

GLOBAL ECONOMIC OUTLOOK – DECEMBER

Monetary and Statistics Department
External Economic Relations Division

2013

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The December issue of Global Economic Outlook (GEO) 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 phenomenon of “financialisation of commodities”. This analysis aims to assess the hypothesis that financial institutions are having a growing influence on commodity markets and to examine the ensuing risks such as commodity price manipulation.

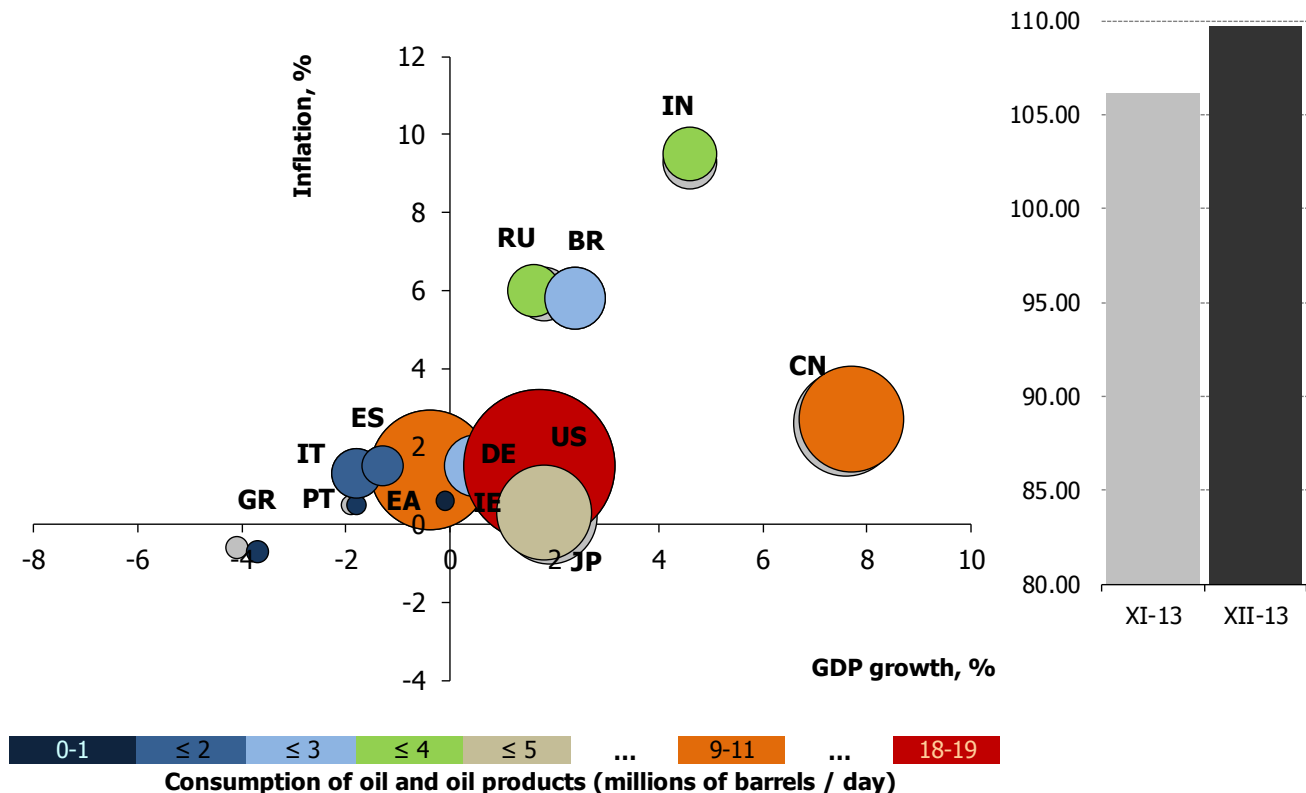
The outlooks for the global economy are indicating that 2014 should be a “more successful” year than 2013. This applies especially to Europe, where the euro area should emerge from more than two years of recession. Given its strength, the German economy – which is expected to record a sizeable pick-up in GDP growth – should be the driving force of this process. These positive outlooks are supplemented by a promising forecast for the USA, which may show growth of up to 3% in 2014. Growth in Japan should slow slightly next year, but the present outlook of around 1.5% is a pleasant prospect in the context of the last 20 years. Despite the expected higher growth rates in advanced countries, disinflation trends should continue both in the euro area as a whole and in Germany. US inflation is not expected to exceed 2%.

The forecast for emerging countries, represented in GEO by the BRIC countries, also points to a rise in economic growth in 2014 accompanied by falling consumer prices. Only China is expected to record a slight slowdown, but it should still be the fastest-growing BRIC country. Consumer prices in China should go up slightly next year.

The interest rate outlooks for the USA and the euro area still point to an only gradual rise in rates across maturities in 2014. This rise should be more pronounced in 2015. The dollar is expected to appreciate against the euro and other reserve currencies, as well as against the rouble, rupee and real, over the one-year horizon. Conversely, it is expected to depreciate moderately against the renminbi over the same time scale. The outlooks for dollar prices of oil (despite a recent rise) and natural gas remain gradually declining until the end of 2015. The outlooks for food commodities are flat overall, but differ across the individual components. Industrial metal prices are expected to rise gradually over the same time frame.

Outlook for the global economy in 2013

Outlook for Brent crude oil prices in December 2013



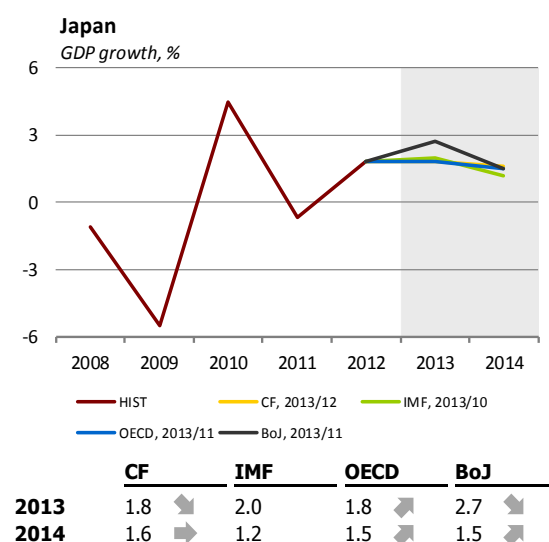
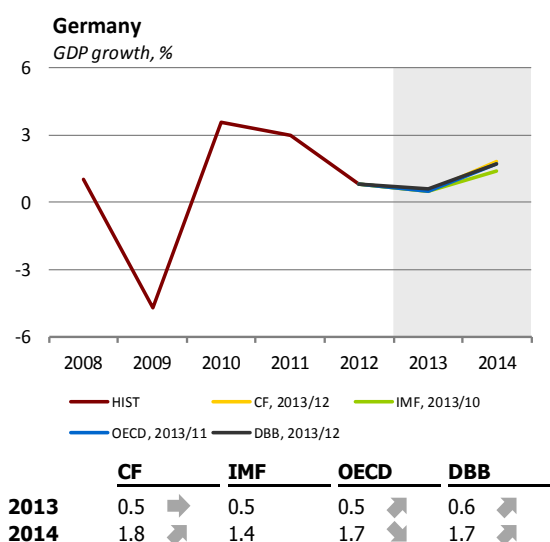
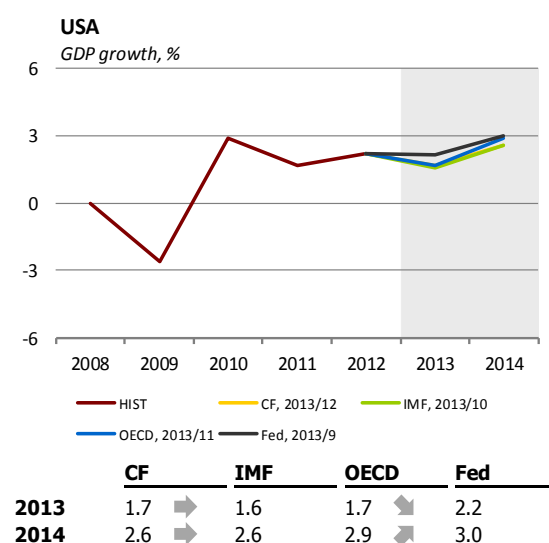
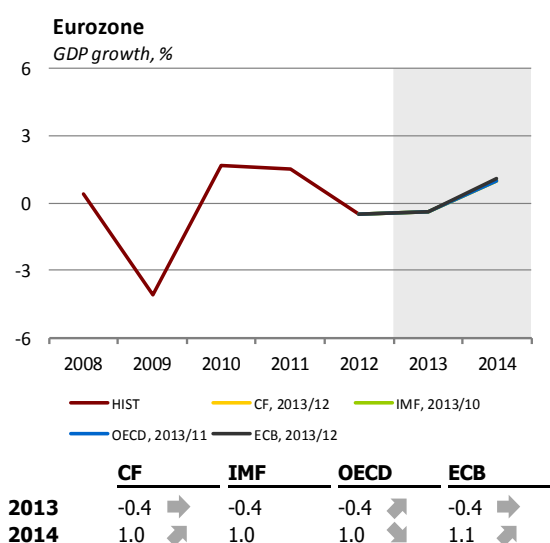
The size of each point represents the size of the country/region according to nominal GDP in US dollars in 2011. The points are coloured according to oil and oil product consumption (million barrels per day) in 2012. The grey colour is the CF forecast (GDP, inflation) or Bloomberg survey (oil price) for the previous month.

[Cut-off date for data: 12 December 2013]

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

II.1 GDP outlook in advanced countries

Although the new outlooks for the euro area economy agree on a 0.4% decline this year, both the November OECD forecast and the December ECB outlook are slightly optimistic as regards the region's future development. According to the ECB, a gradual recovery will be fostered by improving domestic and external demand, as well as by easy monetary policy and forward guidance (this topic will be addressed in the January Focus). The continuing recovery of the financial sector should also strengthen economic growth in the euro area. By contrast, growth will be dampened by high unemployment and incomplete balance sheet adjustments in the public and private sectors. Overall, GDP growth will remain modest over the two-year horizon. In 2014, it will reach 1.0%–1.1% (CF, ECB and OECD). The forecast is more favourable for the largest euro area economy, Germany, where growth should rise from this year's 0.5%–0.6% to 1.7%–1.8% in 2014 (CF, OECD and DBB). In addition to higher external demand, German economic growth will be fostered by domestic demand, which remains the most significant driver of GDP growth, and by low unemployment. The outlooks for the USA and Japan were left unchanged by the new CF, except for the outlook for the Japanese economy this year, which was lowered by 0.1 pp because of worse-than-expected GDP growth in Q3. Japanese GDP growth in 2012 was also revised downwards by 0.5 pp.



