



Energy Survey

Tenth District Energy Activity Declined Sharply Again in Q2

by: Chad Wilkerson

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Second quarter energy survey results revealed Tenth District energy activity declined sharply again in Q2 and was expected to remain largely unchanged moving forward. Firms reported that oil prices needed to be on average \$51 per barrel to substantially increase drilling.

Summary of Quarterly Indicators

Tenth District energy activity declined nearly as much in the second quarter of 2020 as in the first quarter, as indicated by firms contacted between June 15th and June 30th, 2020 (Tables 1 & 2). The drilling and business activity index rose somewhat, from -81 to -61, but indicated continued substantial decreases in activity (Chart 1). The drop in the revenues and profits indexes accelerated, and the employment and wages and benefits indexes fell further. However, the access to credit index declined at a similar pace as Q1 2020, and the supplier delivery time index decreased less sharply in Q2 2020.

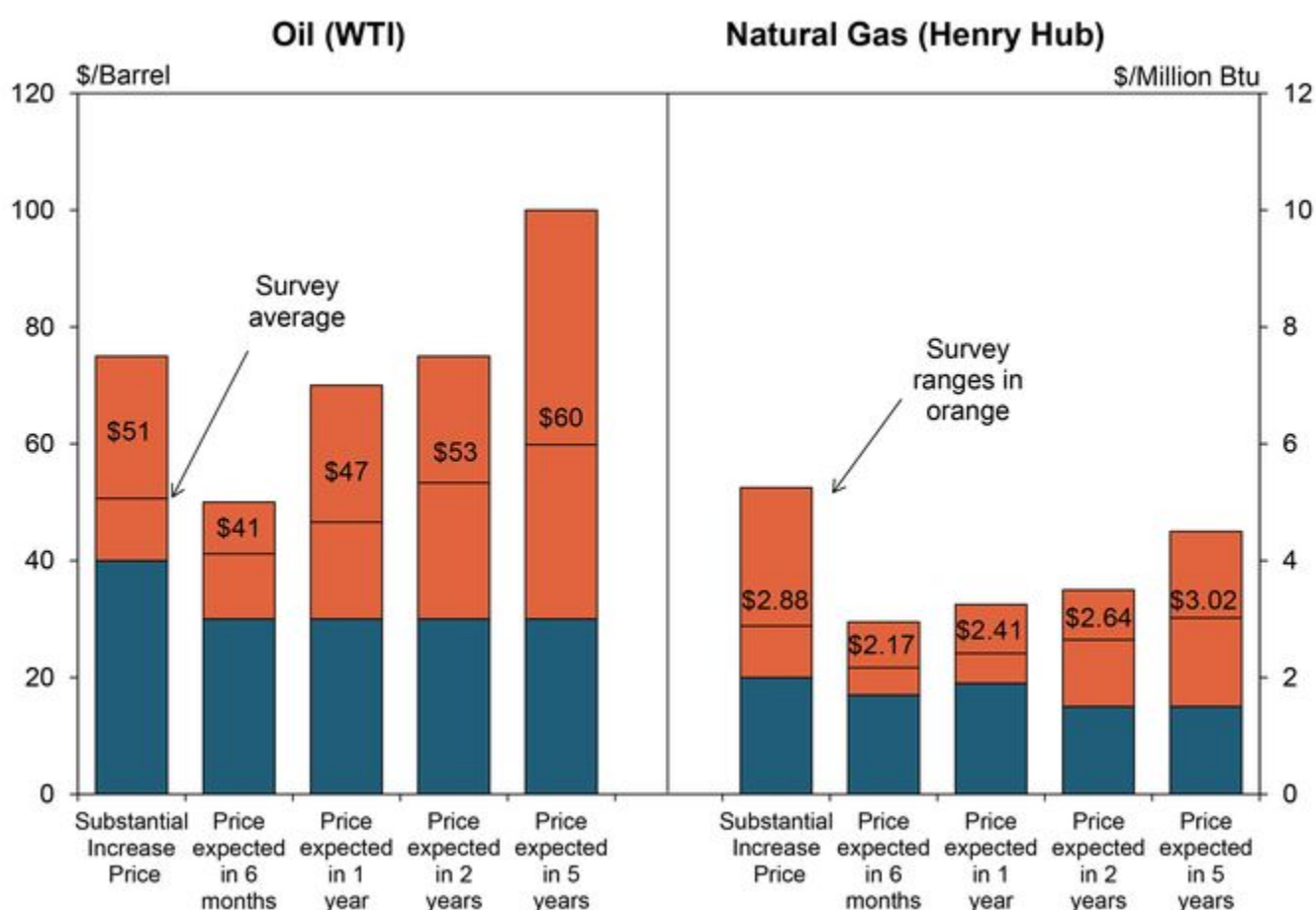
Year-over-year indexes also decreased significantly. The year-over-year drilling and business activity index remained highly negative at -70, but was up from a record survey low of -92. Indexes for total revenues, capital expenditures, delivery time, profits, employment, employee hours, wages and benefits, and access to credit continued to decrease.

