GLOBAL ECONOMIC OUTLOOK – JULY

2011

Monetary and Statistics Department
External Economic Relations Division

CNB CZECH NATIONAL BANK

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In addition to the standard outlooks for GDP, inflation, leading indicators, interest rates, exchange rates and commodity prices, the July issue of the Global Economic Outlook presents its first regular ad hoc analysis entitled *Assessment of the Forecasts Monitored in the GEO*, which quantifies the accuracy of the individual institutions' forecasts for the aforementioned key economic variables over the past one year.

The current outlooks for economic activity and inflation (CF, Fed) in the monitored territories in July again show solid levels for this year. The figures for the euro area remained unchanged, with the performance of the German economy increasing amid lower inflation; opposite movements, i.e. rises in consumer inflation, can be observed in the United States and China.

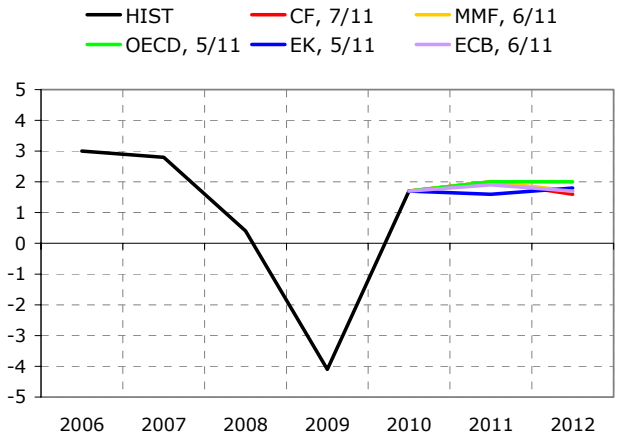
However, the monitored leading indicators and other information from the world economy again suggest a slight deterioration of the outlooks going forward. The July Consensus Forecasts (CF) outlook expects a more moderate rate of recovery of Asian and Latin American economies. According to the new CF, the global outlook for economic growth is less stable than it was six months ago. Slower global growth poses a considerable risk to the advanced countries. Debt problems, in particular the continuing debt crisis and fiscal problems in the GIPS countries (Greece, Ireland, Portugal and Spain), including the financial stress faced recently by Italy, remain another risk for the euro area and the United States. In the case of the USA, there are uncertainties relating to the new debt ceiling. Global economic growth as usual continues to be driven by emerging economies, China and India in particular.

Commodity prices reflected sharp changes in financial market sentiment over the last month, caused mainly by the European debt crisis. The current data do not give a very clear picture of the current situation and future evolution of the global economy. Having fallen sharply in mid-June, oil prices returned above USD 115 a barrel, supported by declining inventories in Europe and the USA. On the other hand, the good news is that the tension in the food commodity market eased somewhat.

II.1 GDP

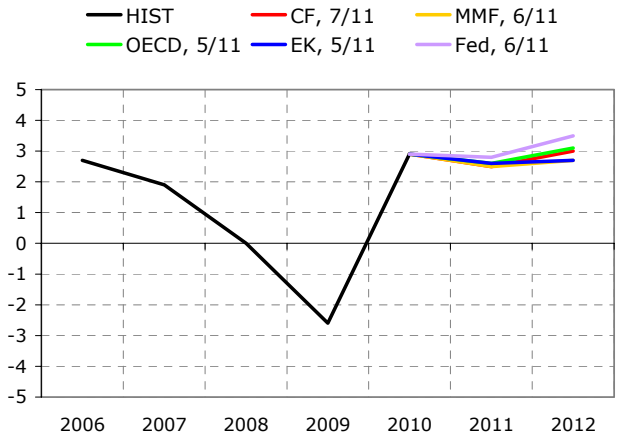
The currently observed slowdown in the economic activity of the euro area is balanced by the strong start seen at the beginning of this year. The July outlook for GDP growth thus remains at 2.0% (CF), but a slowdown to 1.6% is expected next year. The German economy has so far been recording robust growth in GDP and exports and falling unemployment. It will grow at 3.4% this year, but a slowdown of 0.5 percentage point is expected next year. Slightly higher growth at the year-end is expected in the USA thanks to a forecasted decrease in gasoline prices and renewed growth in car production. The outlook for the USA is 2.5–2.8% in 2011 and 3.0–3.5% for 2012 (CF, Fed). Despite some signs of a slowdown in economic activity in China, its growth is estimated at 9.2% in 2011 and 8.8% in 2012 (CF).

EURO AREA



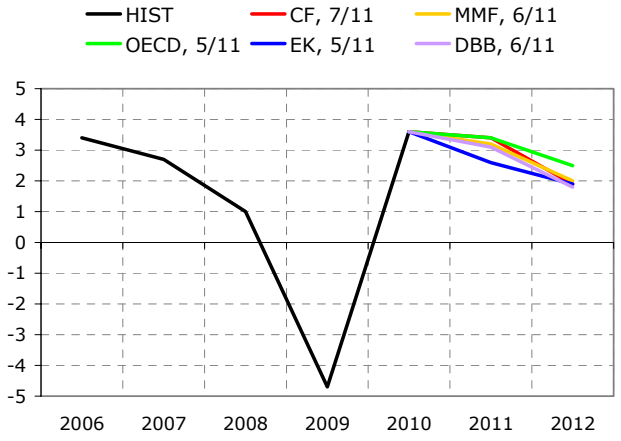
	HIST	CF	MMF	OECD	EK	ECB
2010	1.7					
2011		2.0	2.0	2.0	1.6	1.9
2012		1.6	1.7	2.0	1.8	1.7

USA



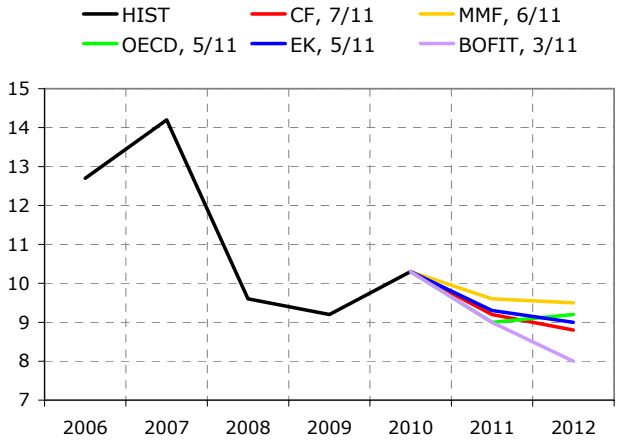
	HIST	CF	IMF	OECD	EC	Fed
2010	2.9					
2011		2.5	2.5	2.6	2.6	2.8
2012		3.0	2.7	3.1	2.7	3.5

GERMANY



	HIST	CF	MMF	OECD	EK	DBB
2010	3.6					
2011		3.4	3.2	3.4	2.6	3.1
2012		1.9	2.0	2.5	1.9	1.8

CHINA



	HIST	CF	MMF	OECD	EK	BOFIT
2010	10.3					
2011		9.2	9.6	9.0	9.3	9.0
2012		8.8	9.5	9.2	9.0	8.0

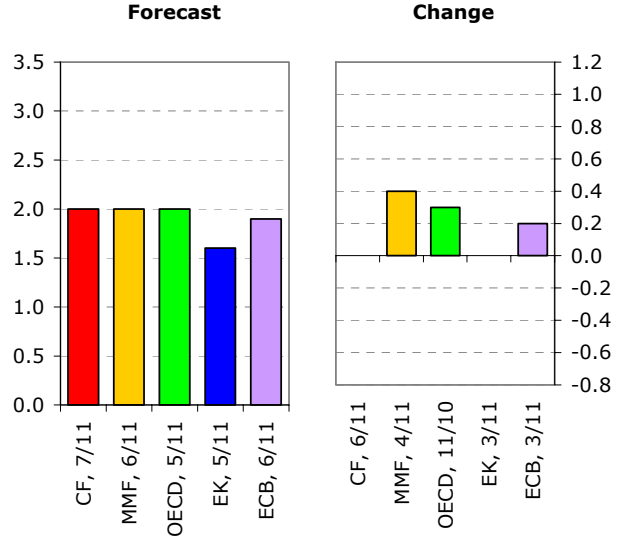
Note: Legend shows latest forecast data in format "Source, month/year of forecast publication". HIST: historical value. ECB and Fed: midpoint of range. [Cut-off date for data: 15 July 2011]

Source: CNB calculation using Eurostat, CF, IMF, OECD, EC, ECB, Fed, DBB and BOFIT databases.

II.2 GDP forecast comparison and change from the previous forecast

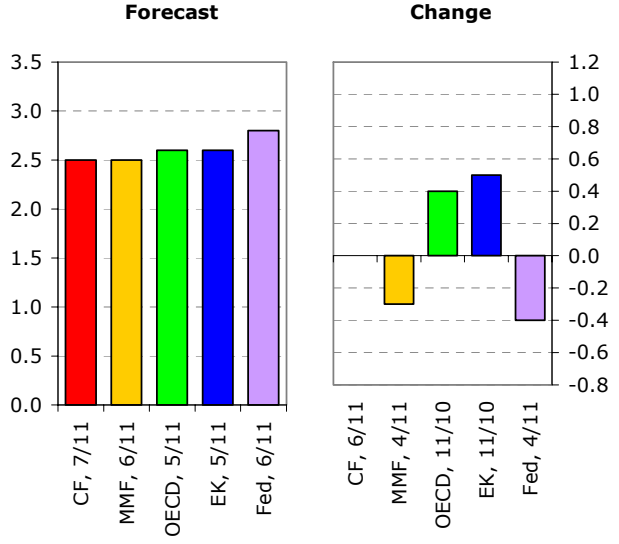
The CF outlook for the euro area and the USA this year remained unchanged. Growth in the euro area is expected to be 0.1 percentage point weaker in 2012. According to CF, the US economy will evolve in the opposite direction. Since the new statistical data suggest a more moderate economic recovery than expected in April, the Fed in its current forecast reduced the outlook for GDP growth in the USA this year by 0.4 percentage point. The July forecast for German GDP was increased by 0.1 percentage point for this year, but was reduced by the same amount for 2012 (CF). The forecast for China remains unchanged according to the July CF.