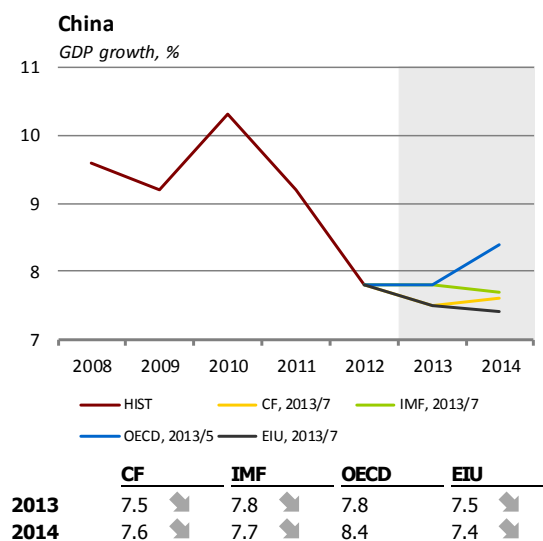
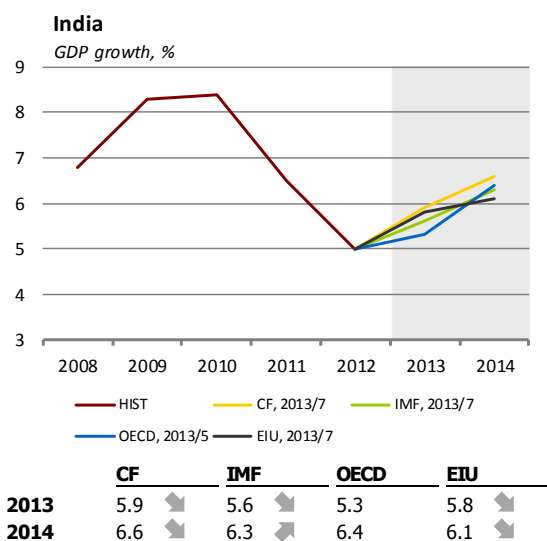
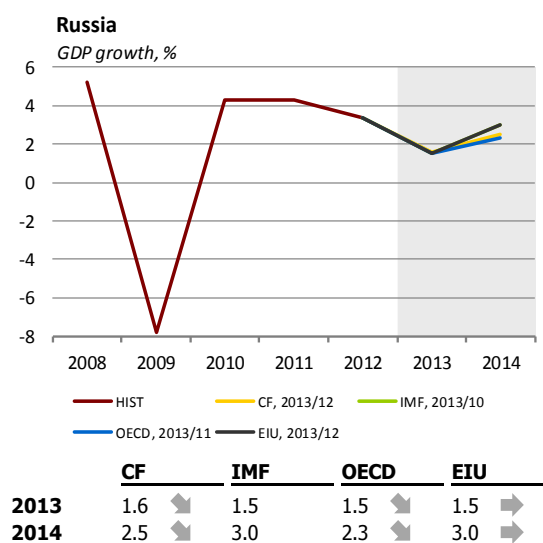
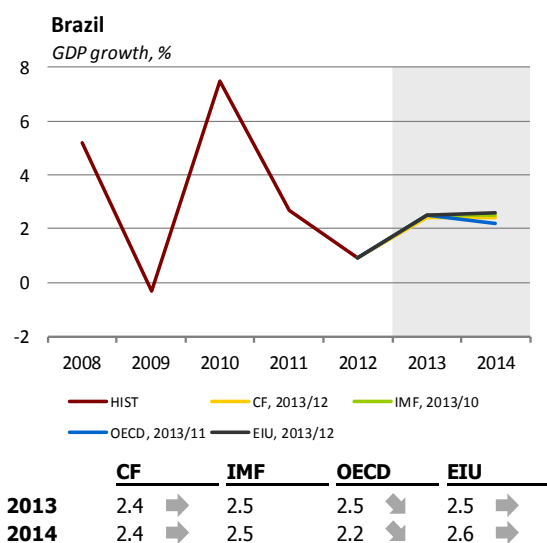
Note: Legend shows latest forecast data in format "Source, year/month" of forecast publication. HIST: historical values. ECB and Fed: midpoint of range. Arrow indicates direction of revision of newly published forecast. If no arrow is shown, no new forecast was available in previous month or by cut-off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

[Cut-off date for data: 12 December 2013]

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

II.2 GDP outlook in BRIC countries

China is still at the top of the ranking of the fastest growing economies. However, a modest slowdown is expected (except by the OECD) for 2014. By contrast, the other BRIC countries should either maintain this year's growth rate next year (Brazil) or pick up pace (Russia and India). China has recently announced changes to its social and economic policy, which should have a strong effect on its future growth. In particular, it wants the private sector and foreign competition to become more involved in sectors controlled up to now by the government. Despite exceeding 7%, the present slower economic growth is viewed as more balanced and should better reflect the structure of the economy, where domestic demand should play a larger role. The Russian economy has been slowing gradually since the start of 2012 and its annual growth was flat at 1.2% in 2013 Q3. The main current problems of the Russian economy include low business confidence and a strong rouble. Brazil has seen only weak economic growth since 2012 and its prospects are uncertain, as its economy slowed to 2.2% year on year in 2013 Q3. India has also recorded relatively weak economic growth since 2012. The 2013 Q3 data hint at an improvement, as the Indian economy grew by 5.6% year on year.



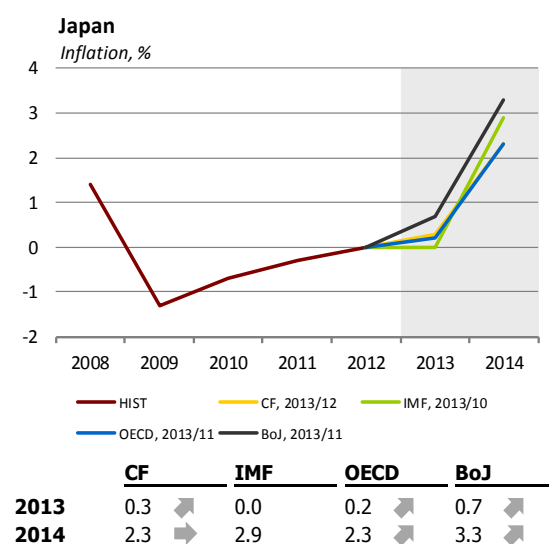
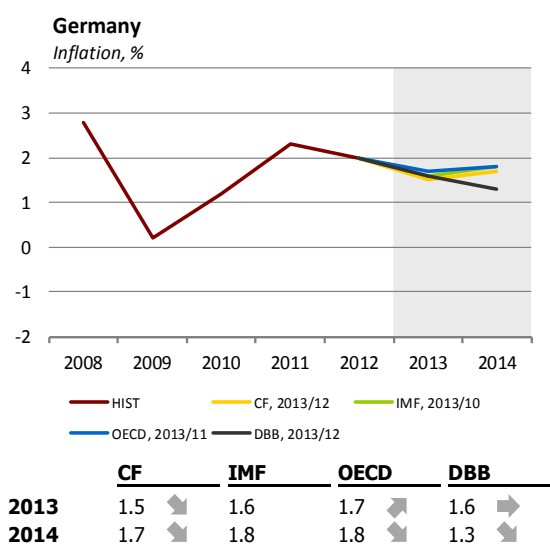
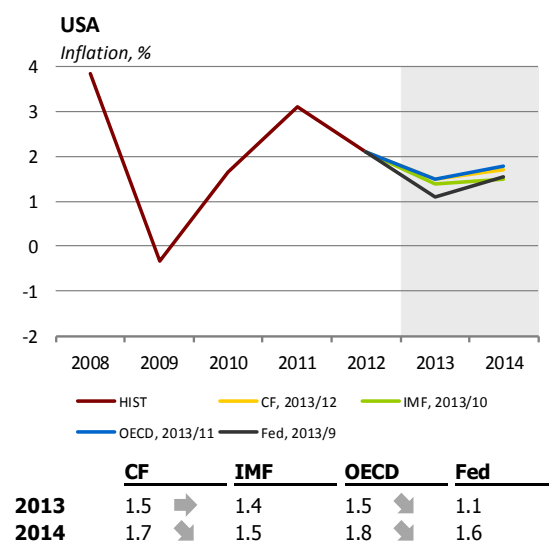
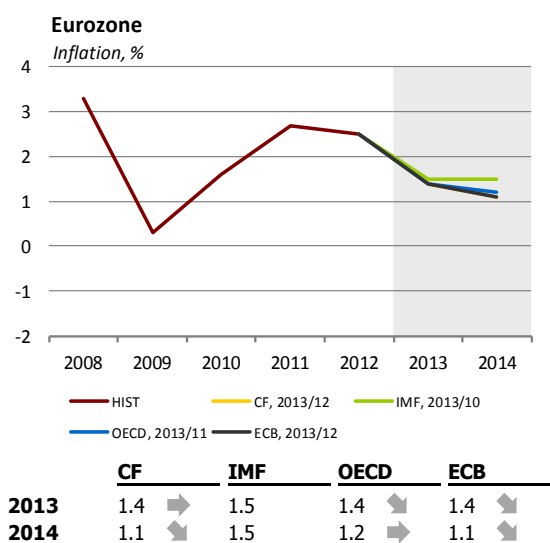
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[Cut-off date for data: 12 December 2013]

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

II.3 Inflation outlook in advanced countries

Price pressures remain subdued over the forecast horizon. Consumer prices in the euro area will show only modest growth according to the new outlooks, as inflation is being dampened by prices of energy commodities. Headline inflation will also be affected by an expected decline in food price inflation and by the past appreciation of the euro, as well as by low economic activity. Headline inflation is expected to decrease from this year's 1.4% to 1.1%–1.2% in 2014 (CF, ECB and OECD). Consumer price inflation in Germany will be somewhat higher in 2014 than in 2013 according to CF and the OECD. By contrast, the DBB expects inflation to slow, as it expects the energy component of the HICP to contribute negatively to inflation and also expects vehicle fuel and fuel oil prices to go down. Inflation in the USA will remain at about 1.5% this year and rise to 1.7%–1.8% in 2014 (CF and OECD). The outlook for consumer price inflation in Japan was revised upwards by CF and the OECD. Inflation should rebound from this year's near-zero levels and reach 2.3% next year.



