistication factors). The sub-indices are given weights depending on each country's stage of economic development and on the number of surveys. The stage of economic development is determined by GDP per capita. Countries are divided into five categories depending on their stage of development.¹¹ The GCI also includes data from other international organisations such as the International Monetary Fund, the World Health Organisation and many others. In

⁴ Harmonised Competitiveness Indicators: <https://www.ecb.europa.eu/stats/exchange/hci/html/index.en.html>.

⁵ www.cepii.fr

⁶ http://ec.europa.eu/growth/industry/competitiveness/reports/eu-competitiveness-report/index_en.htm. The European Commission publishes several statistics on the competitiveness of Member States, which it compares on the basis of macroeconomic, financial and institutional indicators.

⁷ For older assessments of euro area countries' trade competitiveness (mostly on the macroeconomic level), see ECB WP No. 139, Dec 2012 and ECB WP No. 97, Sep 2008. Website of the CompNet database with a description of micro-indicators: https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_compnet.en.html.

⁸ <http://www.worldbank.org/en/topic/trade/brief/trade-competitiveness>

⁹ https://www.wto.org/english/res_e/publications_e/world_tariff_profiles15_e.htm. ITC – International Trade Centre. UNCTAD – United Nations Conference on Trade and Development.

¹⁰ Those countries are Brazil (BR), China (CN), Germany (DE), India (IN), Japan (JP), Russia (RU), the USA (US) and the euro area (EA). This list of countries is extended to include the Czech Republic (CZ).

¹¹ For factor-driven economies, which form one of the categories, the pillars grouped in the basic requirements sub-index are the most critical. Of the countries monitored, India belongs to this category. The next group of economies is driven by efficiency and the main role there is played by the pillars of the second sub-index. This group includes China. Innovation-driven economies have critical weight placed on the pillars of the innovation and sophistication sub-index. The USA, the Czech Republic, Germany and Japan rank among these economies. There are two intermediate stages lying between these three stages. Brazil and Russia fall between the second and third ones (World Economic Forum, 2016).

2015, when the GCI was last published, the ranking contained 140 countries, but the number of countries usually changes every year depending on the availability of survey data. The index takes values in the range of 1 to 7. A country with a score of 7 is the most competitive (World Economic Forum, 2016).

The evolution of the GCI scores for the countries monitored in GEO,¹² including the Czech Republic, from 2001 to 2015 are presented in Chart 1. The chart shows that the Czech Republic has returned to its 2005 level in this ranking following a crisis-related drop. In the last measured period, the Czech Republic improved in nine pillars. By contrast, Brazil has fallen back to its 2008 level after having improved in 2007–2012. In the latest period it worsened in all pillars except technical readiness and market size. The highest scoring countries are the USA, Japan and Germany. Moreover, they were among the top ten countries in the World Economic Forum ranking during the entire monitored period and are a long way ahead of the other countries. The score for the euro area has long been fluctuating around 5. Its drop in 2002 was due to a worsening of most euro area countries in that year's GCI assessment. However, its subsequent stability over time masks significant heterogeneity across countries, particularly the worse scores of southern euro area countries and, since 2007, also the scores of new euro area entrants.¹³ The positions of China and Russia have been improving moderately in recent periods, especially in the pillars falling in the basic requirements sub-index and also in the innovation.

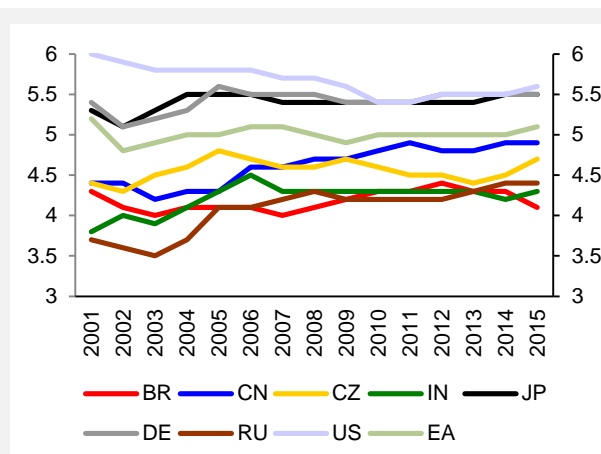


Chart 1 Evolution of the WEF competitiveness index

Source: World Economic Forum (2016), author's calculation

International Institute for Management Development (IMD)

