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Česká národní banka
2016

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GLOBAL ECONOMIC OUTLOOK - DECEMBER

Monetary Department
External Economic Relations Division

2016

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Cut-off date for data

9 December 2016

CF survey date

5 December 2016

GEO publication date

16 December 2016

Notes to charts

ECB and Fed: midpoint of the range of forecasts.

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

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

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This year's final issue of Global Economic Outlook presents the regular monthly overview of recent and expected developments in selected territories, focusing on key economic variables: inflation, GDP growth, leading indicators, interest rates, exchange rates and commodity prices. In this issue, we also focus on a major phenomenon of the day: the migration of people into Europe, and Germany in particular. In this context, we present an analysis of the effect of the increased number of refugees on the German labour market. We show, among other things, that the incoming migrants will be far from enough to cover the demand for labour in Germany and also that they will compete more with workers arriving in search of jobs in Germany from Central and Eastern European countries than with German citizens.

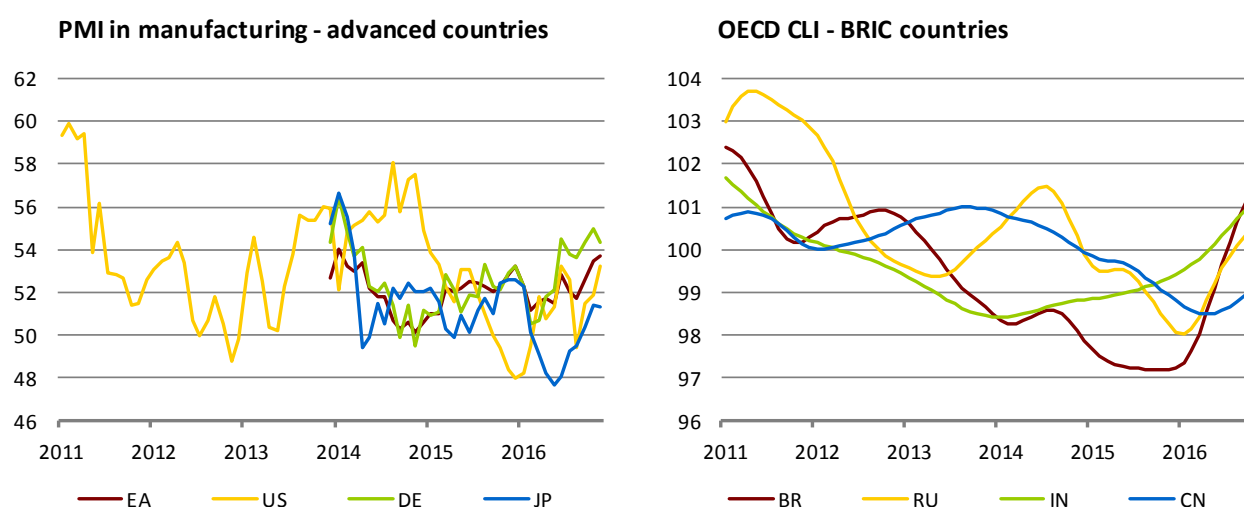
For the USA and the euro area, this year has been less favourable than last year in terms of economic performance. Nevertheless, the outlooks for 2017 suggest that the world's strongest economy will return to growth well in excess of 2%. The euro area and its best-performing part, the German economy, are expected to grow at a broadly similar pace to what we have observed this year. The good news for the global economy is that the inflation rate seems to have bottomed out and will rise with varying intensity over the outlook horizons, converging towards its notional ideal of 2% growth in the price level. Of the countries under review, Japan will be the furthest from this level. It slipped into deflation this year, but the outlooks for 2017 give even the "land of the rising sun" hope of averting the threat of deflation in 2017.

This year has also seen mixed trends in major developing economies, trends which are likely to continue. On the one hand, China and especially India are still showing robust economic growth, although the growth of the Chinese economy has been gradually weakening for several years now. The accelerating growth of the Indian economy halted this year, but the current outlooks for 2017 indicate a return to last year's levels, i.e. growth of around 7.5%. Both economies are expected to record stabilised inflation. A figure of 2% is forecasted for China, while a higher level (of around 5%) is projected for India, although this is consistent with its high pace of economic growth. The two other BRIC economies, Russia and Brazil, are and will continue to be considerably worse off. Both economies are expected to emerge next year from the recessions they have been suffering from, albeit for different reasons. In 2017, they are both expected to record economic growth slightly exceeding 1% at rates of inflation just above 5%.

The outlook for euro area interest rates remains negative for shorter maturities at the one-year horizon in response to the announced extension of the ECB's quantitative easing programme until the end of 2017, albeit with a reduced volume. The Fed's interest rates can be expected to continue rising gradually in 2017. The first increase is expected at the next meeting in December. According to CF, the dollar will appreciate with greater or lesser intensity against all the monitored currencies except the rouble and the yen, where broad stability can be expected.

The outlook for oil prices remains slightly rising at the one-year horizon. The price of oil is expected to be just below USD 60/bbl at the end of 2017. Natural gas prices based on long-term contracts normally lag behind oil prices and are therefore expected to rise slightly over the next few months after several years of decline. The non-energy commodity price index increased slightly compared to last month and can be expected to rise gradually at the one-year horizon, driven mainly by the industrial metals sub-index.

Leading indicators for countries monitored in the GEO

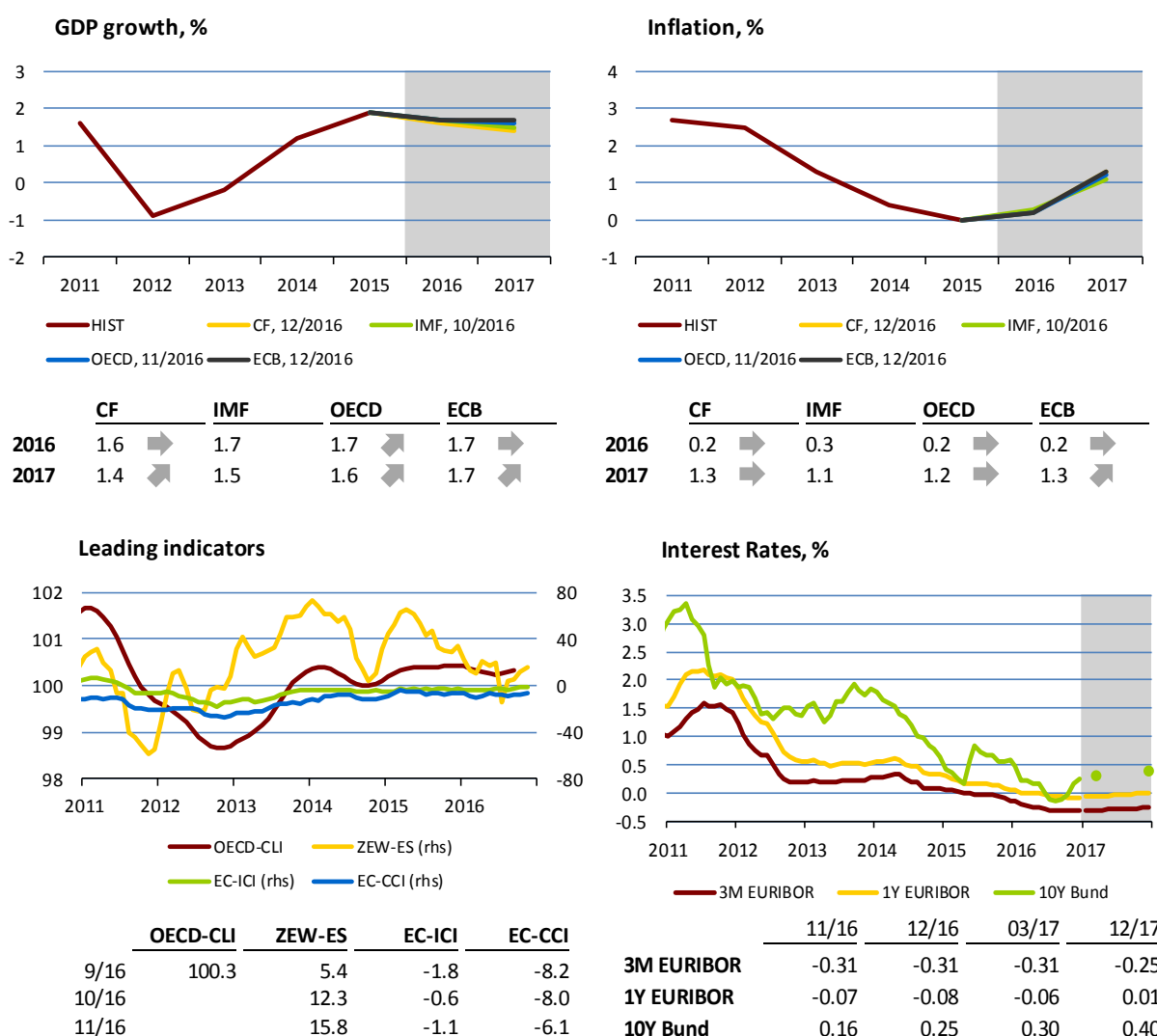


Source: Bloomberg, Datastream

II.1 Euro area

The euro area economy is maintaining stable growth. According to revised data, annual GDP growth stood at 1.7% and quarterly growth at 0.3% in Q3. Household consumption remained the driver of growth. The unemployment rate dropped to 9.8% in October, declining for the second consecutive month. Despite still subdued wage growth, the improved labour market situation was reflected in an increase in retail sales in October, with rising sales being recorded for most goods. Annual industrial production growth slowed to 1.2% in September. It can be expected to have slowed further in October. Nevertheless, leading indicators suggest a positive outlook. Both the ZEW indicator of economic sentiment and the PMI in manufacturing increased in November. The results of the purchasing managers' survey indicate stronger growth in new orders and still solid growth in output and employment. At the same time, consumer confidence is rising further. The December CF left its GDP growth outlook for 2016 at 1.6% and increased that for 2017 to 1.4%. The OECD raised its growth forecasts for both years by 0.2 pp. The ECB published the most optimistic forecast. It expects growth of 1.7% for both this year and the next.