EURO AREA



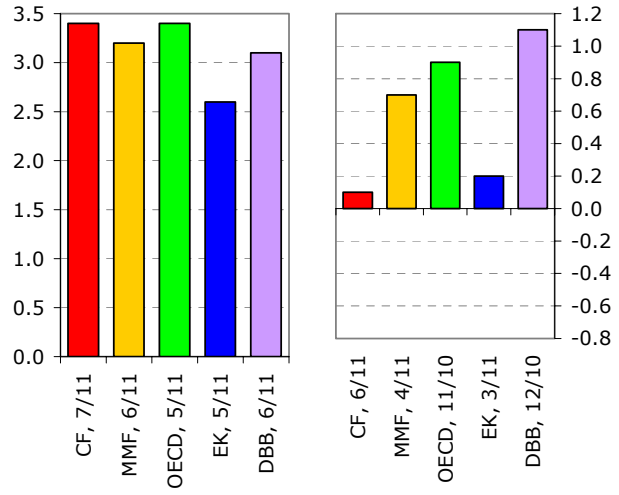
	2010	CF	MMF	OECD	EK	ECB
Forecast	1.7	2.0	2.0	2.0	1.6	1.9
Change		0.0	0.4	0.3	0.0	0.2

USA



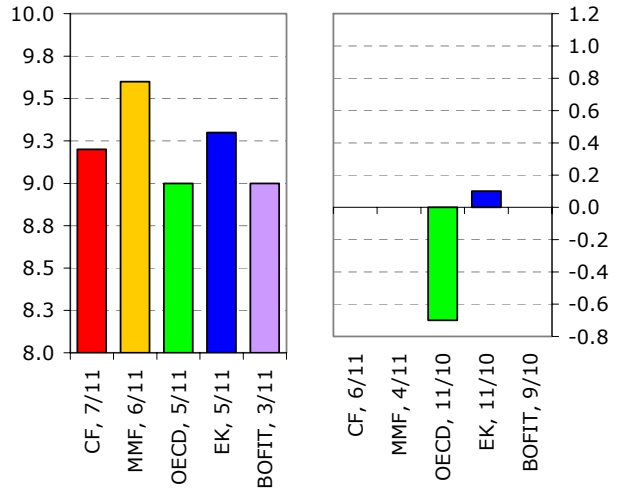
	2010	CF	MMF	OECD	EK	Fed
Forecast	2.9	2.5	2.5	2.6	2.6	2.8
Change		0.0	-0.3	0.4	0.5	-0.4

GERMANY



	2010	CF	MMF	OECD	EK	DBB
Forecast	3.6	3.4	3.2	3.4	2.6	3.1
Change		0.1	0.7	0.9	0.2	1.1

CHINA



	2010	CF	MMF	OECD	EK	BOFIT
Forecast	10.3	9.2	9.6	9.0	9.3	9.0
Change		0.0	0.0	-0.7	0.1	0.0

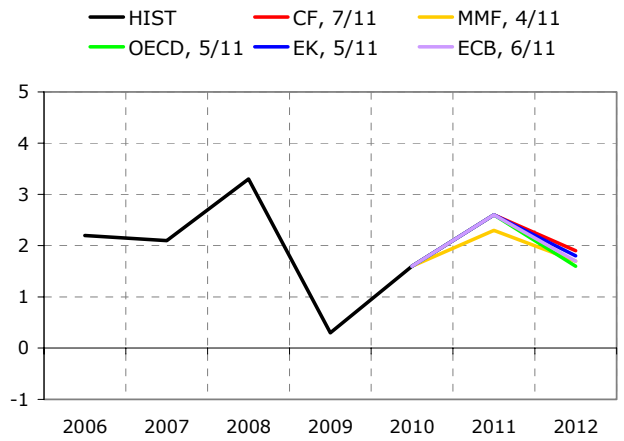
Note: Horizontal axis of left-hand (right-hand) chart shows latest (previous) forecast data in format "Source, month/year of forecast publication". HIST: historical value. ECB and Fed: midpoint of range. [Cut-off date for data: 15 July 2011]

Source: CNB calculation using Eurostat, CF, IMF, OECD, EC, ECB, Fed, DBB and BOFIT databases.

II.3 Inflation

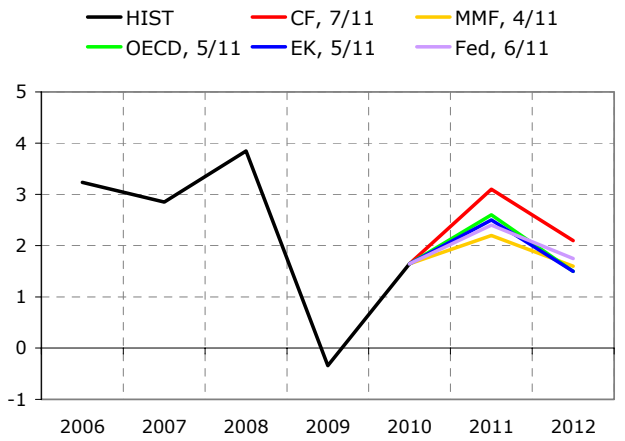
The outlook for inflation in the euro area remains at 2.6% for 2011 and 1.9% for 2012. The increase in the key interest rate made at the ECB's July meeting is probably not the last one this year. This will foster lower inflation in the euro area and Germany. On the other hand, the inflation outlook is still being affected globally by high commodity prices. According to the July CF, inflation in Germany will be 2.3% in 2011 and 2.0% in 2012. Overall inflation in the USA is being affected by high gasoline prices. Core inflation in the USA is also rising and reached a three-year high in June. The price level of the US economy will grow at 2.4–3.1% this year; the growth rate will decrease to 1.8–2.1% next year. Inflation of 5% is expected in China this year. Although the Chinese central bank is tightening its monetary policy, inflation is being fostered by rising energy and food prices, in particular pork prices (food accounts for almost one-third of the Chinese consumer basket). Inflation in China is expected to slow to 3.9% next year.

EURO AREA



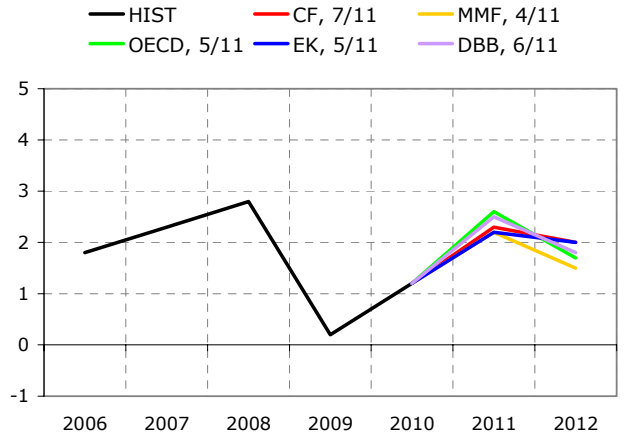
	HIST	CF	MMF	OECD	EK	ECB
2010	1.6					
2011		2.6	2.3	2.6	2.6	2.6
2012		1.9	1.7	1.6	1.8	1.7

USA



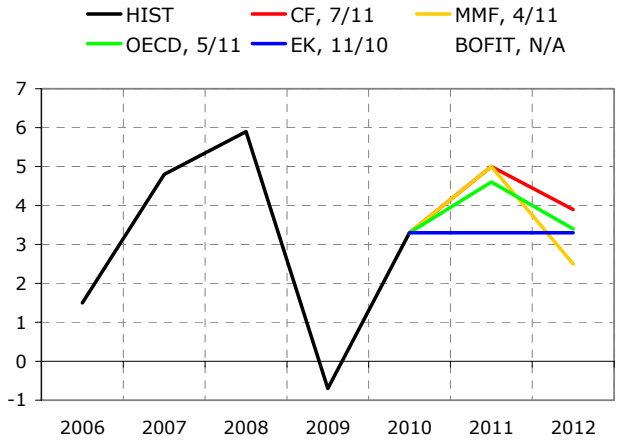
	HIST	CF	MMF	OECD	EK	Fed
2010	1.6					
2011		3.1	2.2	2.6	2.5	2.4
2012		2.1	1.6	1.5	1.5	1.8

GERMANY



	HIST	CF	MMF	OECD	EK	DBB
2010	1.2					
2011		2.3	2.2	2.6	2.2	2.5
2012		2.0	1.5	1.7	2.0	1.8

CHINA



	HIST	CF	MMF	OECD	EK	BOFIT
2010	3.3					
2011		5.0	5.0	4.6	3.3	
2012		3.9	2.5	3.4	3.3	

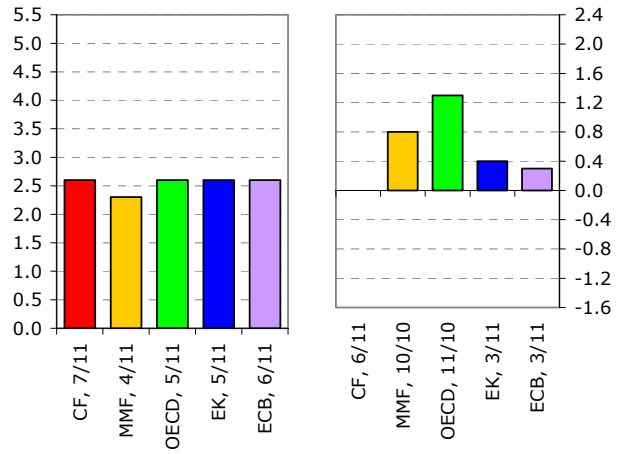
Note: Legend shows latest forecast data in format "Source, month/year of forecast publication". HIST: historical value. ECB and Fed: midpoint of range. [Cut-off date for data: 15 July 2011]

Source: CNB calculation using Eurostat, CF, IMF, OECD, EC, ECB, Fed, DBB and BOFIT databases.

