

ECONOMIC RESEARCH

Working Paper 182

February 27, 2015

} MACROECONOMICS

} FINANCIAL MARKETS

} ECONOMIC POLICY

} SECTORS

Gregor Eder, Dr. Michael Heise, Thomas Hofmann

Oil price collapse: Economic significance and
outlook

AUTHORS:

GREGOR EDER
Tel. +49.69.24431-3358
gregor.eder@allianz.com

DR. MICHAEL HEISE
Tel. +49.89.3800-16143
michael.heise@allianz.com

THOMAS HOFMANN
Tel. +49.69.24431-4912
t.hofmann@allianz.com

Oil price collapse: Economic significance and outlook

EXECUTIVE SUMMARY

- The slide in oil prices will boost growth in many economies. While manufacturing industry benefits from lower input prices, private households gain in purchasing power. For the eurozone we are forecasting economic growth of 1.5%. We have raised our forecast for Germany to 2.1% and the USA looks on course to achieve growth of 3%.
- In the emerging markets the impact of the oil price collapse varies widely. Net oil importers benefit from considerably lower import bills. Simultaneously, falling interest rates create scope for monetary policies to stimulate the economy. India, Indonesia and other countries have used low oil prices to slash energy subsidies. The money saved can be channeled into investment programs.
- Most oil-exporting nations in the Arab world have accumulated considerable foreign assets in recent years, enabling them to cushion the impact of plummeting oil revenue. The picture is different in Venezuela, where default looms, and Russia, where the double whammy of oil revenue losses and sanctions will tip the economy into a deep recession.
- Oil prices have collapsed before. But this time prices have fallen in an environment of extremely low inflation and interest rates. The oil price collapse has pushed inflation down towards zero or even into negative territory in many places. Central banks regard this as a dangerous undershooting of their inflation targets and will continue to counter the effect through unconventional measures such as quantitative easing. While this will give a further stimulus to some economies, it also fuels asset bubbles and therefore creates new financial risks.
- Given how important oil prices are for purchasing power, investment and monetary policy, their future development is a key variable in our economic outlook. Predicting commodity prices has always been an art rather than a science. Hardly any forecasters had predicted the rapid slide in prices we've seen since mid-2014. The shale oil boom has turned the US into a second global swing producer, alongside Saudi Arabia. This new interplay between OPEC strategy and market dynamics in the western hemisphere makes forecasting oil prices even more difficult.
- In the course of the year, possibly beginning in the second quarter, oil prices will edge up gradually as production in North America and elsewhere slows and OPEC producers begin to tighten supply. But at USD 60 a barrel (Brent) on average in 2015, they will still be some 40% down on a year earlier. In 2016 oil prices are likely to average around USD 70 a barrel. Oil prices are unlikely to return to the levels seen in the first half of 2014 in the near future – unless current investment cutbacks unduly affect medium-term supply growth.

The economic significance of oil prices

The development of the price of crude oil is critically important for economic development. Crude oil is not only an important resource for production, but also

accounts for a large proportion of the expenditure of private households. Crude oil has an impact on both production costs and the purchasing power of private sector incomes. If it were possible to make a reliable prediction about the development of oil prices, the quality of global economic forecasts would be dramatically improved. Unfortunately, marked fluctuations in oil prices are often hard to predict. The most recent slump in oil prices – halving within a few months – was only predicted by very few forecasters. It is safe to say that this drop will have significant economic consequences. This is not just the case for net oil-importing industrialized nations, but also for many emerging markets. In 2015, the eurozone will enjoy a consumer-driven upturn, not least thanks to the drop in oil prices. The US economy also stands to profit considerably. Even though the USA has been importing less oil over the past few years, the country consumes a large amount of oil. Using a numerical example to make this clearer: if the pump price of gasoline drops by just one cent, this would lead to an increase in purchasing power for US households totaling USD 1.35 billion.