According to preliminary data, headline inflation rose further in November, reaching 0.6%. This was due mainly to food and services prices. However, energy prices are still having an anti-inflationary effect. Core inflation stayed at 0.8%. The year-on-year decline in industrial producer prices slowed in October (to 0.4%), mainly due to prices of energy and durable goods. Expectations of a return to year-on-year growth in these prices might thus materialise at the year-end. M3 growth decreased to 4.4% in October. The ECB left interest rates unchanged at its December meeting but extended its quantitative easing programme (until the end of 2017; monthly bond purchases were reduced to EUR 60 billion). The 10Y Bund yield has been positive since October and is expected to stand at 0.4% at the one-year horizon. The outlooks for short-term rates at the one-year horizon were increased slightly again.

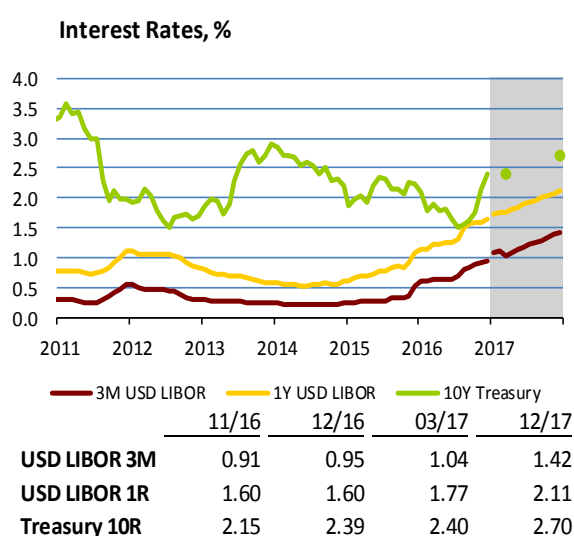
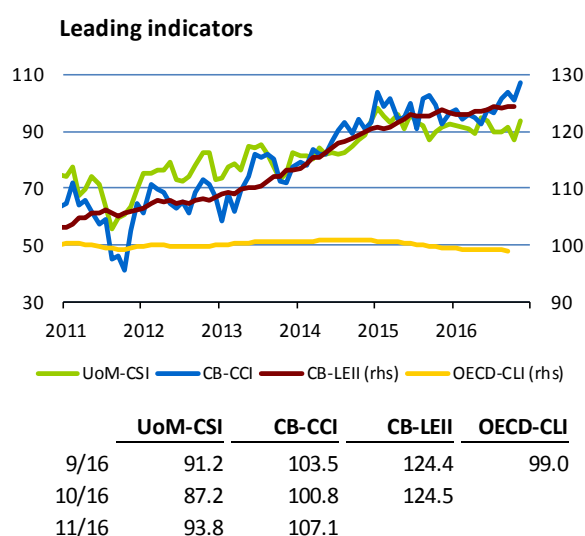
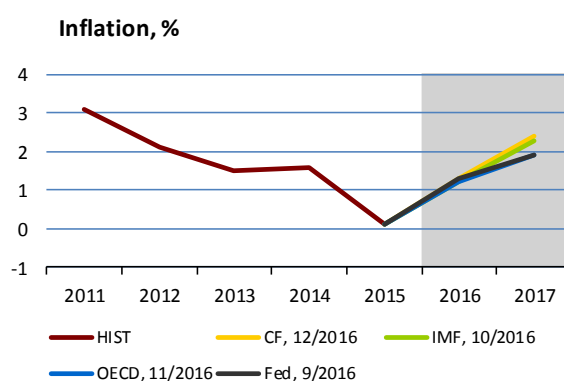
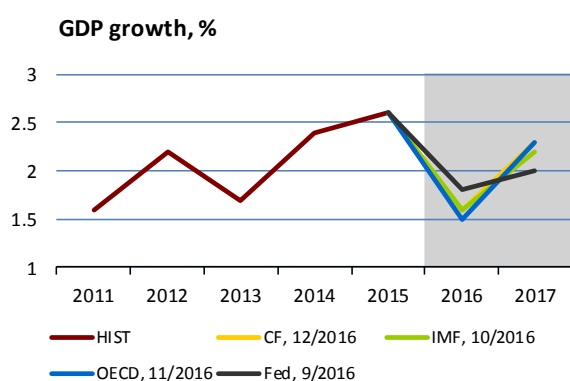


II.2 United States

Donald Trump's surprise victory generated a very negative response from financial markets over the first few days. However, after the President-elect gave a series of speeches, speculation emerged that he would launch a massive fiscal stimulus – involving, for example, higher investment expenditure or lower corporate taxes – and equity indices and bond yields rose again. The [dollar](#) appreciated against other currencies last month. Financial markets were also positively affected by figures from the real economy, which in Q3 recorded its fastest growth since 2014. The third estimate revised GDP growth upwards to 3.2% (quarter-on-quarter, annualised). Corporate investment and residential property construction were revised in the same direction. Exports rose the fastest since 2013 Q4 on the back of record-high soybean exports. The current models of the Atlanta Fed indicate economic growth of more than 3% for 2016 Q4.

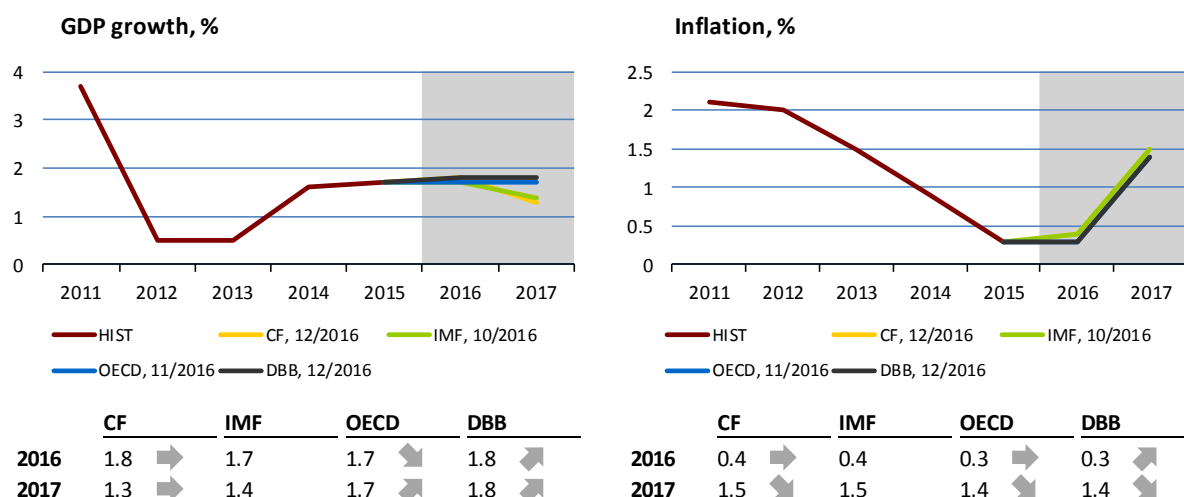
The labour market situation remains favourable. Non-farm payrolls rose by 178,000 in November and the unemployment rate dropped (to 4.6%), as did the participation rate (to 62.7%). Retail sales growth reached a two-year high in October (4.3% year on year) and the year-on-year fall in industrial production slowed further (to 0.8%). The PMI leading indicator was in the expansion band in November (53.2) and consumer confidence also increased.

The inflationary pressures in the US economy grew further. Annual headline consumer price inflation rose again in October (to 1.6%) on the back of higher fuel prices and rents. According to the latest survey, 92.3% of CF panellists expect monetary policy to be tightened at the December meeting. The CF published upward revisions for GDP and inflation for both years. The new OECD outlook was similar, with only the inflation outlook for 2017 revised downwards.



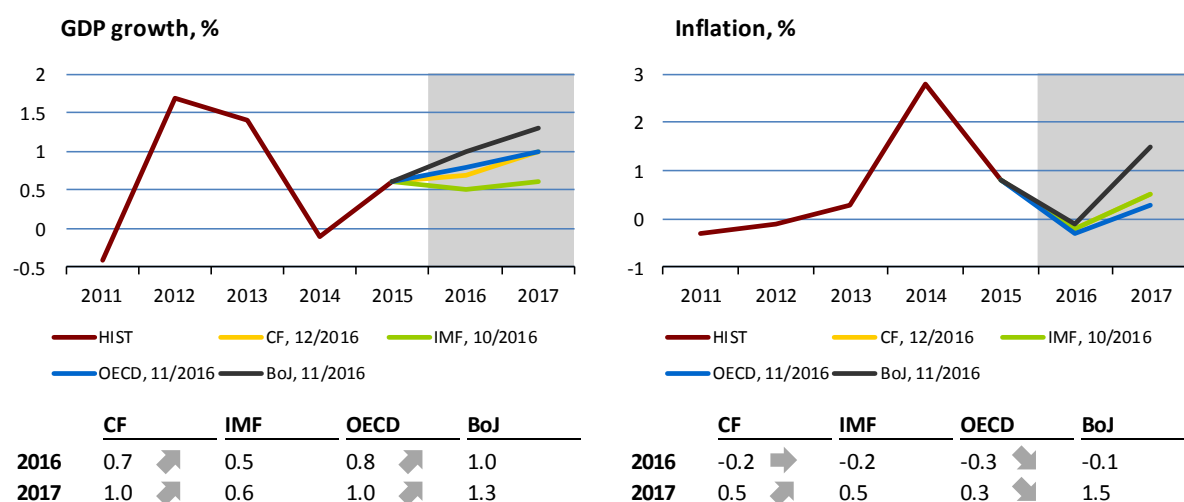
II.3 Germany

Quarterly economic growth in Germany fell from 0.4% to 0.2% in 2016 Q3, but the annual growth rate was unchanged at 1.7%. Domestic demand (especially government and household consumption) fostered growth, while negative net exports dampened it. The number of unemployed and the unemployment rate declined further in October in both month-on-month and year-on-year terms. The December CF and the Deutsche Bundesbank expect a slight recovery in economic growth in 2016 Q4. According to CF, the growth rate will reach 1.8% in 2016 as a whole and slow to 1.3% in 2017. However, the Bundesbank's new outlook expects growth of 1.8% in both years. Inflation stayed at 0.8% in November (the highest level in two years). It was dampened by a deeper decline in energy prices but supported by food prices and rents. At 1.2%, core inflation was also unchanged in October. The decline in industrial producer prices slowed to 0.4%. CF expects average inflation of 0.4 % in 2016 as a whole, increasing to 1.5% next year.