II.4 Inflation forecast comparison and change from the previous forecast

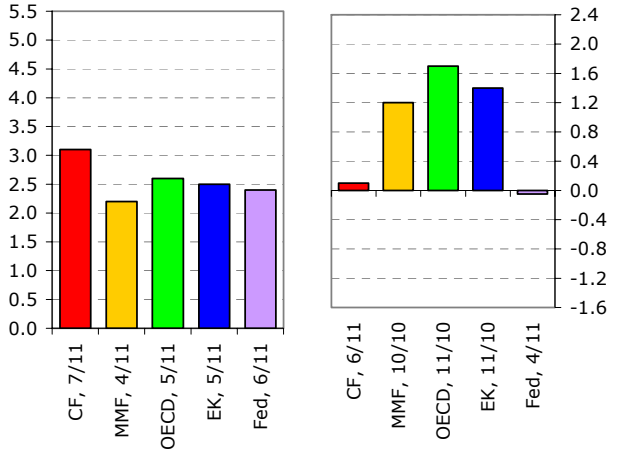
The forecast for inflation in the euro area remained unchanged in July, and was even reduced by 0.1 percentage point in Germany for 2011 (CF). The CF and Fed outlooks for this year were also reduced by the same amount. By contrast, the Fed expects US inflation to be 0.2 percentage point higher in 2012 compared to its previous forecast. Expected inflation in China is 0.2 and 0.1 percentage point higher in 2011 and 2012 respectively compared to the June forecast.

EURO AREA



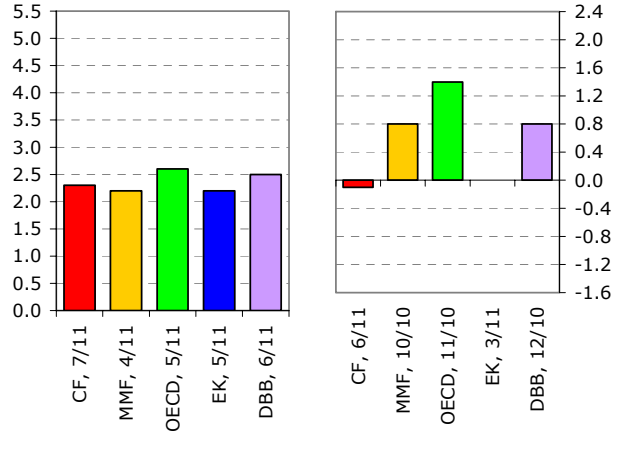
	2010	CF	MMF	OECD	EK	ECB
Forecast	1.6	2.6	2.3	2.6	2.6	2.6
Change		0.0	0.8	1.3	0.4	0.3

USA



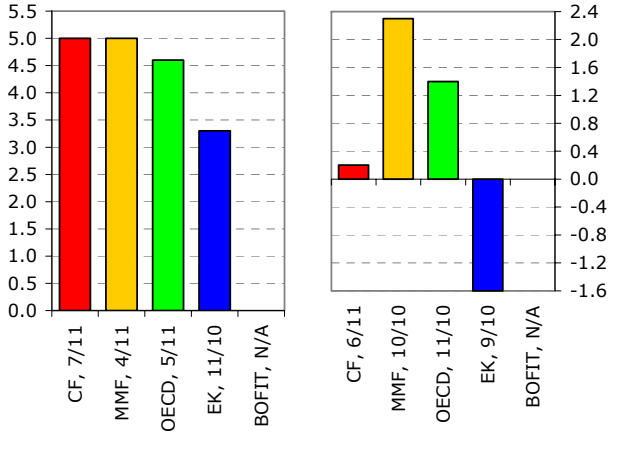
	2010	CF	MMF	OECD	EK	Fed
Forecast	1.6443	3.1	2.2	2.6	2.5	2.4
Change		0.1	1.2	1.7	1.4	-0.1

GERMANY



	2010	CF	MMF	OECD	EK	DBB
Forecast	1.2	2.3	2.2	2.6	2.2	2.5
Change		-0.1	0.8	1.4	0.0	0.8

CHINA



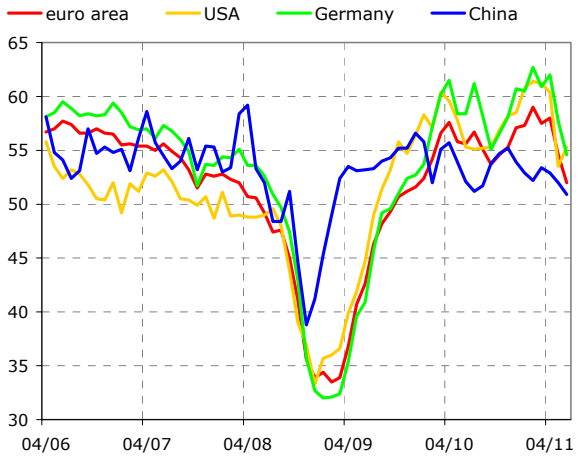
	2010	CF	MMF	OECD	EK	BOFIT
Forecast	3.3	5.0	5.0	4.6	3.3	
Change		0.2	2.3	1.4	-1.6	

Note: Horizontal axis of left-hand (right-hand) chart shows latest (previous) forecast data in format "Source, month/year of forecast publication". HIST: historical value. ECB and Fed: midpoint of range. [Cut-off date for data: 15 July 2011]

Source: CNB calculation using Eurostat, CF, IMF, OECD, EC, ECB, Fed, DBB and BOFIT databases.

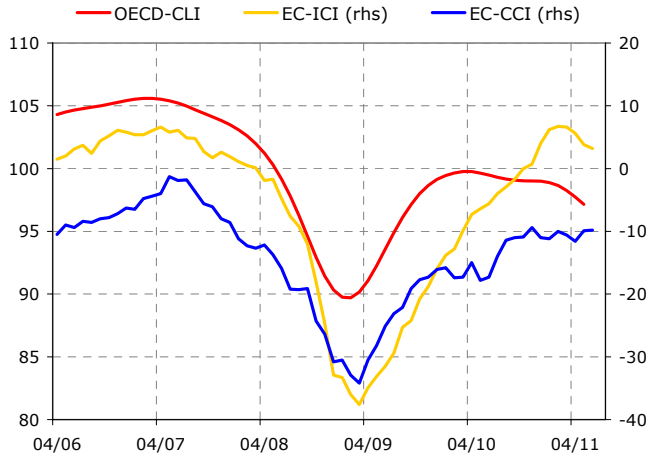
The global economic outlook did not improve in July compared to June. The PMI (Purchasing Managers' Index) in industry continued to fall in all the countries and regions under review in July (except the USA, where a three-month-long decline turned into growth), thus confirming the generally negative outlook for H2. The overall outlook for H2 in the USA improved not only according to the PMI, but also according to the Leading Economic Index (Conference Board). However, consumer confidence declined. In addition to the PMI, decreases were recorded by other leading indicators describing the overall situation and the situation in industry. Economic growth is likely to be more favourable in Germany than in the euro area as a whole. Although the PMI dropped, the Ifo business climate index increased, as did the consumer confidence indices.

PMI IN MANUFACTURING



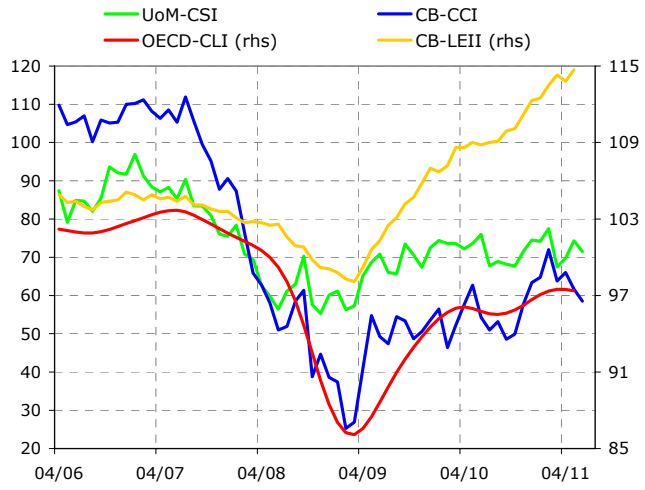
	EA	US	DE	CN
4/11	58.0	60.4	62.0	52.9
5/11	54.6	53.5	57.7	52.0
6/11	52.0	55.3	54.6	50.9

EURO AREA



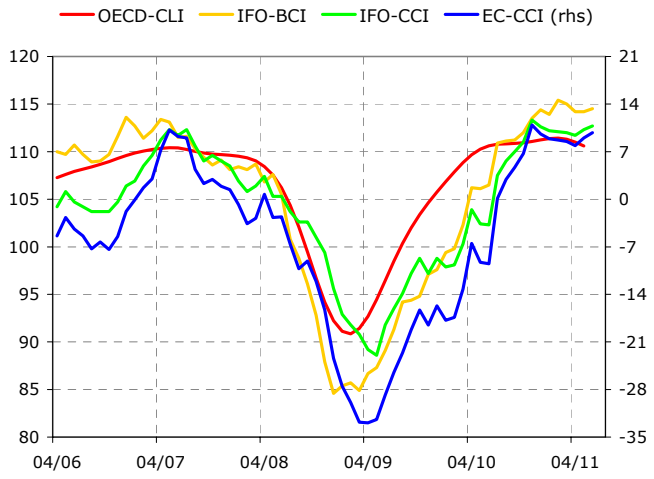
	OECD-CLI	EC-ICI	EC-CCI
4/11	97.7	5.6	-11.6
5/11	97.2	3.8	-9.9
6/11		3.2	-9.8

USA



	OECD-CLI	CB-LEII	UoM-CSI	CB-CCI
4/11	97.5	113.8	69.8	66.0
5/11	97.4	114.7	74.3	61.7
6/11			71.5	58.5

GERMANY



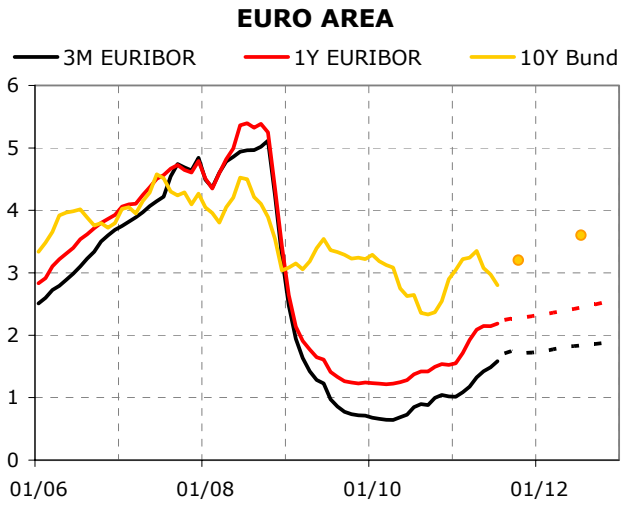
	OECD-CLI	IFO-BCI	IFO-CCI	EC-CCI
4/11	111.0	114.2	111.7	7.9
5/11	110.6	114.2	112.3	9.0
6/11		114.5	112.7	9.8

Note: OECD-CLI stands for OECD Composite Leading Indicator, EC-ICI (right-hand scale) for European Commission Industrial Confidence Indicator, EC-CCI (right-hand scale) for EC Consumer Confidence Indicator, CB-LEII for Conference Board Leading Economic Indicator Index, CB-CCI for CB Consumer Confidence Index, UoM-CSI for University of Michigan Consumer Sentiment Index, IFO-BCI for Institute for Economic Research – Business Climate Index, and IFO-CCI for IFO Consumer Confidence Index. [Cut-off date for data: 14 July 2011]

Source: CNB calculation using OECD, EC, IFO and UoM databases.