Another multi-criteria measure is the competitiveness index of the International Institute for Management Development in Lausanne, which has been published in the World Competitiveness Yearbook since 1989. It assesses international competitiveness using four factors: economic performance, government efficiency, business efficiency and infrastructure. They consist of more than 300 competitiveness-enhancing criteria. Each factor is divided into five sub-factors, each with an equal weight of 5% in the overall ranking. Economic performance includes the domestic economy (size, growth, wealth and forecasts), international trade, international investment (divided into investment and finance), employment and prices. Government efficiency is divided into public finance, fiscal policy, the institutional framework (central bank and state efficiency), business legislation (openness, competition and regulations and labour regulations) and the social framework. Business efficiency consists of productivity and efficiency, the labour market (costs, relations and availability of skills), finance (bank efficiency, stock market efficiency and finance management), management practices and attitudes and values. Infrastructure comprises basic infrastructure, technological infrastructure, scientific infrastructure, health and environment and education. This competitiveness index currently covers 61 countries. Hard statistical data from international institutions represent two-thirds of the overall ranking while data from surveys represent one-third. The scoring scale ranges from 0 to 100, with 100 representing maximum competitiveness. Countries are ranked according to these scores. The highest-ranking country has long been the USA, the only country to score 100 (International Institute for Management Development, 2016a).

The evolution of the IMD competitiveness index scores for selected countries¹⁴ between 2001 and 2015 is shown in Chart 2. With the exception of 2010 and 2012, the USA was in first place with a score of 100. The main reason for its fall in those two years was a loss of government efficiency. However, this area is also problematic for the other countries mentioned. Germany is the only one of them currently in the top 10. The worst off is Brazil, which has been sliding down the ranking since 2011 and was fifth from bottom in 2015. Its gradual fall is due to declining business efficiency and economic performance. The competitiveness of these countries was improving until 2011 but then saw a moderate, and in some cases larger, deterioration. The biggest declines were recorded by India and Brazil. Between 2014 and 2015, competitiveness improved in most of the economies monitored, thanks mainly to economic and business efficiency. By contrast, Japan and Germany moved slightly lower in the ranking in this period, particularly in

¹² The values of the World Economic Forum's GCI for the euro area were calculated from the scores of the individual euro area countries based on their shares in euro area GDP in the given years.

¹³ The new euro area member countries (since 2007) do not, however, significantly influence the group as a whole. They account for just 2.2% of euro area GDP (in 2015). The situation is quite the opposite for the four countries on the southern periphery, whose total GDP at current prices in 2015 was comparable to the GDP of Germany and accounted for almost 30% of total euro area GDP.

¹⁴ As with the World Economic Forum index, the values were calculated from the index scores of the individual countries according to their shares in euro area GDP in the given years.

the areas of business efficiency and infrastructure. The euro area ranks approximately in the middle of the countries in this index. This is due to markedly worse scores for the southern countries and Slovenia, but also because only five euro area countries – Germany, Finland, Ireland, Luxembourg and the Netherlands – have scores exceeding 80.

CESifo

It is also interesting to look at the lack of international competitiveness index published each year by CESifo in its World Economic Survey. The index contains qualitative information for more than 100 countries and CESifo produces aggregated data for country groups or regions depending on the replies. The results are then weighted according to the countries' exports and imports as a share of total world trade. Scores from 5 to 9 show a tendency towards growth in lack of competitiveness and scores from 1 to 5 indicate a drop in lack of competitiveness, meaning an increase in competitiveness (CESifo, 2016a).

