Globální ekonomický výhled - červenec 2015

Česká národní banka
2015

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GLOBAL ECONOMIC OUTLOOK - JULY

Monetary Department
External Economic Relations Division

2015

CNB CZECH
NATIONAL BANK

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The July issue of Global Economic Outlook presents its regular overview of recent and expected developments in selected territories, focusing on economic fundamentals: inflation, GDP growth, leading indicators, interest rates, exchange rates and commodity prices. In this issue, we also assess the accuracy of the forecasts contained in GEO for 2014. On average for all countries and forecast horizons, these forecasts overestimated GDP growth, inflation and long-term interest rates and predicted a weaker dollar and higher dollar prices of oil.

The euro area growth and inflation outlooks were either left unchanged or revised upwards for this year and the next. Continued quantitative easing by the ECB and a weaker euro are contributing to the improvement in the euro area outlook. Running counter to these favourable factors is an economic slowdown in Germany, which, however, continues to grow faster than the rest of the eurozone as a whole. The growth rate of the US economy is expected to rise gradually, reaching almost 3% at the end of next year. The Japanese economy is expected to grow at half this rate over the same horizon. New data on prices continue to show that consumer price inflation in advanced countries will be very low this year. Only the US economy is expected to reach 2%, and not before 2016.

The outlooks for emerging BRIC countries remain mixed for 2016. The Indian economy remains the leader of this group; its growth outlooks for this period declined slightly but are still about 1 percentage point above the projected performance of the Chinese economy. Consumer price inflation in India will also be higher, slightly exceeding 5% at the end of 2016. The two other BRIC countries will be considerably worse off. Updated outlooks still confirm that the Russian and the Brazilian economy will not avoid recession this year. Moreover, the two countries will face high inflation this year (double figures in the case of Russia). The outlooks for both countries for 2016 bring some optimism, as economic growth should rebound and inflation should drop visibly.

The interest rate outlook remains in line with the previous month. Euro area interest rates remain very low, but there are slight signs of growth at the end of 2016 owing to the ECB's quantitative easing. If the improving economic outlooks for the USA materialise, the chance of the first increase in Fed rates occurring in the second half of this year is also increasing. According to CF, the dollar will appreciate very slightly at the one-year horizon against the euro and is also expected to appreciate slightly against all the other monitored currencies except the Chinese renminbi, against which it should be broadly flat at current levels.

The oil price outlook remains slightly rising, but is lower than a month earlier. Oil prices are expected to be just above USD 62 a barrel at the end of 2016. Natural gas prices based on long-term contracts normally lag behind oil prices by 6 to 9 months and are therefore expected to decrease further in the next few months below USD 200 per 1000 m^3 and to start rising again in late 2015. The non-energy commodity price index will rise somewhat at the one-year horizon, owing chiefly to the food commodity price index. The industrial metals index recorded a downward correction. Prices of industrial metals are expected to rise very slowly in late 2016.

Leading indicators for countries monitored in the GEO

PMI in manufacturing - advanced countries


OECD CLI - BRIC countries
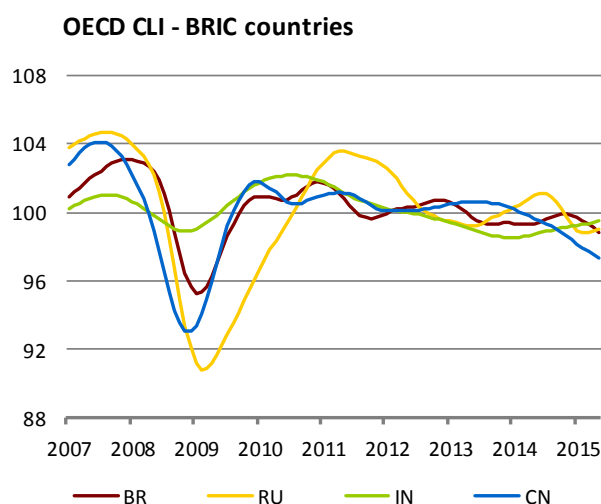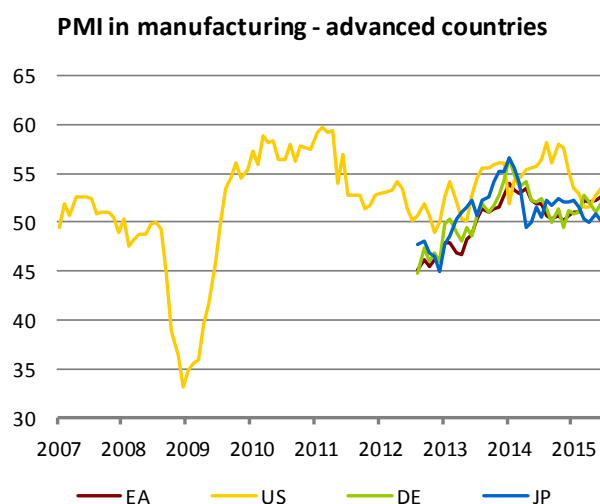

Zdroj: Bloomberg, Datastream

II.1 Eurozone

According to the institutions we monitor, euro area GDP growth will reach 1.5% this year and accelerate slightly further in 2016. The new IMF and OECD forecasts increased the economic growth outlooks for both years. In 2015 Q1, GDP growth accelerated to 0.7% quarter on quarter (1.4% year on year), driven by household consumption. Annual growth in real retail sales picked up in April and May, indicating continued household consumption growth in the following quarter. The annual growth rate of industrial production also increased in May, but remains relatively low. However, the PMI in manufacturing saw a further slight improvement in the expansionary band in June. Consumer price inflation is expected to be very subdued this year, not exceeding 1% until 2016. The annual inflation rate was 0.2% in June, lower than a month earlier. At its July meeting, the ECB confirmed that it would continue its quantitative easing policy. The 3M EURIBOR is therefore slightly negative and will also be close to zero at the one-year horizon according to market outlooks. The 10Y Bund outlook at the one-year horizon edged up compared to the previous month to 1.2% and M3 continued to grow at a pace of 5% in May. In the euro area, the focus was mainly on resolving the Greek debt crisis. Agreements on funding from the European Stability Mechanism (ESM) were reached in exchange for reforms of the Greek economy, but a split in the Greek ruling party Syriza increased the political uncertainty. The German finance minister still does not rule out a Grexit, and according to voices at the IMF, part of Greece's debt will have to be forgiven for the new rescue plan to work at all. The ZEW economic sentiment index for the euro area continued to decline in July.

GDP growth, %
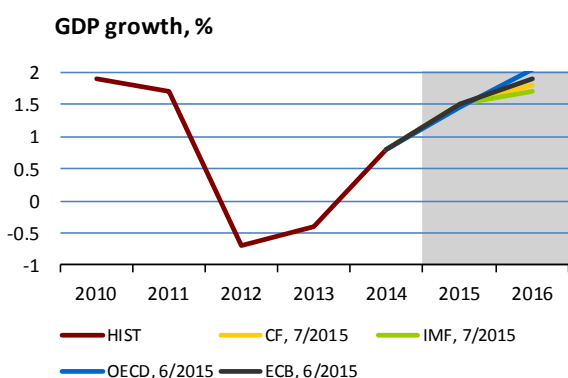
	CF		IMF		OECD		ECB	
2015	1.5	→	1.5	↗	1.4	↗	1.5	→
2016	1.8	→	1.7	↗	2.1	↗	1.9	→

Inflation, %
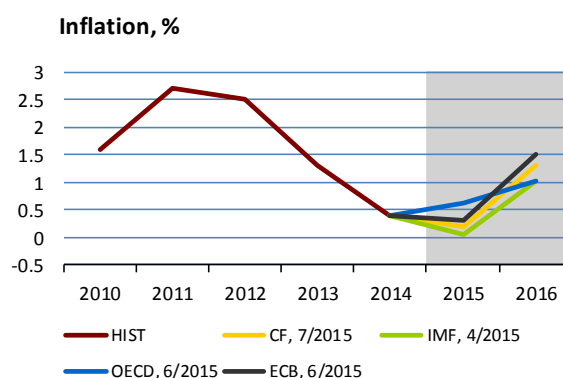
	CF		IMF		OECD		ECB	
2015	0.2	→	0.1		0.6	↗	0.3	↘
2016	1.3	→	1.0		1.0	↗	1.5	→

Leading indicators
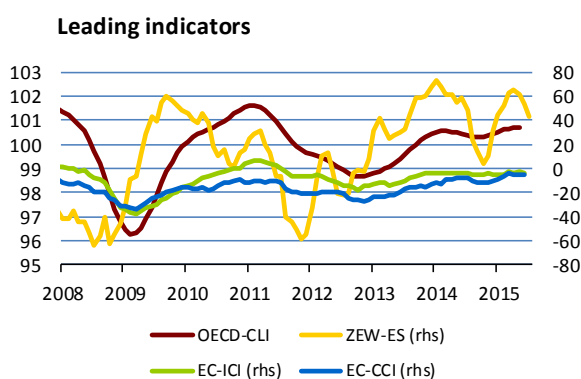
	OECD-CLI	EC-ICI	EC-CCI	ZEW-ES
4/15	100.7	-3.2	-4.6	64.8
5/15	100.7	-3.0	-5.6	61.2
6/15		-3.4	-5.6	53.7

Interest Rates
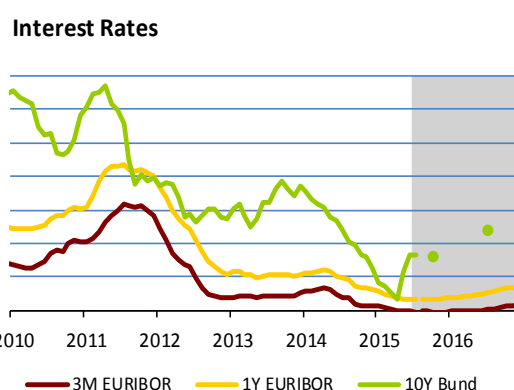
	06/15	07/15	10/15	07/16
EURIBOR 3M	-0.01	-0.02	-0.01	0.02
EURIBOR 1R	0.16	0.16	0.18	0.27
Bund 10R	0.83	0.82	0.80	1.20

II.2 United States

According to the third estimate, the US economy contracted by 0.2% in 2015 Q1. This decline is 0.5 pp smaller than the previous estimate. The revision was due to a more moderate estimated decrease in exports and a higher estimate of household consumption. The economy was adversely affected by a strong dollar and partly by lower oil prices, which, alongside their favourable effects, led to weaker investment in the energy sector. Data for Q2 do not suggest a turnaround in the economy towards strong growth. As in the previous two months, production in manufacturing was flat in June, affected mainly by a drop in production in the automotive industry. Household consumption data do not suggest stronger economic growth either. For example, retail sales saw an unexpected decline in June, but nonetheless rose by 1.5% in Q2 as a whole. Labour market data are relatively favourable. Employment outside agriculture again rose at a solid pace in June (by 223,000 jobs) and the unemployment rate fell to 5.3%, albeit partly due to a decline in the participation rate. The improving labour market situation is thus a source of hope that household consumption will grow more markedly in the second half of this year. However, these expectations are being dampened by only moderate wage growth. Leading indicators are also favourable. For example, the June PMI in manufacturing (53.5) is signalling an expansion and is slowly returning to the levels observed at the start of this year. The outlooks we monitor expect the economy to grow by around 2% this year and accelerate by more than 0.5 pp next year.