IV.1 Outlook for short-term and long-term interest rates: Euro area

Although the key interest rate for refinancing operations was increased to 1.5% at the ECB's July meeting, the slow economic growth and the debt crises in several euro area countries are likely to foster a slower monetary policy tightening. Three-month and one-year EURIBOR rates were flat or rose only slightly in June and July. By contrast, the ten-year German government bond yield fell by around 0.3 p.p. in July owing to the debt crisis in Greece and the signs of problems in some other euro area countries, which resulted in increased demand for German bonds. The outlook based on implied rates compiled as of 11 July predicts a gradual rise in euro rates to 1.9% for 3M rates and 2.6% for 1Y rates. According to the CF analysts, the growth in the ten-year German government bond yield will be steeper, reaching 3.6% in July 2012.



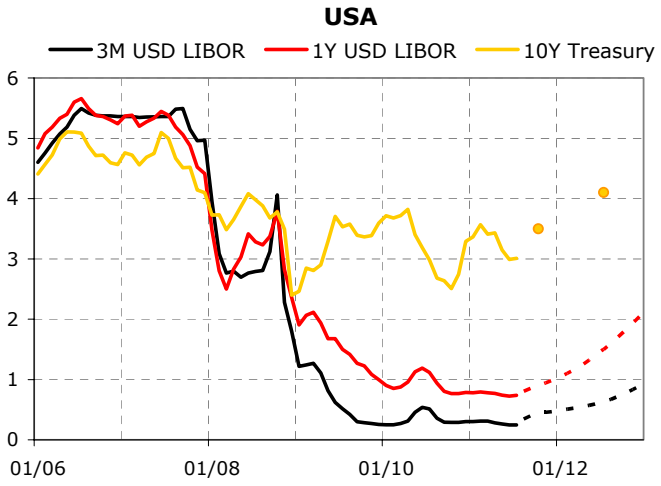
	06/11	07/11	12/11	06/12	12/12	12/13
3M EURIBOR	1.49	1.58	1.72	1.83	1.90	2.28
1Y EURIBOR	2.14	2.19	2.31	2.42	2.58	3.23
	06/11	**07/11**	**10/11**	**07/12**		
10Y Bund	2.98	2.80	3.20	3.60		

Note: Forecast for EURIBOR rates is based on rates implied by interbank market yield curve (FRA rates are used from 4M to 15M and adjusted IRS rates for longer horizon). Forecast for German government bond yield (10Y Bund) is derived from CF forecast. Dashed lines and points represent outlook. [Cut-off date for data: 14 July 2011]

Sources: Thomson Reuters (Datastream), Bloomberg, CNB calculations.

IV.2 Outlook for short-term and long-term interest rates: USA

The second round of quantitative easing, during which the Fed had pumped an additional USD 600 million into the economy while maintaining key interest rates at a record low level (0–0.25%) ended in the USA at the end of June. CF expects rates to remain at this level at least until the end of June 2012. Three-month and one-year money market rates were flat at 0.25% and 0.73% respectively in June and the first half of July, but are expected to surge by 0.65 and 1.31 p.p. respectively at the one-year horizon. According to CF, ten-year government bond yields should also rise to 4.1% in July 2012. Moreover, the US legislature must increase the current public debt ceiling by 2 August to prevent default and a forced reduction in government expenditure.



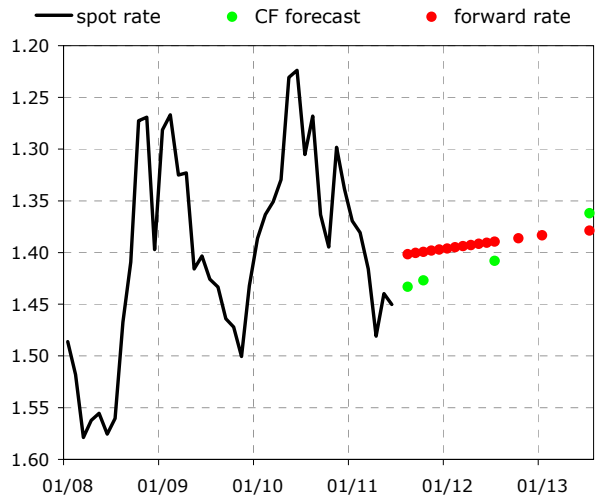
	06/11	07/11	12/11	06/12	12/12	12/13
3M USD LIBOR	0.25	0.25	0.47	0.60	0.89	1.75
1Y USD LIBOR	0.73	0.74	0.99	1.41	2.05	3.63
	06/11	**07/11**	**10/11**	**07/12**		
10Y Treasury	2.99	3.01	3.50	4.10		

Note: Forecast for 3M and 1Y USD LIBOR rates is based on rates implied by London interbank market yield curve (USD LIBOR rates are used up to 3M, 3M FRA rates up to 15M, and adjusted IRS rates for longer horizon). Forecast for US government bond yield (10Y Treasury) is derived from CF forecast. Dashed lines and points represent outlook. [Cut-off date for data: 14 July 2011]

Sources: Thomson Reuters (Datastream), Bloomberg, CNB calculations.

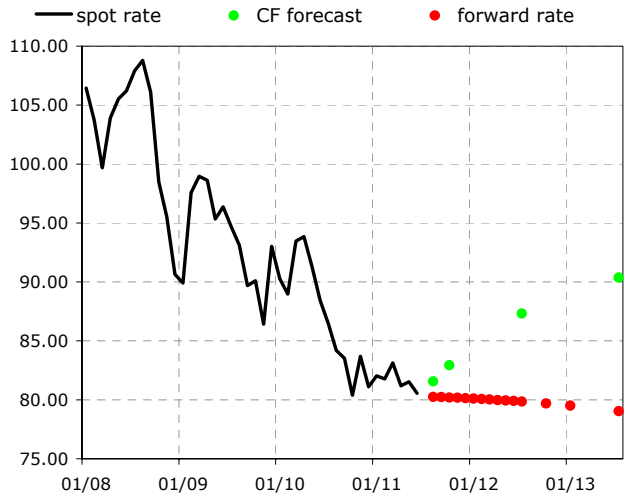
Last month, the exchange rates of world currencies continued to be affected by uncertainty relating to the euro area debt crisis. The approval of Greek austerity measures brought a short-term improvement, but continuing disagreements within the EU and further downgrades of some countries' ratings increased the tension again in July. Italy came under pressure, with its credit spread rising to the highest level since the establishment of the euro area. On the other hand, as expected, the ECB raised interest rates while remaining "cautious", which implies a further rate hike by the end of the year. However, risks are also apparent in the USA, so the new outlook was unchanged from the previous month. The rising uncertainty is affecting the Swiss franc; its expected path has shifted upwards again towards a stronger franc. On the other hand, high inflation and only a slow recovery in the UK, accompanied by low rates, led to a revision of the outlook for the USD/GBP exchange rate towards a stronger dollar. The forecast for the dollar-yen exchange rate was unchanged from June.

US$ per Euro



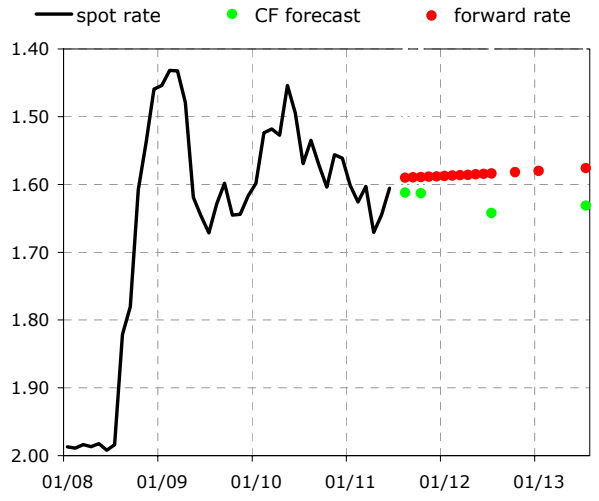
	11/7/11	08/11	10/11	07/12	07/13
spot rate	1.403				
CF forecast		1.433	1.427	1.408	1.362
forward rate		1.402	1.399	1.389	1.379

Yen per US$



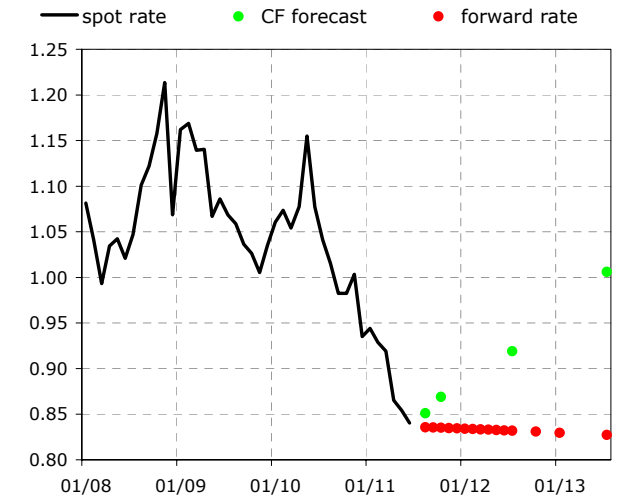
	11/7/11	08/11	10/11	07/12	07/13
spot rate	80.26				
CF forecast		81.57	82.93	87.32	90.36
forward rate		80.24	80.20	79.85	79.04

US$ per UK£



	11/7/11	08/11	10/11	07/12	07/13
spot rate	1.591				
CF forecast		1.612	1.613	1.642	1.631
forward rate		1.590	1.589	1.584	1.576

Swfr per US$



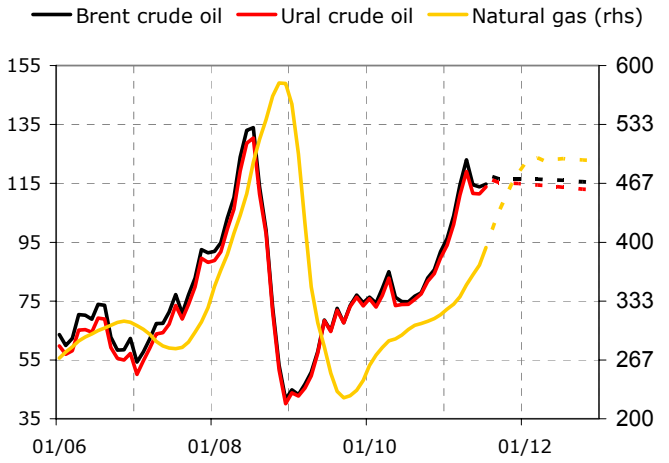
	11/7/11	08/11	10/11	07/12	07/13
spot rate	0.836				
CF forecast		0.851	0.869	0.919	1.006
forward rate		0.836	0.835	0.832	0.827

Note: Increase in currency pair represents appreciation of US dollar; data as of the last day of the 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) possibilities for securing future exchange rate. [Cut-off date for data: 14 July 2011] Source: CNB calculation using Bloomberg and Consensus Forecasts databases.

