

## Recent developments in the oil market

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### Rationale

Oil prices have fluctuated considerably over the past year. Against this background, it is worth analysing the factors behind recent oil price developments, as well as some key aspects for assessing the outlook for the near future.

### Takeaways

- Following the downward trend seen in the second half of 2022, the price of oil hovered around \$80 a barrel throughout 2023, albeit with notable fluctuations.
- The Q3 uptick in oil prices can essentially be attributed to supply-side factors, such as the OPEC+ production cuts, while lacklustre demand appears to lie behind the moderation observed during the rest of the year.
- Looking ahead, the potential for geopolitical tensions to push up oil prices could be offset, at least partially, by the release of inventories, the deployment of spare capacity and the response from other producers, such as the United States, although shale oil production is increasing more slowly than in the pre-pandemic period.

### Keywords

Oil, prices, demand, supply.

### JEL classification

Q41, Q43.

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## RECENT DEVELOPMENTS IN THE OIL MARKET

Following the sharp drop in oil prices seen in the second half of 2022 (from \$130 a barrel in March after the invasion of Ukraine to \$80 by the end of the year), the price of Brent<sup>1</sup> hovered around the \$80-mark over 2023. Nonetheless, prices experienced significant ups and downs, such as the 30% rebound in Q3, after a relatively stable first half of the year, and the subsequent 20% drop in Q4 (see Chart 1.a). These fluctuations took place in a context in which the demand for oil fell short of expectations and with unforeseen supply-side shocks stemming both from geopolitical tensions (such as the Middle East conflict<sup>2</sup>) and from the decisions of OPEC+,<sup>3</sup> which announced several production cuts over the course of 2023 in an attempt to prop up high prices in the face of weak global economic activity. This article aims to analyse the changes in oil prices over 2023 and the factors behind such changes (bearing in mind that their macroeconomic impact depends on the nature of the shock), as well as the aspects that are set to shape developments on the oil market in the coming months.

To analyse the determinants of Brent oil prices in 2023, an econometric model of the oil market is used to identify the contributions made by supply-side factors, global demand and changes in inventory levels.<sup>4</sup> Specifically, while the first two factors refer to the traditional drivers of supply and demand, an inventory shock is likely to reflect a greater demand for oil to be stockpiled for speculative or precautionary reasons (rather than for immediate consumption), as a result, for instance, of greater uncertainty. It is important to identify these factors correctly, since the macroeconomic implications are different. While a negative supply shock is likely to have an adverse impact on global economic activity, as firms and households' energy costs rise amid oil production cuts, the effects of higher oil prices as a result of a positive demand shock are offset by the growth in global economic activity (which is what gave rise to the increase in the first place).

Based on the results obtained, it appears that the slowdown in oil prices in both the first half and the final quarter of 2023 can primarily be attributed to weak demand (see Chart 1.b), which looks to have been more subdued than anticipated. Meanwhile, the rebound seen in 2023 Q3 can largely be explained by the unexpected cutback in oil production in that quarter and, to a lesser degree, the strength of demand. These supply- and demand-side factors are analysed in greater detail below.

On the demand side, one of the key factors shaping developments in 2023 was the weakness of economic activity in the advanced economies, particularly in Europe. Indeed, while the demand

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1 Brent is the type of oil extracted from the North Sea, and is used as a benchmark for the price of oil in Europe.

2 In addition to the Israeli conflict in Gaza, following the attacks by Hamas in October, tensions broke out in the Red Sea midway through December with attacks on several vessels in the Suez Canal, leading some trade to be rerouted around the Cape of Good Hope.

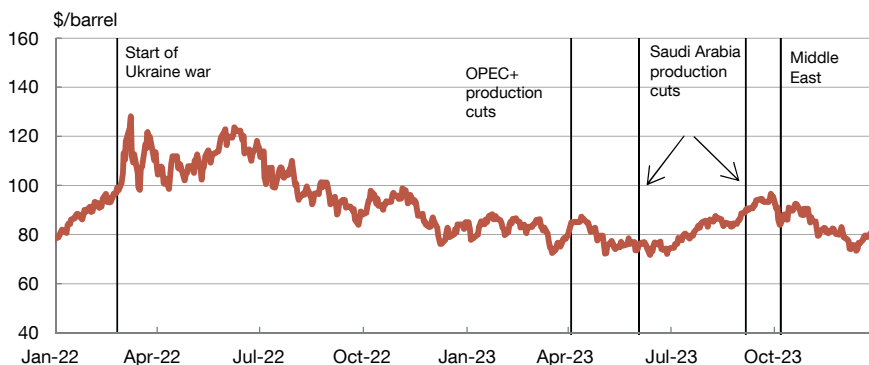
3 OPEC+ refers to the alliance between OPEC (Organization of the Petroleum Exporting Countries) and other non-OPEC oil producers.

