

GLOBAL ECONOMIC OUTLOOK – MARCH

Monetary and Statistics Department
External Economic Relations Division

2014

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Cut-off date for data

10 - 14 March 2014

CF survey date

10 March 2014

GEO publication date

21 March 2014

Notes to charts

ECB and Fed: midpoint of the range of forecasts.

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

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

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II.4 Japan	III.2 India III.4 Brazil	V. Commodity market developments		

The March issue of Global Economic Outlook presents its regular overview of recent and expected developments in selected territories, focusing on economic fundamentals: inflation, GDP growth, leading indicators, interest rates, exchange rates and commodity prices. At the end of the first quarter of this year, we also focus on analysing the impacts of the financial crisis on price levels in the Visegrad Group countries. Price level changes are important for assessing the alignment of economies in the EU (prior to euro area entry), but also have a direct effect on the economy's competitiveness in the broader economic (globalised) environment.

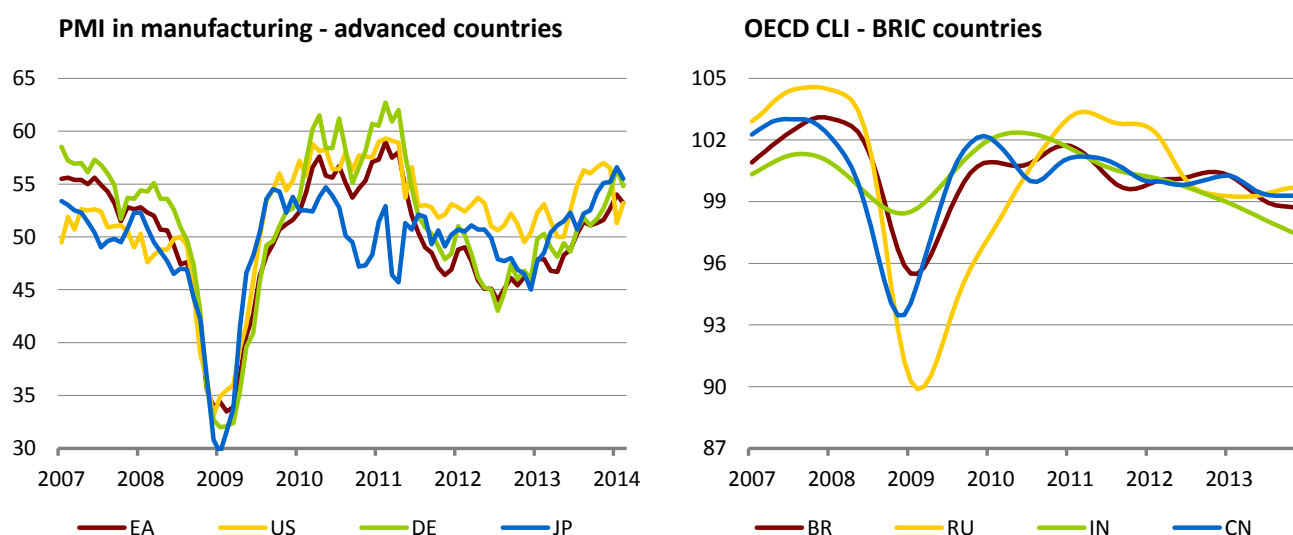
The economic trends in advanced countries are continuing to improve slightly overall. This is confirmed by a continued improvement in leading indicators in industry. Economic growth in the euro area should increase, but the effects of the recovery are yet to be seen on the closely observed labour market due to typical lags. Inflation outlooks are also very low, implying a more pronounced risk to macrofinancial stability. A further pick-up in economic growth is also expected in the USA, where, in contrast to the euro area, the inflation outlooks stand at around 2%. This situation is enabling the Fed to continue its policy of low rates and only gradually taper its monetary stimulus. The Japanese economy is also showing satisfactory developments (despite some disappointment about the contribution of domestic consumption), but industry there will face the effects of a gradually appreciating yen.

The Chinese economy is slowing slightly and the government has announced a target for maintaining growth at "around 7.5%" in 2014. Nevertheless, the probability of this target being met is falling as a result of the latest data (e.g. industrial production growth). The outlooks for the Brazilian economy are none too optimistic owing to domestic economic problems and higher inflation pressures. Capital outflows and currency depreciation due to the political tensions between Russia and Ukraine represent a risk to the Russian economy. On the other hand, positive outlooks, i.e. increasing economic growth and a marked disinflationary process, are prevailing in the Indian economy.

The interest rate outlooks remain low for the euro area this year, but are expected to rise more significantly in the United States towards the end of the year, a trend which should continue into 2015. According to Consensus Forecasts, the dollar should appreciate against both the euro and the yen due to the tapering of the quantitative easing programme in the USA. The dollar is expected to appreciate against the Brazilian and Russian currencies, too. The dollar will also appreciate slightly against the Indian currency while depreciating against the renminbi according to the outlook.

Despite continued rapid growth in oil extraction in North America, the Brent crude oil price remains relatively high owing to renewed demand growth and dwindling oil stocks in OECD countries. Nonetheless, the outlook for the Brent oil price remains downward sloping at the one-year horizon. A decline in oil prices (and commodities in general, including natural gas) should be fostered by the expected appreciation of the dollar as a result of the US monetary policy tightening, which should lead to investors withdrawing from commodity markets. The outlooks for prices of other commodities – especially industrial metals – stabilised, although food commodity prices have recently recorded visible growth.

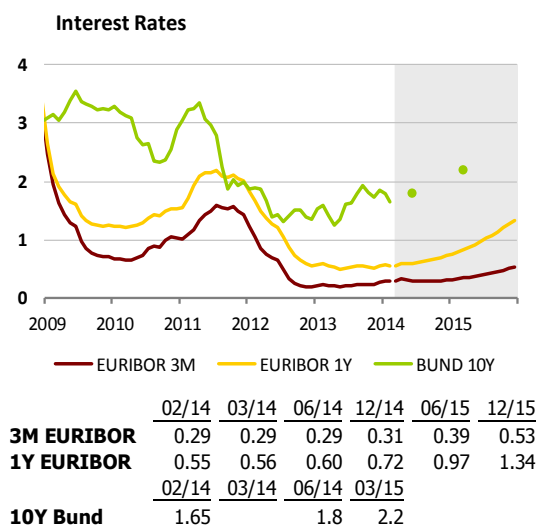
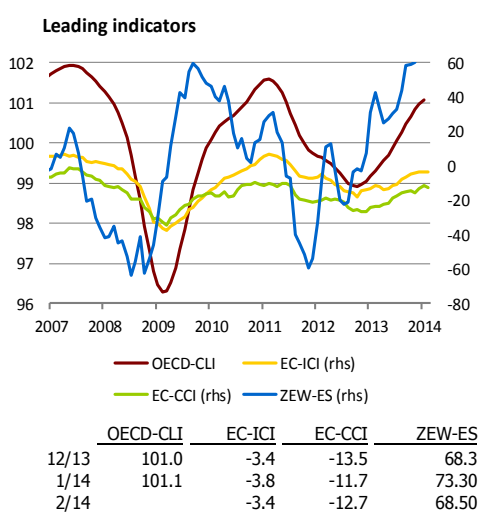
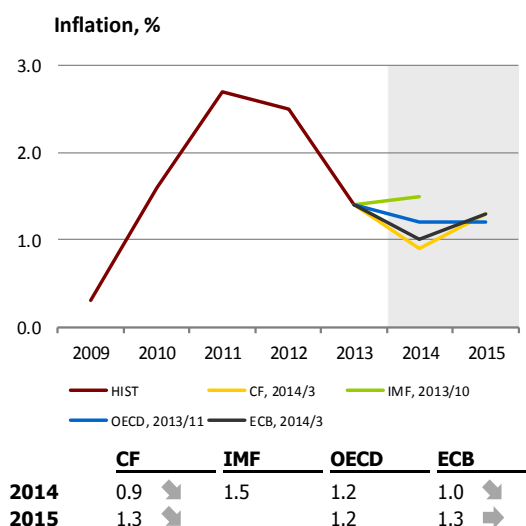
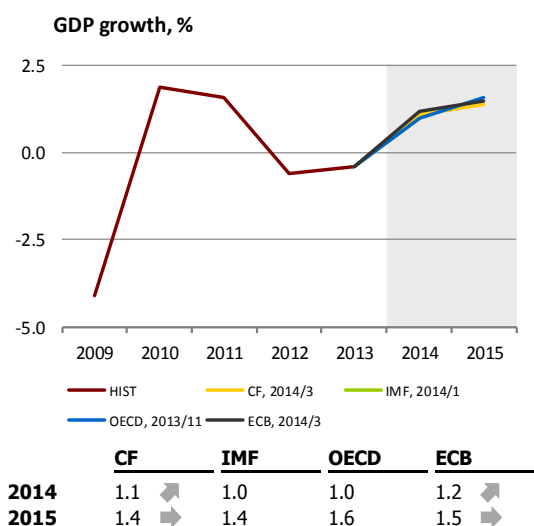
Available PMI time series for countries followed in the GEO



