

# THE U.S. Energy DATABOOK

*A summary of national and global energy indicators*



OCTOBER 21, 2019

FEDERAL RESERVE BANK of KANSAS CITY

## SUMMARY OF CURRENT ENERGY CONDITIONS

In October, the number of total active drilling rigs in the United States continued to drop, decreasing 2.0 percent from a month ago and 20.2 percent from a year ago. In July 2019, U.S. crude oil production dipped 2.3 percent while natural gas production expanded 3.4 percent. For the week ending October 18th, West Texas Intermediate (WTI) crude oil averaged \$53.49 per barrel and North Sea Brent averaged \$59.32 per barrel, a decline of 9.8 percent and 9.5 percent in the last month, respectively. The Henry Hub natural gas spot price averaged \$2.25 per million Btu for the week ending October 18th, falling 14.4 percent in the last month. U.S. crude oil and petroleum products imports and exports eased lower by 3.8 percent and 1.9 percent in the last month, respectively. Global demand for petroleum edged up 1.1 percent in the third quarter of 2019, while global petroleum production inched down 1.2 percent in September 2019.

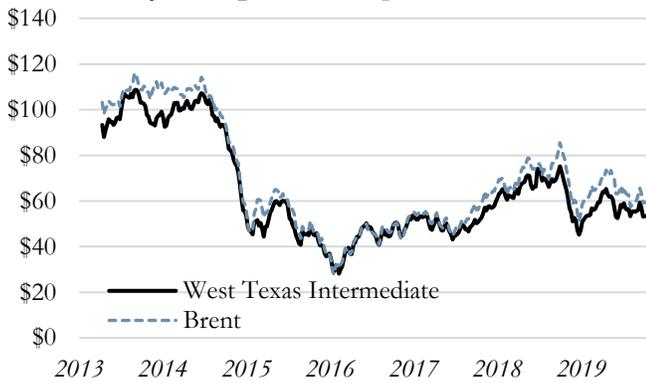
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S. oil imports; U.S. oil exports; oil and gas drilling rig counts; and U.S. natural gas production. These indicators can be found on the following pages.



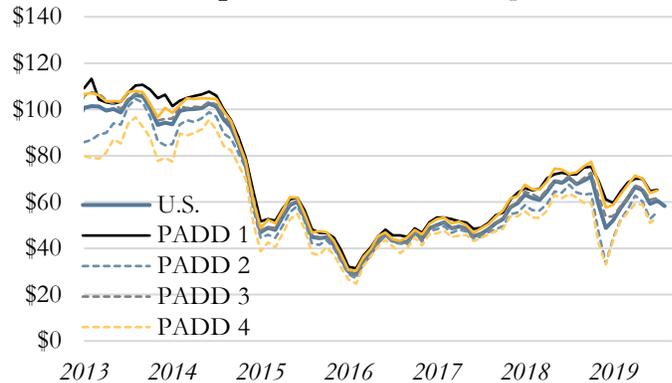
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and Wyoming. There are three branches across the Tenth Federal Reserve District located in Denver, Oklahoma City, and Omaha.

Weekly data through October 18, 2019

Weekly Oil Spot Prices, per barrel



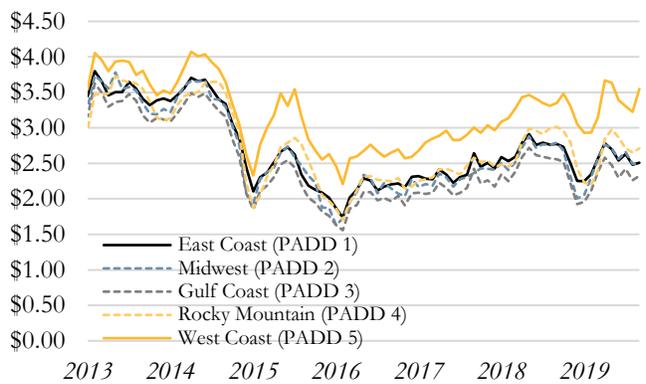
Refiner Acquisition Cost of Oil\*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Monthly Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

Weekly Spot Prices	Current 10/18/19	1 Week Ago	1 Month Ago	3 months Ago	6 Months Ago	1 Year Ago
West Texas Intermediate	\$53.49	\$0.22	-\$5.84	-\$3.26	-\$10.31	-\$16.75
Brent	\$59.32	-\$0.07	-\$6.24	-\$4.31	-\$11.55	-\$21.09
Henry Hub	\$2.25	-\$0.04	-\$0.38	-\$0.19	-\$0.38	-\$1.01

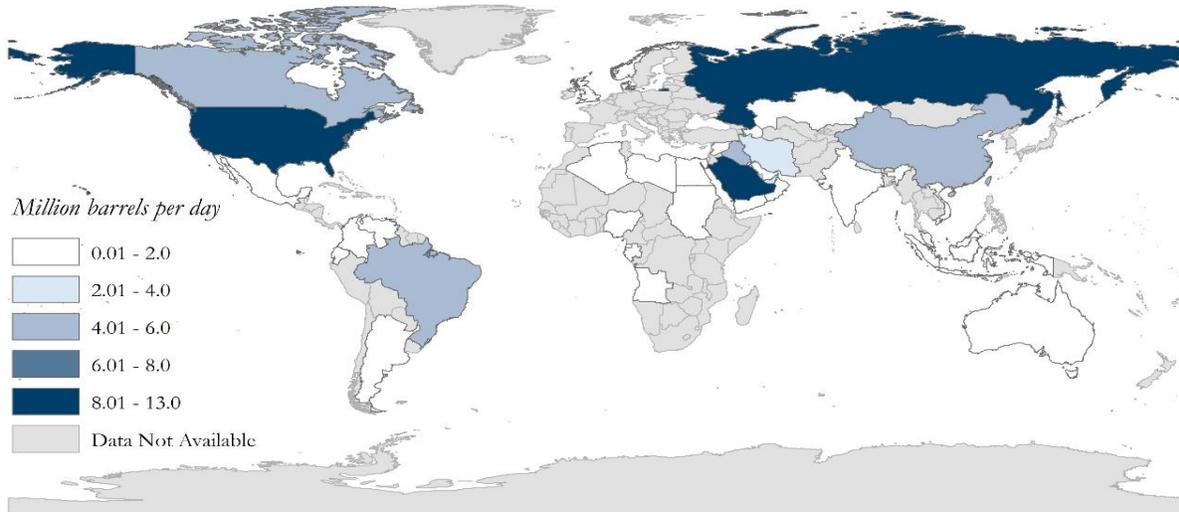
Monthly Gasoline Spot Prices, Change from

Geographic Area	Current Sep-19	1 Month Ago	3 months Ago	6 Months Ago	1 Year Ago
East Coast (PADD 1)	\$2.51	\$0.02	-\$0.04	-\$0.06	-\$0.27
Midwest (PADD 2)	\$2.49	-\$0.01	-\$0.07	-\$0.07	-\$0.30
Gulf Coast (PADD 3)	\$2.33	\$0.06	\$0.03	-\$0.05	-\$0.23
Rocky Mountain (PADD 4)	\$2.71	\$0.06	-\$0.16	\$0.31	-\$0.31
West Coast (PADD 5)	\$3.55	\$0.32	\$0.16	\$0.40	\$0.20

\*The cost of crude oil, including transportation and other fees paid by the refiner.