The price level was flat in May, kept down by energy prices and the strong dollar. Core inflation recorded a similar level as in the previous months (1.7%). Only slightly positive inflation is expected this year, while next year inflation should approach the Fed's target. The dollar-euro exchange rate was relatively stable last month, ranging between USD 1.09 and USD 1.13 to the euro, despite the dramatic situation regarding the third bailout programme for Greece. The interest rate outlook remains in line with the previous month and the first increase in Fed rates is expected to happen this year.

GDP growth, %

	CF		IMF		OECD		Fed	
2015	2.4	↗	2.5	↘	2.0	⇨	1.9	↗
2016	2.8	⇨	3.0	↘	2.8	↘	2.6	↗

Inflation, %

	CF		IMF		OECD		Fed	
2015	0.2	⇨	0.1	⇨	0.0	↘	0.7	⇨
2016	2.2	↗	1.5	⇨	1.8	↘	1.8	↗

Leading indicators

	CB-LEII	OECD-CLI	UoM-CSI	CB-CCI
4/15	122.3	99.6	95.9	94.3
5/15	123.1	99.5	90.7	94.6
6/15			96.1	101.4

Interest Rates

|	06/15	07/15	10/15	07/16
USD LIBOR 3M	0.28	0.29	0.43	1.02
USD LIBOR 1R	0.77	0.77	0.97	1.60
Treasury 10R	2.36	2.40	2.50	3.00
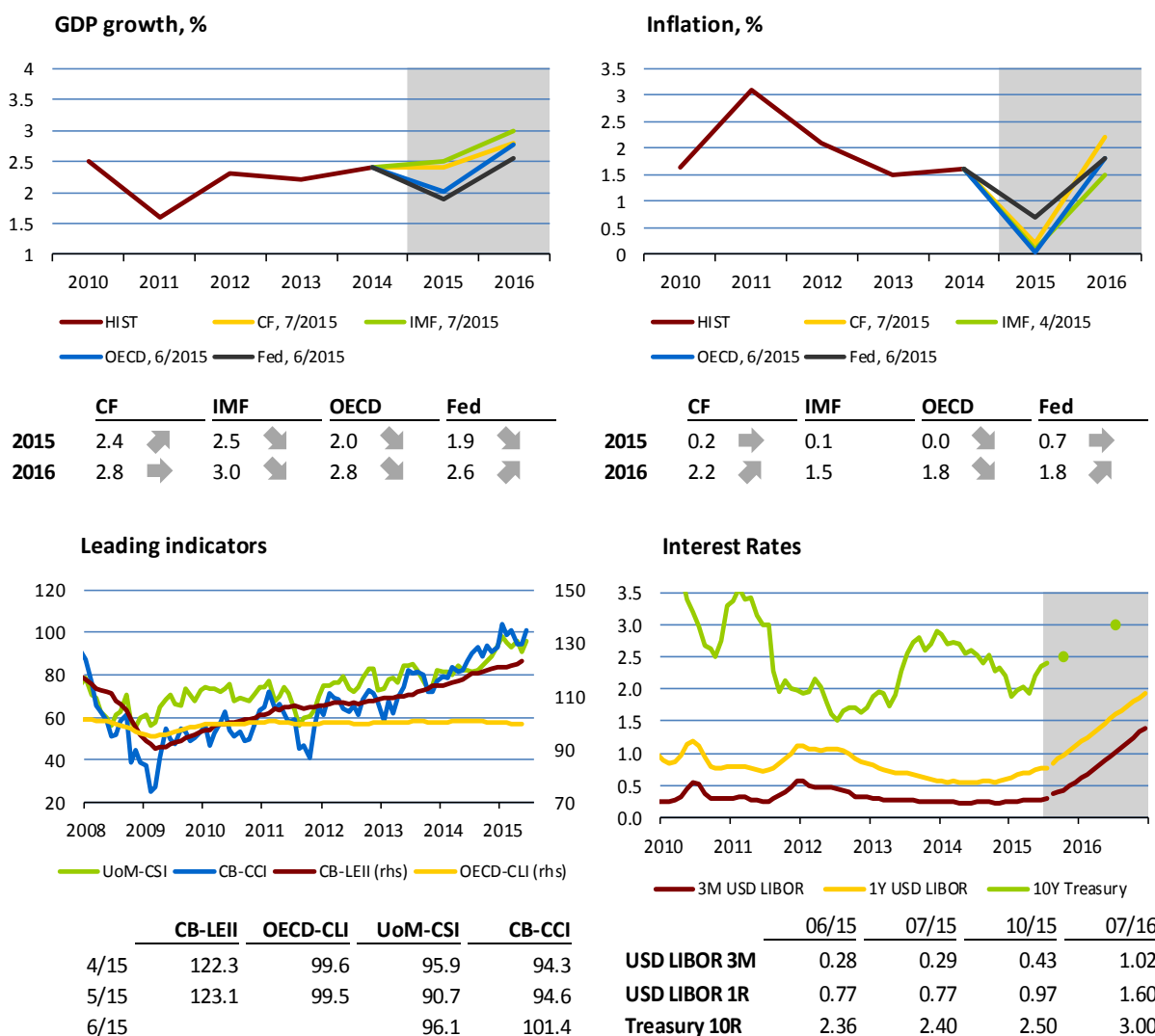
II.3 Germany

Economic growth in Germany slowed in 2015 Q1. The quarterly growth rate fell from 0.7% to 0.3% and the annual growth rate from 1.5% to 1%. The July CF expects a return to stronger quarterly and annual GDP growth in Q2. This is also suggested by stronger average annual growth in industrial production and retail sales in the first two months of Q2 compared to the previous quarter. The July CF predicts growth in German GDP of 1.9% for this year as a whole, driven by a substantial rise in household consumption and investment, low energy prices and a weaker euro. This favourable outlook is somewhat undermined by a June decrease in almost all leading indicators except the PMI in manufacturing. Following half a year of gradually rising inflation, growth in consumer prices slowed again by 0.4 pp to 0.3% in June. The July CF expects average inflation to reach 0.6% this year and rise to 1.6% next year.

GDP growth, %
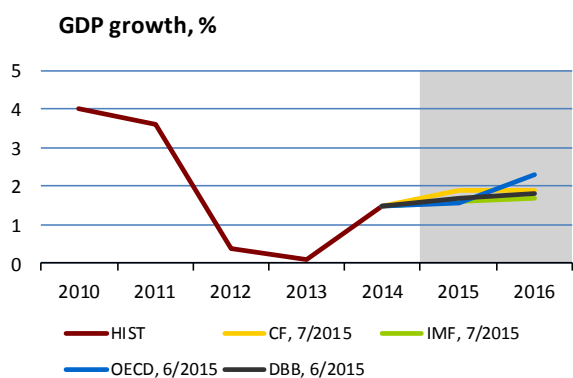
Inflation, %

	CF		IMF		OECD		DBB	
2015	1.9	→	1.6	↘	1.6	↗	1.7	↗
2016	1.9	↘	1.7	↗	2.3	↗	1.8	↗
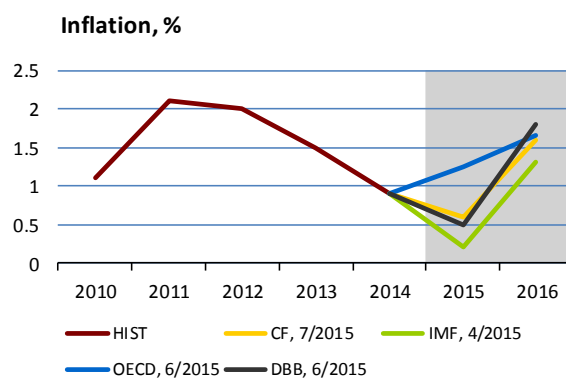
	CF		IMF		OECD		DBB	
2015	0.6	↗	0.2	↘	1.2	↗	0.5	↘
2016	1.6	↘	1.3	→	1.7	↘	1.8	→

II.4 Japan

Headline inflation in Japan slowed slightly to less than 0.5% in May. Core inflation excluding food prices was zero in year-on-year terms. Only household expenditures recorded a positive surprise, rising by more than 8% year on year in May. The June Tankan survey reveals that Japanese firms do not foresee any major increase in inflation pressures. Inflation should reach 1.4% next year (unchanged from the March survey). Japan's central bank also lowered its inflation forecast (to 0.7% in 2016) as part of its half-yearly assessment of the outlook. The economic recovery will be only gradual and slower than predicted by the April forecast. The financial markets therefore expect monetary policy to remain very easy. The July CF increased the inflation outlook for 2015 and 2016, but even the new levels are still below the OECD forecast. The expected GDP growth rate is unchanged, but the new IMF and OECD outlooks for Japanese growth remain less optimistic.