Chart 3 shows the evolution of the lack of international competitiveness index between 2001 and 2015 for the same group of countries as in the previous charts. It indicates that the results of this index do not contradict those of the previous two. If a country is showing a tendency towards growth in lack of competitiveness, this is reflected in a movement in the aforementioned measuring methods and in the country's position in the indices assessing competitiveness. Countries with a score of less than 5 are showing a downward tendency in their lack of competitiveness and hence an increase in competitiveness. The opposite is true for countries with scores of more than 5, which are showing an upward tendency in their lack of competitiveness. A good example is the Czech Republic, which is significantly improving its

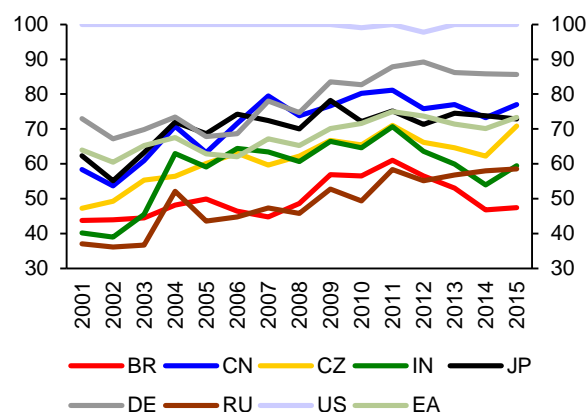


Chart 2 Evolution of the IMD competitiveness index

Source: International Institute for Management Development (2016b), author's calculation

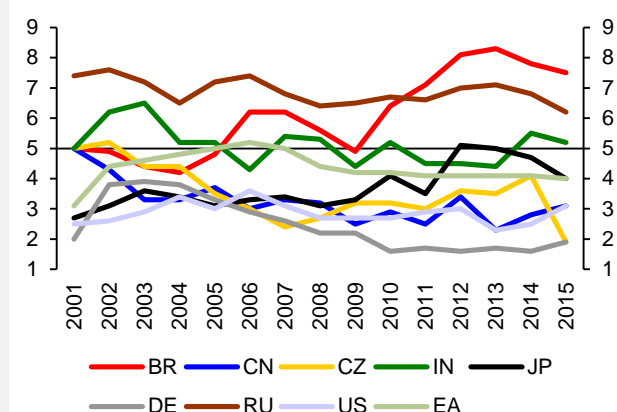


Chart 3 Evolution of the lack of international competitiveness index

Source: Datastream

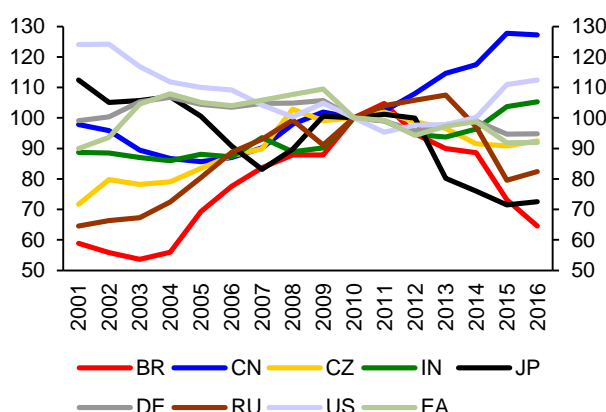


Chart 4 Evolution of the competitiveness indicator

Source: OECD (2016)

Note: Index 2010=100

position in the competitiveness ratings according to the above indices, as the downward tendency in its lack of competitiveness is strengthening. By contrast, Brazil has been displaying a significant upward tendency in its lack of international competitiveness since the crisis. This is reflected, for example, in the IMD index after 2011. However, this tendency has been weakening in recent years hence the loss of competitiveness has also been decreasing. This chart indicates that countries lying in the area above 5 (i.e. greater losses of competitiveness) are also less competitive according to the previous indicators.