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

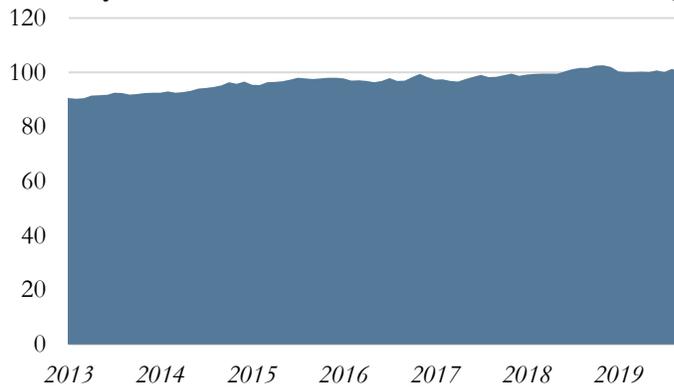
September 2019 Global Petroleum Production



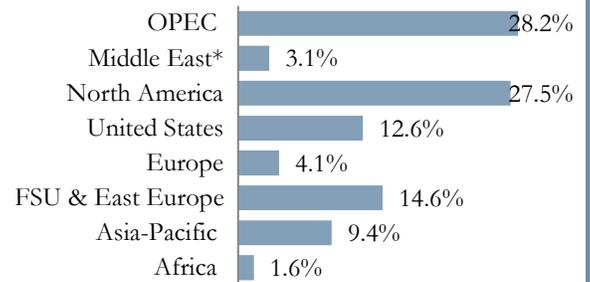
Source: Energy Information Administration/Haver Analytics

September 2019

Monthly Global Petroleum Production, million barrels per day

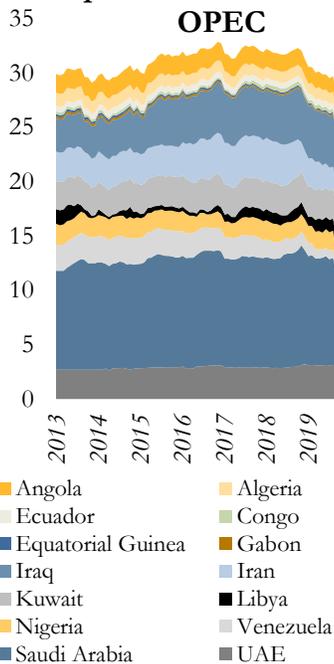


Regional Share of Production

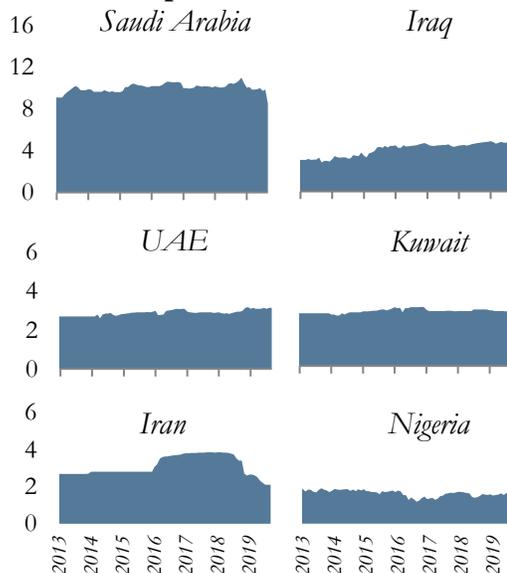


\*Excludes OPEC

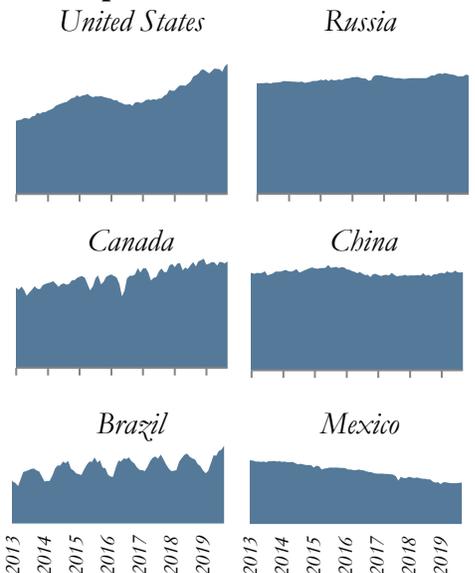
Top Crude Oil Producers, million barrels per day



Top OPEC Producers



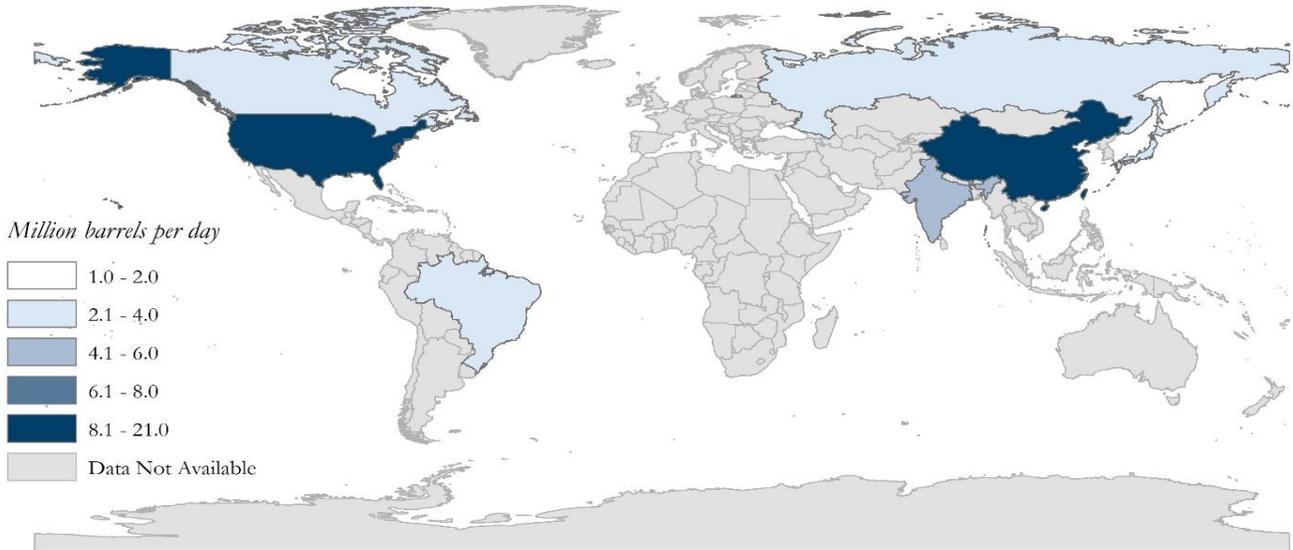
Top Non-OPEC Producers



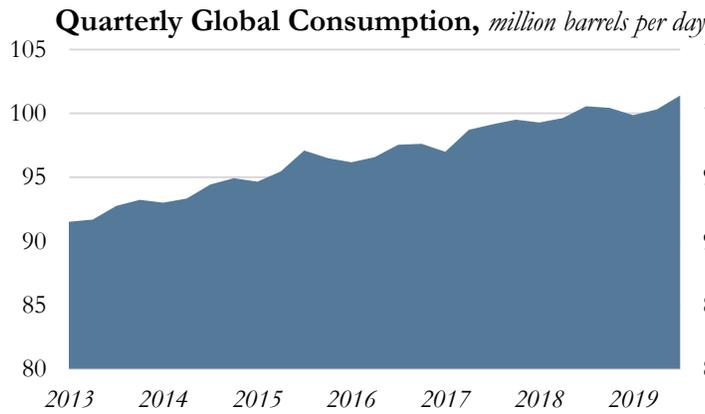
Note: OPEC country production values are for crude oil and non-OPEC country data is for petroleum production.

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

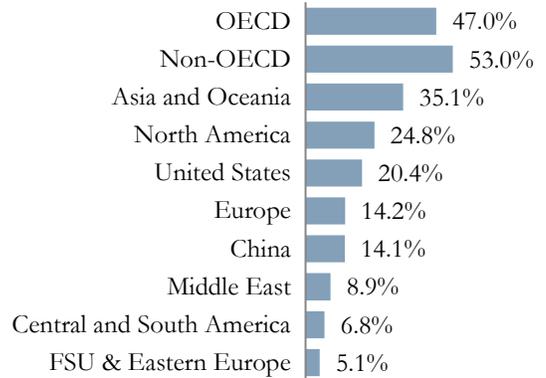
Third Quarter 2019 Global Petroleum Consumption