II.1 Euro area

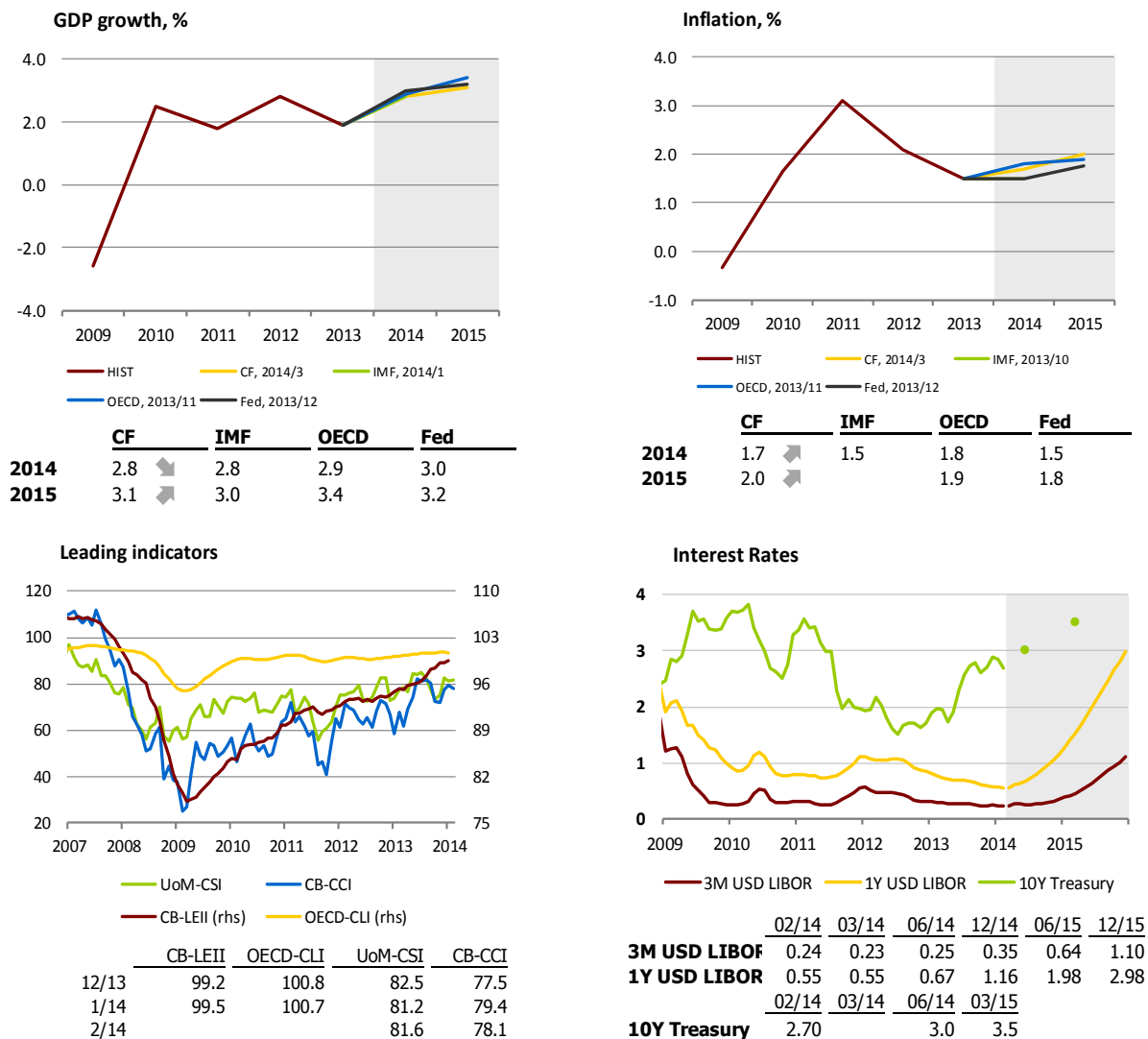
According to Eurostat’s second estimate, quarterly GDP growth in the euro area rose by 0.2 pp to 0.3% in 2013 Q4, driven by net exports, fixed investment and private consumption. By contrast, additions to inventories and government consumption made a negative contribution. Overall, GDP in the euro area shrank by 0.5% in 2013. Leading indicators in the manufacturing sector suggest a continued recovery at the start of 2014, despite a slight decline in industrial production in January. The continued recovery in economic activity has not yet been reflected in the labour market, and unemployment remained at 12% for the fourth consecutive month in January. The outlook for euro area economic growth in 2014 was revised slightly upwards in the March CF and in the ECB’s new forecast. Moreover, the ECB published a forecast horizon extended by one year, according to which euro area GDP growth should pick up to 1.8% in 2016.

Inflation remained low in the euro area. According to Eurostat’s flash estimate, inflation stood at 0.8% in February, as in the previous two months. Excluding prices of energy, food and alcohol, however, it increased by 0.2 pp compared to January, reaching 1%. Inflation is expected to remain subdued in the euro area in the months ahead. It should be around 1% this year and increase to around 1.3% next year. The ECB also expects low inflation in 2016, at 1.5%. Nonetheless, the ECB left its monetary policy settings unchanged at the meeting in March. It repeated its forward guidance that rates would be left at current or lower levels for an extended period of time and also its readiness to react to any change in inflation expectations, which are currently firmly anchored close to the ECB’s target over the medium to long term. However, a reaction by the ECB would also be triggered by a rise in money market rates, which might threaten the fragile recovery in the euro area.



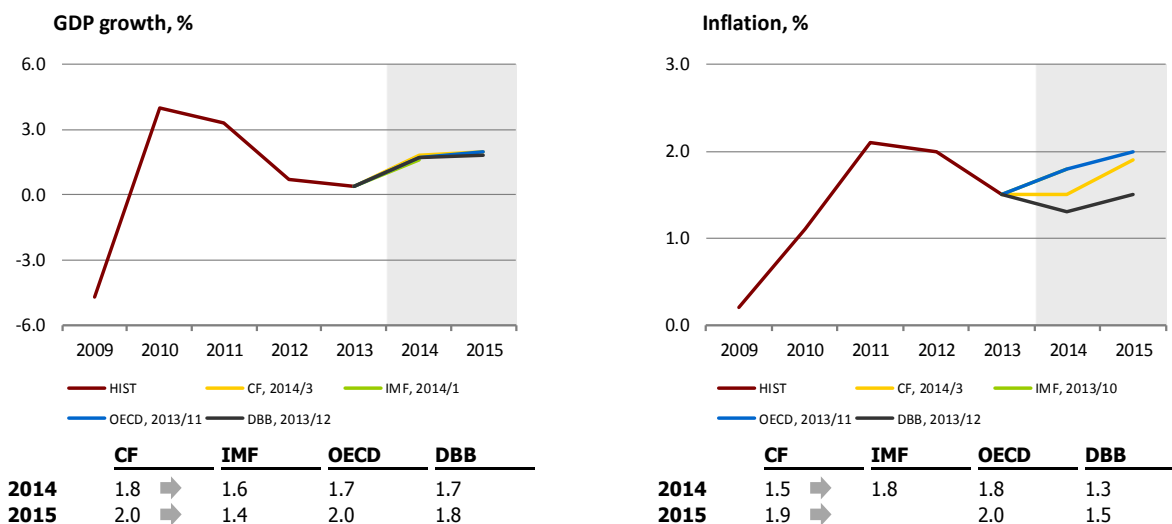
II.2 United States

Although economic growth in the USA reached 1.9% last year, the rate of growth did not go up noticeably until the year-end. According to the forecasts under review, the growth should increase further to 3% this year, and a slight pick-up is also expected in 2015. Renewed growth in the PMI in manufacturing leading indicator in February, following a sharp fall in January (the effect of tough winter conditions in North America), is good news for the current quarter. Overall, faster industrial production growth is expected this year, in line with GDP growth. Consumer confidence indicators also showed relatively favourable developments in February, despite a slight rise in unemployment. Economic activity continues to recover amid still subdued inflation pressures, with annual consumer price inflation at 1.6% in January for both the entire consumer basket and prices excluding energy and food. Nevertheless, some increase in growth can be observed for industrial producer prices since November 2013. The March CF increased the outlook for consumer price inflation for 2014 and 2015. However, given the outlooks by the other institutions under review, inflation should not exceed 2%. In line with the Fed's monetary policy tightening (a reduction in bond purchases of USD 20 billion), the dollar is expected, according to CF, to appreciate against the euro at the one-year horizon to USD 1.30 from its current weak level of USD 1.39. The current weak level of the dollar corresponds more with the actions taken by the ECB, which did not move to ease monetary policy in March despite a very low inflation outlook. The outlook for short-term interest rates suggests they will stay at record-low levels this year and increase in 2015. Ten-year interest rates should rise to 3.5% at the one-year horizon owing to the tapering of the quantitative easing programme.



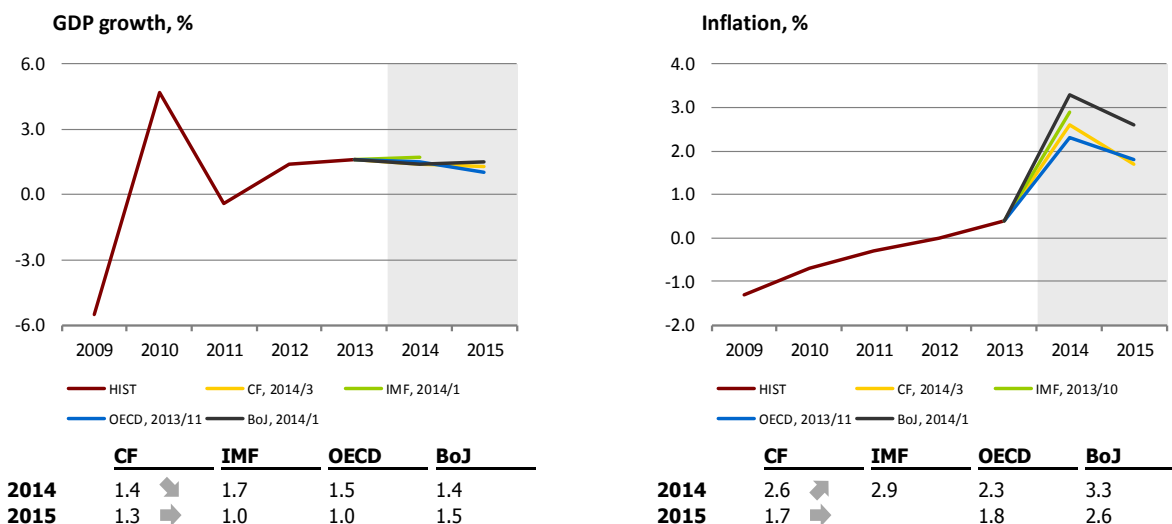
II.3 Germany

Both quarterly and annual GDP growth picked up pace in Germany in 2013 Q4 as compared to the previous quarter. In both cases, stronger growth in net exports outweighed a decline in growth in domestic demand. CF03 expects a further pick-up in both quarterly and annual economic growth in 2014 Q1. This is suggested by high levels of leading indicators and by industrial production and retail trade turnover in January. CF03 expects GDP to grow by 1.8% this year and 2% next year. Faster growth in domestic demand should be the main source of the higher economic activity. The budget of the German government was balanced last year. A deficit of 0.2% of GDP is expected for this year. Inflation edged down further to 1.2% in February. Price growth is being slowed mainly by energy prices, which fell by 2.7% year on year.



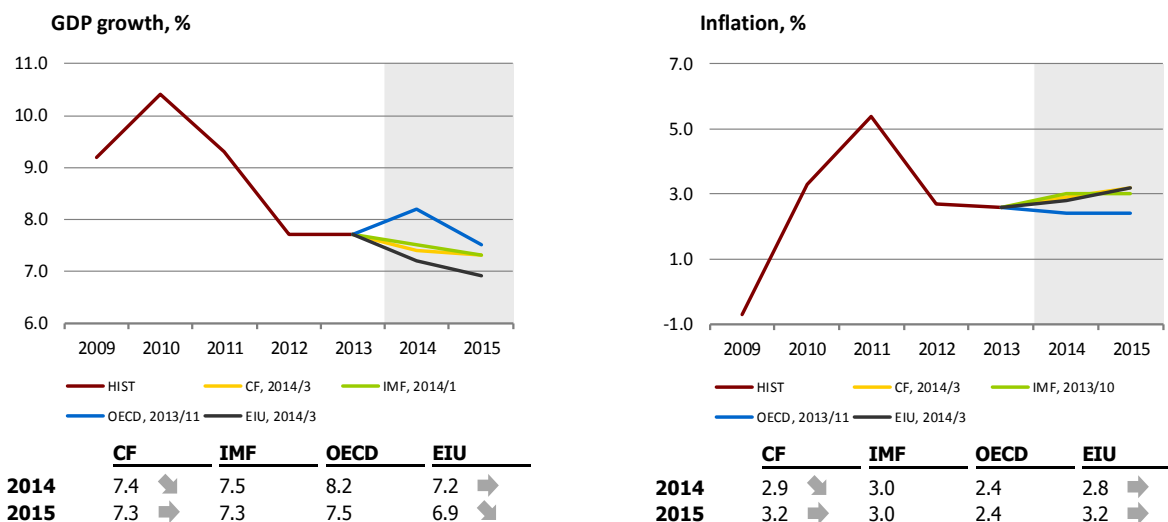
II.4 Japan

The Japanese economy grew more slowly than expected at the end of the year, as GDP recorded an annual increase of only 1% in Q4. Quarterly GDP growth amounted to 0.3%. The expectation that the recovery would pick up further thus failed to materialise. Especially disappointing was the growth rate of household consumption, which nevertheless grew for the fifth consecutive quarter. Consumers are evidently not going to frontload before the planned tax increases until 2014 Q1. Exports and corporate investment lagged behind analysts' assumptions, reflecting declining demand in China and on other Asian markets. However, the outlooks for Q1 are much more optimistic. Industrial production showed the fastest growth in two years in January, and both core inflation and unemployment maintained the growth rates observed in December. Nevertheless, headline inflation dropped to 1.4% and the yen appreciated against the dollar due to an increase in risk aversion and sales on emerging markets. In line with the new data, the March CF lowered the outlook for GDP growth by 0.2 pp and increased the outlook for inflation by 0.2 pp for 2014. The 2015 forecast remained unchanged.



