GLOBAL ECONOMIC OUTLOOK – SEPTEMBER

Monetary and Statistics Department
External Economic Relations Division

2013

CNB CZECH NATIONAL BANK

EDITORS AND AUTHORS

Luboš Komárek
Editor-in-Chief
Summary,
Lubos.Komarek@cnb.cz

Oxana Babecká
Editor
II.1 & II.3 GDP and inflation forecasts
Oxana.Babecka-Kucharcukova@cnb.cz

Tomáš Adam
Editor
V.1 & V.2 Commodity market developments
Tomas.Adam@cnb.cz

Viktor Zeisel
II.1 & II.3 GDP and inflation forecasts
Focus
Viktor.Zeisel@cnb.cz

Milan Klíma
III. Leading indicators
Milan.Klima@cnb.cz

Soňa Benecká
IV.1 & IV. 2 Interest rate and exchange rate outlooks
Sona.Benecka@cnb.cz

Jan Hošek
V.1 & V.2 Commodity market developments
Jan2461.Hosek@cnb.cz

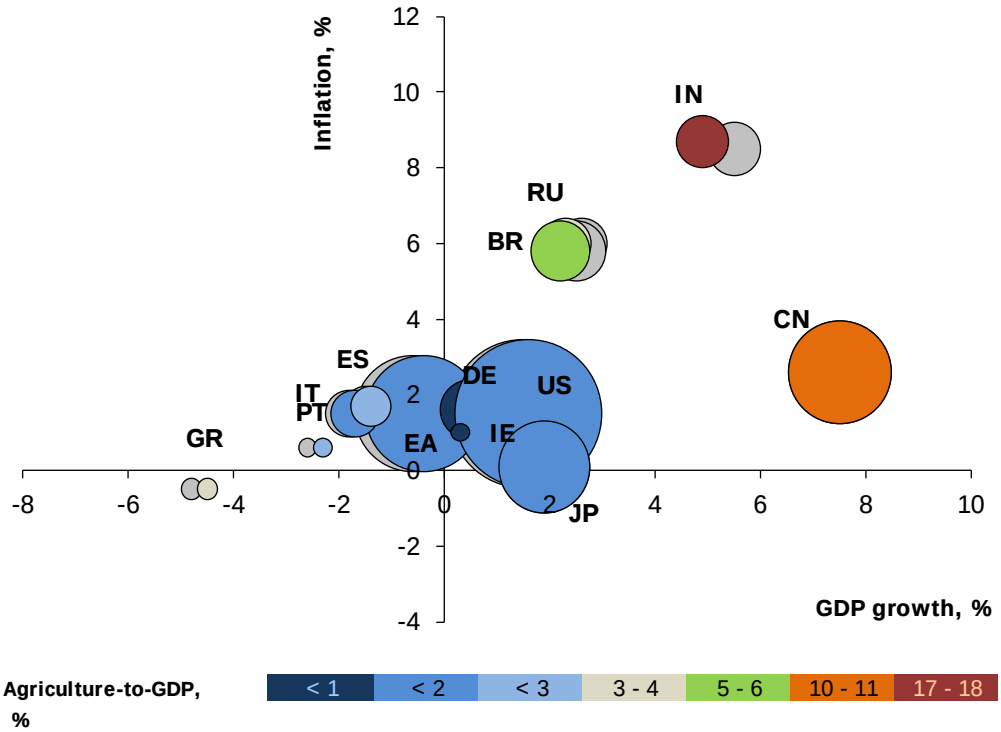
I. SUMMARY

The September issue of Global Economic Outlook presents its regular overview of recent and expected developments in selected advanced and emerging economies, focusing on key economic variables such as GDP, inflation, leading indicators, interest rates, exchange rates and commodity prices. In this issue, we also focus on analysing the effect of weather on food prices and headline inflation. This effect is illustrated using the example of last year's drought in the USA, which was reflected in a rise in prices of food commodities and related products and, in turn, a global increase in food prices.

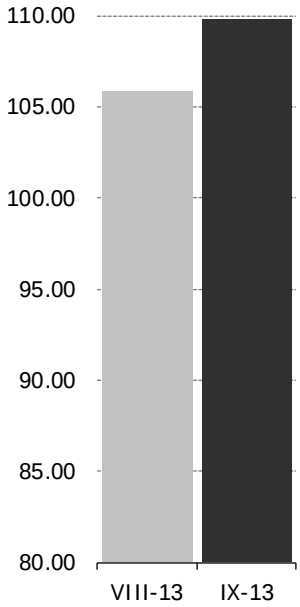
The updated economic growth outlooks for this year have either improved slightly or stabilised in the advanced countries monitored; almost all the leading indicators are painting a similar picture. The outlooks for 2014 point to better economic performance in the USA and Japan. By contrast, the economic growth forecast for this year has worsened for the BRIC countries (except China), where the outlooks for 2014 have also been lowered slightly. With the exception of India the inflation outlook remains stable, as the very slow onset of a global economic recovery and commodity market developments currently signal no inflationary risks.

The outlooks for interest rates in the USA and the euro area increasingly point to a slight rise in rates across maturities in 2014. The market interest rate outlook for 2015 has been revised upwards. The US dollar is expected to appreciate slightly against the euro and other reserve currencies, as well as against the Brazilian and Russian currencies, over the one-year horizon. On the other hand, it is expected to depreciate moderately against the Chinese currency and more markedly against the Indian currency over the same time scale. The outlook for dollar prices of oil and natural gas remains gradually declining until the end of 2015. The outlook for food commodities is stable overall, but mixed across the individual components. Industrial metals prices are expected to rise gradually over the same time frame.

Outlook for the global economy in 2013



Outlook for Brent crude oil prices in December 2013



Agriculture-to-GDP, %

The size of each point represents the size of the country/region according to nominal GDP in US dollars in 2011. The colour of the points is assigned according to the agriculture-to-GDP ratio in 2009-2012 in %. The grey colour is the CF forecast (GDP, inflation) or Bloomberg survey (oil price) for the previous month.
[Cut-off date for data: 12 September 2013]
Source: Bloomberg, Consensus Economics, World Bank, UNECE, CNB calculations.

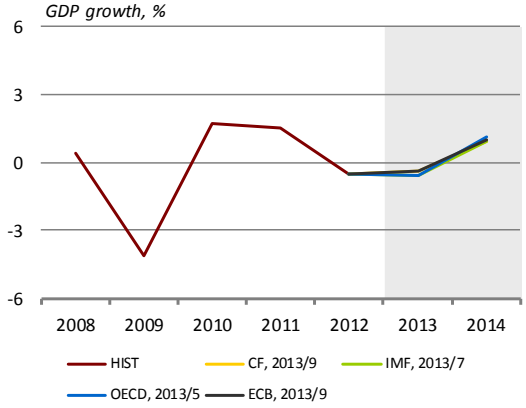
II.1 GDP outlook in advanced countries

Following six quarters of decline, quarterly GDP growth in the euro area turned positive in 2013 Q2, driven mainly by economic growth in Germany and France. Although the macroeconomic indicators are not clear-cut, the favourable GDP figures were reflected in the new outlooks of the ECB and CF, which lowered their outlooks for the annual contraction of the region's economy in 2013 by 0.2 pp to -0.4% (in the case of the ECB this is the median of the outlooks, which improved thanks to a rise in the lower bound of the outlooks). CF increased its prediction of German growth to 0.5%. According to the ECB, the euro area's return to growth will be supported by gradually rising domestic demand thanks to the positive effect of lower commodity price inflation on real income and to easy monetary policy. In the term, domestic demand in the euro area should be supported by less restrictive fiscal policy and stronger loan supply. Net exports should also contribute positively to overall economic growth, although their contribution to GDP growth will decrease over time. The outlook for the USA this year has improved as well, to 1.6%. However, the expected improvement in macroeconomic indicators, especially labour market developments, is increasing concerns about the Fed exiting QE3. Japan will grow at a pace of 1.9% this year.

The CF outlooks for the euro area and Germany for next year were unchanged. By contrast, the ECB revised its 2014 outlook towards weaker growth. The USA should record the fastest growth of the four monitored economies next year (2.7%), while growth in the euro area will remain the slowest (0.9%–1.0%).