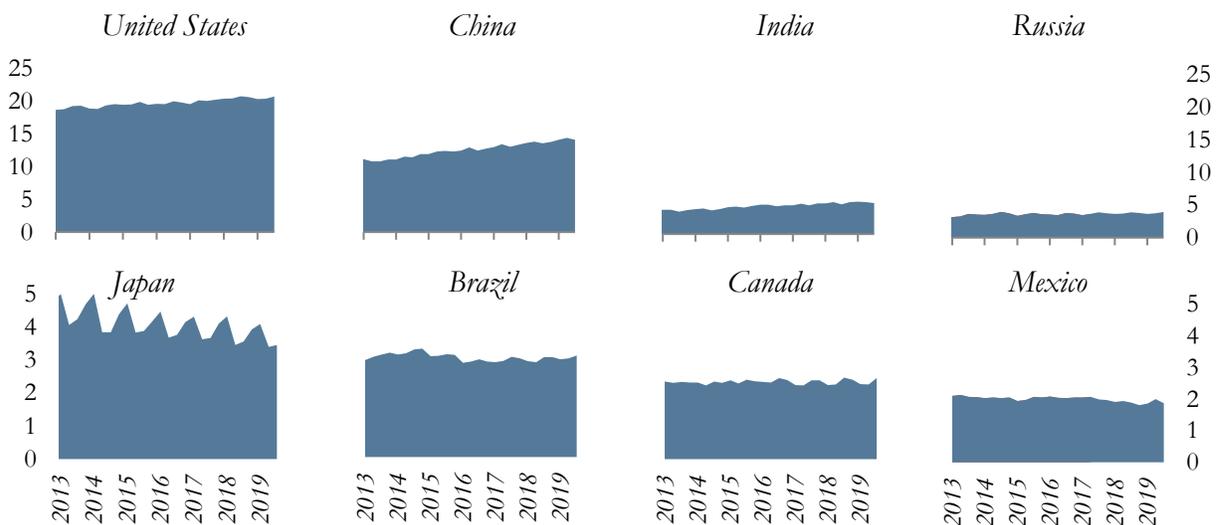
Source: Energy Information Administration/Haver Analytics



Third Quarter 2019 Regional Share of Consumption

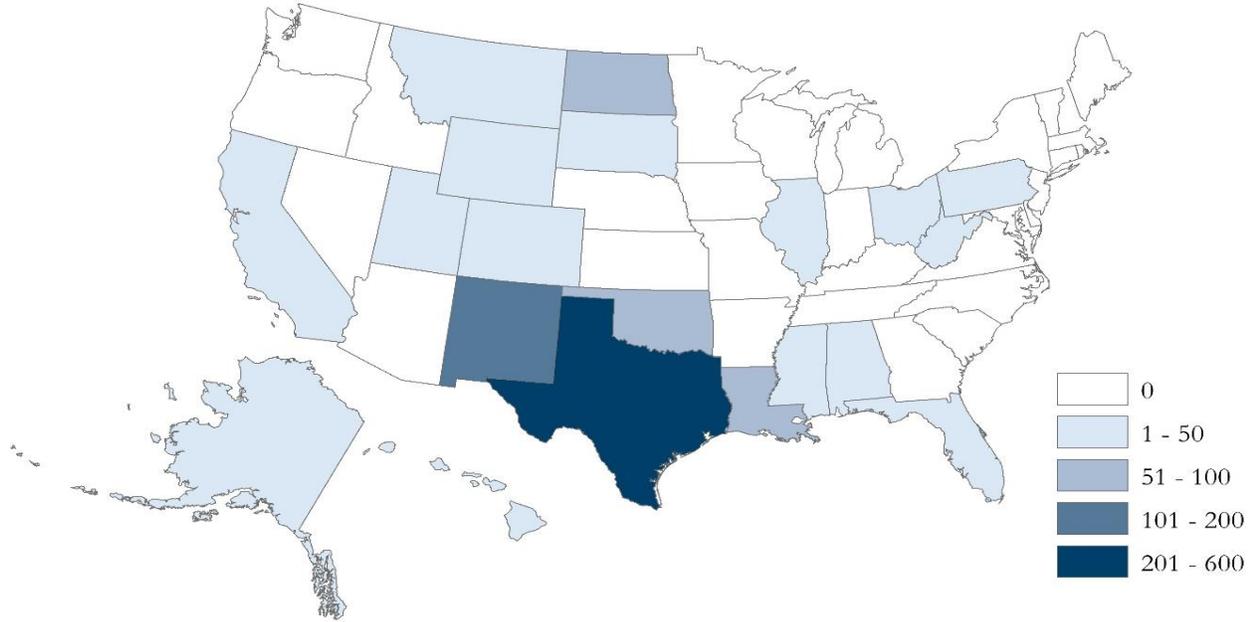


Top Petroleum Consumers, million barrels per day



Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

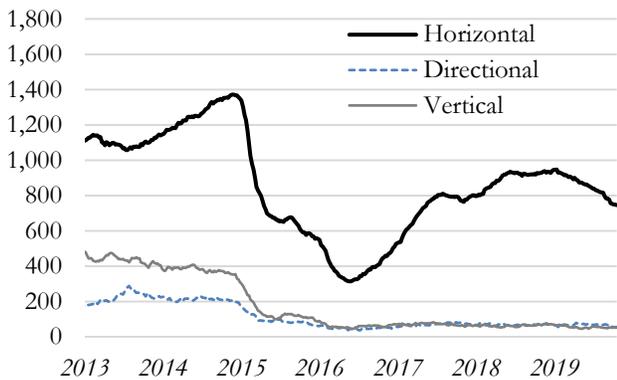
October 2019 Weekly Active Oil & Gas Drilling Rig Counts



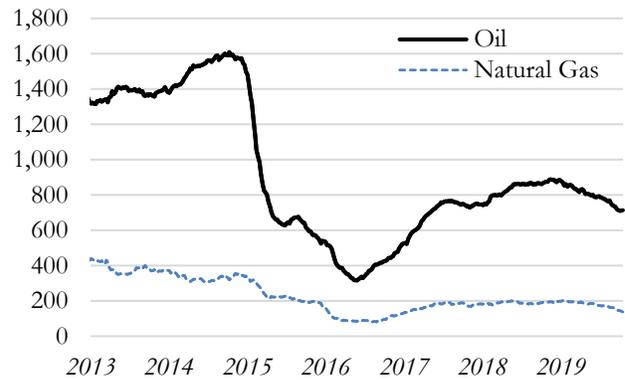
Source: Baker Hughes/Haver Analytics

October 18, 2019

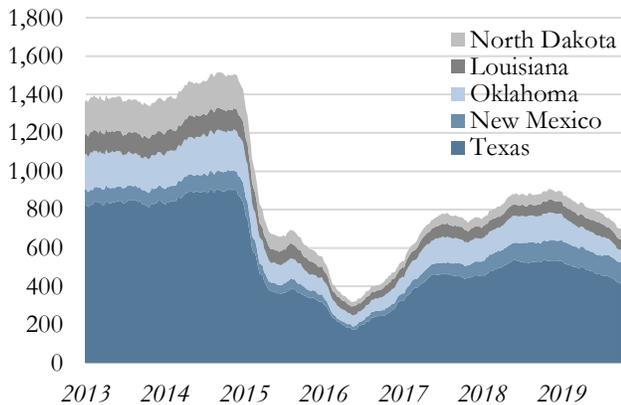
U.S. Active Drilling Rigs by Trajectory



U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

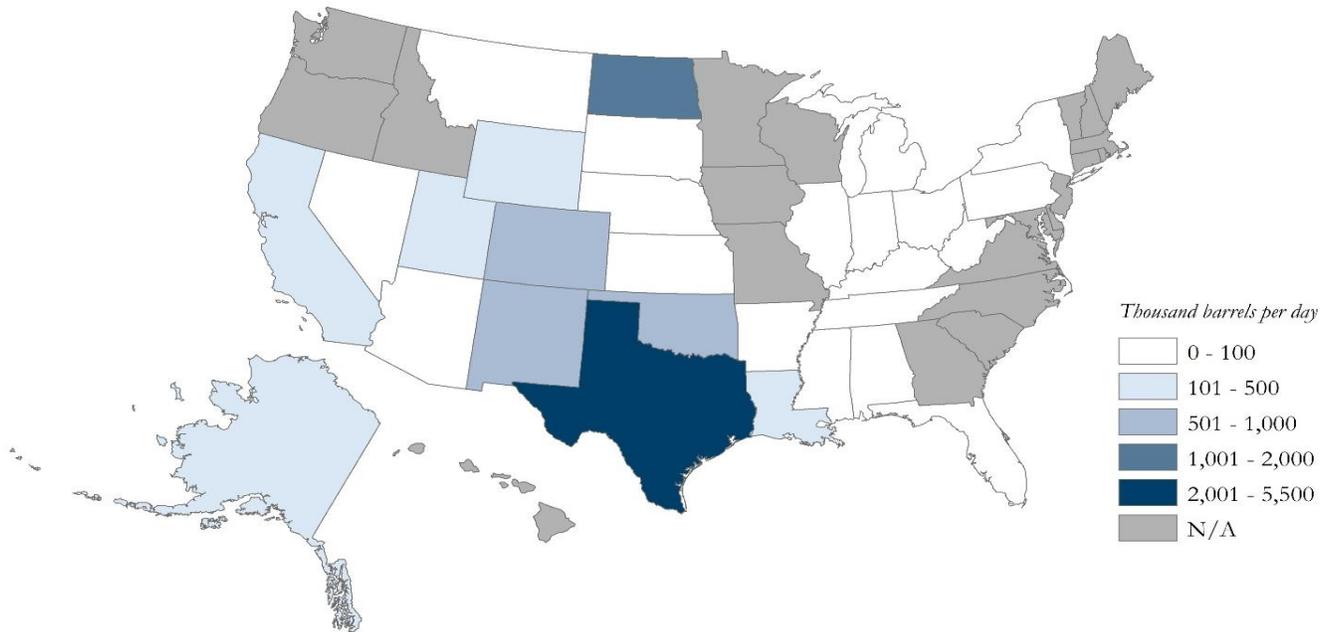
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	713	719	779	873
Gas	137	148	174	194
Misc	1	1	1	0
<b>Total</b>	<b>851</b>	<b>868</b>	<b>954</b>	<b>1067</b>

