AT A GLANCE | Crude Oil

January 29, 2021

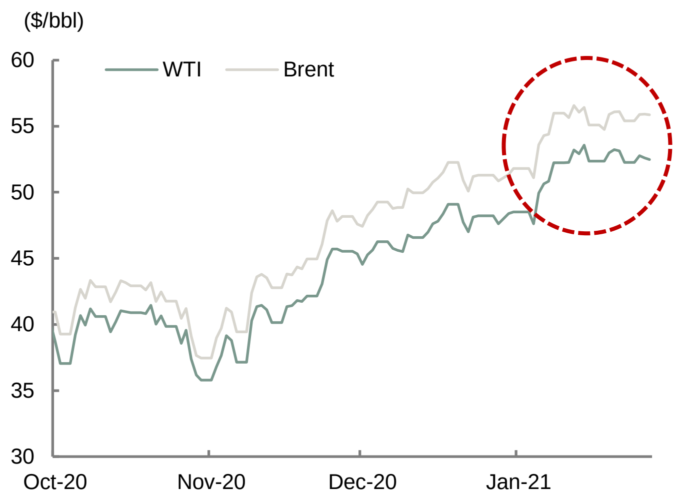
“Current Status of U.S. Shale Oil Producers”

Senior Economist: Kaori Seki

Crude oil prices have been firm since the beginning of this year on the back of Saudi Arabia’s massive production cut by 1 million barrels per day, or bbl/d (scheduled for February and March) and expectations for the new U.S. administration’s additional economic stimulus measures. Along with the rise in crude oil prices, concerns are also growing that the U.S. shale oil companies might increase oil production.

In this report, we summarize the current situation of the U.S. shale oil producers based on the Dallas Fed Energy Survey[1] released in late December of last year.

Figure 1: WTI and Brent



Source: Bloomberg

Capital Investment in 2021 Will Be Restrained Overall

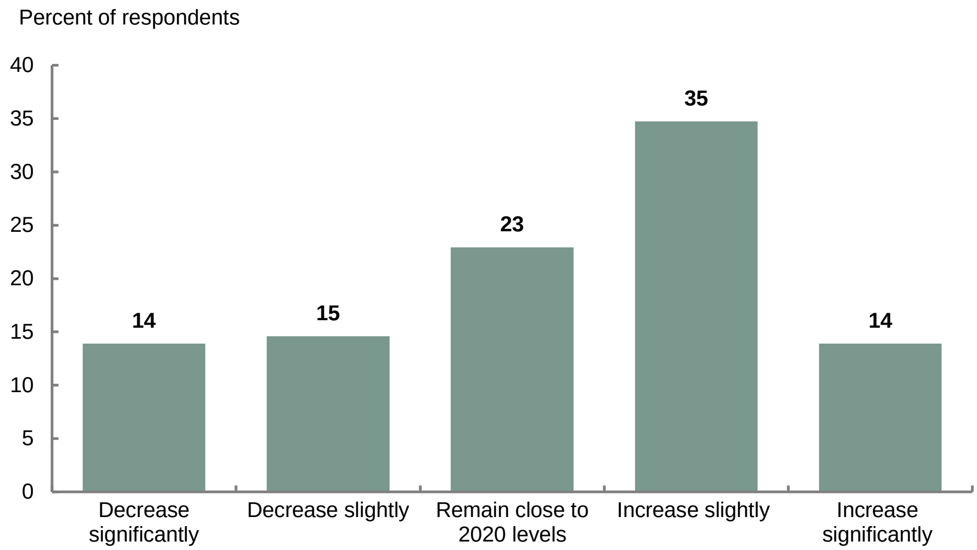
According to the Dallas Fed Energy Survey conducted in mid-December 2020, about half of the respondents answered that their capital investment in 2021 would be about the same as or less than that in 2020. In 2020, shale oil producers reduced their capital investment in response to the plummet in crude oil prices, mainly caused by a sharp drop in demand as a result of the spread of the novel coronavirus (COVID-19) infection.[2] Therefore, the same level as in 2020 means that capital investment will remain restrained at a low level.