Eurozone

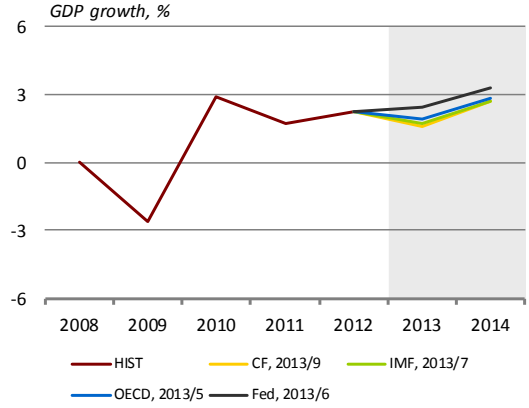
GDP growth, %



	CF	IMF	OECD	ECB
2013	-0.4 ↗	-0.6	-0.6	-0.4 ↗
2014	0.9 →	0.9	1.1	1.0 ↘

USA

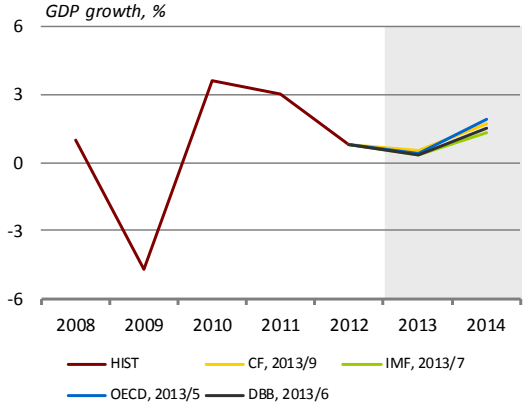
GDP growth, %



	CF	IMF	OECD	Fed
2013	1.6 ↗	1.7	1.9	2.5
2014	2.7 ↗	2.7	2.8	3.3

Germany

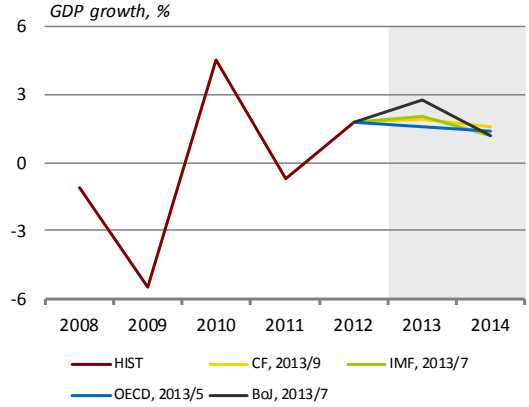
GDP growth, %



	CF	IMF	OECD	DBB
2013	0.5 ↗	0.3	0.4	0.3
2014	1.7 →	1.3	1.9	1.5

Japan

GDP growth, %



	CF	IMF	OECD	BoJ
2013	1.9 →	2.0	1.6	2.8
2014	1.6 ↗	1.2	1.4	1.2

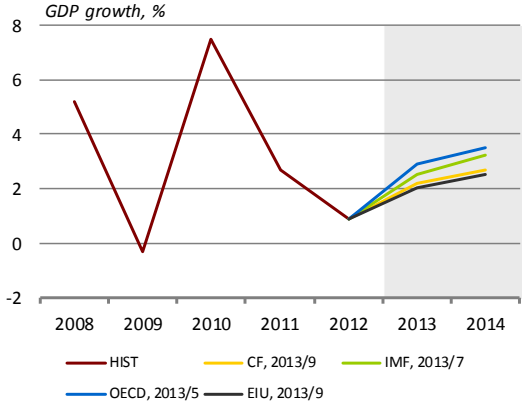
Note: Legend shows latest forecast data in format "Source, year/month" of forecast publication. HIST: historical values. ECB and Fed: midpoint of range. Arrow indicates direction of revision of newly published forecast. If no arrow is shown, no new forecast was available in previous month or by cut-off date in current month. Asterisk indicates first published forecast for given year.
[Cut-off date for data: 12 September 2013)
Source: CF, IMF, OECD, ECB, Fed, DBB, BoJ, CNB calculations.

II.2 GDP outlook in BRIC countries

As in the previous months of this year, the GDP growth forecast for emerging economies (which at the start of the year had still been considered the engine of global growth) worsened in September. China is the best performer among the countries monitored, but it had to resort to tax cuts and launch a new rail transport project to maintain the growth planned by the government. In addition, China is considering lowering its growth target for next year from 7.5% to 7%. However, new economic data show that China is getting a second wind, as industrial production and retail sales rose sharply in August. The volume of new loans doubled in August, although this is also generating some risks. The Russian government cut its GDP growth estimate as well, from 2.4% to 1.8%. President Putin also hinted that expenditure cuts would be necessary in line with the new estimates. New CF estimates for Brazil and India also point to considerably slower growth (down, respectively, by 0.3 pp and 0.6 pp this year and 0.5 pp and 0.4 pp next year).

Brazil

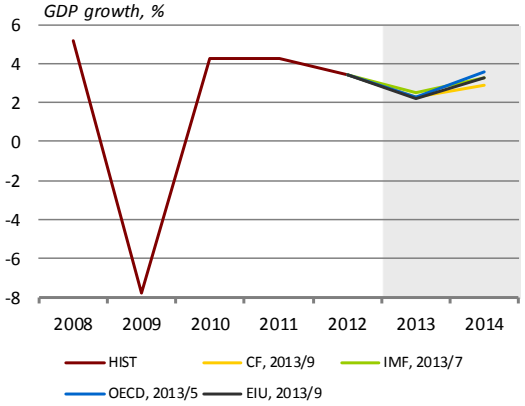
GDP growth, %



	CF	IMF	OECD	EIU
2013	2.2	2.5	2.9	2.0 ➡
2014	2.7	3.2	3.5	2.5

Russia

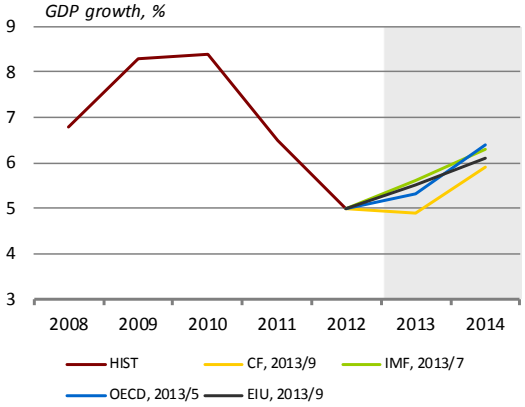
GDP growth, %



	CF	IMF	OECD	EIU
2013	2.3	2.5	2.3	2.2
2014	2.9	3.3	3.6	3.3

India

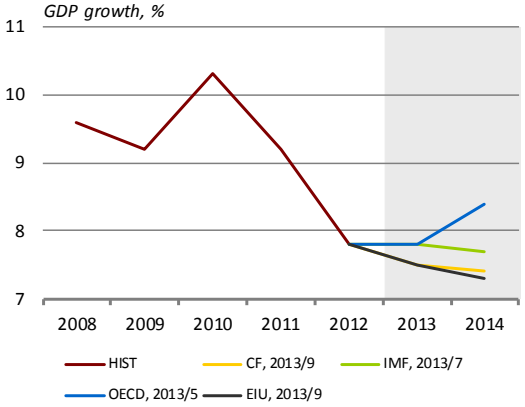
GDP growth, %



	CF	IMF	OECD	EIU
2013	4.9	5.6	5.3	5.5
2014	5.9	6.3	6.4	6.1 ➡

China

GDP growth, %



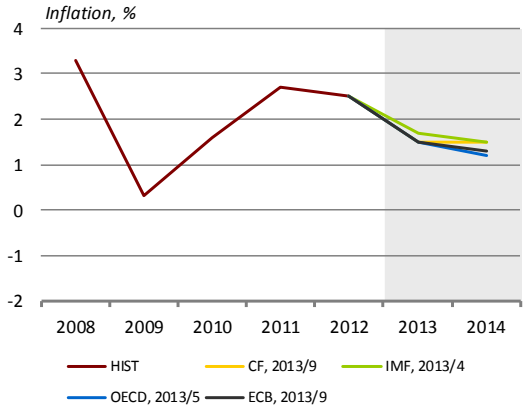
	CF	IMF	OECD	EIU
2013	7.5 ➡	7.8	7.8	7.5 ➡
2014	7.4	7.7	8.4	7.3 ➡

Note: Legend shows latest forecast data in format "Source, year/month" of forecast publication. HIST: historical values. Arrow indicates direction of revision of newly published forecast. If no arrow is shown, no new forecast was available in previous month or by cut-off date in current month. Asterisk indicates first published forecast for given year.
[Cut-off date for data: 12 September 2013)
Source: CF, IMF, OECD, EIU, CNB calculations.

II.3 Inflation outlook in advanced countries

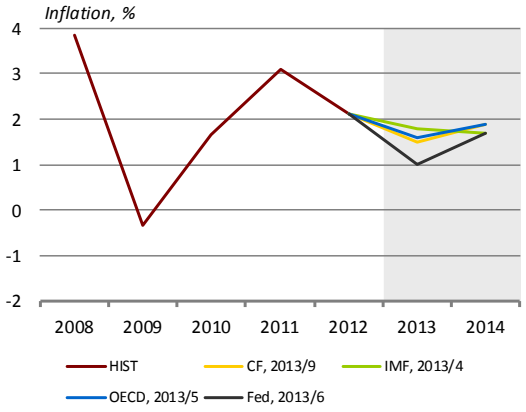
The new CF outlook left its 2013 inflation outlooks unchanged for all the advanced economies monitored; the new quarterly ECB outlook slightly increased its forecast for price growth this year in the euro area compared to the June outlook. In 2013, inflation will be between 1.5% and 1.6% in all the advanced economies monitored. Japan is again the exception; its consumer price inflation should not exceed 0.1% according to CF. The outlook of low annual inflation still reflects the slowdown in energy commodity prices and the appreciation of the euro in 2013 H1. The ECB's new inflation outlooks expect a falling trend in oil prices over the entire horizon. Consumer prices can be expected to rise only modestly for now, partly because of weak domestic demand. Next year, the largest change in inflation dynamics can be expected in Japan, where inflation should pick up to 2.2% owing chiefly to a recovery of the Japanese economy coupled with a rise in excise duties, easy monetary policy and depreciation of the yen. Next year will bring no major changes for the other economies monitored. Inflation in the euro area will remain at last year's level, while consumer price inflation in both Germany and the USA will accelerate to 1.8%.

