GLOBAL ECONOMIC OUTLOOK – MAY

Monetary and Statistics Department
External Economic Relations Division

2013

CNB CZECH
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The May 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 the property market in selected Central and Eastern European countries (CESEE). The analysis reveals that apartment prices evolved differently across CESEE countries after 2000, mainly because of different growth in the real economy and demographic factors.

The outlooks for the advanced economies except Japan worsened slightly in May compared to the previous month, although the performance of those economies differs considerably. On the one hand there is the fast growing US economy with expected growth of more than 2%, which, together with the emerging countries (e.g. the BRIC group), is one of the drivers of global economic growth. On the other hand, the euro area and EU economies remain in recession in 2013, although the outlooks for 2014 are still optimistic. Economic growth in the euro area continues to be driven by Germany, although its outlook was reduced slightly. The inflation outlooks for advanced economies, again except for Japan, were lowered and are below 2%.

Most emerging economies, including the BRIC countries, which we monitor in more detail, should maintain robust growth rates until the end of 2014. This is reflected in higher expected inflation rates. China is still the best-performing BRIC country. It will continue to record the highest growth rates and the lowest inflation until 2014. By contrast, India's economy will probably face heightened inflationary pressures, with inflation potentially exceeding 10%.

The interest rate outlooks still indicate that rates in both the euro area and the USA will show very modest growth across maturities during 2014. The US dollar should appreciate slightly not only against the euro and other reserve currencies, but also against the Brazilian and Russian currencies over the one-year horizon. By contrast, it is expected to weaken against the Indian and Chinese currencies. Dollar prices of oil and natural gas still indicate a slight decline until the end of 2014. The outlook for food commodity prices is falling until the end of 2014. Industrial metal prices are expected to rise slowly over the same timescale.

Outlook for the global economy in 2013

Outlook for Brent crude oil prices in December 2013

Property prices growth, %

| -45 | -27 | -19 | -5 | 2 - 7 | 16 | 79 | N/A |
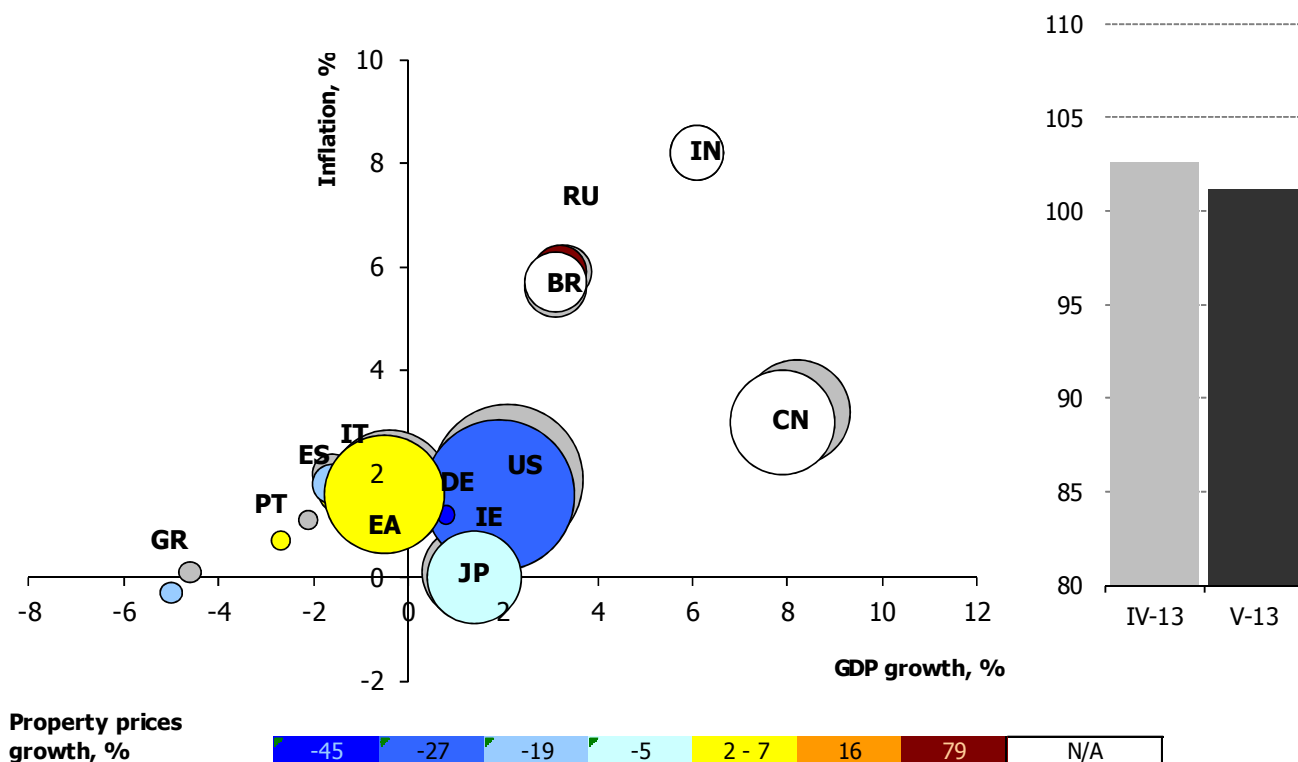
Note: The size of each point represents the size of the country/region according to nominal GDP in US dollars in 2011. The points are coloured according to property prices growth in December 2012 (2006 = 100), %. The grey colour is the CF forecast (GDP, inflation) or Bloomberg survey (oil price) from the previous month. [Cut-off date for data: 17 May 2013]

Source: Bloomberg, Consensus Economics, OECD, CNB calculations.

II.1 GDP outlook in advanced countries

The April *World Economic Outlook* (IMF) characterises the current global trend as a three-speed recovery. Global growth remains modest and is being driven by emerging and developing economies. The advanced economies are showing very different trends: on the one hand there is the United States, which is recording weak but positive growth, and on the other hand there is the euro area, which is in recession. The negative growth is not limited to the periphery of the euro area, but also reflects weakness in its largest economies. According to the new CF and IMF outlooks, euro area GDP will contract by 0.3%–0.5% despite 0.6% growth in Germany; the USA will grow by 1.9%. GDP growth in the euro area should turn positive next year and growth in the USA should reach 2.7%–3.0%. According to the IMF, quantitative easing, a new inflation target and structural reforms should boost growth in Japan in the short term, but the growth is expected to slow next year. The April BoJ outlook also points to weaker growth in 2014, although the BoJ is much more optimistic than CF and IMF (2.7% versus 1.4% and 1.6%). Growth in Japan will be reduced by higher taxes. Overall, economic growth will decline to 1.3%–1.5% (BoJ, CF and IMF).
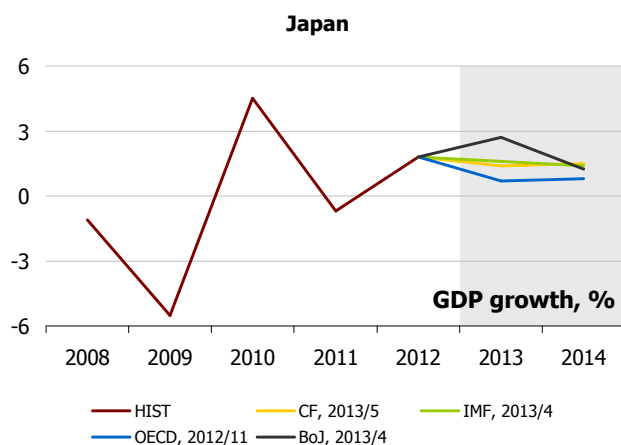
Eurozone
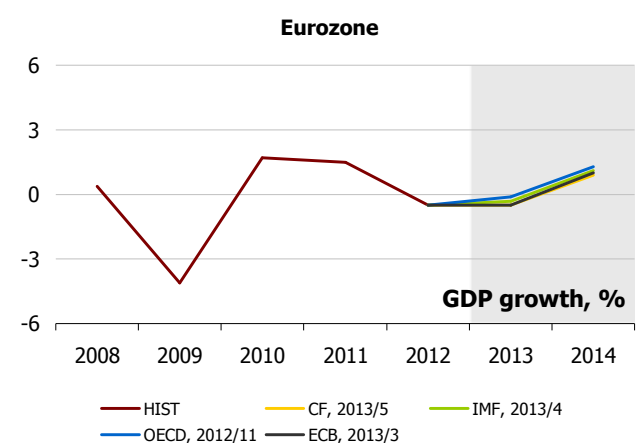
	CF		IMF		OECD	ECB
2013	-0.5	↘	-0.3	↘	-0.1	-0.5
2014	0.9	➡	1.1	↗	1.3	1.0

USA
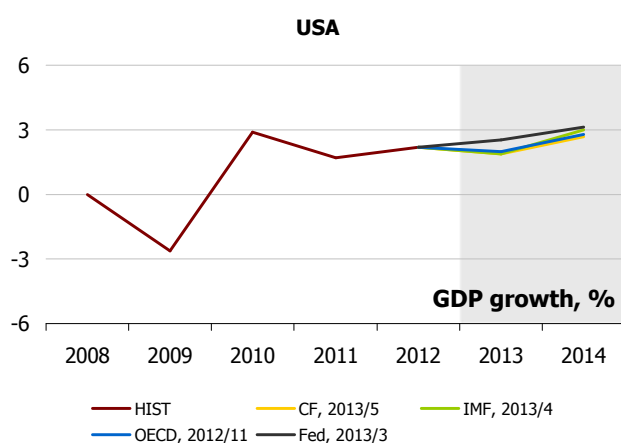
	CF		IMF		OECD	Fed
2013	1.9	↘	1.9	↘	2.0	2.6
2014	2.7	➡	3.0	➡	2.8	3.2

Germany
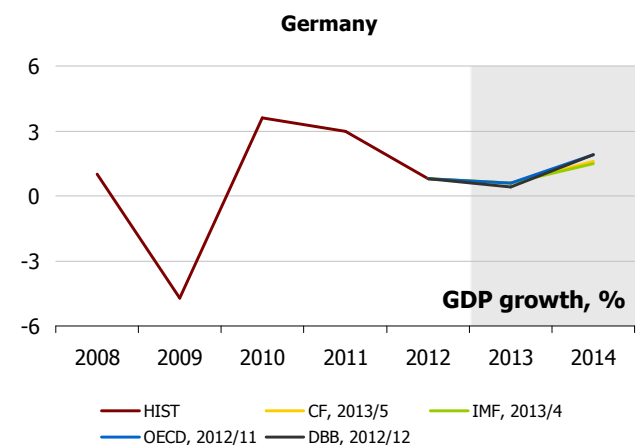
	CF		IMF		OECD	DBB
2013	0.6	↘	0.6	➡	0.6	0.4
2014	1.6	↘	1.5	↗	1.9	1.9

Japan

	CF		IMF		OECD	BoJ	
2013	1.4	↗	1.6	↗	0.7	2.7	↗
2014	1.5	↗	1.4	↗	0.8	1.3	↗

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: 16 May 2013]

Source: CF, IMF, OECD, ECB, Fed, DBB, BoJ, CNB calculations.