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	-0.8%	-8.5%	-18.3%
Gas	-	-7.4%	-21.3%	-29.4%
Misc	-	0.0%	0.0%	-
<b>Total</b>	-	<b>-2.0%</b>	<b>-10.8%</b>	<b>-20.2%</b>

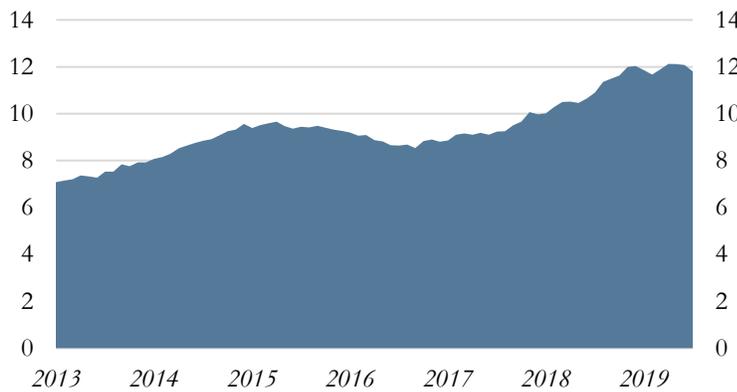
Source: Baker Hughes/Haver Analytics

July 2019 U.S. Crude Oil Production



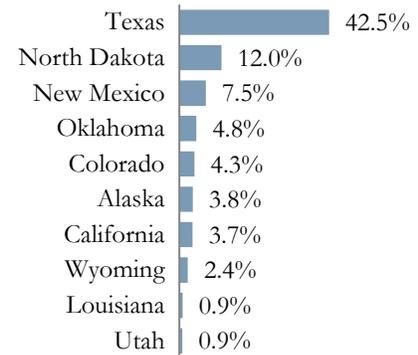
Source: Energy Information Administration/Haver Analytics

Monthly U.S. Production, million barrels per day

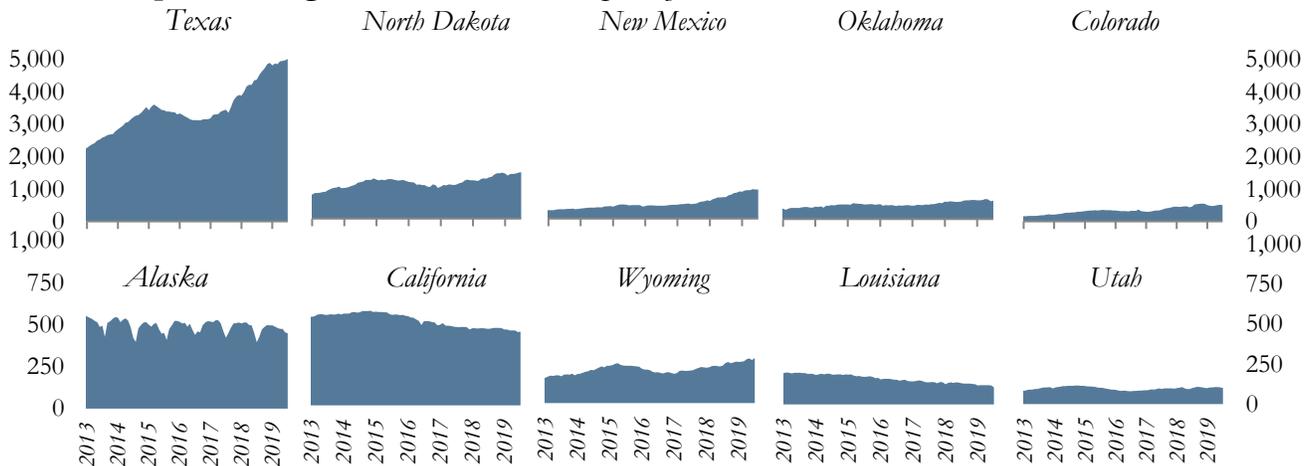


July 2019

Share of Production



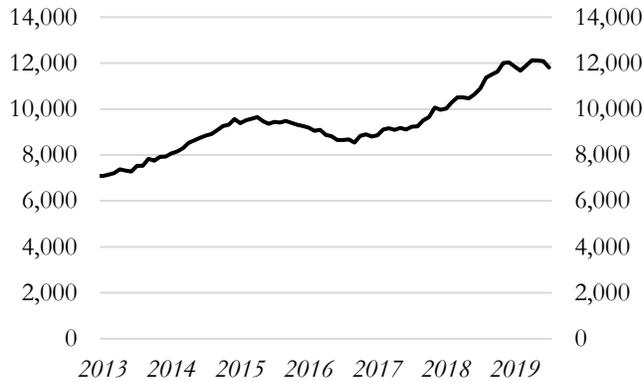
Top Producing States, thousand barrels per day



Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

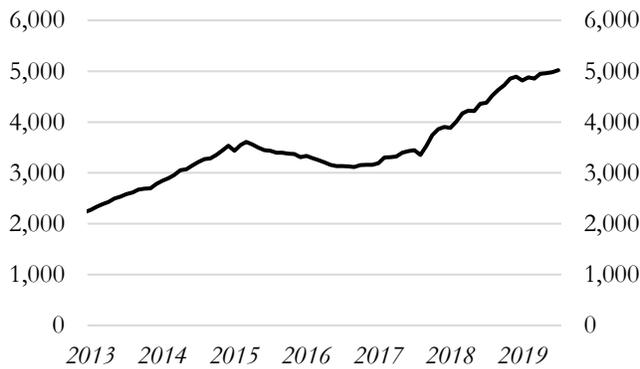
Data through July 2019

**United States** *Thousand barrels per day*



	<b>United States</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Jul-19	11,806	
Month Ago	12,082	-2.3%
3 Months Ago	12,123	-2.6%
6 Months Ago	11,856	-0.4%
1 Year Ago	10,891	8.4%

**Texas**



	<b>Texas</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Jul-19	5,021	
Month Ago	4,981	0.8%
3 Months Ago	4,949	1.5%
6 Months Ago	4,819	4.2%
1 Year Ago	4,377	14.7%
Share of U.S. Production		42.5%

**North Dakota**



	<b>North Dakota</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Jul-19	1,414	
Month Ago	1,400	1.0%
3 Months Ago	1,364	3.7%
6 Months Ago	1,374	2.9%
1 Year Ago	1,258	12.4%
Share of U.S. Production		12.0%