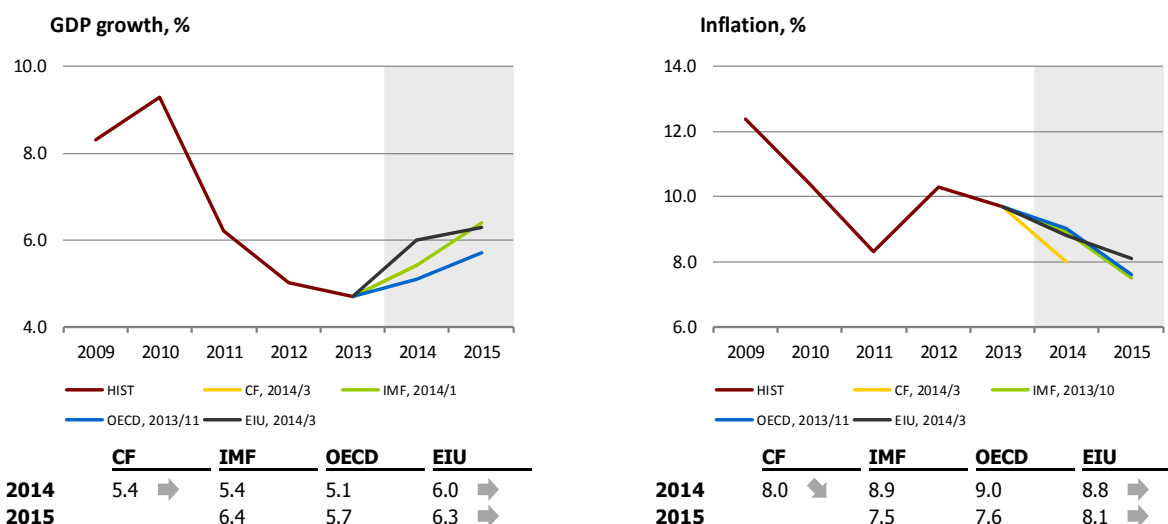
III.1 China

In March, the Chinese government announced a target for domestic GDP growth for this year at “around 7.5%”, which is 0.2 pp lower than the economic growth recorded in 2013. Moreover, Chinese Prime Minister Li Keqiang emphasised the possibility of some tolerance of undershooting or overshooting this target. Economic developments currently suggest a greater likelihood that the target will not be hit this year. The new data show slower growth in industrial production, fixed investment and retail sales. Deflation is apparent in the case of industrial producer prices. In addition, Chinese exports provided an unpleasant surprise in February, recording their biggest fall since 2009. The March CF reduced its GDP growth outlook by 0.1 pp to 7.4% this year and also revised its consumer price forecast downwards (to 2.9% from 3.1% in February). The Chinese government left the inflation target for this year at last year’s level of 3.5%.



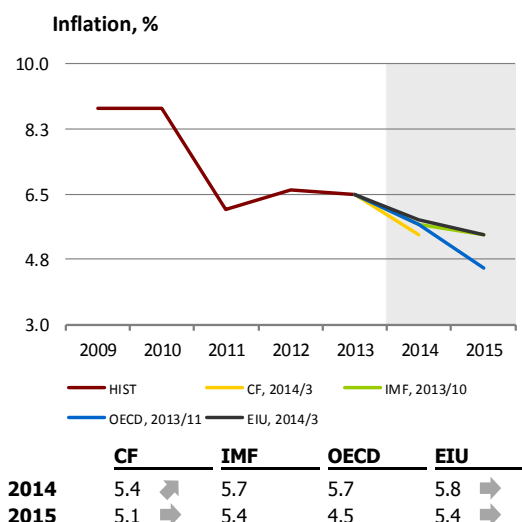
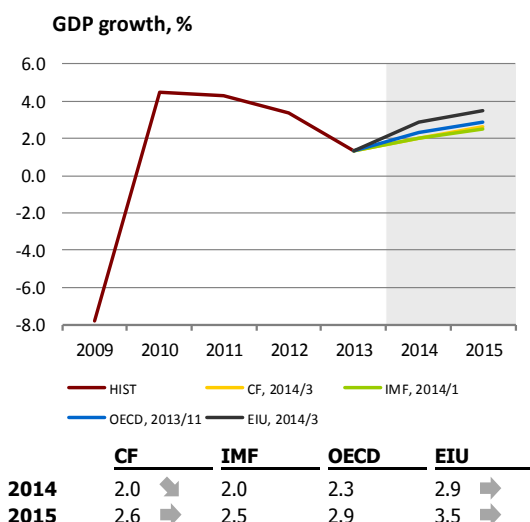
III.2 India

Despite continued capital outflows from some emerging economies, the Indian currency remained stable at close to INR 62 against the dollar. Its stability partly reflects government measures to reduce the current account deficit and the previous monetary tightening by the central bank. Inflation declined to 8.1% in February, the lowest level since 2012. The IMF improved its forecast for GDP growth in February to 5.4% from 4.6% on the back of a stronger global outlook, India’s improving export competitiveness, a moderate monsoon season and recent political reforms. However, according to the forecast, inflation might approach double-digit levels in 2014–2015, mainly due to food price inflation. CF forecasts a slight depreciation of the exchange rate to INR 62.7 against the dollar at the one-year horizon.



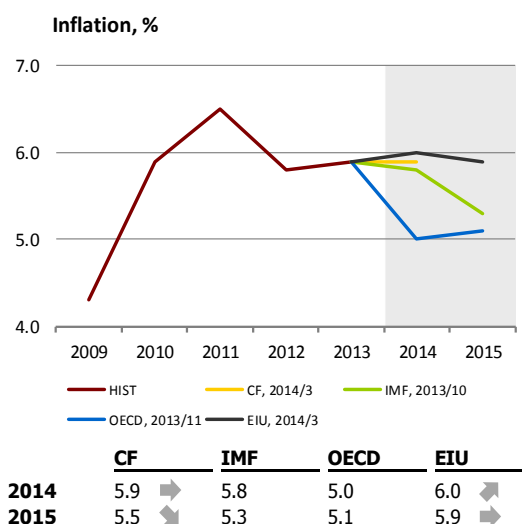
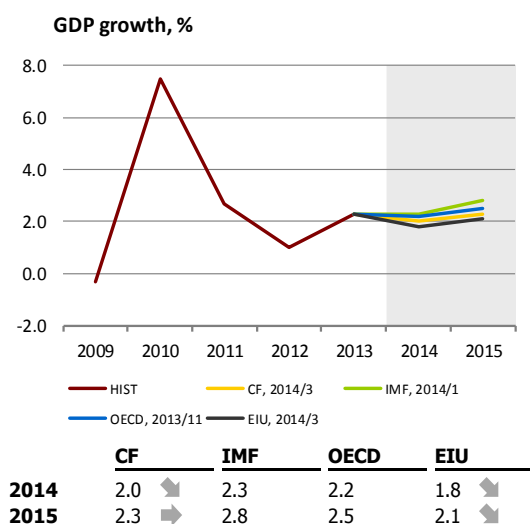
III.3 Russia

The newly published data for the Russian economy are not very favourable. Industrial production growth fluctuated around zero in late 2013 and early 2014. Employment has been falling moderately but constantly since September, which may have an adverse effect on the already subdued domestic demand. The political tensions between Russia and Ukraine remain a risk as regards capital outflows and the economic growth outlook in general. The escalation of the conflict in Crimea resulted in turbulence on financial markets (mainly in Russia, but the financial markets of other countries in the region were also hit) and especially in depreciation of the rouble. The rouble fell to a five-year low against the dollar in mid-March (RUB 36.5 as of 13 March 2014). According to the new CF, the Russian currency will continue to depreciate at the two-year horizon. The Russian central bank temporarily increased its foreign exchange interventions and raised its key interest rate by 1.5 pp to 7.0% on 3 March. The new CF reduced the outlook for growth in economic activity in Russia in 2014 by 0.2 pp to 2.0%. On the other hand, the March CF revised the inflation outlook for 2014 by 0.1 pp to 5.4%. The other outlooks remained unchanged.



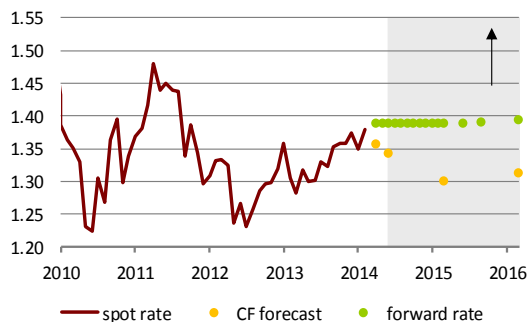
III.4 Brazil

The Brazilian real depreciated significantly in February following the currency crisis in Argentina and the further tapering of the quantitative easing programme in the USA, but appreciated at the start of March back to its end-2013 levels. The central bank continued its monetary tightening programme in March, increasing the interest rate by a further 25 bp to 10.75%. Although the interest rate increases should be at an end, the bank indicated its willingness to continue the hawkish policy in order to slow inflation. According to CF03, inflation should remain at last year's level in 2014 (5.9%). The depreciation of the real is also reflected in a larger budget deficit, which might cause a rating downgrade. The government is trying to combat the huge budget deficit and has published some reforms, including a possible increase in some taxes. However, the reforms are likely to be postponed due to the FIFA World Cup and the presidential elections in October. International institutions (CF, IMF, EIU) forecast GDP growth at around 2% in 2014 and 2%-3% in 2015.