GDP growth, %

Inflation, %
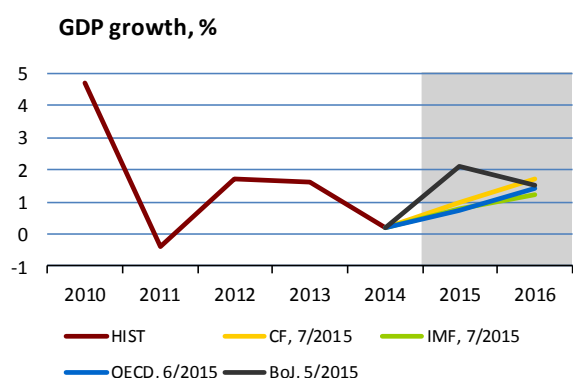
	CF		IMF		OECD		BoJ
2015	1.0	→	0.8	↘	0.7	↘	2.1
2016	1.7	→	1.2	↗	1.4	↗	1.5
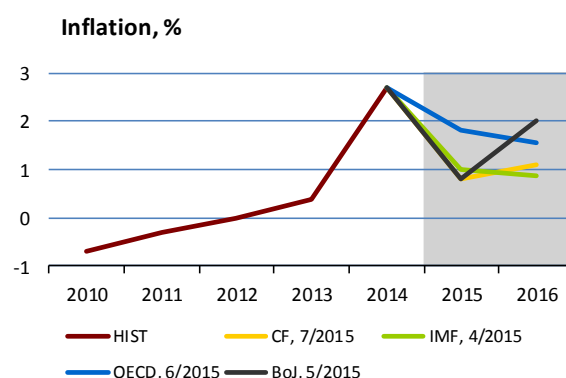
	CF		IMF		OECD		BoJ
2015	0.8	↗	1.0		1.8	↘	0.8
2016	1.1	↗	0.9		1.6	↘	2.0

III. ECONOMIC OUTLOOK IN BRIC COUNTRIES

III.1 China

New macroeconomic data from China surprised forecasters mostly on the positive side. Although economic growth remains weak relative to previous years, China's GDP rose by 7% in Q2 compared to the expected 6.9% (Reuters survey). Positive surprises were also recorded in June by industrial production growth (6.8% year on year compared to expectations of 6.0%), retail sales growth (10.6% year on year compared to expectations of 10.2%) and exports, which rose for the first time in four months (by 2.8% year on year) instead of decreasing by 0.2% as expected. However, imports continued to decline in June (by 6.1%). Although this decline was smaller than expected, it points to weak domestic demand and an overall risk of relatively subdued economic growth. Overall, the latest outlooks for this year (CF, EIU, IMF and OECD) agree that GDP will grow by 6.8%. Next year, the performance of the Chinese economy will weaken somewhat again, with growth ranging between 6.3% and 6.7%.

GDP growth, %

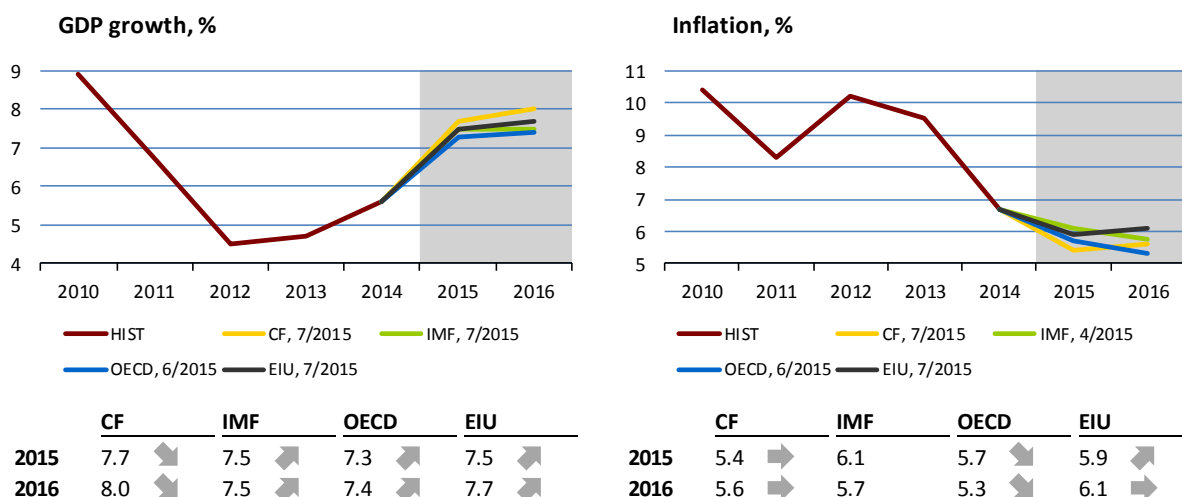|	CF		IMF		OECD		EIU	
2015	6.8	↘	6.8	↗	6.8	↘	6.8	→
2016	6.7	→	6.3	→	6.7	↘	6.5	→

Inflation, %

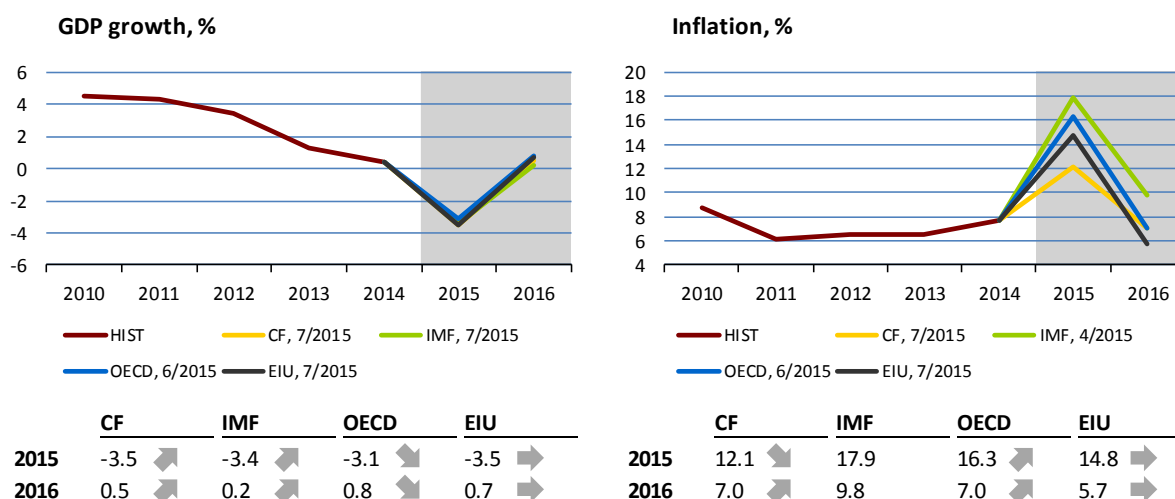|	CF		IMF		OECD		EIU	
2015	1.4	→	1.2		1.6	↘	1.5	→
2016	1.9	→	1.5		2.0	↘	2.2	→
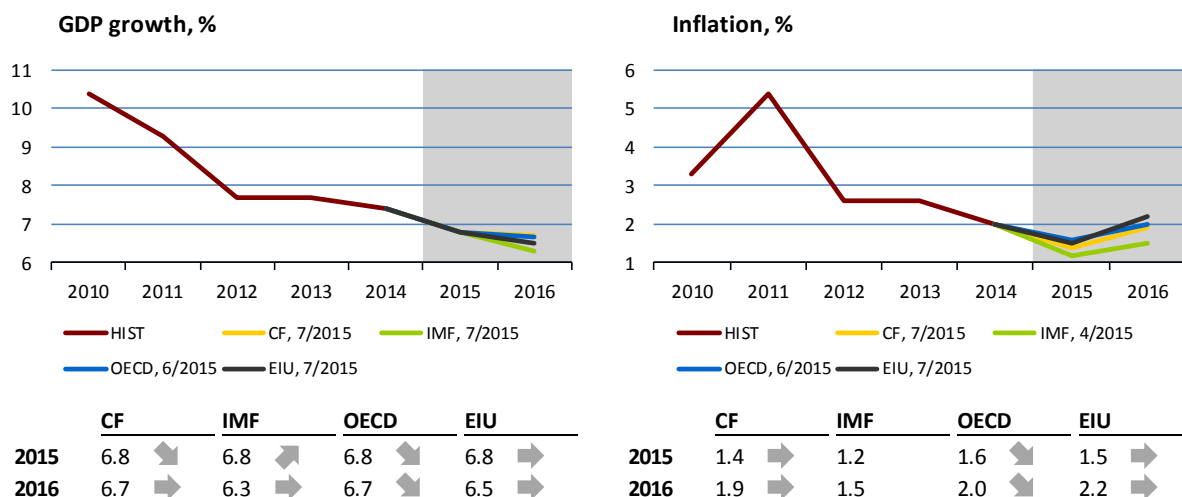
III.2 India

Consumer price inflation in India is continuing to edge up, reaching 5.4% in June, the highest level since November 2014. Food prices increased in particular. The Indian central bank's room for further interest rate cuts is decreasing, as its target is to keep consumer price inflation below 6% until January 2016. The current inflation outlooks for this year lie between 5.4% and 5.9%. The key interest rate is now 7.25%. Any further decrease will depend on the monsoon rainfall, which has been below-average so far in July. A monetary policy easing could boost the economy. Industrial production rose by just 2.7% in May (the April figure was revised downwards to 3.4%). The PMI in manufacturing stayed in the expansionary band despite recording a modest decline in June, but it fell slightly. However, the GDP growth predictions remain optimistic. The IMF, OECD and EIU forecasts for this year and the next were increased. By contrast, CF slightly revised its previous optimism.