1 The Dallas Fed Energy Survey covers upstream energy companies with operations or headquarters in Texas, northern Louisiana, and southern New Mexico, not all shale oil companies. However, the Permian region, which is the center of shale oil production and has low break-even prices, is included in this survey, which is useful for understanding the current situation of the U.S. shale oil producers.
2 In March 2020, many shale oil producers announced that they would reduce their capital investment in 2020 by 20%~40% from the initial plan, due to the drop in crude oil prices following the spread of the COVID-19 infection worldwide.

In addition, the other half of the companies answered that they would increase capital investment, but 70% of them said that they would "increase slightly," and only 30% answered that they would increase significantly.

Based on the above, it is highly likely that shale oil producers' capital investment in 2021 will remain restrained as a whole.

Figure 2: What Is Your Capital Investment Plan for 2021? (compared with 2020)

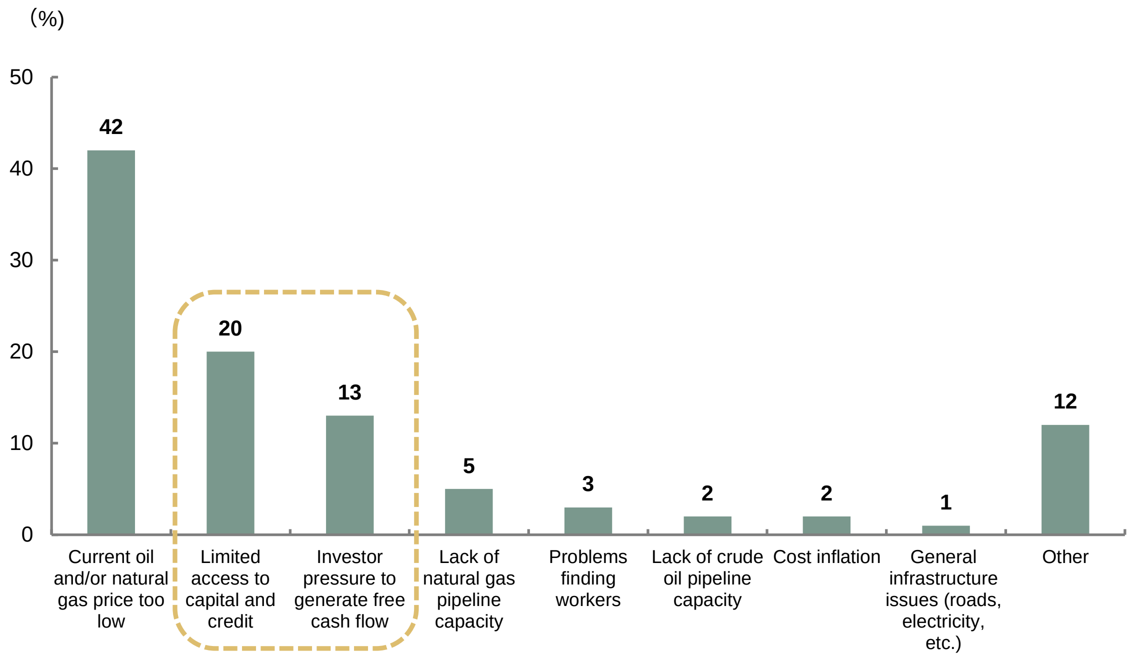


Note: Survey period: Dec 9-17, 2020. Respondents: 144 oil and gas companies (upstream energy companies with operations or headquarters in Texas, northern Louisiana, and southern New Mexico).
Source: Federal Reserve Bank of Dallas

Funding Conditions Will Remain Tight

The funding environment for shale oil companies had been severe even before the spread of the COVID-19 infection began. In the Dallas Fed Energy Survey conducted in mid-September 2019, 20% of the respondents answered that they had limited access to financing and 13% cited pressure from investors (i.e., pressure for increasing dividend payments) as a factor that had dampened business activity in the short term. Since then, it has become difficult to raise funds.