The global significance of oil prices for economic development can be demonstrated by the events of the past few years. The "Great Recession" of 2008 and 2009 was not solely linked to tremors in the financial sector; it was also connected to a dynamic increase in oil prices, which jumped to over USD 130 in July 2008. Even before the financial crisis properly began, it was to be expected that this jump in oil prices would put a considerable dampener on demand. As the financial crisis broke, demand for industrial products, and with it, for natural resources, collapsed, and oil prices slumped dramatically over the course of 2008. After the financial crisis had subsided, prices recovered relatively quickly in important economies, and shortly after the recession were back at around USD 100. This relatively high oil price level can be seen as one reason for the subdued growth of the global economy, and particularly of production in the manufacturing industry. From a long-term perspective, there is a clear correlation between the level of oil prices – looked at over several years – and the rate at which industrial production grows. With all this in mind, the forecast of oil prices for 2015 and 2016 is of great significance for macroeconomic development.

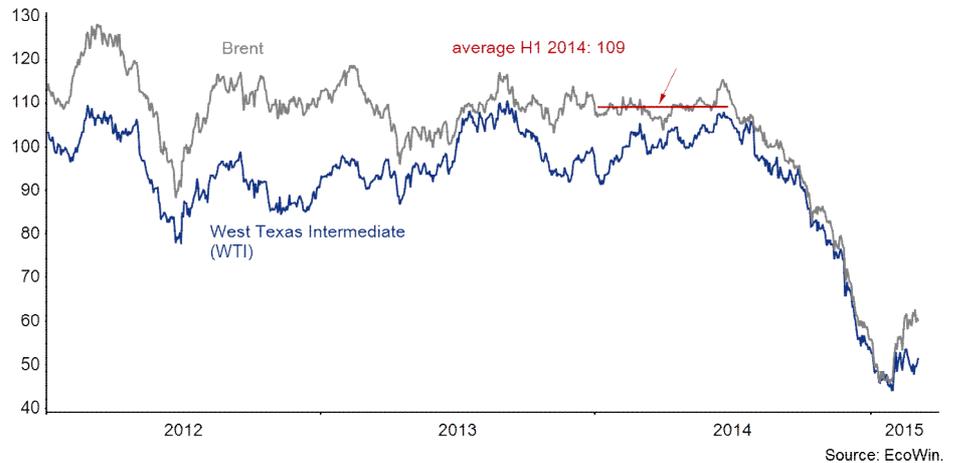
The drop in oil prices since mid-2014 is particularly notable because it occurred in an environment marked by extremely low rates of inflation and interest. The oil price collapse has pushed inflation down towards zero or even into negative territory in many places – taking it well under the nominal inflation targets set by central banks. They have interpreted deflationary trends as a dangerous undershooting of their inflation targets. Because interest rates were already at zero, central banks have tried to expand money supply by introducing or retaining unconventional measures like quantitative easing, aiming to counter the drop in prices caused by the cost of oil. These measures will stimulate the economy in different ways. However, they could be accompanied by overheating on the financial markets, posing risks to financial stability.

A comparison of current and historical price developments

The balance of power on the oil market has shifted considerably since last summer. Under good supply conditions, crude oil prices halved. In January 2015 oil prices ranged from USD 45-50, 55% below their average level in the first half of 2014. This development was preceded by a long period of more or less stable prices.

Crude oil prices

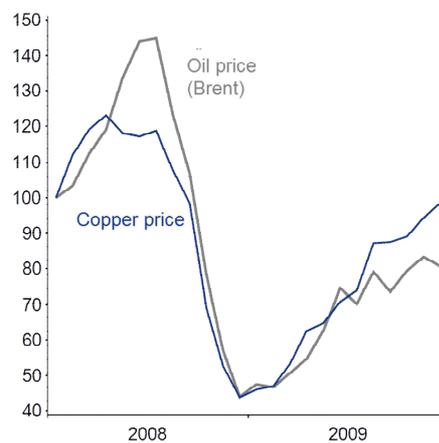
(USD/bbl, daily)