VI.1 Oil and natural gas

The Brent oil price fell sharply from USD 120 to USD 105 a barrel in the second half of June. This drop was initially due mainly to concerns about a slowdown of the global economy and to the statement by Saudi Arabia that it would unilaterally increase oil supplies. The fall in oil prices subsequently accelerated when the IEA announced it would release part of its strategic reserves onto the market. However, market sentiment improved at the end of June and the Brent oil price responded to a depreciating dollar by rising quickly. This trend continued into the first half of July, despite a rapidly appreciating dollar. The Brent oil price was just below USD 120 a barrel in mid-July. The outlook therefore remains virtually unchanged from the previous forecast. Markets expect only a slight decline in prices going forward. Oil and oil product inventories, which have been falling since mid-2010, have come to the forefront of interest. In the USA they are just above their five-year average, but in Europe they were well below average in April.

OUTLOOK FOR PRICES OF OIL AND NATURAL GAS



	07/11	12/11	06/12	12/12	12/13
Brent crude oil	114.7	116.6	116.1	115.2	112.1
Ural crude oil	113.8	115.0	113.9	112.5	108.8
Natural gas	394.1	478.1	494.1	492.0	477.7

Note: Oil prices in USD/barrel are taken from listings on London-based ICE Futures Europe international exchange. Prices of Russian natural gas at border with Germany in USD/1000 cubic m are calculated using IMF data. Future oil prices are derived from oil futures. Dashed line represents outlook. [Cut-off date for data: 11 July 2011].

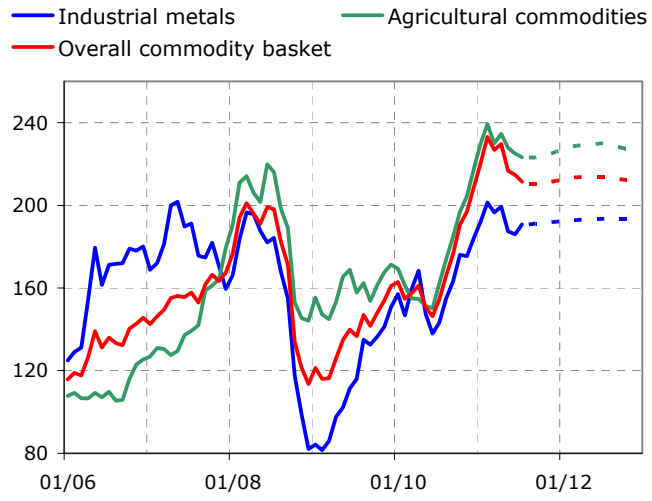
Source: Bloomberg, IMF, CNB calculations.

VI.2 Other commodities

The non-energy commodity price index continued to decline in June, mainly because of falling food commodity prices. By contrast, the industrial metal price index edged up. The new forecasts moved in line with current prices, but their evolution over time remained virtually unchanged. Food prices are expected to rise gradually until 2012 Q3, while industrial metal prices should be broadly flat.

The developments within the individual commodity categories were mixed. For instance, wheat prices fell by 25% in June but their outlook is rising strongly, while the fall in maize prices was "only" 17% but is expected to continue. By contrast, sugar prices rose strongly but their outlook is declining. Meat prices (both pork and beef) remain close to historical highs. Cotton prices fell sharply. Aluminium prices decreased but the forecast remains upward; copper prices are showing the opposite trend.

OUTLOOK FOR OTHER COMMODITY PRICES



	07/11	12/11	06/12	12/12	12/13
Industrial metals	190.8	192.2	193.3	193.5	191.7
Agricultural commodities	223.3	226.0	229.9	227.2	220.8
Overall commodity basket	211.4	211.9	213.9	212.4	208.8

Note: Chart shows indices, year 2005 = 100. Dashed line represents outlook. [Cut-off date for data: 11 July 2011].

Source: Bloomberg, outlooks based on futures.

ASSESSMENT OF THE FORECASTS MONITORED IN THE GEO[1]

The forecasts for GDP growth and CPI inflation in 2010 were underestimated compared to reality. The monitored institutions thus expected a slower recovery after the economic contraction in 2009. The greatest uncertainty was recorded by the forecasts for GDP growth in Germany. By contrast, the outlooks for foreign interest rates in the assessed periods were higher compared to reality. This was especially characteristic of the outlooks for one year ahead. In line with the lower-than-expected interest rates in the USA, the outlooks for the exchange rate of the dollar against the monitored currencies were also overestimated (expectations of a stronger dollar). Owing to the expected stronger dollar and weaker economic recovery, the outlooks for Brent crude oil erred on the downside, so a lower oil price was expected in the assessed period compared to reality.

Introduction

The aim of this article is to assess the accuracy of the forecasts of the individual variables regularly monitored in the Global Economic Outlook (GEO) and to provide readers with feedback on how the individual monitored institutions or outlooks constructed on the basis of futures reflected the *ex post* known reality.

This assessment will be conducted annually for the previous calendar year in the case of the forecasts for GDP growth and CPI inflation (fixed-event forecasts) and for the last 12 known months in the case of the outlooks for foreign interest rates, exchange rates against the dollar (USD) and commodity prices (rolling-event forecasts).

In 2011, therefore, the outlooks for GDP growth and CPI inflation for 2010 are assessed. The outlooks for interest rates, the outlooks for the exchange rate of the dollar against major currencies and the outlook for prices of Brent crude oil three months ahead are assessed for the period from April 2010 to March 2011, and the outlooks one year ahead are assessed for the period from July 2009 to June 2010. As the number of issues of the GEO increases, however, a longer period of time will gradually be taken into account.[2] The record date for the known reality in this analysis is 30 June 2011.

Owing to short time series assessed, the analysis uses simple descriptive methods. The forecast error e_t is calculated as the difference between the ex post known actual value a_t and the corresponding forecast f_t:

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

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

The mean forecast error (MFE), i.e. the mean of the individual forecast errors over a certain period of time, is used as an aggregate indicator of the accuracy of the forecast.

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

[2] A comprehensive assessment of the accuracy of the outlooks for the economic situation abroad, which in the CNB's forecasting framework are taken from Consensus Forecasts, is available for the period from 1994 to 2009 in Novotný and Raková (2010). However, the set of forecasted variables and individual institutions is slightly different from the monitored variables and institutions covered in the monthly GEO.

The analysis is structured as follows. Section 1 assesses the forecasts for GDP growth and CPI inflation for the individual monitored foreign economies. Section 2 goes on to assess the accuracy of the forecasts of foreign interest rates, and section 3 assesses the accuracy of the forecasts for the exchange rate of the dollar against major currencies. Section 4 closes the analysis by assessing the Brent crude oil price forecast.

1 Assessment of the accuracy of the GDP growth and CPI inflation forecasts for 2010

The GEO regularly monitors GDP growth and CPI inflation in four countries/territories: the euro area, the USA, Germany and China. The forecasts for all the above territories are taken from Consensus Forecasts (CF), the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD) and the European Commission (EC). The forecasts of these organisations are complemented with the European Central Bank's (ECB) forecast for the euro area, the Fed's forecast for the USA, the Deutsche Bundesbank's (DBB) forecast for Germany and the Bank of Finland Institute for Economies in Transition's (BOFIT) forecast for China.

These institutions differ in the frequency and date of publication of their forecasts; the forecast updates range from monthly and quarterly through to half-yearly. For presentational reasons, only the half-yearly forecasts (i.e. the spring forecasts and the autumn forecasts) were assessed.[3]

The assessment of the spring and autumn GDP growth forecasts for 2010 for each country is shown in Figures 1–4. The first assessed forecast for 2010 was published in spring 2009 and the last one in autumn 2010. The MFE for all four forecasts for the given year is shown after the vertical dotted line in the chart.