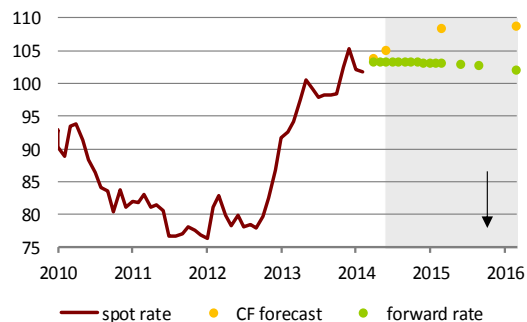
IV. Outlook of exchange rates vis-à-vis the US dollar

THE EURO



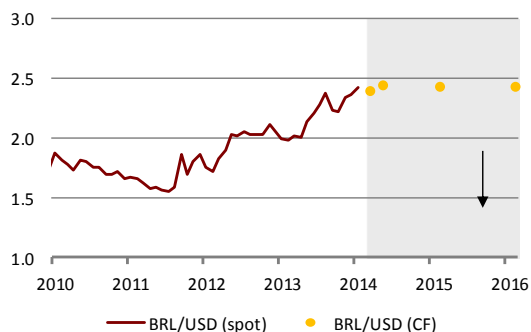
	10/03/14	04/14	06/14	03/15	03/16
spot rate	1.388				
CF forecast		1.356	1.343	1.300	1.313
forward rate		1.388	1.388	1.388	1.393

THE JAPANESE YEN



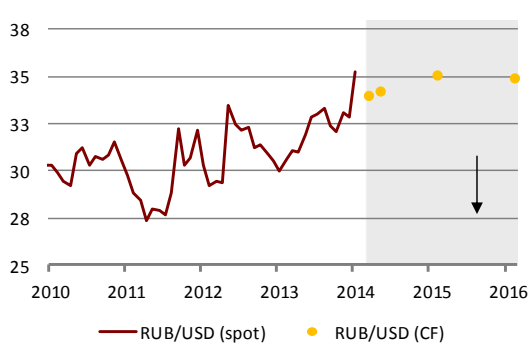
	10/03/14	04/14	06/14	03/15	03/16
spot rate	103.20				
CF forecast		103.80	104.90	108.30	108.70
forward rate		103.25	103.22	102.99	102.04

THE BRAZILIAN REAL



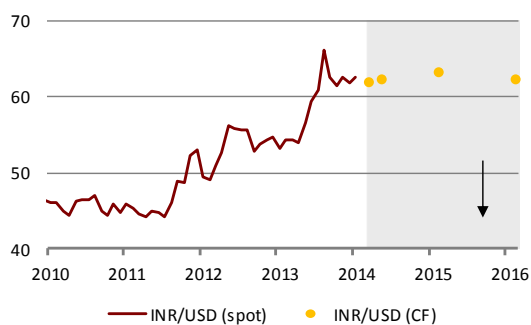
	10/02/14	03/14	05/14	02/15	02/16
spotový kurz	2.40				
předpověď' CF		2.39	2.43	2.42	2.43

THE RUSSIAN ROUBLE



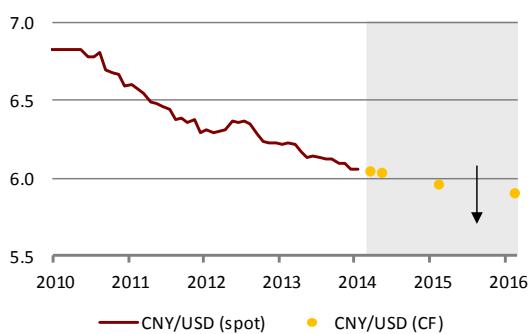
	10/02/14	03/14	05/14	02/15	02/16
spotový kurz	34.81				
předpověď' CF		34.00	34.19	35.05	34.93

THE INDIAN RUPEE



	10/02/14	03/14	05/14	02/15	02/16
spotový kurz	62.36				
předpověď' CF		61.94	62.24	63.20	62.23

THE CHINESE RENMINBI



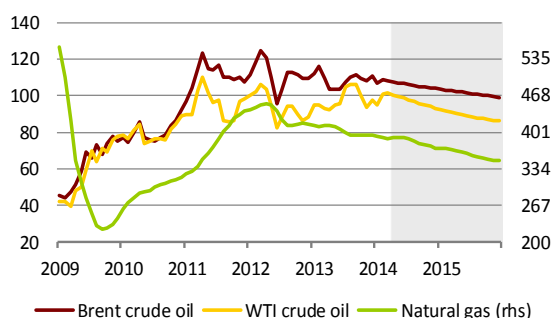
	10/02/14	03/14	05/14	02/15	02/16
spotový kurz	6.06				
předpověď' CF		6.05	6.04	5.96	5.90

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.

V.1 Oil and natural gas

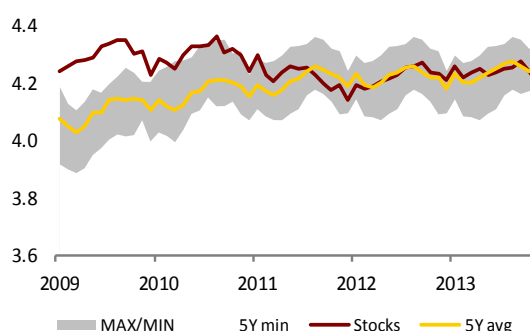
After a modest rise in early February, the Brent crude oil price stabilised again for the rest of the month in a narrow range around USD 109.5 a barrel. In early March, the price volatility increased owing to growing political tensions due to the situation in Ukraine, but prices still tended to decline in the first half of March. A seasonal fall in demand is expected as a result of a maintenance standstill in refineries. By contrast, oil prices are being propped up by very low stocks of oil and oil products in OECD countries, which, according to the IEA, fell unexpectedly again in January (mainly due to cold weather in the USA) after a sharp decrease in 2013 Q4. At the same time, energy agencies' estimates of global oil consumption are gradually increasing, dampening the expected decline in oil prices caused by fast rising supply and growth in the free extraction capacity of OPEC countries. Extraction should increase mainly in the USA, Canada and Brazil. However, the largest rise in extraction was seen in Iraq (a 35-year high), causing supplies from OPEC countries to exceed 30 million barrels a day for the first time in five months (30.49). A drop in oil prices (and commodities in general) should be fostered by the expected dollar appreciation caused by the US monetary policy tightening, which should lead to investors withdrawing from commodity markets. The EIA expects the average Brent oil price at USD 105 and USD 101 a barrel this year and the next respectively, broadly in line with market futures contracts. The CF03 survey expects a more moderate decline, with Brent oil prices at USD 105.4 a barrel. According to the EIA, the Brent-WTI spread should rise on average to USD 10 a barrel in 2014 and USD 11 a barrel in 2015.

OUTLOOK FOR PRICES OF OIL AND NATURAL GAS

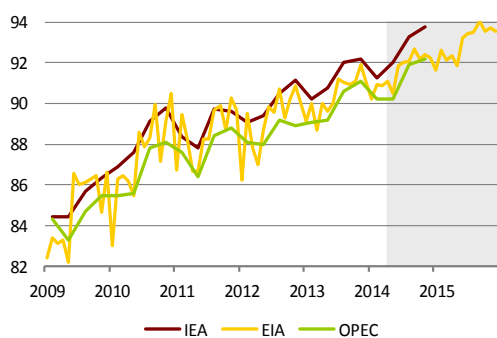


	Brent	WTI	Natural gas
2014	-2.27 ↗	-0.58 ↗	-4.61 ↘
2015	-4.58 ↗	-8.72 ↘	-6.44 ↗

TOTAL STOCKS OF OIL AND OIL PRODUCTS IN OECD

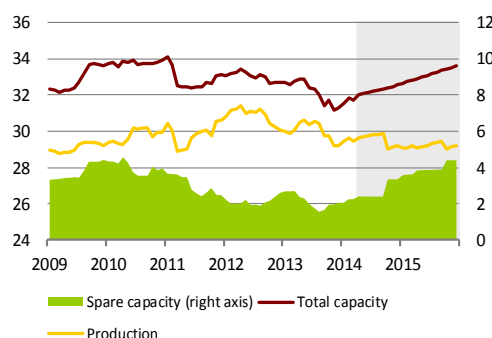


GLOBAL CONSUMPTION OF OIL AND OIL PRODUCTS



	IEA	EIA	OPEC
2014	1.43 ↗	1.34 ↘	1.25 ↘
2015		1.50 ↗	

PRODUCTION, TOTAL AND SPARE CAPACITY IN OPEC COUNTRIES



	Production	Total capacity	Spare capacity
2014	-1.64 ↘	-0.15 ↘	20.74 ↗
2015	-1.17 ↘	3.13 ↗	52.08 ↗

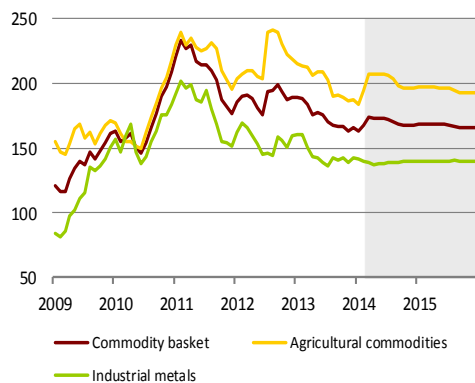
Note: Oil price in USD/barrel, price of Russian natural gas at German border in USD/1,000 m³ (IMF data, smoothed by the HP filter). Future oil prices (grey area) are derived from futures and future gas prices are derived from oil prices using model. Tables show annual percentage changes. Total oil stocks (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).

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

V.2 Other commodities

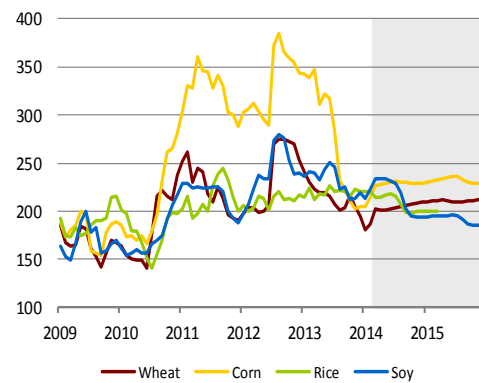
In the past, we observed a "supercycle" on commodity markets in which prices were pushed up mainly by increased demand in emerging economies and by speculative activity, and price trends were (except for the intensity of growth) broadly similar across commodities. Now, the individual markets are being affected by different market-specific parameters. The food commodity index recorded a halt in its long-term downward trend in February and increased significantly, causing the overall non-energy commodity price index to return to growth. Prices of wheat, maize and soy have been increasing since February, initially on concerns that the extreme frosts would damage crops in the USA and also due to adverse weather conditions in Brazil. Prices continued to grow at the start of March as a result of the political tensions in Ukraine, which is the third-largest maize exporter and the sixth-largest wheat exporter in the world, even though there have been no physical supply disruptions yet. The forecast does not expect any further price growth, and prices should drop somewhat in mid-2014 following the new harvest. By contrast, the industrial metals price index edged down further in February and early March, although it has essentially been fluctuating around a horizontal trend for 11 consecutive months now and a similar pattern is expected in the outlook. Growth in the industrial metals price index is being counteracted by high stocks in China and a slowdown in the Chinese economy. Prices of nickel and tin were partly supported by the Indonesian government's mooted ban on exports of unprocessed ores. A joint factor that should dampen growth in commodity prices is the expected appreciation of the dollar and monetary policy tightening in the USA, which should result in an outflow of investment from commodity markets.

