

# THE U.S. Energy DATABOOK

*A summary of national and global energy indicators*



SEPTEMBER 21, 2018

FEDERAL RESERVE BANK of KANSAS CITY

## SUMMARY OF CURRENT ENERGY CONDITIONS

The number of total active drilling rigs in the United States inched up 0.9 percent from a month ago, and increased 12.6 percent from a year ago. U.S. crude oil production increased 2.2 percent in June, while natural gas production declined 2.4 percent. Crude oil prices increased in September. For the week ending September 14th, West Texas Intermediate (WTI) crude oil averaged \$68.96 per barrel and North Sea Brent averaged \$78.11 per barrel, rising 4.2 percent and 11.9 percent respectively in the last month. The Henry Hub natural gas spot price averaged \$2.93 per million Btu for the week ending September 14th, edged down 0.7 percent in the last month. U.S. crude oil and petroleum products imports dipped 1.1 percent and exports fell 1.2 percent over the last month. Global demand for petroleum edged up 0.3 percent in the second quarter of 2018, and global petroleum production improved 0.1 percent in August.

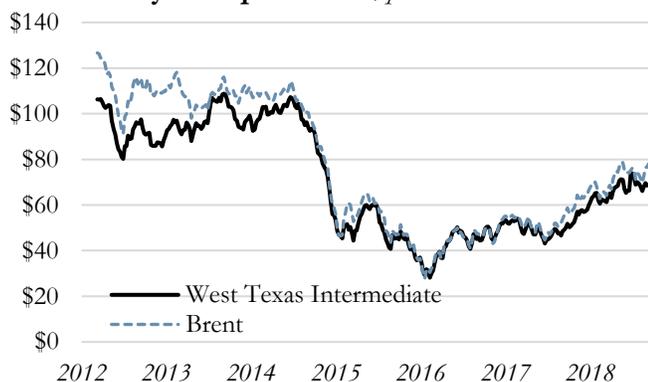
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S. 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.



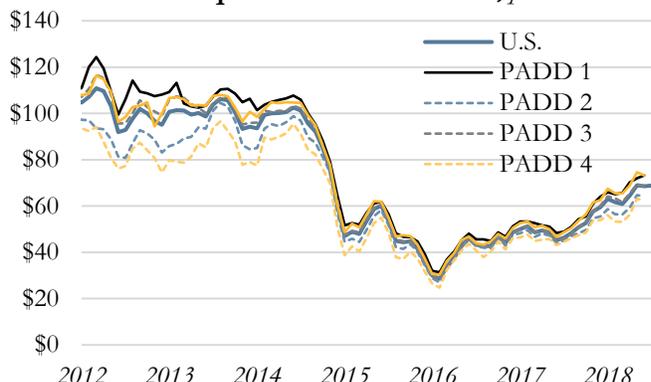
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through September 14, 2018

Weekly Oil Spot Prices, per barrel



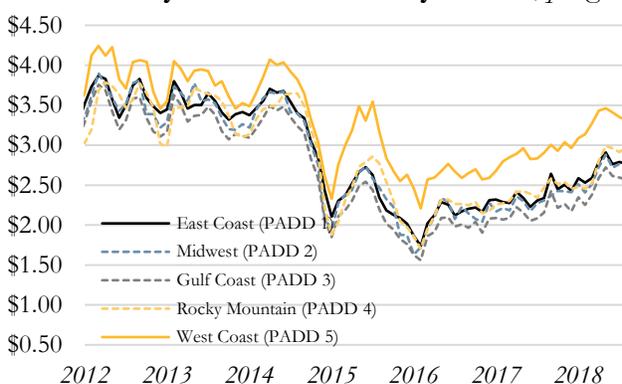
Refiner Acquisition Cost of Oil\*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Monthly Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