II.2 GDP outlook in BRIC countries

The weakening global demand, especially from European countries, is reflected in the forecasts for emerging economies. The outlook for economic growth in BRIC countries was revised downwards again. This time, the growth forecasts were also reduced for China, which released new data on industrial production and fixed investment. Both statistics were below market expectations. In 2013 Q1, annual GDP growth in China slowed to 7.7%, mainly because of weak external demand. New estimates indicate growth of between 7.9% and 8.4% this year. In 2014, growth is expected to stay close to 8%. The growth outlook for Russia was reduced as well. According to the new IMF estimate, growth in Russia will be close to its potential (around 3.4%), as the recently published GDP estimates for 2013 Q1 were very disappointing. Lower-than-forecasted growth is expected also in Brazil, where industrial production declined year on year and remained behind expectations. The new outlooks expect economic growth to be close to 3% this year. The least changed were the outlooks for India, which now predict growth of 5.7%–6.5% this year.

Brazil

GDP growth, %

Legend: HIST — CF, 2013/5 — IMF, 2013/4 — OECD, 2012/11 — EIU, 2013/5

	CF		IMF		OECD	EIU	
2013	3.1	→	3.0	↘	4.0	3.0	↘
2014	3.7	→	4.0	→	4.1	3.5	↘

Russia

GDP growth, %

Legend: HIST — CF, 2013/5 — IMF, 2013/4 — OECD, 2012/11 — EIU, 2013/5

	CF		IMF		OECD	EIU	
2013	3.2	↘	3.4	↘	3.8	2.8	↘
2014	3.8	→	3.8	→	4.1	3.4	↘

India

GDP growth, %

Legend: HIST — CF, 2013/5 — IMF, 2013/4 — OECD, 2012/11 — EIU, 2013/5

	CF		IMF		OECD	EIU	
2013	6.1	→	5.7	↘	6.5	6.5	→
2014	6.8	→	6.2	↘	7.1	7.2	↘

China

GDP growth, %

Legend: HIST — CF, 2013/5 — IMF, 2013/4 — OECD, 2012/11 — EIU, 2013/5

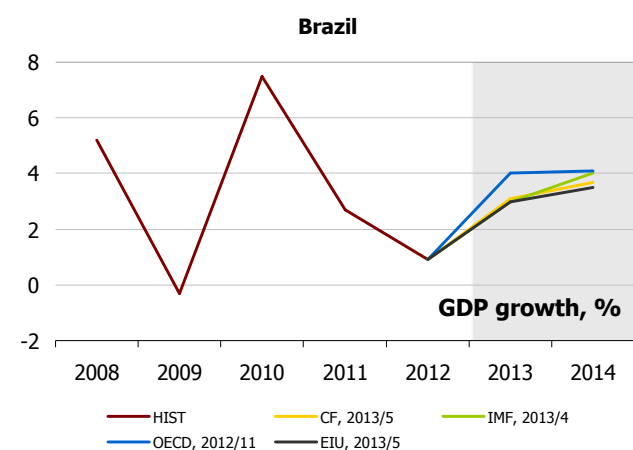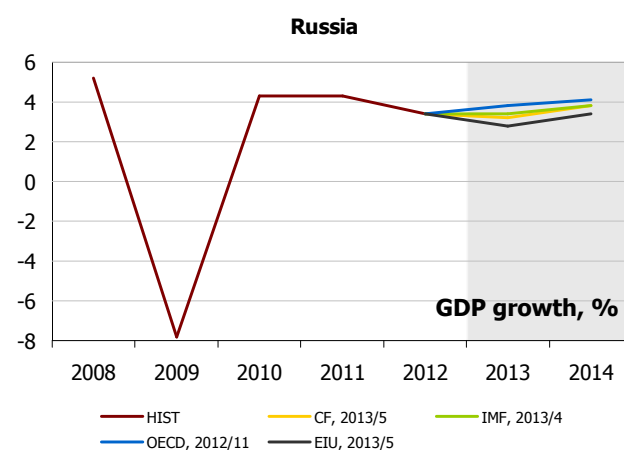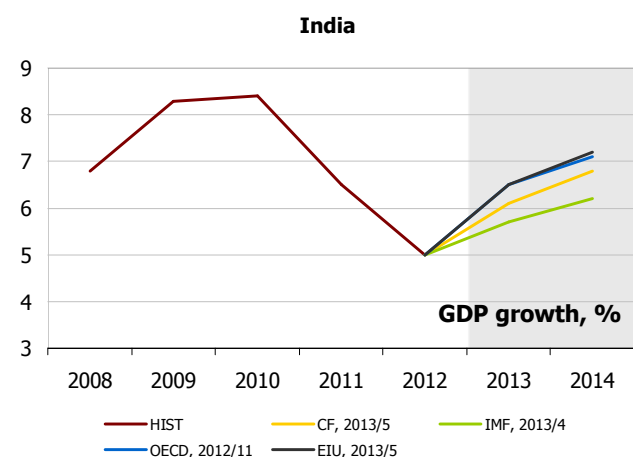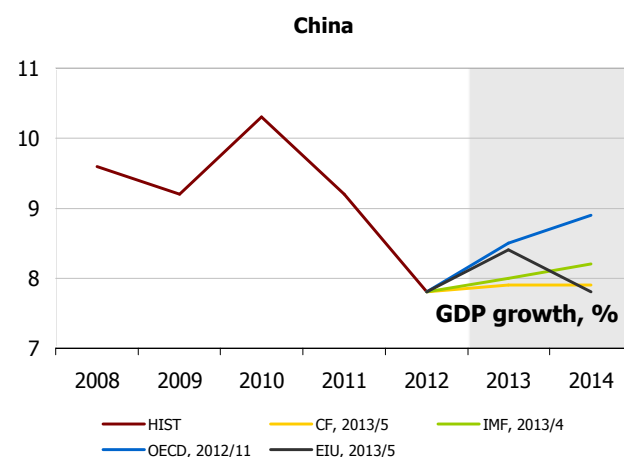|	CF		IMF		OECD	EIU	
2013	7.9	↘	8.0	↘	8.5	8.4	↘
2014	7.9	↘	8.2	↘	8.9	7.8	→

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: 16 May 2013]

Source: CF, IMF, OECD, EIU, CNB calculations.

II.3 Inflation outlook in advanced countries

The May CF lowered its inflation outlook for all the advanced economies monitored by GEO. Consumer price inflation in the USA this year should be 0.3 pp lower than the April outlook. For the other monitored economies CF lowered its outlook by 0.1 pp. The April IMF reduced its inflation outlook compared to January only for Germany. The other new outlooks expect a modest rise in prices or leave the outlook for this year unchanged. Overall, inflation in the euro area, Germany and the USA will be in a range of 1.5%–2.0% in 2013 according to the new CF and IMF outlooks. Consumer price inflation in Japan should stay at last year's level (CF) or rise by 0.1%–0.6%. The Japanese economy should record the highest inflation of all the countries under review next year (1.9%–3.2%). According to the BoJ, the higher inflation will be due to expected excess demand over supply, nominal wage growth and gradually rising import prices resulting from a weaker yen. Rising inflation expectations are also expected to contribute to higher future inflation.