Eurozone



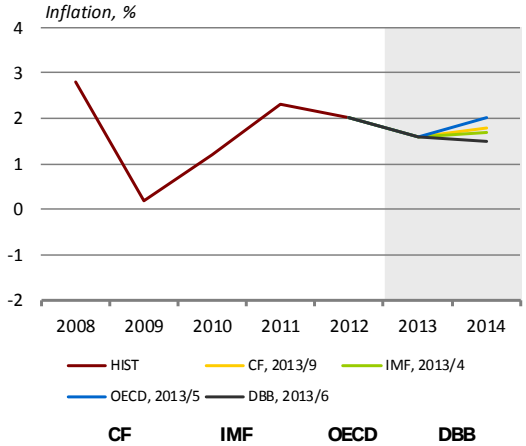
	CF	IMF	OECD	ECB
2013	1.5 →	1.7	1.5	1.5 ↗
2014	1.5 →	1.5	1.2	1.3 →

USA



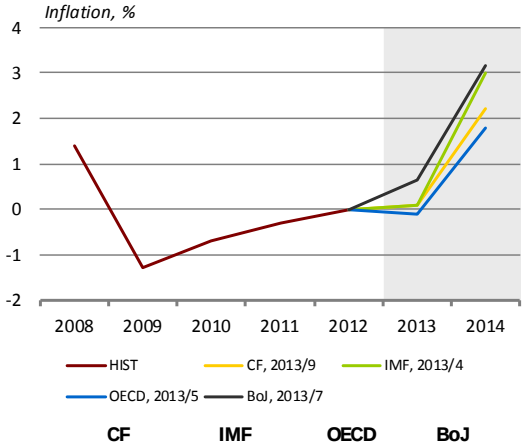
	CF	IMF	OECD	Fed
2013	1.5 →	1.8	1.6	1.0
2014	1.9 →	1.7	1.9	1.7

Germany



	CF	IMF	OECD	DBB
2013	1.6 →	1.6	1.6	1.6
2014	1.8 ↘	1.7	2.0	1.5

Japan



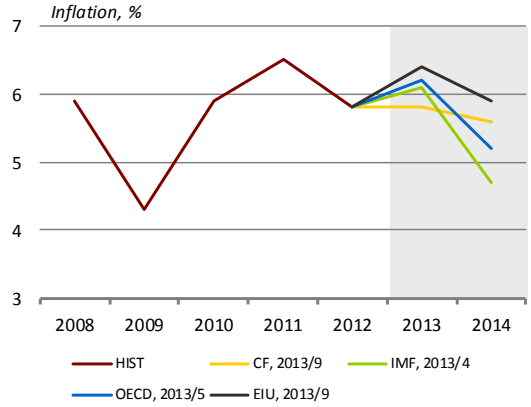
	CF	IMF	OECD	BoJ
2013	0.1 →	0.1	-0.1	0.7
2014	2.2 ↗	3.0	1.8	3.2

Note: Legend shows latest forecast data in format "Source, year/month" of forecast publication. HIST: historical values. ECB and Fed: midpoint of range. Arrow indicates direction of revision of newly published forecast. If no arrow is shown, no new forecast was available in previous month or by cut-off date in current month. Asterisk indicates first published forecast for given year.
[Cut-off date for data: 12 September 2013)
Source: CF, IMF, OECD, ECB, Fed, DBB, BoJ, CNB calculations.

II.4 Inflation outlook in BRIC countries

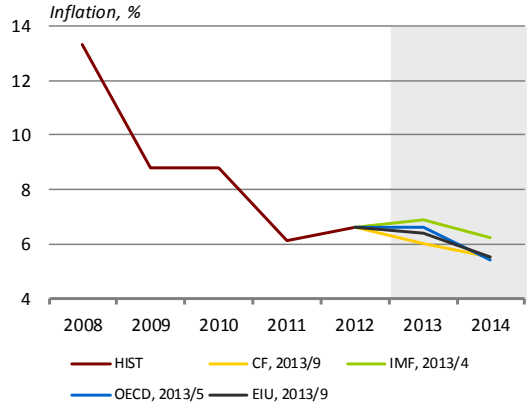
Inflation remains a major problem in all the BRIC countries except China, where it is currently well below the government's target of 3.5% and should remain there according to updated forecasts. Despite an economic slowdown, inflation remains above the target in Russia, where the government decided to face rising prices by freezing utility tariffs regulated by the state (e.g. prices of gas, electricity and rail transport). Inflation in Brazil fell to an eight-month low but increased in the case of household goods; this could weaken households' purchasing power. Consumer price inflation is the most problematic in India, which is going through a financial crisis connected with depreciation of the rupee. This is pushing up import prices and generating further inflation pressures. The CF outlook for consumer price inflation in India thus increased by 0.2 pp for this year and 0.3 pp for next year.

Brazil



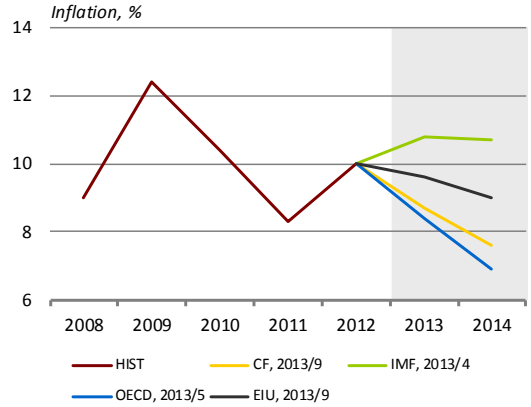
	CF	IMF	OECD	EIU
2013	5.8 ➡	6.1	6.2	6.4
2014	5.6 ➡	4.7	5.2	5.9

Russia



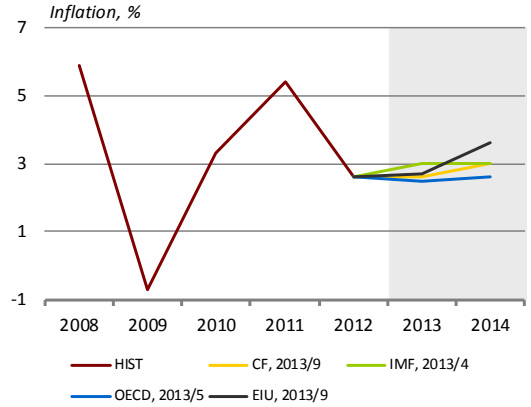
	CF	IMF	OECD	EIU
2013	6.0 ➡	6.9	6.6	6.4
2014	5.5	6.2	5.4	5.5

India



	CF	IMF	OECD	EIU
2013	8.7	10.8	8.4	9.6 ➡
2014	7.6	10.7	6.9	9.0

China

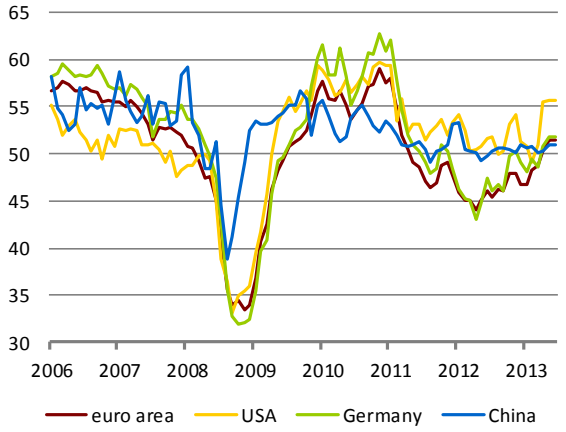


	CF	IMF	OECD	EIU
2013	2.6 ➡	3.0	2.5	2.7 ➡
2014	3.0	3.0	2.6	3.6 ➡

Note: Legend shows latest forecast data in format "Source, year/month" of forecast publication. HIST: historical values. Arrow indicates direction of revision of newly published forecast. If no arrow is shown, no new forecast was available in previous month or by cut-off date in current month. Asterisk indicates first published forecast for given year.
[Cut-off date for data: 12 September 2013)
Source: CF, IMF, OECD, EIU, CNB calculations.

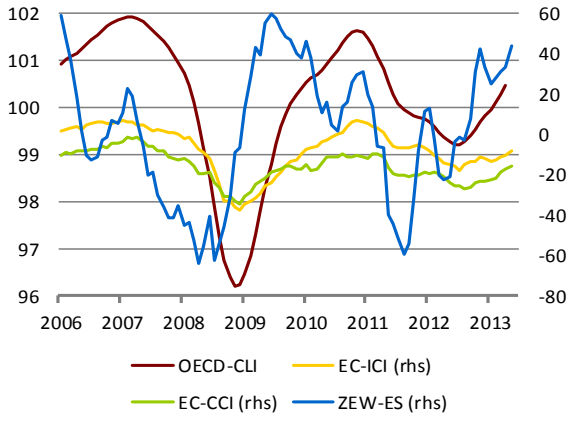
The global economic outlook improved further in August. The Purchasing Managers' Indices (PMIs) in industry rose further above 50 points in all the countries and regions monitored. The US PMI attained the highest levels and, together with growth in almost all the leading indicators, is pointing to a marked recovery in the rest of this year. The euro area PMI was above 50 for the second consecutive month after having spent two years below this level. Coupled with the values of other leading indicators, it is indicating a weaker recovery in the second half of the year. The German PMI also rose only slightly further above 50, suggesting slower economic growth (although the German indicators still remain well above those for the euro area as a whole). The Chinese PMI is likewise signalling no acceleration of economic growth in China.