	Current	1 Week	1 Month	6 Months	1 Year	Peak (2012-17)
Weekly Spot Prices	9/14/18	Ago	Ago	Ago	Ago	
West Texas Intermediate	\$68.96	\$0.45	\$2.81	\$7.68	\$19.89	-\$39.81
Brent	\$78.11	\$1.47	\$8.29	\$13.97	\$22.57	-\$39.99
Henry Hub	\$2.93	-\$0.01	-\$0.07	\$0.22	-\$0.03	-\$3.62

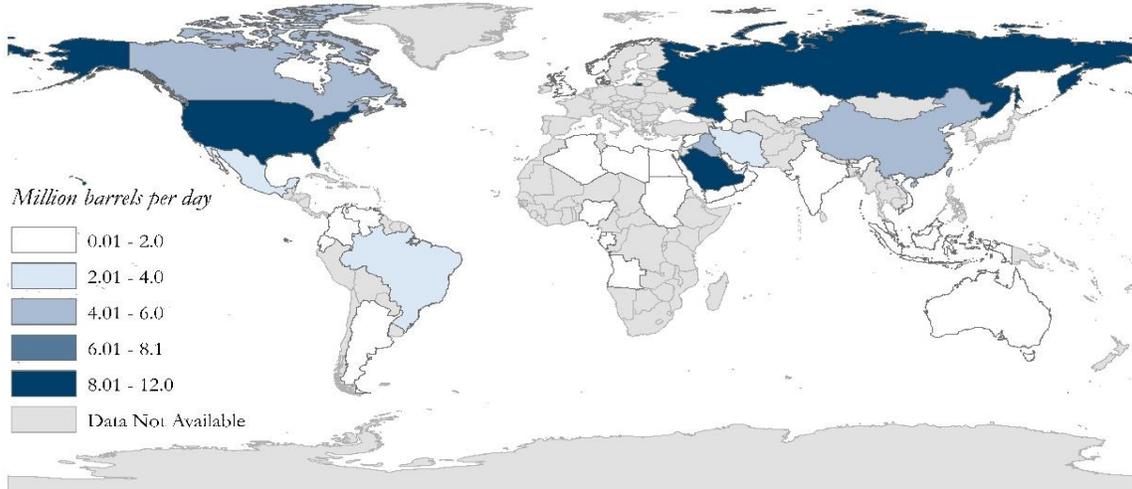
Monthly Gasoline Spot Prices, Change from

	Current	1 Month	6 Months	1 Year	Peak (2012-17)
Geographic Area	Aug-18	Ago	Ago	Ago	
East Coast (PADD 1)	\$2.76	-\$0.03	\$0.23	\$0.43	-\$1.06
Midwest (PADD 2)	\$2.76	-\$0.01	\$0.36	\$0.45	-\$1.05
Gulf Coast (PADD 3)	\$2.57	-\$0.02	\$0.32	\$0.41	-\$1.06
Rocky Mountain (PADD 4)	\$2.99	\$0.08	\$0.54	\$0.53	-\$0.78
West Coast (PADD 5)	\$3.31	-\$0.04	\$0.17	\$0.41	-\$0.92

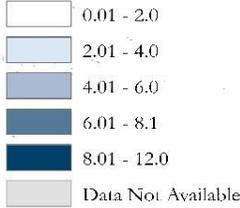
\*The cost of crude oil, including transportation and other fees paid by the refiner.