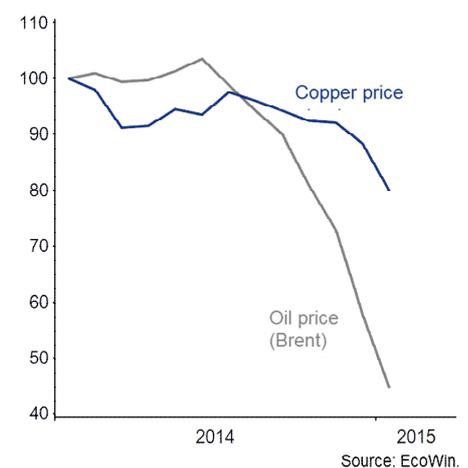
From a historical perspective, significant swings in oil prices are nothing unusual. Nevertheless, the scale of the most recent slide is noteworthy. It is comparable to the period between August and December 2008, when prices tumbled by almost 70%, and the price drop between January and July 1986, which amounted to almost 65%. The price collapse during the global financial crisis in 2007/2008 primarily reflected the reduced demand for raw materials which arose as a result of the recession. This is also visible in the correlation between oil prices and other cyclically sensitive commodities at the time.

Oil versus copper price

Indices
(Monthly data, January 2008=100)



Indices
(Monthly data, January 2014=100)

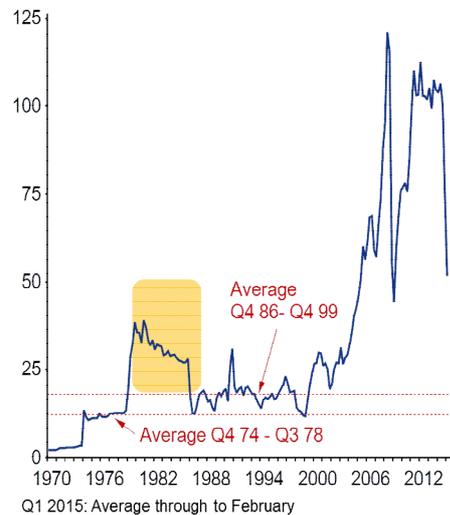


Even if the reduction in demand for oil, as a result of slower growth in emerging markets, played a part, its current development, by contrast, looks to be largely supply-side driven. It reflects structural changes on the oil markets, and the associated shift in behavior of oil producers. To this extent, it has clear parallels with the oil price collapse of 1986, which was ultimately caused by the preceding spike in oil prices, the so-called second oil price shock of 1979. (see following chart).

The oil price collapse 1986

Crude oil price

(quarterly figures,
average of Dubai, Brent & WTI, USD/bbl)

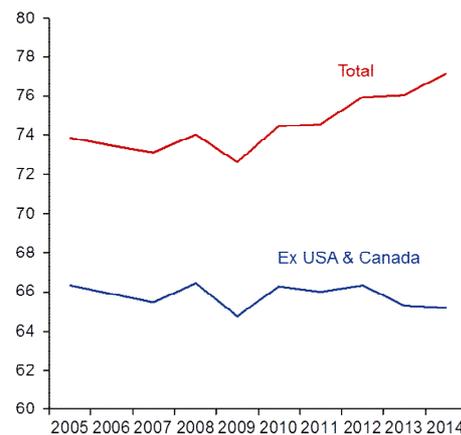


- > Sluggish recovery in oil demand
- > OPEC cartel loses influence → Development of oil fields in Alaska and in the North Sea, expansion of output in Mexico
- > Lax output discipline within OPEC → adjustment left largely to Saudi Arabia
- > 1985: Saudi Arabia abandons its role as swing producer → oil price falls temporarily to average level of Q4 74 – Q3 78
- > Slow recovery: oil price level of 1985 not re-attained until year 2000.
- > Price slide has scant impact on oil demand:
 - Substitution effects (e.g. displacement of oil in electricity production)
 - Efficiency gains in oil consumption

Sources: EcoWin, IMF, Deutsche Bundesbank.

With regard to structural changes on the supply side, the continuous expansion of the North American oil supply (tight oil in the USA and oil from the oil sands in Canada) – which exceeded expectations – over the past few years has been significant, supplementing more or less stagnant production in other regions. This extraction was rendered feasible on the back of high prices and technological innovations opening up new oil fields. However, a substitution effect is also at play, for example with the increasing importance of biofuels.