PMI in manufacturing



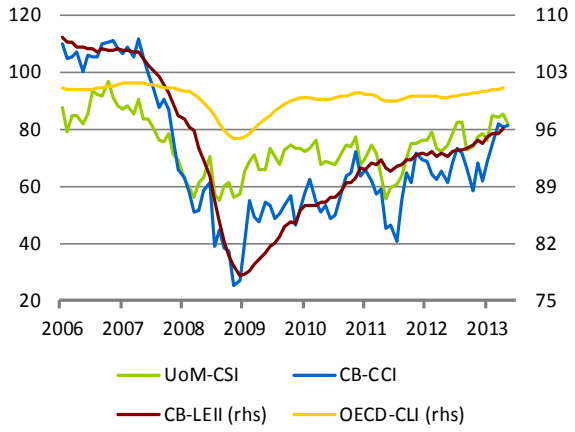
	EA	US	DE	CN
6/13	48.8	50.9	48.6	50.1
7/13	50.3	55.4	50.7	50.3
8/13	51.4	55.7	51.8	51.0

Euro area



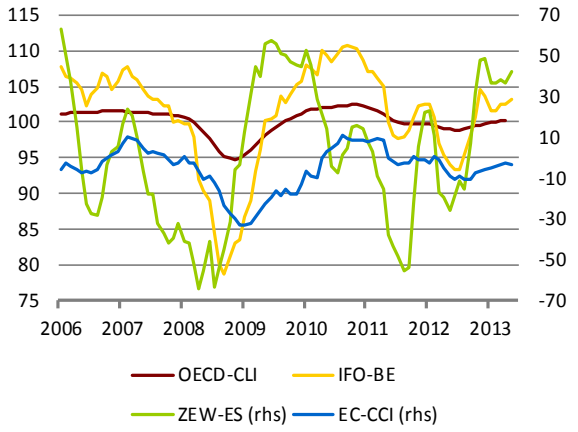
	OECD-CLI	EC-ICI	EC-CCI	ZEW-ES
6/13	100.3	-11.2	-18.8	30.6
7/13	100.4	-10.6	-17.4	32.80
8/13		-7.9	-15.6	44.00

USA



	CB-LEII	OECD-CLI	UoM-CSI	CB-CCI
6/13	95.4	100.9	84.1	82.1
7/13	96.0	101.0	85.1	81.0
8/13			82.1	81.5

Germany



	OECD-CLI	IFO-BE	ZEW-ES	EC-CCI
6/13	100.2	102.5	38.5	-3.2
7/13	100.3	102.4	36.3	-2.3
8/13		103.3	42.0	-3.4

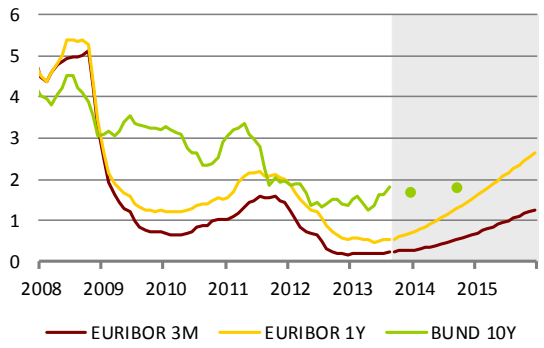
Note: **PMI** = Purchasing Manager Index (50); **OECD-CLI** = OECD Composite Leading Indicator (100); **EC-ICI** = European Commission Industrial Confidence Indicator (0); **EC-CCI** = European Commission Consumer Confidence Indicator (0); **ZEW-ES** = ZEW Economic Sentiment (0); **CB-LEII** = Conference Board Leading Economic Indicator Index (2004 = 100); **UoM-CSI** = University of Michigan Consumer Sentiment Index (Dec 1966 = 100); **CB-CCI** = Conference Board Consumer Confidence Index (1985 = 100); **IFO-BE** = IFO Business Expectations (2005 = 100). Values in parentheses indicate the index threshold between expected economic expansion and decline or the period as of which the index was normalised. [Cut-off date for data: 12 September 2013)
Source: OECD, EC, IFO, Conference Board, University of Michigan, CNB calculations.

IV.1 Interest rate outlook in the euro area and the USA

Euro interest rates saw no major changes compared to mid-August, staying at 0.23% and 0.55% for three-month and one-year maturities respectively. However, the market outlook was revised upwards compared to the previous month, especially for 2015. After announcing "forward guidance" in July, the ECB even discussed the possibility of a rate cut, despite signs of a recovery in the euro area. The forward guidance was aimed at reducing volatility and limiting strong market reactions to positive news from the economy. Excess liquidity was flat in July and August close to EUR 250 billion, which was regarded by the ECB as an appropriate level. On the other hand, fragmentation in the euro area remains high and the central bank is ready to respond if necessary. The ECB's policy rate was unchanged in September.

USD LIBOR rates were also flat from early August onwards for both maturities, at 0.26% for 3M and 0.66% for 1Y. As in the case of euro rates, market outlooks shifted upwards especially for 2015. The September CF also increased its outlook for the 10Y US government bond yield over the entire horizon, while the German Bund is higher only at the one-year horizon.

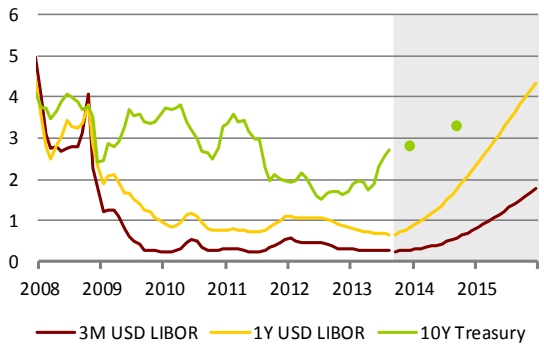
EURO AREA



	08/13	09/13	06/14	12/14	06/15	12/15
3M EURIBOR	0.23	0.23	0.43	0.66	0.95	1.27
1Y EURIBOR	0.54	0.55	1.06	1.53	2.07	2.63

	08/13	09/13	12/13	09/14
10Y Bund	1.80		1.7	1.8

USA



	08/13	09/13	06/14	12/14	06/15	12/15
3M USD LIBOR	0.26	0.26	0.45	0.77	1.23	1.77
1Y USD LIBOR	0.67	0.67	1.39	2.24	3.26	4.32

	08/13	09/13	12/13	09/14
10Y Treasury	2.73		2.8	3.3

Note: 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. [Cut-off date for data: 9 September 2013]

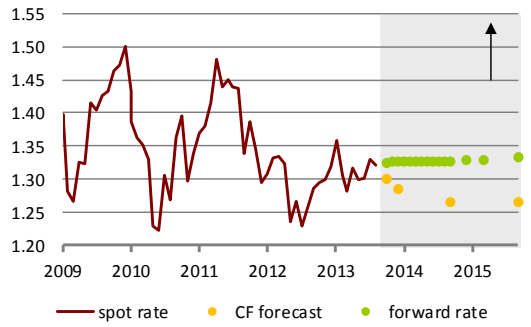
Source: Thomson Reuters (Datastream), Bloomberg, Consensus Forecasts, CNB calculations.

IV.2 Outlook for selected exchange rates

Uncertainty regarding the tapering of Fed purchases decreased in July and August, and so, therefore, did the volatility of the US dollar. However, the latest data from the US economy (industrial production and the labour market) suggest that the recovery is less robust than expected. On the other hand, euro area leading indicators are favourable amid an unchanged ECB policy stance, so the euro continued to appreciate against the dollar in August. A correction was caused by the escalation of the conflict in Syria and investors' concerns regarding developments in emerging economies hit by capital outflows. Nevertheless, the September CF continues to expect depreciation of the euro against the US dollar at the one-year horizon. The outlook for the Japanese yen, which tended to weaken against the dollar in August, is also unchanged. However, the latest data are favourable and a further expansion of the monetary stimulus that the central bank is ready to undertake seems unlikely. A recovery is also visible in the UK, so sterling strengthened against the dollar and the outlook was also revised towards a stronger pound compared to the previous month. Capital outflows back to the euro area are helping to maintain the ceiling for the Swiss franc, which, according to the September CF, should continue to depreciate against both the euro and the dollar.

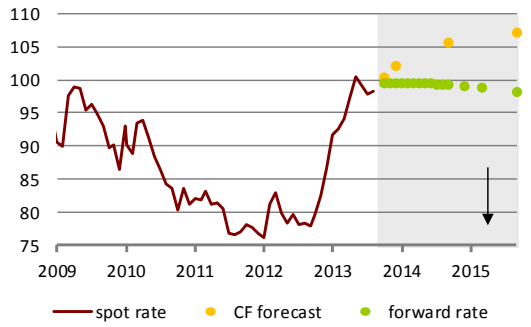
The depreciation of the currencies of the BRIC countries (except China), which had lasted for four months, halted in late August and these currencies strengthened somewhat against the dollar in early September. However, their outlooks were again revised towards weaker levels compared to the previous month. India was hit hardest by capital outflows, mainly because of its high current account deficit (4.8% of GDP). The central bank reacted to exchange rate volatility by introducing currency swaps (and a number of financial reforms). Brazil's central bank also launched daily swap auctions aimed at alleviating the depreciation pressures on its currency. The Chinese central bank also announced that it was ready to respond to fluctuations connected with an exit from QE3, and the volatility of the renminbi fell to the lows seen in 2010. The first step involved narrowing the band around the reference value by one-half to 0.5%. The central bank is also continuing to provide liquidity to the banking sector using reverse repos.

