AT A GLANCE | Crude Oil

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Weakness in U.S. Shale Oil Production

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Many U.S. shale oil companies remain cautious because of rising costs seen last year.

However, U.S. shale oil production trends should be monitored closely because the U.S. is the largest supplier of oil in the 2023 oil supply forecast by the U.S. Department of Energy's Energy Information Administration (EIA).

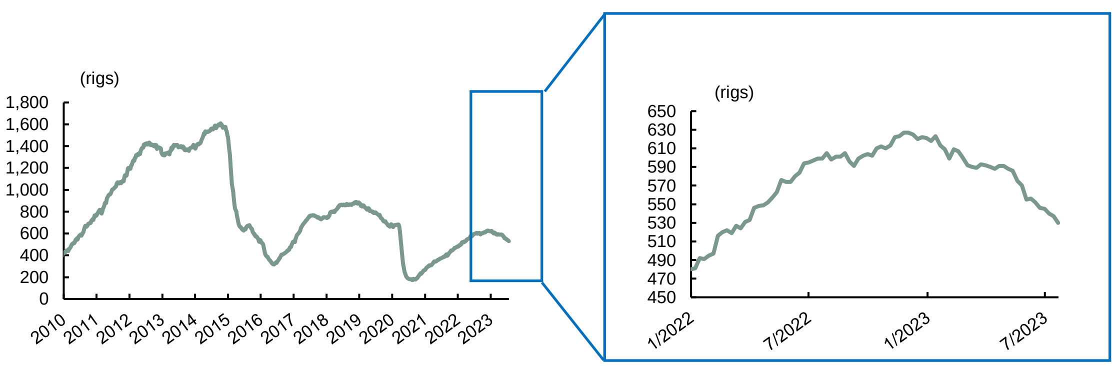
In this report, we review the current status of U.S. shale oil production based on the EIA's Drilling Productivity Report.

If we look ahead to the conclusion, we note that there is weakness in U.S. shale oil production, and production is expected to be cut in August.

Rig Count (Petroleum) Continues to Decline

First, we look at the oil rig count (the number of new wells drilled), which is one of the leading indicators of shale oil production.[1] As shown in Figure 1, the rig count peaked in December 2022, decreased in January to March 2023, and remained generally flat from April to mid-May. Since the second half of May, however, there has been a marked decline, with the latest figure falling to its lowest level since March 2022.

Figure 1: Rig Count (Oil)

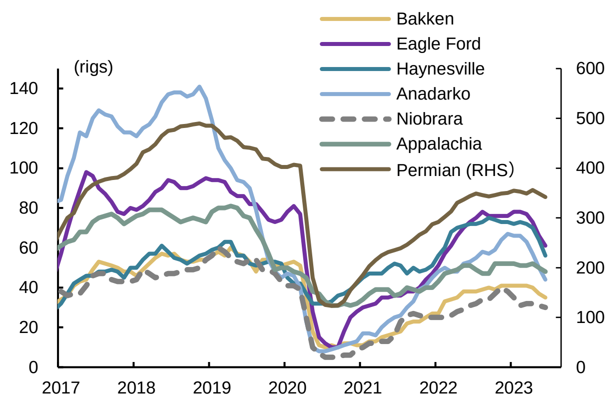


Source: Bloomberg

1 Shale oil production = (A) rig count × (B) initial production per new well – (C) reduction in production of existing wells. Therefore, although (A) is one of the components of production, production also depends on (B) and (C).

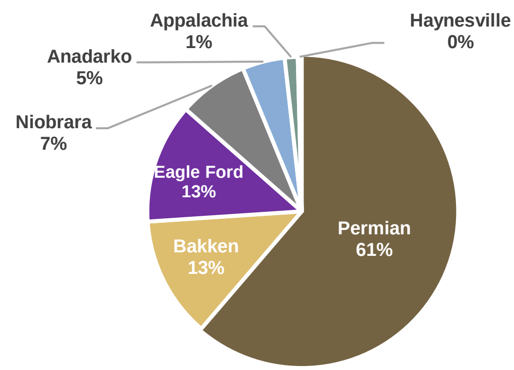
On a regional basis, there is also a reduction in the number of rig counts in all regions. The Permian region, which accounts for over 60% of shale oil production and is a major producer of shale oil, also experienced a moderate decline, peaking in April 2023.