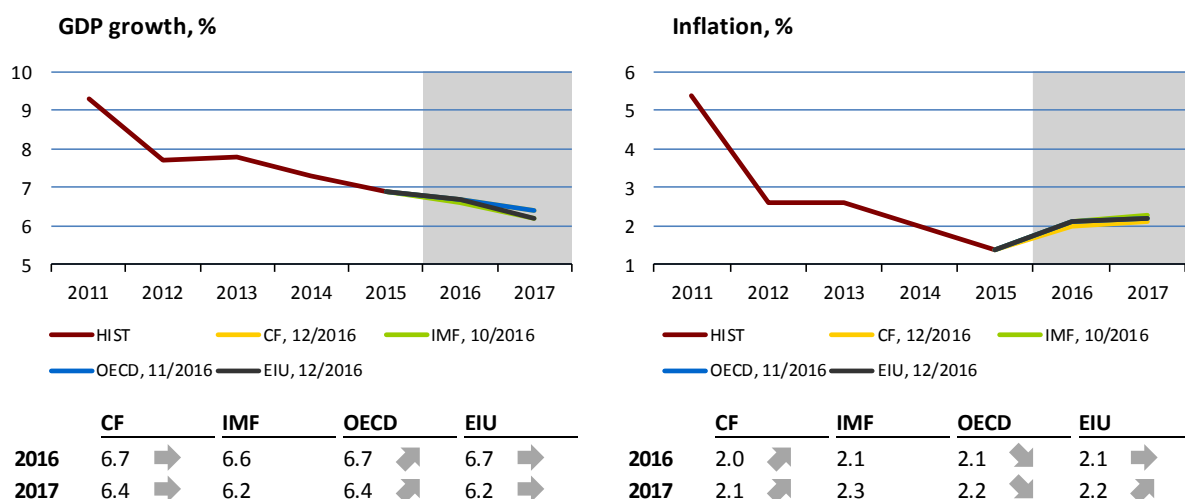
II.4 Japan

According to revised figures, the Japanese economy expanded by 1.3% in Q3 (quarterly, annualised), i.e. by significantly less than suggested by the first estimate (2.2%). The revision was due mainly to lower-than-expected capital expenditure and inventories, which intensified concerns about the robustness of the economic recovery. Conversely, consumer expenditure was revised upwards. However, the figures so far for Q4 suggest no significant economic improvement. The PMI leading indicator in manufacturing has been in the expansion band since September, but industrial production fell year on year in October (by 1.3%). The year-on-year change in retail sales and household expenditure was negative again in October and consumer confidence dropped further in November. However, CF raised its GDP growth outlook for both years (as did the OECD). Headline inflation was positive in October for the first time in eight months (0.2%). CF increased its inflation outlook for 2017, while the OECD presented a more pessimistic estimate.



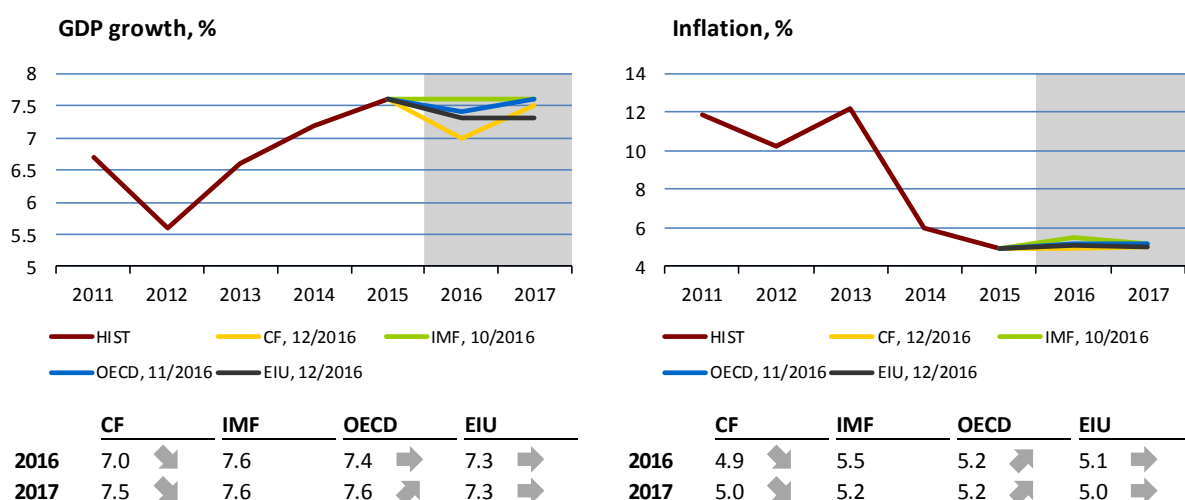
III.1 China

GDP growth of 6.7% is expected in China this year. It will be driven mainly by government expenditure and continued credit growth. Similar developments will continue next year, but the high credit growth rate is not sustainable. The monitored institutions therefore expect economic growth to slow in 2017. Moreover, the uncertainties surrounding the growth outlook for 2017 are skewed downwards. The ratio of problem loans in the banking sector seems to be sustainable so far, but the risk of a fall in liquidity has increased. This is also related to an observed outflow of capital from China putting depreciation pressure on the [renminbi](#). The currency thus dropped to an eight-year low. The outlook foresees a further 3.7% depreciation of the renminbi by the end of 2017. Inflation is still expected to be low, only slightly exceeding 2%. China will continue to significantly affect inflation in advanced countries via the commodity market, in which it is a major price-maker.



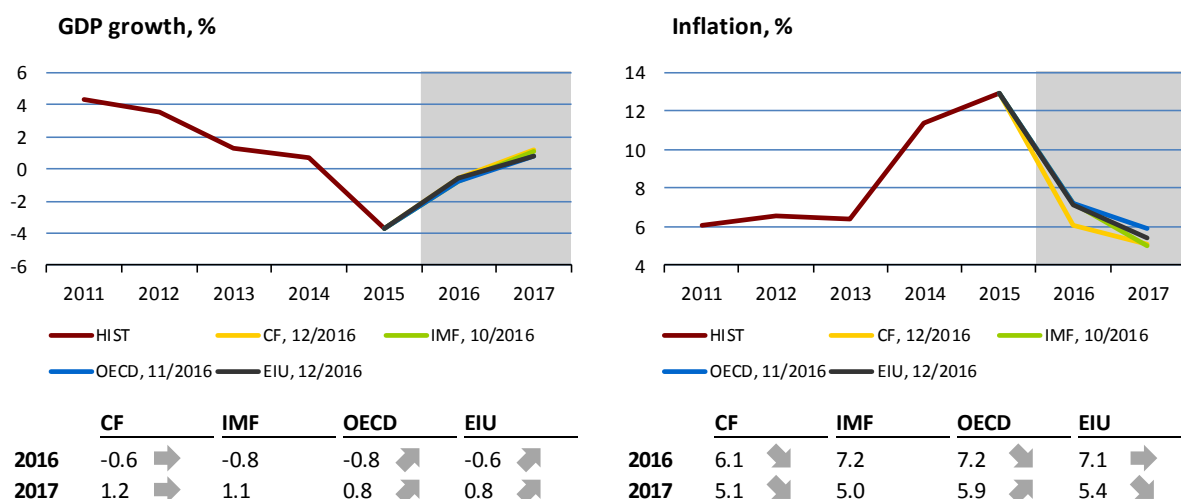
III.2 India

GDP in India increased by 7.3% year on year in 2016 Q3. High economic growth is also expected next year. However, it could be temporarily jeopardised by recent actions of the government, which launched an unexpected exchange of banknotes of high denominations. The measure sparked public outrage and caused a shortage of cash in an economy dependent on cash payments. The new banknotes are smaller than the old ones and the current ATMs cannot dispense them. Nevertheless, the government believes this step will eliminate money stemming from illegal activities, as it will be hard for the owners of such cash to prove its origin in the exchange. The shortage of cash might also have contributed to the recent depreciation of the [rupee](#) against the dollar. The rupee is expected to weaken slightly further at the one-year horizon. At its meeting in December, the Reserve Bank of India surprisingly did not reduce interest rates, which thus remained at 6.25%. The inflation outlooks are around 5% for both this year and the next.



