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TENTH DISTRICT ENERGY ACTIVITY DECREASED AT A STEEP PACE
Federal Reserve Bank of Kansas City Releases First Quarter Energy Survey

KANSAS CITY, Mo. –The Federal Reserve Bank of Kansas City released the first quarter Energy Survey today. According to Chad Wilkerson, Oklahoma City Branch executive and economist at the Federal Reserve Bank of Kansas City, the survey revealed that Tenth District energy activity decreased at a steep pace and expectations for future activity dropped further.

"District energy activity fell sharply during the first quarter of 2020, with our index dropping to its lowest level since we began the survey in early 2014," said Wilkerson. "Expectations for future activity also fell to their lowest level since late 2014, as most firms do not expect energy prices to return to profitable levels this year."

The Kansas City Fed's quarterly Tenth District Energy Survey provides information on current and expected activity among energy firms in the Tenth District. The survey monitors oil and gas-related firms located and/or headquartered in the Tenth District, with results based on total firm activity. Survey results reveal changes in several indicators of energy activity, including drilling, capital spending, and employment. Firms also indicate projections for oil and gas prices. All results are diffusion indexes – the percentage of firms indicating increases minus the percentage of firms indicating decreases. A summary of the first quarter survey is attached. Results from past surveys and release dates for future surveys can be found at https://www.kansascityfed.org/research/indicatorsdata/energy.

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TENTH DISTRICT ENERGY SUMMARY

First quarter energy survey results revealed Tenth District energy activity decreased at a steep pace and expectations for future activity dropped further. Firms reported that oil prices needed to be on average $47 per barrel for drilling to be profitable, lower than any profitable price in survey history (since early 2014).

Summary of Quarterly Indicators

Tenth District energy activity decreased at a steep pace in the first quarter of 2020, as indicated by firms contacted between March 16th and March 31st, 2020 (Tables 1 & 2). The drilling and business activity index fell from -48 to -81, the lowest reading in survey history (since early 2014), indicating a continued, deep decrease in activity (Chart 1). The revenues and profits indexes fell sharply to levels last seen in Q1 2015. Indexes for employment and employee hours indexes also decreased significantly, and the wages and benefits index turned negative. Additionally, the indexes for supplier delivery time and access to credit declined further.

Year-over-year indexes also declined substantially. The year-over-year drilling and business activity index sank further, from -50 to -92, a record survey low. Indexes for total revenues, capital expenditures, delivery time, profits, employment, employee hours, and access to credit decreased again in the first quarter, marking over six months in negative territory. The year-over-year index for wages and benefits also turned negative.

Expectations indexes dropped further. The future drilling and business activity index worsened from -16 to -78, the weakest outlook for activity since Q4 2014. The future capital expenditures, delivery time, profits, employment, employee hours, wages and benefits, and access to credit indexes decreased again in Q1 2020. The future revenues and profits indexes dropped steeply to the most negative readings in survey history. Price expectations for oil and natural gas liquids decreased compared to the previous quarter, while price expectations for natural gas rose.

Summary of Special Questions

This quarter firms were asked what oil and natural gas prices were needed for drilling to be profitable on average across the fields in which they are active (in alternate quarters they are asked what price they need for a substantial increase in drilling). The average oil price needed was $47 per barrel, with a range of $25 to $65 (Chart 2). This average was below the prices reported in 2019, and the lowest recorded profitable price. The average natural gas price needed was $2.74 per million Btu, with responses ranging from $1.90 to $4.50.

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 much lower than previous price expectations. The average expected WTI prices were $33, $42, $50, and $58 per barrel, respectively. Expectations for natural gas prices also decreased from last quarter. The average expected Henry Hub natural gas prices were $2.02, $2.34, $2.57, and $2.94 per million Btu, respectively.