Eurozone

	CF		IMF		OECD	ECB
2013	1.6	↘	1.7	↗	1.6	1.6
2014	1.6	➡	1.5	↗	1.2	1.3

USA

	CF		IMF		OECD	Fed
2013	1.6	↘	1.8	↗	1.8	1.5
2014	2.0	↘	1.7	↘	2.0	1.8

Germany

	CF		IMF		OECD	DBB
2013	1.6	↘	1.6	↘	1.9	1.5
2014	1.9	↘	1.7	↘	2.0	1.6

Japan

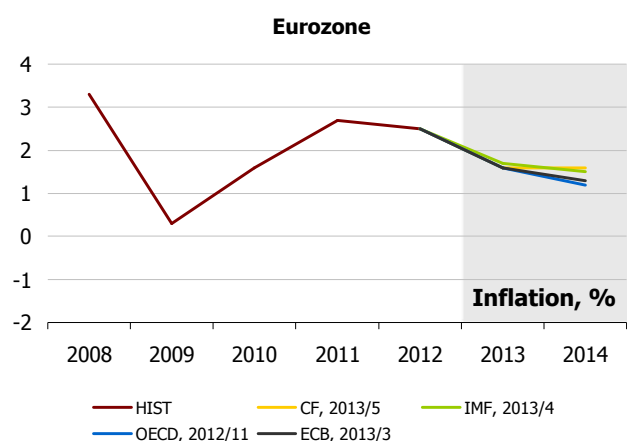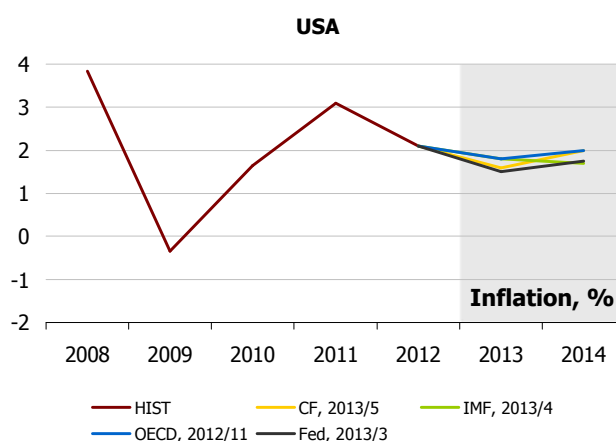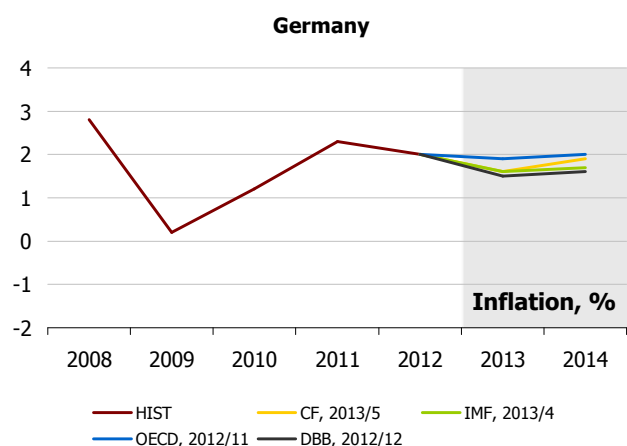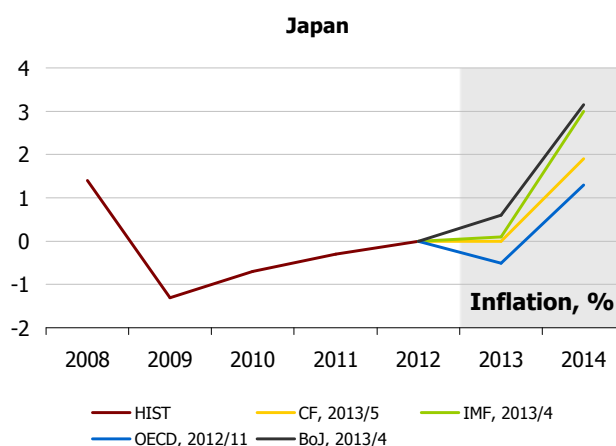|	CF		IMF		OECD	BoJ	
2013	0.0	↘	0.1	↗	-0.5	0.6	↗
2014	1.9	➡	3.0	↗	1.3	3.2	↗

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: 16 May 2013]

Source: CF, IMF, OECD, ECB, Fed, DBB, BoJ, CNB calculations.

II.4 Inflation outlook in BRIC countries

Despite the worse economic growth outlook, the inflation forecast for the largest emerging economies is worsening as well. The only exception is China, despite the fact that its inflation rose unexpectedly in April as a result of higher food prices. On the other hand, producer prices fell significantly again. In India, which has the highest inflation among the BRIC countries (including at the forecast horizon), wholesale prices fell to a 3.5-year low and inflation dropped below 10%. Nonetheless, the IMF outlook expects inflation of above 10% this year and the next. The other forecasts under review are rather more favourable. Inflation in Brazil and Russia should stay just above the central banks' inflation targets or close to the upper boundaries of the tolerance bands. This will prevent any greater monetary policy easing in support of economic growth.

Brazil

	CF		IMF		OECD	EIU	
2013	5.7	↗	6.1	↗	5.3	6.3	↗
2014	5.7	↗	4.7	↘	5.2	5.8	↗

Russia

	CF		IMF		OECD	EIU	
2013	5.9	→	6.9	↗	6.4	6.3	→
2014	5.5	→	6.2	↘	4.3	6.4	↗

India

	CF		IMF		OECD	EIU	
2013	8.2	→	10.8	↗	7.7	9.4	↗
2014	7.4	→	10.7	↗	6.6	7.2	↘

China

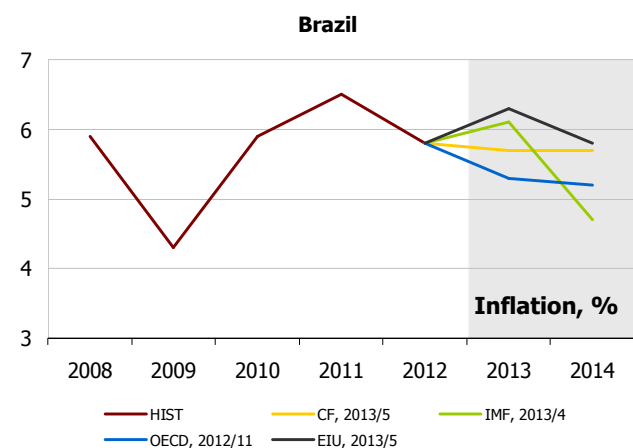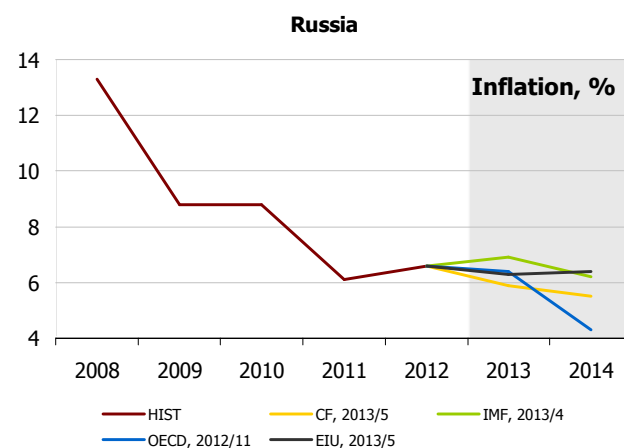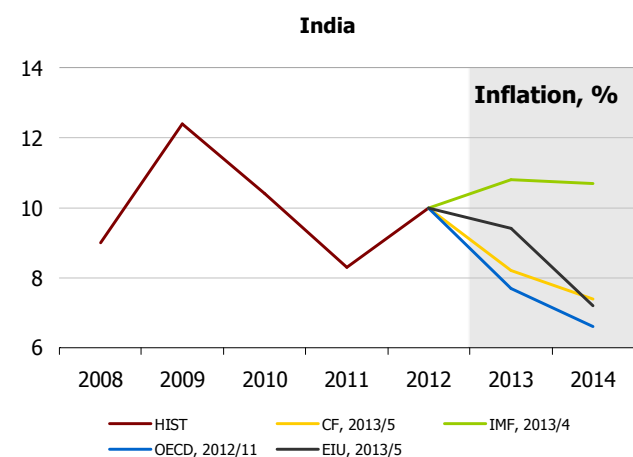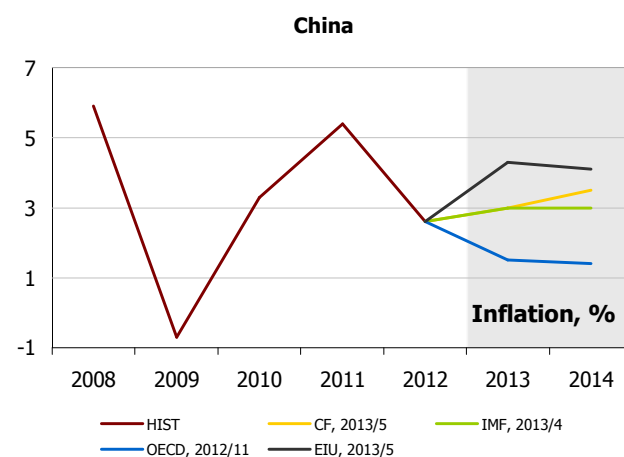|	CF		IMF		OECD	EIU	
2013	3.0	↘	3.0	↘	1.5	4.3	→
2014	3.5	→	3.0	→	1.4	4.1	→

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: 16 May 2013]

Source: CF, IMF, OECD, EIU, CNB calculations.

The overall economic outlooks for the USA and the euro area worsened in May (with some exceptions in consumer expectations). The US Purchasing Managers' Index (PMI) in industry decreased further, but remains above the 50% threshold separating growth from decline. The other leading indicators under review, except the University of Michigan consumer confidence index, also decreased. The outlook for industry in the euro area deteriorated in May, but the estimates of future consumption went up. The expectations of managers of industrial and non-industrial enterprises in Germany decreased and the outlook for industry deteriorated. By contrast, consumer confidence improved in Germany. The PMI in China decreased slightly, suggesting a slowdown in economic growth in the quarters to come.
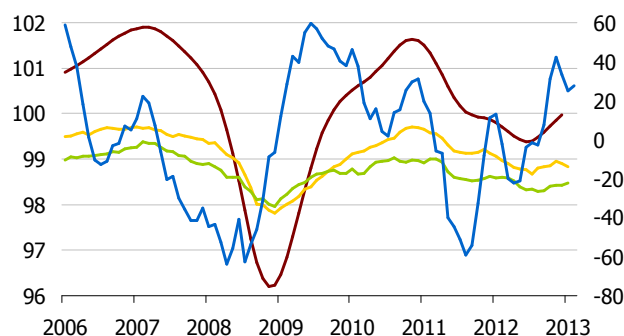
PMI IN MANUFACTURING
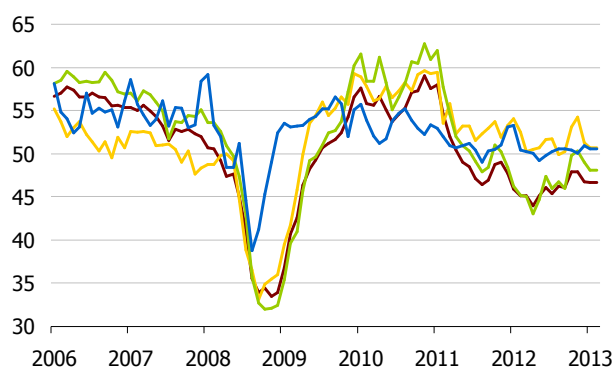
euro area — USA — Germany — China