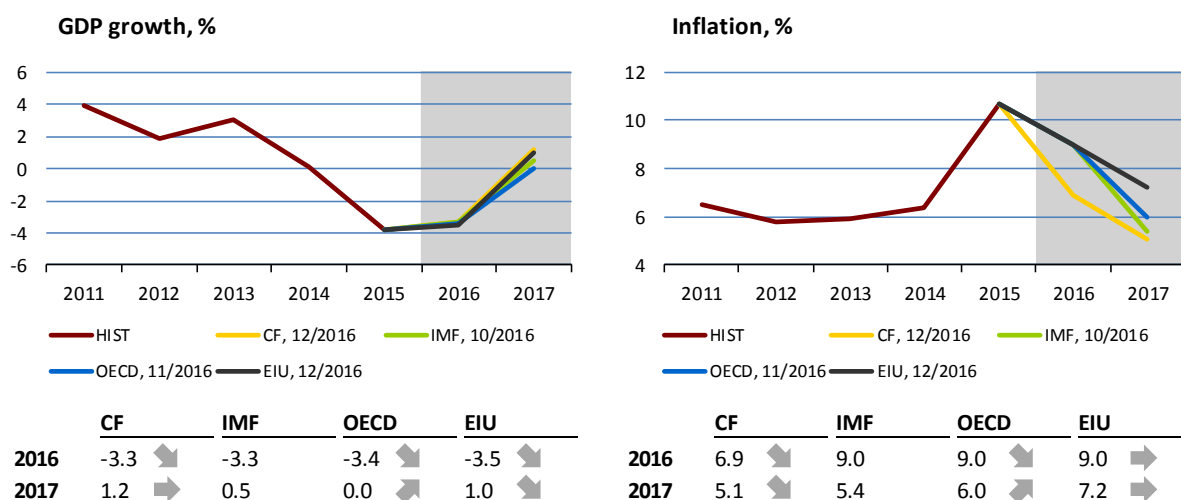
III.3 Russia

The rate of decline in economic activity in Russia has slowed sharply since the start of 2016. According to a preliminary estimate, the contraction in GDP decreased to 0.4%, the lowest figure in the seven quarters of recession so far. Also optimistic is the November PMI Markit, which for manufacturing reached its highest level in five and half years (53.6). For services, it stood at 54.7. As a result, the overall PMI recorded a four-year high (55.8). The year-on-year decline in industrial production slowed to 0.2% in October, while a month-on-month increase of almost 6% was recorded. Unemployment went up slightly, but the real wage showed year-on-year growth. Oil output reached a new historical high in November (11.2 million barrels a day), but will gradually come down in 2017 H1 due to the [OPEC agreement](#). According to the latest CF, EIU and OECD outlooks, the Russian economy will return to growth of 0.8%–1.2% next year. Inflation will decline to 5.1%–5.9% at the end of 2017.



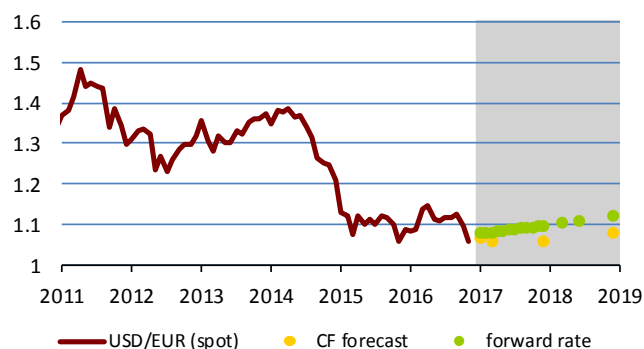
III.4 Brazil

Following a previous moderation, the decline in Brazilian GDP deepened again in 2016 Q3, reaching 0.8% quarter on quarter (versus 0.4% in the previous period). This was due mainly to a sizeable decrease in fixed investment (of 3.1%), but other GDP components also recorded negative growth. Overall, this was the largest quarterly decline in GDP this year. The contraction in Brazil is thus likely to exceed 3% for the second consecutive year. Growth will stay below 1% in 2017. The uncertainty surrounding future developments, especially investment, has been heightened by the result of the recent US presidential election. Although the economic situation in Brazil has worsened sharply, the rate of monetary policy easing has remained gradual (the Selic rate was cut by 0.25 pp to 13.75% at the end of November). Inflation has been gradually falling and is expected to slow to around 7% in November (which would be the lowest level since the end of 2014). This would bring it close to the upper boundary of the target band (6.5%).



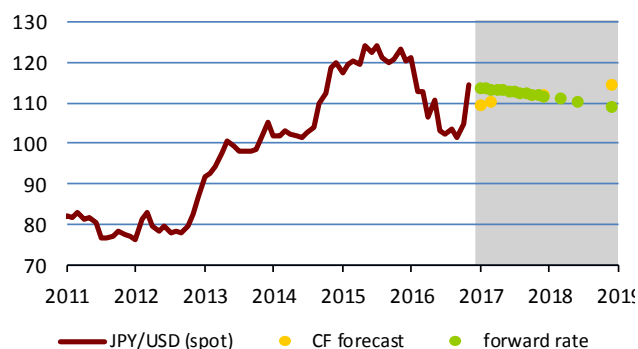
IV. Outlook of exchange rates

The US dollar (USD/EUR)



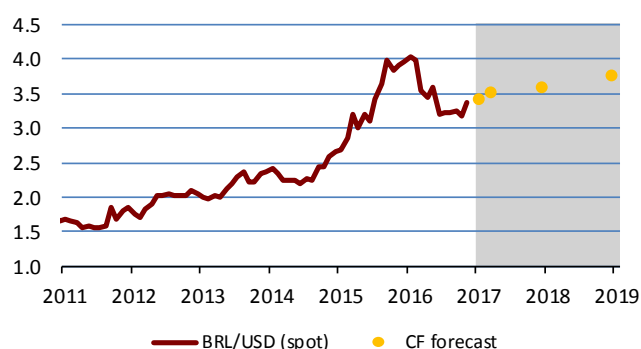
	5/12/16	01/17	03/17	12/17	12/18
spot rate	1.073				
CF forecast		1.066	1.059	1.057	1.080
forward rate		1.079	1.081	1.097	1.122

The Japanese yen (JPY/USD)



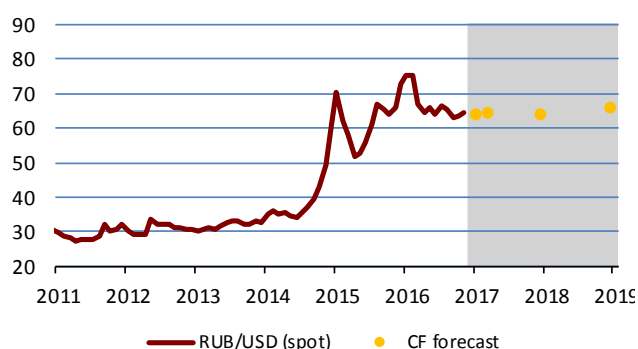
	5/12/16	01/17	03/17	12/17	12/18
spot rate	114.4				
CF forecast		109.5	110.1	112.0	114.5
forward rate		113.6	113.3	111.7	109.0

The Brazilian real (BRL/USD)



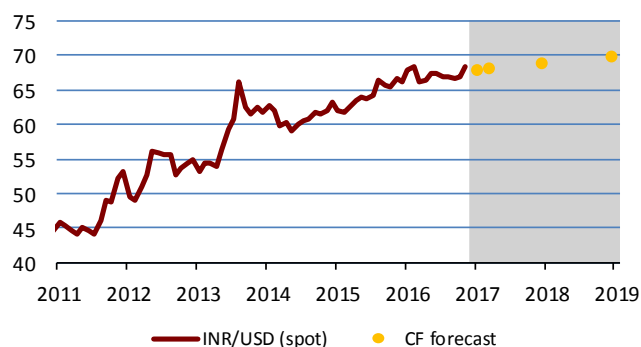
	5/12/16	01/17	03/17	12/17	12/18
spot rate	3.444				
CF forecast		3.424	3.526	3.590	3.750

The Russian rouble (RUB/USD)



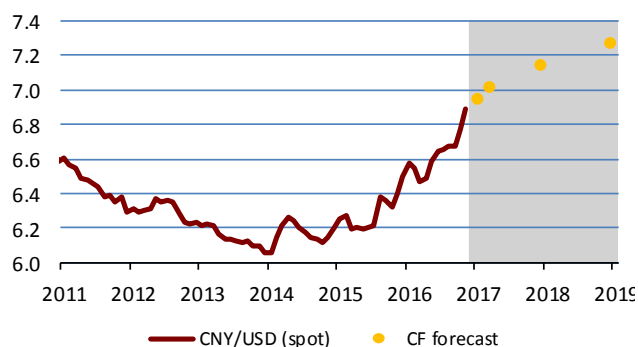
	5/12/16	01/17	03/17	12/17	12/18
spot rate	63.58				
CF forecast		64.23	64.50	63.75	65.98

The Indian rupee (INR/USD)



	5/12/16	01/17	03/17	12/17	12/18
spot rate	68.26				
CF forecast		67.83	68.22	68.96	69.73

The Chinese renminbi (CNY/USD)



	5/12/16	01/17	03/17	12/17	12/18
spot rate	6.886				
CF forecast		6.949	7.015	7.148	7.267

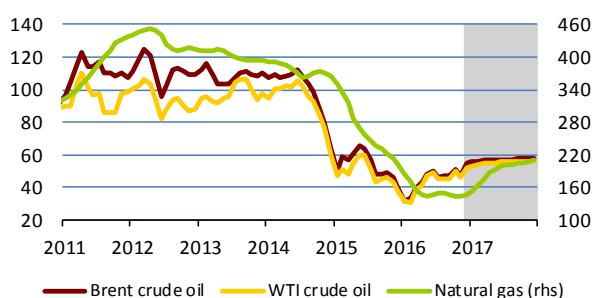
Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

V.1 Oil and natural gas

The Brent crude oil price showed strong volatility in November in response to often contradictory news from meetings of experts held before the OPEC summit in Vienna. In the first half of the month, the price fluctuated around USD 46/bbl on average, with negative sentiment prevailing and markets being generally sceptical about a future agreement. Saudi Arabia stepped up its diplomatic activity in the second half of November. This met with a more accommodative approach from Iraq and Iran as well as Russia, pushing the price around USD 2/bbl higher. On 30 November, OPEC agreed to cut output by 1.2 million barrels a day. Production in Russia and other non-OPEC countries could be reduced by 600,000 barrels a day. The Brent oil price responded with its biggest increase since the start of 2009 (rising by more than 15% in four days). This took it to its highest level since mid-2015. However, future price movements will depend on quota compliance by individual countries and also on the response of US shale oil output to the higher price.