Organisation for Economic Cooperation and Development (OECD)

According to the OECD (2013), outcome competitiveness consists of three pillars – an income pillar, a social pillar and an ecological pillar. The key determinants of competitiveness are price competitiveness (defined by wages, productivity and unit labour costs), the structure of production and exports, and country capabilities (defined by innovation, education, the social system, ecological ambition and institutions). The OECD competitiveness indicator monitors two aspects – the sectoral effect and the global competitiveness effect. At the core of the indicator are relative consumer prices in dollar terms, where the weight of foreign CPI is adjusted according to the weight of trading partners calculated on the basis of the structure of

competition in goods export and import markets. An increase in this indicator indicates a real effective appreciation of the domestic currency and a decrease in the competitive position. Conversely, a decrease indicates a real effective depreciation of the domestic currency and an increase in the competitive position (OECD, 2016).

It is apparent from Chart 4, which depicts the evolution of this competitiveness indicator for the selected countries, that the conclusions differ slightly from the previous assessments. This is mainly because this indicator measures the countries' dynamics against one another and so cannot be used to compare the absolute level of competitiveness. The competitive positions of Brazil, Japan and Russia have been rising sharply in recent years. By contrast, those of China, the USA and India have been falling. However, if the weakening of the domestic currency and the drop in domestic prices in foreign currency are due to political tensions (Brazil) or a military-political conflict (Russia) and to a sharp decrease in incomes due to a decline in prices of exported commodities, this can hardly be considered an improvement in competitiveness in the sense of sustainable growth. Germany, the Czech Republic and the euro area are currently slightly below their 2010 levels. The competitive positions of most of the countries monitored changed sharply after 2010. That of the USA, for example, started to decrease, whereas until then it had been rising. Brazil recorded the opposite situation, with an initial decline in competitiveness replaced by a rise. According to the OECD, China has gradually been losing its competitive position since 2005, owing, for example, to a rise in unit labour costs. This process is related to the transformation of the Chinese economy and to faster growth in the share of value added than in other countries. According to the forecast for 2016, the OECD competitiveness indicators for all the countries shown will continue to exhibit the trends seen in 2015.

4 Conclusion

The multi-criteria competitiveness assessments of the eight selected countries indicate that the most competitive economy is the USA, which also has the highest GDP per capita. The USA's level of competitiveness is relatively stable. Other developed countries, such as Germany, Japan, the euro area and the Czech Republic, are also high up the rankings. The Czech Republic's multi-criteria indicator scores are similar to those of China, which, as a representative of developing countries, is doing very well in terms of competitiveness. Russia, India and Brazil are doing worse. The assessment of the lack of international competitiveness index produced similar results. The OECD competitiveness indicator provides slightly different conclusions due to its construction and so cannot be compared with the results of the other indicators. The overall comparison reveals that, according to the indicators analysed, developed countries are more competitive. The same goes for the euro area, which, however, is being hampered by the results of some of its Member States, especially those from southern Europe. The more competitive countries also include China, which is gaining in competitiveness thanks to the transformation and growth of its economy. By contrast, the other BRIC countries are less competitive and have also been hindered in recent years by macroeconomic, political and other factors which are not contributing to their level of competitiveness. Nevertheless, most of the countries monitored still have room for improvement as regards competitiveness.

In general, the key to competitiveness is a high-quality education system complemented by a flexible labour market. However, it is also important to reduce bureaucracy, facilitate entrepreneurship and improve infrastructure. In this respect, it is a good idea to observe the twelve golden competitiveness rules presented by the International Institute for Management Development (2016a). They include, among other things, promotion of science and culture, economic diversification from the sectoral and geographical perspectives, maintenance of budgetary and debt discipline and support for enterprises and technologies. Increasing competitiveness ultimately helps countries achieve sustainable economic growth and fosters growth in living standards.