GDP growth, %

	CF		IMF		OECD		EIU	
2015	7.7	↘	7.5	↗	7.3	↗	7.5	↗
2016	8.0	↘	7.5	↗	7.4	↗	7.7	↗

Inflation, %

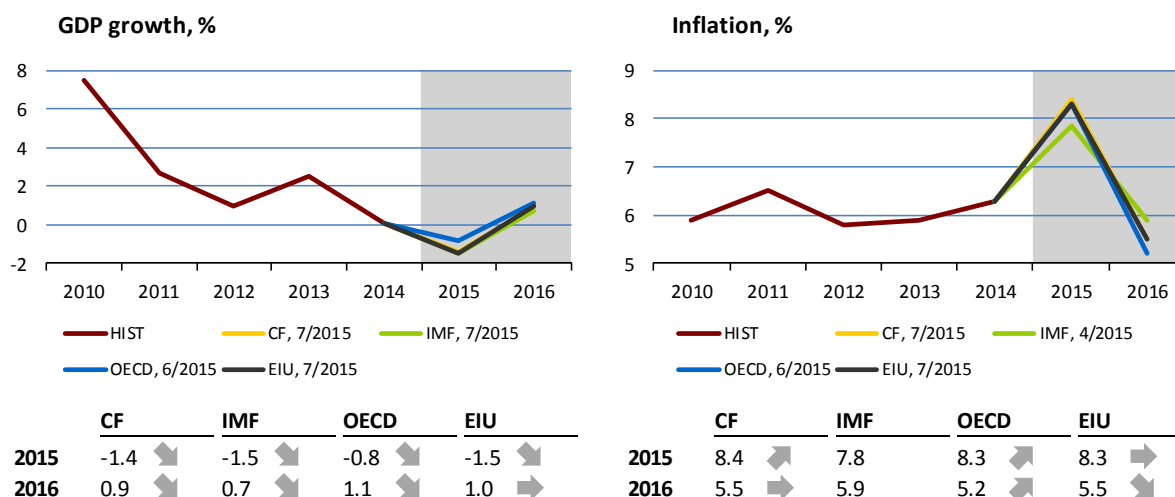|	CF		IMF		OECD		EIU	
2015	5.4	→	6.1		5.7	↘	5.9	↗
2016	5.6	→	5.7		5.3	↘	6.1	→

III.3 Russia

Following previous annual growth of 0.4%, Russia's GDP fell by 2.2% year on year in 2015 Q1. Net exports recorded a strong annual rise, but on account of a 25% plunge in imports. Investment decreased by almost 9%. Household consumption, which was the biggest contributor to the overall drop in economic activity among the GDP components, declined at the same pace. The domestic demand outlooks for Q2 remain gloomy so far. Retail sales fell by more than 9% year on year in April and May. The evolution of disposable income does not suggest a recovery in household consumption either. Real wages dropped for the seventh consecutive month. According to a Bloomberg survey, they can be expected to fall again in June. Trade will continue to be hampered by economic sanctions, which were extended by another six months by the EU in late June. Russia is preparing a retaliatory step. The new CF, EIU, IMF and OECD outlooks expect economic activity to contract by 3.1%–3.5% this year.

GDP growth, %

	CF		IMF		OECD		EIU	
2015	-3.5	↗	-3.4	↗	-3.1	↘	-3.5	→
2016	0.5	↗	0.2	↗	0.8	↘	0.7	→

Inflation, %

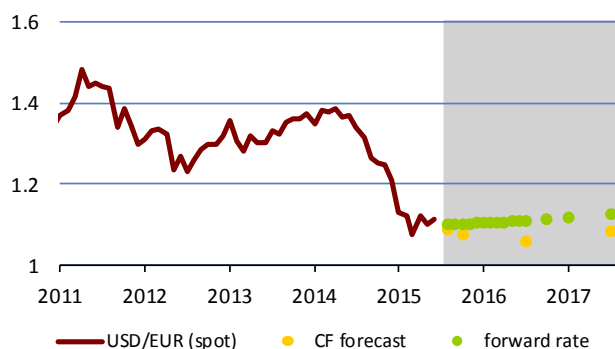|	CF		IMF		OECD		EIU	
2015	12.1	↘	17.9		16.3	↗	14.8	→
2016	7.0	↗	9.8		7.0	↗	5.7	→

III.4 Brazil

The economic situation in Brazil is not getting any better. Inflation stood at 8.9% in June (compared to 8.5% in May), further diverging from the Brazilian central bank's target (4.5% ± 2 pp). The policy rate remains at 13.75%, but a further increase is expected at the end of the month. The inflation forecasts for this year were increased slightly again, to around 8.3%. However, both CF and the EIU are expecting prices to rise by only 5.5% next year. Besides inflation, unemployment is also growing, approaching a five-year high. Consumer confidence is the lowest in 14 years. By contrast, business confidence has been rising gradually since April. However, it is still at almost one-half the level observed in January 2010. Industrial production fell by 8.8% year on year in May (from 7.6% in April) and the PMI in manufacturing stayed in the contractionary band in June (despite rising modestly). All the monitored institutions lowered their GDP outlooks for 2015, most often to a decline of 1.5%. A return to growth of around 1% is forecasted for 2016.

GDP growth, %

	CF		IMF		OECD		EIU	
2015	-1.4	↘	-1.5	↘	-0.8	↘	-1.5	↘
2016	0.9	↘	0.7	↘	1.1	↘	1.0	→

Inflation, %

	CF		IMF		OECD		EIU	
2015	8.4	↗	7.8		8.3	↗	8.3	→
2016	5.5	→	5.9		5.2	↗	5.5	↘

IV. Outlook of exchange rates vis-à-vis the US dollar

The euro

	13/7/15	08/15	10/15	07/16	07/17
spot rate	1.100				
CF forecast		1.087	1.074	1.057	1.082
forward rate		1.101	1.102	1.109	1.126

The Japanese yen
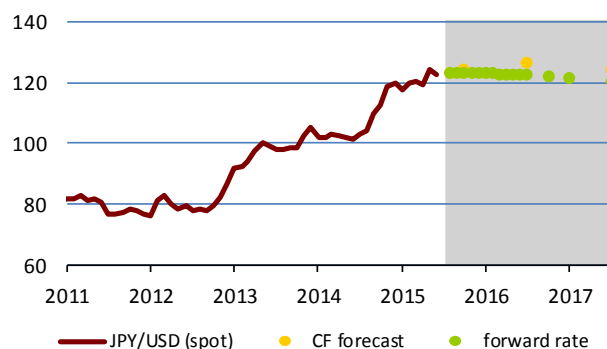
	13/7/15	08/15	10/15	07/16	07/17
spot rate	123.4				
CF forecast		123.2	124.4	126.3	124.3
forward rate		123.4	123.3	122.4	120.1

The Brazilian real
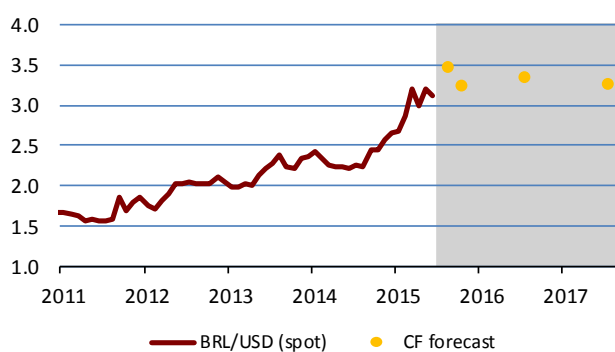
	13/7/15	08/15	10/15	07/16	07/17
spot rate	3.167				
CF forecast		3.465	3.245	3.353	3.257

The Russian rouble
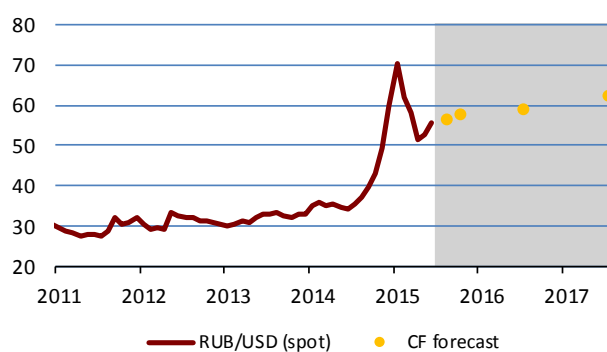
	13/7/15	08/15	10/15	07/16	07/17
spot rate	56.79				
CF forecast		56.53	57.53	58.91	62.13

The Indian rupie
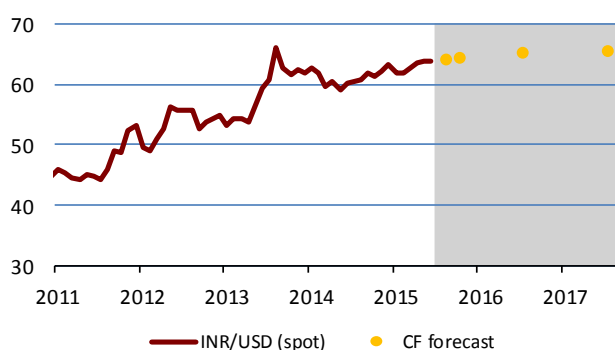
	13/7/15	08/15	10/15	07/16	07/17
spot rate	63.54				
CF forecast		64.18	64.34	65.07	65.61

The Chinese renminbi
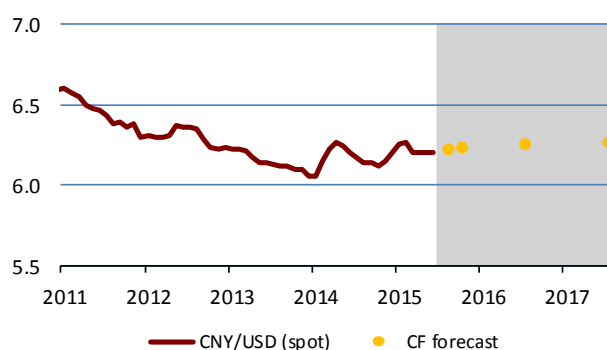
	13/7/15	08/15	10/15	07/16	07/17
spot rate	6.218				
CF forecast		6.218	6.228	6.251	6.262

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

Crude oil prices stabilised at the start of May. Brent prices followed a modest downward trend with only minor fluctuations until early July. By contrast, WTI prices showed a moderate upward trend in the same period (owing to strong demand from US refineries). The gap thus gradually shrank from roughly USD 7.5 a barrel (bbl) to USD 3.5/bbl. In the first week of July, however, WTI prices started to fall as US oil stocks surprisingly increased (for the first time since April) and the rig count in the USA rose for the first time since December. The price of both types of oil then fell sharply following the Greek referendum. Since then, the Brent price has stayed below USD 60/bbl and the WTI price only slightly above USD 50/bbl.

