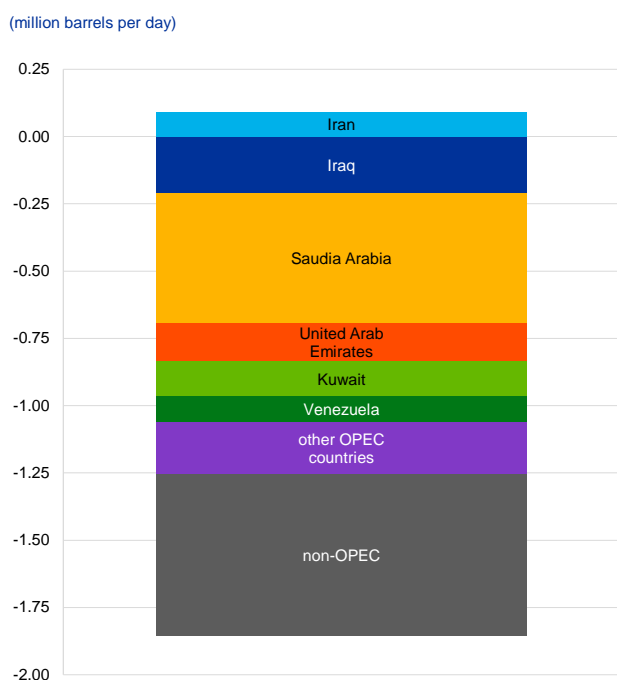


Boxes

1 Impact of the November 2016 OPEC agreement on the oil market

At its Ministerial Conference on 30 November 2016, the Organization of the Petroleum Exporting Countries (OPEC) set the terms for reintroducing an oil production target of 32.5 million barrels per day. The agreement involves a cut in output of 1.2 million barrels per day, to be implemented through a uniform 4.5% reduction of each member's supply, from January to June 2017 (see Chart A). Depending on market conditions and prospects, the agreement to reduce the supply of oil may be extended to the end of 2017. However Libya and Nigeria have been exempted, because their supply is unpredictable and subject to recurrent disruptions as a result of political instability. Iran, which is recovering from western sanctions, was given special treatment and allotted a target of 4 million barrels per day – well above its actual production level. OPEC's strategy to cut oil production is supported by non-OPEC producers, who plan to carry out a reduction of 0.6 million barrels per day. The global supply will be curbed by 1.9%, which compares with its 2.6% growth over the period 2015-16.

Chart A
Production cuts agreed at the OPEC meeting on 30 November



Source: OPEC.
Notes: Iran: 0.09 mb/d, Iraq: -0.21 mb/d, Kuwait: -0.13 mb/d, Saudi Arabia: -0.49 mb/d, United Arab Emirates: -0.14 mb/d, Venezuela: -0.1 mb/d, non-OPEC: -0.6 mb/d; *other OPEC countries* includes Algeria (-0.05 mb/d), Angola (-0.08 mb/d), Ecuador (-0.03 mb/d), Gabon (-0.01 mb/d) and Qatar (-0.03 mb/d).

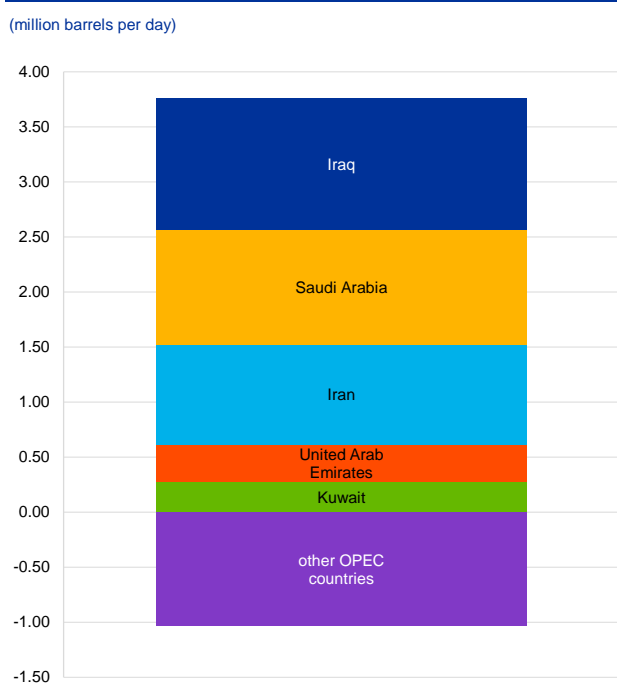
This box reviews the organisation's new supply strategy and provides an assessment of the potential impact on the oil price. Since OPEC announced on 28 September its intention to reinstate a production cap, the price of oil has fluctuated within a range of USD 44-54 per barrel. This has resulted in somewhat higher volatility but no significant price rise, as market sentiment about the likelihood of reintroducing production quotas has proved fickle. Following the agreement, the Brent oil price soared by USD 6 per barrel (rising from USD 45.9 on 29 November to USD 52.0 on 7 December). However, some of the considerations which generated market uncertainty still prevail.