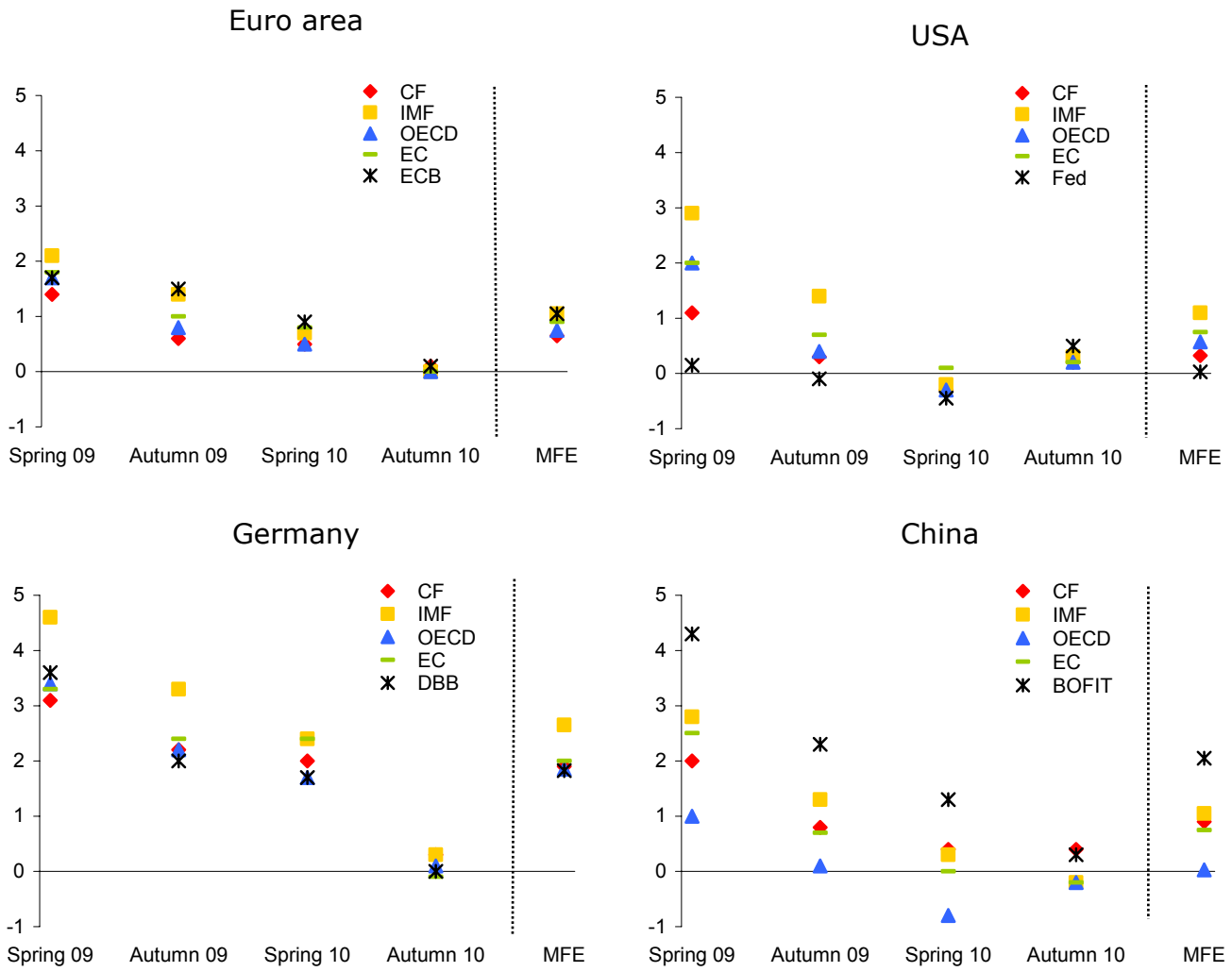
Excluding the ECB, Fed, DBB and BOFIT forecasts, each of which is produced for a specific country, the lowest MFE for the four countries as a whole was recorded by the OECD (0.8), followed by CF (0.9), the Commission (1.1) and the IMF (1.5). The greatest variability (as measured by the standard deviation), and hence the greatest uncertainty, was recorded by the forecasts for Germany, followed by those for China and the USA, while the smallest differences between individual institutions were found in the economic forecasts for the euro area.

As the forecast horizon became shorter, the errors of the individual forecasts for the euro area, Germany and China gradually became smaller as new information became available. The exception to this was the autumn 2010 forecast for the USA, which was less accurate than the previous spring 2010 forecast. At the end of 2010, the monitored institutions were thus more pessimistic about GDP growth in the USA, but in the end that pessimism was not confirmed by the actual figures.

The forecast errors for all the countries as a whole were mostly positive, which means that the monitored institutions had expected lower growth for 2010 compared to reality. The forecasters were thus strongly influenced by the 2009 crisis, which had surprised them in the opposite direction (see Novotný and Raková, 2010), and only gradually accepted a faster recovery in 2010.

[3] CF, the IMF and the Fed publish their forecasts in April and October, the OECD and the Commission in May and November, the ECB and the BOFIT in March and September, and the DBB in June and December.

Figures 1–4 Forecast errors for GDP growth for 2010

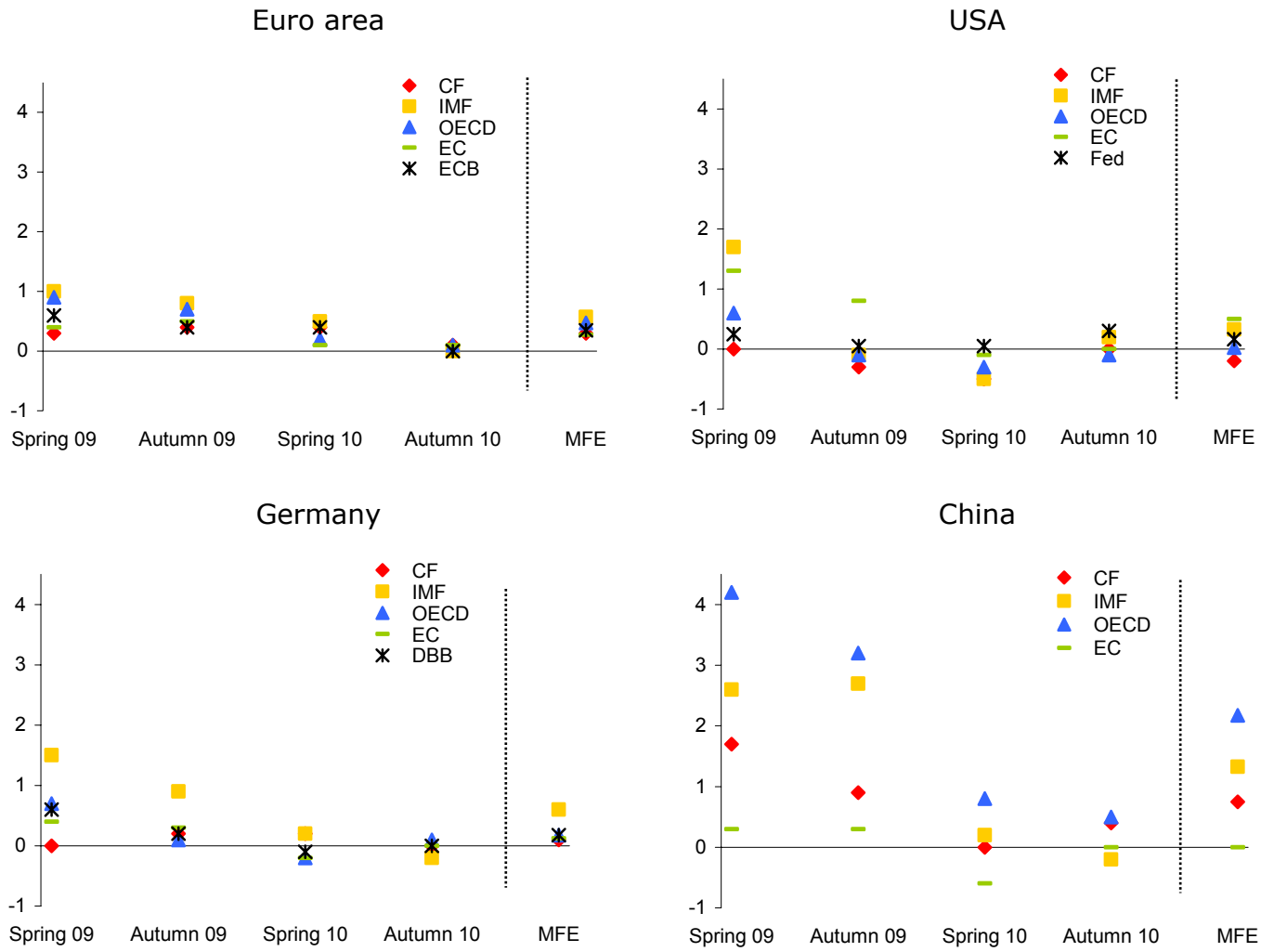


Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, EC – European Commission, ECB – European Central Bank, Fed – Federal Reserve System of the USA, DBB – Deutsche Bundesbank, BOFIT – Bank of Finland Institute for Economies in Transition. The source of the historical figures for 2010 is the June 2011 issue of CF. MFE is the mean forecast error for the given year.

As regards individual countries, the most accurate GDP growth forecasts for 2010 were compiled by CF, while the forecasts of the ECB and the IMF were the worst performers. The best forecasts for the USA were made by the Fed, which was also the most optimistic about US economic growth. The worst forecasts for the US economy were provided by the IMF. The smallest MFE for Germany was recorded by the Deutsche Bundesbank, followed closely by CF and the OECD. By contrast, the worst forecast was again that of the IMF. The best-performing forecast for China was that of the OECD, which even recorded a zero forecast error on average. The worst results were achieved by the BOFIT.

Figures 5–8 assess the CPI inflation forecasts for the given territories for 2010.

Figures 5–8 Forecast errors for consumer prices for 2010



Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, EC – European Commission, ECB – European Central Bank, Fed – Federal Reserve System of the USA, DBB – Deutsche Bundesbank, BOFIT – Bank of Finland Institute for Economies in Transition. The source of the historical figures for 2010 is the June 2011 issue of CF. MFE is the mean forecast error for the given year.

Excluding the ECB, Fed and DBB forecasts, the lowest MFEs for the countries as a whole were recorded by CF and the Commission (0.2), while the highest were recorded by the IMF and the OECD (0.7). The largest variability (as measured by the standard deviation), and hence the greatest uncertainty, was recorded by the CPI inflation forecasts for China, followed by those for the USA and Germany, while the individual forecasts for the euro area showed the lowest variability.

As in the case of the GDP growth forecasts, the forecast error shrank as the forecast horizon became shorter owing to the availability of new information. This applied without exception to the forecasts for the euro area and Germany. The spring 2010 CPI inflation forecast for the USA was less accurate than the autumn 2009 forecast, owing to temporarily higher expected inflation in spring 2010 compared to reality. Nevertheless, in most cases the monitored institutions expected lower growth in consumer prices in 2010 compared to reality, in line with the expected slower economic recovery (see Figures 1–4).

As regards the individual countries, the most accurate CPI inflation forecasts for the euro area in 2010 were compiled by CF and the Commission, while the IMF forecast had the highest MFE for CPI inflation. The OECD had the best forecast for the USA, while the Commission had the worst. Inflation in Germany was best forecasted by CF and the Commission and worst forecasted by the IMF. The CPI inflation forecasts of only four institutions are available for China, since the BOFIT only forecasts economic growth in China. Of the remaining institutions, the Commission was the best performer and the OECD was the worst.