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

August 2018 Global Petroleum Production



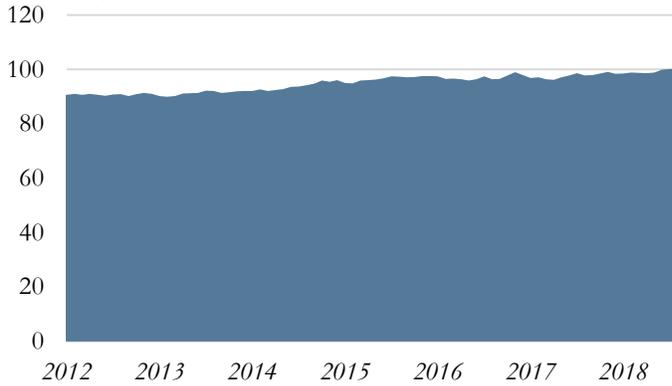
Million barrels per day



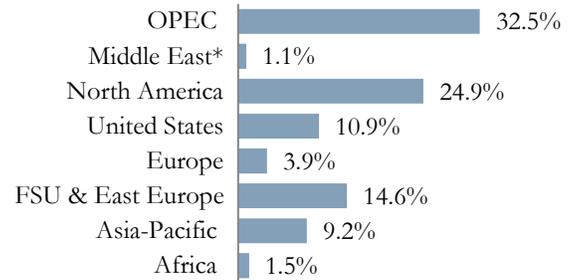
Source: Energy Information Administration/Haver Analytics

August 2018

Monthly Global Petroleum Production, million barrels per day

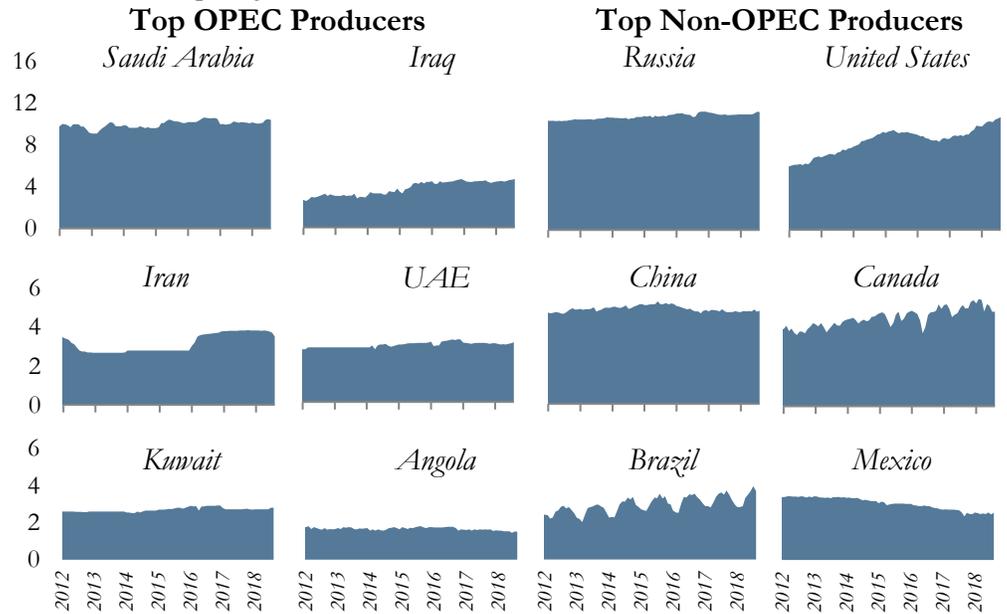
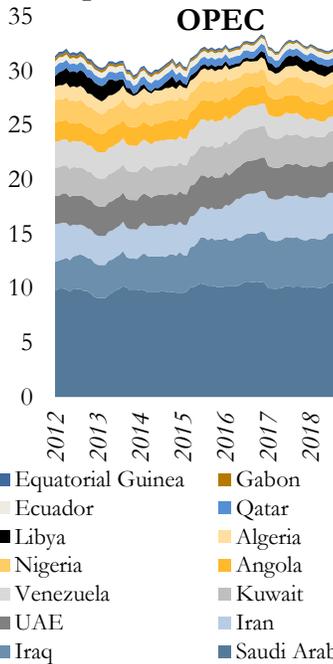