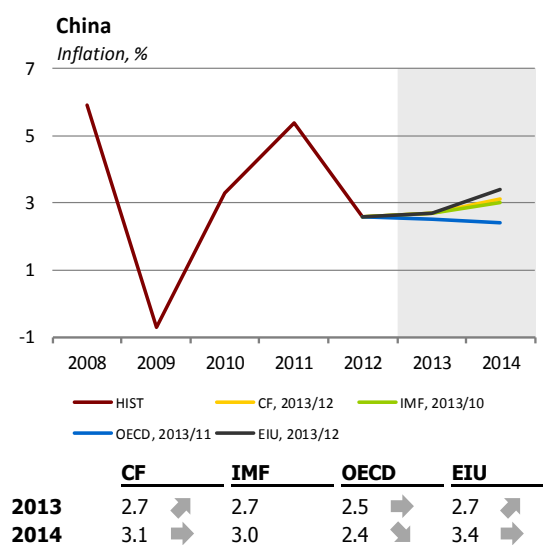
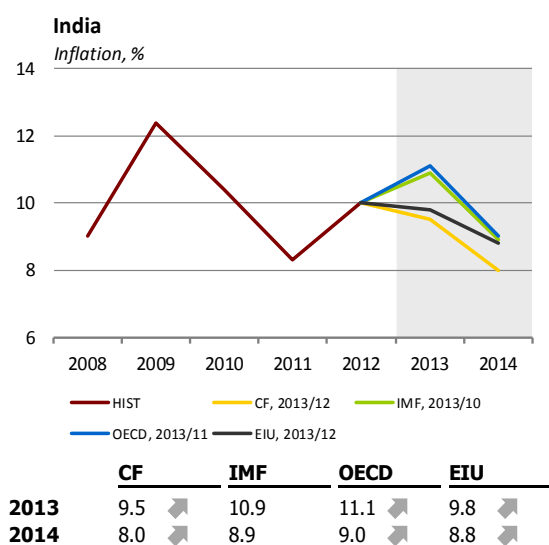
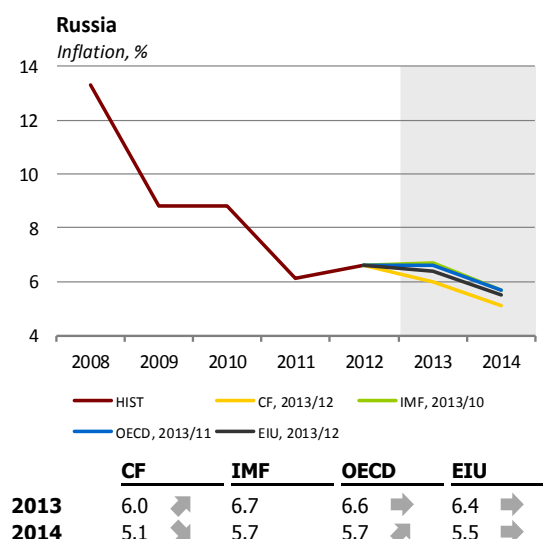
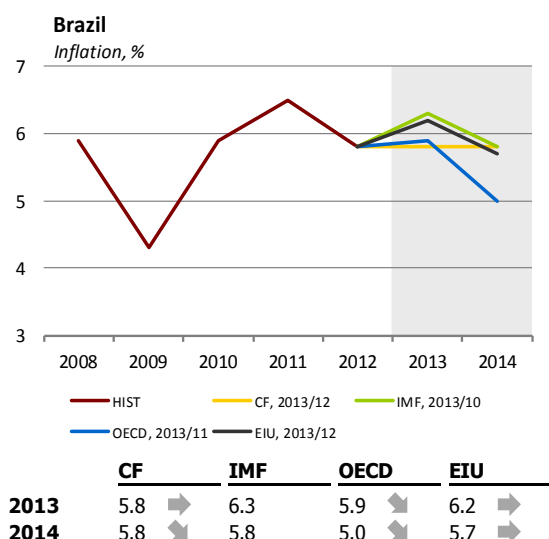
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[Cut-off date for data: 12 December 2013]

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

II.4 Inflation outlook in BRIC countries

Disinflation pressures are expected in most BRIC countries in 2014. The exception is China, where inflation should stay at the current level of around 3% or rise slightly in 2014. Annual inflation fell to 3% in November due to lower food prices. Average inflation reached 2.6% in the first eleven months of 2013 and is thus well below the government's whole-year target of 3.5%. In India, annual inflation rose to a seven-month high in October owing to higher prices of fuels and industrial goods. Inflation in India will be about 10% this year, but should slow significantly in 2014. Brazil has considerably tightened its monetary policy this year and is experiencing a slowdown in inflation, which should continue into 2014. Prices in Russia have been rising constantly by more than 6% a year, but the outlooks for 2014 expect a decline below this level.

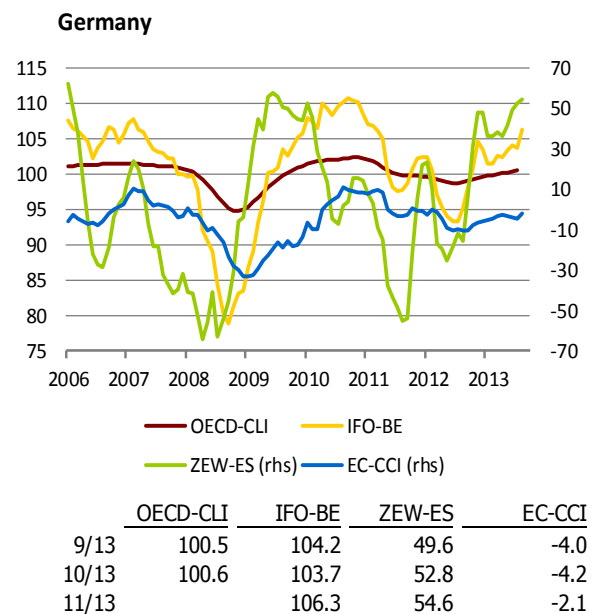
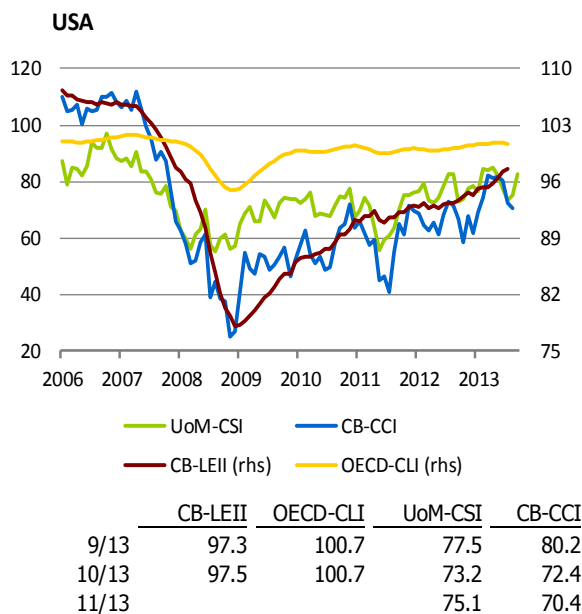
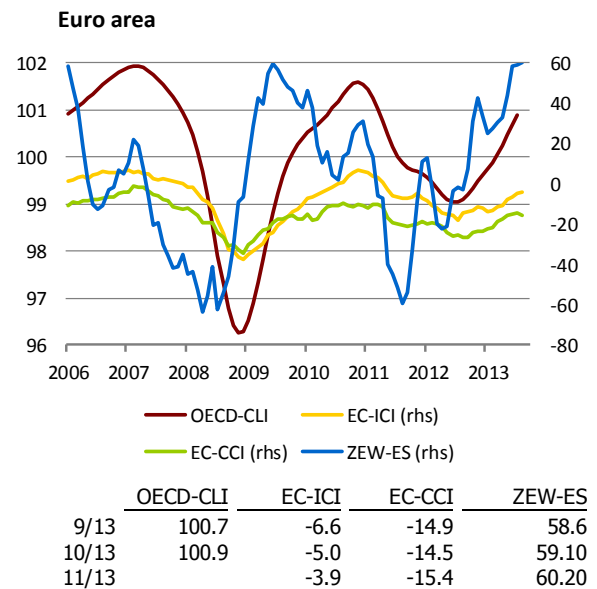
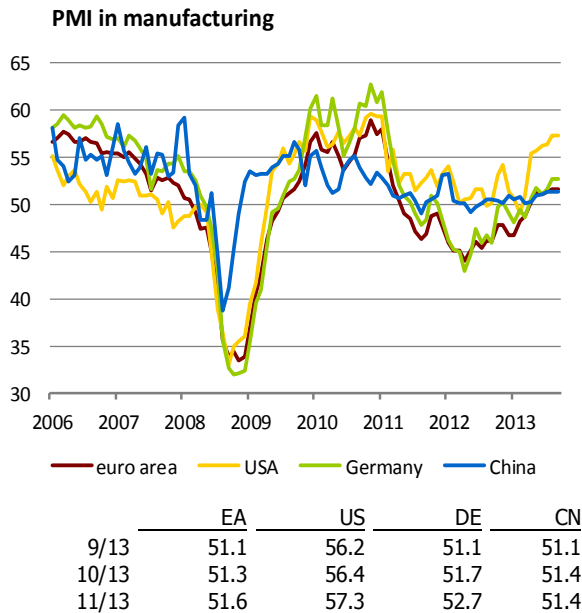


Note: Legend shows latest forecast data in format "Source, year/month" of forecast publication. HIST: historical values. Arrow indicates direction of revision of newly published forecast. If no arrow is shown, no new forecast was available in previous month or by cut-off date in current month. Asterisk indicates first published forecast for given year.

[Cut-off date for data: 12 December 2013]

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

The monitored leading indicators in November point to a modest pick-up in global economic growth in the first half of next year, when the trends from the second half of this year are expected to continue. GDP growth will probably be much higher in the USA than in the euro area, where it will be dampened by low consumer demand of households again in 2014. The European economy will again be driven by Germany, where economic growth will continue to outpace the European average. Relatively high economic growth can be expected in China next year, but the leading indicators are not suggesting any acceleration.