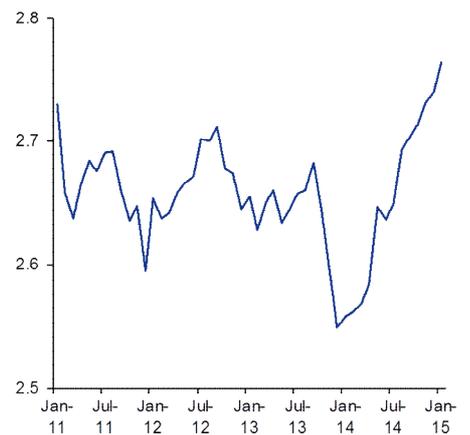
Global crude oil output* (million barrels per day)



* 2014: Average Q1-Q3

Sources: US Energy Information Administration (EIA), Short-Term Energy Outlook, February 2015, own calculations.

Commercial OECD oil stocks (billion barrels)

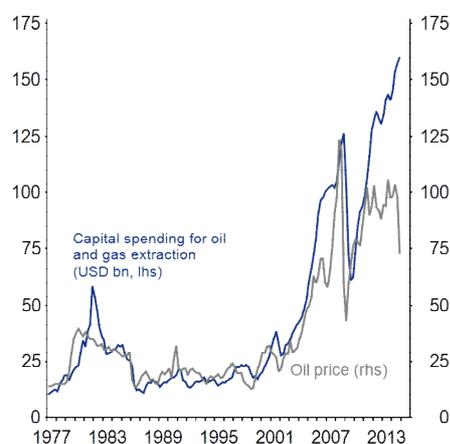


In light of the oil supply situation, already deemed good, OPEC's November 2014 decision to uphold total daily output at 30 million barrels was certainly another factor behind the collapse in oil prices. With this, OPEC evidently changed its tune once again, placing guaranteeing market share in the foreground, and potentially putting a damper on exploration projects with regard to tar sands, shale oil, and deep sea reserves, as well as the increased extraction of gas and the construction of LNG terminals.

Prospects for the oil market

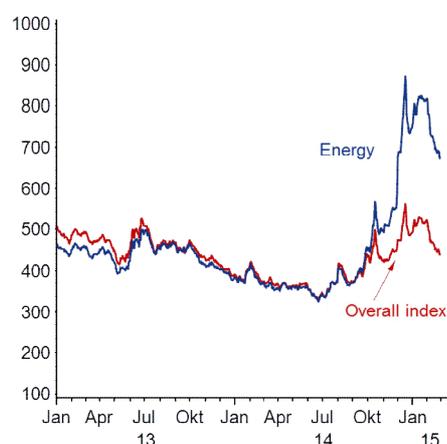
With the increase in demand for crude oil remaining sluggish, adjustments in output are essential to ensure sustained stability and, possibly, an uptick in prices. Based on current estimates for total production costs, the Bank of Canada's latest monetary policy report, for example, suggested that around a third of current oil production, with prices sitting at around USD 60 per barrel, could be uneconomical¹. This includes production in North America, which is relatively costly. Accordingly, it is to be expected that energy companies will decommission further oil rigs, postpone exploratory activities, and trim their investment budgets. As constant new investment is necessary to offset reduced output from active oil rigs, a marked reduction in capital spending is likely to lead to reduced supply growth in the medium term as well.

Crude oil price and capital spending in US energy sector*



* Quarterly figures up to Q4 2014

Risk spreads on bonds in US non-investment-grade segment (basis points)



Source: EcoWin.

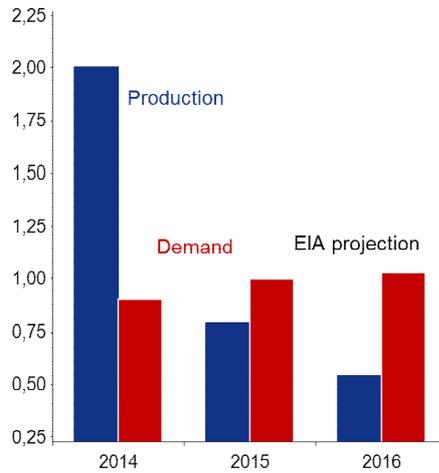
Output may well be adjusted at a faster pace because the financing conditions have worsened, in particular for heavily-indebted oil companies on the North American market. Credit is either hard to come by, or only available at higher interest rates. Firms active in exploration and production in the USA and Canada with above-average levels of debt or below-average cash flow produced 0.35 million barrels of oil per day in 2013².