Regional Share of Production



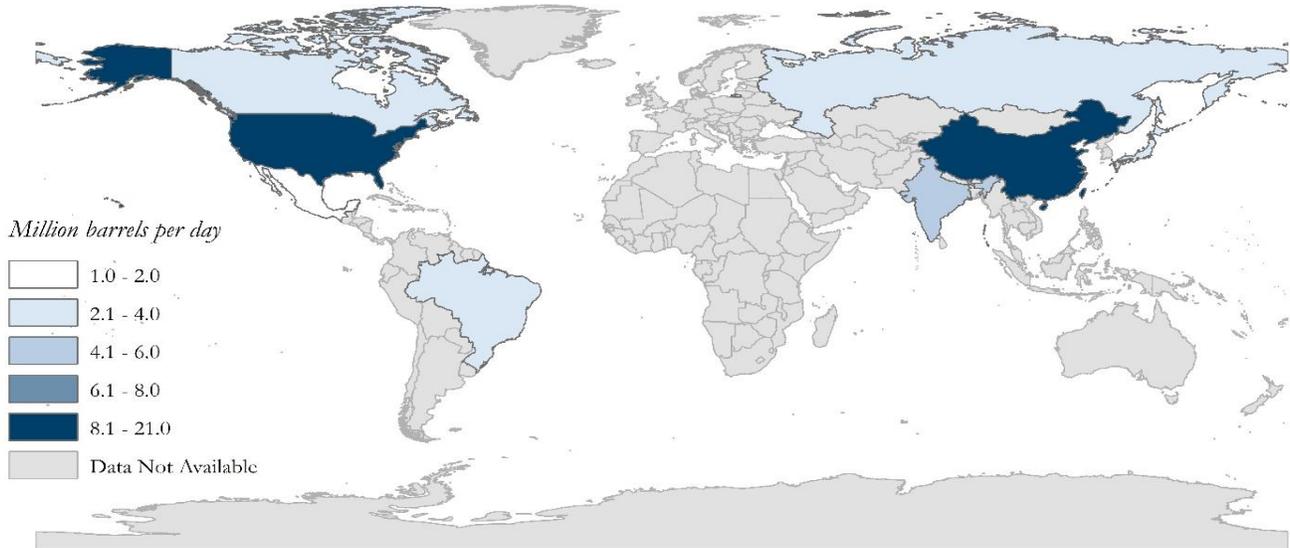
\*Excludes OPEC

Top Crude Oil Producers, million barrels per day

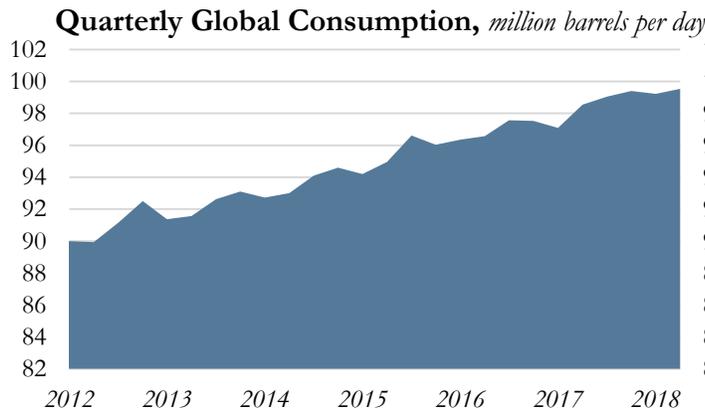


Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Second Quarter 2018 Global Petroleum Consumption