	EA	US	DE	CN
2/13	47.9	54.2	50.3	50.1
3/13	46.8	51.3	49.0	50.9
4/13	46.7	50.7	48.1	50.6

EURO AREA

OECD-CLI — EC-ICI (rhs) — EC-CCI (rhs) — ZEW-ES (rhs)

	OECD-CLI	EC-ICI	EC-CCI	ZEW-ES
2/13	99.9	-11.1	-23.6	42.4
3/13	100.0	-12.3	-23.5	33.40
4/13		-13.8	-22.3	24.90

USA
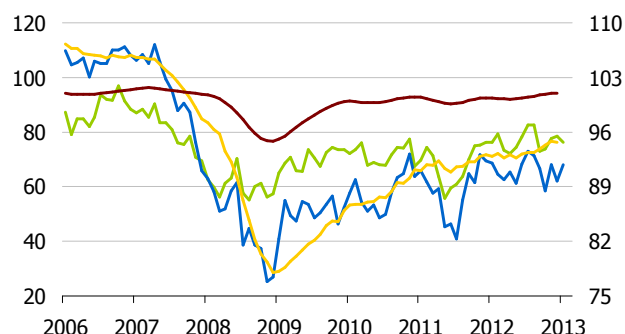
UoM-CSI — CB-CCI — CB-LEII (rhs) — OECD-CLI (rhs)

	CB-LEII	OECD-CLI	UoM-CSI	CB-CCI
2/13	94.8	101.0	77.6	68.0
3/13	94.7	101.0	78.6	61.9
4/13			76.4	68.1

GERMANY
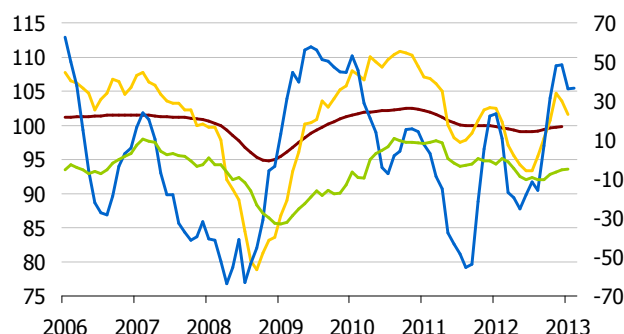
OECD-CLI — IFO-BE — ZEW-ES (rhs) — EC-CCI (rhs)

|	OECD-CLI	IFO-BE	ZEW-ES	EC-CCI
2/13	99.8	104.7	48.2	-6.4
3/13	99.9	103.6	48.5	-5.4
4/13		101.6	36.3	-4.9

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: 15 May 2013]

Source: OECD, EC, IFO, Conference Board, University of Michigan, CNB calculations.

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

The 1Y EURIBOR continued to fall moderately in April. This trend came to an end at 0.5% in early May. The 3M rate has been fluctuating around 0.2% since the autumn, and the new outlook based on implied rates moved slightly downwards again compared to the previous month. The rates were affected most of all by a reduction of the main refinancing rate by 25 bp to 0.50%. The ECB also repeated its willingness to act and mentioned the possibility of negative deposit rates. The May CF lowered its outlook for German ten-year government bond yields by 0.1 pp at both the three-month and one-year horizons.

One-year dollar LIBOR rates also fell slightly in the period under review, whereas the 3M LIBOR was flat at 0.27 pp. The May Fed meeting confirmed the current monetary policy stance, but the Committee also stated that it is "prepared to increase or reduce the pace of its purchases to maintain appropriate policy accommodation as the outlook for the labor market or inflation changes".


EURO AREA — EURIBOR 3M, EURIBOR 1R, BUND 10R

USA — USD LIBOR 3M, USD LIBOR 1R, Treasury 10R
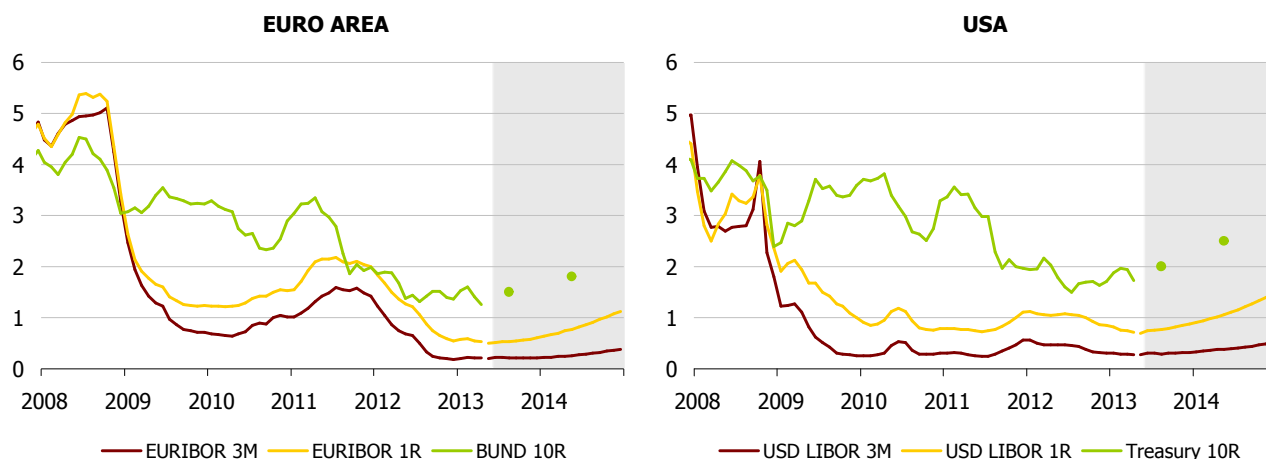
	04/13	05/13	06/13	12/13	06/14	12/14		04/13	05/13	06/13	12/13	06/14	12/14
3M EURIBOR	0.21	0.20	0.23	0.21	0.27	0.38	**3M USD LIBOR**	0.28	0.27	0.30	0.32	0.40	0.51
1Y EURIBOR	0.53	0.49	0.52	0.61	0.82	1.12	**1Y USD LIBOR**	0.72	0.70	0.74	0.88	1.11	1.47
	04/13	05/13	08/13	05/14				04/13	05/13	08/13	05/14		
10Y Bund	1.25		1.5	1.8			**10Y Treasury**	1.73		2.0	2.5		

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: 15 May 2013] Source: Thomson Reuters (Datastream), Bloomberg, Consensus Forecasts, CNB calculations.

IV.2 Outlook for selected exchange rates

The forecasts for the advanced countries' exchange rates were little changed from the previous month (with the exception of the Japanese yen). The dollar-euro rate fluctuated between USD 1.30 and 1.32 in April, with data from the US economy failing to confirm a stronger recovery and the euro area remaining in recession. The debate about the timing of the termination of the Fed's unconventional measures also wound down. A further easing of ECB monetary policy in early May caused the euro to depreciate. The new CF forecast still expects the dollar to appreciate against the euro. Confidence in the British pound is being eroded by the UK's rating downgrade, uncertain growth prospects and persisting inflation, and the May CF also expects further depreciation over the one-year horizon. The depreciation of the yen against the US dollar slowed in April, but the psychological threshold of JPY 100/USD was broken. The new forecast also shifted downwards and the dollar's upward trend cannot be expected to stop until mid-2014. The election results in Italy helped reduce financial market tensions in the euro area and the Swiss franc depreciated against the euro. The May CF expects it to depreciate to parity with the dollar over the next two years.

Exchange rates in the BRIC countries (except China) showed insignificant trends last month. The evolution of inflation led to an increase in the Brazilian key rate, and the Russian central bank faces a similar problem. The outlook for the Russian rouble was revised and the exchange rate should remain stable over the two-year horizon. India's central bank cut rates, but future developments depend on the political situation and the government's willingness to continue with reforms. The Chinese renminbi appreciated strongly against the US dollar in April, but May saw a correction, with the central bank announcing measures to counter the inflow of speculative capital. However, efforts are continuing to achieve greater internationalisation of the renminbi and open up the capital account. In April, the range for permitted fluctuations relative to the official exchange rate was widened from 0.5% to 1.0%. The investment ceiling for foreign funds in the country was also increased to USD 80 billion. However, full convertibility of the Chinese currency can be expected only at the five-year horizon.