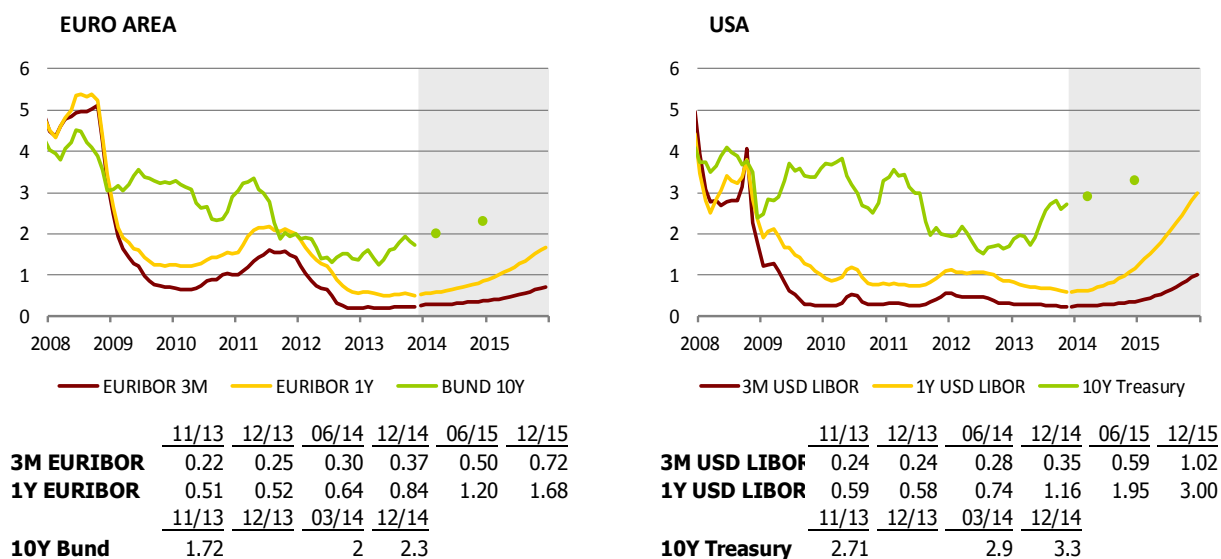


Note: **PMI** = Purchasing Manager Index (50); **OECD-CLI** = OECD Composite Leading Indicator (100); **EC-ICI** = European Commission Industrial Confidence Indicator (0); **EC-CCI** = European Commission Consumer Confidence Indicator (0); **ZEW-ES** = ZEW Economic Sentiment (0); **CB-LEII** = Conference Board Leading Economic Indicator Index (2004 = 100); **UoM-CSI** = University of Michigan Consumer Sentiment Index (Dec 1966 = 100); **CB-CCI** = Conference Board Consumer Confidence Index (1985 = 100); **IFO-BE** = IFO Business Expectations (2005 = 100). Values in parentheses indicate the index threshold between expected economic expansion and decline or the period as of which the index was normalised. [Cut-off date for data: 12 December 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 November lowering of the key rate by the ECB led to a temporary decline in market rates. The ECB's subsequent comments suggested, however, that further measures were not yet necessary. No changes were made at the December meeting of the Governing Council either. By contrast, excess liquidity fell below EUR 160 billion in the last week of November and EURIBOR rates started rising in early December. The 3M rate thus reached its highest level in 15 months (0.26%), but the new outlook based on implied rates has not yet been revised significantly. As regards the one-year rate, a shift is apparent at the longer horizon, such that the 1Y EURIBOR will approach the 2% level by the end of 2015. CF12 also revised the outlook for German long-term government bond yields upwards by 0.1 pp at both horizons.

USD LIBOR rates have been flat since mid-November – at 0.24% and 0.58% respectively at the 3M and 1Y maturities. The new market-based forecast is unchanged and the rise in the 1Y LIBOR will not be pronounced until 2015. CF12 increased the outlook for 10Y Treasury yields by 0.1 pp at both horizons.



Note: Forecasts for EURIBOR and LIBOR rates are based on implied rates from interbank market yield curve (FRA rates are used from 4M to 15M and adjusted IRS rates for longer horizons). Forecasts for German and US government bond yields (10Y Bund and 10Y Treasury) are taken from CF. [Cut-off date for data: 9 December 2013]

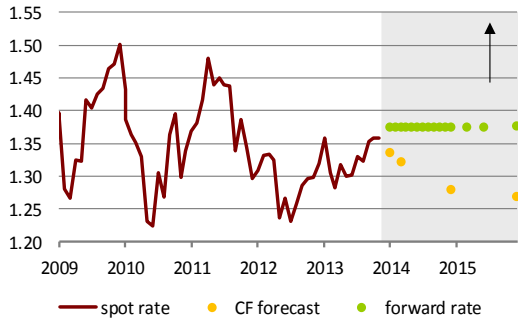
Source: Thomson Reuters (Datastream), Bloomberg, Consensus Forecasts, CNB calculations.

IV.2 Outlook for selected exchange rates

The new industrial output and employment data in the USA are fostering optimism about a recovery, as reflected in a forward shift of the expected start of the tapering of asset purchases by the Fed to 2014 Q1. This optimism can also be seen in the CF12 outlooks, which expect the dollar to appreciate against major currencies and the BRIC currencies (except China). By contrast, the euro area is facing a risk of recession. The ECB responded by cutting rates, and the euro depreciated sharply against the dollar at the start of November. A moderation of the tone subsequently caused the euro to firm, but the new outlook expects it to depreciate by almost 7% at the one-year horizon. Japan is also facing a slowdown, and the possibility of a further monetary stimulus is even being mentioned. According to the new CF, this should lead to further depreciation of the yen, more so than last month. The British pound appreciated in early November on good news from the economy, and the new outlook shifted to slightly stronger levels of the pound against the dollar. The outlook for the Swiss franc was unchanged. The Swiss central bank is not considering abolishing its exchange rate ceiling (CHF 1.2 against the euro) and regards any such thinking as premature.

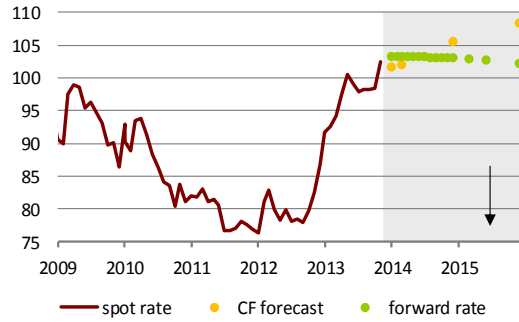
The developments in the USA were reflected in depreciation of the Brazilian real and the Russian rouble in November, and their outlooks also shifted to weaker levels compared to last month. Risks associated with the economic slowdown and inflation persist in both economies. These risks even led the Brazilian central bank to raise its key rate further. Moreover, India is facing a slowdown in capital inflows, raising concerns about the financing of the country's external debt. China published details of reforms up to 2020 – the aim is to accelerate convertibility of the Chinese currency and to liberalise interest rates. The central bank's willingness to downscale its actions already (i.e. to suspend interventions, to widen the band and to gradually switch to a managed float) resulted in further appreciation of the currency to a new historical high. The central bank also expressed a lack of interest in further increasing its foreign reserves, but the new outlook shifted only slightly to stronger levels.

US\$ per Euro



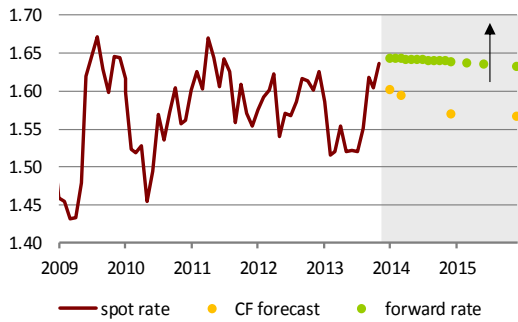
	09/12/13	01/14	03/14	12/14	12/15
spot rate	1.374				
CF forecast		1.335	1.321	1.279	1.269
forward rate		1.374	1.374	1.374	1.377

Yen per US\$



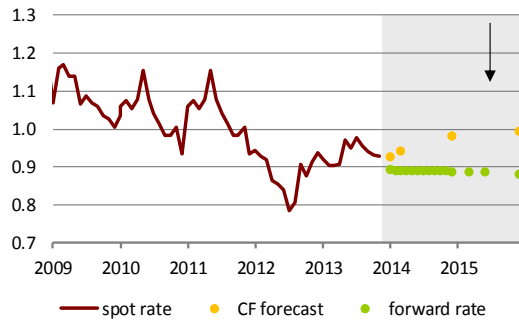
	09/12/13	01/14	03/14	12/14	12/15
spot rate	103.27				
CF forecast		101.60	101.90	105.50	108.30
forward rate		103.23	103.20	102.97	102.18

US\$ per UK£



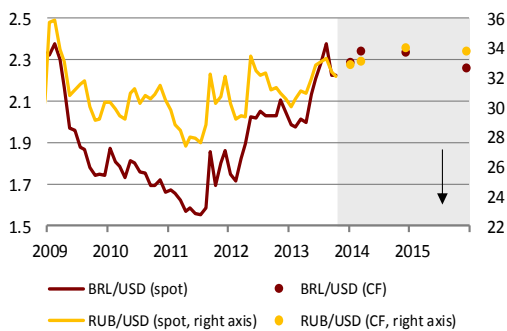
	09/12/13	01/14	03/14	12/14	12/15
spot rate	1.643				
CF forecast		1.601	1.594	1.569	1.566
forward rate		1.643	1.642	1.638	1.631

Swfr per US\$



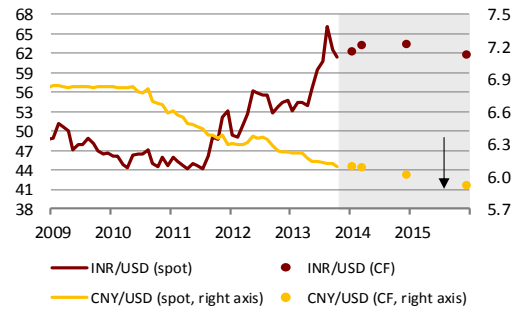
	09/12/13	01/14	03/14	12/14	12/15
spot rate	0.891				
CF forecast		0.924	0.939	0.981	0.992
forward rate		0.890	0.890	0.887	0.881

BRAZILIAN REAL, RUSSIAN ROUBLE



	09/12/13	01/14	03/14	12/14	12/15
BRL/USD (spot)	2.32				
BRL/USD (CF)		2.29	2.34	2.33	2.26
RUB/USD (spot)	32.73				
RUB/USD (CF)		32.81	33.08	33.95	33.73

INDIAN RUPEE, CHINESE RENMINBI



	09/12/13	01/14	03/14	12/14	12/15
INR/USD (spot)	61.10				
INR/USD (CF)		62.21	63.21	63.40	61.75
CNY/USD (spot)	6.07				
CNY/USD (CF)		6.09	6.08	6.01	5.91

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

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

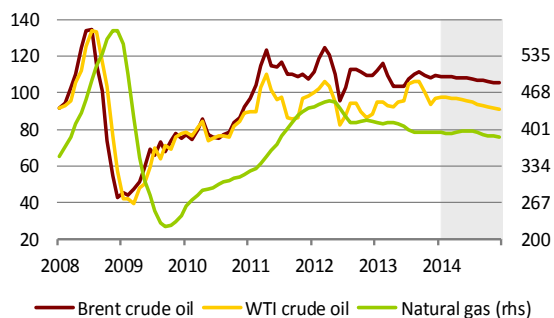
V.I Oil and natural gas

The price of Brent crude oil dropped below USD 104 a barrel in early November, but then started rising on the back of higher demand and extraction disruptions. The price was above USD 111 a barrel at the end of the month and remained at similar levels at the start of December, but declined in the second week of December. The WTI crude oil price showed an even larger decrease in November (to a five-month low) due to high supplies of oil. This resulted in the spread between the two benchmarks widening to a six-month maximum (of just below USD 20 a barrel). However, the spread narrowed again in early December, when the WTI price started rising on solid data from the US economy, lower stocks and the announcement of the launch of part of the Keystone XL pipeline in January, which will mean higher refinery demand for WTI.