PRICES OF NON-ENERGY COMMODITIES



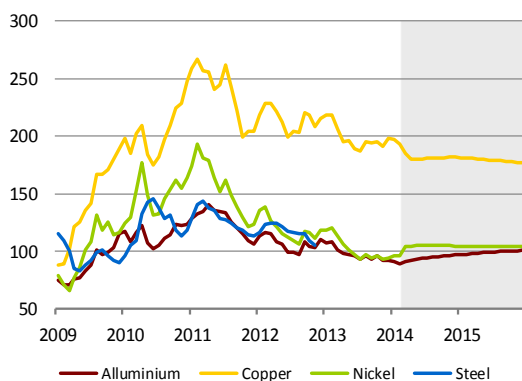
	Overall	Agricultural	Industrial
2014	-2.5	-0.3	-4.1
2015	-1.5	-2.6	0.8

FOOD COMMODITIES



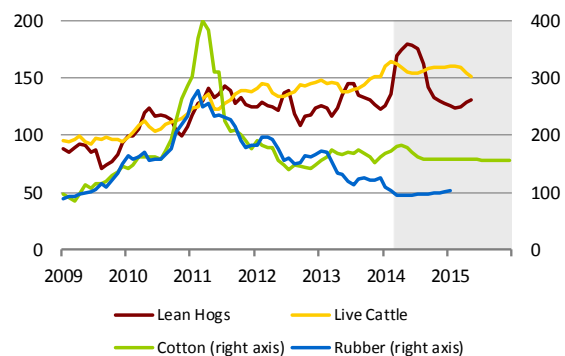
	Wheat	Corn	Rice	Soy
2014	-6.5	-18.7	-4.2	-6.5
2015	4.9	2.7	-4.9	-11.6

METALS



	Aluminium	Copper	Nickel
2014	-3.8	-7.6	1.2
2015	5.7	-2.4	1.0

MEAT, NON-FOOD AGRICULTURAL COMMODITIES



	Lean hogs	Live Cattle	Cotton	Rubber
2014	17.2	9.5	1.1	-26.5
2015	-16.9	-0.9	-6.1	

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).

Source: Bloomberg, CNB calculations.

The impacts of the financial crisis on price levels in Visegrad Group countries¹

A process of catch-up with advanced economies (convergence) is typical of new EU members, including the Visegrad countries (V4). This process manifests itself in real indicators such as production, wealth and consumption per capita, as well as in relative prices and wages. In recent years, price adjustment processes have been affected by a myriad of factors in the EU and particularly in the V4 countries: EU enlargement in 2004 and the policies that preceded it, adoption of the euro and the still visible/persisting effects of the deepest economic crisis since the 1930s. The crisis has been reflected in strong volatility and changes in output growth indicators, exchange rates and – directly and indirectly – in relative prices across economies. The latest available data indicate not only interruption of the convergence process or even temporary divergence, but also only a gradual return to the pre-crisis figures. Price level changes are important for assessing the alignment of economies in the EU (prior to euro area entry), but also have a direct effect on competitiveness in the globalised environment.

1 Comparative price levels

The comparative price level (CPL) is based on the difference between the current (market, spot) exchange rate and the purchasing power parity (PPP) exchange rate. PPP is an artificial currency unit that is always measured in relation to some other currency unit, for example, the US dollar in the case of the OECD. The EU countries use the purchasing power standard (PPS), which is based on the average for the EU member states.² PPP exchange rates are used because of their ability to eliminate purchasing power differences across countries (the effect of different price levels). The calculated PPP/PPS are valid for a fixed period of time (usually one year) and are used for making comparisons across countries. Mainly owing to qualitative changes, however, they are not suitable for monitoring economic performance in a country over time.³

The comparative price level (CPL) expresses the price level for a particular good or set of goods in a given economy relative to the price level of a reference unit (a country or set of countries). Eurostat also uses the term price level index (PLI). The comparative price level is given as the ratio of the PPS exchange rate to the market exchange rate.⁴

$$CPL = \frac{ER_t^{PPS}}{ER_t^D} (1)$$

¹ Written by Václav Žďárek (vaclav.zdarek@atlas.cz). The text is based on Žďárek (2013), which used data for EU countries provided by Paul Konijn (Eurostat, Luxembourg). The author is grateful for comments on the first version of this text. The views expressed in this contribution are those of the author and do not necessarily reflect the official views of the CNB.

² That is for 28 member states since Croatia joined the EU.

³ This problem can be solved using constant parities (constant PPP/PPS). The principle is similar to the calculation of GDP at constant and current prices. For constant parities (PPP/PPS), prices and the exchange rate are fixed to a base period, whereas current parities change every year depending on current trends; for details see Spěvák (2003) or Eurostat-OECD (2012) and for examples of problems see Cvengroš et al. (2008). The OECD gives both current PPP and constant PPP (at present with respect to 2005) in its publications – see OECD (2014). Substantial long-term differences between the two parities are observed mainly for very open economies undergoing structural adjustment and for economies with a significant share of the global market for a particular good, e.g. Norway and Turkey. In 2012, the difference between current and constant PPP was 2.2 pp for the Czech Republic, but 7 pp for Hungary (on base OECD = 100)

⁴ Methodologies and information regarding international surveys can be found in Spěvák et al. (2012) and in the WB (2013) and Eurostat-OECD (2012) manuals. The results of the 2011 round of the World Bank's International Comparison Program (ICP) will be published in March 2014 (shifted from December 2013), with more detailed results to follow in April 2014.

where ER_t^D is the spot exchange rate and ER_t^{PPS} is the PPS exchange rate given by the ratio of the price levels (between country D and country F or country D and group F):

$$ER_t^{PPS} = \frac{P_t^D}{P_t^F} \quad (2)$$

where P_t^D is the domestic price index and P_t^F is the foreign price index.

The main advantage of CPLs is their direct interpretability, in the sense that the CPL expresses the price level in a given country in per cent compared to the price level in the reference country. It may express, for example, the comparative price level for a particular macroeconomic aggregate (GDP or its individual items, e.g. investment) or sub-item (e.g. rents, postal charges, purchase prices of domestic appliances or motor vehicles), always relative to a reference point. This may be a single country (e.g. Germany or Austria) or a group of countries (e.g. the EU-28 or the EA-17).

The relationship between the CPL and GDP per capita in PPP/PPS is usually illustrated by a chart with a 45 degree line representing the ideal situation – the price and economic levels along this line are identical. A position above/below the line indicates misalignment between the two levels, i.e. a higher economic or price level. Analytical publications also use the exchange rate deviation index (ERDI). This index is given by the relation between the market exchange rate and the PPP/PPS exchange rate. If the two rates are identical, the ERDI is equal to 1 (or 100). If a currency is undervalued/overvalued, its ERDI is above/below 1 (or 100). The ERDI is calculated as follows:⁵

$$ERDI = \frac{1}{CPL} \quad (3)$$

2 Price levels for GDP

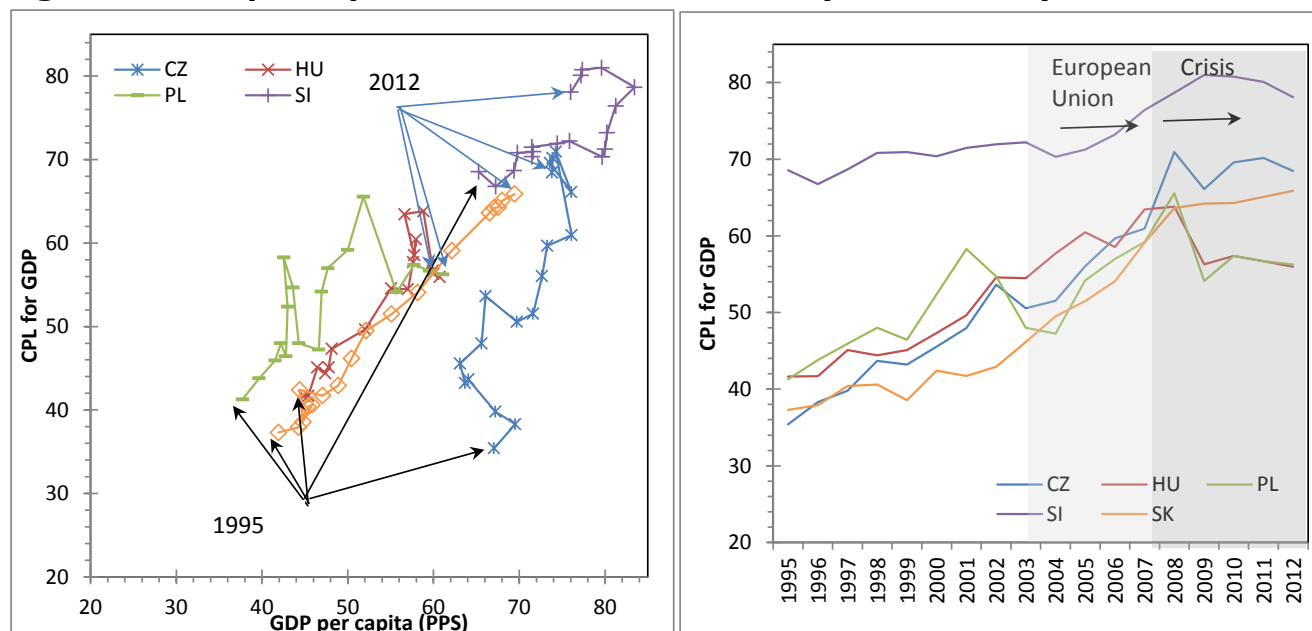
In the past, one of the typical features of the Czech economy compared to the other V4 countries was a significant difference between GDP per capita (p.c.) in PPP and the price level for GDP. This difference was explained by, among other things, nontradable GDP items (see CES, 2011), insufficient competition and the existence of trade barriers, and the strong depreciation of the koruna at the start of the transformation process (see, for example, Skořepa, 2001).⁶ This is no longer the case thanks to gradual and sustained appreciation of the Czech koruna (the trend appreciation against the euro started in mid-1999 and – apart from a few swings – continued until mid-2011). In the last two years, the negative deviation from the notional 45 degree line has been only 4–5 pp (i.e. comparable with the advanced EU countries) – see the left panel of Figure 1.

The effects of the latest crisis were mixed across the V4 countries: the Polish economy saw only a modest slowdown in GDP growth rates with no recession, whereas the Hungarian economy was hit hard (partly as early as 2007) and the country received EU and IMF assistance.⁷ These differences across economies were reflected both in real GDP growth and in convergence processes (temporary suspension, cf. CNB, 2013), i.e. in a change in the CPL. The left panel of Figure 1 illustrates the “treading water” displayed by the Czech Republic and Hungary and the divergence recorded for Hungary and Slovenia in recent years. The right panel of Figure 1 shows only the evolution of the CPL for GDP over time. In the case of Slovakia, both convergence (from 1995 to 2008)

⁵ If we calculate the ERDI weighted average by major trading partners, we obtain the real effective exchange rate for the economy. For transition economies, the ERDI values are above 1 (100), often due partly to depreciations/devaluations at the start of the transformation process. If the transformation process is successful, the ERDI decreases depending on how the real economy develops. For example, the ERDI in the Czech Republic was 2.8 in 1995, while in 2012 it was 1.5 according to the latest data (relative to the EU-15; author’s calculation based on data in Eurostat, 2014a). The figures for the other V4 countries were slightly lower during the 1990s, but have been rather higher in recent years (since late 2008/early 2009), except for Slovakia (almost the same ERDI).

and the effect of ECB monetary policy (continuing favourable changes in both CPL and GDP p.c.) in 2008–2011 are visible. For comparison, the two figures also include a country using the euro, namely Slovenia.

Figure 1: GDP per capita in PPP and CPL for GDP (EA-17 = 100)



Note: EA-17 average = 100. Different colours are used for the period after EU entry and the period of the economic crisis. The 2012 data are preliminary. Source: Eurostat (2014), authors' calculation.