Figure 3: What Are the Short-Term Constraints on Business Activities?



Note: Survey period: Sep 11-19, 2019. Respondents: 142 oil and gas companies (upstream energy companies with operations or headquarters in Texas, northern Louisiana, and southern New Mexico).
Source: Federal Reserve Bank of Dallas

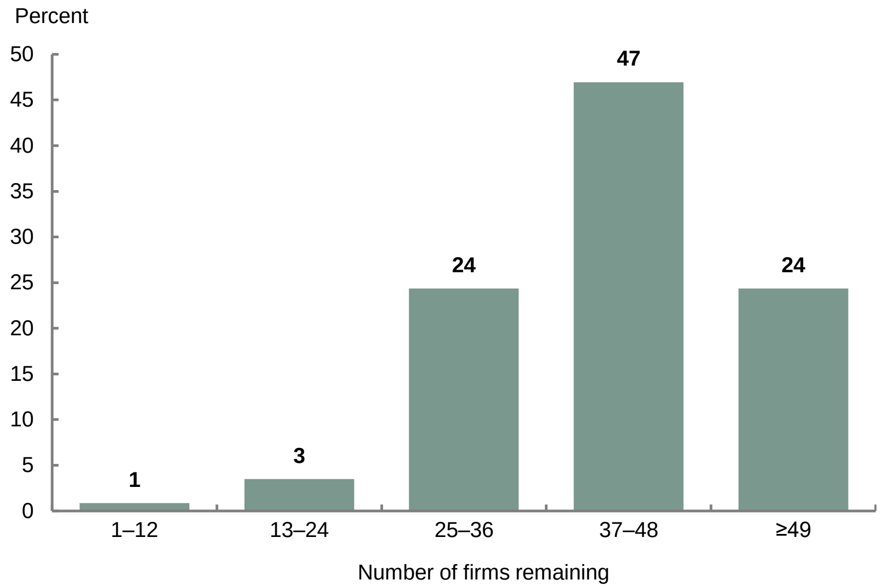
This situation seems to be continuing, and in a question targeting energy and petroleum companies using Reserves Based Lending (RBL), a popular form of financing for shale oil companies, 24% expect to switch from the RBL to a term loan based on the proved developed producing (PDP) reserves at the next repricing. In the RBL, proven reserves when calculating the lending base amount includes not only the PDP but also proved developed non-producing (PDNP) reserves and proved undeveloped (PUD) reserves,[3] so it is speculated that the term loan based on the PDP will have more stringent borrowing conditions for shale oil companies.

Behind this difficult funding environment is the growing need for environmental measures to respond to climate change as well as the impact of COVID-19. With the newly installed Biden administration taking an active stance on environmental issues and the return of the U.S. to the Paris Climate Agreement, there is growing momentum among developed countries to seriously tackle environmental issues. It is unlikely that the severe financing conditions for shale oil companies will be resolved easily.

On the back of this harsh environment, many believe that industry reorganization will continue. According to the Dallas Fed Energy Survey in December 2020, nearly half of the respondents consider that the number of independent listed enegy and petroleum companies in the U.S. will decrease from 60 to 37~48 over the next two years (-38%~-20%).

3 PDNP and PUD use loanable values considering risks.

Figure 4: How Many Independent Listed E&P Companies Do You Think There Will Be at the End of 2022?



Note: Survey period: Dec 9-17, 2020. Respondents: 115 oil and gas companies (upstream energy companies with operations or headquarters in Texas, northern Louisiana, and southern New Mexico).
Source: Federal Reserve Bank of Dallas

Measures to Reduce CO_2 Emissions From Now On

Under the Biden administration, environmental regulations are expected to be tightened. The current state of shale oil companies' environmental action plans (Figure 5) shows that at least half of large-scale companies[4] have their own plans for reducing CO_2 and methane emissions, while 54% of small-scale companies do not have any plans, indicating that their preparations are insufficient.