The IEA revised its oil demand growth estimates for 2013 and 2014 upwards in its December report, mainly because of higher-than-expected OECD oil demand (which rose in Q2 after eight falls). Growth of 1.2 million barrels per day (mbpd) is expected in both 2013 and 2014. Conversely, the OPEC has left its demand growth forecast unchanged at 0.9 and 1.0 mbpd this year and the next. According to the IEA, supplies from OPEC countries fell for the fourth consecutive month due to renewed extraction disruptions in Libya, Niger and Kuwait. Higher output from Iran, Iraq and Angola failed to make up this shortfall. Moreover, OPEC representatives agreed at the start of December to leave the production target for 2014 H1 unchanged at 30 mbpd. The Geneva agreement with Iran had only a limited effect on the oil price, as it cannot be expected to lead to an earlier lifting of the embargo on oil imports from Iran.

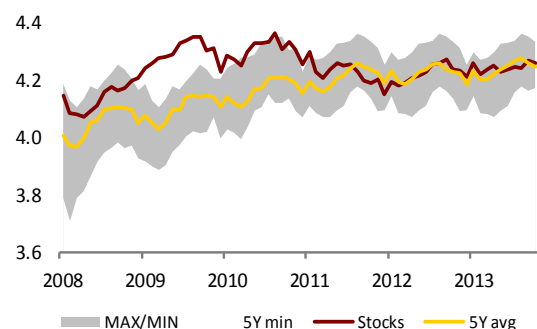
The futures-based oil price outlook is slightly declining and the price should be just above USD 105 a barrel at the end of 2014.

OUTLOOK FOR PRICES OF OIL AND NATURAL GAS

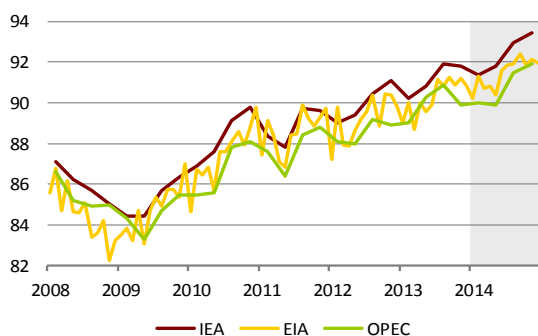


	Brent	WTI	Natural gas
2013	-2.70 ↘	3.94 ↗	-6.45 ↘
2014	-1.10 ↗	-3.10 ↘	-2.54 ↘

TOTAL STOCKS OF OIL AND OIL PRODUCTS IN OECD

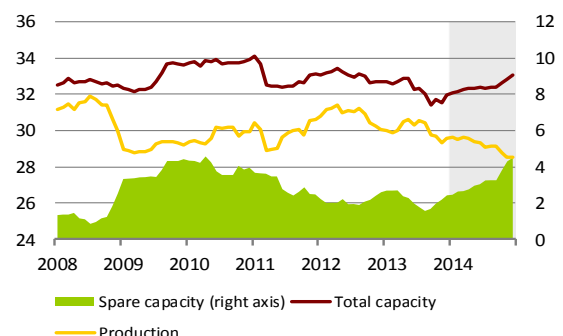


GLOBAL CONSUMPTION OF OIL AND OIL PRODUCTS



	IEA	EIA	OPEC
2013	1.33 ↗	1.25 ↗	1.67 ↗
2014	1.31 ↘	1.28 ↗	0.89 ↘

PRODUCTION, TOTAL AND SPARE CAPACITY IN OPEC COUNTRIES



	Production	Total capacity	Spare capacity
2013	-2.74 ↘	-2.36 ↘	3.09 ↘
2014	-2.87 ↘	0.58 ↗	47.70 ↘

Note: Oil price in USD/barrel, price of Russian natural gas at German border in USD/1,000 m³ (IMF data, smoothed by the HP filter). Future oil prices (grey area) are derived from futures and future gas prices are derived from oil prices using model. Tables show annual percentage changes. Total oil stocks (commercial and strategic) in OECD countries including average, maximum and minimum in past five years in billions of barrels. Global consumption of oil and oil products in millions of barrels a day. Production and extraction capacity of OPEC in million barrels a day (EIA estimate). [Cut-off date for data: 12 December 2013]

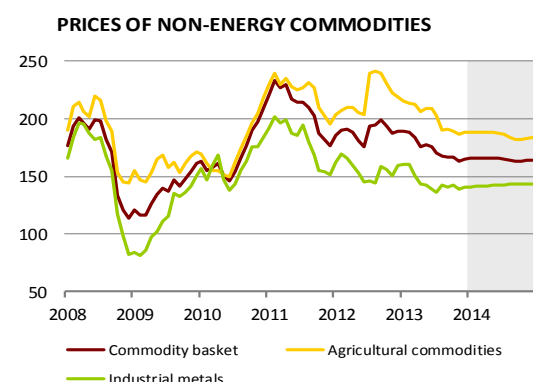
Source: Bloomberg, IEA, EIA, OPEC, CNB calculations

V.2 Other commodities

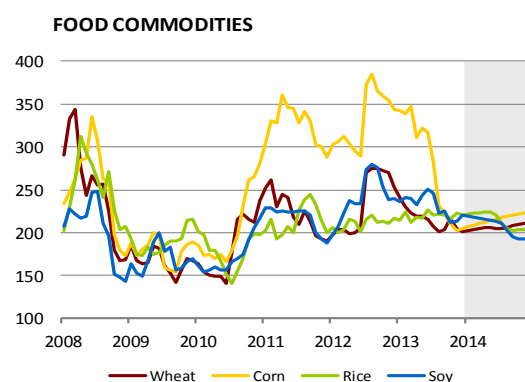
As in previous months, the overall non-energy commodity price index showed no major movements in November and declined only slightly. In addition to lower growth in demand in emerging countries, this decline reflects a lower incentive to hold commodities as a hedge against inflation as well as expectations of slower monetary policy easing in advanced countries.

Both components of the index contributed to the decline. The decrease in the metal price index was the most pronounced. As regards food commodities, prices of wheat, sugar and coffee showed the largest decreases. The futures-based outlook for food commodities is slightly declining.

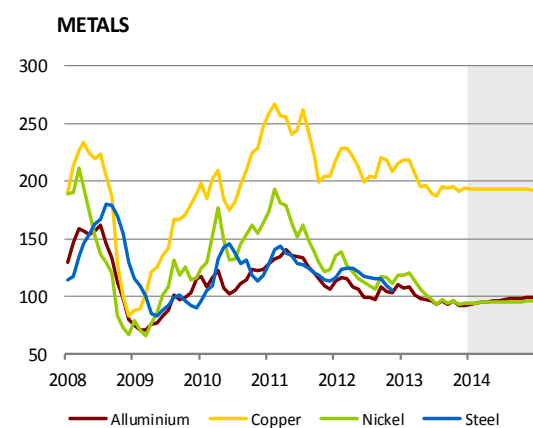
The decline in the metal price index was attributable to all its components (especially nickel, aluminium and copper) with the exception of platinum, which recorded only a slight increase. Nevertheless, the outlook for the metal index is slightly increasing, with growth being fostered mainly by aluminium prices. Prices of technical crops were flat and their outlook is also broadly flat.



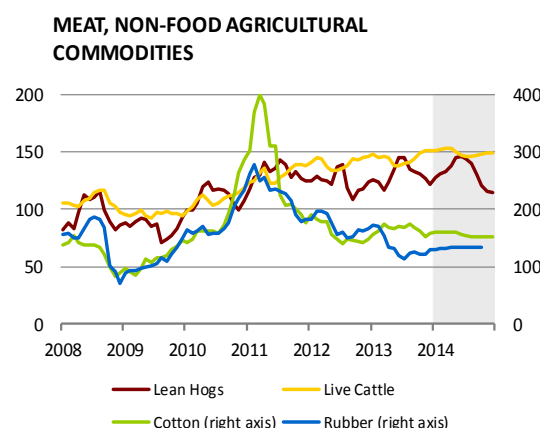
	Overall comm. basket	Agricultural comm.	Industrial metals
2013	-7.9	-8.2	-7.0
2014	-5.3	-7.6	-1.7



	Wheat	Corn	Rice	Soy
2013	-8.6	-16.4	4.2	-3.8
2014	-4.1	-22.2	-2.7	-10.6



	Aluminium	Copper	Nickel
2013	-8.6	-7.7	-14.4
2014	-0.9	-2.7	-6.7



	Lean hogs	Live Cattle	Cotton	Rubber
2013	5.1	3.0	4.1	-21.3
2014	1.4	3.3	-5.6	

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

Source: Bloomberg, CNB calculations.

Financialisation of commodities and the structure of participants on commodity futures markets ¹

Commodity futures markets were established primarily to enable their participants (producers/processors) to hedge against potential risks in the form of unpredictable price swings (due, for example, to poor harvests in the case of agricultural commodities). Over the last few decades, however, commodities have started to be traded in the same way as many other financial assets (currencies, bonds, stock indices), i.e. not only as a means of hedging production or buying a raw material, but also as an investment instrument with the aim of making a potential return – the hypothesis known as financialisation of commodities. This trend has been bolstered by rising globalisation, new communication technologies and growing innovation in the financial sector associated with the introduction of a whole range of new financial instruments (derivatives). There are growing complaints from market participants, economists and politicians that the surge in commodity prices over the last ten years has been due to growth in the number of financial institutions and index funds that also trade in commodities. This article aims to assess the hypothesis that financial institutions are having a growing influence on commodity markets and to examine the ensuing risks such as commodity price manipulation.