Owing to its construction, the comparative price level changes due to two main determinants, which are themselves affected by a number of factors and processes. From the theoretical viewpoint, these two determinants are movement of the exchange rate and inflation. Schematically, they may be written using equation (4) based on the approach of Lewis (2007):

$$\Delta CPL_t = \epsilon_t + \pi_t, \quad (4)$$

where ϵ_t is the change in the exchange rate (over a particular period) and π_t is the contribution of inflation (in the same period).

In the real economic environment, however, the CPL changes not only due to the above two determinants, but also because of other factors, such as methodological changes (e.g. to the PPP exchange rate calculation method) and inflation measurement errors. For this reason, equation (4) is rewritten into a form containing an additional term capturing these other factors:

$$\Delta CPL_t = \epsilon_t + \pi_t + \vartheta_t, \quad (5)$$

where ϑ_t represents the other factors (in the given period) and the other symbols have the same interpretation as in (4).

For simplicity we can ignore these other factors and focus on the effect of the two determinants mentioned above, i.e. relationship (4).⁸ The effect of the exchange rate on

⁶ By contrast, some new EU member countries, e.g. the Baltic States (Estonia and Latvia) and Croatia, recorded a higher price level than economic level over the entire period of comparable data (1995–2012).

⁷ Like the Czech economy, it recorded two annual GDP declines in the period under review (2009 and 2012), but unlike the Czech economy it showed positive quarter-on-quarter GDP growth in the first three quarters of 2013 (data based on Eurostat, 2014a).

⁸ As indicated above, CPL changes are due to numerous effects and processes, such as the Balassa-Samuelson effect, terms of trade changes, changes in indirect taxation and deregulation, public expenditure and the

the CPL is called the **exchange rate channel** and its strength depends on the exchange rate regime (fixed or free-floating). The exchange rate itself is also affected by short-term (transitory) and long-term (fundamental) factors, which can lead to temporary fluctuations or longer-term trends. The second CPL determinant is the effect of price changes. This can be influenced in the long term by government economic policy as well as by central bank measures and is termed the **price channel**. For example, inflation targeting or a change in the absolute price index, at which conventional and unconventional instruments applied by the central bank are directed, affects the behaviour of prices in the economy. This limits the central bank's ability to adjust the price level (assuming, of course, that the target is hit without major deviations).⁹ The relative shares of the two CPL determinants are affected by the specific conditions in the economy (region) and, as suggested above, by the monetary authority's policy. In recent years, the exchange rate channel has been dominant in the Czech, Polish and Hungarian economies. For the Slovak, Estonian and Slovenian economies, whose exchange rates have been fixed to the euro since a particular date, the price channel has been dominant; a graphical illustration of the above decomposition is available, for example, in Žďárek (2013).¹⁰

3 Structural views of price levels

As regards price levels, it is important not only to analyse the overall trends in absolute levels, but also to monitor the trends in sub-segments, especially in the case of aggregate indicators. One possible approach, described below, is to structurally decompose GDP into its main expenditure items. Another approach involves analysing changes in price levels over time with the aid of price level variability indicators in individual countries, using the dispersion (standard deviation) or the coefficient of variation (the ratio of the standard deviation to the mean). This additional view yields information about the evolution (variability) of price levels in an economy or group of economies in relation to a certain reference unit (economy, set of economies, etc.). The importance of this decomposition also reflects the fact that not all GDP items are exposed to an equally intensive process of international competition, and so the speed of adjustment will differ.¹¹

A relevant question is how come declining dispersion of CPL values for individual countries or groups of countries can be observed in the data for V4 (mostly EU) countries. There are many possible explanations, one of which is based on a hypothesis of effects related to the integration process. Thanks to the lifting of barriers, this process may have strengthened the integration of EU countries' markets and helped reduce price level differences. An alternative explanation is linked with the gradual rise in real income per capita (real convergence), i.e. growth in the economic level and living standards of the population. This phenomenon is one of the major determinants of price levels and their change over time in individual countries.

Linder hypothesis (see Komárek et al., 2010), which affect the exchange rate and price level in the economy. The monetary authority can strive to modify their effects by means of targets (e.g. for the inflation rate) and the exchange rate regime.

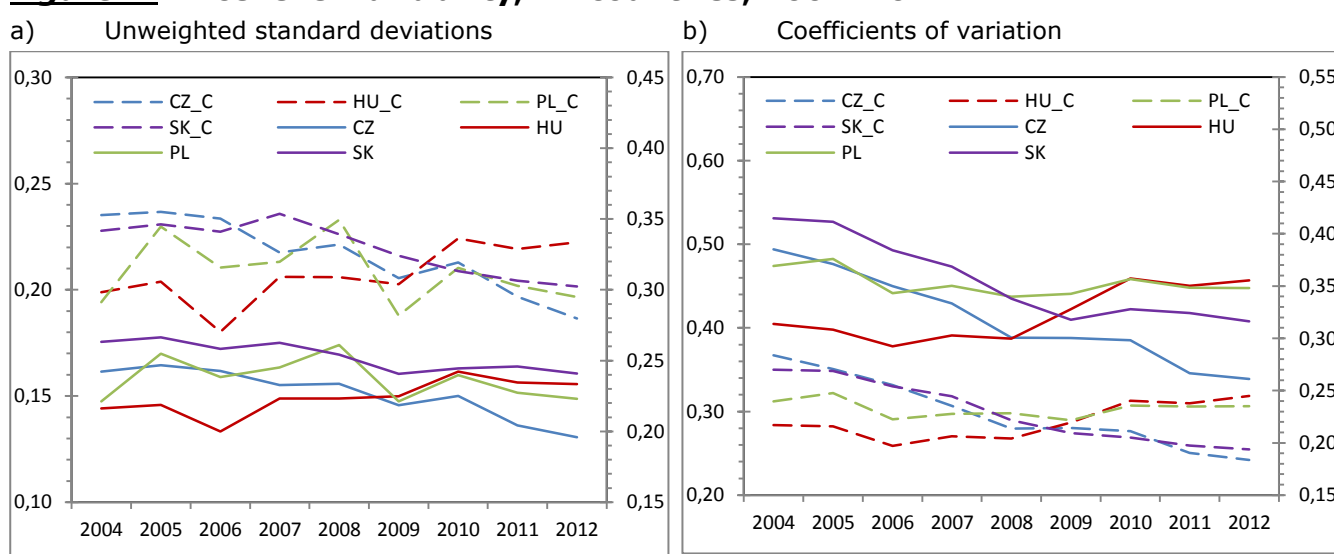
⁹ The growth rate of prices in the economy is again affected by many factors associated with the aggregate demand and supply sides of the economy and its involvement in international trade, and with changes in the economic environment (taxes, subsidies, contributions, etc.).

¹⁰ For the Polish economy we can consider a similar combination as for the Czech economy: inflation targeting and a freely floating exchange rate, which de facto define the limits. In this situation, the two channels may interfere (i.e. complement each other or cancel each other out).

3.1 Price level variability over time

Figure 2 shows the variability of CPL items for the V4 countries since 2004 for both total GDP and its main item, actual individual consumption. Both panels of the figure show that the price level variability decreased only marginally after EU entry (i.e. after 2004) for both total GDP and consumption compared to the EU-17 average.¹² The coefficient of variation offers a more optimistic view, indicating a decrease in variability in the period under review, although with differing intensity (see Poland vs. Slovakia). The process of relative price adjustment seems to have exhausted the potential that existed before EU entry and is now temporarily limited.¹³ This may be due to financial crisis-related effects (this is clearly visible in the standard deviations), offering, among other things, a parallel with the empirically well documented fact that the correlation of economic indicators between countries increases at times of crisis.

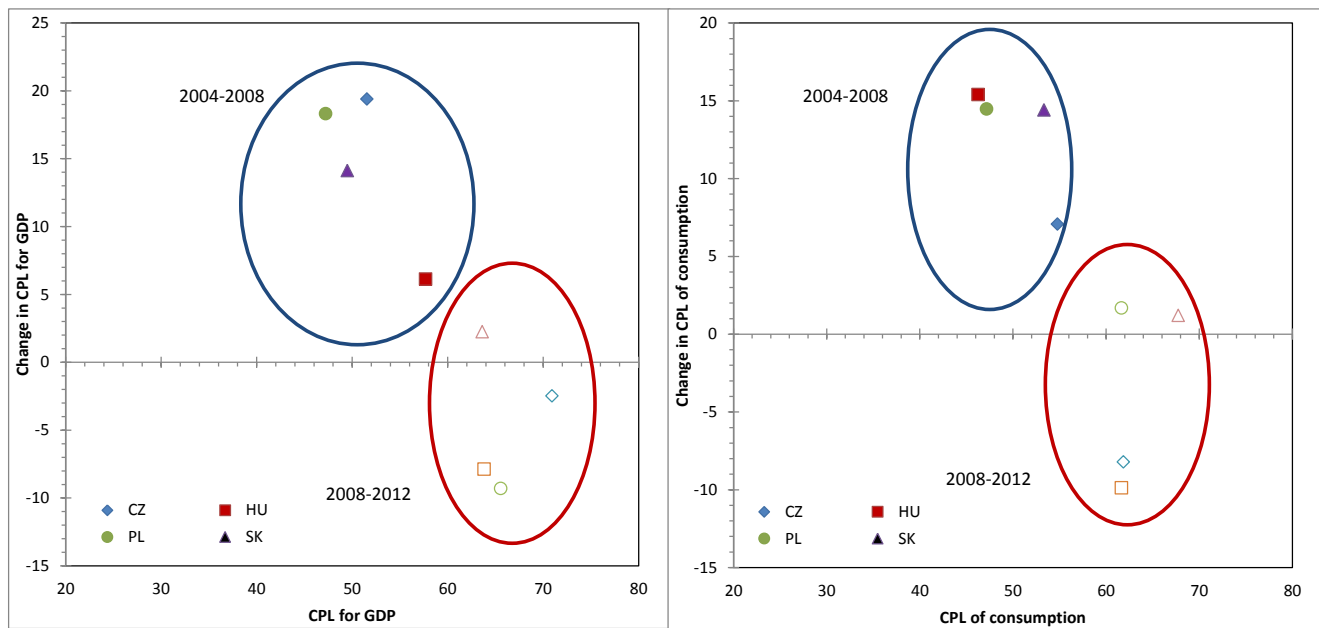
Figure 2: Price level variability, V4 countries, 2004–2012



Note: XX_C – standard deviation (coefficient of variation) for consumption (solid line, left-hand scale), XX – standard deviation (coefficient of variation) for total GDP (dashed line, right-hand scale). Different scales are used to show the slightly different tendencies in the period under review. The unweighted standard deviation is calculated from the individual values of the GDP items (or individual consumption items) for the relevant year in the individual V4 economies with the CPL in relation to the EA-17 average = 100. The coefficient of variation is the unweighted standard deviation divided by the simple arithmetic mean. The underlying CPL data for 2012 are preliminary. Source: Eurostat (2014), authors' calculation.