In light of this, the current projections of the US Energy Information Administration (EIA) look plausible. According to these projections, daily demand for oil will increase by a more or less unchanged 1 million barrels this year, while the increase in daily oil production will slow from 2 to just 0.8 million barrels, with the consequence that oil supply and demand will in future be better in line again. Output adjustment in North America will make a significant contribution to this. The increase in output in this region will likely be only half the level seen last year.

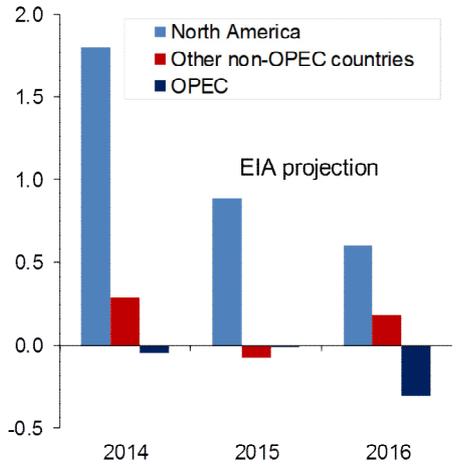
¹ Bank of Canada, "Monetary Policy Report", January 2015.

² c.f. Institute of International Finance (IIF), After the Fall – Consequences of Lower Oil Prices, December 10, 2014.

Increase in global oil production and demand (million barrels per day)



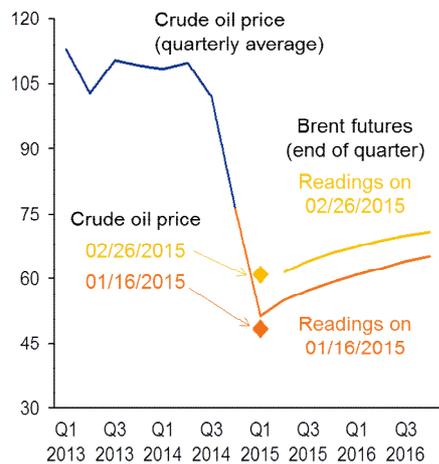
Increase in oil production by region (million barrels per day)



Sources: US Energy Information Administration (EIA), Short-Term Energy Outlook, February 2015, own calculations.

Oil futures markets are also signaling that current oil prices will not remain. Nevertheless, only a gradual rebound is being priced in. The levels seen in the first half of 2014 will likely not be seen for the foreseeable future. Futures in Brent crude oil, for delivery in December 2019, were traded at USD 78 per barrel over the past few weeks. The markup on future crude oil deliveries until the end of 2016 have recently been hinting at an average annual price of around USD 60 per barrel for the current year, and around USD 70 per barrel in the year to come. In 2015 oil prices will, therefore, remain 40% below their average level in 2014 (USD 99 per barrel).

Crude oil price and oil price futures (Brent)



Source: EcoWin.

The rapid jump in oil prices at the start of February seems to anticipate this fundamental development. Reports from energy companies regarding investment cuts and a shrinking number of active oil rigs in the USA have certainly played their part in this recovery. However, this is offset by inventory levels, which continue to increase. Taking this into account, we conclude that oil prices will drop slightly, in the short term, and remain at this low level. The effects on production caused by reduced investment will only become clear over the course of the second half of the year, and then cause prices to rise.