US$ per Euro



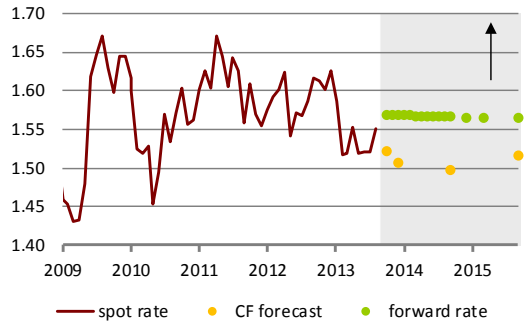
	09/09/13	10/13	12/13	09/14	09/15
spot rate	1.326				
CF forecast		1.301	1.286	1.265	1.265
forward rate		1.326	1.326	1.328	1.333

Yen per US$



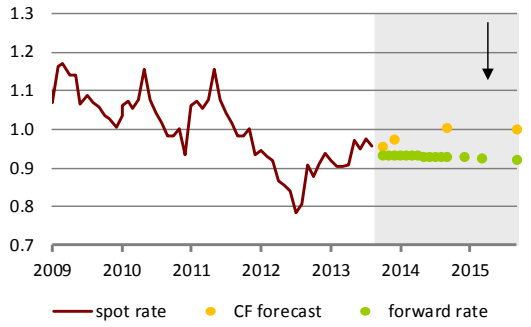
	09/09/13	10/13	12/13	09/14	09/15
spot rate	99.58				
CF forecast		100.40	102.20	105.50	107.10
forward rate		99.57	99.53	99.23	98.10

US$ per UK£



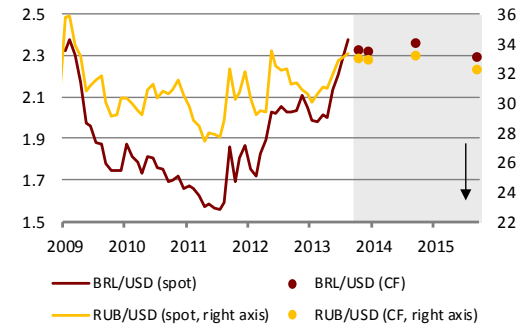
	09/09/13	10/13	12/13	09/14	09/15
spot rate	1.570				
CF forecast		1.522	1.507	1.497	1.516
forward rate		1.569	1.569	1.566	1.565

Swfr per US$



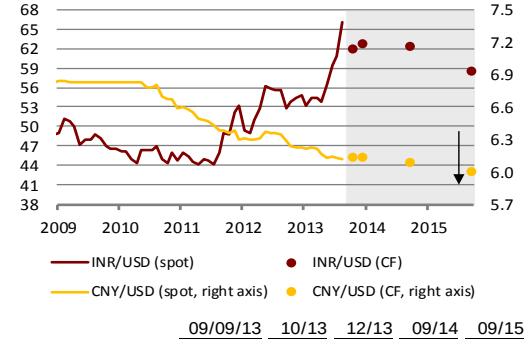
	09/09/13	10/13	12/13	09/14	09/15
spot rate	0.932				
CF forecast		0.954	0.972	1.003	0.999
forward rate		0.932	0.932	0.929	0.920

BRAZILIAN REAL, RUSSIAN ROUBLE



	09/09/13	10/13	12/13	09/14	09/15
BRL / USD (spot)	2.29				
BRL / USD (CF)		2.33	2.32	2.36	2.29
RUB / USD (spot)	33.11				
RUB / USD (CF)		32.99	32.87	33.21	32.27

INDIAN RUPEE, CHINESE RENMINBI



	09/09/13	10/13	12/13	09/14	09/15
INR / USD (spot)	65.31				
INR / USD (CF)		61.94	62.80	62.42	58.52
CNY / USD (spot)	6.12				
CNY / USD (CF)		6.13	6.14	6.09	6.00

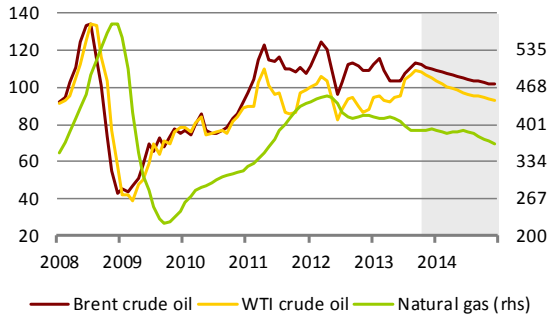
Note: Arrow indicates currency appreciation against US dollar. Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate. [Cut-off date for data: 9 September 2013)
Source: Thomson Reuters (Datastream), Bloomberg, Consensus Forecasts, CNB calculations.

V.I Oil and natural gas

The Brent crude oil price rose in the first half of July due to the conflict in Egypt. It then settled between USD 107 and 109 a barrel, responding with minor swings to the conflicting news on which the market was basing its estimation of the global economic situation. Traders were particularly sensitive to Chinese macroeconomic indicators. The reactions to news from the US economy were less clear-cut, as good news implied a higher probability of the Fed tapering its monetary stimulus and bad news a lower probability. In mid-August the Brent price moved about USD 2 a barrel higher in response to a further drop in extraction in Libya and an escalation of the situation in Egypt, and subsequently fluctuated around USD 110 a barrel. At the end of August, the price jumped by a further USD 5 a barrel as the USA threatened armed intervention in Syria, but the situation then calmed partly after Russia gained support for its proposed political solution to the situation in Syria, and the price returned to USD 111 a barrel. There is still increased speculation on the oil market. After the Brent-WTI spread fell almost to zero in mid-July, speculative trades moved to the Brent market, which is more sensitive to tensions in the Middle East and to extraction shortfalls in North Africa. The Brent price premium thus rose again to around USD 4 a barrel.

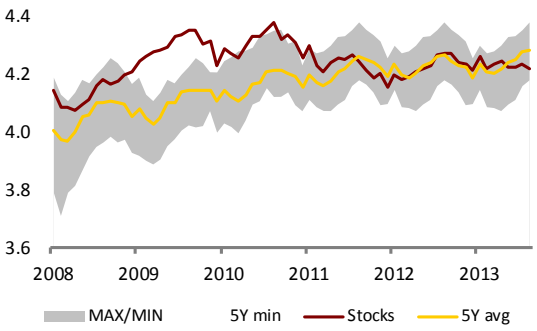
The market outlook for Brent crude oil prices rose as a result of the current risks, but remains falling. This means that from the fundamental perspective the supply of oil is expected to be satisfactory with respect to expected demand. The September CF also predicts a gradual price decline to USD 109 a barrel at the three-month horizon and USD 106.8 a barrel in one year. The IEA and OPEC agree that supply will be sufficient, the latter estimating that its market share will fall and free extraction capacity will rise due to higher non-OPEC extraction. The current depreciation of some emerging market economies' currencies is a risk on the demand side. Commercial stocks of oil and oil products in OECD countries fell significantly below their five-year average, but remain slightly above average in terms of days of future consumption.

OUTLOOK FOR PRICES OF OIL AND NATURAL GAS

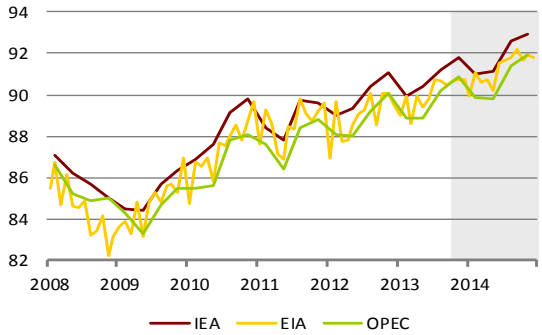


	Brent	WTI	Natural gas
2013	-2.11	6.64	-6.86
2014	-3.91	-2.95	-4.82

TOTAL STOCKS OF OIL AND OIL PRODUCTS IN OECD

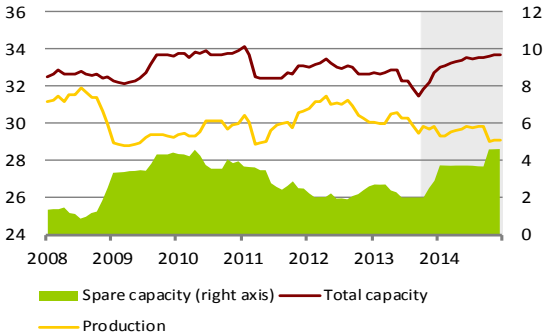


GLOBAL CONSUMPTION OF OIL AND OIL PRODUCTS



	IEA	EIA	OPEC
2013	0.99	1.26	0.98
2014	1.21	1.32	1.14

PRODUCTION, TOTAL AND SPARE CAPACITY IN OPEC COUNTRIES



	Production	Total capacity	Spare capacity
2013	-2.76	-1.92	10.22
2014	-1.79	3.24	67.60

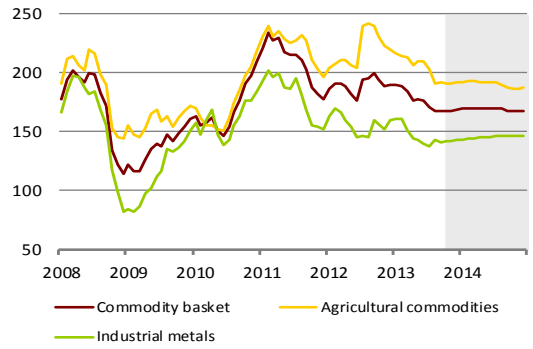
Note: Oil price in USD/barrel, price of Russian natural gas at German border in USD/1,000 m3 (IMF data, smoothed by the HP filter). Future oil prices (grey area) are derived from futures and future gas prices are derived from oil prices using model. Tables show annual percentage changes. Total oil stocks (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). [Cut-off date for data: 12 September 2013)
Source: Bloomberg, IEA, EIA, OPEC, CNB calculations

V.2 Other commodities

The overall non-energy commodity price index continued to decline in August, in line with the previous forecast. However, the decline slowed markedly in the first half of September. The index should start rising slightly in the months ahead and be flat in 2014. The August decrease in the overall index was due mainly to food prices, which fell significantly further overall (although rather less so than forecasted). In September, however, the food commodity price index returned to slight growth, which should continue until mid-2014. By contrast, the fall in industrial metal prices turned into growth in August as expected, albeit weaker growth than predicted in the previous forecast. Given the falling economic growth in large emerging markets, further growth in the industrial metals index is expected to be only modest.