US$ per Euro
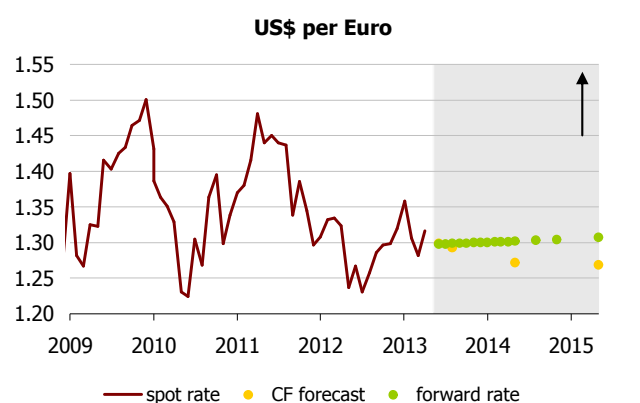
	13/05/13	06/13	08/13	05/14	05/15
spot rate	1.298				
CF forecast		1.299	1.292	1.271	1.268
forward rate		1.298	1.298	1.301	1.306

Yen per US$
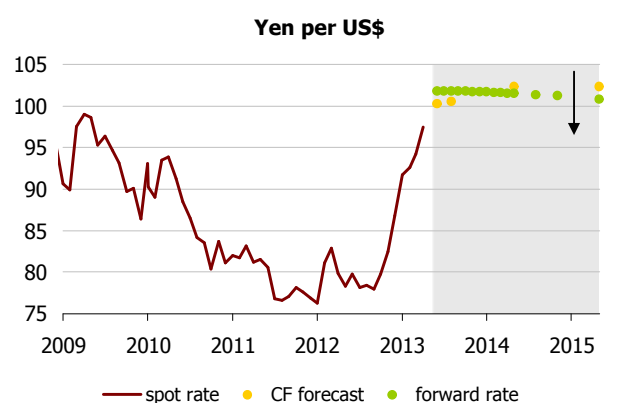
	13/05/13	06/13	08/13	05/14	05/15
spot rate	101.82				
CF forecast		100.20	100.50	102.30	102.30
forward rate		101.81	101.77	101.50	100.81

US$ per UK£
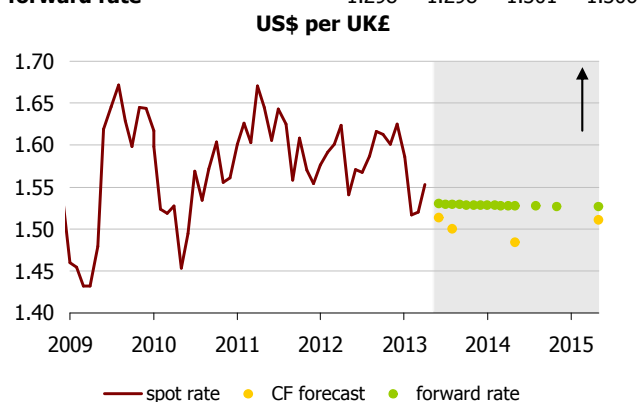
	13/05/13	06/13	08/13	05/14	05/15
spot rate	1.530				
CF forecast		1.513	1.500	1.484	1.510
forward rate		1.530	1.529	1.528	1.527

Swfr per US$
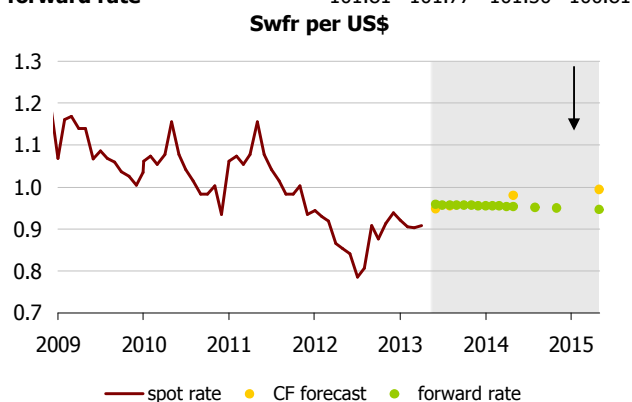
	13/05/13	06/13	08/13	05/14	05/15
spot rate	0.958				
CF forecast		0.948	0.955	0.980	0.994
forward rate		0.957	0.957	0.953	0.946

BRAZILIAN REAL, RUSSIAN ROUBLE
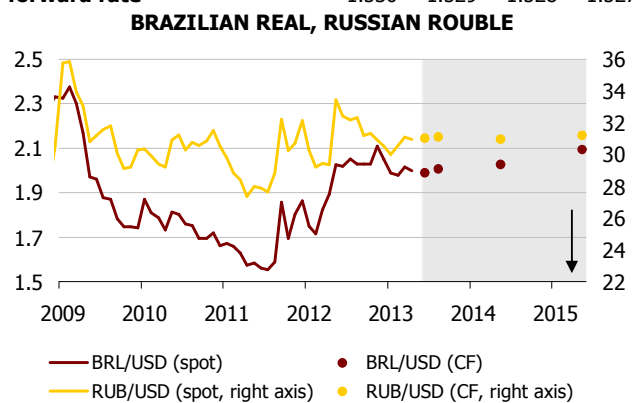
	31/05/14	06/13	08/13	05/14	05/15
BRL/USD (spot)	2.02				
BRL/USD (CF)		1.99	2.00	2.03	2.09
RUB/USD (spot)	31.36				
RUB/USD (CF)		31.01	31.09	30.95	31.17

INDIAN RUPEE, CHINESE RENMINBI
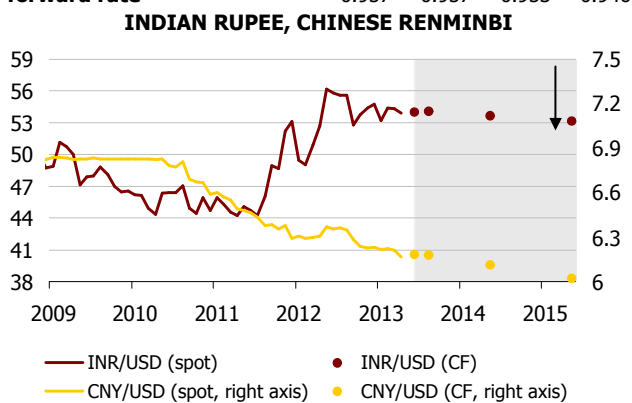
	31/05/14	06/13	08/13	05/14	05/15
INR/USD (spot)	54.80				
INR/USD (CF)		53.98	54.02	53.64	53.14
CNY/USD (spot)	6.15				
CNY/USD (CF)		6.18	6.18	6.11	6.02

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: 16 May 2013]

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

V.1 Oil and natural gas

The price of Brent crude oil decreased for the second consecutive month in April. In mid-April, it stood at almost USD 97 a barrel, down by 14% year on year. The decline was due mainly to concerns about global economic developments supported by weaker macroeconomic data, rising production and high stocks of oil. It was also fostered by negative sentiment and sell-offs across commodity markets. In early May, the price of Brent crude oil was USD 102–105 a barrel. Prices of futures fell together with spot prices in April. As a result, the outlook is decreasing over the entire horizon – the price should be just above USD 100 a barrel at the end of 2013 and below USD 98 a barrel at the end of 2014. By contrast, the CF expects a slightly rising outlook, with a price above USD 107 a barrel at the end of May 2014.

The IEA revised its global demand forecast for 2013 slightly upwards due to a revision of actual consumption in Germany in 2012. By contrast, OPEC and the EIA revised their global demand forecasts downwards slightly. Industrial stocks of oil and oil products remain at their five-year average.
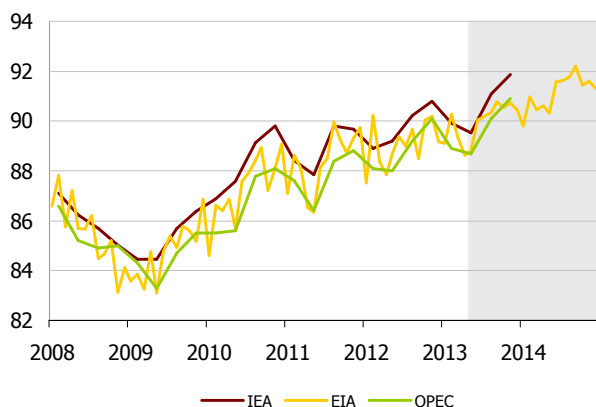
OUTLOOK FOR PRICES OF OIL AND NATURAL GAS
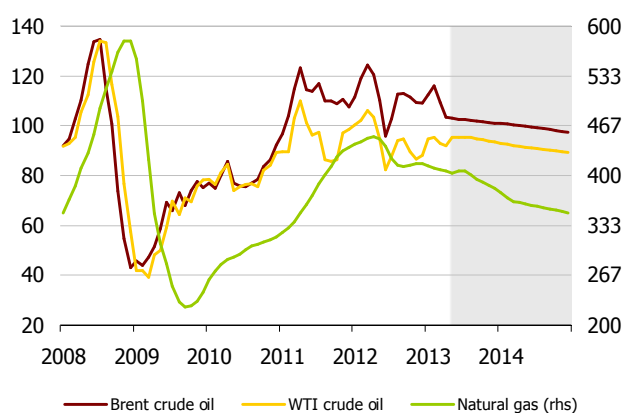
	Brent	WTI	Natural gas
2013	-6.17 ↘	0.20 ↗	-7.05 ↗
2014	-5.36 ↗	-3.60 ↗	-10.06 ↗

TOTAL STOCKS OF OIL AND OIL PRODUCTS IN OECD
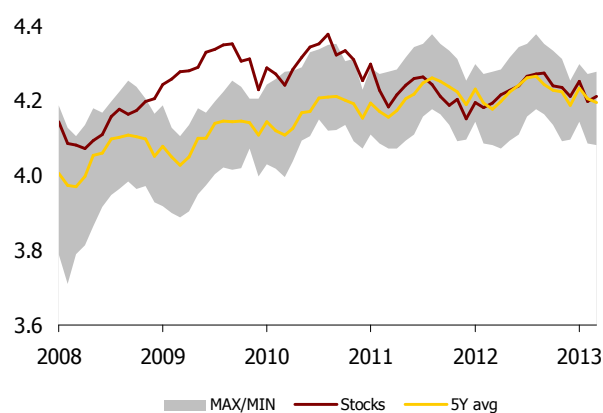
GLOBAL CONSUMPTION OF OIL AND OIL PRODUCTS

	IEA	EIA	OPEC
2013	0.91 ↗	1.00 ↘	0.90 ↘
2014		1.34 ↘	

PRODUCTION, TOTAL AND SPARE CAPACITY IN OPEC COUNTRIES
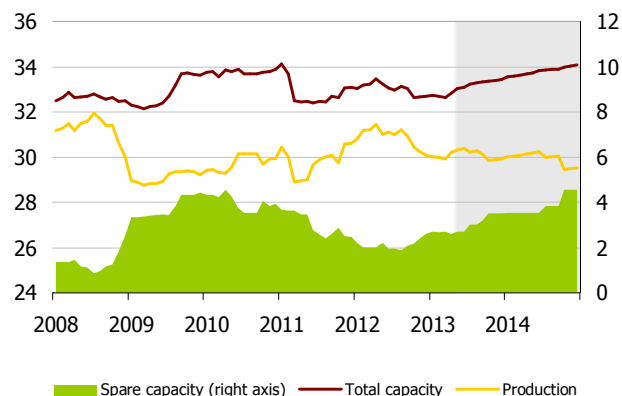
	Production	Total capacity	Spare capacity
2013	-2.57 ↘	0.18 ↘	40.13 ➡
2014	-0.53 ↗	2.22 ↗	29.92 ➡