Analyzing previous oil price cycles can help in determining how long oil prices can remain at this lower level. This enables us to ascertain that negative price developments usually only persist for a short period of time before prices stabilize, as a result of improved economic conditions, on the one hand, and OPEC cutting output on the other. For example, during the Asia crisis of 1997/1998, OPEC agreed to cut supply in spring 1998, after the crisis had been raging for five months and prices had fallen by 30%. Oil prices then began to increase in 1999. When oil prices fell sharply in 2008, OPEC took just two months to announce that supply would be cut, and then also imposed further restrictions, leading to a swift recovery in which oil prices almost reached pre-crisis levels. By contrast, when oil prices slumped in 1985/1986, OPEC took a back seat for a much longer period of time. But new quotas were agreed eventually. Although no official price target was set, the goal is to keep oil prices within a certain range to allow OPEC members to receive a 'fair proportion' of the global oil market. To this extent, it should come as no great surprise if OPEC introduces measures to reduce supply over the coming months, supporting the bottoming out of oil prices. However, such a step is not likely to be taken too aggressively. Significantly higher prices would ultimately lead to notable growth in non-OPEC output, running counter to the race for market share. Given the expansion of unconventional oil, it is to be expected that global capacity to supply oil, with prices around USD 100 per barrel, is greater at the moment than it was just a few years ago.

Nevertheless, there is considerable uncertainty regarding the development of oil prices in the future. Further technological advances in oil production, in combination with cost-cutting measures by oil producers, could push down breakeven costs for certain energy projects, driving prices down. Over recent decades there have been dramatic productivity gains in oil extraction. Innovations to improve energy efficiency, and environmental requirements, could also contribute to sustained subdued demand for oil. On the other hand, if OPEC changes its strategy and curbs the amount of oil available appreciably, prices could spike. In addition, disruptions to supply caused by geopolitical developments are a permanent source of volatility. Finally, the scaling back of investment in regions with high costs could unduly reduce supply growth in the medium term. OPEC's current capacity reserves could then prove insufficient to offset a significant decrease in non-OPEC supply.

Winners and losers in the oil price collapse

A substantial drop in oil prices such as that seen since mid-2014 has tangible effects on macroeconomic variables such as growth, inflation and international capital flows. However, these effects vary greatly depending on the country and region involved. Here, we will primarily focus on the consequences of the oil price collapse on economic growth. Model-based simulations support our forecast that the supply-side induced price decrease will, on balance, lead to an increase in global output. Taking the assumption that approximately 60% of the price drop in the second half of 2014 is due to a sustained supply shock, the Institute of International Finance (IIF) puts the boost to global economic output at 0.4% over the medium term, with the bulk of the growth impetus likely in the first two years³. The International Monetary Fund (IMF) reached a similar conclusion: in an analysis also published in December 2014, economists Rabah Arezki and Olivier Blanchard put the additional boost to growth for the current year at between 0.3% and 0.7%⁴.

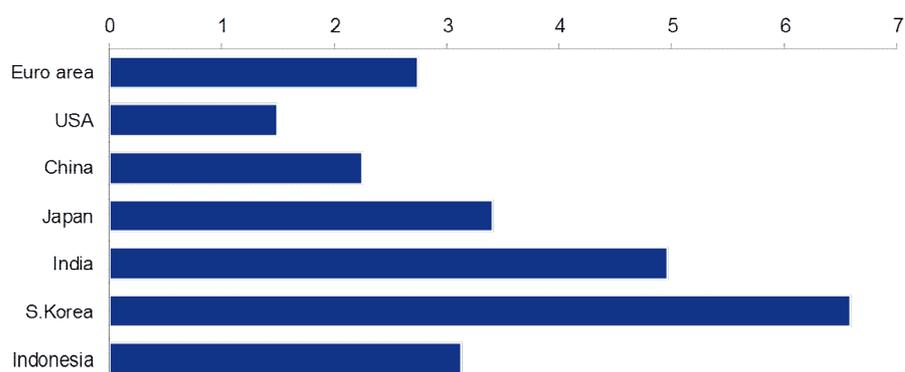
³ c.f. IIF, op. cit.

⁴ c.f. Arezki, R. und O. Blanchard, 2014. "Seven Questions about the Recent Oil Price Slump." IMFdirect – The IMF Blog, December 22, 2014.