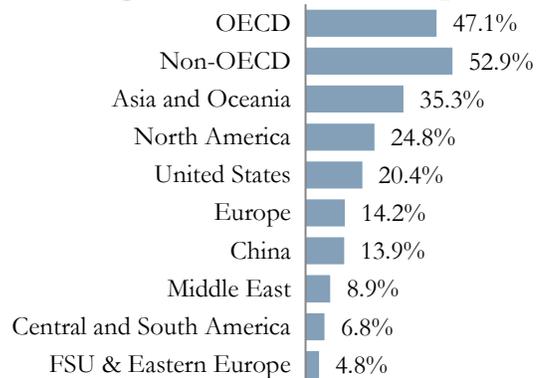


Source: Energy Information Administration/Haver Analytics

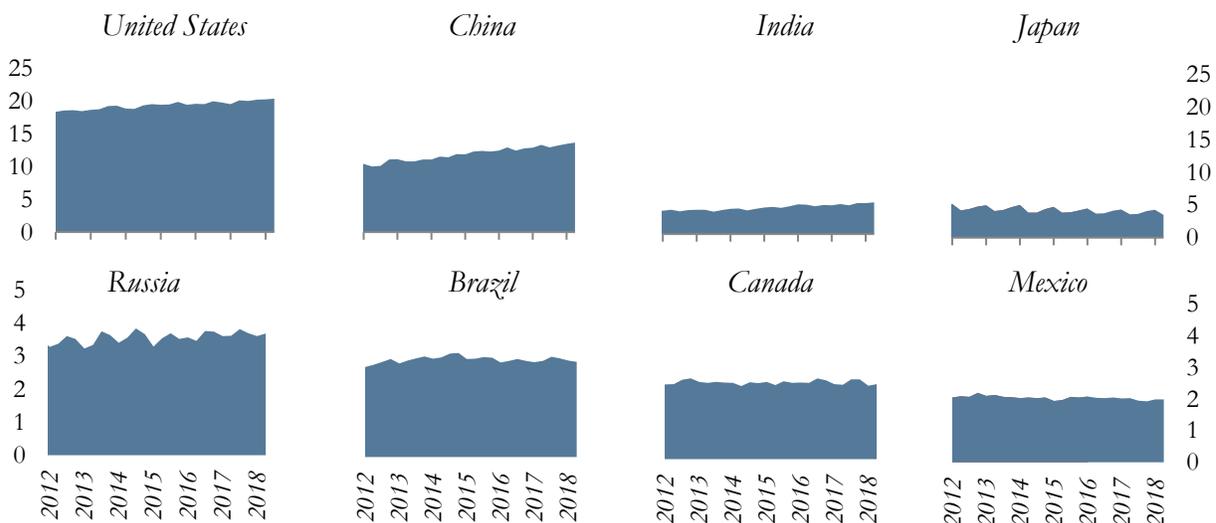


Second Quarter 2018

Regional Share of Consumption

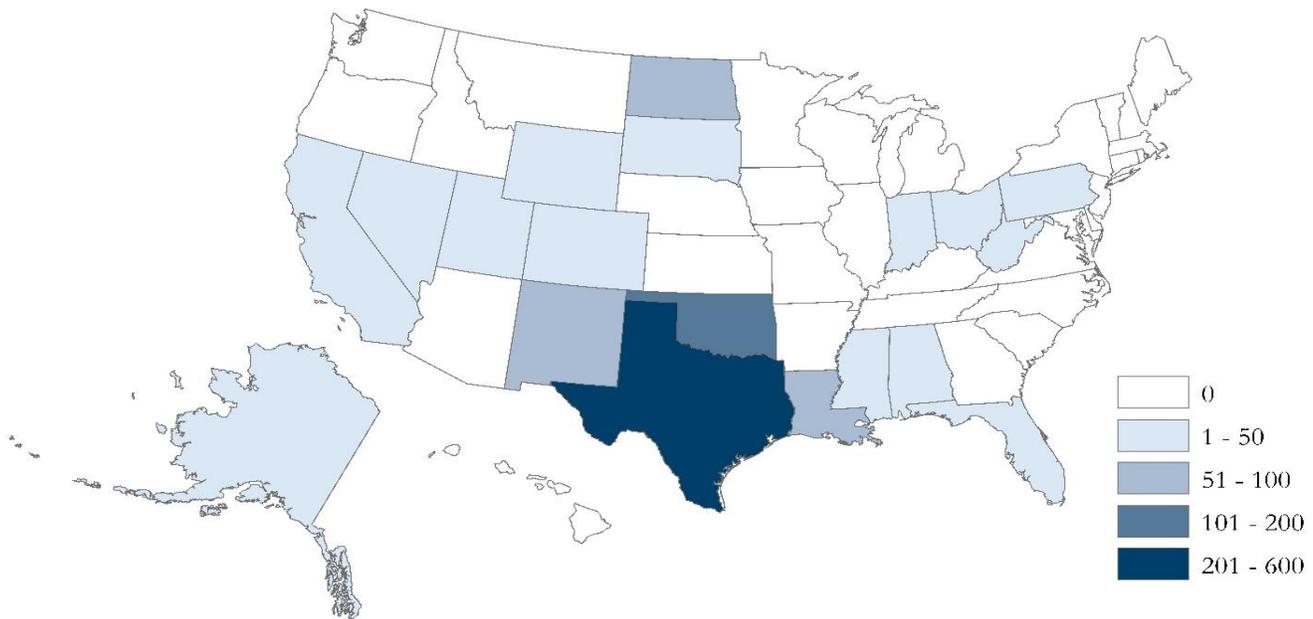


Top Petroleum Consumers, million barrels per day



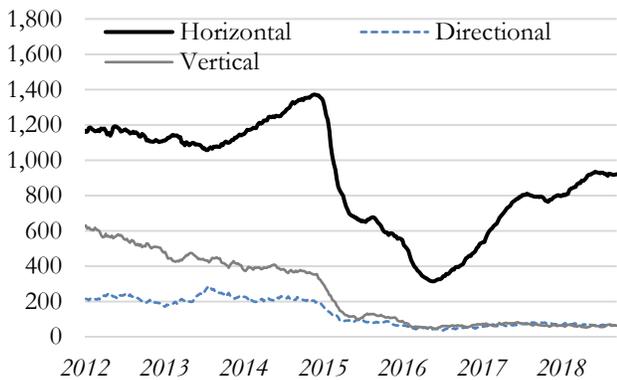