Figure 2: Regional Rig Count (petroleum)



Source: EIA

Figure 3: Shale Oil Production Market Share (2022)



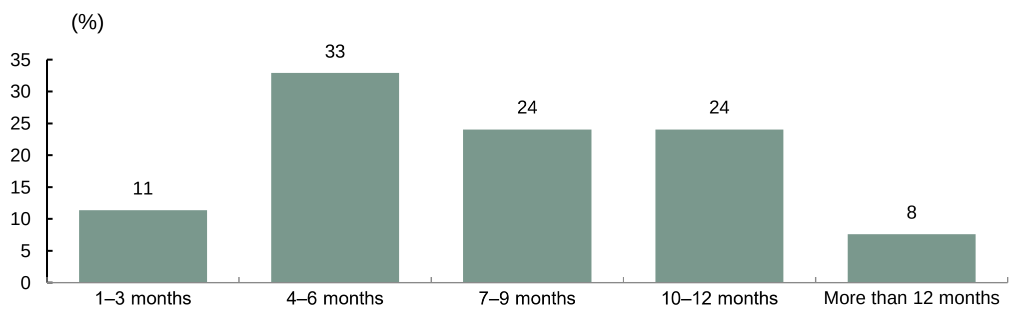
Source: EIA

Shale Oil Production Expected to Be Cut in August

The EIA's Drilling Productivity Report assumes that production will begin two months after drilling begins. The period from drilling to the start of production varies depending on the well, and the start of production may be delayed by business judgment.

In addition, the Federal Reserve Bank of Dallas's energy survey conducted in June of last year showed that the time required to start production has been prolonged against the backdrop of shortages of raw materials, equipment, and human resources required for production (Figure 4). However, it should be noted that the above assumptions may not be met in the current situation.

Figure 4: How Long Does It Take to Drill and Complete a Well?



Note: Number of respondents: 79 E&P companies; Response period: June 8-16, 2022

Source: Federal Reserve Bank of Dallas

With these considerations in mind, if we estimate the recent shale oil production based on the above assumptions, shale oil production will start to decrease slightly in August (Figure 5).

Although the decline in the rig count became apparent in May, the production in July (estimated based on the rig count in May) was avoided mainly due to an increase in the initial production per new well. But in August, production is expected to fall for the first time since December, the month of the record-breaking cold snap.

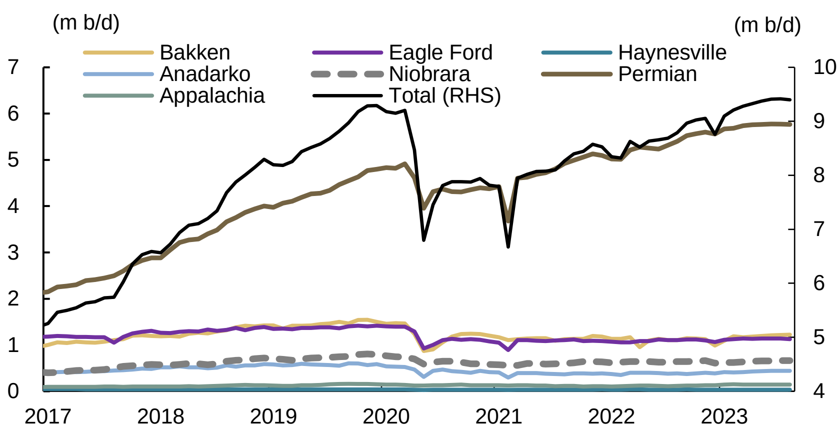
Considering the background of the decline in the rig count since the middle of May, (1) as pointed out in this report's issue dated July 14, most shale oil companies have been cautious about new drilling due to the continued high production costs, and (2) amid the decarbonization trend, the funding environment has become severe, and many companies have no choice but to raise funds for high returns and need to prioritize shareholder returns over increased production (capital investment). In addition, from May to early July of this year, the price of West Texas Intermediate (WTI) crude oil remained low in the $67–$74 range despite OPEC+'s decision to cooperate and cut production voluntarily, as concerns about prolonged Federal Reserve rate hikes weighed on the market. This situation probably led to a decrease in the rig count.