The oil price forecasts are quite divergent this time. According to the futures curve, the average Brent price should be USD 59.2/bbl this year, rising only slightly to USD 62.8/bbl next year. The EIA lowered its forecast for this year to USD 60/bbl but continues to expect a significantly higher price (USD 67/bbl) next year. WTI prices should be USD 5/bbl lower in both years. If Iranian oil returns quickly to the global market, the EIA forecast could fall by USD 5–10/bbl. The July CF expects Brent prices to grow already at the three-month horizon (to USD 62.8/bbl), while at the one-year horizon its forecast is even higher than the EIA prediction (USD 68.6/bbl). All three oil agencies agree that excess supply will moderate but remain positive in 2016. This is limiting the scope for a sharp rise in crude oil prices in the near future. The potential growth in demand from refineries has more or less disappeared, and Iranian oil also represents a downside risk.

Outlook for prices of oil and natural gas (USD/1000m3)
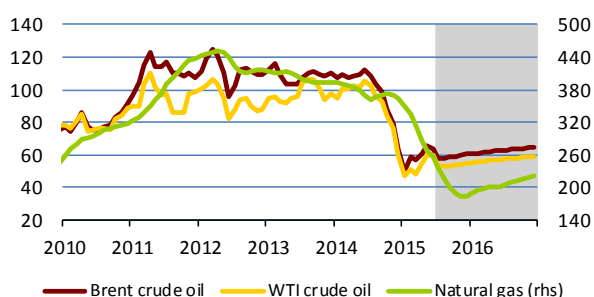
	Brent	WTI	Natural gas
2015	59.19	53.44	251.47
2016	62.84	57.22	205.66

Total stocks of oil and oil products in OECD (bil. barrel)
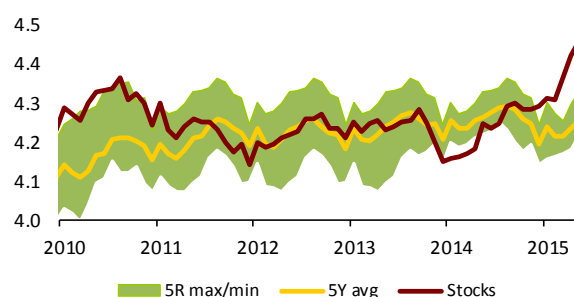
Global consumption of oil and oil products (mil. barrel / day)
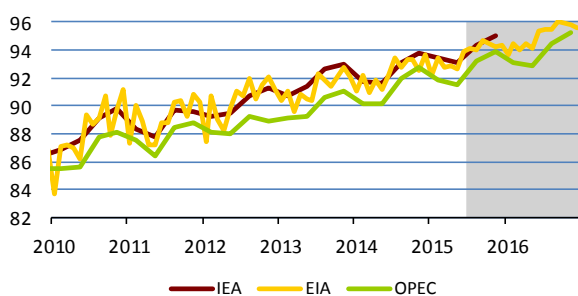
	IEA	EIA	OPEC
2015	93.96	93.63	92.60
2016		95.03	

Production, total and spare capacity in OPEC countries (mil. barrel / day)
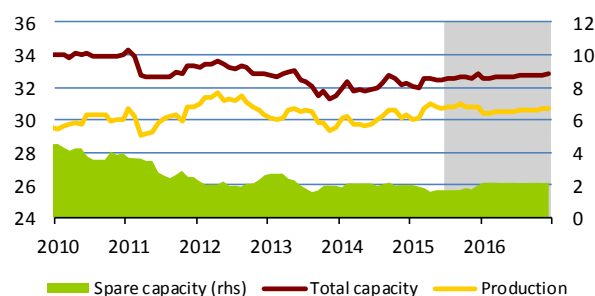
	Production	Total capacity	Spare capacity
2015	30.70	32.47	1.77
2016	30.55	32.68	2.13

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

The average monthly non-energy commodity price index fell in June, mainly due to a broad-based decline in basic metal prices, which outweighed the growth in the food commodity price index. In the first half of July, by contrast, the non-energy commodity price index rose, returning almost to the May level, with the food commodity price index strengthening and the metals price index slowing. The outlook for all three indices is only modestly rising.

Prices of agricultural products were affected by the weather and stronger demand. The USDA lowered its soybean and corn harvest estimates for this year because of wet weather. Moreover, the quarterly estimates of stocks at the end of June were lower than expected. This led to a surge in prices of wheat, corn and soy in the second half of June. Prices of rice also rose slightly. In addition, sugar prices went up following a previous sharp decline driven by the weakness of the Brazilian currency and expected stronger exports from India. Cocoa prices continued their several-month increase caused by damaged crops in Ghana. Agricultural commodity prices could be supported this year by colder weather due to El Niño.

Prices of basic metals decreased owing to the strong dollar and on concerns about a decline in Chinese industry – the PMI in China went up in May but remains below 50. Lower imports of some metals to China and sell-offs on the Chinese stock market in early July also contributed to the price decrease. The price of iron ore rose for the second consecutive month. However, it fell sharply again at the beginning of July due to persisting excess supply and a drop in global steel production in May. Looking ahead, metal prices could be supported by continued stabilisation of the Chinese property market.

Non-energy commodities price indicies
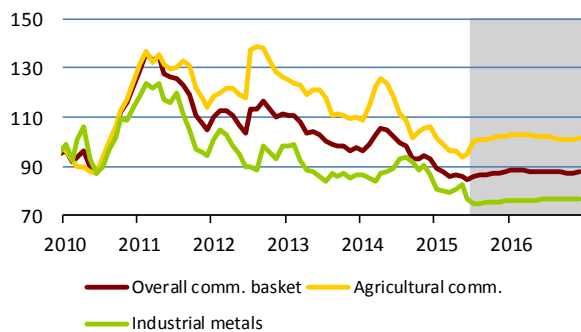
	Overall	Agricultural	Industrial
2015	86.8 ⬈	99.2 ⬈	77.8 ⬊
2016	87.9 ⬊	102.1 ⬈	76.4 ⬊

Food commodities
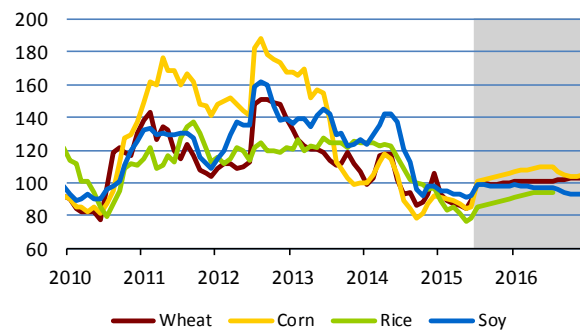
	Wheat	Corn	Rice	Soy
2015	94.1 ⬈	95.7 ⬈	85.2 ⬈	95.9 ⬈
2016	101.7 ⬈	107.0 ⬈	93.4 ⬈	96.1 ⬈

Meat, non-food agricultural commodities
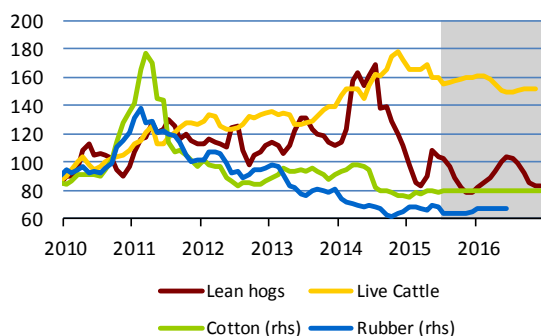
	Lean hogs	Live Cattle	Cotton	Rubber
2015	91.6 ⬊	161.1 ⬈	68.8 ⬈	49.2 ⬈
2016	91.8 ⬊	153.8 ⬊	69.9 ⬊	

Basic metals and iron ore
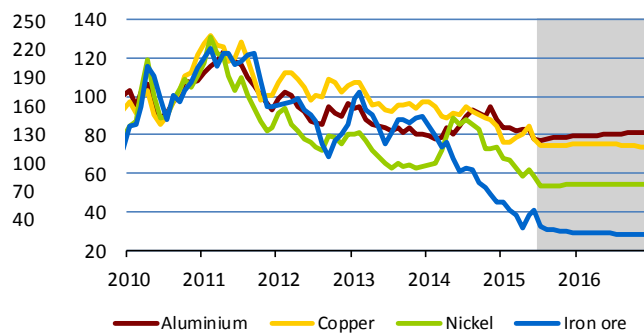
	Aluminium	Copper	Nickel	Iron ore
2015	80.2 ⬊	76.7 ⬊	58.4 ⬊	34.9 ⬊
2016	80.3 ⬊	74.8 ⬊	54.4 ⬊	28.8 ⬊

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.

ANNUAL ASSESSMENT OF THE FORECASTS INCLUDED IN GEO[1]

The GDP growth and inflation forecasts for 2014 were overestimated on average for all countries and horizons. The outlooks for long-term interest rates were likewise overestimated. The exchange rate of the dollar against all the currencies under review was expected to be weaker at the one-year horizon compared to reality. The price of oil was lower than the forecasters had predicted owing to a strong fall at the end of 2014.

1 Introduction

The aim of this article is to assess the accuracy of the forecasts of the economic variables regularly monitored in Global Economic Outlook (GEO) and to provide readers with feedback on how well the individual monitored institutions, including Consensus Forecasts, and the outlooks derived from market contracts reflected the ex post known outcomes.

In the case of the forecasts for GDP growth and CPI inflation (fixed-event forecasts), this assessment is conducted annually for the previous calendar year i.e. we are now assessing the past forecasts for 2014. In the case of the three-month and one-year outlooks (rolling-event forecasts) for foreign interest rates, exchange rates against the dollar (USD) and oil prices, the assessment starts with the May 2013 outlooks.

Owing to the short length of the time series under assessment, the analysis mainly uses the MFE (mean forecast error). However, the mean absolute forecast error (MAFE) and the root mean square error (RMSE) are also used to assess the accuracy of the forecasts. Specifically, the forecast error e_t is calculated as the difference between the ex post known actual value a_t and the corresponding forecast f_t :

$$e_t = a_t - f_t. \quad (1)$$

A positive forecast error therefore means that the forecasted value undershot the subsequent outcome, while a negative error means that it overshot it.