Expectations indexes rose considerably from very negative levels in Q1 2020, and future energy activity was expected to remain largely unchanged. The future drilling and business activity index expanded from -78 to 0. The future revenues capital expenditures, delivery time, profits, employment, employee hours, wages and benefits, and access to credit indexes remained negative in Q2 2020, but decreased less sharply compared to the previous quarter. Price expectations for oil, natural gas, and natural gas liquids increased, rebounding somewhat from earlier in 2020.

Summary of Special Questions

This quarter firms were asked what oil and natural gas prices were needed to substantially increase drilling on average across the fields in which they are active (in alternate quarters they are asked what prices are needed to be profitable). The average oil price needed was \$51 per barrel, with a range of \$40 to \$75 (Chart 2). This average was below the prices reported in 2019, and the lowest recorded price to substantially increase drilling. The average natural gas price needed was \$2.88 per million Btu, with responses ranging from \$2.00 to \$5.25.

Chart 2. Special Question - What price is currently needed to substantially increase drilling for oil and natural gas, and what do you expect the WTI and Henry Hub prices to be in six months, one year, two years, and five years?



Source: Federal Reserve Bank of Kansas City

Firms were again asked what they expected oil and natural gas prices to be in six months, one year, two years, and five years. Expected oil prices were moderately higher than price expectations from Q1 2020, but lower than a year ago. The average expected WTI prices were \$41, \$47, \$53, and \$60 per barrel, respectively. Expectations for natural gas prices grew modestly from last quarter. The average expected Henry Hub natural gas prices were \$2.17, \$2.41, \$2.64, and \$3.02 per million Btu, respectively.

Firms were also asked about shut-in wells (Chart 3). Over 62% of firms shut-in wells or curtailed production in Q2 2020, primarily driven by low wellhead prices. Regarding prices moving forward, 37% of firms indicated they expect the majority of producers in the U.S. to restart horizontal drilling at prices of \$41 to \$45 per barrel. Another 37% of firms expect oil prices would need to be higher than \$45 per barrel for drilling to restart.

Additionally, firms were again asked about solvency. A majority of firms in our survey applied for and received SBA PPP loans, but low energy prices have hurt profitability. Over two-thirds of firms reported they could survive more than a year if current revenues were to continue, while around 32% would not survive a year if current revenue levels persist (Chart 4).

Table 1 - Summary of Tenth District Energy Conditions, Quarter 2, 2020

Table 1
Summary of Tenth District Energy Conditions, Quarter 2, 2020

Energy Company Indicators	Quarter 2 vs. Quarter 1 (percent)*				Quarter 2 vs. Year Ago (percent)*				Expected in Six Months (percent)*			
	Increase	No Change	Decrease	Diff Index^	Increase	No Change	Decrease	Diff Index^	Increase	No Change	Decrease	Diff Index^
Drilling/Business Activity	6	26	68	-61	10	10	80	-70	33	33	33	0
Total Revenues	6	9	84	-78	6	13	81	-74	32	19	48	-16
Capital Expenditures					9	13	78	-69	16	32	52	-35
Supplier Delivery Time	6	75	19	-13	3	68	29	-26	6	68	26	-19
Total Profits	3	6	91	-88	3	10	87	-84	35	19	45	-10
Number of Employees	0	44	56	-56	3	32	65	-61	10	55	35	-26
Employee Hours	0	45	55	-55	3	40	57	-53	3	60	37	-33
Wages and Benefits	3	56	41	-38	19	45	35	-17	6	68	26	-19
Access to Credit	3	63	34	-31	3	58	39	-35	10	68	23	-13
Expected Oil Prices									47	34	19	28
Expected Natural Gas Prices									38	63	0	38
Expected Natural Gas Liquids Prices									45	55	0	45

*Percentage may not add to 100 due to rounding.