4 A Bayesian structural VAR model estimated with monthly data for the period from January 1980 to November 2023. The structural shocks are identified following a sign restrictions framework, which enables a distinction to be drawn between oil market supply-side, global demand, precautionary demand and idiosyncratic factor shocks. See Alonso-Álvarez and Santabárbara (forthcoming).

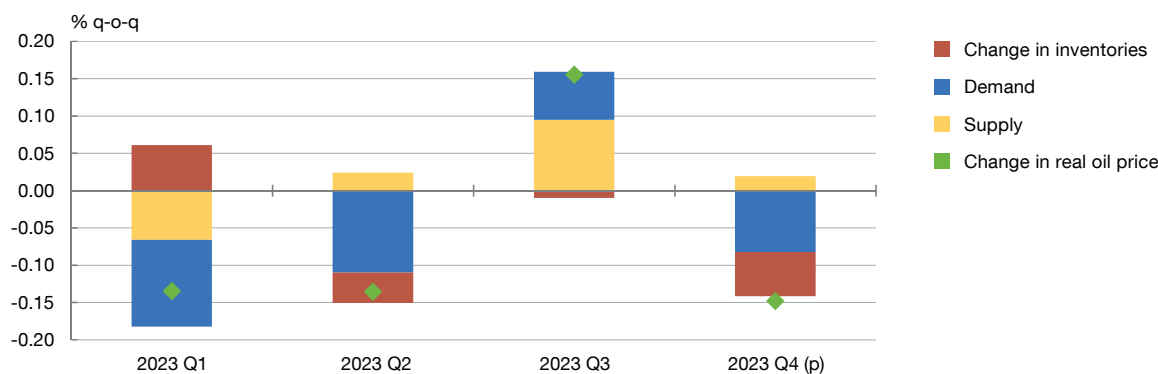
Chart 1

**Oil prices and their determinants**

1.a Oil price per barrel and unexpected supply shocks



1.b Breakdown of recent oil prices (a)



SOURCES: Refinitiv and devised by author drawing on Alonso-Álvarez and Santabarbara (forthcoming).

a Devised by author based on a model with sign restrictions that distinguishes between demand, supply and precautionary demand (inventory change) shocks. Demand includes both global demand and specific demand due to idiosyncratic factors of the model. In 2023 Q4 only data for October and November are available.



for oil grew throughout 2023, particularly in Q2 and Q3, when it increased by around 3 million barrels a day (mb/d) (see Chart 2.a), this growth appears to have been somewhat weaker than initially forecast for 2023 H1 and Q4. For instance, the International Energy Agency (IEA) has revised demand growth for 2023 Q4 downwards by almost 400,000 barrels a day,<sup>5</sup> largely as a result of the weakness of the European economy and lower demand in the United States late in the year. Conversely, much of the buoyancy of the demand for oil in 2023 appears to have been driven by China, which accounts for 80% of the growth in global demand, owing to the sharp rise in fuel consumption in the first two quarters of 2023 (following the economic reopening early on in the year, leading to greater mobility) and to the significant expansion of the Chinese petrochemical sector in 2023 Q3.<sup>6</sup> However, in line with the trend observed in much of the rest

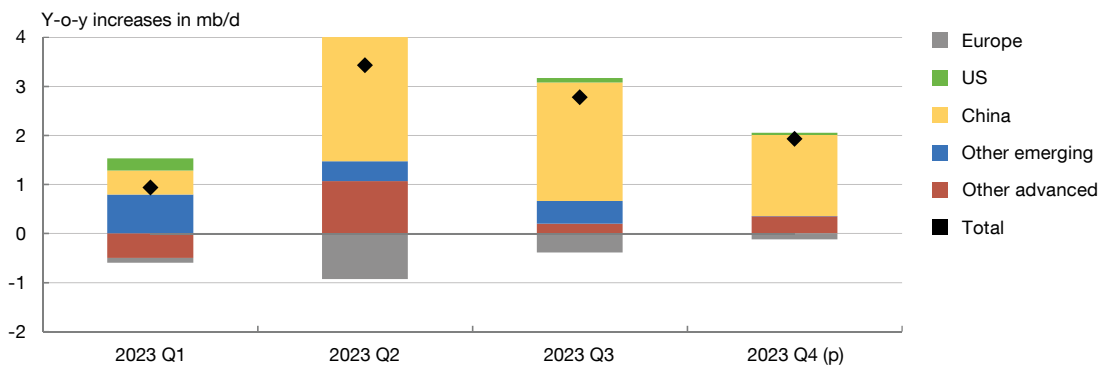
5 See the International Energy Agency's December 2023 Oil Market Report (OMR).