Firms were also asked about their expectations of firm solvency if low oil prices persist (Chart 3). Contacts anticipated on average that 61 percent of firms would remain solvent in the next year if the WTI price of oil were to stay at $30 per barrel, and 64 percent of firms would remain solvent if the WTI price of oil were to stay at $40. Respondents expected considerably fewer firms to remain solvent if oil prices stay low for more than one year.

Finally, respondents were asked if they have seen additional pressure from investors or customers regarding environmental practices (Chart 4). 58 percent of firms indicated they have seen increased pressure regarding environmental practices over the last 24 months. Over 48 percent of firms reported gas flaring as a top environmental concern from investors and customers, and 45 percent listed water management and carbon emissions (other than gas flaring) as a top environmental concern.

Selected Energy Comments

“These are unprecedented times. The combination of the supply shock (Saudi and Russia supply increase) and demand shock (COVID-19) are introducing challenges we have never seen before. We are hunkering down to live within cash flow.”

“We cannot continue producing oil below the cost to produce it. Prices must go up, but there is a world-wide oversupply keeping prices down.”

“Long term $30 per barrel (oil price) will lead to massive consolidation and insolvency. I'm estimating that some will be able to hang on for another year, but two years probably reduces E&Ps significantly.”

“I don't know of any companies that can operate profitably at that price ($40/bbl oil). The ones that stay solvent have cash reserves, refining or other revenue streams to keep them solvent.”

“Long term, $40 is not enough. Some will be able to survive but many/ most will not.”

“The longer the price stays at $30 the more likely our competitors will fail. Even those who have hedged have likely only hedged a portion of their production and likely for a year or two out.”

“The oilfield is generally highly leveraged and these commodity prices will not sustain the bulk of firms in the industry.”

“Electrical demand for transportation fuel will help natural gas prices stabilize, along with LNG exports giving natural gas the ability to become a fungible global commodity.”

“Saudi/Russia fight for market share could last 6-18 months. COVID-19 demand destruction likely to last 3 months.”

“The next year is going to be bad due to the demand destruction related to the shutdown of the world economy due to COVID-19. As the market balances over the next 18-24 months prices should start to improve.”

“(In response to COVID-19) we are taking protective measures, encouraging some to work at home, and restricting business travel. We are also looking at cutting costs, because it is affecting business.”

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

	Quarter 1 vs. Quarter 4 (percent)*				Quarter 1 vs. Year Ago (percent)*				Expected in Six Months (percent)*			
Energy Company Indicators	Increase	No Change	Decrease	Diff Index^	Increase	No Change	Decrease	Diff Index^	Increase	No Change	Decrease	Diff Index^
Drilling/Business Activity	3	14	83	-81	0	8	92	-92	6	11	83	-78
Total Revenues	8	11	81	-73	8	3	89	-81	5	11	84	-78
Capital Expenditures					16	0	84	-68	5	16	78	-73
Supplier Delivery Time	3	70	27	-24	5	68	27	-22	5	57	38	-32
Total Profits	3	14	83	-81	6	6	89	-83	6	8	86	-81
Number of Employees	5	35	59	-54	8	22	70	-62	5	22	73	-68
Employee Hours	5	35	59	-54	5	27	68	-62	8	24	68	-59
Wages and Benefits	11	54	35	-24	22	27	51	-30	3	46	51	-49
Access to Credit	0	68	32	-32	0	56	44	-44	0	56	44	-44
Expected Oil Prices									27	27	46	-19
Expected Natural Gas Prices									38	41	22	16
Expected Natural Gas Liquids Prices									19	54	27	-8

*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 first quarter survey ran from March 16 to March 31, 2020 and included 37 responses from firms in Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri.