^Diffusion Index. The diffusion index is calculated as the percentage of total respondents reporting increases minus the percentage reporting declines.

Note: The second quarter survey ran from June 15 to June 30, 2020 and included 32 responses from firms in Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri.

Source: Federal Reserve Bank of Kansas City

Table 2 - Historical Energy Survey Indexes

Table 2
Historical Energy Survey Indexes

	Q2'17	Q3'17	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20
<i>Versus a Quarter Ago</i>													
(not seasonally adjusted)													
Drilling/Business Activity	43	7	13	37	26	45	-13	0	7	-23	-48	-81	-61
Total Revenues	20	23	39	50	53	50	6	13	-14	-10	6	-73	-78
Capital Expenditures	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Supplier Delivery Time	11	-10	-4	19	16	7	0	3	7	-7	-6	-24	-13
Total Profits	3	21	29	50	53	37	-18	6	-18	-23	-21	-81	-88
Number of Employees	23	17	19	20	29	23	9	3	0	-10	0	-54	-56
Employee Hours	20	0	19	24	24	23	6	6	0	0	-12	-54	-55
Wages and Benefits	20	7	16	34	39	33	30	28	15	10	9	-24	-38
Access to Credit	-3	13	0	3	15	10	-19	-10	-7	-6	-21	-32	-31
<i>Versus a Year Ago</i>													
Drilling/Business Activity	70	44	54	54	41	57	17	17	-11	-21	-50	-92	-70
Total Revenues	62	37	56	68	56	61	50	23	-22	-7	-19	-81	-74
Capital Expenditures	59	50	50	68	58	62	27	3	4	-10	-13	-68	-69
Supplier Delivery Time	11	-14	-7	19	16	10	3	3	7	-21	-13	-22	-26
Total Profits	59	21	38	53	50	47	42	6	-24	-13	-30	-83	-84
Number of Employees	31	23	40	31	36	27	27	24	4	-13	-18	-62	-61
Employee Hours	28	10	27	30	34	31	19	16	3	-17	-18	-62	-53
Wages and Benefits	31	37	34	48	69	67	55	47	43	33	3	-30	-17
Access to Credit	-3	20	7	0	15	25	9	3	-7	0	-16	-44	-35
<i>Expected in Six Months</i>													
(not seasonally adjusted)													
Drilling/Business Activity	26	30	33	50	61	50	-19	17	-26	-21	-16	-78	0
Total Revenues	18	44	44	52	50	56	-23	47	-4	4	13	-78	-16
Capital Expenditures	19	37	43	56	48	43	-13	19	-4	-17	-13	-73	-35
Supplier Delivery Time	4	-11	-11	15	17	-4	9	14	14	-14	-23	-32	-19
Total Profits	12	28	43	53	48	59	-27	35	-7	-10	0	-81	-10
Number of Employees	21	20	21	34	33	21	15	14	0	-3	-16	-68	-26
Employee Hours	21	17	27	43	31	17	3	13	-4	-10	-18	-59	-33
Wages and Benefits	7	30	50	34	39	34	42	28	15	17	-6	-49	-19
Access to Credit	4	10	14	3	6	30	3	0	-3	-10	-9	-44	-13
Expected Oil Prices	4	54	50	31	12	48	29	34	15	32	28	-19	28
Expected Natural Gas Prices	3	24	28	3	21	20	-33	3	10	23	-6	16	38
Expected Natural Gas Liquids Prices	21	38	30	7	27	32	-3	18	-7	13	10	-8	45
<i>Special Price Questions</i>													
(averages)													
Profitable WTI Oil Price (per barrel)		\$51		\$52		\$55		\$52		\$55		\$47	
WTI Price to Substantially Increase Drilling	\$56		\$62		\$69		\$63		\$66		\$65		\$51
WTI Price Expected in 6 Months	\$47	\$52	\$58	\$63	\$67	\$71	\$54	\$60	\$57	\$58	\$60	\$33	\$41
WTI Price Expected in 1 Year	\$49	\$55	\$60	\$64	\$70	\$72	\$59	\$61	\$60	\$60	\$62	\$42	\$47
WTI Price Expected in 2 Years	\$54	\$58	\$62	\$66	\$73	\$73	\$61	\$65	\$63	\$63	\$65	\$50	\$53
WTI Price Expected in 5 Years	\$61	\$65	\$70	\$72	\$78	\$79	\$66	\$72	\$70	\$69	\$71	\$58	\$60
Profitable Natural Gas Price (per million BTU)		\$3.05		\$2.92		\$3.23		\$3.02		\$2.91		\$2.65	
Natural Gas Price to Substantially Increase Drilling	\$3.65		\$3.59		\$3.60		\$3.48		\$3.40		\$3.66		\$2.88
Henry Hub Price Expected in 6 Months	\$3.05	\$3.01	\$2.88	\$2.70	\$2.85	\$2.89	\$3.06	\$2.85	\$2.52	\$2.59	\$2.38	\$2.02	\$2.17
Henry Hub Price Expected in 1 Year	\$3.06	\$3.11	\$3.10	\$2.83	\$2.90	\$2.92	\$3.12	\$2.91	\$2.59	\$2.58	\$2.49	\$2.34	\$2.41
Henry Hub Price Expected in 2 Years	\$3.25	\$3.30	\$3.30	\$2.98	\$3.05	\$3.10	\$3.23	\$3.05	\$2.79	\$2.81	\$2.69	\$2.57	\$2.64
Henry Hub Price Expected in 5 Years	\$3.51	\$3.73	\$3.65	\$3.33	\$3.34	\$3.42	\$3.54	\$3.18	\$3.16	\$3.20	\$3.09	\$2.94	\$3.02