6 Following a significant increase in the country's processing capacity in recent years, demand for petrochemical products has risen sharply in China since 2023 H2. According to the IEA, this has come at the expense of producers in Europe, East Asia and the Middle East, which appear to have lost market share. See IEA (2023)

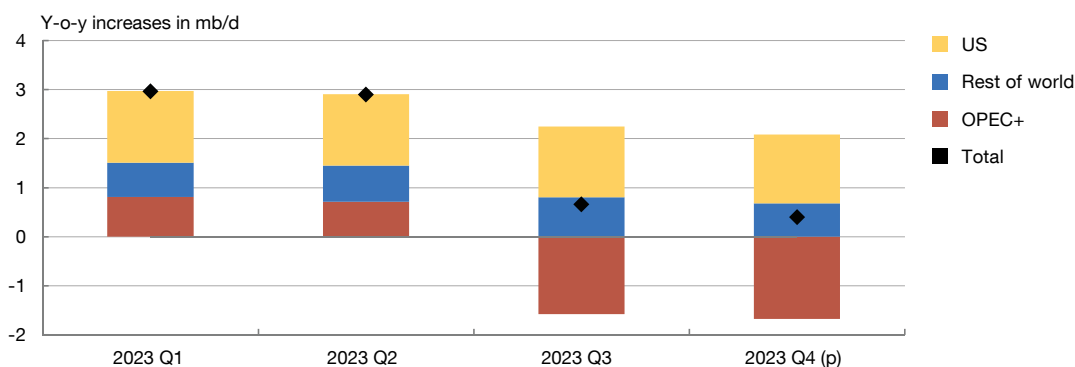
Chart 2

**Oil demand and supply, by area**

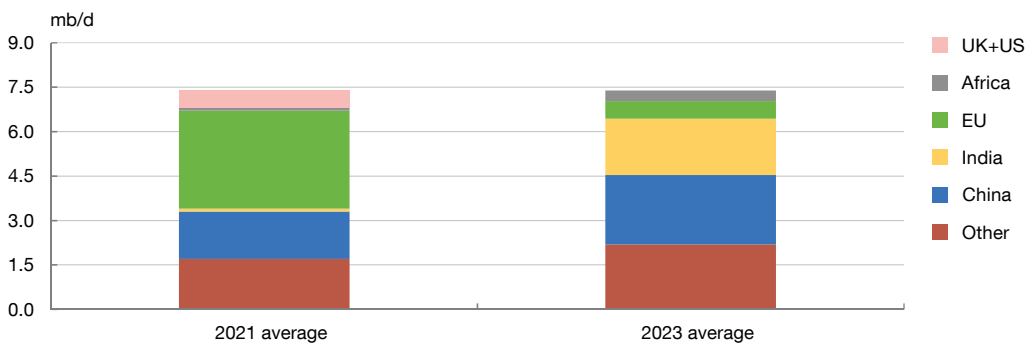
2.a Oil demand



2.b Oil supply



2.c Russian oil exports (a)



SOURCE: IEA.

a Includes exports of oil and oil-related items. Exports to the UK and the US were 0 in 2023.

of the world, Chinese demand for oil products is also showing signs of cooling, based on the October figures. Lastly, improvements in energy efficiency and the rise of electric vehicles appear to be reducing oil consumption worldwide.

From a supply-side perspective, events have largely been shaped by the strategic decisions of OPEC+, which announced various production cuts over the course of 2023 in a bid to keep oil prices high in the face of lacklustre demand. Thus, in April 2023 OPEC+ announced that it would be cutting production by 1.2 mb/d, leading to a slight slowdown in output growth in Q2 (see Chart 2.b). This was compounded by voluntary cutbacks by Saudi Arabia (1 mb/d), from July onwards, and by Russia (0.3 mb/d), triggering a pronounced slowdown in total oil production. Overall, the cuts announced in 2023 amounted to 2.5 mb/d (around 2.5% of the global supply), which came on top of the 2 mb/d announced in November 2022. This drop-off in production was offset by robust output in non-OPEC+ countries, which grew by an average of 2.2 mb/d in 2023. Two-thirds of this growth can be explained by the strength of oil production in the United States (see Chart 2.b), whose contribution remained constant across all quarters. Also, despite the sanctions imposed by the advanced countries, Russian oil exports remained stable in 2023, as export flows shifted away from the United States, the United Kingdom and Europe to Asian countries (mainly India and China), as shown in Chart 2.c. Thus, the geopolitical tensions in Ukraine and the Middle East do not appear to have impacted production significantly.