Chart 1. Drilling/Business Activity Index vs. a Quarter Ago

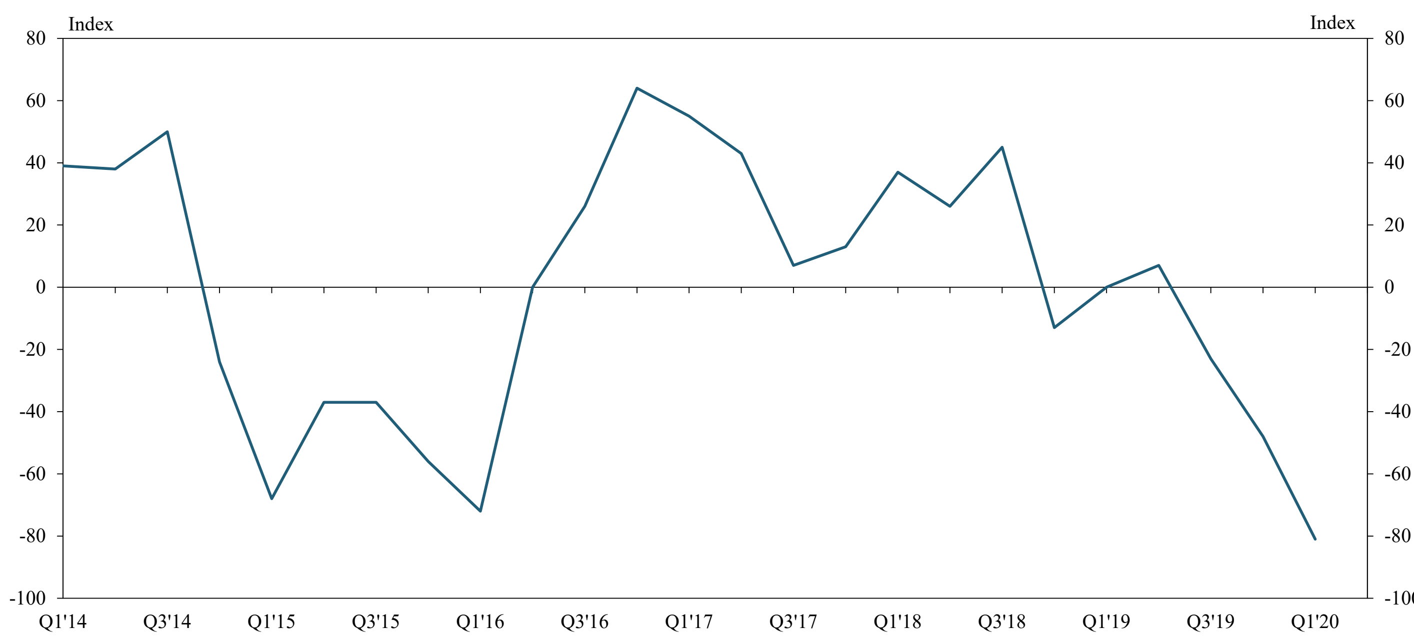

Table 2
Historical Energy Survey Indexes

	Q1'17	Q2'17	Q3'17	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20
Versus a Quarter Ago													
(not seasonally adjusted)													
Drilling/Business Activity	55	43	7	13	37	26	45	-13	0	7	-23	-48	-81
Total Revenues	52	20	23	39	50	53	50	6	13	-14	-10	6	-73
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	4	11	-10	-4	19	16	7	0	3	7	-7	-6	-24
Total Profits	41	3	21	29	50	53	37	-18	6	-18	-23	-21	-81
Number of Employees	31	23	17	19	20	29	23	9	3	0	-10	0	-54
Employee Hours	16	20	0	19	24	24	23	6	6	0	0	-12	-54
Wages and Benefits	13	20	7	16	34	39	33	30	28	15	10	9	-24
Access to Credit	3	-3	13	0	3	15	10	-19	-10	-7	-6	-21	-32
Versus a Year Ago													
Drilling/Business Activity	59	70	44	54	54	41	57	17	17	-11	-21	-50	-92
Total Revenues	52	62	37	56	68	56	61	50	23	-22	-7	-19	-81
Capital Expenditures	43	59	50	50	68	58	62	27	3	4	-10	-13	-68
Supplier Delivery Time	-4	11	-14	-7	19	16	10	3	3	7	-21	-13	-22
Total Profits	55	59	21	38	53	50	47	42	6	-24	-13	-30	-83
Number of Employees	13	31	23	40	31	36	27	27	24	4	-13	-18	-62
Employee Hours	0	28	10	27	30	34	31	19	16	3	-17	-18	-62
Wages and Benefits	9	31	37	34	48	69	67	55	47	43	33	3	-30
Access to Credit	13	-3	20	7	0	15	25	9	3	-7	0	-16	-44
Expected in Six Months													
(not seasonally adjusted)													
Drilling/Business Activity	57	26	30	33	50	61	50	-19	17	-26	-21	-16	-78
Total Revenues	52	18	44	44	52	50	56	-23	47	-4	4	13	-78
Capital Expenditures	37	19	37	43	56	48	43	-13	19	-4	-17	-13	-73
Supplier Delivery Time	11	4	-11	-11	15	17	-4	9	14	14	-14	-23	-32
Total Profits	45	12	28	43	53	48	59	-27	35	-7	-10	0	-81
