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The Recovery of the US Oil Production and Structural Change in the Industry

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Oil production in the United States has quietly recovered. In January 2020, production reached a peak of 18.03 million barrels per day (mb/d), which fell to 15 mb/d in February 2021 as a result of the collapse of demand and prices during the COVID-19 pandemic. Production has recovered in line with the return of demand and higher prices, but at a slow pace. The pre-pandemic peak production was not exceeded until June 2022. Then in April 2023, the 19 mb/d mark was surpassed, reaching 19.77 mb/d in October.

Since February 2021, production has increased 30%, with shale oil production up 41%. However, production of shale oil only surpassed its pre-pandemic peak in March 2023, which is relatively recent. The 2010s saw the “shale revolution,” a virtuous cycle of technological innovation driving down the production cost which promoted a dramatic increase in upstream investment. Recently, however, the situation is far from “revolutionary.” The average production cost of shale oil before the pandemic was in the range of \$40-50/barrel, but now inflation has pushed the cost of developing oil fields up to \$60-70/barrel. To date, shale oil development has been driven not by the oil majors but by independents with limited financial muscle, so the procurement of capital through financial markets has been vital. When the price of oil plummeted in early 2016, causing a wave of bad loans in shale development lending, financial institutions cracked down on shale development financing, tightening conditions. The shale investment boom seen in the early 2010s has not returned. Shale oil producers have since focused on profitability over productivity and have shifted to fields with larger production per well. As a result, the oil rig count of over 1,000 in 2018-2019 is now down to 625 as of 31 October 2023. Meanwhile, production per well recently (November 2023) is at 1,152 b/d, nearly back to the record level of November 2021 (1,162 b/d).

The deterioration in the economics of shale development since 2016 has also brought about a restructuring of the shale development industry. Many of the small to medium businesses that had driven shale development until then were forced out, leaving the large independents such

as EOG Resources, Devon Energy, Marathon Oil and Pioneer Natural Resources to dominate the scene. In recent years, we have also seen buyouts of independent oil companies by the oil majors. As examples from 2023, PDC Energy and Hess were bought out by Chevron, while there was ExxonMobil's acquisition of Pioneer Natural Resources.

In this way, the US shale industry has moved on from the 2010s, an era of independent players focused on increasing production, to a period of increased industrial concentration and a focus on profitability. In addition, there are concerns that the life expectancy of wells might be compromised by rapid development in the Permian Basin and other major shale basins. And while it may not be the level of Europe, there is social pressure on upstream developers to reduce investment in fossil fuels. Productivity is improving, but this is more the result of closing unproductive wells than of technological innovation seen in the 2010s.

Based on these factors, it is reasonable to think that even in the case of higher oil prices, we will see little change in the slow pace of production increase. However, if the trend toward increased industrial concentration and the focus on profitability leads to stable upstream investment, this increases the prospect of stability in US production. Assuming that President Biden (a moderate Democrat) seeks re-election in 2024 (and that at least no left-wing Democratic administration will emerge), the risk of policy controls on domestic upstream development is low. According to the US Energy Information Administration, the US oil output will have reached 20.47 mb/d in 2050, a 0.5% annual increase from the 2022 figure of 17.80 mb/d. It is no "revolution", but if this gentle increase in production can be achieved, this would be positive for the stability of oil prices.

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