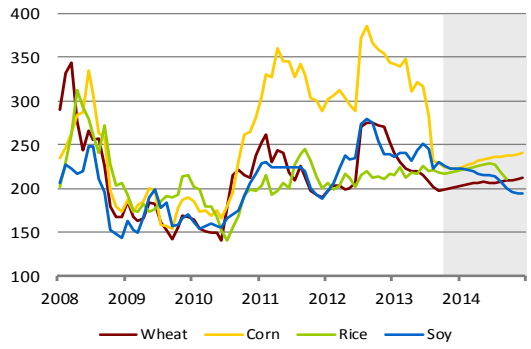
As regards the individual components of the food commodity price index, wheat prices dropped further, but their outlook remains slightly rising. Following a sharp decline in mid-July, prices of corn and soy continued to fall until mid-August and then started to rise. The corn price outlook is increasing, but soy prices should drop significantly further. In mid-August, the price of pork plunged from its all-time highs, and a further price decline is expected in 2014 H1. By contrast, beef prices remain high and are expected to rise to new historical highs.

PRICES OF NON-ENERGY COMMODITIES



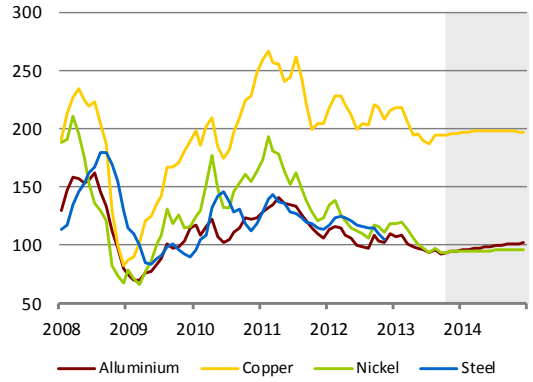
	Overall comm. basket	Agricultural comm.	Industrial metals
2013	-7.5	-7.9	-6.8
2014	-3.5	-6.0	0.0

FOOD COMMODITIES



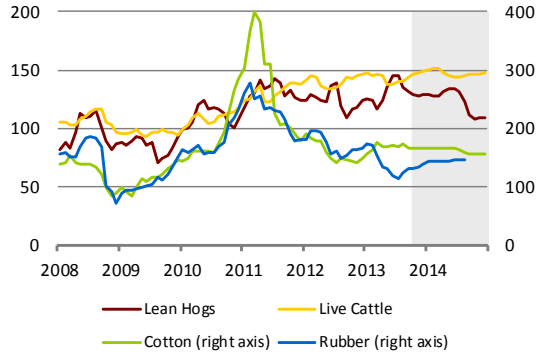
	Wheat	Corn	Rice	Soy
2013	-9.5	-15.0	3.9	-2.7
2014	-2.7	-17.3	1.8	-10.5

METALS



	Aluminium	Copper	Nickel
2013	-8.4	-7.4	-14.3
2014	1.4	-0.5	-6.4

MEAT, NON-FOOD AGRICULTURAL COMMODITIES



	Lean hogs	Live Cattle	Cotton	Rubber
2013	5.4	2.5	5.3	-19.7
2014	-5.9	2.3	-3.5	

Note: Structure of non-energy commodity price indices corresponds to composition of The Economist commodity indices. All prices are given as indices, 2005 = 100 (charts) and percentage changes (tables). [Cut-off date for data: 12 September 2013)
Source: Bloomberg, CNB calculations.

Drought and its impact on food prices and headline inflation[1]

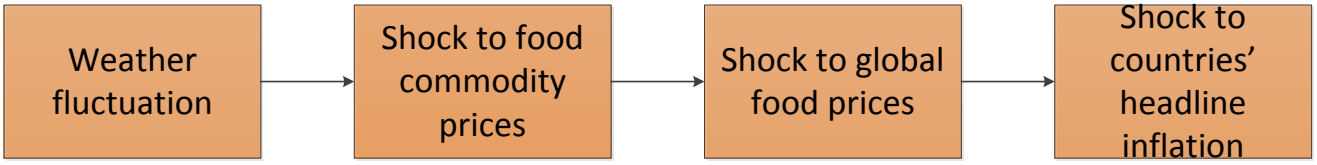
This article shows how natural phenomena such as drought can affect food prices and headline inflation. We demonstrate this effect mainly on the example of last year's drought in the USA, which significantly reduced cereal, corn and soybean yields and quality. This was reflected not only in the prices of these commodities, but also in prices of other related products and, in turn, in global food prices. Food plays an important role in the consumer basket of developing countries, where food price volatility has a strong effect on headline inflation. Volatile food prices can thus cause difficulties for inflation-targeting central banks, particularly those in developing countries, where the share of food in the consumer basket is typically higher.

Introduction

Various parts of the world have experienced food crises over the last few years (see, for example, Krugman, 2011). The phenomena that accompany such crises are not all that appreciable in the USA or in advanced European countries, but their impact in developing and emerging countries, where food costs make up a large part of households' budgets, can be devastating. According to many analysts, high food prices may have been behind the social shocks in Brazil and sparked the "Arab Spring" protests, and they might also have increased obesity and given rise to protective measures. The effect of increased food price volatility is spreading to other industries, such as food processing, the manufacture of equipment for producers, retail trade and insurance, as well as to the sciences, the chemical industry and genetic engineering.

The consequences of food price volatility are covered regularly by the daily press, and its causes are the subject of a lively debate. This article attempts to present several factors that significantly affect food prices. We shall focus primarily on the supply side and examine climate change, which is associated with long periods of drought. Last year's drought in the USA is a textbook example of a supply shock. To a certain extent, the reaction of the markets is similar in the case of floods and other climatic phenomena observed in other countries. As the USA is a major global player in the agricultural market, the consequences of climatic phenomena in the USA are also significant on the global scale. These consequences include increased food commodity prices spilling over to global food prices and on to headline inflation in individual countries.

Figure VI-1: The transmission of weather fluctuations to headline inflation



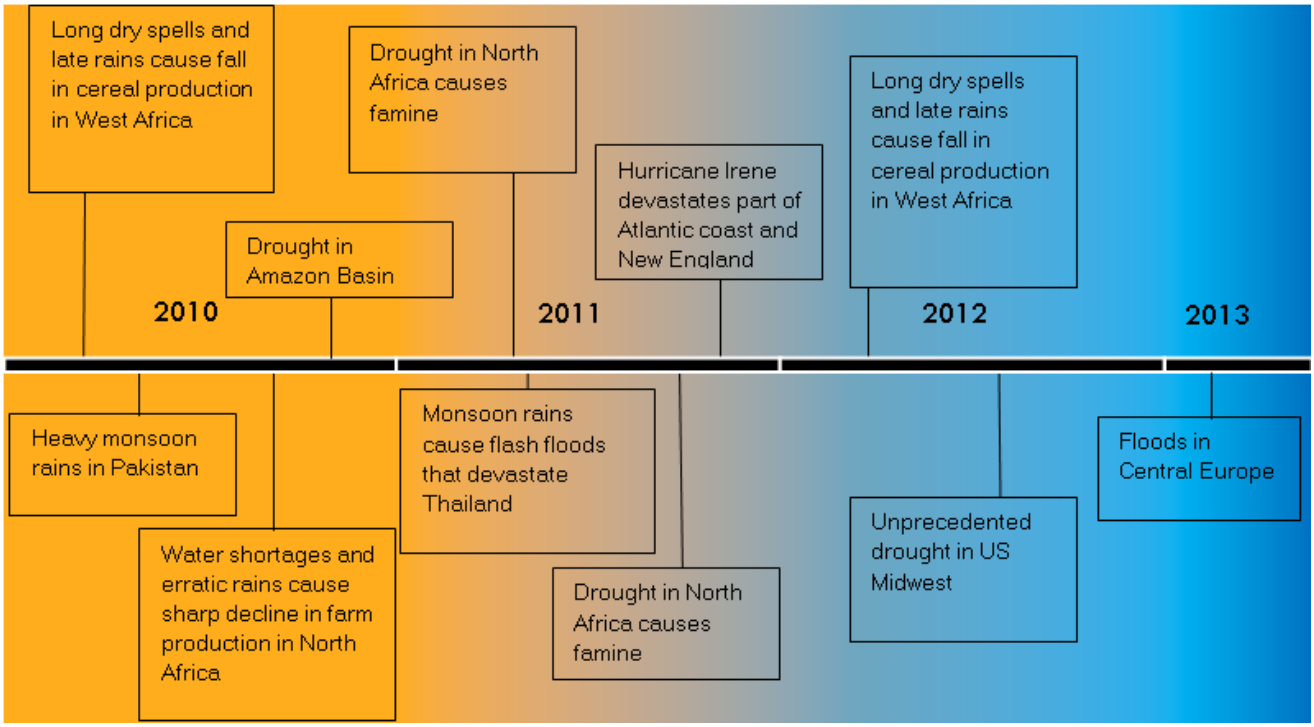
1. Climate change and weather fluctuations

Weather fluctuations, which strongly affect harvests, have been quite frequent in recent years. Over the past three years we have been witness to various meteorological phenomena that have had a bearing on global food prices. Such events seem to have become more frequent recently due to global climate change (see Figure VI.2). In 2010, Russia was hit by a drought that destroyed 25% of its wheat crop and led to forest fires. As a result, global wheat prices rose by 60%–80% compared to the start of the season.

[1] Autorem je Oxana Babecká Kucharčuková (Oxana.Babecka-Kucharcukova@cnb.cz). Názory v tomto příspěvku jsou její vlastní a neodráží nezbytně oficiální pozici České národní banky.

The damage was estimated at USD 1.4 billion. Monsoon rains in Pakistan brought record floods and devastated farm land producing wheat, rice, tobacco and cotton. The floods also killed 450,000 livestock. In the same year, drought caused the flow rate of the Rio Negro, a major tributary to the River Amazon, to fall to an all-time low. This resulted in a sharp fall in soybean production in South America. In North Africa, dry soil at planting and erratic rains caused wheat crop production to fall by 18% from the previous year's levels.