In addition, a high proportion of the respondents have coped with the issues of water recycling or reuse and the flare problem (burning unnecessary gas in an oil well), which have long been pointed out as environmental issues in shale oil development, as well as the restriction to reduce methane emissions, which was tightened under the Obama administration. However, they have yet to formulate a plan to reduce CO_2 emissions, which is expected to be requested by the Biden administration.

Even after the COVID-19 pandemic settles down, U.S. shale oil companies are likely to have a difficult time due to environmental problems and financing conditions.

4 In the survey conducted in December 2020, the Dallas Fed classified companies producing more than 10,000 bbl/d of crude oil in Q4 2020 as "large-scale" companies and less than 10,000 bbl/d as "small-scale" companies.

Figure 5: What Plans Does Your Company Have?

	Percent Reporting (check all that apply)		
	Small Firms	Large Firms	All Firms
Plan to reduce CO_2 emissions	**10**	**50**	**21**
Plan to reduce methane emissions	30	50	36
Plan to reduce flaring	27	63	37
Plan to recycle/reuse water	21	67	33
None of the above	**54**	**17**	**44**

Note: (1) Flaring is the burning of unwanted gas in wells. (2) Survey period: Dec 9-17, 2020. Respondents: 87 oil and gas companies (small-scale companies: 63, large-scale companies: 24) (upstream energy companies with operations or headquarters in Texas, northern Louisiana, and southern New Mexico). More than 80% of oil production is conducted by large-scale companies.
Source: Federal Reserve Bank of Dallas

Thus, it is unlikely that U.S. shale oil companies will increase their capital investment significantly this year, and given the severe financing environment and the lack of preparation for environmental measures (for CO_2 reduction in particular), it is unreasonable to consider that U.S. shale oil production will increase significantly. This situation will underpin crude oil prices.

However, if crude oil prices are maintained at one level higher, Organization of the Petroleum Exporting Countries (OPEC) members, whose finances have been deteriorating due to the COVID-19 pandemic, will demand an early reduction or termination of the coordinated production cuts even if the U.S. shale oil companies do not actually increase production significantly. We believe this scenario will make it difficult for crude oil prices to rise. According to news reports, Iraq has asked the International Monetary Fund (IMF) for emergency assistance totaling US$6 billion, and the fiscal situation of oil-producing countries in the Middle East appears to be considerably tight.

Economic Outlook: 2021-2022 Forecast

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

		2020			2021				2022				2019	2020	2021	2022
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
US	Real GDP	−31.4	33.4	4.0	1.7	2.4	5.6	4.0	2.4	2.0	2.5	2.3	2.3	−3.5	3.8	3.0
	Inflation	1.0	1.4	1.4	1.5	2.0	1.7	1.8	1.8	1.8	1.9	1.9	1.6	1.4	1.8	1.9
	Unemployment	13.0	8.8	6.8	6.6	6.5	6.3	6.1	6.0	5.9	5.8	5.7	3.7	6.8	6.4	5.9
Euro Area	Real GDP	−11.7	12.5	−2.5	1.0	3.0	1.5	0.7	0.5	0.4	0.4	0.4	1.3	−7.2	5.0	3.1
	Inflation	0.2	0.0	−0.3	0.4	1.0	1.4	1.5	1.2	1.3	1.4	1.5	1.2	0.3	1.1	1.4
	Unemployment	7.6	8.6	8.6	9.0	9.2	9.3	9.2	9.1	9.0	8.9	8.7	7.6	8.0	9.2	8.9
Japan	Real GDP	−29.2	22.9	9.1	−2.9	3.3	2.0	0.9	1.1	1.2	1.1	0.8	0.3	−5.1	2.2	1.3
	Inflation	−0.1	−0.2	−0.9	−0.7	−0.2	0.2	0.6	0.7	0.7	0.7	0.7	0.7	−0.2	0.1	0.7
	Unemployment	2.8	3.0	3.0	3.2	3.2	3.1	3.0	3.0	2.9	2.8	2.7	2.4	2.8	3.1	2.9
China	Real GDP	3.2	4.9	6.5	20.4	8.8	7.1	5.6	5.6	5.6	5.6	5.6	6.1	2.3	9.8	5.6
	Inflation	2.7	2.3	0.7	0.8	1.0	0.7	1.3	1.4	1.4	1.6	1.9	2.9	2.7	1.0	1.6
	Unemployment	5.9	5.6	5.3	5.2	5.1	5.0	5.0	4.9	4.9	4.8	4.8	5.2	5.3	5.1	4.9