Note: Oil price in USD/barrel, price of Russian natural gas at German border in USD/1,000 m^3 (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: 16 May 2013]

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

V.2 Other commodities

The overall non-energy commodity price index fell in April on negative contributions from both components, but rose slightly again in early May thanks to an increase in the food index. Turning to industrial metals, declines were recorded for prices of lead, tin and nickel, which reached three-year lows i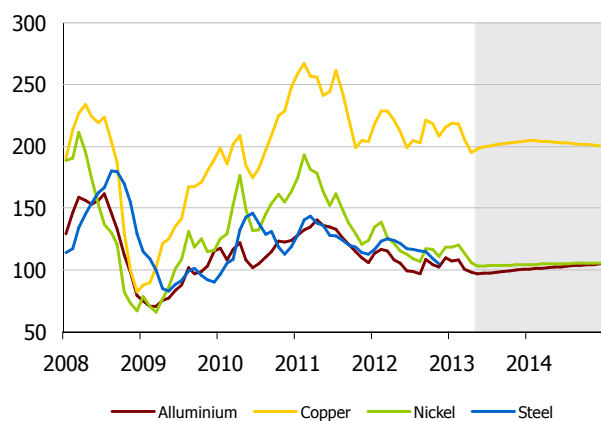n April. The outlook for all the monitored metals is flat, however. As regards food commodities, the biggest fall was recorded for maize prices, whereas prices of rice and beef rose slightly. The outlook for maize and soy prices is falling in the short term. Later they are expected to be flat, as are rice prices. The outlook for wheat prices is rising over the entire horizon. Moving on to technical commodities, the price of rubber fell again and thus remains at a three-year low. The outlooks for rubber and cotton prices are flat.

PRICES OF NON-ENERGY COMMODITIES
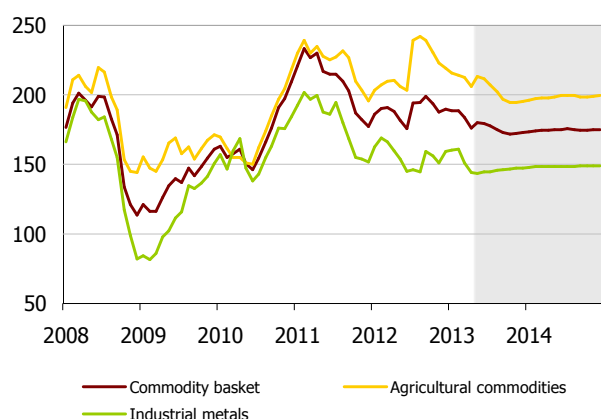
	Overall	Agricultural	Industrial
2013	-5.8 ⬊	-6.4 ⬊	-4.8 ⬊
2014	-2.0 ⬈	-3.3 ⬈	0.0 ⬊

FOOD COMMODITIES

	Wheat	Corn	Rice	Soy
2013	-3.9 ⬊	-8.3 ⬊	3.5 ⬈	-6.8 ⬊
2014	5.3 ⬈	-13.2 ⬈	1.7 ⬈	-10.3 ⬈

METALS

	Aluminium	Copper	Nickel
2013	-5.9 ⬊	-5.0 ⬊	-9.8 ⬊
2014	2.4 ⬈	-0.7 ⬊	-2.0 ⬊

MEAT, NON-FOOD AGRICULTURAL COMMODITIES
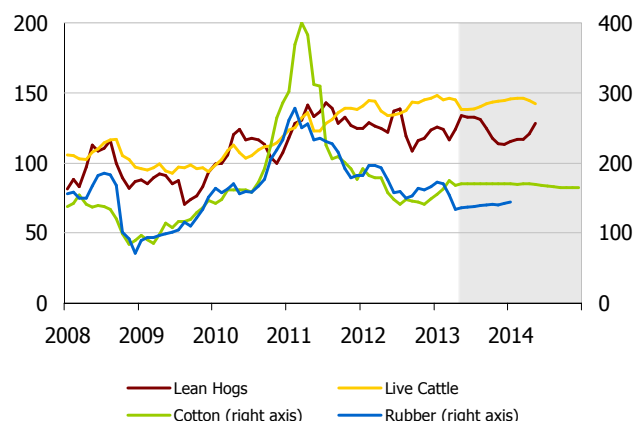
	Lean hogs	Live Cattle	Cotton	Rubber
2013	0.2 ⬈	1.7 ⬈	6.2 ⬊	-15.1 ⬊
2014	-3.6 ⬊	1.5 ⬈	-0.6 ⬈	➡

Note: Structure of non-energy commodity price indices corresponds to composition of The Economist commodity indices. All prices are given as indices, 2005 = 100. [Cut-off date for data: 16 May 2013]

Source: Bloomberg, CNB calculations.

APARTMENT PRICE TRENDS IN SELECTED CESEE COUNTRIES AND CITIES[1]

This article describes trends in property prices (apartment prices) in selected countries and cities of Central, Eastern and South-Eastern Europe (CESEE). Owing to the non-existence of wider data sources, our study period starts at the beginning of the new millennium. This allows us to assess partial effects of the financial and debt crisis even though the time series are relatively short.

1 Factors affecting property prices in CESEE countries

Property prices and their alignment with economic fundamentals played an important role in propagating the financial crisis. As we showed in the April 2012 issue of *Global Economic Outlook*,[2] property prices have shown very mixed trends in advanced economies. However, for direct comparison of property prices in the Czech Republic, it is more appropriate to compare property prices with those in countries with a similar economic level. This paper sets out to facilitate such a comparison by trying to explain the differences in the dynamics of property prices across the countries considered and, where the data sources allow, across their capitals.

The standard factors determining property prices include money growth, growth in housing loans (mortgage loans in particular), growth in construction output, interest rates (a decline in interest rates leads to a rise in property prices), demographic factors (population growth leads to property price growth), the size of the property market (higher supply leads to lower property prices) and limited property supply in a particular locality. Supply in the property market is driven primarily by the profitability of the construction business and is regarded as inelastic in the short run. Demand is determined mainly by households' disposable income, the mortgage interest rate and demographic trends. These factors are reflected in differences in apartment prices both within and across countries (see, for example, Hlaváček and Komárek, 2011).[3]

Analysing the determinants, or misalignment, of property prices in transformed economies is even more difficult than analysing the same for advanced countries. Property price time series for transition economies are often short and not broken down in sufficient detail (into various types of property, new versus used property, housing versus commercial property, etc.). The series can also be of low quality due to insufficient liquidity on property markets. And it is hard to obtain alternative indices based on different sources (asking prices versus transfer prices) to check the accuracy of the main index. These data problems, in turn, adversely affect the comparability of property price indices over time and across countries. Property price analysis in transforming economies is also complicated by the convergence nature of such economies. Property prices in most of these countries were undervalued at the start of the period under review, so it is difficult to estimate how much of their growth is due to convergence towards the advanced economies and how much of it is a symptom of

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[1] Written by Michal Hlaváček (Michal.Hlavacek@cnb.cz) and Luboš Komárek (Lubos.Komarek@cnb.cz). The views expressed in this contribution are those of the authors and do not necessarily reflect the official views of the CNB.

[2] See also the CNB Financial Stability Report and the ECB Financial Stability Report.

[3] Key ratios describing property market developments across countries, regions or cities are constructed to make the property market easier to understand. They include the price-to-income (P/I) and price-to-rent (P/R) ratios. The P/I ratio provides basic information on the affordability of property in relation to income. A high P/I ratio indicates that property purchasing costs are high relative to income; moreover, it is more difficult to repay debt financing of property purchases at any given interest rate and loan-to-value ratio. However, these indicators are not available for most of the countries we study here.

emerging misalignment or a property price bubble. The situation is further complicated by the fact that convergence also applies to the determinants of property prices (e.g. GDP growth), which may also conceal major imbalances. As regards international comparisons, there is also the problem that the economic level differs across countries, hence faster growth in property prices (or GDP) in a poorer country may be due to faster convergence of that country. The transition nature of the economy also affects the development of the credit market, with housing loans emerging "out of the ashes" in most of the countries under study. Another problem with analysing property prices is growth in the quality of housing, which again can differ over time and across countries and which further reduces the quality of the source data. Finally, in many countries property prices are – or were until recently – subject to regulation of rents. This regulation has distorted the rental market and affected the substitution between renting and home ownership. All these problems must be taken into account when comparing property price trends across countries.

In this article, we focus on analysing apartment prices, as these prices are most internationally comparable and their index is of the highest quality owing to the relative homogeneity of apartments within various types of property. Note, however, that we say nothing about the rest of the market (prices of family houses, building plots, commercial property, agricultural land prices, etc.) Although the various types of property prices may be highly correlated within individual countries, we cannot rule out highly uneven price dynamics.

2 Property price dynamics and the economic development of CESEE countries

As in advanced countries, property prices in the countries of Central, Eastern and South-Eastern Europe (CESEE) have shown mixed trends since the start of the new millennium. The available data[4] allow us to compare four periods (see Figure VI-1):

- between 2002 and 2004, when property price growth was positive but relatively subdued in most countries,

- between end-2004 and the property price peak,[5] when price growth accelerated and prices were probably overvalued,

- between the peak and end-2009, when the property price correction was at its strongest in most countries, and finally,

- between 2009 and 2012, when prices were very mixed across countries.