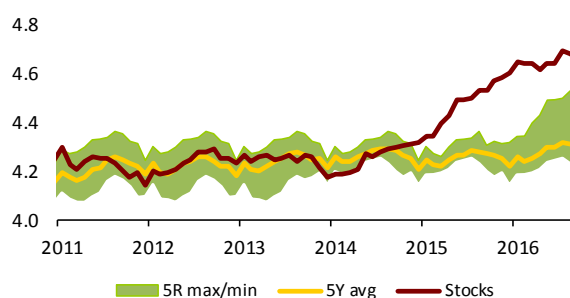
The market futures curve moved significantly upwards compared to last month, implying a further increase in prices, especially in 2017 H1. The average Brent price is thus expected to increase to USD 57/bbl in 2017 but should be only less than a dollar higher in 2018. By contrast, the EIA forecast was broadly unchanged from the previous month. It expects a price of USD 48/bbl in the remainder of the year and in 2017 Q1 and an average price of only USD 51/bbl in 2017 as a whole (i.e. faster growth in the price in H2 only). The forecasted price of WTI oil is around USD 1/bbl lower.

Outlook for prices of oil (USD/barrel) and natural gas (USD / 1000 m³)

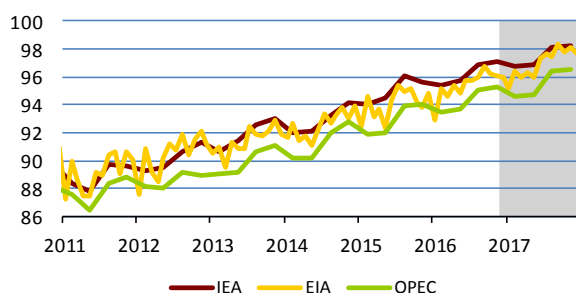


	Brent	WTI	Natural gas
2016	45.06 ↗	43.32 ↗	152.01 ↗
2017	57.00 ↗	55.11 ↗	192.03 ↗

Total stocks of oil and oil products in OECD (bil. barrel)

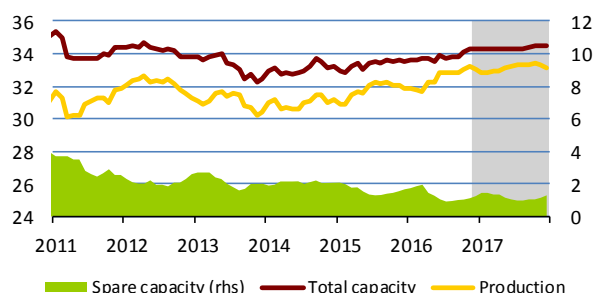


Global consumption of oil and oil products (mil. barrel / day)



	IEA	EIA	OPEC
2016	96.29 ↗	95.43 ↗	94.40 ↗
2017	97.51 ↗	96.99 ↗	

Production, total and spare capacity in OPEC countries (mil. barrel / day)



	Production	Total capacity	Spare capacity
2016	32.53 ↗	33.83 ↗	1.30 ↗
2017	33.15 ↗	34.34 ↗	1.19 ↗

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. Total oil stocks (commercial and strategic) in OECD countries including average, maximum and minimum in past five years in billions of barrels. Global consumption of oil and oil products in millions of barrels a day. Production and extraction capacity of OPEC in million barrels a day (EIA estimate).

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

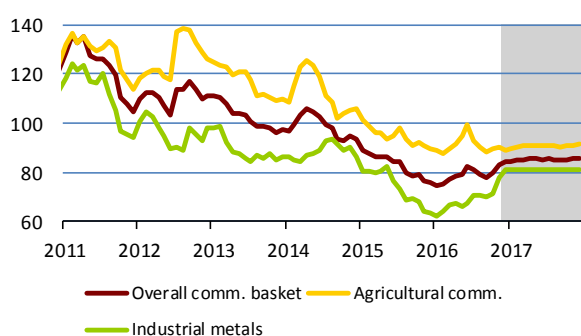
V.2 Other commodities

The average monthly non-energy commodity price index rose at the start of December for the third consecutive month, due mainly to strong growth in prices of industrial metals. Their index has been trending upwards since February 2016, and in early December reached its highest level since May 2015. By contrast, the average food commodity index weakened slightly at the start of December after two months of growth and has thus been fluctuating only modestly around a horizontal trend for around five months now. All three indices are virtually flat at the outlook horizon.

Food commodity prices were very mixed. The price of wheat remained close to a ten-year low, but its outlook is slightly rising. A similar pattern can be observed for prices of corn and rice. On the other hand, the price of soy rose in the last two months, but its outlook is declining. The price of sugar partly reversed its previous strong growth and is expected to decrease over the outlook horizon as well (albeit at a more moderate pace). Prices of coffee and especially cocoa recorded declines. The price of pork returned to growth following a several-month decline. The price of beef also increased, but its outlook is declining. As regards non-food commodities, the price of rubber recorded strong growth, the price of cotton increased less significantly and the prices of both commodities are flat at the outlook horizon.

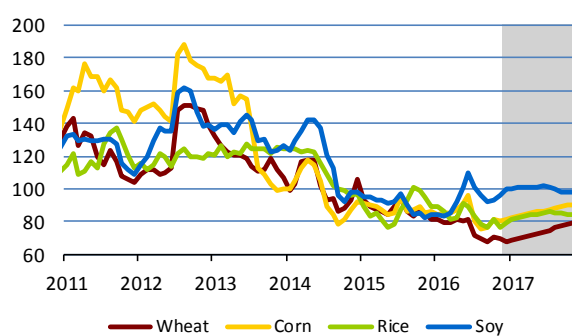
Prices of virtually all basic metals (except aluminium) saw further strong growth as Chinese industry and construction continued to recover in November. At the forecast horizon, however, metals prices are expected to be flat. The iron ore price showed a similar pattern but is expected to fall over the outlook horizon.

Non-energy commodities price indices



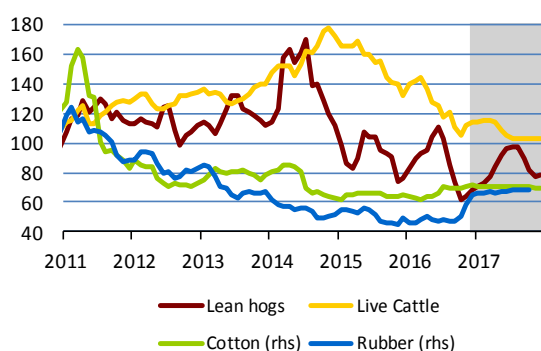
	Overall	Agricultural	Industrial
2016	79.4 ↗	91.1 ↗	69.6 ↗
2017	85.3 ↗	90.8 ↗	81.2 ↗

Food commodities



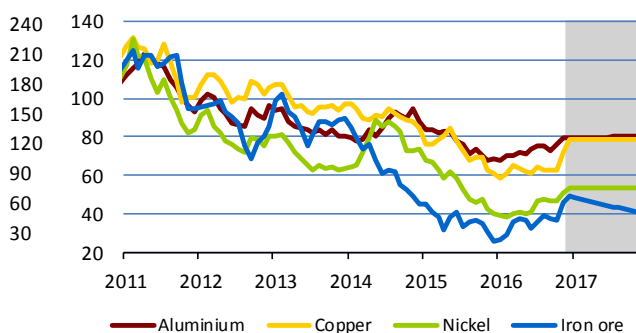
	Wheat	Corn	Rice	Soy
2016	75.0 ↗	83.9 ↗	83.0 ↗	94.4 ↗
2017	74.5 ↗	87.2 ↗	84.3 ↗	99.9 ↗

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2016	85.9 ↗	124.6 ↗	70.1 ↗	45.1 ↗
2017	84.5 ↗	107.6 ↗	75.7 ↗	70.8 ↗

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2016	73.7 ↗	64.5 ↗	44.2 ↗	36.9 ↗
2017	79.9 ↗	78.8 ↗	53.6 ↗	44.3 ↗

Note: Structure of non-energy commodity price indices corresponds to composition of The Economist commodity indices. All prices are given as indices, 2010 = 100 (charts) and percentage changes (tables).
Source: Bloomberg, CNB calculations.

The effect of the increased number of refugees on the German labour market¹

The post-2013 escalation of the military conflicts led to global growth in refugee numbers. In 2014, the number of refugees coming to Germany started to rise too. This influx peaked in November 2015. Since then it has been falling, but it remains above the pre-2014 level. The average qualifications of refugees are lower than those of existing German citizens. This is slowing the integration of refugees into the local labour market. Based on past experience, however, about half of working age migrants can be expected to find work within six years of arriving in Germany. Still, these newcomers can at best meet only 20% of the ever-increasing demand for labour in the German economy. When looking for work, they will compete more with workers arriving in Germany in search of jobs from Central and Eastern European countries than with German citizens.