This is the first time that OPEC and non-OPEC producers have agreed a coordinated cut in supply. The collaboration is underpinned by the various countries' common desire to improve the financial conditions of their economies. OPEC's contribution is more modest than on previous occasions (being approximately half the cut implemented during the Asian crisis or the Great Recession) but the involvement of non-OPEC producers helped to ensure a substantial reduction in the supply of oil. However the actual reduction may turn out to be less than

announced, as it remains to be seen whether Russia and other non-OPEC producers will respect their commitments.

With this agreement, Saudi Arabia is backtracking on the strategy it took in November 2014 of safeguarding its market share. At the time, it opposed a move put forward by the smaller members to limit production to prevent a further slide in the price of oil. As a consequence, from the beginning of 2015, the total OPEC supply expanded by 2.7 million barrels per day. The bulk of this supply came from Iraq, Saudi Arabia and, later on, Iran but the production rates of some members declined because of low oil prices (see Chart B).

Chart B
OPEC members supply changes over last two years



Source: International Energy Agency.
Notes: Iran: 0.91 mb/d, Iraq: 1.19 mb/d, Kuwait: 0.28 mb/d, Saudi Arabia: 1.04 mb/d, United Arab Emirates: 0.34 mb/d, "other OPEC countries" includes Algeria (-0.01 mb/d), Angola (-0.17 mb/d), Gabon (-0.03 mb/d), Libya (-0.18 mb/d), Nigeria (-0.32 mb/d), Qatar (-0.06 mb/d), Venezuela (-0.32 mb/d), Ecuador (0.01 mb/d) and Indonesia (0.04 mb/d).

The impact of the OPEC decision on future oil prices can be assessed with a wide set of models.

For example, the supply reduction has been analysed through the lenses of models used by Eurosystem staff⁹ and with the help of a structural vector autoregression (SVAR) model of the oil market with sign restrictions, similar to the one proposed by Kilian and Murphy.¹⁰ Using these models, the oil price is forecast to increase by the end of 2017 to between 19% and 25% above the baseline projections which are based on oil future prices.¹¹

This upward scenario is however surrounded by downside risks. First, the existence of massive inventories accumulated over more than two years of excess supply may act as an additional buffer, cushioning any sudden and large oil price responses. Second, production developments in exempted OPEC members may partially offset the supply. Third, the potential endogenous reaction of non-OPEC supply may cap the oil price response. In particular, the structural modifications brought about by the US shale revolution reduced extraction costs for shale to levels below those of other non-conventional oil producers, a change that is likely to affect the equilibrium price of oil.

In the long run the oil price remains tied down by the marginal cost of production. Structural market conditions have not changed in the meantime. If anything, the oil market has become even more competitive today than it was two

⁹ See the four-model combination presented in the article entitled "Forecasting the price of oil", *Economic Bulletin*, Issue 4, ECB, 2015.

¹⁰ "The role of inventories and speculative trading in the global market for crude oil", *Journal of Applied Econometrics*, Vol. 29, 2014, pp. 454-478.

¹¹ The baseline projections forecast the oil price to reach USD 55 per barrel by the end of 2019. The analysis conducted in this box is broadly in line with an alternative oil price path used to perform a sensitivity analysis around the latest Eurosystem staff macroeconomic projections, which were conditioned, inter alia, on oil price futures before the OPEC agreement. The results of this sensitivity analysis are presented in Box 3, entitled "Sensitivity and scenario analyses", in the December 2016 Eurosystem staff macroeconomic projections for the euro area, available on the ECB's website.

years ago, as the cost-effective restructuring of the US oil industry and new technological progress have further reduced the shale wellhead break-even price by more than a fifth over three years.¹²

¹² Rystad Energy, *North American Shale Report – NASReport*, 2016.