Looking ahead, the oil market will largely be shaped by the fallout from the potential geopolitical tensions and by how other non-OPEC+ suppliers respond. In an increasingly complex geopolitical setting, most recently in the form of the war in the Middle East and the attacks on vessels in the Red Sea, further tensions affecting the oil market cannot be ruled out, although the impact of such events tends to be temporary<sup>7</sup> given the existence of mitigating factors. These notably include the response of other producers, such as the United States. In particular, the oil market has been transformed by the emergence and development of shale oil in the United States over the past decade, affecting both the structure of the market and the strategic decisions adopted by OPEC since 2014. In the years prior to the pandemic, with oil prices standing above \$50-\$55 per barrel (the range at which shale oil production becomes profitable), the United States grew its market share to the detriment of the more traditional producers and, specifically, of OPEC.<sup>8</sup> However, in the most recent period (since 2020), shale oil production has expanded more slowly than in the pre-pandemic period. Indeed, while the price of the West Texas grade<sup>9</sup> has risen by a greater amount and for longer since 2020, the growth in shale oil production has slowed (see Charts 3.a and 3.b). Several factors may explain why shale oil production has been slow to react. These include a change of financing model following the financial difficulties experienced by some producers in recent years, the recent shift towards distributing dividends rather than retaining profits to fund new investments, the bottlenecks at oil services providers and the ensuing rise in operating costs, which have not stabilised after the pandemic, and, lastly, the climate transition-related regulatory uncertainty that appears to be affecting investment decisions.

7 See Banco de España (2020).

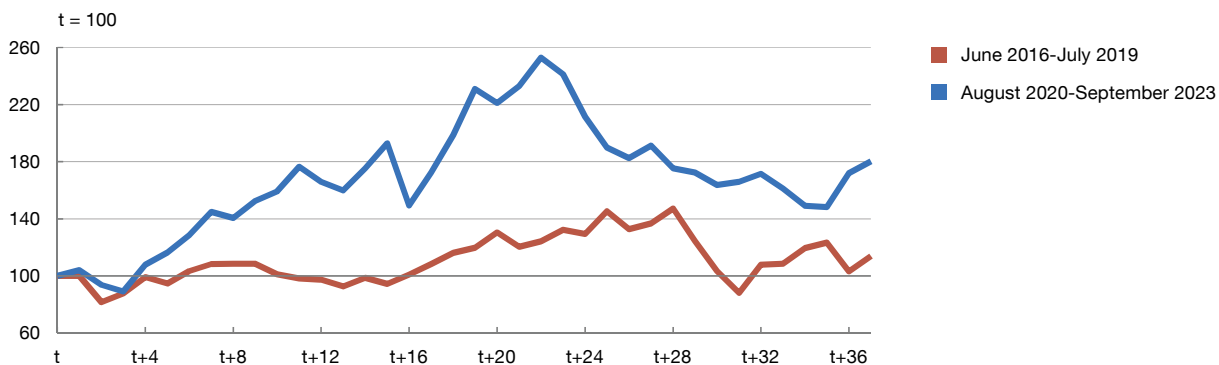
8 Compared with conventional oil production, the investment period and time to maturity of shale oil is much shorter, allowing supply to react swiftly to shocks that tend to raise crude prices (see Álvarez and Di Nino (2017)).