Number of Employees	16	21	20	21	34	33	21	15	14	0	-3	-16	-68
Employee Hours	16	21	17	27	43	31	17	3	13	-4	-10	-18	-59
Wages and Benefits	23	7	30	50	34	39	34	42	28	15	17	-6	-49
Access to Credit	0	4	10	14	3	6	30	3	0	-3	-10	-9	-44
Expected Oil Prices	3	4	54	50	31	12	48	29	34	15	32	28	-19
Expected Natural Gas Prices	6	3	24	28	3	21	20	-33	3	10	23	-6	16
Expected Natural Gas Liquids Prices	14	21	38	30	7	27	32	-3	18	-7	13	10	-8
Special Price Questions													
(averages)													
Profitable WTI Oil Price (per barrel)	$51		$51		$52		$55		$52		$55		$47
WTI Price to Substantially Increase Drilling		$56		$62		$69		$63		$66		$65	
WTI Price Expected in 6 Months	$51	$47	$52	$58	$63	$67	$71	$54	$60	$57	$58	$60	$33
WTI Price Expected in 1 Year	$54	$49	$55	$60	$64	$70	$72	$59	$61	$60	$60	$62	$42
WTI Price Expected in 2 Years	$60	$54	$58	$62	$66	$73	$73	$61	$65	$63	$63	$65	$50
WTI Price Expected in 5 Years	$69	$61	$65	$70	$72	$78	$79	$66	$72	$70	$69	$71	$58
Profitable Natural Gas Price (per million BTU)	$3.38		$3.05		$2.92		$3.23		$3.02		$2.91		$2.74
Natural Gas Price to Substantially Increase Drilling		$3.65		$3.59		$3.60		$3.48		$3.40		$3.66	
Henry Hub Price Expected in 6 Months	$2.85	$3.05	$3.01	$2.88	$2.70	$2.85	$2.89	$3.06	$2.85	$2.52	$2.59	$2.38	$2.02
Henry Hub Price Expected in 1 Year	$3.01	$3.06	$3.11	$3.10	$2.83	$2.90	$2.92	$3.12	$2.91	$2.59	$2.58	$2.49	$2.34
Henry Hub Price Expected in 2 Years	$3.22	$3.25	$3.30	$3.30	$2.98	$3.05	$3.10	$3.23	$3.05	$2.79	$2.81	$2.69	$2.57
Henry Hub Price Expected in 5 Years	$3.64	$3.51	$3.73	$3.65	$3.33	$3.34	$3.42	$3.54	$3.18	$3.16	$3.20	$3.09	$2.94

Chart 2. Special Question - What price is currently needed for drilling to be profitable 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?