The positive effects of low oil prices will be particularly visible on economies which are heavily dependent on oil imports, and/or whose industries are very energy-intensive. As the following chart illustrates, among industrialized nations, the eurozone and Japan will benefit in particular from the fall in oil prices. In 2013, the eurozone's net oil imports amounted to 2.7% of its GDP. A halving of the oil price would, all else being equal, would lower net oil imports to 1.35% of GDP. The impact will, however, be slightly less due to the depreciation of the euro against the US dollar, which will erode some of the relief.

Net oil importers enjoy sharply lower oil bills

Net oil imports (2013, as % of GDP*)



*) Calculation based on average oil price in 2013 (average Dubai, Brent and WTI) and average exchange rate against USD.

Sources: US Energy Information Administration, EcoWin, own calculations.

Among the emerging markets, the relief will be particularly marked in India and South Korea. In India it will amount to 2½% of GDP, in South Korea to as much as 3.3%, and in China to a good 1%. Overall, the boost to growth in the emerging markets is likely to be somewhat less than in industrialized nations. This is mainly because the positive growth effects in oil-importing emerging markets (particularly due to stronger private consumer demand) will at least be partially offset by weaker growth in the large oil-exporting emerging markets.

In some oil-importing emerging markets, the drop in oil prices has had a considerable side effect: it has created room to cut energy subsidies. This not only frees up funds which can be used for important infrastructure investments, but also helps rein in existing budget deficits. Examples include India, Indonesia and Malaysia. In November 2014, fuel prices in Indonesia were increased by 33%, helping to halve fuel subsidies to 1.4% of GDP. The funds released by this are to be channeled into investment and the budget deficit kept at around 2% GDP. In India, diesel prices were completely deregulated in October 2014, relieving the budget to the tune of 0.5% of GDP. Gasoline prices had already been deregulated.

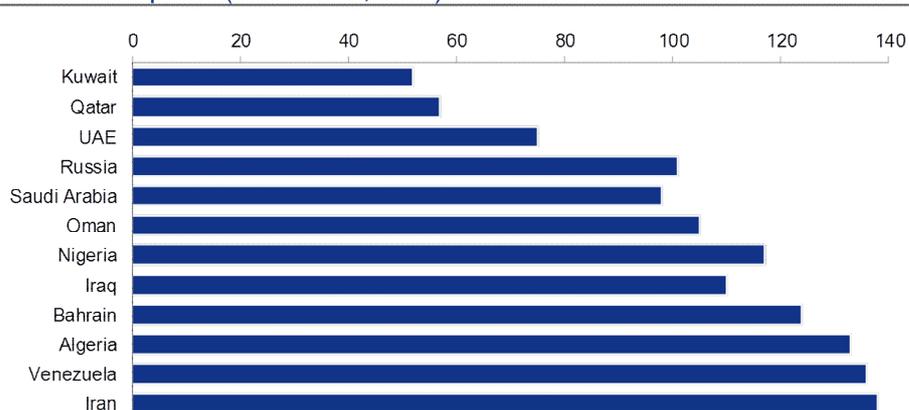
In light of the slump in oil prices, we lifted our growth forecast for this year inter alia for the eurozone and Germany appreciably. We now expect real economic growth of 2.1% (previously: 1.6%) in Germany. Consumption will be one of the main beneficiaries from the slide in oil prices. We expect real private consumption in Germany in 2015 to increase by around 2½%, i.e. even more strongly than in bumper year 2011.

Compared with last fall, our forecast for growth in global economic output has remained practically unchanged, with an increase of almost 3%. This is primarily down to the fact that the economic outlook in a range of countries has clouded over substantially over the

past few months. In some of these countries, the deterioration is closely linked to the fall in oil prices. Venezuela is a prime example. As a result of its heavy dependence on oil and the already fragile state of the Venezuelan economy, the risks associated with long-term low oil prices are particularly high for this Latin American country. The so-called 'breakeven oil price' needed to balance the budget was around USD 136 per barrel last year. Compared with other countries, this is very high. By comparison: in Saudi Arabia and Russia, the breakeven oil price in 2014 was around USD 100 per barrel. Assuming that oil prices don't pick up massively, the Venezuelan budget deficit is likely to brush around 17% of GDP this year. The economy threatens to slump by at least 5%. Recent changes to the exchange rate system enacted by the Venezuelan government imply de facto a depreciation of the bolivar by around 70% against the US dollar. On its own, with its impact on state finances this will to some extent offset the slump in oil prices because oil revenues are calculated in US dollars, while the budget is drawn up in the national currency. All told, the risk of a Venezuelan default has increased further as a result of the slump in oil prices.