The outbreak of the financial, and later debt, crisis was an important milestone. In the pre-crisis period, most advanced countries and also the CESEE countries under review recorded real property price increases which were more (Bulgaria, Slovakia) or less (Lithuania, Estonia, Poland) even. After the fall of Lehman Brothers, the previous real increases in property prices recorded visible corrections, especially in those countries which had shown the highest growth in the pre-crisis period (the Baltic States and Poland). Apartment prices in Hungary were rather specific, as they peaked in the EU accession year of 2004. The latest two-year period shows a moderation of the real decline in property prices in most of the economies under review and their capital cities.

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[4] Data exist for Bulgaria (BG), the Czech Republic (CZ), Lithuania (LT) and Hungary (HU) since 1998, for Poland (PL) and Slovakia (SK) since 2002, for Estonia (EE) since 2013 Q3, for Latvia (LV) since 2006, for Slovenia (SI) since 2007 and for Romania (RO) since 2009.

[5] The peak means the maximum price between 2004 and 2009; the peaks were reached at different times in different countries: first in HU in late 2004 and last in BG and CZ in 2008 Q3.

The exception is the situation on the Romanian property market, where the decline in prices has deepened significantly – more so in Bucharest than in the rest of Romania.

Figure VI-1: Apartment prices in selected CESEE countries and their capital cities (growth in % in real terms, HICP-deflated)
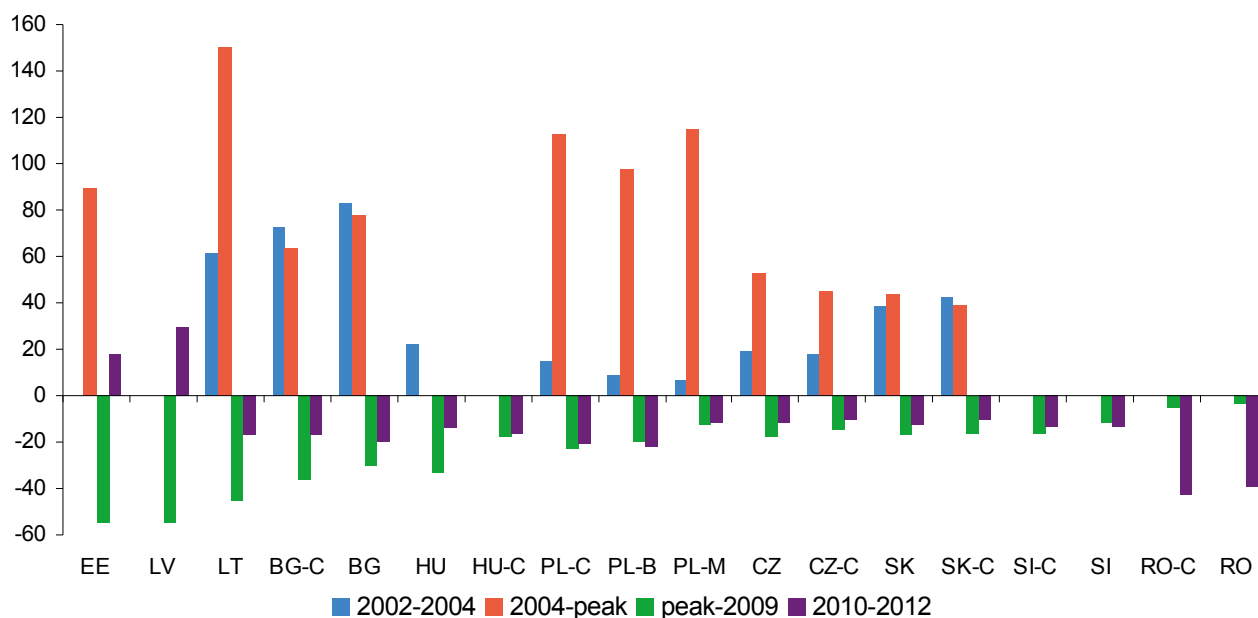
Note: -C denotes capital city, -B big towns and -M medium-sized towns; otherwise data for the whole country. EE – Estonia, LV – Lithuania, LT – Latvia, BG – Bulgaria, HU – Hungary, PL – Poland, CZ – Czech Republic, SK – Slovakia, SI – Slovenia, RO – Romania. Missing columns indicate missing data, with the exception of HU (2004 until peak), where the peak overlaps with the end of 2004.

Source: BIS, national statistical offices and central banks.

In Hlaváček and Komárek (2011), we showed, using the example of the Czech Republic, that property price dynamics in the capital city are often very different from those in the country as a whole. The "price leader" effect, whereby price changes on the more liquid market in the capital precede price changes in the rest of the country, often applies here. The results also showed that property price determinants in the capital may also differ from those in the rest of the country. For this reason, this article also focuses on distinguishing between the property market in the capital and elsewhere.

The left-hand side of Figure VI-2 compares apartment prices in selected CESEE countries and their capitals, converted into euros for comparability. The data confirm the general intuition that apartment prices in capital cities are significantly higher than those in other parts of the country. The exception is geographically small countries (such as the Baltic States), where apartment prices are driven almost entirely by developments in the capital. The right-hand side of Figure 2 provides evidence of a strong positive relationship between apartment prices (per metre squared in euros) and a country's level of economic development (as measured by GDP per capita in thousands of euros) or the standard of living in a town. This relationship applies across countries as well as between the capital and other regions of the country. The differences in living standards and apartment prices between the capital and the rest of the country can be very large (see CZ, SK, PL, HU).

Figure VI-2: Comparison of euro value of apartment prices in selected CESEE countries

a) Apartment prices (EUR/m^2, 2012)   b) Comparison of apartment prices (EUR/m^2) and GDP per capita (EUR thousands), 2012
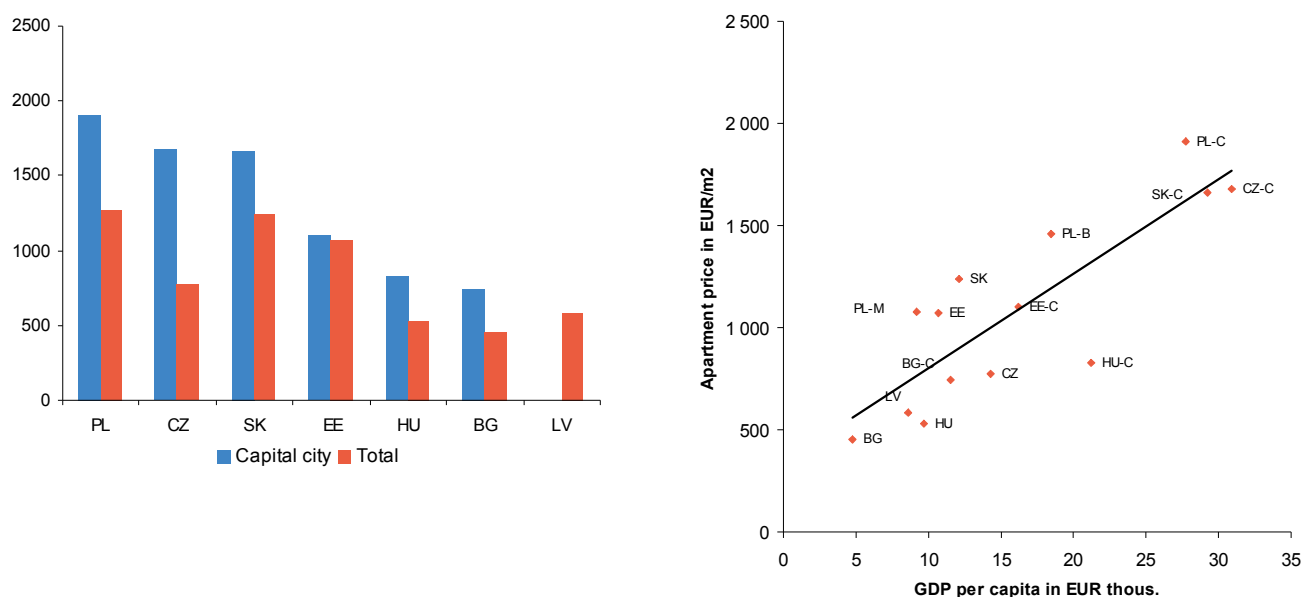
Note: -C denotes capital city, -B big towns and -M medium-sized towns; otherwise data for the whole country. EE – Estonia, LV – Lithuania, LT – Latvia, BG – Bulgaria, HU – Hungary, PL – Poland, CZ – Czech Republic, SK – Slovakia, SI – Slovenia, RO – Romania.

Source: BIS, national statistical offices and central banks.

Figure VI-3: Explaining apartment price growth

a) Apartment price growth in first and second phases of financial crisis (real growth in %)

b) Comparison of apartment price growth and GDP growth (real growth in %, maximum decline 2008–2010)

Note: -C denotes capital city, -B big towns and -M medium-sized towns; otherwise data for the whole country. EE – Estonia, LV – Lithuania, LT – Latvia, BG – Bulgaria, HU – Hungary, PL – Poland, CZ – Czech Republic, SK – Slovakia, SI – Slovenia, RO – Romania. The green line denotes the trend without outliers (the Baltic States, Romania).

Source: BIS, national statistical offices, central banks and Eurostat.

Comparing property prices in the first phase of the financial crisis (up to 2009) with those in the second phase (2009–2012) helps explain their dynamics. Figure VI-3a shows that this relationship is negative (the blue line), i.e. apartment prices declined more moderately or even increased in countries which saw the biggest corrections of their previous growth (the Baltic States). For Romania, on the other hand, the price correction occurred with a lag. However, this negative relationship is driven largely by the situation in these outliers. If the outliers are not taken into account, it disappears entirely and even turns slightly positive (the green line). The said dependence on historical developments, which is to some extent a sign of the self-cleaning function of the property market, thus applies only to relatively extreme increases or decreases in property prices. For most countries, however, the dynamics are determined by fundamental factors, which are similar for most countries between the two periods. A larger decrease in GDP in countries with the largest price falls (see Figure VI-3b) is one such fundamental explanation. This positive relationship is again driven mainly by the Baltic economies (the blue line). However, this dependence loosens again if these countries are not included. Possible endogeneity between property price growth and GDP, due either to the opposite implication or to the joint effect of a third factor (e.g. excessive exposure of households to foreign currency loans), remains an issue here.