The text is structured as follows. Section 2 assesses the forecasts for GDP growth and CPI inflation for the individual foreign economies monitored. Section 3 assesses the accuracy of the forecasts for foreign interest rates. Section 4 assesses the accuracy of the forecasts for the exchange rate of the dollar against the currencies under review. Section 5 assesses the Brent crude oil price forecast. This is followed by a section summarising the results.
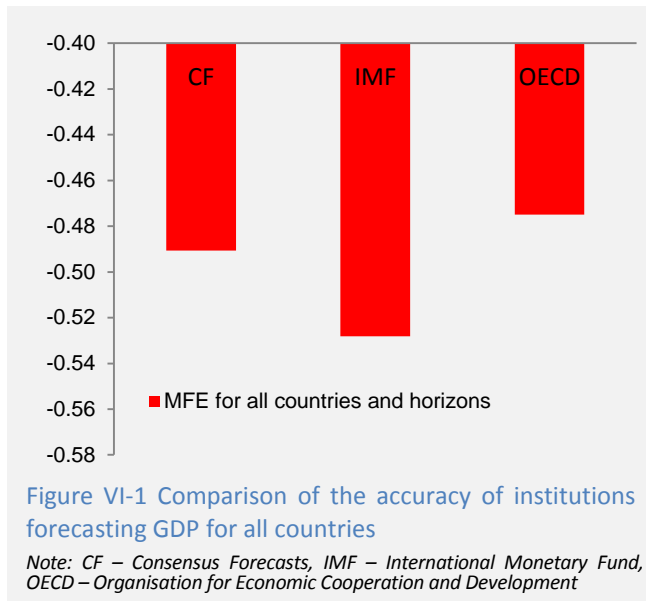
2 Assessment of the accuracy of the GDP growth and CPI inflation forecasts for 2014

GEO regularly monitors actual and predicted GDP growth and CPI inflation in the euro area, the USA, Germany and Japan and also in the BRIC countries (Brazil, Russia, India and China). The forecasts for their GDP growth and inflation are taken primarily from Consensus Forecasts (CF) and also from the International Monetary Fund (IMF) and the Organisation for Economic Cooperation and Development (OECD). These three institutions also cover all the countries monitored. In addition, we monitor the European Central Bank's (ECB) forecast for the euro area, the Federal Reserve's forecast for the USA and Deutsche Bundesbank's (DBB) forecast for Germany. The forecasts of the Economist Intelligence Unit (EIU) are used for BRIC countries.

These institutions differ in the frequency and date of publication of their forecasts. The forecast updates range from monthly and quarterly through to half-yearly. For presentational reasons, only the half-yearly forecasts (i.e. the spring forecasts and the autumn forecasts) are assessed.

The deviations of the GDP growth forecasts from the subsequent outcomes are provided in Figures VI-9 to VI-16 in the Appendix. The monitored forecasts on average hit the actual economic growth figures for 2014 (as measured by the MFE) in Germany (actual figure for 2014: 1.6%), India (5.6%) and China (7.4%) and approximately also in the euro area, which recorded 0.9% growth after two years of contraction. In the cases of Brazil and Japan, whose economies stagnated in reality, and also Russia (0.6% growth), the economic growth projections were relatively strongly overestimated. Growth in the USA (2.4%) was also slightly overestimated.

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[1] Written by Filip Novotný (filip.novotny@cnb.cz). The views expressed in this article are those of the author and do not necessarily reflect the official position of the Czech National Bank.

Figure VI-1 Comparison of the accuracy of institutions forecasting GDP for all countries

Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development

Nonetheless, these inaccuracies can be assessed relatively favourably, as in past years the GDP growth forecasts had suffered from larger overestimation, at least in the case of advanced economies. This pointed to a poor ability of economists to predict an economic downturn or a turning point in the economy. According to Ahir and Loungani (2014),[2] one reason may be an asymmetrically perceived greater loss for incorrectly calling a recession than benefits from correctly calling one. As the above study says, this applies to the forecasts of both private institutions (grouped in CF) and international government institutions.

Figures VI-9 to VI-16 in the Appendix also show that the forecasts did not improve significantly over time. In general, we can see the forecasts gradually becoming more accurate as they approach the forecasted outcome. This could suggest heightened uncertainty of the forecasts for 2014. The armed conflict in Ukraine and the sharp drop in oil prices in the second half of 2014 played a role in the countries monitored in GEO. This is reflected above all in the GDP growth forecasts for Russia, which showed the greatest variability (uncertainty). However, the forecasts for economic growth in Brazil were also quite variable, although this was due also to domestic economic and political problems.

Turning to the individual institutions providing forecasts for all the countries under review, namely CF, the IMF and the OECD, the best performer on average was the OECD, followed by CF (see Figure VI-1). Figure VI-1 also shows that the GDP forecasts for all the countries under review for 2014 were overestimated on average.

We should note, however, that the accuracy ranking of the institutions' forecasts changes from year to year, so no hard conclusions should be drawn from the results for one year. Turning to the other forecasters, the least accurate forecasts for the BRIC countries were those of the EIU, and as in previous years US GDP growth was most overestimated by the Fed.
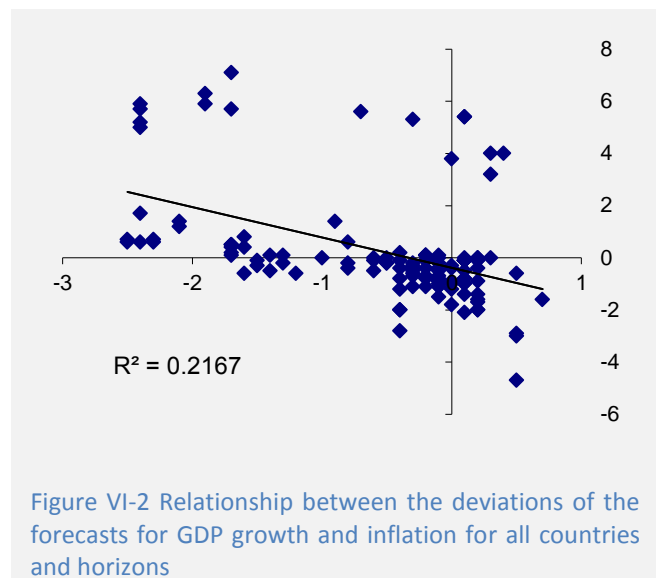
In line with the GDP growth forecasts for 2014 which were overestimated on average, the CPI inflation forecasts were overestimated as well (see Figures VI-17 to VI-24). Only the strongly underestimated inflation outlooks for Russia until the end of 2014 (due to the armed conflict in Ukraine) and the underestimated inflation in Japan according to the OECD and CF do not fit this pattern. Of the three institutions forecasting inflation for all the countries under review, the best performer on average was the IMF, followed by CF. In contrast to being the best GDP growth forecaster, the OECD was the worst at forecasting inflation on average. It is also worth noting that the most overestimated inflation outlooks for Japan were those of the BoJ.

Figure VI-2 illustrates the correlation between the forecast errors for GDP growth and CPI inflation for all countries and horizons. It shows that the relationship between the GDP growth and inflation predictions was loosened overall and moreover was unintuitively negative. This was due to the fact that the inflation forecasts for Russia and partly also for Japan were significantly underestimated and the GDP growth forecasts for the two countries were overestimated.

Figure VI-2 Relationship between the deviations of the forecasts for GDP growth and inflation for all countries and horizons

Under normal conditions, however, we can expect a mutually consistent positive relationship between GDP growth and inflation. In other words, analysts should reassess the two variables in the same direction as new data comes in. However, this happened only for the forecasts for the euro area and Germany.

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[2]   "There will be growth in the spring: How well do economists predict turning points?" http://www.voxeu.org/article/predicting-economic-turning-points

3   Assessment of the accuracy of the forecasts for foreign interest rates

The outlooks for three-month interest rates monitored in GEO are derived from futures. By contrast, the outlooks for long-term (ten-year) government bond yields are taken from CF. The interest rate outlooks are monitored for the euro area and the USA only.

Figure VI-3 Three-month outlooks

Figure VI-4 One-year outlooks
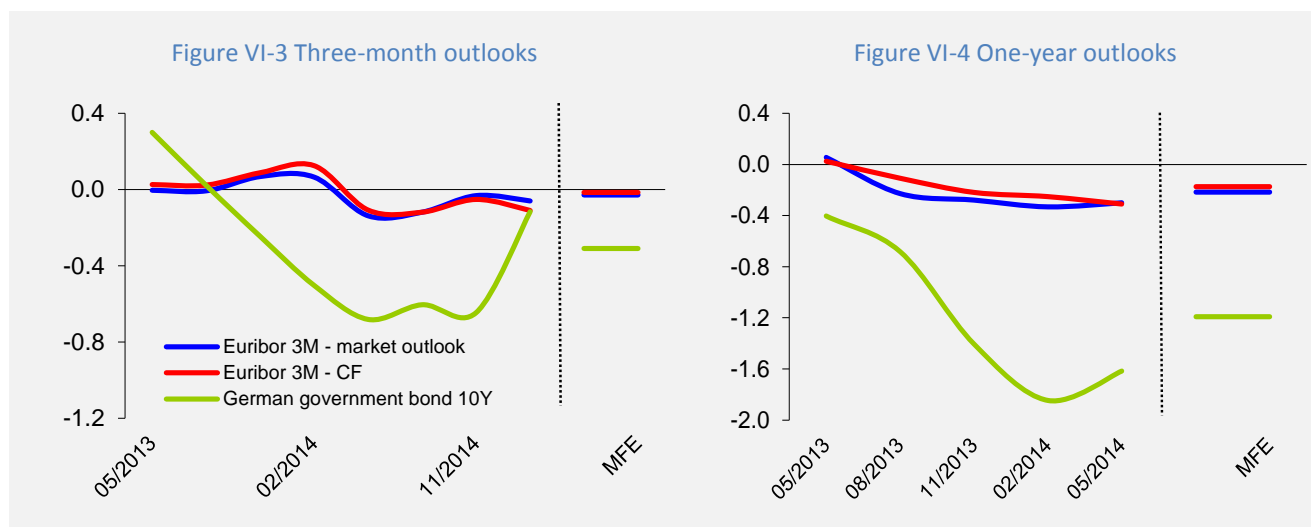
Figures VI-3 and VI-4 Forecast errors for interest rates for the euro area (pp)
Note: The source of the actual data is Datastream. MFE is the mean forecast error for the monitored period.