Low oil price squeezes budgets of oil-exporting countries

Breakeven oil price* (USD/barrel, 2014)



*) Oil price required to register a balanced budget.

Source: IIF.

The Russian economy is currently not only suffering as a result of dramatically lower oil prices, but also as a result of the economic sanctions imposed on Russia in the context of the conflict in the Ukraine. In combination, these two factors will tip the Russian economy into a deep recession this year. We expect GDP to fall by around 4%. However, should, contrary to our expectations, oil prices fail to stabilize and/or the situation in east Ukraine worsen to the extent that additional economic sanctions are imposed, a drop in GDP of between 10% and 15% would be a real prospect. The Russian economy is heavily reliant on oil and gas. They account for nearly 70% of total Russian export earnings, and almost half of central government revenue. Even if the massive depreciation of the ruble against the US dollar and the euro has so far prevented the budget deficit from widening, the fiscal consolidation pressure is still substantial. The Russian government has already announced that it will be cutting most of the expenditure items planned for 2015 by 10%. Defense and welfare are two areas which have been ring-fenced. In contrast to Venezuela, we think that it is extremely unlikely that Russia will default. Last year, government debt stood at around 10% of GDP. In 1997, the year before Russia declared bankruptcy, it amounted to 54% of GDP. With its currency reserves, the country still has a substantial safety cushion – even if it has shrunk appreciably in recent months.

Most of the oil-exporting countries in the Arab world are able to weather the recent slump in oil prices far better than was the case in the 80s and 90s, for example. The primary reason is the public sector's large reserves of foreign assets (currency reserves and sovereign wealth funds), as well as the generally low levels of government debt in most of these economies. Despite the sharp drop in oil revenues, the respective governments will more or less be in a position to uphold their spending plans by resorting to their financial cushions. As a result, the slowdown in economic growth in these countries will be limited.

As always, the evaluations are subject to the following cautionary notes.

ABOUT THE ALLIANZ GROUP

Together with its customers and sales partners, Allianz is one of the strongest financial communities. More than 83 million private and corporate customers insured by Allianz rely on Allianz's knowledge, global reach, capital strength and solidity to help them make the most of financial opportunities and to avoid and safeguard themselves against risks.

In 2013, around 148,000 employees in over 70 countries achieved total revenue of 110.8 billion euros and an operating profit of 10.1 billion euros. Payouts to customers came in at 93.9 billion euros.

This business success with insurance, asset management and assistance services is based increasingly on customer demand for crisis-proof financial solutions for an aging society and the challenges of climate change. Transparency and integrity are key components of sustainable corporate governance at Allianz SE.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

In so far as forecasts or expectations are expressed in this document or where our statements concern the future, these forecasts, expectations or statements may involve known or unknown risks and uncertainties. Actual results and developments may therefore differ considerably from the expectations and assumptions made.

Such deviations may arise due to, without limitation, (i) changes of the general economic conditions and competitive situation, particularly in the Allianz Group's core business and core markets, (ii) performance of financial markets (particularly market volatility, liquidity and credit events), (iii) frequency and severity of insured loss events, including from natural catastrophes, and the development of loss expenses, (iv) mortality and morbidity levels and trends, (v) persistency levels, (vi) particularly in the banking business, the extent of credit defaults, (vii) interest rate levels, (viii) currency exchange rates including the euro/US-dollar exchange rate, (ix) changes in laws and regulations, including tax regulations, (x) the impact of acquisitions, including related integration issues, and reorganization measures, and (xi) general competitive factors, in each case on a local, regional, national and/or global basis. Terrorist attacks and their consequences can increase the probability and extent of fluctuations.

NO DUTY TO UPDATE

The company is under no obligation to update the information and the forward-looking statements made in this report, provided there is no statutory publication requirement.