The price of a barrel of Brent has risen markedly to date this year. Specifically, from end-2018 to late April 2019, the oil price climbed 40%, to $75, the highest price for this commodity since October 2018 (that said, there has been a sharp decline subsequently) (see Chart 1). As this box sets out, the price rise seen in the first four months of the year is chiefly associated with various supply-side factors, including the recent cuts in production by OPEC and its partners, the US sanctions on Iran and the abrupt decline in Venezuelan output (see Chart 2).

Moreover, dearer crude between January and April may also have been partly in response to demand-side factors, insofar as it has been accompanied by a perception of some improvement in global activity. Initially, economic developments proved somewhat more favourable than expected at the start of the year. But the recent heightening of trade tensions has reignited doubts over the strength of global demand, which may have contributed to the fall in oil prices observed over the course of May.

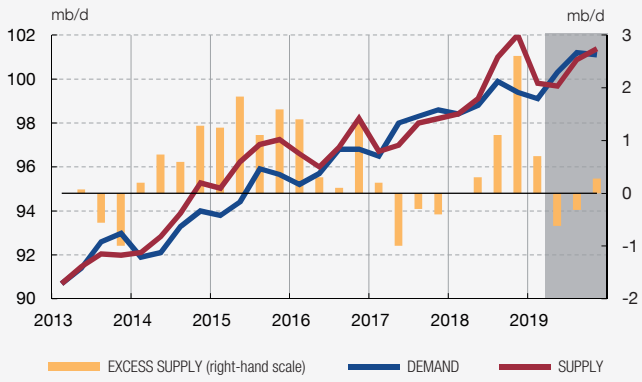
This box describes in detail the supply-side factors behind dearer crude in 2019 to date, and provides a quantification of the sensitivity of oil prices to shocks of this nature. One fundamental supply element when it comes to explaining price developments is the production strategy of OPEC and its partners (OPEC+). Last

Chart 1
OIL MARKET

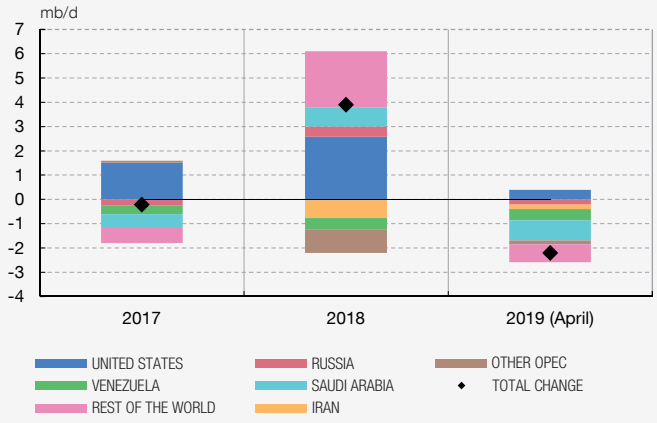
The price of a barrel of Brent has increased considerably in 2019. This rise is associated with the production cuts by OPEC+, with the US sanctions on Iran and with the sharp fall in Venezuelan output. The heightening of trade tensions in the recent period extends the doubts over the weakness of the global demand for oil.

1 OIL PRICES (BRENT)

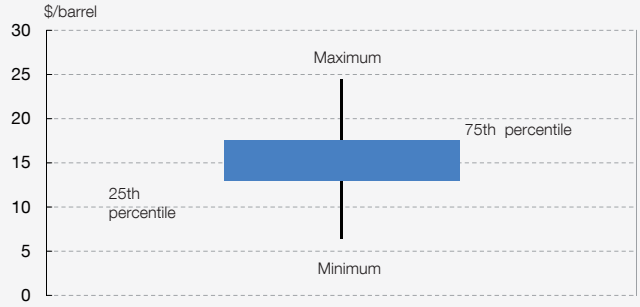
2 SUPPLY AND DEMAND (a)



3 CHANGE IN PRODUCTION (b)



4 IMPACT OF A PERMANENT SUPPLY SHOCK OF -1MB/DAY ON OIL PRICES



Range of simulations based on different Structural Bayesian VAR models

SOURCES: International Energy Agency, Bloomberg, IFS and own calculations.

a Supply projections calculated having regard to constant OPEC production.
b Q4 over Q4, except 2019: April over December.

December, OPEC+ agreed to cut crude oil extraction by 1.2 million barrels a day (mb/d), accounting for 1.2% of the global oil supply. This was an attempt to re-balance the market, after the rising trend in inventories and the decline in prices observed in the second half of 2018. Under the terms agreed, the OPEC countries' contribution to the cut would be 0.8 mb/d, and that of the non-OPEC members, 0.4 mb/d.[1] The aim of the agreement was to try and set a floor to the price per barrel of around $60 dollars. On data to April, the reduction in output is estimated to have exceeded the 0.4 mb/d agreed upon (see Chart 3).[2] At its forthcoming meeting in June, OPEC+ will have to decide, in view of market developments, whether it maintains the cuts and their size.