In line with the overestimation of GDP growth and inflation, the outlooks for long-term interest rates were overestimated in the period under review (see Figures VI-3 to VI-6). The one-year outlooks were naturally more overestimated (less accurate) than the three-month outlooks. The very similar deviations of the forecasts for long-term yields are due to the high correlation between German and US ten-year government bond rates (correlation coefficient 0.95).

The smaller deviations of the forecasts for short-term interest rates (3M Euribor) were due to the relatively low levels of these rates in advanced countries. In 2014, 3M rates were only slightly above 0.2% on average in the euro area and the USA.

In addition, 3M Euribor forecasts are available both from futures and CF, which makes it possible to compare the accuracy of their predictions. The comparison reveals that the accuracy of the three-month Euribor outlooks was the same, while CF was slightly more accurate in the case of one-year outlooks. The same applied to the forecasts for US 3M rates.

4   Assessment of the accuracy of the forecasts for the dollar exchange rate

GEO provides outlooks for the exchange rates of selected currencies against the US dollar based on CF forecasts. In addition, forward rates are provided for the euro and the Japanese yen. They are based on

Figure VI-5 Three-month outlooks

Figure VI-6 One-year outlooks

Figures VI-5 and VI-6 Forecast errors for interest rates for the USA (pp)
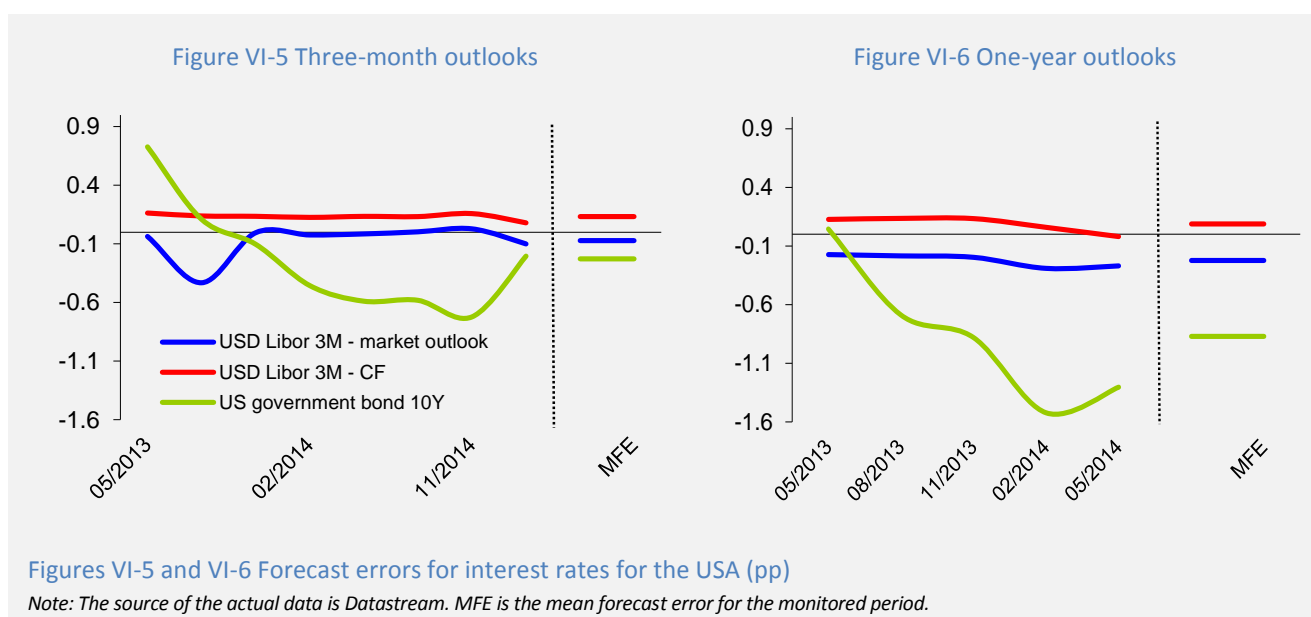*Note: The source of the actual data is Datastream. MFE is the mean forecast error for the monitored period.*

covered interest parity and represent the current ability to hedge the future exchange rate rather than the outlook.

For the above currencies (except the euro at the three-month horizon) the dollar surprised the forecasters with its stronger-than-expected level. The forecasts thus expected a weaker dollar compared to the actual outcome (see Figures VI-25 to VI-36 in the Appendix). The CF outlooks reflected the later outcomes for the euro and the yen better than the forward rates did.

5 Assessment of the accuracy of the Brent crude oil price forecasts

The market outlooks derived from both futures contracts and the CF outlooks overestimated the actual price of oil at both the three-month and one-year horizons. The curves of the forecast errors (see Figures VI-7 to VI-8) show that this was due to a fall in the price of oil in the second half of 2014. A comparison of the accuracy of the market outlooks and CF outlooks reveals that market outlooks were more accurate at the one-year horizon.
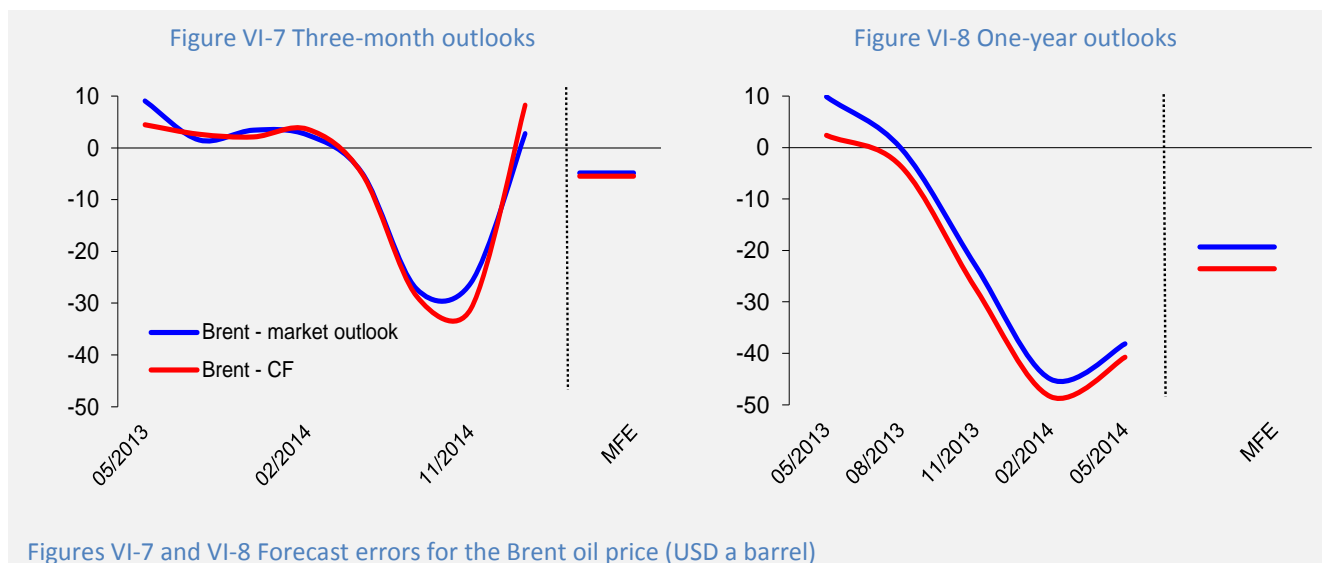
Figures VI-7 and VI-8 Forecast errors for the Brent oil price (USD a barrel)

6 Conclusion

Our assessment of the accuracy of the forecasts monitored in GEO reveals that 2014 surprised most forecasters with worse-than-expected GDP growth. The developments in Russia, Brazil and Japan were the biggest surprise. Turning to the accuracy of the individual GDP growth forecasts, the lowest negative forecast errors on average for all countries and forecast horizons were recorded by the OECD, followed by CF. Similarly, the institutions under review overestimated the consumer price inflation outlooks for 2014 (except for Russia and partly also Japan).

In line with the overestimated outlooks for GDP growth and inflation, long-term interest rates were also expected to be higher compared to the actual outcome on average in the period under review. The exchange rate of the dollar against the currencies under review (except the euro at the three-month horizon) surprised the forecasters with its stronger-than-expected level. The outlooks for the price of Brent crude oil were strongly overestimated owing to a sharp fall at the end of 2014.