1 Introduction

Labour market harmony is very important for any functioning market economy. It is even more important for countries grouped in a monetary union, as labour market flexibility helps establish internal equilibrium, which cannot be achieved using the exchange rate. The above is based on the ideas of Robert Mundell, the “father” of monetary integration, who argued in favour of the need to ensure geographical mobility of labour. In the event of an asymmetric shock, workers would move from the shock-hit region to a prosperous one. They would thereby create excess demand for work in the prosperous region, which would lead to a drop in the average wage. At the same time, the fall in demand for work in the shock-hit region would foster growth in the average wage there. The result is stabilisation of inflation and income at their natural levels in both regions of the monetary union. The arrival of labour force from countries outside the monetary union is not incompatible with this idea. Since newcomers usually head for the countries with the highest wages, they contribute to reducing economic imbalances in the monetary union.²

In reality, efforts to achieve a flexible labour market face a number of barriers, starting with language ones and ending with social and cultural ones. Still, many European countries – especially Germany – have long used foreign nationals, or “Gastarbeiter” (foreigners working for a long time in an economically more advanced country), to meet demand for labour. This originally German term emerged in the early 1950s, when the then West Germany became the destination for job seekers from European countries (Italy (1955), Spain (1960), Greece (1960), Portugal (1964) and Yugoslavia (1968)) as well as non-European ones (Turkey (1961), Morocco (1963) and Tunisia (1965)). Initially, Gastarbeiter were persons who had a work visa for only a limited period and were expected to return to their homeland once it expired. After it turned out that many such people do not return home after their work visas expire and stay in Germany for good, the term started to be used for workers from abroad in general. Movement of persons, which started in the mid-1950s as time-limited work migration organised by the authorities, thus morphed into immigration in the classic sense in the mid-1970s. In recent years, attention has been focused mainly on the growing proportion of refugees³ among immigrants.

Before 2014, around 250,000–400,000 refugees came to Europe every year. Since then, however, their numbers have increased, recording a dramatic rise in the second half of 2015. Since the start of 2016, the number of incomers has dropped back, but it remains above the pre-2014 level. Although the growth in migration from the third (i.e. non-EU) countries has affected most EU states, this article focuses on Germany, Europe’s most important economy and the country that has taken in the most refugees in absolute terms.

In this article we will first describe the surge in the numbers of refugees coming to Europe, and particularly Germany, between 2014 and 2016. We will attempt to put this “human inflow” in its historical context, compare it with the global growth in refugees and identify its causes. We will then focus on the options for integrating refugees into the labour market as the main element of, and condition for, overall social integration. In particular, we will examine whether refugees have the right prerequisites for smoothly entering the German labour market. We will also briefly discuss what kinds of jobs refugees seek. Then we will attempt to estimate the speed of their integration into the labour market and hence also the effect they will have on it in the near future. Finally, we will focus on the impact of the increased refugee numbers on neighbouring Central and Eastern European countries.

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² It is clear that Mundell’s model (1961) is very simplifying, since it does not take into account, for example, shock adjustment costs; see McKinnon (2002).

³ In this text we use the following conventions. A migrant is anyone who moves to a country of which he is not a citizen. A refugee is a migrant who has left his homeland due to war or political, ethnic or other persecution regardless of whether he has been or will in the future be granted political asylum under the German Constitution or the Geneva Convention on refugees. An asylum seeker is a person who applies for political (or other) asylum in a foreign country. A successful asylum seeker is a person who has been granted asylum.

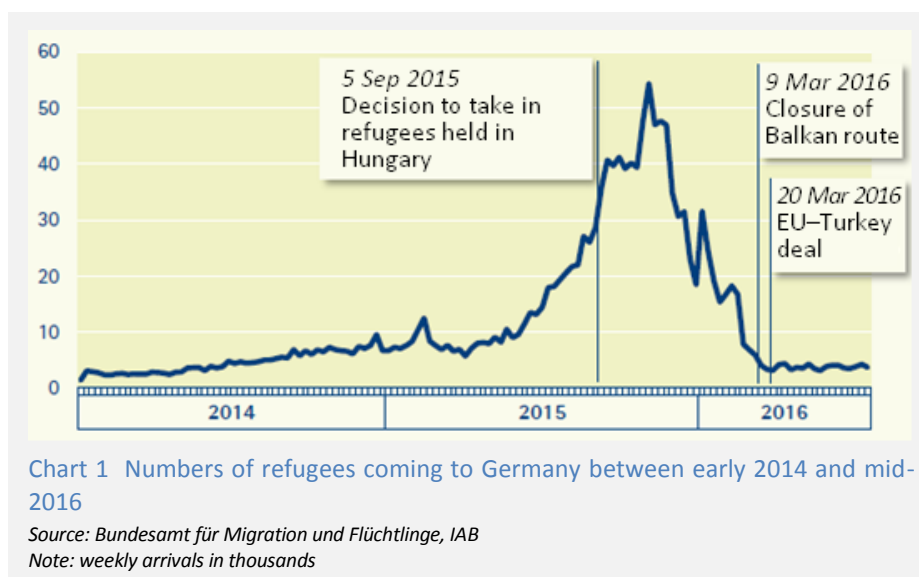
2 Refugee numbers in the EU and Germany

In 2014, the number of migrants moving between EU states (i.e. within the EU) was about 1.3 million and the number of migrants from third countries was roughly 1.6 million. Refugees accounted for about 40% of those coming from non-EU countries. In the same year, about 400,000 migrants came to Germany from outside the EU. The proportion of refugees among them was similar as at the EU level. The reasons for the strong immigration to Germany include not only its high living standards and wealth, but also related stable and robust economic growth linked with fast-growing demand for labour. The number of employed people grew by about 1% on average in Germany in 2011–2015, while the average unemployment rate in this period was 5.5%. In 2016, 660,000 vacancies were untaken due to a shortage of suitable workers.

Demand for labour is traditionally not fully met from domestic sources owing to a low birth rate⁴ and a resulting natural decline in the population.⁵ In 2005–2014, the total fertility rate (the average number of children born to a woman over her lifetime) in Germany was only 1.39 children per woman. From the demographic point of view, meanwhile, a total fertility rate of 2.1 is needed to naturally maintain the size of the population. The arrival of migrants in 2011–2014 thus did not give rise to economic or serious political problems in Germany. On the contrary, it was considered beneficial to the economy, as it had been in the second half of the 20th century.

In 2015 and 2016, however, the number of migrants coming to Germany surged owing to a rapid rise in newcomers registered as refugees. This category is the most variable component of total migration, since it usually responds to any acute deterioration in the security situation in the EU's wider environs. This is what happened in this case. In 2014 and 2015, there was an overall escalation in violent conflicts around the world (particularly in the Middle East, the Horn of Africa and Afghanistan). This was reflected in growth in the numbers of people killed in those conflicts – from 43,000 in 2013 to 132,000 the following year and 118,000 in 2015.⁶ The number of people who decided to flee war zones thus rose markedly worldwide.⁷

At the same time, the economic and living conditions of refugees living in countries neighbouring war zones, i.e. countries to which most refugees had headed until then, deteriorated in this period (due to work bans, lower transfers from UN funds per refugee, etc.). For these reasons, the number of refugees moving to Europe, and especially to Germany, started to edge up during 2014 (see Chart 1). While in 2013 an average of 9,000 refugees a month came to Germany, in 2014 the inflow grew to 14,000 a month. The number of incomers continued to rise gradually in



the first half of 2015, but in the second half of the year refugee numbers started to surge, reaching as many as 100,000 a month between June 2015 and March 2016.

On 5 September 2015, the German and Austrian Chancellors made the now well-known decision to take in refugees who had reached Hungary on their way to seek refuge in the EU. As Chart 1 shows, this decision had little effect on the many-months-long upward trend in the number of refugees coming to Germany.⁸ The number of refugees arriving in Germany stopped increasing about a month later and, after a brief spike

⁴ The population naturally increases when the birth rate is higher and decreases when it is lower (the change in population size in this sense does not take into account the direct effect of migration). France has the highest total fertility rate of all the EU countries, but even there it was only 2.0 in 2005–2014. By contrast, Germany ranks among the countries with the lowest total fertility rates in the EU. Source: Eurostat.

⁵ The natural decline in population (the difference between deaths and births) was 186,000 per year on average in Germany in 2010–2014. Source: Eurostat.

⁶ UN Refugee Agency (UNHCR), 2015.

⁷ According to UNHCR data, the number of new refugees (here including internally displaced persons) exceeded 12 million in 2015, taking the total number to 65 million. Of this, only one-third fled abroad (most often to neighbouring countries), while the rest stayed in their home country. The number of Syrian refugees abroad went up by 1 million to almost 5 million.

⁸ The criticism of Chancellor Angela Merkel for being responsible for the refugee wave in Germany, and perhaps in Europe as a whole, seems unjustified.

in November, the refugee “wave” started to abate. This was due initially to bad weather in the Mediterranean (for crossing the straits between Turkey and the Greek islands) and, after March 2016, also to the closure of the “Balkan route” and the signing of the EU-Turkey deal. From the European perspective, the number of refugees newly arriving in Greece has since declined from about 100,000 a month⁹ to 8,000 on average. However, the number of refugees setting out across the Mediterranean Sea from Libya to Italy has simultaneously risen. Still, the total number of refugees from the two routes remains well below the figures seen in the second half of 2015. The weaker refugee inflow to Europe has naturally also been reflected in a dramatic drop in the number of refugees coming to Germany – from 208,000 in November 2015 to an average of 16,000 a month in April–August 2016 (see Chart 1).

3 Economic integration of refugees in Germany – problems and possibilities

Since the German statistics do not monitor refugees separately from other migrants, in this article we use, instead of data on refugees, data on migrants coming from the eight non-European countries for which refugees make up the dominant part of migration to Germany and from which most of the refugees heading to Europe come. Those countries are Afghanistan, Eritrea, Iraq, Iran, Nigeria, Pakistan, Somalia and Syria. The dynamics and structure of immigration from these countries can be used as a proxy for the immigration of all refugees into Germany.¹⁰

A major barrier to the integration of refugees into the labour market is the qualifications they obtained in their home countries. The main prerequisites for successful economic integration are knowledge of German

and sufficient qualifications, i.e. attained education and work experience.¹¹ Most refugees do not speak German, but this handicap can be removed in a relatively short time with reasonable expenditure on one side and sufficient effort on the other. A bigger problem seems to be insufficient education and little or no work experience among those arriving, who have left much poorer countries with less developed industry, infrastructure and education and whose destination countries rank among the most advanced in the world. Table 1 offers a comparison of the qualification structure of refugees and German citizens.