Figure VI-4: Explaining apartment price growth by demographic factors

a) Comparison of apartment price growth and total population growth (real price growth in %, units; population growth in persons per 1,000 population)

b) Comparison of apartment price growth and total population growth due to migration (real price growth in %, units; population growth in persons per 1,000 population)
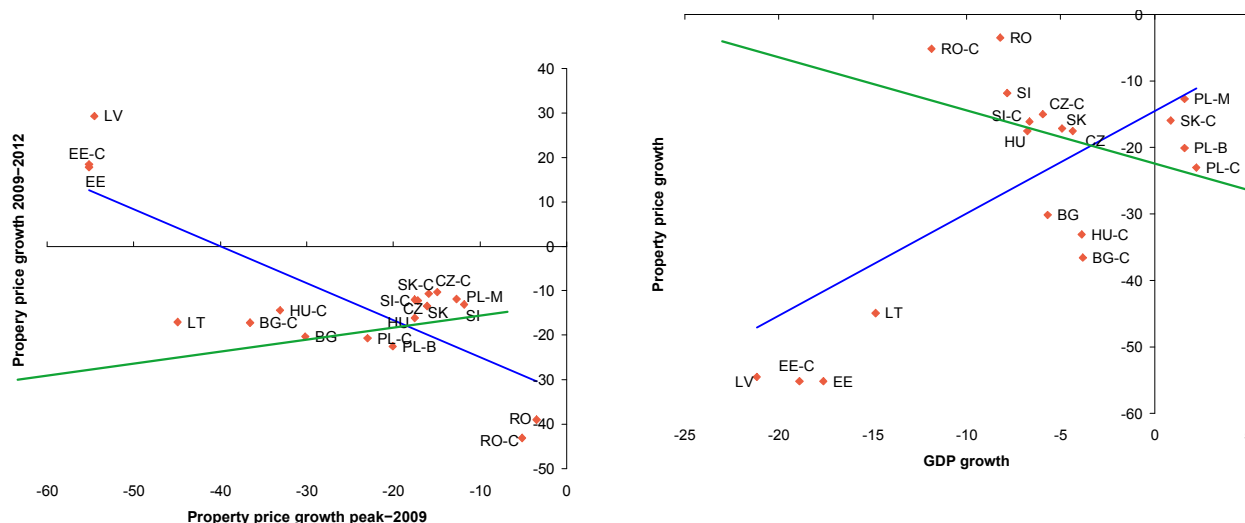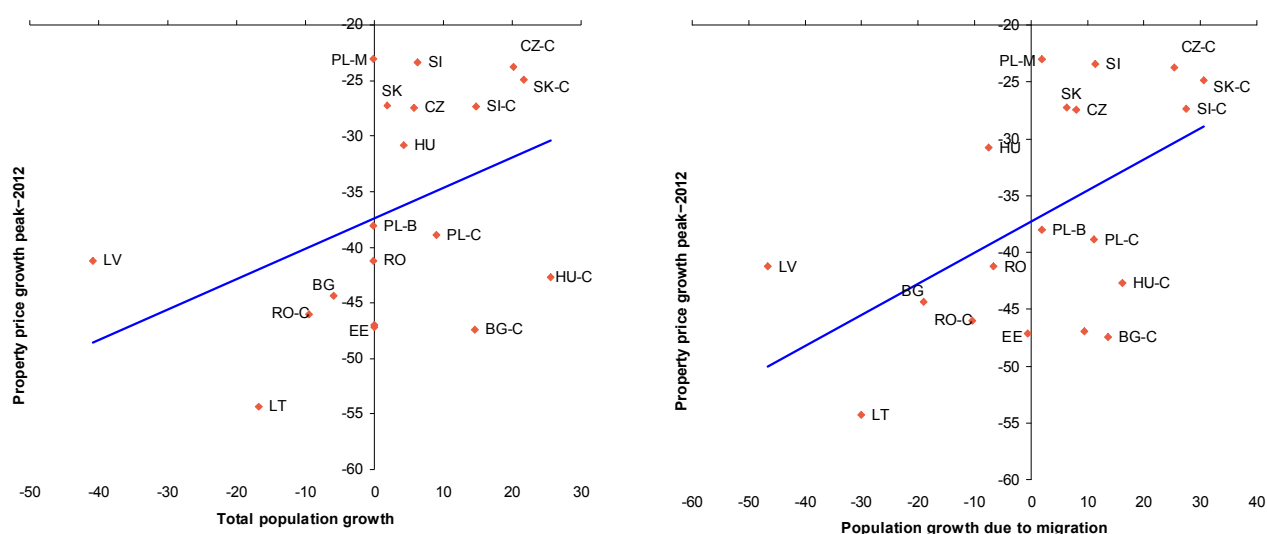

Note: -C denotes capital city, -B big towns and -M medium-sized towns; otherwise data for the whole country.
EE – Estonia, LV – Lithuania, LT – Latvia, BG – Bulgaria, HU – Hungary, PL – Poland, CZ – Czech Republic, SK – Slovakia, SI – Slovenia, RO – Romania

Source: BIS, national statistical offices, central banks and Eurostat.

3 Property price growth and selected demographic factors of CESEE countries

As we illustrated for the Czech Republic in Hlaváček and Komárek (2011), demographic factors, population growth in particular, are also a major factor of property price growth. Both natural population growth (births minus deaths) and population growth due to migration are significant factors. Cross-border migration between individual countries and internal migration within a country both play a role here. Internal migration usually goes from poorer, often agricultural, areas to the capital or other large cities. This is

confirmed by data from the set of countries under review (see Figure VI-4). The largest population increases are recorded mostly by capitals, in which property prices simultaneously saw the smallest decreases. At national level, the largest population increases were shown mainly by the wealthier countries (SI, CZ, SK).

The analysis revealed relatively uneven property price dynamics across CESEE countries. However, despite these very mixed trends, we managed to establish several determinants which explain these dynamics. There is some dependence on the past evolution of property prices, with the largest falls in property prices having been recorded by the countries with the largest pre-crisis price increases. There is also a partial negative relationship between price declines in various phases of the financial and debt crisis. Real economic growth and demographic factors (population growth) were also important for the evolution of apartment prices across countries. Our analysis also confirmed that it is important to distinguish between the property market in the capital city and that in the other regions of the country. However, property price growth in CESEE countries was also affected by other phenomena not covered by this paper (e.g. the role of foreign currency housing loans and households' related difficulties repaying such loans). A comparison of property prices in the Czech Republic with those in other countries in the region taking into account their economic fundamentals reveals that the situation in the Czech Republic is basically "typical", the only difference being that during the financial crisis apartment prices started falling slightly later in the Czech Republic.

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Hlaváček, M. & Komárek, L. (2011): Regional Analysis of Housing Price Bubbles and Their Determinants in the Czech Republic, Czech Journal of Economics and Finance (Finance a úvěr) 61(1), pp. 67–91, ISSN 0015-1920.

Hlaváček, M. & Komárek, L. (2012): Property Price Misalignment Around the World, Global Economic Outlook, April 2012, Czech National Bank.

A1. Change in GDP predictions for 2013

	CF		IMF		OECD		CB / EIU	
EA	-0.1	2013/5 2013/4	-0.1	2013/4 2013/1	-0.3	2012/11 2012/5	-0.2	2013/3 2012/12
US	-0.2	2013/5 2013/4	-0.1	2013/4 2013/1	-0.1	2012/11 2012/5	-0.1	2013/3 2012/12
DE	-0.1	2013/5 2013/4	0.0	2013/4 2013/1	0.1	2012/11 2012/5	-1.2	2012/12 2012/6
JP	0.1	2013/5 2013/4	0.4	2013/4 2013/1	-0.6	2012/11 2012/5	1.0	2013/4 2012/10
BR	0.0	2013/5 2013/4	-0.5	2013/4 2013/1	-1.7	2012/11 2012/5	-0.5	2013/5 2013/4
RU	-0.1	2013/5 2013/4	-0.3	2013/4 2013/1	-1.1	2012/11 2012/5	-0.5	2013/5 2013/4
IN	0.0	2013/5 2013/4	-0.2	2013/4 2013/1	-2.7	2012/11 2012/5	0.0	2013/5 2013/4
CN	-0.3	2013/5 2013/4	-0.2	2013/4 2013/1	-0.7	2012/11 2012/5	-0.1	2013/5 2013/4

A2. Change in inflation predictions for 2013

	CF		IMF		OECD		CB/EIU	
EA	-0.1	2013/5 2013/4	0.1	2013/4 2012/10	-0.3	2012/11 2012/5	0.0	2013/3 2012/12
US	-0.3	2013/5 2013/4	0.0	2013/4 2012/10	-0.1	2012/11 2012/5	-0.2	2013/3 2012/12
DE	-0.1	2013/5 2013/4	-0.3	2013/4 2012/10	-0.1	2012/11 2012/5	-0.1	2012/12 2012/6
JP	-0.1	2013/5 2013/4	0.3	2013/4 2012/10	-0.3	2012/11 2012/5	0.2	2013/4 2012/10
BR	0.1	2013/5 2013/4	1.2	2013/4 2012/10	0.0	2012/11 2012/5	0.2	2013/5 2013/4
RU	0.0	2013/5 2013/4	0.3	2013/4 2012/10	0.6	2012/11 2012/5	0.0	2013/5 2013/4
IN	0.0	2013/5 2013/4	1.2	2013/4 2012/10	0.6	2012/11 2012/5	0.6	2013/5 2013/4
CN	-0.2	2013/5 2013/4	0.0	2013/4 2012/10	-1.3	2012/11 2012/5	0.0	2013/5 2013/4

A3. 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

2013

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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

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How have global imbalances changed during the crisis? (Vladimír Žďárský)	2011-6
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