Source: Federal Reserve Bank of Kansas City

Selected Comments

“We have low debt and believe rig counts are beginning to bottom.”

“We’re starting our 4th month without any revenue. Currently we have nothing scheduled to drill.”

“The U.S. orphaned well inventory will explode to new highs if the current price continues. In addition, I don’t see a market for stripper wells in the future so many small producers will be surrendering their wells...”

“The PPP was a life saver, we’re now planning to apply for the SBA Economic Disaster.”

“The market is currently oversupplied and needs to be brought back into balance. Reduced production rates are required.”

“Summer and fall waves of COVID-19 driving down demand.”

“The demand destruction from Covid-19 impact on the economy is the biggest unknown until an effective vaccine is developed. Underinvestment will drive higher prices in future years.”

“Over supply will continue to be a problem with short term moves up, but will fall back down”

“Decreased oil drilling equates to less gas production, less flaring, electricity demand going up this summer.”

“Tightening supply due to rig drop while demand gradually rebuilds.”

“Natural gas is a derivative of crude, and is not as sensitive to people sheltering in place. With less crude there will be less natural gas and without the decline in demand.”

“This has been a historically challenging down cycle. Many firms will not survive and there will be longer term damage than in comparable down cycles.”

“Continued improvement in oil prices will drive our business (i.e. whether to begin drilling or not) in the next 6 months.”

Additional Resources

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Author



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Chad Wilkerson served as Oklahoma City Branch Executive and Senior Vice President for the Federal Reserve Bank of Kansas City. Wilkerson began his career with Federal Reserve in the Kansas City research department in 1998, accepting the role of Oklahoma City Branch Executive in 2006. In 2022, Wilkerson was appointed Senior Vice President. He retired from the Kansas City Fed in 2025. As Oklahoma City Branch Executive, Wilkerson was the Bank's lead officer and regional economist in Oklahoma. He recruited and worked closely with the Oklahoma City Branch Board of Directors and was responsible for briefing the Kansas City Fed president, a member of the Federal Open Market Committee, on economic trends in the state. His team conducted research and surveys on key regional issues such as energy, manufacturing and migration. Wilkerson holds a master's degree in public policy from the University of Chicago, as well as a master's degree from Southwestern Seminary and bachelor's degree from William Jewell College. He serves on the boards of the Economic Club of Oklahoma, the United Way of Central Oklahoma and City Rescue Mission. He lives in Edmond, Oklahoma, with his wife and children.