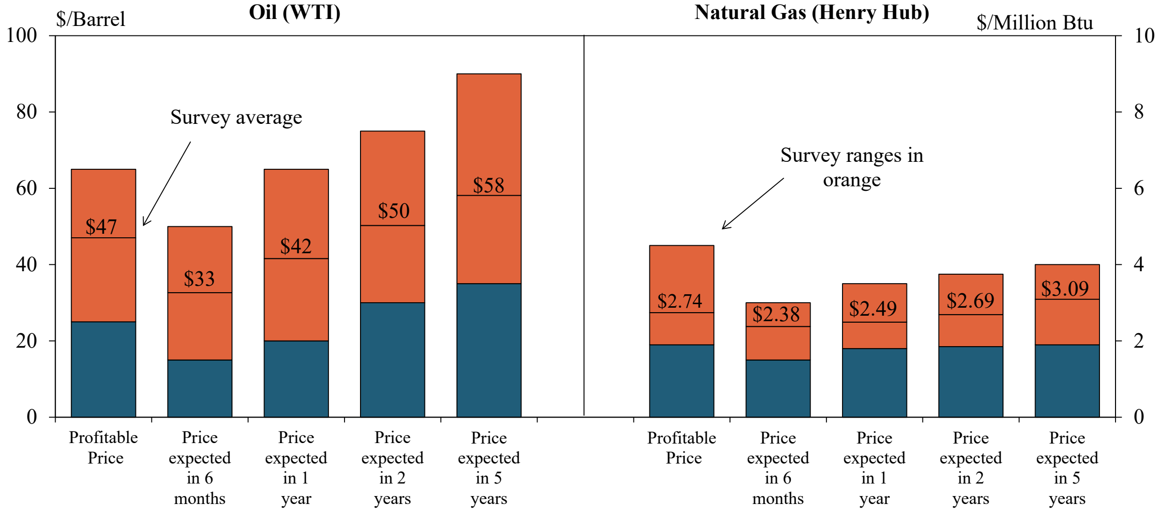

Chart 3. Special Question - If the WTI price of oil were to stay at $30/bbl or $40/bbl for an extended period of time, what share of firms in your industry would remain solvent for the following time periods?

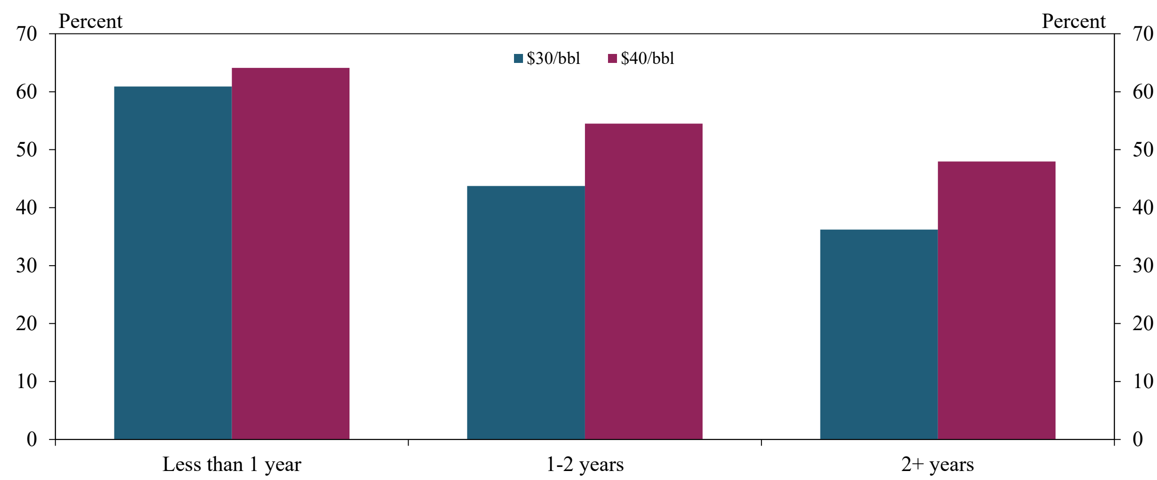

Chart 4. Special Question - What areas of environmental practices are investors or customers most concerned about (choose all that apply)?