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A1. Change in GDP predictions for 2016

	CF		IMF		OECD		CB / EIU	
EA	+0.1	2016/5	-0.2	2016/4	-0.4	2016/2	-0.3	2016/3
		2016/4		2016/1		2015/11		2015/12
US	-0.2	2016/5	-0.2	2016/4	-0.5	2016/2	-0.2	2016/3
		2016/4		2016/1		2015/11		2015/12
DE	0	2016/5	-0.2	2016/4	-0.5	2016/2	0	2015/12
		2016/4		2016/1		2015/11		2015/6
JP	-0.1	2016/5	-0.5	2016/4	-0.2	2016/2	-0.3	2016/4
		2016/4		2016/1		2015/11		2016/1
BR	-0.3	2016/5	-0.3	2016/4	-2.8	2016/2	0	2016/5
		2016/4		2016/1		2015/11		2016/4
RU	+0.2	2016/5	-0.8	2016/4	-1.2	2015/11	0	2016/5
		2016/4		2016/1		2015/6		2016/4
IN	0	2016/5	0	2016/4	+0.1	2016/2	0	2016/5
		2016/4		2016/1		2015/11		2016/4
CN	0	2016/5	+0.2	2016/4	0	2016/2	+0.2	2016/5
		2016/4		2016/1		2015/11		2016/4

A2. Change in inflation predictions for 2016

	CF		IMF		OECD		CB / EIU	
EA	-0.1	2016/5	-0.6	2016/4	-0.1	2015/11	-0.9	2016/3
		2016/4		2015/9		2015/6		2015/12
US	-0.1	2016/5	-0.3	2016/4	-0.8	2015/11	-0.4	2016/3
		2016/4		2015/9		2015/6		2015/12
DE	-0.1	2016/5	-0.7	2016/4	-0.7	2015/11	-0.7	2015/12
		2016/4		2015/9		2015/6		2015/6
JP	0	2016/5	-0.6	2016/4	-0.9	2015/11	-0.3	2016/4
		2016/4		2015/9		2015/6		2016/1
BR	-0.2	2016/5	+2.4	2016/4	+0.6	2015/11	-2.4	2016/5
		2016/4		2015/9		2015/6		2016/4
RU	-0.5	2016/5	-0.2	2016/4	+2.5	2015/11	-0.9	2016/5
		2016/4		2015/9		2015/6		2016/4
IN	-0.1	2016/5	-0.2	2016/4	-0.4	2015/11	0	2016/5
		2016/4		2015/9		2015/6		2016/4
CN	0	2016/5	0	2016/4	+0.5	2015/11	+0.4	2016/5
		2016/4		2015/9		2015/6		2016/4

A3. List of abbreviations

ABS	asset-backed securities	HICP	harmonised index of consumer prices
bbl	barrel	CHF	Swiss franc
BoJ	Bank of Japan	ICE	Intercontinental Exchange
BR	Brazil	IEA	International Energy Agency
BRIC	countries of Brazil, Russia, India and China	IFO	Institute for Economic Research
BRL	Brazilian real	IFO-BE	IFO Business Expectations
CB	central bank	IMF	International Monetary Fund
CB-CCI	Conference Board Consumer Confidence Index	IN	India
CB-LEII	Conference Board Leading Economic Indicator Index	INR	Indian rupee
CBOT	Chicago Board of Trade	IRS	Interest Rate swap
CBR	Central Bank of Russia	ISM	Institute for Supply Management
CF	Consensus Forecasts	JP	Japan
CN	China	JPY	Japanese yen
CNB	Czech National Bank	LI	leading indicators
CNY	Chinese renminbi	LIBOR	London Interbank Offered Rate
DBB	Deutsche Bundesbank	MER	Ministry of Economic Development (of Russia)
DE	Germany	MMBtu	million of British Thermal Units
EA	euro area	OECD	Organisation for Economic Co-operation and Development
EBRD	European Bank for Reconstruction and Development	OECD-CLI	OECD Composite Leading Indicator
EC	European Commission	PMI	Purchasing Managers' Index
ECB	European Central Bank	PPI	producer price index
EC-CCI	European Commission Consumer Confidence Indicator	QE	quantitative easing
EC-ICI	European Commission Industrial Confidence Indicator	RU	Russia
EIA	Energy Information Administration	RUB	Russian rouble
EIU	Economist Intelligence Unit	TLTRO	targeted longer-term refinancing operations
EU	European Union	UoM	University of Michigan
EUR	euro	UoM-CSI	University of Michigan Consumer Sentiment Index
EURIBOR	Euro Interbank Offered Rate	US	United States
Fed	Federal Reserve System (the US central bank)	USD	US dollar
FOMC	Federal Open Market Committee	USDA	United States Department of Agriculture
FRA	forward rate agreement	WEO	World Economic Outlook
FY	fiscal year	WTI	West Texas Intermediate (crude oil used as a benchmark in oil pricing)
GBP	pound sterling	ZEW-ES	ZEW Economic Sentiment
GDP	gross domestic product		