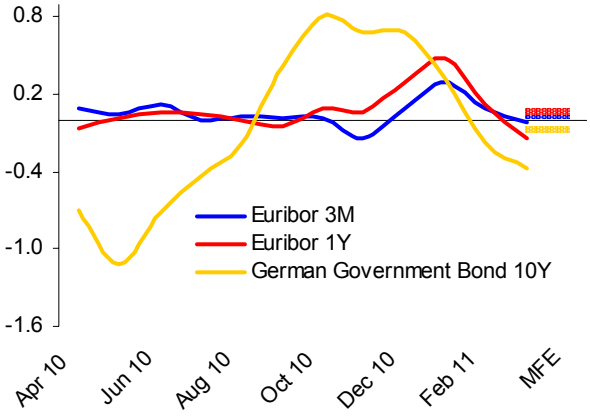
2 Assessment of the accuracy of the forecasts for foreign interest rates

The GEO also regularly monitors the outlooks for short-term interest rates, which are derived from futures, and the outlooks for long-term (ten-year) yields, which are taken from CF. The interest rate outlooks are monitored for the euro area and the USA. Figures 9 and 10 show the accuracy of the interest rate outlooks for the euro area for three months and one year ahead respectively. Figures 11 and 12 show the accuracy of the outlooks for interest rates in the USA.

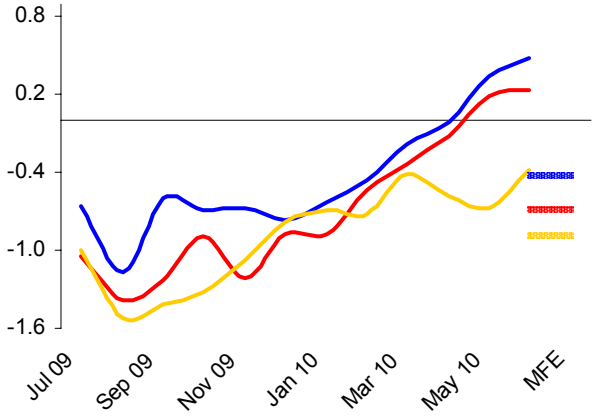
To ensure that the results were as up-to-date as possible, the three-month outlooks for interest rates were assessed for the period from April 2010 to March 2011, while the one-year outlooks for interest rates were assessed for the twelve months from July 2009 to June 2010.

Figures 9–10 Forecast errors for interest rates for the euro area

Three-month outlooks



One-year outlooks

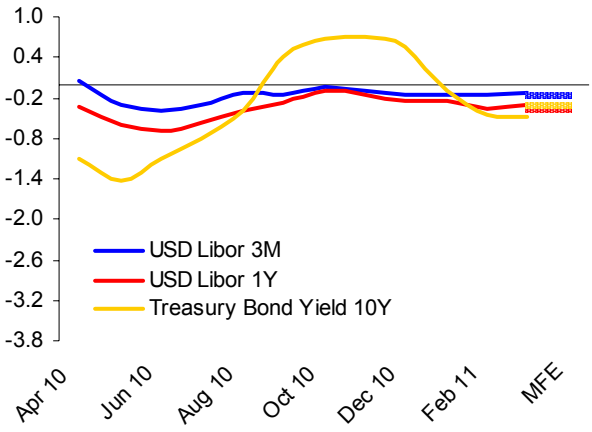


The smallest MFEs for both three months and one year ahead were recorded by the market outlooks for the 3M EURIBOR. The outlooks for the EURIBOR three months ahead were relatively close to the actual figures, with the exception of January 2011, when they undershot reality quite significantly. The three-month outlooks for the German long-term bond yield were higher than reality until August 2010 and again from February 2011 onwards (see Figure 9).

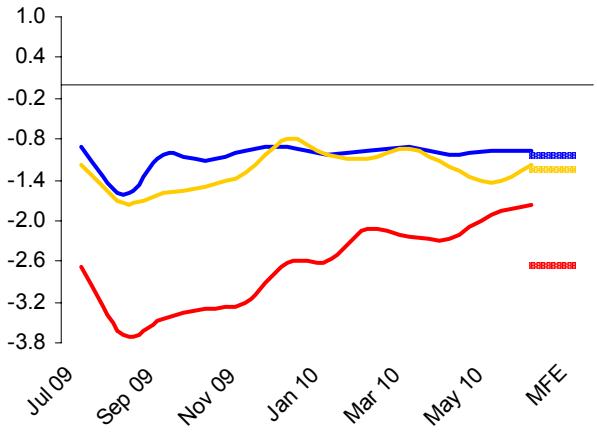
The one-year outlooks for euro rates were higher than reality for most of the period under review. The 3M EURIBOR and the 1Y PRIBOR showed a reversal in May 2010.

Figures 11–12 Forecast errors for interest rates for the USA

Three-month outlooks



One-year outlooks



The outlooks for interest rates for the USA recorded higher errors on average than those for the euro area. The smallest MFEs were again recorded by three-month rates. On average, higher rates were expected in the period under review by comparison with the subsequent reality, especially in the case of the one-year outlooks (see Figure 12).

The deviations of the three-month outlooks for ten-year government bond yields were almost identical for the USA and the euro area. The one-year outlooks were identical only until December 2009. Subsequently, the errors in the one-year outlooks for US long-term yields were increasingly higher than reality, while the outlooks for euro long-term yields were closer to reality.

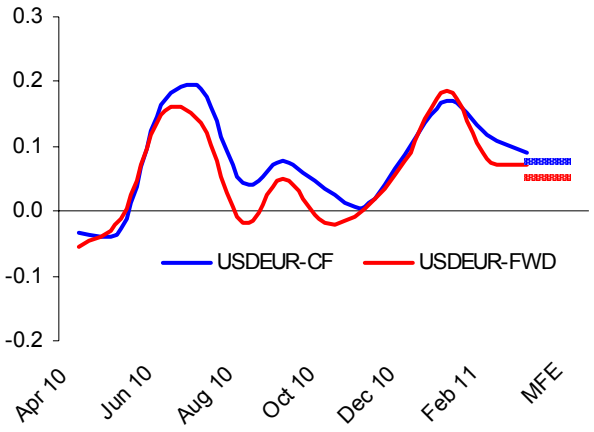
3 Assessment of the accuracy of the forecasts for the dollar exchange rate

The GEO provides regular outlooks for the exchange rate of the US dollar against four currencies – the euro (EUR), the Japanese yen (JPY), the British pound (GBP) and the Swiss franc (CHF) – based on CF forecasts as well as outlooks derived from futures.

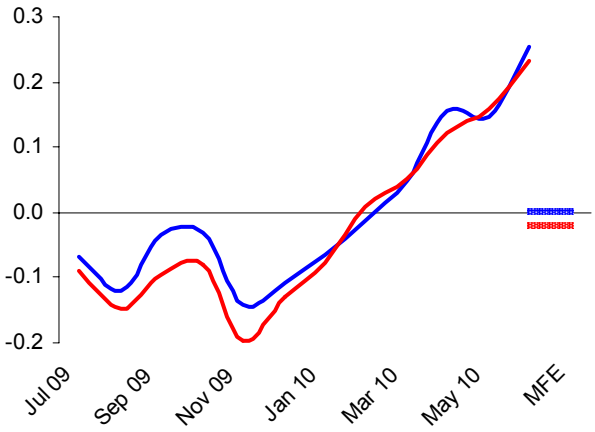
Except for the one-year outlooks for the USD/EUR and USD/GBP exchange rates, the futures-based outlooks recorded smaller MFEs than the CF forecasts.

Figures 13–14 Forecast errors for the USD/EUR exchange rate

Three-month outlooks



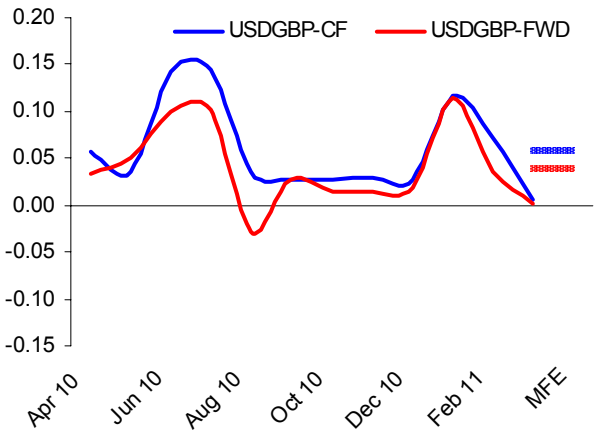
One-year outlooks



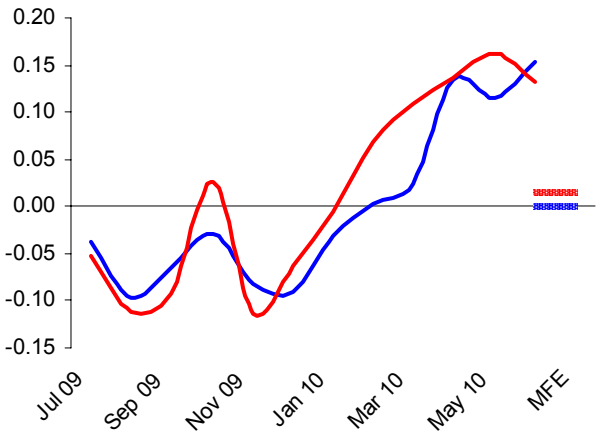
The three-month outlooks for the USD/EUR exchange rate predicted a stronger dollar on average compared to reality. The expectations of a strong dollar, which failed to materialise in the end, were the highest in July 2010 and January 2011. The one-year outlooks recorded a smaller MFE; in the case of CF the deviation from reality was in fact zero. However, the deviations from reality changed over time. A weaker dollar by comparison with reality was expected until January 2010 and from then onwards a stronger dollar was expected, with the deviation from reality increasing over time.