1. Commodity futures markets

In the past, most commodities, grain in particular, were only traded in the spot market and in physical form. This was gradually replaced by trading in derivatives whose underlying assets are physical commodities. The most frequently used instrument through which commodities are traded today is the futures contract, or futures.

Futures are standardised contracts traded at a central location called a futures exchange.² A commodity futures contract is an agreement to make or take delivery of a commodity of a specified quality and quantity on a specified future date. Each commodity contract has a relevant expiration (delivery) date and contains some specific essentials such as place of delivery, protein content, moisture content, weight and purity. Such specifications exist for each commodity. A futures contract means a commitment by one party (the seller) to deliver goods of specified amount and quality to the other party (the buyer) on a specified date.

The term “commodity” refers primarily to raw materials. Besides traditional natural materials the commodity category includes futures on “artificial” commodities such as currencies, bonds, stock indexes and interest rates.³ Natural commodities can be divided into five major sectors (see Appendix 1). In the past, commodity futures trading was used solely to hedge against price movements – for example a farmer will negotiate a contract before the harvest to guarantee that he sells the goods at the current market price at the time of harvest. The buyer, conversely, hedges against the expected costs associated with the price of his purchase. In recent years, however, there has been an

¹ Written by Martin Motl (Martin.Motl@cnb.cz). The opinions expressed in this article are those of the author and do not necessarily reflect the official position of the Czech National Bank.

² The biggest futures trading company in the world is the Chicago-based CME Group, which was formed over 2007–2012 by the merger of the Chicago Mercantile Exchange, the Chicago Board of Trade, the New York Mercantile Exchange and Commodity Exchange and the Kansas City Board of Trade.

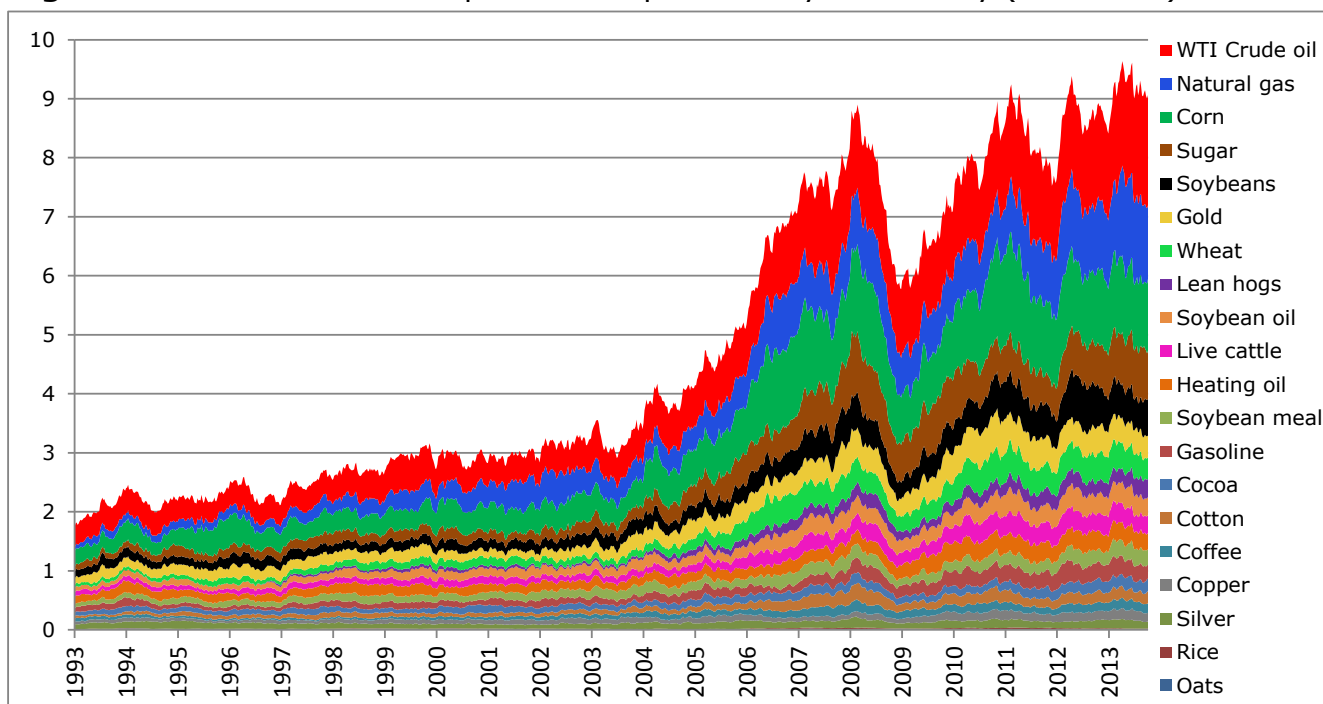
³ To separate speculative motives for entering commodity futures markets from traditional hedging motives, the analysis focuses solely on natural commodities.

increase in the proportion of speculative trades, mainly due to large financial institutions⁴ and other investors entering the commodity markets.

2. The rising importance of commodities as an investment instrument

In the 1990s money managers were still generally averse to commodities, which were seen as highly risky and too speculative, especially compared to such sophisticated investments as real estate, stocks and bonds. During the last decade, however, money managers' and investors' negative view of commodity markets started to change noticeably. This phenomenon is illustrated in Figure VI-1, which shows the evolution of the number of net open traded positions (open interest⁵) for various commodities.

Figure VI-1: Number of net open futures positions by commodity (in millions)



Note: The order of the commodities corresponds to the number of open positions at the start of October 2013. As regards the number of open futures positions for corn, wheat and soy, the data between 1993 and the end of 1997 have been recalculated owing to a change in the calculation methodology. Until August 2006, the series of unleaded gasoline (New York shore) was used. It was then replaced by the RBOB gasoline series.

Source: U.S. Commodity Futures Trading Commission – CFTC, CNB calculation.

As regards demand among participants, there was practically nothing going on in the commodity market between 1993 and 2003. A gradual modest increase in open interest – of about 85% in 10 years – was observed. Between 1998 and 2003 the number of net open positions in the selected markets rose by only 20%. However, between 2003 and February 2008, i.e. in less than five years, the number of open positions grew sharply across all major commodities (by 170% on average). The onset of the economic recession associated with the failure of Lehman Brothers in September 2008 and a

⁴ Some financial institutions also use futures contracts to hedge themselves. For example, pension funds, insurance companies and large corporations holding various investment portfolios, which may hedge their security and bond holdings by selling various financial or stock index futures. However, this applies mainly to futures on “artificial” commodities, which are not discussed in this article.

⁵ Open interest is the total of all long and short positions currently open in the market. There is a buyer for each seller, i.e. the aggregate of all long open interest is equal to the aggregate of all short open interest.

sharp rise in risk aversion in financial markets then led to an abrupt fall in the number of net open commodity futures; this downturn had started to emerge at the beginning of the year. The upward trend in the number of open positions is still ongoing, albeit at a much slower rate. The surge in 2003–2008 may thus have been caused only by a substantial transfer of funds by certain market groups into commodity futures contracts (see Table VI-1). The physical amounts of wheat, sugar, cotton, coffee, etc. did not rise exponentially. The highest number of open positions of all traded commodities was recorded for futures on WTI crude oil, traded in New York.

Table VI-1: Changes in the number of open positions for individual commodities in individual periods (in %)

	January 1998 - December 2002	January 2003 - February 2008
Lean hogs	-7	451
Wheat	-11	384
Sugar	13	354
Cotton	-10	260
Corn	35	233
Coffee	142	180
Soybeans	50	179
Rice	38	166
Oats	-50	150
Live cattle	11	146
Natural gas	98	136
WTI Crude oil	40	133
Gold	9	130
Gasoline	12	121
Soybean oil	42	108
Cocoa	-4	90
Silver	-17	81
Soybean meal	23	63
Heating oil	8	40
Copper	16	32

Source: U.S. Commodity Futures Trading Commission – CFTC, CNB calculation.

The surge in the number of net open positions (not the number of contracts traded) thus suggests a possible shift in money managers' and other investors' preferences away from the traditional investment instruments used by fund managers for managing money towards commodity futures contracts. Besides the specific long-term characteristics of various types of financial assets and instruments, the strong interest among portfolio managers in commodity futures markets may be linked with the rapid development of the financial markets towards a providing a wide range of instruments (derivatives) and funds linked to commodity prices. The very easy global monetary policy in the above period, and especially the Fed's monetary policy since 2000, may have provided an additional stimulus. The sustained low (and even negative in some periods) real interest rates have encouraged portfolio managers to shift their investment interests (capital) away from financial instruments with fixed yields towards commodity futures contracts promising potentially higher returns.⁶

⁶ See Hošek, Komárek and Motl (2010).

3. Structure of commodity market participants

The structure of commodity market participants has changed significantly over the last 20 years. In addition to traditional large commercial entities using the commodity markets to hedge their trading, there has been an inflow of a new type of traders – speculators, who participate in the commodity markets with the primary aim of making profits. There are also commodity index traders (including pension and foundation funds), which enter into long-term liability-side transactions, and swap dealers, who try to hedge against changes arising from their business activities in over-the-counter (OTC) markets.⁷ In general, there are two basic sets of participants on the commodity futures markets.

The first set comprises entities whose primary objective in commodity futures markets is to hedge against unpredictable future movements in the price of a commodity. Generally they are also called “hedgers”. Hedgers are entities or individuals whose activities are in some way connected with a physical commodity. For example, an oil-processing company has to pay a higher price to oil producers and intermediaries if there is a threat of war in the Middle East. To hedge against such unpredictable effects, the company can purchase in advance the appropriate number of oil futures contracts covering the amount it intends to buy. If the oil price actually rises on the spot market, the company will have to buy it at a higher price, but its potential loss arising from this movement will be offset by its profit from the futures contracts it purchased in advance with a later delivery date, whose price has gone up as well. The hedgers’ primary objective on commodity futures markets is thus not to make profits but to hedge against unfavourable future price movements.

The second set of commodity market participants consists of speculators – entities whose primary reason for trading in futures contracts is to make profits. This group consists of large financial institutions (banks and funds) as well as other larger or smaller investors. It also includes exchange floor traders (known as locals) trading for their own accounts. Unlike hedgers, these investors are not interested in handling commodities, i.e. in buying or selling physical commodities. Instead, they trade with the objective of making profits stemming from price movements in individual futures contracts before their expiration date and physical delivery.