3.2 Structural analysis – CPLs of GDP items

Figure 3 shows the effect of the crisis on CPLs at the GDP and actual individual consumption levels.¹³ Each chart captures the initial CPL values and their changes in the pre-crisis period (2004–2008) and during the crisis (2008–2012). Besides the more or less expected pattern (a rise and fall), we can see that in the only continuously growing (from the GDP perspective) V4 economy during the crisis (Poland), the crisis was reflected in a substantial fall in the price level (of about 9 pp). By contrast, the Slovak economy recorded positive growth in both periods (of around 14 pp and 2 pp respectively for GDP). As regards the absolute CPL values and the magnitude of the changes over time, a similar trend can be seen in the right part of Figure 3, capturing the CPLs and their changes for actual individual consumption.¹⁴

Figure 3: CPLs for GDP for the V4 countries (EA-17 = 100)

Note: Based on CPLs in relation to the EU-17 average = 100. Filled symbols represent the pre-crisis period (2004–2008, blue oval) and unfilled symbols the crisis period (2008–2012, red oval). The 2012 data are preliminary. Source: Eurostat (2014), authors' calculation.

Table 1 below contains price level data for selected items of Czech GDP in 2004–2012 relative to the EA-17 average. Looking at this period of almost ten years, we can see a strong but differentiated process of price level convergence, from a CPL of one-half in 2004 to more than two-thirds according to the 2012 data for GDP, and a similar change for final consumption. In the case of gross fixed capital formation (GFCF), the CPL rises from two-thirds to four-fifths. Within the individual main components of GDP we can see both price adjustment and visible differences; for example, for tradable commodities (e.g. machinery and equipment), the price levels were the same or higher than for total GDP and, according to the latest data, are now about 27 pp above it. Final public consumption (very often nontradable goods) is on the opposite side.¹⁶ This difference can also be seen for consumption items, where price levels of household expenditure are higher, as – unlike actual final consumption – they contain public consumption items (directly unpaid services). Although the differences have shrunk over time, they were around 5 pp in the period under review. Differences are apparent within GFCF if we compare the price levels for machinery and equipment and construction, which showed

¹¹ We can consider the existence of very low price levels for some goods and especially for services (with a significant share of wage costs) and very high levels for other goods stemming from imperfect competition in segmented and protected markets.

¹² More sizeable CPL movements were seen for some other GDP items, for example investment (see the decomposition below).

¹³ The same applies to the base (the values of both indicators are higher, indicating higher dispersion), i.e. the weighted average for euro area countries (EA-17) or the average for the old EU countries (EU-15) or for a selected country. In formal testing of the sigma convergence hypothesis, this would be rejected.

¹⁴ Looking at the period prior to EU entry, there was a decline in the standard deviations (larger for GDP than for final consumption) and in the coefficients of variation. An analysis for a longer time period is available in CES (2012), for example.

¹⁵ The slowdown may have been due not only to the effect of the financial crisis on real convergence, but also to the fast convergence in the past, which led to the attainment of higher levels and logically to a slowdown in the convergence process (similar processes were observed in EU-15 countries in the past).

¹⁶ As regards services, we must distinguish between market services, which attain the price level of GDP, and government services, which are well below this level. One reason is the way in which these mostly non-market services are priced (based on costs, which are greatly affected by the still relatively low wage level).

the highest growth in the period 2004 to 2012. The average CPL growth rate (nominal convergence) was thus higher than the growth rate of the economic level (real convergence) – 3.6% versus 0.4% a year at the total GDP level.¹⁷

Table 1: CPLs of GDP expenditure items in the Czech Republic relative to euro area countries

	2004	2006	Change ¹	2008	Change ²	2010	Change ³	2012	Change ⁴	Total ⁵
Final consumption	47.6	55.0	7.4	67.1	12.1	65.2	-2.0	64.4	-0.8	16.8
<i>Actual final consumption</i>	48.9	56.0	7.1	69.1	13.1	66.8	-2.2	66.1	-0.7	17.2
<i>Household final consumption</i>	53.8	60.2	6.3	74.9	14.7	72.2	-2.7	70.7	-1.5	16.9
Gross fixed capital formation	65.6	74.9	9.3	83.7	8.8	85.3	1.6	80.7	-4.6	15.0
<i>Machinery and equipment</i>	88.5	96.3	7.8	104.7	8.4	100.0	-4.7	95.2	-4.8	6.7
<i>Constructions</i>	51.0	60.9	9.9	69.7	8.8	75.7	6.0	70.4	-5.3	19.4
<i>Residential</i>	40.9	48.8	7.9	58.7	9.9	63.3	4.6	62.2	-1.2	21.3
<i>Other</i>	53.3	60.9	7.6	69.9	9.0	74.3	4.4	70.5	-3.8	17.2
Government final consumption	35.5	44.2	8.6	51.8	7.6	50.9	-0.9	51.0	0.1	15.5
<i>Collective consumption</i>	38.8	48.2	9.5	55.2	7.0	55.3	0.1	53.5	-1.8	14.7
<i>Individual consumption</i>	33.3	41.4	8.1	49.2	7.9	48.2	-1.0	49.7	1.5	16.4
GDP	51.5	59.7	8.1	70.9	11.3	69.6	-1.4	68.5	-1.1	16.9

Note: EA-17 average = 100. Because of a methodological change made in 2005, the 2004 and 2006 data are not fully comparable. Actual final consumption includes households' expenditure on final consumption and social transfers in kind. Collective consumption includes public expenditure on collective services (security etc.) and individual consumption includes expenditure on goods and services provided to some groups of the population (students, sick people, etc.). ¹⁾ change between 2006 and 2004; ²⁾ change between 2008 and 2006; ³⁾ change between 2010 and 2008; ⁴⁾ change between 2012 and 2010; ⁵⁾ change for 2004–2012. Changes in GDP p.c. in PPS: 1.6 pp, 1.0 pp, -0.7 pp, 0.2 pp, total change 2.2 pp. The 2012 data are preliminary. The totals may not add up due to rounding. Source: Eurostat (2014), authors' calculation.

3.3 What is the Czech Republic's position within the V4 countries?

If we compare developments in the V4 countries (see Table 1A in the Appendix) relative to euro area average over the same period, the above characteristics mentioned in the analysis of the Czech Republic again apply. Looking at the entire period of nine years (the overall CPL change), we can see mixed trends. Although the Czech economy, as a country with higher GDP per capita in PPS, still shows higher comparable price levels, the difference compared with the fast converging Slovak economy is relatively small. For example, the overall change in the CPL for GDP between 2004 and 2012 in Slovakia was +16.4 pp, which is comparable with that in the Czech Republic (16.9 pp), but in Poland it was only 9.0 pp, while Hungary recorded an absolute decline of 1.8 pp.¹⁸ In 2012, the Slovak economy recorded higher price levels in some GDP items than the Czech economy (for example, GFCF was 85%, as against around 80% in the Czech Republic) and almost identical levels in other cases (household final consumption items). The CPL for construction also recorded significant growth. The price levels in the Polish economy also displayed sizeable growth, but lagged behind both the Czech Republic and Slovakia except in some GFCF items. The differences are much greater in the case of final consumption of households (about 14 pp). Hungary is the opposite case, as it saw declining CPLs for all the items monitored in the table over the entire period and thus dropped considerably, despite having been one of the V4 leaders until 2006/2007. Significant decreases were observed in connection with the financial crisis, which strongly affected the Hungarian economy in two waves – during the first spillover to

¹⁷ Relatively strong dispersion of the prices (price levels) of individual commodities is another characteristic feature of the Czech economy. The situation is similar in other transition economies. Comparisons made in the past, for example with Germany, clearly confirm this characteristic (see Čihák and Holub, 2003).

¹⁸ The annual growth rates were 3.6%, 2.2% and -0.4%, whereas the changes in real GDP in PPS were 3.6%, 3.4% and 0.7% a year.

Europe in the second half of 2007 and then, together with the other economies in the region, at the end of 2008 and particularly in 2009.¹⁹ In all the V4 countries, government consumption CPLs lagged quite considerably behind the other GDP items (the differences amount to tens of pp). In the Czech Republic they were only slightly above 50% of the EA-17 average in 2012 (the highest values among the V4 countries).

4 What is the outlook for V4 countries?

Upon EU entry, the CPLs for total GDP ranged between 48% and 58% of the EA-17 average, and according to the 2012 figures they ranged between 56% and 69% of the same average. Based on the main GDP items for the entire nine-year period, the existence of mixed trends across both countries and groups was pointed out above: the Czech economy still ranked first, but was being caught up very quickly by the Slovak economy. By contrast, the Polish economy saw no major CPL changes despite recording rapid GDP growth. The financial-crisis-hit Hungary recorded the same CPL in 2012 as in the period prior to EU accession. The indicators measuring the degree of CPL alignment of the V4 countries with the EA-17 (standard deviation and coefficient of variation) pointed to continuing convergence of price structures (more pronounced for total GDP than for final consumption), although it had been very slow in recent years and disrupted by the financial crisis. The text did not deal in much detail with comparisons, so in a future issue of GEO we will look at the evolution of the price levels for individual household consumption items in V4 countries by comparison with a selected geographically close country (Austria).

The future evolution of CPLs is an open question and will depend on how the still ongoing financial (economic, debt) crisis unfolds and how the imbalances in the global economy – which are being transmitted directly or indirectly to the V4 countries via European economies – are dealt with.²⁰ Whereas the crisis manifested itself in disruption of price adjustment due to factors lying outside the analysis in this text (GDP growth per capita, trade and capital flows) and resulted in increased volatility of economic variables (including exchange rates directly affecting CPLs), the single currency acted, at least partly, in the opposite direction. Although the Slovak economy is relatively small and rather specific by many measures, the available data show that the loss of independent monetary policy and the permanent fixing of the exchange rate were partially offset by greater stability of the economic environment and by access to the single market without exchange rate fluctuations. Thanks to this, the loss of independent monetary policy did not lead to disruption of the convergence process. In many cases, however, the effects are short-term or medium-term in nature, as the long-term effects will be felt later on as changes occur in domestic producers' prices, wages and other costs or in innovation strategies, affecting their ability to compete in domestic and foreign markets.

In the long term, countries with floating exchange rates will continue to experience partial CPL fluctuations linked with exchange rate fluctuations. In addition, we cannot assume that taxation rates, administered prices, the behaviour of corporations in the market, the evolution of the real economy and economic agents' income will be constant. They will also be affected by the soundness of the public sector, i.e. its ability to finance higher spending in traditional categories of services. With respect to the sub-categories of consumption there is some room for catch-up in the case of food and non-

¹⁹ As the aim of this study is different, one can only speculate about the effect of the departure of foreign investors (FDI), the influence of the specific financial sector (foreign currency debt) and the role of economic policy makers.

²⁰ The latest issue is the exchange rate and securities market instability in many transition economies linked with the persisting problems of the Turkish economy.

alcoholic beverages and, for example, in accommodation and food services. In any event we are looking at a period of many more years, as the experience of the advanced EU-15 countries shows. It is also quite possible, however, that the price adjustment process will stop temporarily at a certain level (e.g. at 85% or 95% relative to a country or group average) or will continue in the form of adjustment of price structures in relation to some European economy (e.g. a major trading partner) while real convergence continues gradually. There are also alternative hypotheses pointing to the possibility of the formation, or sharper delineation, of price “clubs” in the EU, which may show intra-club convergence but only very limited inter-club convergence. However, this would also affect the functioning of the internal market (competition) and monetary policy in the case of monetary union members.