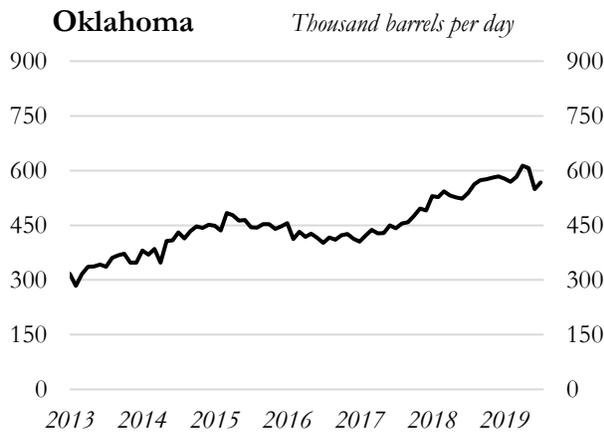
**New Mexico**



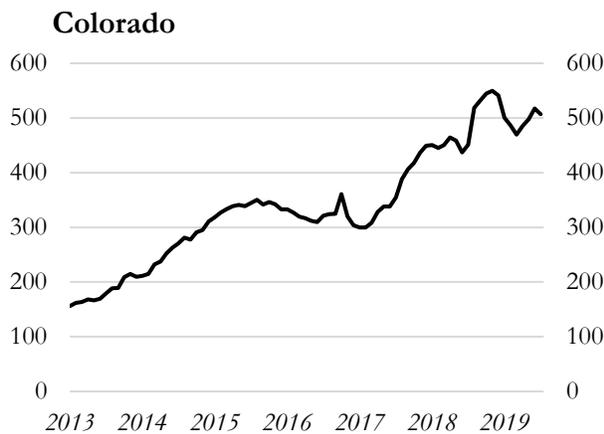
	<b>New Mexico</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Jul-19	888	
Month Ago	884	0.5%
3 Months Ago	866	2.5%
6 Months Ago	820	8.3%
1 Year Ago	657	35.3%
Share of U.S. Production		7.5%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

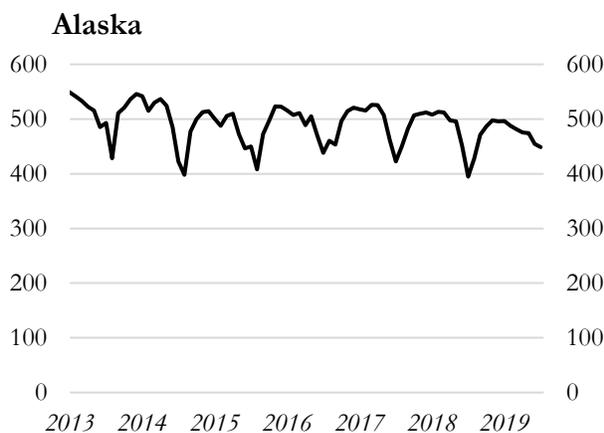
Data through July 2019



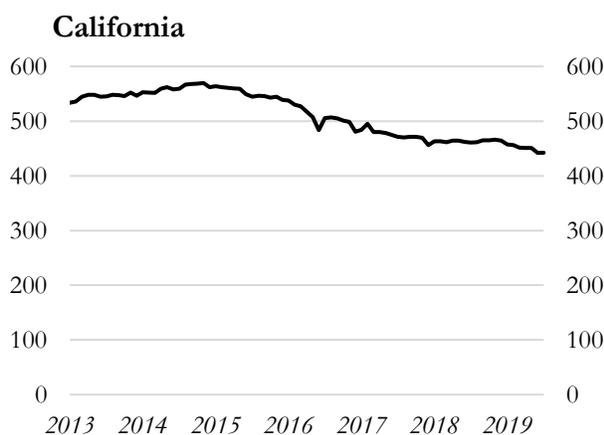
<b>Oklahoma</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jul-19	567	
Month Ago	549	3.3%
3 Months Ago	613	-7.5%
6 Months Ago	578	-1.8%
1 Year Ago	539	5.3%
Share of U.S. Production		4.8%



<b>Colorado</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jul-19	507	
Month Ago	517	-2.0%
3 Months Ago	486	4.4%
6 Months Ago	501	1.3%
1 Year Ago	451	12.4%
Share of U.S. Production		4.3%



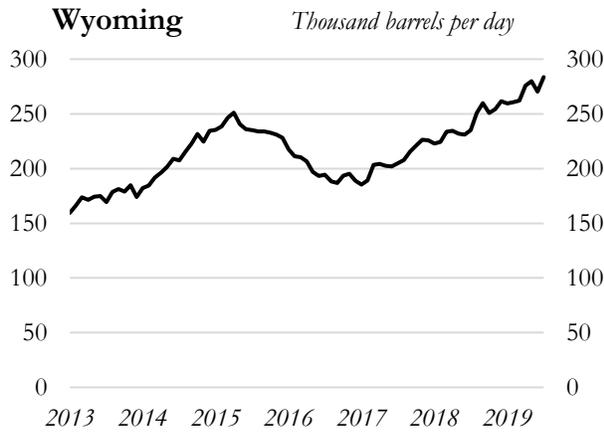
<b>Alaska</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jul-19	448	
Month Ago	455	-1.4%
3 Months Ago	475	-5.7%
6 Months Ago	496	-9.6%
1 Year Ago	395	13.6%
Share of U.S. Production		3.8%



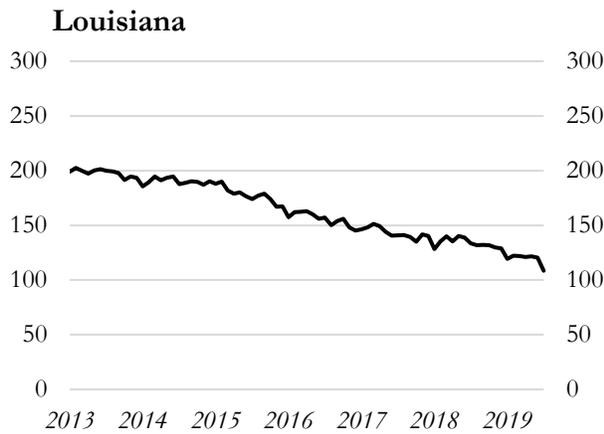
<b>California</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jul-19	442	
Month Ago	442	0.1%
3 Months Ago	451	-2.0%
6 Months Ago	457	-3.3%
1 Year Ago	461	-4.0%
Share of U.S. Production		3.7%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

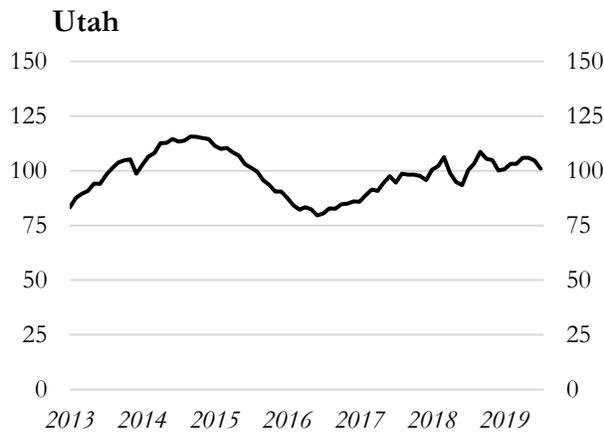
Data through July 2019



Wyoming		Change
Thousand barrels per day		from
Jul-19	284	
Month Ago	270	4.9%
3 Months Ago	276	2.8%
6 Months Ago	259	9.3%
1 Year Ago	235	20.6%
Share of U.S. Production		2.4%



Louisiana		Change
Thousand barrels per day		from
Jul-19	108	
Month Ago	121	-10.0%
3 Months Ago	121	-10.3%
6 Months Ago	119	-9.0%
1 Year Ago	134	-18.7%
Share of U.S. Production		0.9%

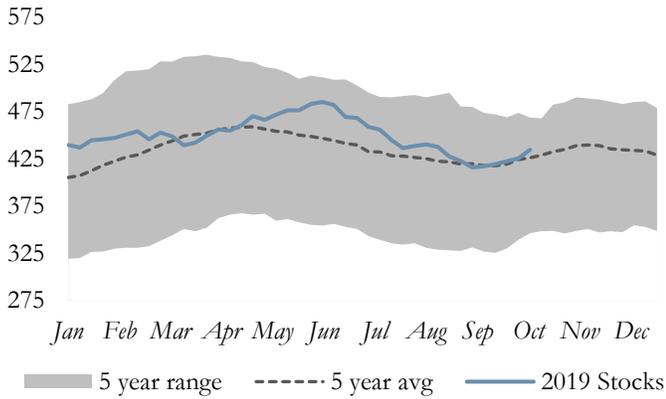


Utah		Change
Thousand barrels per day		from
Jul-19	101	
Month Ago	105	-3.5%
3 Months Ago	106	-4.6%
6 Months Ago	101	0.3%
1 Year Ago	100	0.8%
Share of U.S. Production		0.9%