The structure and influence of the individual groups of commodity futures market participants can be tracked in the statistics issued by the U.S. Commodity Futures Trading Commission (CFTC). Since 1962, the US government has been issuing Commitments of Traders (COT) reports, which allow us to identify the participation of active market players for individual commodities. These reports provide information about current market purchases and sales by various classes of commodity market participants. The original reports divided commodity futures market participants into commercial traders (producers/processors) and non-commercial traders (managed money and small investors). However, in order to increase transparency, and owing to the development of financial markets and the entry of new entities into the commodity futures markets, the CFTC introduced a new methodology for the breakdown of participants on 13 July 2006. The new breakdown has five categories (see Box 1).

⁷ An OTC market facilitates trading between two participants (e.g. market-makers, dealers). Such trading occurs electronically or by telephone or fax and is not subject to regulation or stock exchange fees.

Box 1: Characteristics of commodity futures market participants

Commercials (producers/merchants/processors/users) are entities that predominantly engage in the production, processing, packing or handling of physical commodities and use the commodity futures markets to manage or hedge risks associated with those activities.

Swap dealers are entities that use commodity swaps to manage or hedge the risks associated with swaps transactions. Swap dealers buy commodity futures contracts as counter-positions to OTC transactions. In the original CFTC breakdown of commodity futures market participants, this category was included under commercial entities. However, as the swap dealer's counterparties may theoretically be both financial institutions and traditional commercial entities, swap dealers now constitute a separate category. Owing to the nature of swap transactions, which serve mainly to ensure a specific price for a longer time over a specific period, these transactions can also be considered activities of commercial entities that in this way manage risks arising from their dealings in the physical commodity.

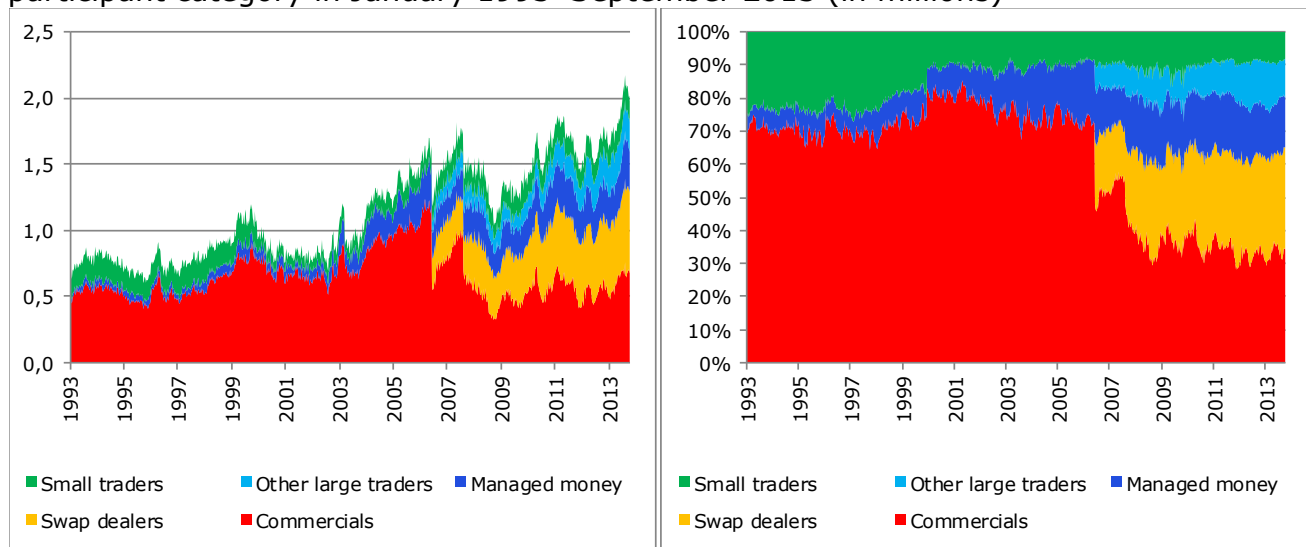
Managed money refers to officially registered commodity trading advisors (CTAs), commodity pool operators (CPOs) or unregistered funds identified by the CFTC. An unregistered fund may thus have characteristics of both CTAs and CPOs or come from outside the USA. The managed money category also includes hedge funds and other institutional investors, e.g. pension and foundation funds.

Other large traders are participants whose classification does not match the three criteria mentioned above (i.e. other large reportable positions), i.e. entities whose positions invested in commodities are so large that they are also subject to CFTC monitoring.

Small traders are traders that hold non-reportable positions; this category thus consists mainly of small investors trading in small positions primarily to make profit.

The hypothesis of a potential rising effect of large financial institutions and other large investors on the commodity markets is confirmed by Figure VI-2, which describes the structure of long and short WTI crude oil futures positions by market participant category. WTI crude oil shows the largest number of net open positions of all the natural commodities traded.

Figure VI-2: Structure of long and short WTI crude oil futures positions by market participant category in January 1993–September 2013 (in millions)



Note: A more detailed breakdown into swap dealers and other large traders is available as from 13 June 2006.

Source: U.S. Commodity Futures Trading Commission – CFTC, CNB calculation.

A surge in the positions held by these entities (i.e. managed money and other large traders), which manage and invest large sums of money, can be seen around 2003. One can also see a sharp decline in the futures positions of small traders after 2000. Their share has remained at historical lows since then. From the historical perspective,

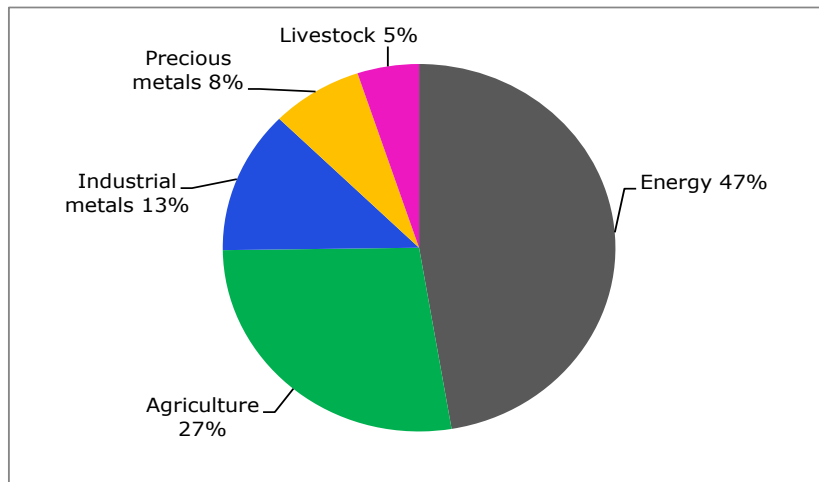
commercial entities (i.e. large producers and processors) have traditionally had the largest share of futures positions on the WTI crude oil market. Until 2006, the positions held by producers and processors also included trading by swap dealers. As a result, these data may be slightly distorted. In June 2006, in order to increase transparency, the CFTC therefore started to separate the positions of swap dealers intermediating trades for various individual categories of market participants from the producers and processors statistics. For these intermediaries, it is impossible to determine which specific category trades have been executed for. Taking this into account, the shares of the positions held by processors and financial institutions including other large traders are roughly equal. However, as these are long-term positions that overlap with the OTC market, it is reasonable to assume that producers' and processors' positions account for the largest share of the total trades executed by swap dealers. Nonetheless, even if 100% of trades executed by swap dealers are included in this category of commercial entities, a sustained downward trend can be observed since 2000 in the share of the open positions of this category on the WTI crude oil market to the benefit of managed money and other large traders.

4. Investment commodity funds and their behaviour on the commodity markets

As described above, the share of financial institutions and other large traders in futures trading on the commodity markets increased significantly after 2000. This was reflected in a rise in the open interest of these entities. This is due to the fact that many commodity funds are founded on the expectation that in the long term commodity prices will only rise. For this reason, they are mostly in long positions across the spectrum of all the main commodity futures contracts.

The Commodity Research Bureau Index, which was established in 1958, can be regarded as the first such commodity index. By construction, however, it was not usable as an investment index. The first investible commodity indices started to be formed in the early 1990s. They are broken down further by generation (see Hošek, 2012). This analysis only covers first-generation passive indices operating with futures mainly at the nearest end of the notional futures curve and having the highest liquidity. Established in 1991, the Standard & Poor's Goldman Sachs Commodity Index (S&P GSCI) was one of the first commodity funds and is also the biggest, holding a commodity portfolio of about USD 55 billion. This category of first-generation passive investible commodity indices also includes the Thomson Reuters/CRB Index, the Rogers International Commodity Index (RICI) and the Dow Jones-UBS Commodity Index. This commodity fund boom reflects the rising interest of investors seeking profits from commodities as an investment asset. Index commodity funds track the performance of a particular commodity index. A commodity index is a weighted average of selected commodity prices representing a particular sector or subset of commodities. The detailed compositions of the commodity baskets of selected indices, including their current weights, are provided in Appendix 1. For example, the composition of the S&P GSCI commodity basket is based on the world production weighting of each commodity. The composition states that the quantity of each commodity included in the index is determined by the average quantity of world production in the last five years. The weights are updated every year. In general, the application of this method to determine the composition means that energy commodities have a large weight in the S&P GSCI (currently about 70%). Figure VI-3 shows the average structure of the commodity basket of the four largest commodity funds mentioned above.

Figure VI-3 Current average weight structure of the S&P GSCI, Thomson Reuters/CRB Index, RIC1 and Dow Jones-UBS Commodity Index by commodity sector



Source: Goldman Sachs, Thomson Reuters, S&P Dow Jones Indices, Rogers Raw Materials – CNB calculation.

As each commodity sooner or later reaches its consumer and each futures contract is time-limited by its expiration date (and subsequently by physical delivery), these commodity baskets must be rolled forward regularly. In practice, futures that are close to maturity are sold before expiration and replaced by following contracts with longer maturities. This process of systematically rolling forward long positions is described using the example of the S&P GSCI (see Box 2) and is also known as the “Goldman Roll”.

Box 2: S&P GSCI commodity index – futures contracts rolling process⁸

The rolling forward of the underlying futures contracts in the excess return index portfolio occurs once each month, on the **fifth through ninth business days** (the roll period). The simplest way to think of the process is as rolling from one basket of nearby futures (the first nearby basket) to a basket of futures contracts that are further from expiration (the second nearby basket). The S&P GSCI is calculated as though these rolls occur at the end of each day during the roll period at the daily settlement prices.