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Appendix

Table A1: CPLs of GDP expenditure items, V4 countries relative to the euro area (EA-17 = 100)

Hungary	2004	2006	Change¹	2008	Change²	2010	Change³	2012	Change⁴	Total⁵
Final consumption	53.5	54.2	0.6	60.2	6.1	53.4	-6.8	51.9	-1.5	-1.6
<i>Actual final consumption</i>	54.8	55.4	0.6	61.9	6.5	55.1	-6.8	53.6	-1.4	-1.1
<i>Household final consumption</i>	60.2	59.5	-0.7	67.3	7.9	61.0	-6.3	59.0	-2.0	-1.2
Gross fixed capital formation	74.7	75.9	1.2	77.8	1.9	70.8	-6.9	66.8	-4.0	-7.9
<i>Machinery and equipment</i>	91.3	90.0	-1.3	97.1	7.1	89.7	-7.4	85.8	-4.0	-5.5
<i>Construction</i>	63.7	67.5	3.8	65.9	-1.6	58.9	-7.0	53.8	-5.1	-10.0
<i>Residential</i>	55.0	57.5	2.6	56.0	-1.6	47.3	-8.6	47.4	0.1	-7.6
<i>Other</i>	63.2	63.0	-0.3	61.7	-1.3	60.3	-1.4	51.6	-8.6	-11.6
Government final consumption	41.2	43.2	2.0	46.4	3.1	39.1	-7.2	38.0	-1.2	-3.2
<i>Collective consumption</i>	45.7	46.7	1.0	50.4	3.7	44.1	-6.3	41.8	-2.4	-3.9
<i>Individual consumption</i>	38.3	41.0	2.8	43.5	2.5	35.6	-7.9	35.3	-0.4	-3.0
GDP total	57.7	58.5	0.8	63.8	5.3	57.4	-6.4	55.9	-1.4	-1.8
Poland	2004	2006	Change¹	2008	Change²	2010	Change³	2012	Change⁴	Total⁵
Final consumption	44.5	53.3	8.7	59.8	6.6	52.6	-7.2	50.8	-1.8	6.3
<i>Actual final consumption</i>	46.2	55.4	9.1	61.6	6.3	53.8	-7.8	51.8	-2.1	5.5
<i>Household final consumption</i>	51.7	61.3	9.6	67.1	5.8	58.5	-8.7	55.6	-2.9	3.9
Gross fixed capital formation	58.9	73.6	14.7	92.8	19.1	79.9	-12.9	79.8	0.0	20.9
<i>Machinery and equipment</i>	84.8	93.4	8.6	106.2	12.8	97.3	-8.9	92.2	-5.1	7.4
<i>Construction</i>	43.6	61.4	17.7	83.5	22.1	69.0	-14.5	70.9	2.0	27.3
<i>Residential</i>	34.7	48.1	13.4	70.9	22.9	56.9	-14.0	54.2	-2.7	19.5
<i>Other</i>	43.3	58.1	14.8	77.6	19.5	67.8	-9.8	72.3	4.4	28.9
Government final consumption	30.4	36.5	6.1	44.2	7.7	40.1	-4.2	40.2	0.2	9.9
<i>Collective consumption</i>	33.7	39.7	6.0	47.9	8.2	45.1	-2.8	44.6	-0.4	10.9
<i>Individual consumption</i>	28.3	34.6	6.3	42.0	7.4	37.1	-4.9	37.6	0.5	9.3
GDP total	47.2	57.0	9.8	65.5	8.6	57.4	-8.2	56.3	-1.1	9.0
Slovakia	2004	2006	Change¹	2008	Change²	2010	Change³	2012	Change⁴	Total⁵
Final consumption	44.8	49.3	4.5	58.8	9.5	59.3	0.5	60.7	1.4	15.9
<i>Actual final consumption</i>	47.2	52.3	5.1	61.6	9.4	62.0	0.4	63.3	1.3	16.2
<i>Household final consumption</i>	53.3	56.9	3.6	67.7	10.9	68.1	0.3	69.0	0.9	15.6
Gross fixed capital formation	70.6	74.4	3.7	83.5	9.1	85.8	2.3	85.0	-0.7	14.4
<i>Machinery and equipment</i>	96.5	99.8	3.3	102.7	2.9	101.0	-1.7	105.5	4.5	9.0
<i>Construction</i>	53.5	59.2	5.7	71.3	12.0	74.4	3.1	70.3	-4.1	16.8
<i>Residential</i>	47.5	55.1	7.7	66.1	10.9	67.8	1.7	61.3	-6.5	13.8
<i>Other</i>	55.9	56.5	0.6	68.1	11.5	74.0	5.9	73.4	-0.5	17.5
Government final consumption	29.5	33.9	4.4	40.7	6.8	42.1	1.5	43.5	1.4	14.0
<i>Collective consumption</i>	32.7	34.7	2.1	42.6	7.9	44.6	2.0	45.6	1.0	12.9
<i>Individual consumption</i>	26.6	33.8	7.2	39.4	5.6	40.6	1.2	42.2	1.6	15.6
GDP total	49.5	54.1	4.6	63.6	9.5	64.3	0.7	65.9	1.6	16.4

Note: EA-17 average = 100. Because of a methodological change made in 2005, the 2004 and 2006 data are not fully comparable. Actual final consumption includes households' expenditure on final consumption and social transfers in kind. Collective consumption includes public expenditure on collective services (security etc.) and individual consumption includes expenditure on goods and services provided to some groups of the population (students, sick people, etc.). ¹⁾ change between 2006 and 2004; ²⁾ change between 2008 and 2006; ³⁾ change between 2010 and 2008; ⁴⁾ change between 2012 and 2010; ⁵⁾ change for 2004–2012. Changes in GDP p.c. in PPS: Hungary 0.1 pp, 1.1 pp, 0.8 pp, 1.1 pp, total change 3.1 pp; Poland: 1.1 pp, 4.2 pp, 5.9 pp, 3.4 pp, total change 14.5 pp; Slovakia: 6.0 pp, 8.4 pp, 1.0 pp, 1.9 pp, total change 17.3 pp. The 2012 data are preliminary. The totals may not add up due to rounding. Source: Eurostat (2014), authors' calculation.

A1. Change in GDP predictions for 2014

	CF		IMF		OECD		CB / EIU	
EA	0.1	2014/3 2014/2	0.0	2014/1 2013/10	-0.1	2013/11 2013/5	0.1	2014/3 2013/12
US	-0.1	2014/3 2014/2	0.2	2014/1 2013/10	0.1	2013/11 2013/5	0.0	2013/12 2013/9
DE	0.0	2014/3 2014/2	0.2	2014/1 2013/10	-0.2	2013/11 2013/5	0.2	2013/12 2013/6
JP	-0.2	2014/3 2014/2	0.5	2014/1 2013/10	0.1	2013/11 2013/5	-0.1	2014/1 2013/11
BR	-0.2	2014/3 2014/2	-0.2	2014/1 2013/10	-1.3	2013/11 2013/5	-0.4	2014/3 2014/2
RU	-0.2	2014/3 2014/2	-1.0	2014/1 2013/10	-1.3	2013/11 2013/5	0.0	2014/3 2014/2
IN	0.0	2014/3 2014/2	0.3	2014/1 2013/10	-1.3	2013/11 2013/5	0.0	2014/3 2014/2
CN	-0.1	2014/3 2014/2	0.2	2014/1 2013/10	-0.2	2013/11 2013/5	0.0	2014/3 2014/2

A2. Change in inflation predictions for 2014

	CF		IMF		OECD		CB/EIU	
EA	-0.1	2014/3 2014/2	0.0	2013/10 2013/4	0.0	2013/11 2013/5	-0.1	2014/3 2013/12
US	0.1	2014/3 2014/2	-0.2	2013/10 2013/4	-0.1	2013/11 2013/5	-0.1	2013/12 2013/9
DE	0.0	2014/3 2014/2	0.1	2013/10 2013/4	-0.2	2013/11 2013/5	-0.2	2013/12 2013/6
JP	0.2	2014/3 2014/2	-0.1	2013/10 2013/4	0.5	2013/11 2013/5	0.0	2014/1 2013/11
BR	0.0	2014/3 2014/2	1.1	2013/10 2013/4	-0.2	2013/11 2013/5	0.2	2014/3 2014/2
RU	0.1	2014/3 2014/2	-0.5	2013/10 2013/4	0.3	2013/11 2013/5	0.0	2014/3 2014/2
IN	-0.3	2014/3 2014/2	-1.8	2013/10 2013/4	2.1	2013/11 2013/5	0.0	2014/3 2014/2
CN	-0.2	2014/3 2014/2	0.0	2013/10 2013/4	-0.2	2013/11 2013/5	0.0	2014/3 2014/2

A3. List of abbreviations

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

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

A4. List of thematic articles published in the GEO

2014

	Issue
The impacts of the financial crisis on price levels in Visegrad Group countries (Václav Žďárek)	2014-3
Is the threat of deflation real? (Soňa Benecká and Luboš Komárek)	2014-2
Forward guidance – another central bank instrument? (Milan Klíma and Luboš Komárek)	2014-1

2013

	Issue
Financialisation of commodities and the structure of participants on commodity futures markets (Martin Motl)	2013-12
The internationalisation of the renminbi (Soňa Benecká)	2013-11
Unemployment during the crisis (Oxana Babecká and Luboš Komárek)	2013-10
Drought and its impact on food prices and headline inflation (Viktor Zeisel)	2013-9
The effect of globalisation on deviations between GDP and GNP in selected countries over the last two decades (Vladimír Žďárský)	2013-8
Competitiveness and determinants of travel and tourism (Oxana Babecká)	2013-7
Annual assessment of the forecasts included in GEO (Filip Novotný)	2013-6
Apartment price trends in selected CESEE countries and cities (Michal Hlaváček and Luboš Komárek)	2013-5
Selected leading indicators for the euro area, Germany and the United States (Filip Novotný)	2013-4
Financial stress in advanced economies (Tomáš Adam and Soňa Benecká)	2013-3
Natural gas market developments (Jan Hošek)	2013-2
Economic potential of the BRIC countries (Luboš Komárek and Viktor Zeisel)	2013-1

2012

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

2011

	Issue
An empirical analysis of monetary policy transmission in the Russian Federation (Oxana Babecká)	2011-12
The widening spread between prices of North Sea Brent crude oil and US WTI crude oil (Jan Hošek and Filip Novotný)	2011-11
A look back at the IIF annual membership meeting (Luboš Komárek)	2011-10
Where to look for a safe haven currency (Soňa Benecká)	2011-9
Monetary policy of the central bank of the Russian Federation (Oxana Babecká)	2011-9
Increased uncertainty in euro area financial markets (Tomáš Adam and Soňa Benecká)	2011-8
Eurodollar markets (Narcisa Kadlčáková)	2011-8
Assessment of the forecasts monitored in the GEO (Filip Novotný)	2011-7
How have global imbalances changed during the crisis? (Vladimír Žďárský)	2011-6
Winners and losers of the economic crisis in the eyes of European investors (Alexis Derviz)	2011-5
Monetary policy of the People's Bank of China (Soňa Benecká)	2011-4
A look back at the IIF spring membership meeting (Jan Hošek)	2011-3
The link between the Brent crude oil price and the US dollar exchange rate (Filip Novotný)	2011-2
International integration of the Chinese stock market (Jan Babecký, Luboš Komárek and Zlatuše Komárková)	2011-1