As concerns about the Federal Reserve's long-term interest-rate hikes recede, the WTI price has eased and is shifting toward the upper 70s. If the increase in the WTI price continues to take hold, there is a possibility that companies that held back on new drilling under (1) will increase their drilling.

However, considering the time (weeks to months) required to arrange the necessary equipment (= rigs) for new drilling, and the lag between the start of drilling and the start of production (Figure 4), it takes at least a few months for shale oil production to actually increase after a company decides to increase production. It is difficult to imagine that shale oil production, which has been weak, will regain its strength immediately.

A comparison of the pace of increase in shale oil production in the EIA forecast at the beginning of this report with the pace of increase in shale oil production by August shows that the EIA expects shale oil production to weaken toward the end of the year. Shale oil production will show weakness in August, as expected by the EIA. It remains to be seen whether the weakness in production toward the end of the year will fall within the EIA's forecast.

Figure 5: Trends in U.S. Shale Oil Production



Note: July to August 2023 EIA estimates

Source: EIA

Economic Outlook: 2023-2024 Forecast

Figure 1: Forecasts for Economic Growth, Inflation, and Unemployment Rates

		2022			2023				2024				2021	2022	2023	2024
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
US	Real GDP	−0.6	3.2	2.6	2.0	2.4	−0.8	0.6	0.9	1.4	1.8	2.2	5.9	2.2	1.4	1.0
	Inflation	5.0	5.0	4.8	4.7	4.4	4.2	3.9	3.2	2.8	2.5	2.2	3.3	5.0	4.4	2.7
	Unemployment	3.6	3.6	3.6	3.5	3.5	3.7	4.3	4.6	4.7	4.7	4.6	5.4	3.7	3.7	4.7
Euro Area	Real GDP	0.8	0.4	−0.1	0.0	0.3	0.2	0.1	0.2	0.3	0.3	0.2	5.3	3.3	0.6	0.9
	Inflation	8.0	9.3	10.0	8.0	6.2	4.8	3.2	3.1	2.9	2.7	2.5	2.6	8.4	5.6	2.8
	Unemployment	6.7	6.7	6.7	6.6	6.6	6.6	6.7	6.8	6.8	6.9	6.9	7.7	6.7	6.6	6.9
Japan	Real GDP	5.6	−1.5	0.4	2.7	1.7	1.0	0.9	0.9	0.8	0.8	0.7	2.3	1.1	1.0	0.9
	Inflation	2.1	2.7	3.8	3.5	3.2	3.0	2.5	3.0	2.8	2.5	2.1	−0.2	2.3	3.1	2.6
	Unemployment	2.6	2.5	2.5	2.6	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.8	2.6	2.4	2.3
China	Real GDP	0.4	3.9	2.9	4.5	6.3	4.8	5.5	4.5	5.0	5.1	5.1	8.4	3.0	5.3	4.9
	Inflation	2.2	2.8	1.8	1.3	0.2	1.4	1.5	1.6	1.9	2.0	2.0	0.8	1.7	1.1	1.9
	Unemployment	5.8	5.4	5.6	5.5	5.2	5.3	5.2	5.1	5.0	5.0	5.0	5.1	5.1	5.3	5.0

Real GDP growth is in QoQ annualized for U.S. and Japan, QoQ for euro area and YoY for China and India. Inflation rate is in YoY%. Inflation rate is YoY, % of core index (ex. fresh food) for Japan, YoY % of PCE deflator for U.S., and total YoY% for the rest.