Completed education	Refugees	Germans
university degree	11	15
vocational training	9	67
without completed education	57	10
provided no information about their education	23	9

Table 1 Comparison of qualifications

Source: Bundesagentur für Arbeit – Statistik, authors' calculations.

Note: Refugees – German immigrants from eight non-European countries (Afghanistan, Eritrea, Iraq, Iran, Nigeria, Pakistan, Somalia and Syria); Germans – German citizens; as % of working age population of given group

University graduates account for 11% of working age refugees. This is little different from the share of university-educated people in the German population. A much bigger problem is that only 9% of refugees have vocational qualifications (as compared to a sizeable 67% of Germans).¹² Thus only 20% of arriving refugees have provably completed education (compared with 82% of Germans). It can also be assumed that refugees who provided no information about their education tend to have a low level of education. Moreover, the last two groups with the lowest qualifications will contain an unknown but certainly not insignificant share of illiterate persons with very little ability to raise their qualification level.

Table 2 shows the importance of qualifications in job seeking. It compares the education attained by refugees and German citizens based on whether or not they are employed. It turns out that

Completed education	Employed		Unemployed	
	Refugees	Germans	Refugees	Germans
university degree	15	16	9	8
vocational training	18	68	4	51
without completed education	32	8	72	38
not provided	35	9	16	4

Table 2 Comparison of qualifications of the employed and unemployed

Source: Bundesagentur für Arbeit – Statistik, authors' calculations.

Note: Refugees – German immigrants from eight non-European countries (Afghanistan, Eritrea, Iraq, Iran, Nigeria, Pakistan, Somalia and Syria); Germans – German citizens; as % of working age population of given group

⁹ The average for June 2015 to March 2016.

¹⁰ This conclusion is supported by a comparison of selected indicators available for both refugees and migrants from the eight refugee countries mentioned above, which are almost the same for both categories. We therefore believe that this substitution will not significantly skew our results. The same approach is used by the Institut für Arbeitsmarkt und Berufsforschung (Nuremberg, Germany).

¹¹ Recognition of the education attained in refugees' home countries (e.g. in medicine) can also be a problem.

¹² Completed vocational training traditionally plays a major role in the German education system. It is specific in that it provides top quality specialised qualifications broadly equivalent to university education in other European countries.

quality of education plays an even bigger role in job seeking for refugees than for the normal German population. Over 70% of all unemployed refugees are job applicants without completed education (compared with only 38% of unemployed Germans).

By contrast, the difference between refugees and Germans in the university graduates category is negligible. In all other categories, however, the qualifications distribution is completely different for both job seekers and those who have found a job. It can therefore be assumed that refugees entering the labour market will not compete with locals, but will primarily supplement the supply of labour in professions with lower education requirements. Their rate of success in finding work will depend on whether employers have sufficient demand for these professions. If they do, we can expect the entry of refugees onto the Germany labour market to have a favourable impact on the local economy without having a major negative impact on German citizens seeking work. This is confirmed by Table 3, which shows the different positions of refugees and German citizens in employment and the type of employment they seek if they are unemployed.

Type of employment	Employed		Unemployed	
	Refugees	Germans	Refugees	Germans
expert	14	12	6	3
skilled manual work	43	73	48	15
auxiliary work	44	13	41	60
not provided	1	1	22	5

Table 3 Comparison according to the type of work done or sought

Source: Bundesagentur für Arbeit – Statistik, authors' calculations.

Note: Refugees – German immigrants from eight non-European countries (Afghanistan, Eritrea, Iraq, Iran, Nigeria, Pakistan, Somalia and Syria); Germans – German citizens; as % of given group

Age and gender structure	Refugees	Germans
share of men	74	52
share of young persons under 30 years old	38	17

Table 4 Comparison of age and gender structure

Source: Bundesagentur für Arbeit – Statistik, authors' calculations.

Note: Refugees – German immigrants from eight non-European countries (Afghanistan, Eritrea, Iraq, Iran, Nigeria, Pakistan, Somalia and Syria); Germans – German citizens; as % of given group

However, the current qualifications of a proportion of refugees may not be final. Refugees tend to come from countries with insufficient infrastructure and their poor education may thus be due to the poor conditions in their homeland rather than to an unwillingness or inability to invest in their education. It can therefore be asserted that some of them will be strongly motivated to extend their existing education in Germany. This is supported by the fact that almost 40% of them are less than 30 years old (see Table 4) and 60% are less than 35 years old.

4 Experience with the integration of refugees into the German labour market

It usually takes refugees longer than other migrants to integrate into the labour market, not only because it usually takes them longer to learn German and gain higher qualifications, but also because they have to deal with administrative matters. The entire process of labour market integration can only start after asylum is obtained. The asylum process takes at least eight months from the application date, but it can take longer even if all the necessary documents are submitted and asylum is granted (as is the case in 50%–70% of applications). Including the time before refugees are able to file an asylum application, the shortest period between arriving and obtaining asylum is one year. If the application is rejected in the first instance and the applicant files an appeal, the period is extended by about a year.

However, we can at least roughly estimate the speed of integration of the current refugee “wave” on the basis of older experience with the migrants who came to Germany after 1994.¹³ By assuming that the process of integrating current refugees into the labour market will proceed similarly as that of refugees who arrived earlier, we can estimate its speed on the basis of available data (see Chart 2) and also forecast how quickly refugees’ standards of living (represented by the ratio of their average wage to the average wage in Germany) will converge with those of Germans (see Chart 3).

Chart 2 shows the rate of growth in the share of working age refugees (15–64 years old) who succeeded in finding a full-time or part-time job (the employment rate) in Germany in the past. Based on this chart, about half of working age refugees can be expected to find work within six years of arriving and 70% of them within 14 years. The employment rate of German citizens is 74%. It is thus evident from the chart that the process of integrating refugees will be relatively slow.

¹³ Leben, lernen, arbeiten – wie es Migranten in Deutschland geht, in IAB Kurzbericht 21/2014 Special.

This is also apparent from initial data on the integration of the current “wave” of refugees, of whom there were about 900,000 in Germany in the middle of this year.¹⁴ Only 105,000 of them have acquired a full-time job so far (as of July 2016). This number rose by only 26,000 year on year,¹⁵ while the number of unemployed refugees increased by 90,000 to 172,000 in the same period. The main sectors in which refugees find their first jobs – mostly auxiliary positions – are services, accommodation and trade.

Chart 3 describes how fast refugees’ wages converge to the German average.

We can see that in the past, refugees’ income reached 75% of the average German wage quite quickly (after roughly four years). Over the next 11 years, however, it did not climb higher than just above 80% of the German average. It is evident that refugees’ lower wages in the long term are primarily due to their lower education – a handicap they are unable to overcome even after 15 years. Despite that, the German labour market is extremely attractive for refugees, since average wages in Central European countries lag well behind those in Germany. When converted using the exchange rate, average wages in the Czech Republic and Slovakia are only 38% of the German average, while those in Poland and Hungary are 32% and 30% respectively. When converted using purchasing power parity, the comparison is better (61%, 63%, 59% and 54%), but it is still evident that such big differences in wages motivate refugees to apply for asylum in Germany and not, for example, in the Visegrad Group countries (the Czech Republic, Hungary, Poland and Slovakia).

On the basis of the above time profile showing how fast refugees found their first job in Germany, it is possible to at least roughly estimate the effect of the current refugee “wave” on the German labour market in the next few years. We estimate that about 1.5 million refugees will arrive in Germany between 2014 and 2016 in the current “wave”.¹⁶ The success rate of asylum proceedings is around 55% and about 80% of refugees taken in are of working age.

About 660,000 of these newcomers will thus be ready to look for work. Further, on the basis of previous experience we expect half of them (about 330,000) to find a job in the first six years. This represents about 55,000 refugees per year given roughly linear growth in the number of employed persons (see Chart 2).

However, part of the refugees who came to Germany before 2014 will also still be looking for work in the same period. In this category, there were about 50,000 newcomers a year on average. At the same time, it can be assumed that the inflow of refugees to Germany will not halt after 2016. For the purposes of our calculation, we estimate the number of newcomers in this period at about 200,000 a year in line with the

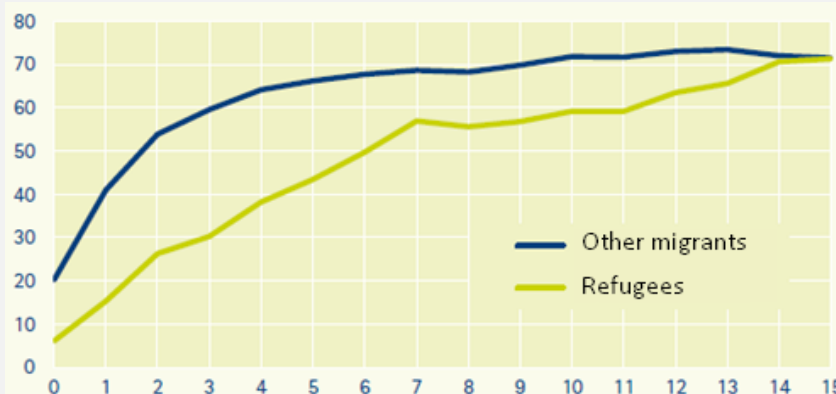


Chart 2 Unemployment rate of refugees and other migrants as a function of the number of years spent in Germany

Source: IAB – SOEP – Migrationsstichprobe, Aktuelle Berichte, IAB 19/2016

Note: vertical axis – employment rate in %, horizontal axis – time from arrival date in years

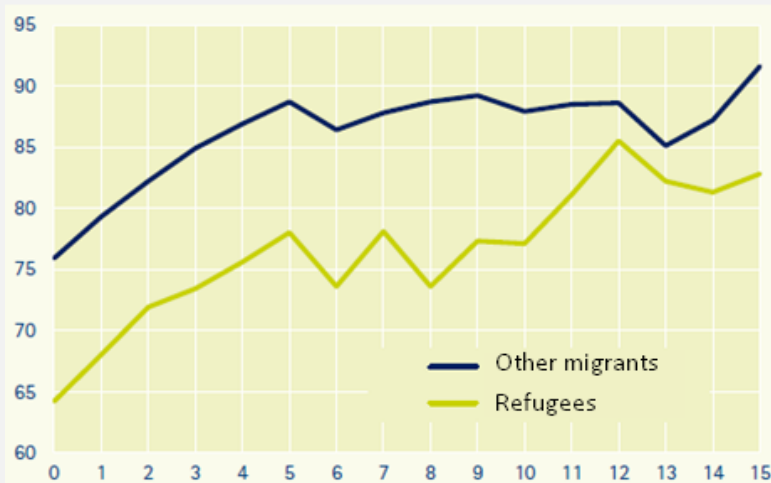


Chart 3 Speed of convergence of wages of refugees (and other migrants) to the average wage in Germany as a function of the number of years from the date of finding their first job in Germany

Source: IAB – SOEP – Migrationsstichprobe, Aktuelle Berichte, IAB 19/2016

Note: refugees’ average wage in comparison with the average wage in Germany

¹⁴ However, these data only cover refugees who lodged an application for asylum.