Figures 15–16 Forecast errors for the USD/GBP exchange rate

Three-month outlooks



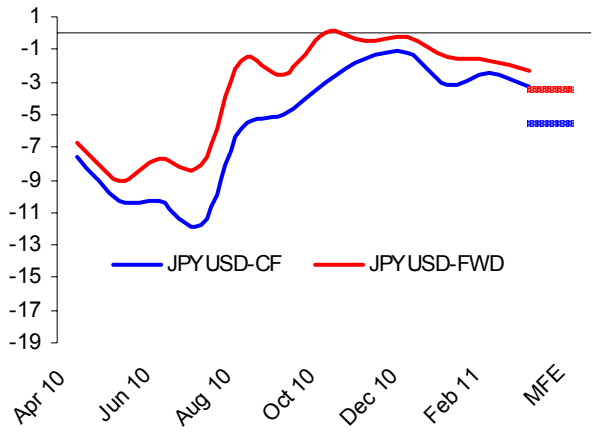
One-year outlooks



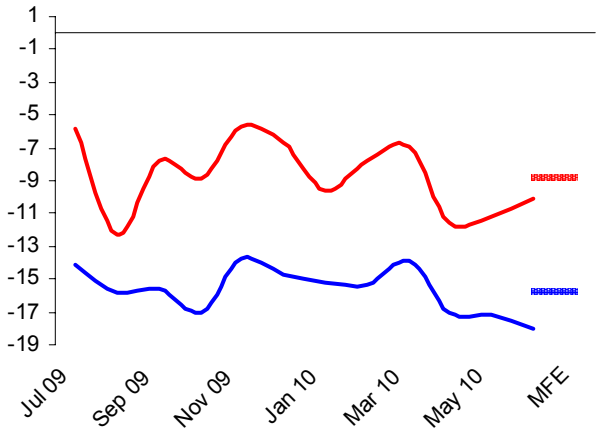
The deviations of the outlooks of the exchange rate of the dollar against the pound were fairly similar to those in the case of the dollar-euro exchange rate. The outlooks for three months ahead assumed a stronger dollar compared to reality. The deviations of the outlooks for one year ahead gradually increased from February 2010 onwards, towards an expected stronger dollar.

Figures 17–18 Forecast errors for the JPY/USD exchange rate

Three-month outlooks



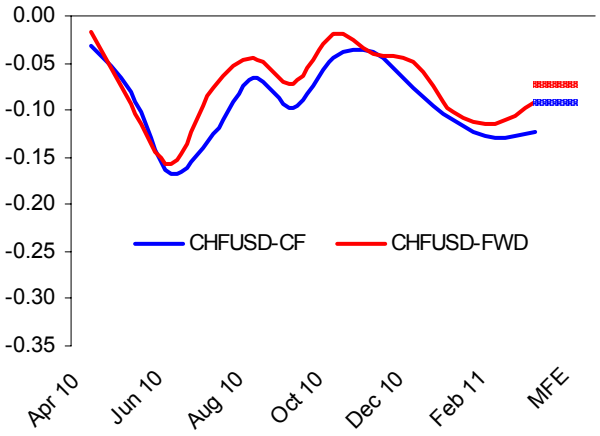
One-year outlooks



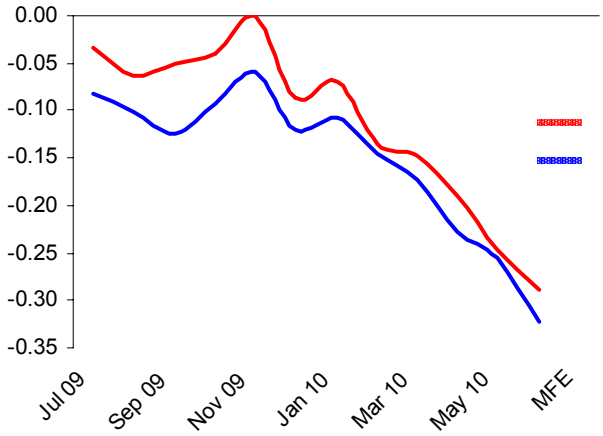
The situation was clearer in the case of the outlooks for the exchange rate of the dollar against the yen. A stronger dollar compared to reality was expected on average at both forecasting horizons. Smaller deviations from reality were recorded for the futures-based outlook.

Figures 19–20 Forecast errors for the CHF/USD exchange rate

Three-month outlooks



One-year outlooks



Similarly, a stronger dollar compared to reality was expected against the Swiss franc at both forecasting horizons. Moreover, as in the case of the dollar-euro and dollar-pound exchange rates, the deviation of the one-year outlooks gradually increased from February 2010 onwards.

The expectation of a stronger dollar compared to reality seems to have been consistent with the higher-than-reality interest rates in the USA. The one-year outlooks for interest yields in the USA started to deviate from reality in January 2010, while the outlooks for euro yields were closer to reality. The expectations of a stronger dollar started at the same time, with the deviation increasing over time.

Nevertheless, this relationship is not in line with the condition of uncovered interest rate parity (UIP), which says that the currency with the higher interest return should depreciate to balance out the total return on investment in the two currencies. In line

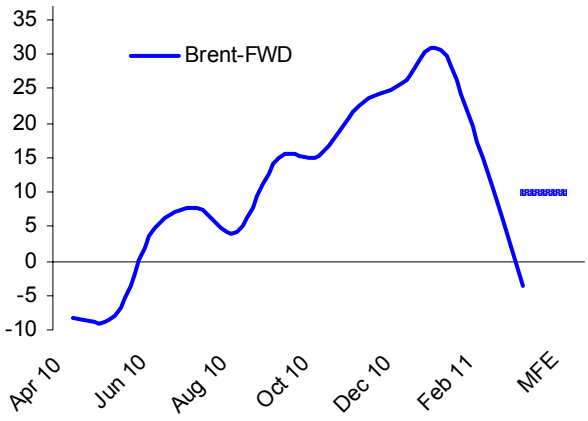
with our finding, however, Hauner, Lee and Takizawa (2010), for example, prove on the basis of an empirical analysis of the CF interest rate and exchange rate forecasts that UIP is not a very significant factor for explaining exchange rate forecasts.

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

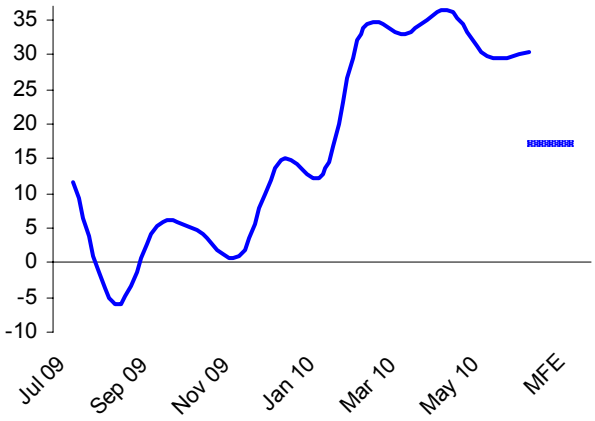
The outlooks for the Brent oil price are derived from futures. These futures predicted a lower oil price compared to reality at both the three-month and one-year horizons. This was in line with the lower expected economic recovery in the monitored economies and with the stronger expected dollar exchange rate, which, however, failed to materialise.[4]

Figures 21–22 Forecast errors for the Brent oil price (USD per barrel)

Three-month outlooks



One-year outlooks



In the case of the one-year outlooks for the Brent oil price, the deviation of the forecast from reality increased from approximately the same period as in the case of the deviations of the one-year outlooks for the US dollar exchange rate.

Conclusion

The GDP growth and CPI inflation forecasts for 2010 undershot reality. The monitored institutions were cautious in assessing the speed of economic recovery and related growth in consumer prices following the 2009 crisis, which surprised them with a larger-than-expected contraction. The most accurate GDP growth predictions were published by CF (the euro area), the Fed (the USA), DBB (Germany) and the OECD (China). Consumer price inflation was best predicted by the European Commission (the euro area, Germany and China), CF (the euro area and Germany) and the OECD (the USA). By contrast, the largest forecast errors were most frequently recorded by the IMF for both GDP growth and consumer price inflation.

As regards the interest rate outlook, larger forecast errors were recorded for the USA than for the euro area. Higher rates compared to reality were expected, especially in the case of the one-year outlooks.

[4] The observed inverse relationship between the US dollar exchange rate and commodity prices was analysed, for example, in the *Focus* section of the February 2011 Global Economic Outlook.

In line with the expected higher rates in the USA compared to reality, especially at the one-year horizon, a stronger dollar was expected vis-à-vis all the monitored currencies. The deviations of the forecasts from reality increased above all from the start of 2010 onwards in the case of the one-year outlooks. The errors of one-year forecasts for ten-year yields on German and US bonds started to diverge in the same period. The deviation for the USA increased towards higher expected yields compared to reality.

With the exception of the one-year outlooks for the USD/EUR and USD/GBP exchange rates, the forward exchange rate outlooks were better on average than the CF forecasts in the monitored periods.

The forecast errors for the price of Brent crude oil were in line with those for the other monitored variables. Lower Brent oil prices compared to reality were expected as a result of a weaker expected economic recovery in 2010 and a stronger expected US dollar exchange rate.

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BOFIT	Bank of Finland Institute for Economies in Transition
CB-CCI	Conference Board Consumer Confidence Index
CB-LEII	Conference Board Leading Economic Indicator Index
CBOT	Chicago Board of Trade
CF	Consensus Forecasts
CN	China
CNB	Czech National Bank
DBB	Deutsche Bundesbank
DE	Germany
EA	euro area
EC	European Commission
ECB	European Central Bank
EC-CCI	European Commission Consumer Confidence Indicator
EC-ICI	European Commission Industrial Confidence Indicator
EIU	The Economist Intelligence Unit database
EU	European Union
EUR	euro
EURIBOR	Euro Interbank Offered Rate
Fed	Federal Reserve System (the US central bank)
FRA	forward rate agreement
GBP	pound sterling
GDP	gross domestic product
CHF	Swiss franc
IFO	Institute for Economic Research
IFO-BCI	IFO – Business Climate Index
IFO-CCI	IFO – Consumer Confidence Index
IMF	International Monetary Fund
IRS	Interest rate swap
JPY	Japanese yen
LIBOR	London Interbank Offered Rate
N/A	not available
OECD	Organisation for Economic Co-operation and Development
OECD-CLI	OECD Composite Leading Indicator
UoM	University of Michigan
UoM-CSI	University of Michigan Consumer Sentiment Index
US	United States
USD	US dollar

	Issue
International integration of the Chinese stock market (Jan Babecký, Luboš Komárek and Zlatuše Komárková)	2011-1
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