Figure 2: Forecast for Rates

Interest rate		2022	2023				2024				2022	2023	2024
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
US	Policy rate	4.25 ~ 4.50	4.75 ~ 5.00	5.00 ~ 5.25	5.25 ~ 5.50	5.25 ~ 5.50	5.00 ~ 5.25	4.75 ~ 5.00	4.50 ~ 4.75	4.25 ~ 4.50	4.25 ~ 4.50	5.25 ~ 5.50	4.25 ~ 4.50
	2yr	3.43	4.03	4.90	4.20	4.00	3.80	3.60	3.40	3.20	3.43	4.00	3.20
	10yr	3.87	3.47	3.84	3.60	3.60	3.60	3.60	3.50	3.50	3.87	3.60	3.50
Germany	Policy rate	2.50	3.50	4.00	4.25	4.25	4.25	4.25	4.00	3.75	2.50	4.25	3.75
	Deposit rate	2.00	3.00	3.50	3.75	3.75	3.75	3.75	3.50	3.25	2.00	3.75	3.25
	2yr	2.50	2.68	3.20	3.20	3.00	2.80	2.60	2.40	2.30	2.50	3.00	2.30
	10yr	2.20	2.29	2.39	2.30	2.30	2.30	2.20	2.10	2.10	2.20	2.30	2.10
Japan	Policy rate	−0.10	−0.10	−0.10	−0.10	−0.10	−0.10	0.10	0.10	0.10	−0.10	−0.10	0.10
	2yr	0.04	−0.06	−0.07	0.10	0.15	0.20	0.30	0.30	0.30	0.04	0.15	0.30
	10yr	0.42	0.35	0.40	0.65	0.75	0.80	0.90	0.90	0.90	0.42	0.75	0.90
China	Policy rate	2.75	2.75	2.65	2.55	2.55	2.55	2.55	2.55	2.55	2.75	2.55	2.55
	2yr	2.39	2.41	2.11	2.16	2.24	2.32	2.39	2.49	2.59	2.39	2.24	2.59
	10yr	2.83	2.85	2.64	2.64	2.69	2.74	2.79	2.84	2.89	2.83	2.69	2.89

Figure 3: Forecast for FX and Oil Price

		2022	2023				2024				2022	2023	2024
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
USD/JPY	Range	130.58 ~ 151.95	127.23 ~ 137.91	130.64 ~ 145.07	128.00 ~ 147.00	125.00 ~ 138.00	121.00 ~ 135.00	119.00 ~ 133.00	116.00 ~ 130.00	116.00 ~ 130.00	113.47 ~ 151.95	125.00 ~ 147.00	116.00 ~ 135.00
	End of quarter	131.12	132.86	144.31	137.00	133.00	130.00	128.00	126.00	123.00	131.12	133.00	123.00
EUR/USD	Range	0.9633 ~ 1.0735	1.0806 ~ 1.1033	1.0635 ~ 1.1095	1.0300 ~ 1.1300	1.0200 ~ 1.1200	1.0100 ~ 1.1100	1.0000 ~ 1.1000	1.0100 ~ 1.1100	1.0100 ~ 1.1100	0.9536 ~ 1.1495	1.0200 ~ 1.1300	1.0000 ~ 1.1100
	End of quarter	1.0705	1.0839	1.0909	1.0700	1.0600	1.0500	1.0500	1.0600	1.0600	1.0705	1.0600	1.0600
EUR/JPY	Range	138.81 ~ 148.40	124.40 ~ 145.67	142.55 ~ 158.00	145.00 ~ 159.00	136.00 ~ 150.00	131.00 ~ 145.00	128.00 ~ 142.00	127.00 ~ 141.00	123.00 ~ 137.00	124.40 ~ 150.00	136.00 ~ 159.00	123.00 ~ 145.00
	End of quarter	140.41	144.01	157.43	146.59	140.98	136.50	134.40	133.56	130.38	140.41	140.98	130.38
Crude Oil Prices (WTI)		82.64	75.99	73.67	75.00	80.00	80.00	75.00	77.00	78.00	98.74	76.17	77.50

※ Crude oil prices are averages for each period. Source: SMBC.

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