Figure VI-2: Significant climate events since 2010



Source: Sager (2013)

In 2011, a drought wave in the Horn of Africa led to a famine and humanitarian crisis in Somalia as it depleted grazing areas and caused major loss of livestock. Thailand, the world's largest rice exporter, was hit by monsoon rains causing flash floods with damage estimated at USD 1.3 billion. In the same year, Hurricane Irene struck the US Atlantic Coast and New England, causing flooding that destroyed a large part of the harvest. The estimated damage was USD 7.4 billion. Also in 2011, the US Central and Southern Plains were hit by a drought that significantly reduced wheat output and cost farmers a projected USD 20 billion. The following year, cereal production in several regions of North Africa was 26% lower than in 2010 owing to late rains and a long dry spell. The estimated damage was USD 1.6 billion. Last year's drought in the US Midwest had probably the biggest effect, with most corn and soybean-producing regions. This drought affected the largest area of land in more than 50 years.

2. The effects of droughts in the USA on harvests

The droughts that hit the USA in 2008 and 2012 had a major effect on harvests of agricultural commodities. As the USA is the largest producer of corn and soybean and the third largest producer of wheat, as well as being the biggest exporter of these three commodities, its agricultural commodity production affects the entire world.

Although the 2008 drought was more moderate than last year's, its effect was magnified by other circumstances relating to agricultural production and by the drought that hit

Australia at the same time. In 2008, the rise in agricultural crop prices and subsequently food prices was due, among other things, to production of bio-fuels in the USA and the EU and to large areas of agricultural land lying waste. Last year's drought in the US Midwest (see Figure VI-2) affected about 80% of agricultural land and was the most widespread calamity of this type since the 1950s. It was also extreme in length, starting in June and lasting until August. Over 2,000 US counties were designated as disaster areas.[2] According to the USDA, 60% of crop production was affected (as measured by the value of crop production in the affected areas in the previous year). At least 70% of total agricultural production (crop and livestock) was hit by at least moderate drought.[3] Severe or extreme drought impacted 67% of cattle production and about 70%–75% of corn and soybean production.

Figure VI-3: Drought in the USA

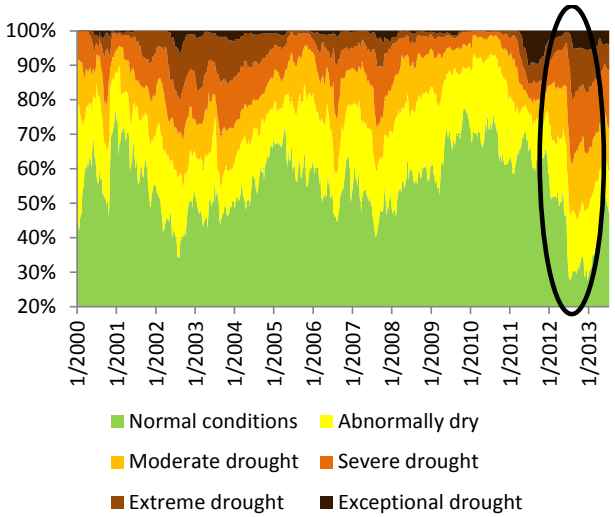
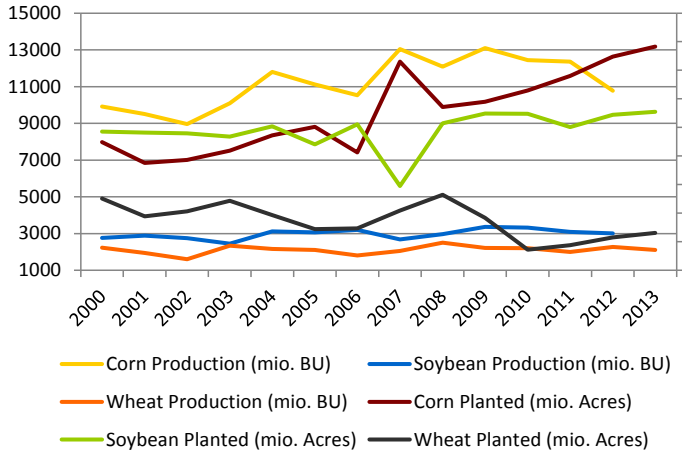


Figure VI-4: Crop production in the USA

(production on left-hand scale; planted area on right-hand scale)



Source: US Drought Monitor, NASS

According to Crutchfield (2012), production of soybean and especially corn fell significantly compared to 2011 due to the drought, despite a rise in planting acreage (see Figure VI-4). The soybean acreage rose by 3%, while soybean production fell by 3%. The situation was even more severe for corn, with the acreage increasing by 4% but production falling by 13%. These figures are far below market expectations. According to the NASS, the production estimates decreased by 27.5% for corn and by 7% for soybean between May and November 2012. This was due to a decline in yields per acre, and also to the fact that more than 10% of the corn planted was not harvested at all. This represents a rise of 45% on 2010.

The bad weather affected not only the size of the harvest, but also its quality. In May 2012, over 75% of the corn crop had been rated as good to excellent by the NASS. By the end of September, only 25% of the crop remained in this category, while 50% was rated poor or very poor. Soybean production saw a similar decline. These adverse developments of course affected prices of agricultural commodities, but they also passed through to other sectors that use these commodities.

[2] By the US Department of Agriculture (USDA).

[3] According to the US Drought Monitor classification.

3. The impact of the harvest on agricultural commodity prices

The primary impact of the drought and worse harvest is directly visible in both quantitative and qualitative terms in the prices of the agricultural commodities affected. According to the USDA, the supply of corn and soybeans in the financial year 2012/2013 was of special importance because of limited global stocks from 2011/2012.

Figure VI-5: Crop product prices

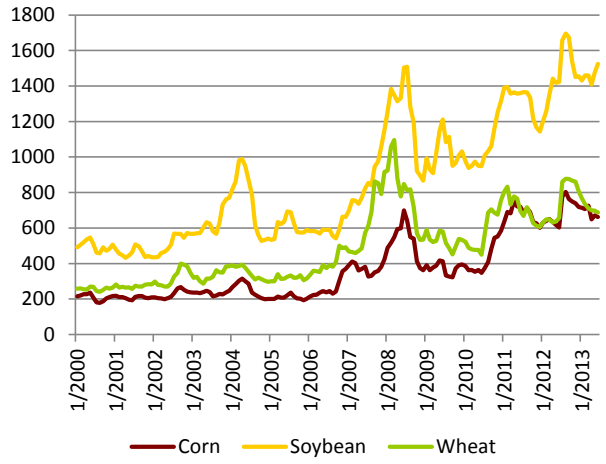
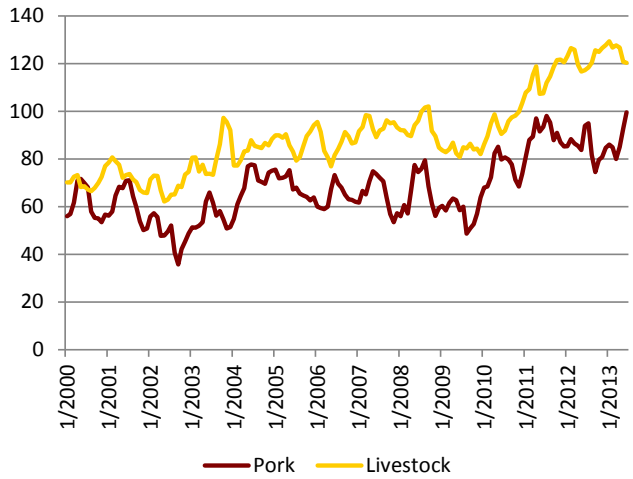


Figure VI-6: Cattle and pork prices



Source: Bloomberg

Figure VI-5 shows that prices of crop products rose rapidly during the dry spells. Corn and wheat prices increased by one-third and soybean prices by almost one-fifth between June and August. This was reflected not only directly in the food price index, but also – because these crops are important feedstuffs – in the cattle market. The cattle market reacts to more expensive feed in the longer run. Paradoxically, its first reaction was a fall in cattle prices due to a significant increase in supply, as farmers expected higher production costs. The USDA had expected the biggest rise in cattle prices due to last year's drought to occur this spring. In reality, prices went up by 10% between May 2012 and January 2013 and remained at historical highs until April.