9 West Texas Intermediate (WTI) is the benchmark for the US oil market.

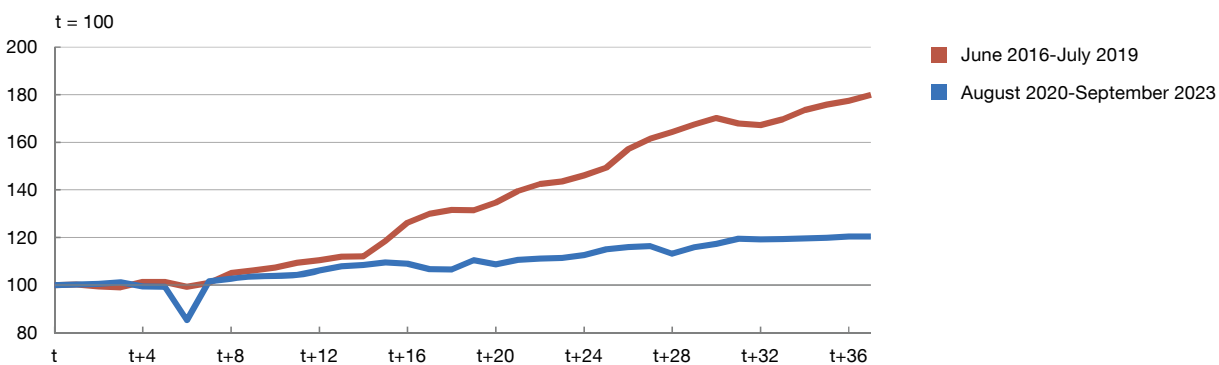
Chart 3

**Oil market buffers in the face of new supply shocks**

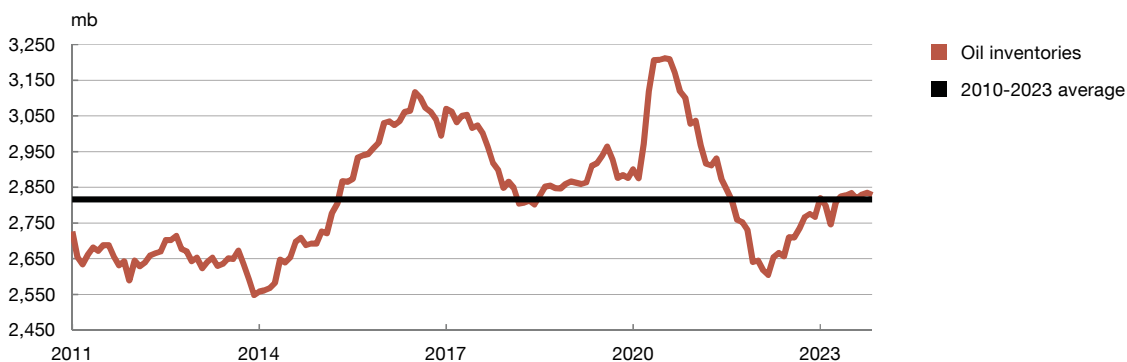
3.a Real price of WTI over two growth periods



3.b Recovery of shale oil production



3.c OECD: Commercial oil inventories



SOURCES: Refinitiv and US EIA.

a Comparison of changes in the price of West Texas Intermediate (WTI) and in shale oil production over two periods in which the price of oil picked up significantly: from June 2016 to July 2019 and August 2020 to September 2023.



Meanwhile, in addition to the response from the United States, the spare capacity<sup>10</sup> of other global producers (which currently stands at levels above the average for the last decade and accounts for around 4% of global production) could also be used.<sup>11</sup> Aside from an increase in other countries' output, which tends to materialise over the medium term,<sup>12</sup> there are other more immediate mitigating factors in the oil market. These include the release of commercial inventories, which, as Chart 3.c shows, are currently at normal levels, or the deployment of strategic reserves, which, both in the case of the United States and the main European economies, are above the level recommended by the IEA, exceeding 90 days of net imports.<sup>13</sup>

All of these factors can thus be expected to cushion, at least partially, a potential rise in oil prices due to worsening geopolitical tensions and/or an additional production cut by OPEC+. In this regard, the oil futures markets are not currently pricing in any significant rise in future oil prices, with prices trending slightly downwards and standing close to \$74 a barrel by end-2024.<sup>14</sup> However, in a highly uncertain environment, significant oil price hikes in the face of further shocks cannot be ruled out.

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10 Spare capacity refers to the existing capacity that can be brought online within 30 days and sustained for at least 90 days. Much of this capacity lies with OPEC producers, given that non-OPEC producers tend to produce as much as market conditions will allow. See the US Energy Information Administration (EIA) (2022)

11 In this case, the availability of spare capacity depends on whether such producers are willing to use it to stabilise the market.

12 Even the elasticity of supply of US shale oil in the very short-term (one quarter) tends to be close to 0, given that these producers need more than one month to respond. See Kilian (2022).

13 Even though the United States sold 180 million barrels in 2022 to stabilise the price of oil, its strategic reserves remain above the historical average. See Golding (2023). In the case of the European Union, the reserves of most economies stand above the threshold recommended by the IEA. See Eurostat (2023)

14 It is worth noting that the slope of the futures curve is simply an imperfect representation of market expectations, since it also reflects certain non-observable factors (such as the "convenience yield" – the benefits of holding a commodity as inventory – and the risk premium).

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