Real GI [illegible] on 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		2020	2021				2022				2020	2021	2022
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
US	Policy rate	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25	0.00 ~ 0.25
	2yr	0.12	0.15	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.12	0.15	0.20
	10yr	0.91	1.00	1.10	1.20	1.50	1.75	1.75	1.80	1.80	0.91	1.50	1.80
Germany	Policy rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Deposit rate	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50	−0.50
	2yr	−0.70	−0.65	−0.60	−0.60	−0.60	−0.55	−0.55	−0.55	−0.55	−0.70	−0.60	−0.55
	10yr	−0.57	−0.50	−0.40	−0.30	−0.20	−0.10	−0.10	−0.05	−0.05	−0.57	−0.20	−0.05
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	−0.12	−0.10	−0.10	−0.10	−0.10	−0.10	−0.10	−0.10	−0.10	−0.12	−0.10	−0.10
	10yr	0.02	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.05
China	Policy rate	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
	2yr	2.70	3.00	3.05	3.15	3.05	3.10	3.10	3.10	3.15	2.70	3.05	3.15
	10yr	3.14	3.35	3.40	3.45	3.45	3.50	3.50	3.50	3.55	3.14	3.45	3.55

Figure 3: Forecast for FX and Oil Price

		2020	2021				2022				2020	2021	2022
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
USD/JPY	Range	103.56 ~ 106.11	99.00 ~ 108.00	99.00 ~ 108.00	99.00 ~ 110.00	100.00 ~ 112.00	100.00 ~ 112.00	100.00 ~ 112.00	100.00 ~ 112.00	100.00 ~ 112.00	99.00 ~ 112.23	99.00 ~ 112.00	100.00 ~ 112.00
	End of quarter	103.25	103.00	104.00	105.00	106.00	105.00	105.00	105.00	105.00	103.25	106.00	105.00
EUR/USD	Range	1.1603 ~ 1.2310	1.1600 ~ 1.2700	1.1700 ~ 1.2800	1.1800 ~ 1.2900	1.1900 ~ 1.3000	1.1900 ~ 1.3000	1.1900 ~ 1.3000	1.1900 ~ 1.3000	1.2000 ~ 1.3100	1.0636 ~ 1.2300	1.1500 ~ 1.3000	1.1800 ~ 1.3100
	End of quarter	1.2216	1.2000	1.2100	1.2200	1.2400	1.2300	1.2300	1.2400	1.2500	1.2216	1.2400	1.2500
EUR/JPY	Range	121.62 ~ 127.49	120.00 ~ 131.00	122.00 ~ 133.00	124.00 ~ 135.00	126.00 ~ 137.00	125.00 ~ 136.00	125.00 ~ 136.00	126.00 ~ 137.00	126.00 ~ 137.00	114.43 ~ 128.00	120.00 ~ 137.00	125.00 ~ 137.00
	End of quarter	126.18	123.60	125.84	128.10	131.44	129.15	129.15	130.20	131.25	126.18	131.44	131.25
Crude Oil Prices (WTI)		42.70	48.00	50.00	53.00	50.00	50.00	50.00	50.00	50.00	39.20	50.25	50.00

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