Figure VI-7: Global food price index

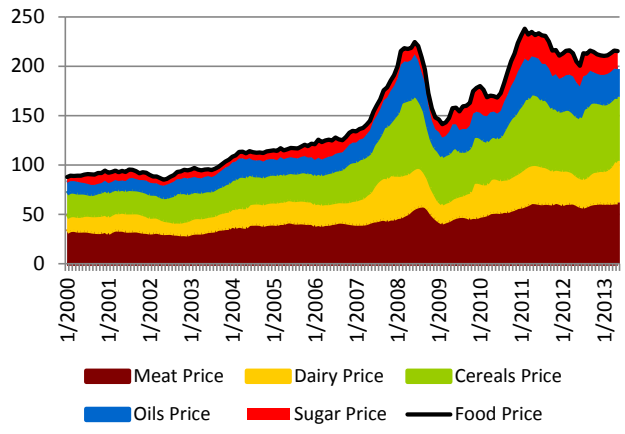
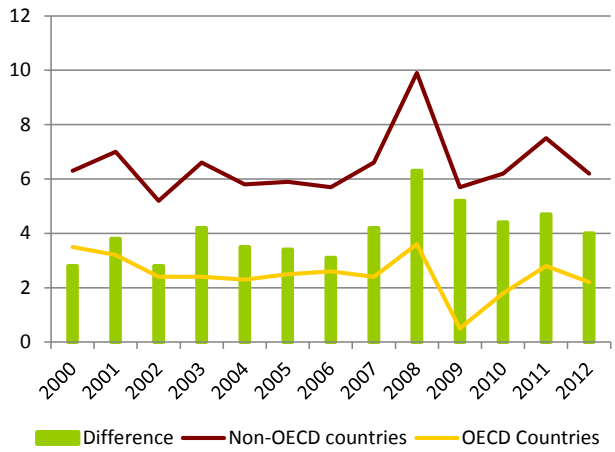


Figure VI-8: Inflation in OECD and non-OECD countries



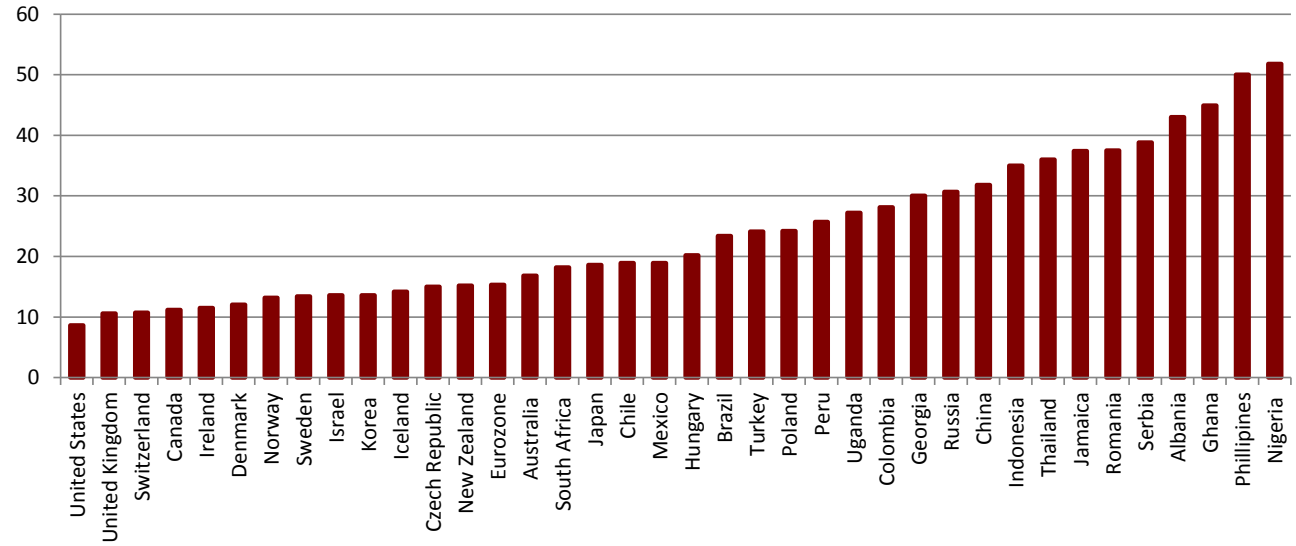
Source: UN Food and Agriculture Organization, Economist Intelligence Unit

Both cereal and meat prices contribute to the overall food price index. The cereal component of the world food price index (see Figure VI-7) rose by 17% in the period of last year under review. The dairy product price index had gone up by 30% by this April. Surprisingly, meat prices saw no major changes.

4. Food prices and inflation

In the final phase, food prices affect the overall consumer price index in individual countries. The effect is stronger in some countries and weaker in others. In the USA (and other advanced economies), commodity prices account for only 15% of total food prices (Fawley and Juvenal, 2011). The effect of food prices on headline inflation is also much lower in advanced countries. In the USA, food makes up less than 10% of the consumer basket, whereas in the Philippines and Nigeria it accounts for 50% (see Figure VI-9).

Figure VI-9 Weight of food prices in headline inflation by country in 2013



Source: OECD, Datastream

In addition, the effect of rising food prices on other non-food items is marginal in advanced economies compared to non-advanced countries (Guimaraes et al., 2010). The rest of the final price of food consists of retail margins, logistics and storage, commodity processing prices and other related costs. Figure VI-8 shows the resulting effect. Until 2006, the difference in the inflation rate between advanced and emerging countries was shrinking, but since 2008 – when food prices were hit by a large shock and became more volatile – this difference has widened again. The effect of food prices on less advanced countries is thus stronger. The inflation-targeting emerging economies may thus face major complications, as the effect of traditional monetary policy channels on food prices is limited. Nonetheless, Catão and Chang (2011) recommend including food prices in inflation targeting despite their high volatility. Models in non-advanced countries often work with two Phillips curves, one for food price inflation and the other for other goods price inflation.

Conclusion

Food prices have been showing high volatility and a strong upward trend in recent years. The causes lie probably on both the supply and demand sides. Weather

fluctuations, among other things, play a large role on the supply side. In recent years, climate change has manifested itself in strong weather fluctuations affecting harvests. On the example of last year's drought in the USA, we have shown the gradual effect of this change on global food prices and national inflation rates. The above drought had a major effect on harvests of cereal, corn and soybean, whose prices then surged. This led not only to higher prices of these commodities, but also to higher prices in livestock production, where they are used as feed. In advanced countries, food commodity prices do not play a major role in headline inflation, as the total price of commodities makes up only a relatively small part of the final price of food, which, in addition, does not have a large weight in the consumer basket. By contrast, developing and emerging economies are strongly affected by food prices. Weather fluctuations, which we will probably continue to experience in the future, may thus cause many problems in these countries.

References

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A1. Change in GDP predictions for 2013

	CF		IMF		OECD		CB / EIU	
EA	0.2	2013/9 2013/8	-0.3	2013/7 2013/4	-0.5	2013/5 2012/11	0.2	2013/9 2013/6
US	0.1	2013/9 2013/8	-0.2	2013/7 2013/4	-0.1	2013/5 2012/11	-0.1	2013/6 2013/3
DE	0.1	2013/9 2013/8	-0.3	2013/7 2013/4	-0.2	2013/5 2012/11	-0.1	2013/6 2012/12
JP	0.0	2013/9 2013/8	0.4	2013/7 2013/4	0.9	2013/5 2012/11	0.0	2013/7 2013/4
BR	-0.3	2013/9 2013/8	-0.5	2013/7 2013/4	-1.1	2013/5 2012/11	0.0	2013/9 2013/8
RU	-0.3	2013/9 2013/8	-0.9	2013/7 2013/4	-1.5	2013/5 2012/11	-0.6	2013/9 2013/8
IN	-0.6	2013/9 2013/8	-0.1	2013/7 2013/4	-1.2	2013/5 2012/11	-0.3	2013/9 2013/8
CN	0.0	2013/9 2013/8	-0.2	2013/7 2013/4	-0.7	2013/5 2012/11	0.0	2013/9 2013/8

A2. Change in inflation predictions for 2013

	CF		IMF		OECD		CB/EIU	
EA	0.0	2013/9 2013/8	0.1	2013/4 2012/10	-0.1	2013/5 2012/11	0.1	2013/9 2013/6
US	0.0	2013/9 2013/8	0.0	2013/4 2012/10	-0.2	2013/5 2012/11	-0.5	2013/6 2013/3
DE	0.0	2013/9 2013/8	-0.3	2013/4 2012/10	-0.3	2013/5 2012/11	0.1	2013/6 2012/12
JP	0.0	2013/9 2013/8	0.3	2013/4 2012/10	0.4	2013/5 2012/11	0.0	2013/7 2013/4
BR	0.0	2013/9 2013/8	1.2	2013/4 2012/10	0.9	2013/5 2012/11	-0.1	2013/9 2013/8
RU	0.0	2013/9 2013/8	0.3	2013/4 2012/10	0.2	2013/5 2012/11	0.2	2013/9 2013/8
IN	0.2	2013/9 2013/8	1.2	2013/4 2012/10	0.7	2013/5 2012/11	0.0	2013/9 2013/8
CN	0.0	2013/9 2013/8	0.0	2013/4 2012/10	1.0	2013/5 2012/11	0.0	2013/9 2013/8

A3. List of abbreviations

BoJ	Bank of Japan
BR	Brazil
BRIC	Brazil, Russia, India and China
CB-CCI	Conference Board Consumer Confidence Index
CB-LEII	Conference Board Leading Economic Indicator Index
CBOT	Chicago Board of Trade
CF	Consensus Forecasts
CN	China
CNB	Czech National Bank
DBB	Deutsche Bundesbank
DE	Germany
EA	euro area
EC	European Commission
ECB	European Central Bank
EC-CCI	European Commission Consumer Confidence Indicator
EC-ICI	European Commission Industrial Confidence Indicator
EIU	The Economist Intelligence Unit database
EEA	European Economic Area

ES	Spain
EU	European Union
EMI	European Monetary Institute
EURIBOR	Euro Interbank Offered Rate
Fed	Federal Reserve System (the US central bank)
FRA	forward rate agreement
GBP	pound sterling
GDP	gross domestic product
GR	Greece
CHF	Swiss franc
ICE	Intercontinental Exchange
IE	Ireland
IFO	Institute for Economic Research
IFO-BE	IFO Business Expectations
IMF	International Monetary Fund
IN	India
IRS	interest rate swap
IT	Italy
JP	Japan
JPY	Japanese yen
LIBOR	London Interbank Offered Rate
N/A	not available
OECD	Organisation for Economic Co-operation and Development
OECD-CLI	OECD Composite Leading Indicator
PMI	Purchasing Managers' Index
PT	Portugal
RU	Russia
UoM	University of Michigan
UoM-CSI	University of Michigan Consumer Sentiment Index
US	United States
USD	US dollar
ZEW-ES	ZEW Economic Sentiment

A4. List of thematic articles published in GEO

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