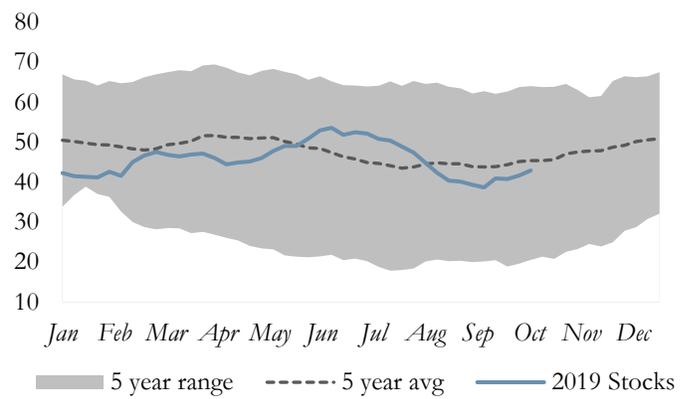
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

October 2019 Weekly U.S. Crude Oil Stocks

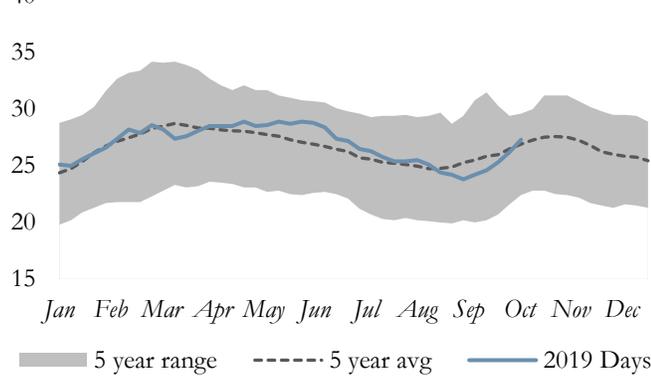
U.S. Oil Stocks, million barrels\*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



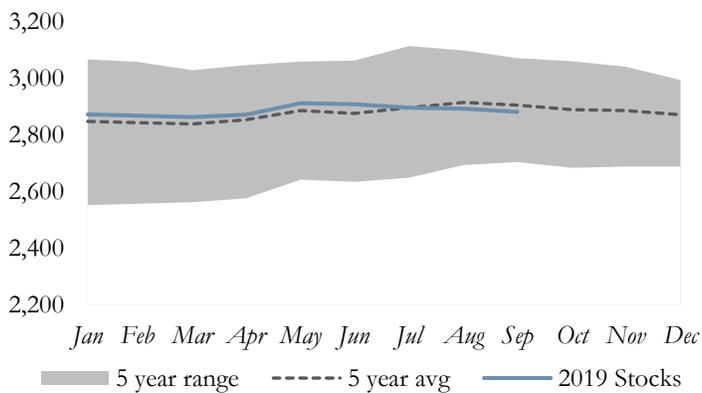
Crude Oil Stocks

	1 Week	1 Year
Change from	Ago	Ago
U.S.	2.2%	4.4%
Cushing, OK	3.1%	50.0%
Days of Supply	4.2%	7.5%
East Coast (PADD 1)	2.7%	-12.1%
Midwest (PADD 2)	1.5%	10.9%
Gulf Coast (PADD 3)	2.5%	4.4%
Rocky Mountain (PADD 4)	4.1%	-0.6%
West Coast (PADD 5)	1.7%	-4.3%

\*Stocks include those domestic and Customs-cleared foreign stocks held at, or in transit to, refineries and bulk terminals, and stocks in pipelines.

September 2019 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



Petroleum Stocks

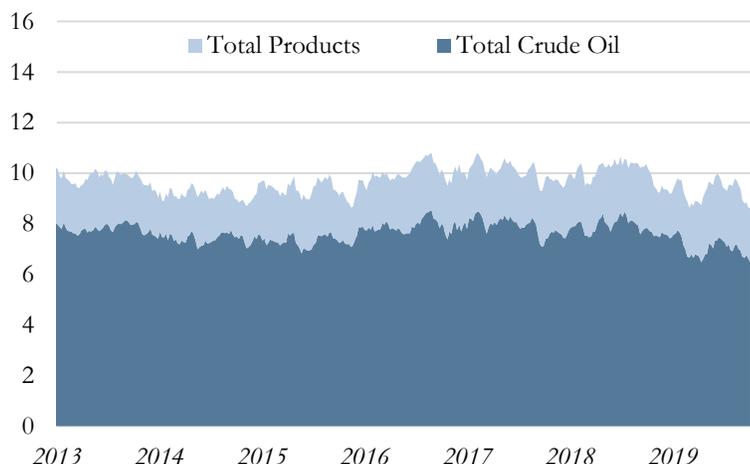
	Million Barrels	Change from
Current Month	2,882	
1 Month Ago	2,893	-0.4%
3 Months Ago	2,908	-0.9%
6 Months Ago	2,863	0.7%
1 Year Ago	2,858	0.8%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

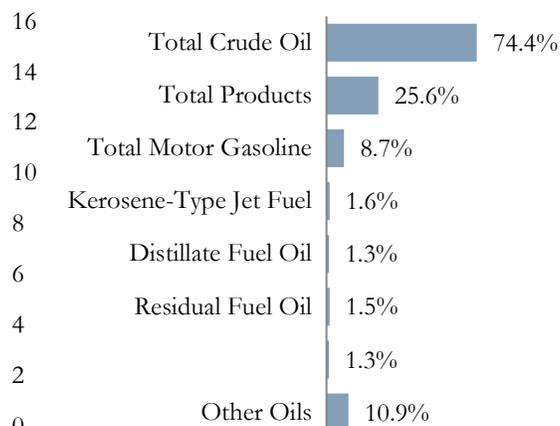
### October 2019 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product\*

Thousand barrels per day

	Current 10/11/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>6,297</b>	<b>6,652</b>	<b>7,094</b>	<b>6,474</b>	<b>7,695</b>
<b>Total Products</b>	<b>2,166</b>	<b>2,145</b>	<b>2,203</b>	<b>2,270</b>	<b>2,324</b>
Total Motor Gasoline	734	745	769	785	666
Kerosene-Type Jet Fuel	136	172	148	179	153
Distillate Fuel Oil	108	110	111	144	160
Residual Fuel Oil	130	173	112	174	323
Propane/Propylene	107	107	105	167	112
Other Oils	922	827	948	822	892
<b>Total Imports</b>	<b>8,463</b>	<b>8,797</b>	<b>9,297</b>	<b>8,744</b>	<b>10,019</b>

U.S. Imports by Product, Change from

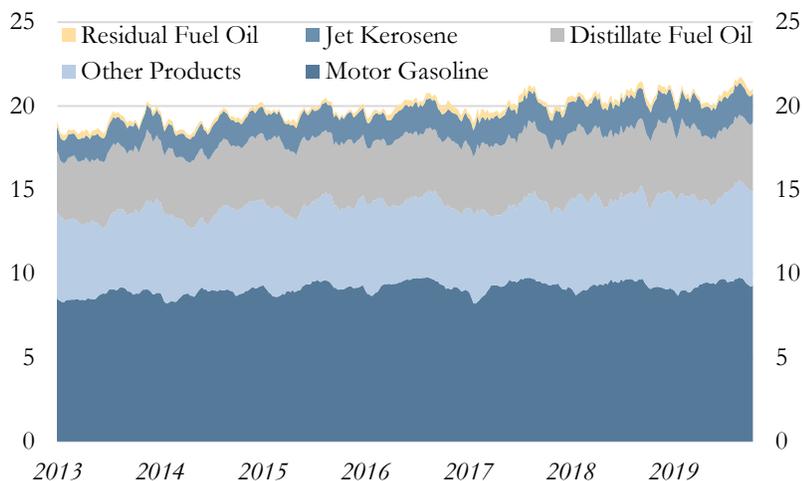
	Current 10/11/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>-5.3%</b>	<b>-11.2%</b>	<b>-2.7%</b>	<b>-18.2%</b>
<b>Total Products</b>	-	<b>1.0%</b>	<b>-1.7%</b>	<b>-4.6%</b>	<b>-6.8%</b>
Total Motor Gasoline	-	-1.5%	-4.6%	-6.5%	10.2%
Kerosene-Type Jet Fuel	-	-20.9%	-8.1%	-24.0%	-11.1%
Distillate Fuel Oil	-	-1.8%	-2.7%	-25.0%	-32.5%
Residual Fuel Oil	-	-24.9%	16.1%	-25.3%	-59.8%
Propane/Propylene	-	0.0%	1.9%	-35.9%	-4.5%
Other Oils	-	11.5%	-2.7%	12.2%	3.4%
<b>Total Imports</b>	-	<b>-3.8%</b>	<b>-9.0%</b>	<b>-3.2%</b>	<b>-15.5%</b>