The portfolio is shifted from the first to the second nearby baskets at a rate of 20% per day for the five days of the roll period. This means that until just before the end of the fifth business day in the month, the entire S&P GSCI portfolio consists of the first nearby basket of commodity futures. At the end of the fifth business day, the portfolio is adjusted so that 20% of the contracts held are in the second nearby basket (i.e. a basket of future contracts that are further from maturity), with 80% remaining in the first nearby basket.

The roll process continues on the sixth, seventh and eighth business days, with relative weights of first to second nearby baskets of 60%/40%, 40%/60% and 20%/80%. This percentage breakdown refers to the number of contracts, not their value. At the end of the ninth business day, the last of the old first nearby basket is exchanged, completing the roll and leaving the entire portfolio in the second nearby basket. At this time, this former second nearby basket becomes the new first nearby basket, and a new second nearby basket is formed for use in the next month’s roll.

In addition to traditional investment funds, the number of exchange traded funds (ETFs) has increased significantly in the last ten years. These are specialised financial vehicles administering portfolios of stocks or commodities contained in individual indices in certain ratios. The stocks of an ETF, whose portfolio may also contain long positions in certain commodities through financial derivatives, then track the prices of the

⁸ See Goldman Sachs (2013).

commodities contained in the portfolio.⁹ Most of these funds were formed in 2003–2007. Their massive and rapid expansion shows how popular they are with investors. The big advantage of these instruments compared to funds is the size of fees, as no fees are charged for portfolio management in the case of ETFs. Another undoubted advantage of ETFs is that they are quoted on the stock exchange throughout the day, whereas prices of mutual funds are usually calculated once a day. Thanks to these advantages, ETFs are among the most traded stocks. ETFs thus probably owe their rapid growth to high investor demand, as they have made investing in commodities accessible to small investors by reducing their investment costs and leverage. The increased investor participation in these funds in turn raises demand for commodity futures, which ETFs have to buy in the long term to ensure that their shares are able to track the price of the underlying asset (commodity).

Conclusion

At the start of this century, and particularly after 2003, the behaviour of certain groups of commodity futures market participants changed significantly, leading to a surge in the number of open positions across the entire commodity spectrum. This reflected the sharply rising investment activity of financial institutions and traditional as well as new investment funds that create “commodity baskets”. The hypothesis of increasing commodity financialisation owing to fast growth in index commodity investment over the last ten years is supported by Tang and Xiong (2011). Regular rolling forward of these funds’ commodity baskets started to be used on a larger scale around 2003. This upward trend in open positions is continuing, albeit at a slower rate than in the past. The growth in the number of open positions also differed across commodities. This is reflected to some extent in the weighting systems of commodity funds, which also partly explains why the growth was not equal across all commodities. WTI crude oil has the biggest weight in the commodity basket of the four largest commodity funds, at almost 20% on average. The traditionally biggest share of large commercial entities, which enter into commodity futures transactions primarily for the purpose of hedging, thus started to shrink gradually after 2000, but still plays a dominant role in the commodity futures markets. Conversely, a rise could be seen in the number of trades made by banks, funds and other large traders. Easy monetary policy in advanced countries may also have played a major role in the greater interest of money managers in commodity markets. Very low yields on traditional instruments and an expected negative relationship between real interest rates and commodity prices led to investment capital being moved away from financial instruments with low fixed yields towards commodity contracts offering potentially higher yields. This may have caused money managers’ and investors’ attention to shift from previously widely used conservative financial instruments such as shares and bonds towards riskier (but higher-yielding) commodity markets.

Despite the indisputable rise in the influence and number of trades executed by financial institutions and other investors on commodity futures markets, supply and demand among commodity producers and processors, i.e. commercial entities, remain the primary drivers of price movements. This conclusion is in line with the findings of Kilian and Mahadeva (2012) and Juvenal and Petrella (2011), according to whom the sharp oil price fluctuations since 2003 have probably been due mainly to economic fundamentals reflecting global demand and not to financialisation of the oil futures market. The share

⁹ These funds specialise either in one commodity, e.g. the United States Oil Fund (formed on 10 April 2006), in which WTI oil derivatives account for 100% of the portfolio, or in multiple commodity sectors, e.g. the Pimco Commodity Real Return Strategy Fund, which was established on 28 June 2002, where agricultural commodities account for 37%, energy commodities for 33% and metals for 30%.

of small traders in the WTI crude oil market, which – on the contrary – fell markedly after 2000 and remains stable at very low levels, plays a negligible role.

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Appendix 1 Breakdown of commodities into sectors in selected investment commodity funds, including their weights in the commodity basket (in %)

Commodity	Exchange	S&P Goldman Sachs Commodity Index	Thomson Reuters/CRB Index	Rogers International Commodity Index	Dow Jones-UBS Commodity Index	Average total weight
Energy		69,70	39,00	44,00	36,68	47,35
WTI Crude oil	NYMEX	24,71	23,00	21,00	10,95	19,92
Brent Crude oil	ICE EU	22,34		14,00	6,08	14,14
Natural gas	NYMEX	2,02	6,00	3,00	12,31	5,83
Gas oil	ICE EU	8,56		1,20		4,88
Gasoline	NYMEX	5,90	5,00	3,00	3,56	4,37
Heating oil	NYMEX	6,17	5,00	1,80	3,78	4,19
Agriculture		15,18	34,00	31,90	28,69	27,44
Corn	CBOT	4,69	6,00	4,75	4,94	5,10
Soybeans	CBOT	2,62	6,00	3,50	5,52	4,41
Cotton	ICE US	1,07	5,00	4,20	2,21	3,12
Wheat	CBOT	3,22	1,00	4,75	3,37	3,09
Sugar	ICE US	1,85	5,00	1,00	4,06	2,98
Coffee	ICE US	0,82	5,00	2,00	2,01	2,46
Soybean oil	CBOT			2,00	2,45	2,23
Cocoa	ICE US	0,23	5,00	1,00		2,08
Soybean meal	CBOT			0,75	2,81	1,78
Red wheat	KCBOT	0,68		1,00	1,32	1,00
Milling wheat	NYSE Liffe			1,00		1,00
White sugar	NYSE Liffe			1,00		1,00
Lumber	CME			1,00		1,00
Rapeseed	NYSE Liffe			1,00		1,00
Rubber	TOCOM			1,00		1,00
Orange juice	NYBOT		1,00	0,60		0,80
Rice	CBOT			0,75		0,75
Oats	CBOT			0,50		0,50
Milk class III	CME			0,10		0,10
Livestock		4,72	7,00	3,00	5,61	5,08
Live cattle	CME	2,62	6,00	2,00	3,54	3,54
Lean hogs	CME	1,58	1,00	1,00	2,07	1,41
Feeder cattle	CME	0,52				0,52
Industrial metals		6,90	13,00	14,00	16,46	12,59
Copper	COMEX		6,00	4,00	7,15	5,72
Aluminum	LME	2,13	6,00	4,00	4,74	4,22
Copper	LME	3,28				3,28
Zinc	LME	0,51		2,00	2,59	1,70
Lead	LME	0,40		2,00		1,20
Nickel	LME	0,58	1,00	1,00	1,98	1,14
Tin	LME			1,00		1,00
Precious metals		3,49	7,00	7,10	12,55	7,54
Gold	COMEX	3,00	6,00	3,00	9,49	5,37
Platinum	NYMEX			1,80		1,80
Silver	COMEX	0,49	1,00	2,00	3,06	1,64
Palladium	NYMEX			0,30		0,30
Total weight		100	100	100	100	100

Note: NYMEX – New York Mercantile Exchange, ICE EU – Intercontinental Exchange London, ICE US – Intercontinental Exchange New York, CBOT – Chicago Board of Trade, KCBOT – Kansas City Board of Trade, NYSE Liffe – New York Stock Exchange & London International Financial Futures and Options Exchange, CME – Chicago Mercantile Exchange, TOCOM – Tokyo Commodity Exchange, NYBOT – New York Board of Trade, COMEX – Commodity Exchange, LME – London Metal Exchange.

Source: Goldman Sachs, Thomson Reuters, S&P Dow Jones Indices, Rogers Raw Materials – CNB calculation.

A1. Change in GDP predictions for 2013

	CF		IMF		OECD		CB / EIU	
EA	0.0	2013/12 2013/11	0.2	2013/10 2013/7	0.2	2013/11 2013/5	0.0	2013/12 2013/9
US	0.0	2013/12 2013/11	-0.1	2013/10 2013/7	-0.2	2013/11 2013/5	-0.3	2013/9 2013/6
DE	0.0	2013/12 2013/11	0.2	2013/10 2013/7	0.1	2013/11 2013/5	0.3	2013/12 2013/6
JP	-0.1	2013/12 2013/11	0.0	2013/10 2013/7	0.2	2013/11 2013/5	0.0	2013/11 2013/7
BR	0.0	2013/12 2013/11	0.0	2013/10 2013/7	-0.4	2013/11 2013/5	0.0	2013/12 2013/11
RU	-0.2	2013/12 2013/11	-1.0	2013/10 2013/7	-0.8	2013/11 2013/5	0.0	2013/12 2013/11
IN	0.0	2013/12 2013/11	-1.8	2013/10 2013/7	-1.9	2013/11 2013/5	-0.1	2013/12 2013/11
CN	0.1	2013/12 2013/11	-0.2	2013/10 2013/7	-0.1	2013/11 2013/5	0.0	2013/12 2013/11

A2. Change in inflation predictions for 2013

	CF		IMF		OECD		CB/EIU	
EA	0.0	2013/12 2013/11	-0.2	2013/10 2013/4	-0.1	2013/11 2013/5	-0.1	2013/12 2013/9
US	0.0	2013/12 2013/11	-0.4	2013/10 2013/4	-0.1	2013/11 2013/5	0.1	2013/9 2013/6
DE	-0.1	2013/12 2013/11	0.0	2013/10 2013/4	0.1	2013/11 2013/5	0.0	2013/12 2013/6
JP	0.1	2013/12 2013/11	-0.1	2013/10 2013/4	0.3	2013/11 2013/5	0.0	2013/11 2013/7
BR	0.0	2013/12 2013/11	0.2	2013/10 2013/4	-0.3	2013/11 2013/5	0.0	2013/12 2013/11
RU	0.1	2013/12 2013/11	-0.2	2013/10 2013/4	0.0	2013/11 2013/5	0.0	2013/12 2013/11
IN	0.2	2013/12 2013/11	0.1	2013/10 2013/4	2.7	2013/11 2013/5	0.2	2013/12 2013/11
CN	0.1	2013/12 2013/11	-0.3	2013/10 2013/4	0.0	2013/11 2013/5	0.1	2013/12 2013/11

A3. List of abbreviations

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

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

A4. List of thematic articles published in GEO

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