Another key factor behind the price rise is the resumption of US sanctions on Iran. These include, in particular, a halt in oil purchases from Iran.[3] As a result of the sanctions, Iranian oil production has dipped by almost one-third to 2.6 mb/d and might fall to a greater extent in the coming months (see Chart 3).

The third factor bearing on supply is the collapse of oil production in Venezuela.[4] True, Venezuelan crude oil production has been falling for almost two decades. But the decline has become more pronounced in the past three years, from 2.3 mb/d in January 2016 to 0.8 mb/d in April 2019 (see Chart 3). This slump has been in an environment of strong political tensions and a fresh round of US sanctions. In perspective, the factors behind this development would be related to the secular decline in investment and to the shortcomings in the management of firms in the sector. Looking ahead, against the backdrop of the difficult political context, the outlook is negative. That is due to financial difficulties and to the US sanctions, both of which factors prevent the necessary inputs being imported to maintain production and to check the progressive deterioration in the network of pipelines and infrastructure needed for extraction.

To assess the impact on crude prices of a worsening in the situation in Iran or Venezuela, a series of simulations have been performed with a set of ten alternative models. These consider different specifications of the price of a barrel of Brent in real terms based on a series of variables (world crude production, various indicators of global economic activity – as a proxy for demand – and oil inventories of the OECD countries).[5] The simulations show that a permanent unanticipated shock, consisting of a reduction in supply of 1 mb/d, would have an upward impact on the Brent per-barrel price of between $6 and $24, with the average effect around $15 dollars (Chart 4).

Against this background, if global demand for oil were to trend in line with International Energy Agency (IEA) projections, which were made before the recent rise in trade tensions, the market could tighten again in the short term. There could be possible upward risks to crude prices if the supply-side shocks described were to increase. However, in the medium term several factors can cap the rise in prices. First, OPEC and Russia might react with increases in their production to this hypothetical scenario of additional price rises. Hence, the Saudi authorities have suggested they might use a portion of their spare production capacity (some 2.2 mb/d) to accommodate supply. Moreover, the limited fiscal leeway of some of the OPEC+ members will foreseeably contribute to encouraging increases in production (although given their downward impact on prices, it is not obvious they will achieve their revenue-raising objective). Lastly, shale-oil production in the United States will continue growing, which might consolidate this country's position this year as the leading global oil producer and turn it into a net oil exporter.[6]

In sum, there are arguments that the increase in prices observed until end-April might conceivably respond to supply fluctuations. In the medium term, it is likely that several of the producer countries signatory to the agreement to cut output may not wish it to hold over time. And this, along with the supply of shale oil in the United States, would tend to restrict the rise in crude prices, at the expense of the evolution of demand. In any case, the upcoming IEA forecasts may portray a less favourable demand scenario, reflecting the forces that appear to have characterised recent oil market developments. That would add a downward risk to the price of this commodity.

1 In any event, Iran, Venezuela and Libya were exempt from production cuts.

2 In particular, Saudi Arabia's production has been 0.5 mb/d below its assigned target, while Russia, conversely, showed a compliance rate of only 80%.

3 Iran has the fourth biggest reserves in the world after Venezuela, Saudi Arabia and Canada. Whereas before the Iranian revolution in 1979 production rose to 6 mb/d, it subsequently fell drastically, recovering partly only after the lifting of the embargo in 2015, to 3.8 mb/d at the start of 2018, 4% of global supply. In principle, it was expected that the entry into force of the sanctions on oil purchases would be in November 2018. However, the US administration introduced exemptions, which expired in early May.

4 Venezuela, according to its authorities, has the biggest crude oil reserves in the world, some 300 billion barrels of heavy crude. However, much of these reserves have very high production costs. According to alternative sources, Venezuela's economically viable oil resources with per-barrel prices of $50 would only amount to 75 billion barrels.

5 These models use a Bayesian Structural VAR (BVAR) methodology with sign restrictions. The identification used allows a distinction to be drawn between supply shocks, global demand, speculative demand and idiosyncratic oil demand factors. In any event, it should be pointed out that the modelling of oil prices is not trivial, as academic debate shows, and the conclusions may change significantly depending on the model used.

6 Admittedly, however, other factors would tend to limit the downward pressures on prices. Firstly, there are doubts in the market about Saudi Arabia's capacity to expand its output in a sustained manner, and about the possibility of OPEC replacing the crude oil varieties produced by Iran and Venezuela. Secondly, shale-oil extraction in the United States is highly sensitive to prices; thus, if prices fall that would translate into output reductions.