¹⁵ The employment rate among successful asylum seekers fell year on year from 24.7% to 14.7% in July 2016, with the number of employed refugees rising more slowly than the number of refugees granted asylum (successful asylum seekers).

¹⁶ The figure was 200,000 in 2014 and about 900,000 in 2015. We preliminary estimate arrivals in 2016 at about 400,000.

current trend (see Chart 1).¹⁷

By applying the above assumptions about the annual numbers of newly arriving refugees (past, present and future), the average success rate of asylum proceedings and the share of working age refugees, we can, on the basis of the time profile in Chart 2, roughly estimate how many refugees will find work in Germany in the next few years. Overall, we can expect the employment of refugees to rise by about 75,000 persons a year on average over the next six years. This represents 0.2% of the German workforce. Since the number of employed persons in Germany has been rising by 1% a year on average over the past five years, we can see that the arrival of refugees will meet only 20% of the German economy's demand¹⁸ even under very optimistic assumptions about their smooth and uninterrupted integration into the labour market.

5 Effects on neighbouring Central and Eastern European countries

Besides Germany, some other advanced countries, including those from the V4 Group,¹⁹ are also facing low birth rates, ageing populations, falling numbers of working age inhabitants and labour shortages in an environment of solid growth. Moreover, these countries cannot offer as good working and pay conditions as Germany. They are therefore themselves source countries of the inflow of foreign workers to the German labour market in the long run. As was shown above, the arrival of refugees in Germany will only partly meet the local demand for labour. The outflow of workers from V4 countries to Germany is thus not likely to be halted by the refugee "wave".

However, it may be reduced, primarily in terms of a lower outflow of less qualified professions, in which refugees seeking integration into the German labour market will be direct rivals to Central Europeans. This is confirmed by Table 5, which shows that migrants from EU member states in Central and Eastern Europe (Poland, Hungary, the Czech Republic, Slovakia, Slovenia, Estonia, Lithuania and Latvia) usually occupy roughly the same positions (the employed) or seek similar positions (the unemployed) as refugees.

The second type of effect that the current refugee inflow to Germany may have on labour markets in neighbouring countries concerns the mechanism for finding international equilibrium between labour supply and labour demand described in the Introduction. While the reduced outflow of less qualified workers from Central and Eastern European countries to Germany will slightly weaken the wage growth pressures in these countries, the integration of a larger number of refugees into the German labour market will foster a drop, or slower growth, in German wages. This situation could help reduce the differences in living standards between Germany and Central and Eastern European countries.

Type of employment	Employed		Unemployed	
	Refugees	CEE EU	Refugees	CEE EU
expert knowledge	14	5	6	3
skilled manual work	43	49	48	27
auxiliary work	44	46	41	63
not provided	1	0	22	6

Table 5 Comparison according to type of work performed or sought – refugees versus migrants from Central and Eastern Europe

Source: Bundesagentur für Arbeit – Statistik, own calculations.

Note: Refugees – German immigrants from eight non-European countries (Afghanistan, Eritrea, Iraq, Iran, Nigeria, Pakistan, Somalia and Syria); CEE EU – German immigrants from eight Central and Eastern European EU Member States (Poland, Hungary, the Czech Republic, Slovakia, Slovenia, Estonia, Lithuania and Latvia); as % of given group

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¹⁷ Since April 2016, an average of 16,000 refugees have been coming to Germany every month. This means almost 200,000 refugees in 2016 as a whole if the same trend continues. We realise that this is a very rough estimate.

¹⁸ We assume that the economy will continue growing at the current rate of 1.5%–2%. The average GDP growth rate in 2010–2015 was 2%.

¹⁹ The countries of the Visegrad Group (the Czech Republic, Hungary, Poland and Slovakia).

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A1. Change in GDP predictions for 2016

	CF		IMF		OECD		CB / EIU	
EA	0	2016/12	+0.1	2016/10	+0.2	2016/11	0	2016/12
		2016/11		2016/7		2016/9		2016/9
US	+0.1	2016/12	-0.6	2016/10	+0.1	2016/11	-0.2	2016/9
		2016/11		2016/7		2016/9		2016/6
DE	0	2016/12	+0.1	2016/10	-0.1	2016/11	+0.2	2016/12
		2016/11		2016/7		2016/9		2016/6
JP	+0.1	2016/12	+0.2	2016/10	+0.2	2016/11	0	2016/11
		2016/11		2016/7		2016/9		2016/7
BR	-0.1	2016/12	0	2016/10	-0.1	2016/11	-0.2	2016/12
		2016/11		2016/7		2016/9		2016/11
RU	0	2016/12	+0.4	2016/10	+0.9	2016/11	+0.2	2016/12
		2016/11		2016/7		2016/6		2016/11
IN	-0.6	2016/12	+0.2	2016/10	0	2016/11	0	2016/12
		2016/11		2016/7		2016/9		2016/11
CN	0	2016/12	0	2016/10	+0.2	2016/11	0	2016/12
		2016/11		2016/7		2016/9		2016/11

A2. Change in inflation predictions for 2016

	CF		IMF		OECD		CB / EIU	
EA	0	2016/12	-0.1	2016/10	0	2016/11	0	2016/12
		2016/11		2016/4		2016/6		2016/9
US	+0.1	2016/12	+0.4	2016/10	+0.1	2016/11	-0.1	2016/9
		2016/11		2016/4		2016/6		2016/6
DE	0	2016/12	-0.1	2016/10	0	2016/11	+0.1	2016/12
		2016/11		2016/4		2016/6		2016/6
JP	0	2016/12	0	2016/10	-0.4	2016/11	-0.2	2016/11
		2016/11		2016/4		2016/6		2016/7
BR	-0.2	2016/12	+0.3	2016/10	-0.2	2016/11	0	2016/12
		2016/11		2016/4		2016/6		2016/11
RU	-0.2	2016/12	-1.2	2016/10	-0.1	2016/11	0	2016/12
		2016/11		2016/4		2016/6		2016/11
IN	-0.1	2016/12	+0.2	2016/10	+0.2	2016/11	0	2016/12
		2016/11		2016/4		2016/6		2016/11
CN	+0.1	2016/12	+0.3	2016/10	-0.5	2016/11	0	2016/12
		2016/11		2016/4		2016/6		2016/11

A3. List of abbreviations

ABS	asset-backed securities	HICP	harmonised index of consumer prices
bbl	barrel	CHF	Swiss franc
BoJ	Bank of Japan	ICE	Intercontinental Exchange
BR	Brazil	IEA	International Energy Agency
BRIC	countries of Brazil, Russia, India and China	IFO	Institute for Economic Research
BRL	Brazilian real	IFO-BE	IFO Business Expectations
CB	central bank	IMF	International Monetary Fund
CB-CCI	Conference Board Consumer Confidence Index	IN	India
CB-LEII	Conference Board Leading Economic Indicator Index	INR	Indian rupee
CBOT	Chicago Board of Trade	IRS	Interest Rate swap
CBR	Central Bank of Russia	ISM	Institute for Supply Management
CF	Consensus Forecasts	JP	Japan
CN	China	JPY	Japanese yen
CNB	Czech National Bank	LI	leading indicators
CNY	Chinese renminbi	LIBOR	London Interbank Offered Rate
DBB	Deutsche Bundesbank	LME	London Metal Exchange
DE	Germany	MER	Ministry of Economic Development (of Russia)
EA	euro area	MMBtu	million of British Thermal Units
EBRD	European Bank for Reconstruction and Development	OECD	Organisation for Economic Co-operation and Development
EC	European Commission	OECD-CLI	OECD Composite Leading Indicator
ECB	European Central Bank	PMI	Purchasing Managers' Index
EC-CCI	European Commission Consumer Confidence Indicator	PPI	producer price index
EC-ICI	European Commission Industrial Confidence Indicator	QE	quantitative easing
EIA	Energy Information Administration	RU	Russia
EIU	Economist Intelligence Unit	RUB	Russian rouble
EU	European Union	TLTRO	targeted longer-term refinancing operations
EUR	euro	UoM	University of Michigan
EURIBOR	Euro Interbank Offered Rate	UoM-CSI	University of Michigan Consumer Sentiment Index
Fed	Federal Reserve System (the US central bank)	US	United States
FOMC	Federal Open Market Committee	USD	US dollar
FRA	forward rate agreement	USDA	United States Department of Agriculture
FY	fiscal year	WEO	World Economic Outlook
GBP	pound sterling	WTI	West Texas Intermediate (crude oil used as a benchmark in oil pricing)
GDP	gross domestic product	ZEW-ES	ZEW Economic Sentiment

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