7 APPENDIX
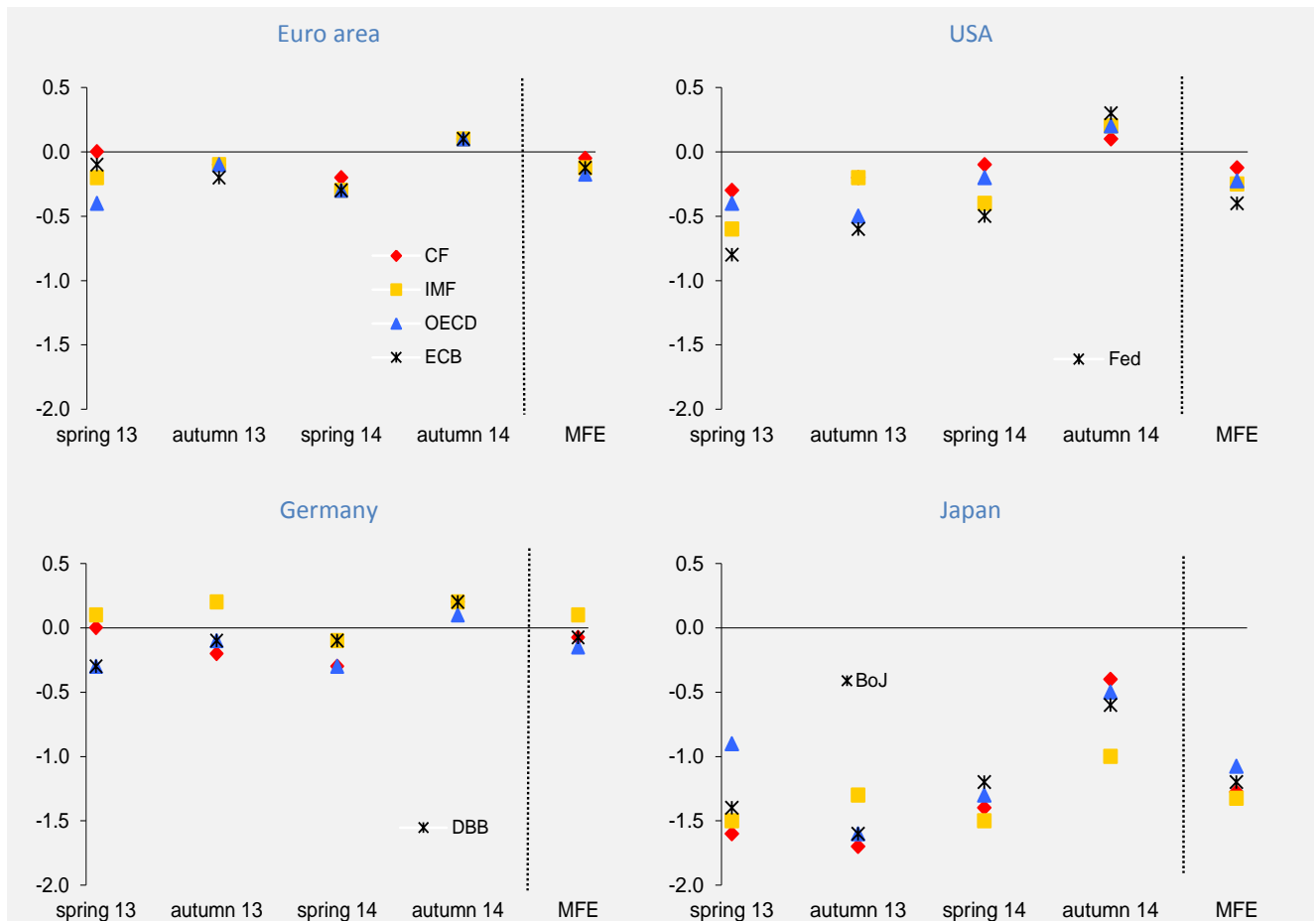
Figures VI-9 to VI-12 Forecast errors for GDP growth in advanced countries for 2014 (pp)

Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, ECB – European Central Bank, Fed – Federal Reserve System of the USA, DBB – Deutsche Bundesbank, BoJ – Bank of Japan. The source of the historical figures for 2014 is CF06. MFE is the mean forecast error for the given year.

Figures VI-13 to VI-16 Forecast errors for GDP growth in BRIC countries for 2014 (pp)

Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, EIU – Economist Intelligence Unit. The source of the historical figures for 2014 is CF06. MFE is the mean forecast error for the given year.

Euro area

USA

Germany

Japan

Figures VI-17 to VI-20 Forecast errors for consumer price inflation in advanced countries for 2014 (pp)

Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, ECB – European Central Bank, Fed – Federal Reserve System of the USA, DBB – Deutsche Bundesbank, BoJ – Bank of Japan. The source of the historical figures for 2014 is CF06. MFE is the mean forecast error for the given year.

Figures VI-21 to VI-24 Forecast errors for consumer price inflation in BRIC countries for 2014 (pp)

Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, EIU – Economist Intelligence Unit. The source of the historical figures for 2014 is CF06. MFE is the mean forecast error for the given year.

Euro

Japanese yen

Brazilian real

Russian rouble

Indian rupee

Chinese renminbi

Figures VI-31 to VI-36 One-year outlooks for exchange rates (deviations from reality)

Note: CF – Consensus Forecasts. MFE is the mean forecast error for the given year.

A1. Change in GDP predictions for 2015

	CF		IMF		OECD		CB / EIU	
EA	0	2015/7 2015/6	+0.0	2015/7 2015/4	+0.0	2015/6 2015/3	0	2015/6 2015/3
US	+0.2	2015/7 2015/6	-0.6	2015/7 2015/4	-1.1	2015/6 2015/3	-0.6	2015/6 2015/3
DE	0	2015/7 2015/6	-0.0	2015/7 2015/4	-0.1	2015/6 2015/3	+0.7	2015/6 2014/12
JP	0	2015/7 2015/6	-0.2	2015/7 2015/4	-0.3	2015/6 2015/3	0	2015/5 2015/1
BR	-0.2	2015/7 2015/6	-0.5	2015/7 2015/4	-2.3	2015/6 2014/11	-0.5	2015/7 2015/6
RU	+0.1	2015/7 2015/6	+0.4	2015/7 2015/4	-3.1	2015/6 2014/11	0	2015/7 2015/6
IN	-0.1	2015/7 2015/6	+0.0	2015/7 2015/4	+0.9	2015/6 2014/11	+0.2	2015/7 2015/6
CN	-0.1	2015/7 2015/6	+0.0	2015/7 2015/4	-0.3	2015/6 2014/11	0	2015/7 2015/6

A2. Change in inflation predictions for 2015

	CF		IMF		OECD		CB/EIU	
EA	0	2015/7 2015/6	-0.9	2015/4 2014/10	+0.0	2015/6 2014/11	+0.3	2015/6 2015/3
US	0	2015/7 2015/6	-2.0	2015/4 2014/10	-1.4	2015/6 2014/11	0	2015/6 2015/3
DE	+0.1	2015/7 2015/6	-1.0	2015/4 2014/10	+0.0	2015/6 2014/11	-0.6	2015/6 2014/12
JP	+0.1	2015/7 2015/6	-1.0	2015/4 2014/10	+0.0	2015/6 2014/11	-0.2	2015/5 2015/1
BR	+0.4	2015/7 2015/6	+2.0	2015/4 2014/10	+2.9	2015/6 2014/11	0	2015/7 2015/6
RU	-0.2	2015/7 2015/6	+10.6	2015/4 2014/10	+8.6	2015/6 2014/11	0	2015/7 2015/6
IN	0	2015/7 2015/6	-1.4	2015/4 2014/10	-0.7	2015/6 2014/11	+0.1	2015/7 2015/6
CN	0	2015/7 2015/6	-1.3	2015/4 2014/10	-1.0	2015/6 2014/11	0	2015/7 2015/6

A1. Change in GDP predictions for 2015

A3. List of abbreviations

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

A4. List of thematic articles published in the GEO

2015

	Issue
Annual assessment of the forecasts included in GEO (Filip Novoný)	2015-7
Seasonal price movements in the commodity markets (Martin Motl)	2015-6
Assessment of the effects of quantitative easing in the USA (Filip Novoný)	2015-5
How consensus has evolved in Consensus Forecasts (Tomáš Adam and Jan Hošek)	2015-4
The US dollar's position in the global financial system	2015-3
The crisis and post-crisis experience with Swiss franc loans outside Switzerland (Alexis Derviz)	2015-2
The effect of oil prices on inflation from a GVAR model perspective (Soňa Benecká and Jan Hošek)	2015-1

2014

	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
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 Novoný)	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
Annual assessment of the forecasts included in GEO (Filip Novotný)	2013-6

	Issue
Apartment price trends in selected CESEE countries and cities (Michal Hlaváček and Luboš Komárek)	2013-5
Selected leading indicators for the euro area, Germany and the United States (Filip Novotný)	2013-4
Financial stress in advanced economies (Tomáš Adam and Soňa Benecká)	2013-3
Natural gas market developments (Jan Hošek)	2013-2
Economic potential of the BRIC countries (Luboš Komárek and Viktor Zeisel)	2013-1

2012

	Issue
Global trends in the services balance 2005–2011 (Ladislav Prokop)	2012-12
A look back at the 2012 IIF annual membership meeting (Luboš Komárek)	2012-11
The relationship between the oil price and key macroeconomic variables (Jan Hošek, Luboš Komárek and Martin Motl)	2012-10
US holdings of foreign securities versus foreign holdings of securities in the US: What is the trend? (Narcisa Kadlčáková)	2012-9
Changes in the Czech Republic's balance of payments caused by the global financial crisis (Vladimír Žďárský)	2012-8
Annual assessment of the forecasts included in the GEO (Filip Novotný)	2012-7
A look back at the IIF spring membership meeting (Filip Novotný)	2012-6
An overview of the world's most frequently used commodity indices (Jan Hošek)	2012-5
Property price misalignment around the world (Michal Hlaváček and Luboš Komárek)	2012-4
A macrofinancial view of asset price misalignment (Luboš Komárek)	2012-3
The euro area bond market during the debt crisis (Tomáš Adam and Soňa Benecká)	2012-2
Liquidity risk in the euro area money market and ECB operations (Soňa Benecká)	2012-1

2011

	Issue
An empirical analysis of monetary policy transmission in the Russian Federation (Oxana Babecká)	2011-12
The widening spread between prices of North Sea Brent crude oil and US WTI crude oil (Jan Hošek and Filip Novotný)	2011-11
A look back at the IIF annual membership meeting (Luboš Komárek)	2011-10
Where to look for a safe haven currency (Soňa Benecká)	2011-9
Monetary policy of the central bank of the Russian Federation (Oxana Babecká)	2011-9
Increased uncertainty in euro area financial markets (Tomáš Adam and Soňa Benecká)	2011-8
Eurodollar markets (Narcisa Kadlčáková)	2011-8
Assessment of the forecasts monitored in the GEO (Filip Novotný)	2011-7
How have global imbalances changed during the crisis? (Vladimír Žďárský)	2011-6
Winners and losers of the economic crisis in the eyes of European investors (Alexis Derviz)	2011-5

	Issue
Monetary policy of the People's Bank of China (Soňa Benecká)	2011-4
A look back at the IIF spring membership meeting (Jan Hošek)	2011-3
The link between the Brent crude oil price and the US dollar exchange rate (Filip Novotný)	2011-2
International integration of the Chinese stock market (Jan Babecký, Luboš Komárek and Zlatuše Komárková)	2011-1