A4. List of thematic articles published in the GEO 2016

	Issue
International comparison of competitiveness using composite indicators (Iveta Polášková)	2016-5
How global inventory levels affect commodity prices (Jan Hošek)	2016-4
The Europe 2020 strategy: Will it be fulfilled? (Pavla Břízová)	2016-3
Changes in global imbalances in the world economy (Luboš Komárek and Vladimír Žďárský)	2016-2
The FDI life cycle on the example of the Czech Republic (Filip Novotný)	2016-1

2015

	Issue
The role of China in the slowdown in international trade (Oxana Babecká Kucharčuková)	2015-12
Central banks' gold reserves (Iveta Polášková)	2015-11
Shadow policy rates – alternative quantification of unconventional monetary policy (Soňa Benecká, Luboš Komárek and Filip Novotný)	2015-10
The economic reforms of Indian Prime Minister Narendra Modi (Pavla Břízová)	2015-9
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Seasonal price movements in the commodity markets (Martin Motl)	2015-6
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	Issue
Applicability of Okun's law to OECD countries and other economies (Oxana Babecká Kucharčuková and Luboš Komárek)	2014-12
Monetary policy normalisation in the USA (Soňa Benecká)	2014-11
Changes in FDI inflows and FDI returns in the Czech Republic and Central European countries (Vladimír Žďárský)	2014-10
Competitiveness and export growth in selected Central European countries (Oxana Babecká Kucharčuková)	2014-9

	Issue
Developments and the structure of part-time employment by European comparison (Eva Hromádková)	2014-8
The future of natural gas (Jan Hošek)	2014-7
Annual assessment of the forecasts included in GEO (Filip Novotný)	2014-6
How far the V4 countries are from Austria: A detailed look using CPLs (Václav Žďárek)	2014-5
Heterogeneity of financial conditions in euro area countries (Tomáš Adam)	2014-4
The impacts of the financial crisis on price levels in Visegrad Group countries (Václav Žďárek)	2014-3
Is the threat of deflation real? (Soňa Benecká and Luboš Komárek)	2014-2
Forward guidance – another central bank instrument? (Milan Klíma and Luboš Komárek)	2014-1

2013

	Issue
Financialisation of commodities and the structure of participants on commodity futures markets (Martin Motl)	2013-12
The internationalisation of the renminbi (Soňa Benecká)	2013-11
Unemployment during the crisis (Oxana Babecká and Luboš Komárek)	2013-10
Drought and its impact on food prices and headline inflation (Viktor Zeisel)	2013-9
The effect of globalisation on deviations between GDP and GNP in selected countries over the last two decades (Vladimír Žďárský)	2013-8
Competitiveness and determinants of travel and tourism (Oxana Babecká)	2013-7
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