\*Totals may not sum due to component rounding

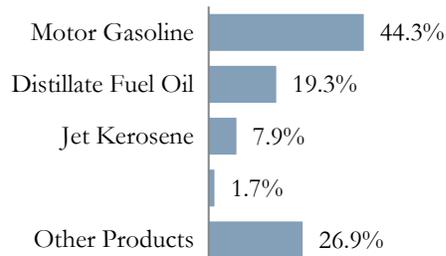
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

**October 2019 Weekly U.S. Demand for Petroleum Products**  
4-Week Averages

**All Petroleum Products, million barrels per day**



**Share of Total Consumption**



**U.S. Consumption by Product & Percent Change**

**U.S. Consumption by Product, thousand barrels per day**

	Current 10/11/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
All Products	21,061	21,383	20,811	20,084	19,989
Motor Gasoline	9,324	9,529	9,482	9,370	9,087
Distillate Fuel Oil	4,065	3,961	3,728	3,876	4,148
Jet Kerosene	1,661	1,787	1,864	1,666	1,693
Residual Fuel Oil	349	356	384	265	394
Other Products	5,662	5,750	5,353	4,907	4,667

**U.S. Consumption by Product, Change from**

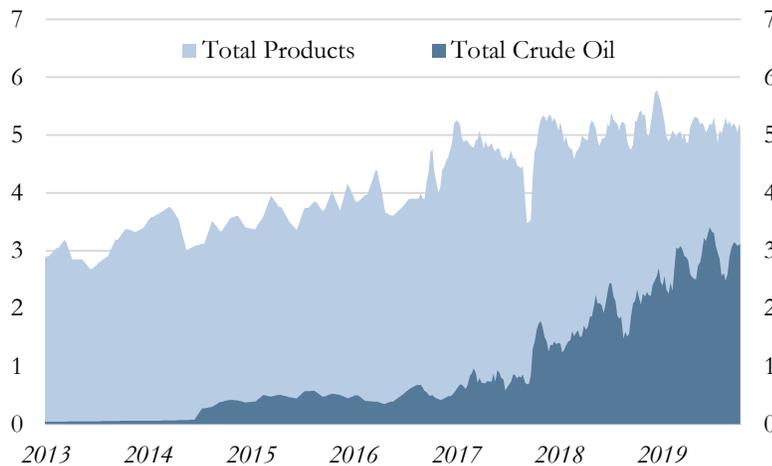
	Current 10/11/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
All Products	-	-1.5%	1.2%	4.9%	5.4%
Motor Gasoline	-	-2.2%	-1.7%	-0.5%	2.6%
Distillate Fuel Oil	-	2.6%	9.0%	4.9%	-2.0%
Jet Kerosene	-	-7.1%	-10.9%	-0.3%	-1.9%
Residual Fuel Oil	-	-2.0%	-9.1%	31.7%	-11.4%
Other Products	-	-1.5%	5.8%	15.4%	21.3%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

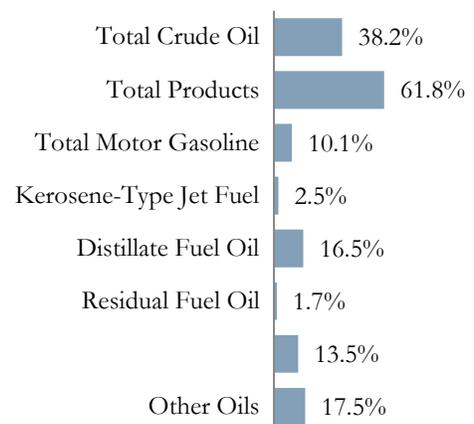
October 2019 Weekly U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages

Exports, million barrels per day



Share of Total Exports



U.S. Exports by Product\*

Thousand barrels per day

	Current 10/11/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>3,125</b>	<b>3,138</b>	<b>3,086</b>	<b>2,590</b>	<b>2,180</b>
<b>Total Products</b>	<b>5,059</b>	<b>5,203</b>	<b>5,089</b>	<b>5,145</b>	<b>5,386</b>
Total Motor Gasoline	826	712	705	641	993
Kerosene-Type Jet Fuel	206	228	180	199	214
Distillate Fuel Oil	1,348	1,400	1,424	1,344	1,246
Residual Fuel Oil	137	228	92	259	267
Propane/Propylene	1,108	977	1,130	1,113	886
Other Oils	1,435	1,659	1,559	1,589	1,781
<b>Total Exports</b>	<b>8,184</b>	<b>8,341</b>	<b>8,174</b>	<b>7,735</b>	<b>7,566</b>

U.S. Exports by Product, Change from

	Current 10/11/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>-0.4%</b>	<b>1.3%</b>	<b>20.7%</b>	43.3%
<b>Total Products</b>	-	<b>-2.8%</b>	<b>-0.6%</b>	<b>-1.7%</b>	<b>-6.1%</b>
Total Motor Gasoline	-	16.0%	17.2%	28.9%	-16.8%
Kerosene-Type Jet Fuel	-	-9.6%	14.4%	3.5%	-3.7%
Distillate Fuel Oil	-	-3.7%	-5.3%	0.3%	8.2%
Residual Fuel Oil	-	-39.9%	48.9%	-47.1%	-48.7%
Propane/Propylene	-	13.4%	-1.9%	-0.4%	25.1%
Other Oils	-	-13.5%	-8.0%	-9.7%	-19.4%
<b>Total Exports</b>	-	<b>-1.9%</b>	<b>0.1%</b>	<b>5.8%</b>	<b>8.2%</b>

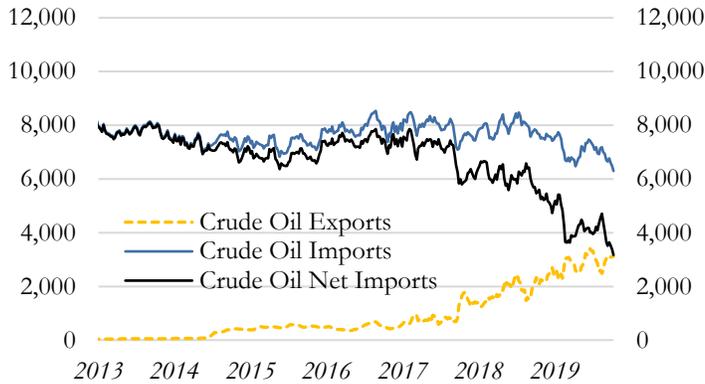
\*Totals may not sum due to rounding

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

### October 2019 Weekly U.S. Net Imports of Crude Oil & Petroleum Products

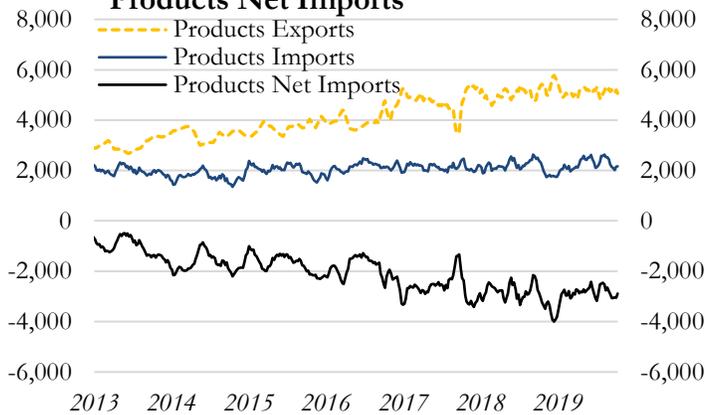
4-Week Averages, Thousand barrels per day

#### Crude Oil Net Imports



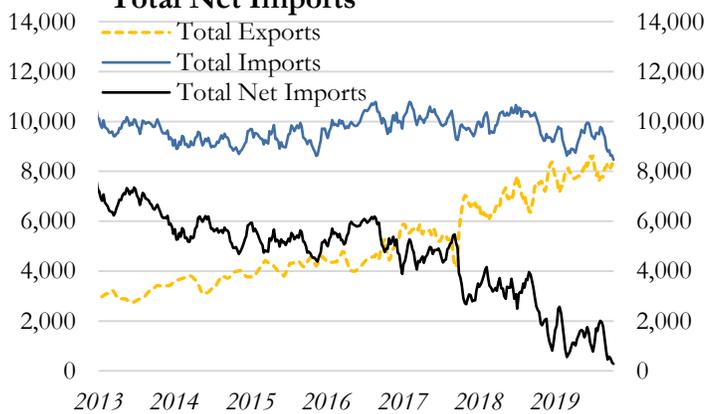
Crude Oil Net Imports		Change
Thousand barrels per day		from
10/11/19	3,173	
Month Ago	3,514	-9.7%
3 Months Ago	4,008	-20.8%
6 Months Ago	3,884	-18.3%
1 Year Ago	5,515	-42.5%

#### Products Net Imports



Products Net Imports		Change
Thousand barrels per day		from
10/11/19	-2,893	
Month Ago	-3,058	-
3 Months Ago	-2,886	-
6 Months Ago	-2,876	-
1 Year Ago	-3,062	-

#### Total Net Imports



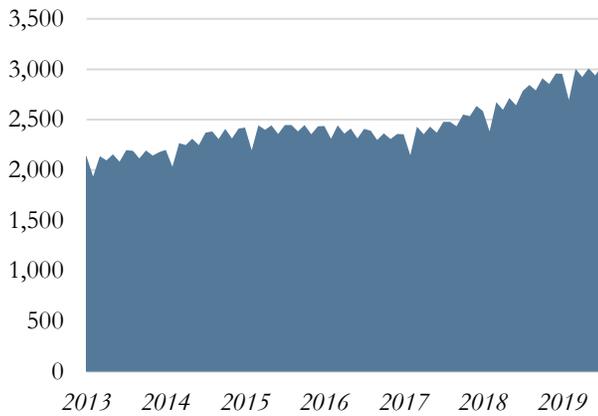
Total Net Imports		Change
Thousand barrels per day		from
10/11/19	280	
Month Ago	457	-38.7%
3 Months Ago	1,122	-75.0%
6 Months Ago	1,008	-72.2%
1 Year Ago	2,452	-88.6%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

U.S. Natural Gas Production & Stocks

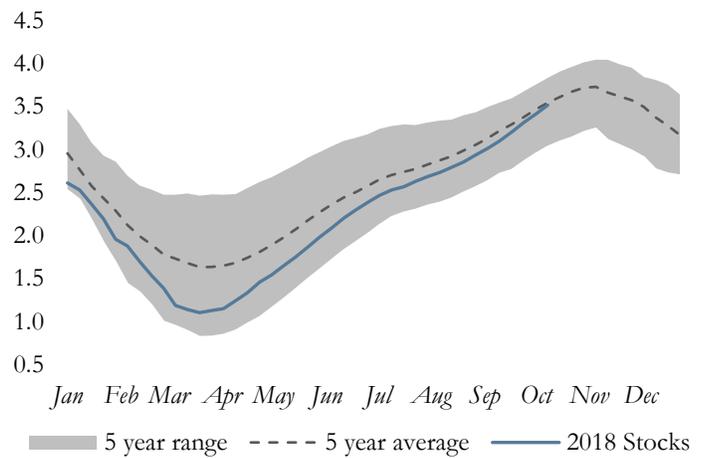
July 2019 Production

Total U.S. Production, Billion cubic feet (Bcf)



October 2019 Weekly Stocks

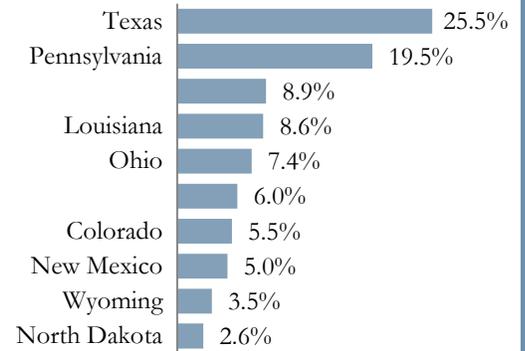
U.S. Natural Gas Stocks, Billion cubic feet (Bcf)



U.S. Natural Gas, Billion cubic feet (Bcf)

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	3,039	2,939	2,923	2,955	2,784
U.S. Stocks	3,519	3,103	2,533	1,247	3,037

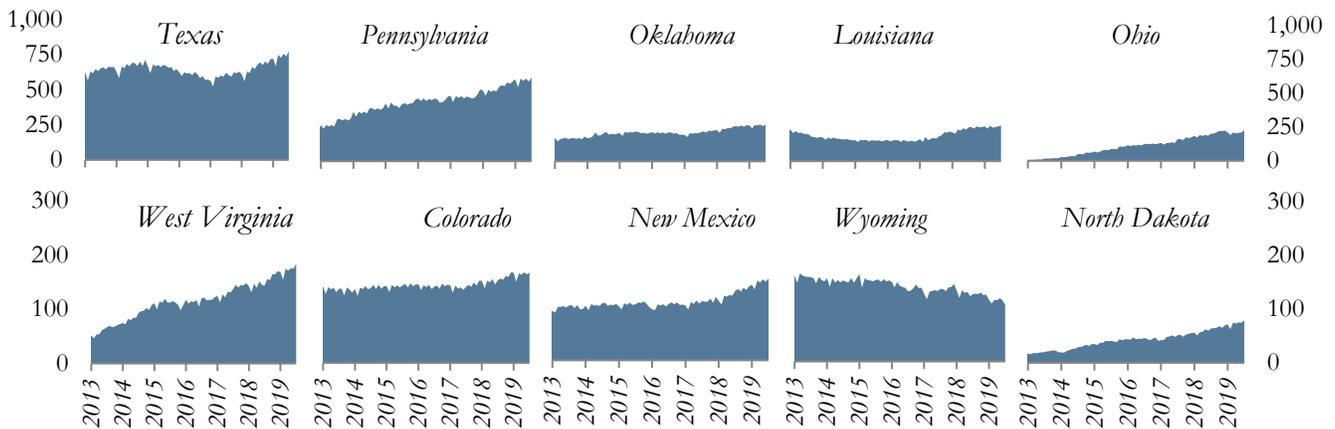
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	3.4%	4.0%	2.8%	9.2%
U.S. Stocks	-	13.4%	38.9%	182.2%	15.9%

Top Producing States, Billion cubic feet (Bcf)



\*U.S. production is monthly data & stocks are weekly data

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

*Definitions:*

West Texas Intermediate: A crude oil produced in Texas and southern Oklahoma which serves as a reference or "marker" for pricing a number of other crude streams and is traded in the domestic spot market at Cushing, Oklahoma.

Brent: A blended crude oil produced in the North Sea region which serves as a reference or "marker" for pricing a number of other international crude streams.

Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Refined petroleum products include but are not limited to gasolines, kerosene, distillates (including No. 2 fuel oil), liquefied petroleum gas, asphalt, lubricating oils, diesel fuels, and residual fuels.

*Notes:*

*Page 2:* Petroleum Administration for Defense Districts (PADD) are geographic aggregations of the 50 States and the District of Columbia into five districts by the Petroleum Administration for Defense in 1950. These districts were originally defined during World War II for purposes of administering oil allocation. For more information, visit: <http://www.eia.gov/petroleum/supply/monthly/pdf/append.pdf>

*Page 3:* For OPEC countries & the U.S., only crude oil production data is used. For non-OPEC countries (excluding the U.S.) total petroleum production data is used. Total petroleum production includes production of crude oil (including lease condensates), natural gas plant liquids, biofuels, other liquids, and refinery processing gains.

*Page 5:* The active rig count is the number of rigs actively exploring for or developing oil or natural gas. Rig counts provide an indicator of new drilling activity and potential for expanded crude oil or natural gas production.

*Pages 10:* Crude oil stocks are stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Crude oil stocks for Cushing include domestic and foreign crude oil stocks held in tank farms in Lincoln, Payne, and Creek counties in Oklahoma. Cushing, Oklahoma, is the designated delivery point for NYMEX crude oil futures contracts.

Days of supply are calculated by taking the current stock level and dividing by product supplied (used as an estimate of demand) averaged over the most recent four-week period. For crude oil, refinery inputs of crude oil are used as a proxy for demand.

*Notes:*

Page 11: Petroleum Consumption approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas-processing plants, blending plants, pipelines, and bulk terminals.

**Data Revisions**

Most data are revised periodically to correct for errors and incorporate additional information as it becomes available. Data shown in this report are subject to change.

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