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

September 2018 Weekly Active Oil & Gas Drilling Rig Counts



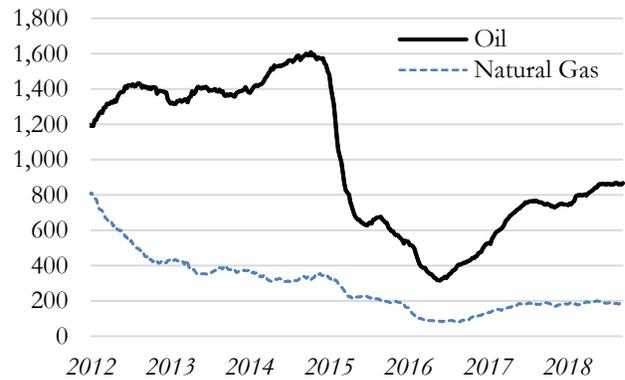
Source: Baker Hughes/Haver Analytics

U.S. Active Drilling Rigs by Trajectory

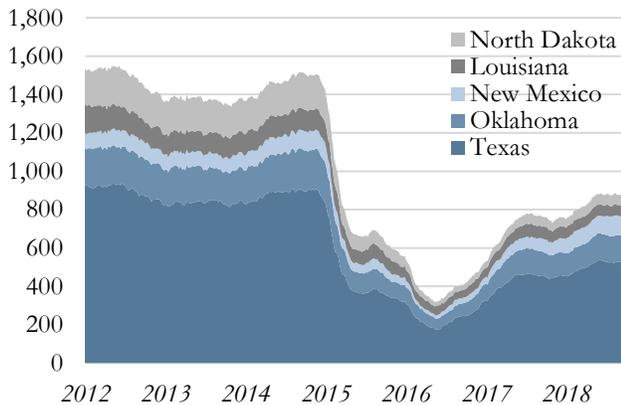


September 21, 2018

U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

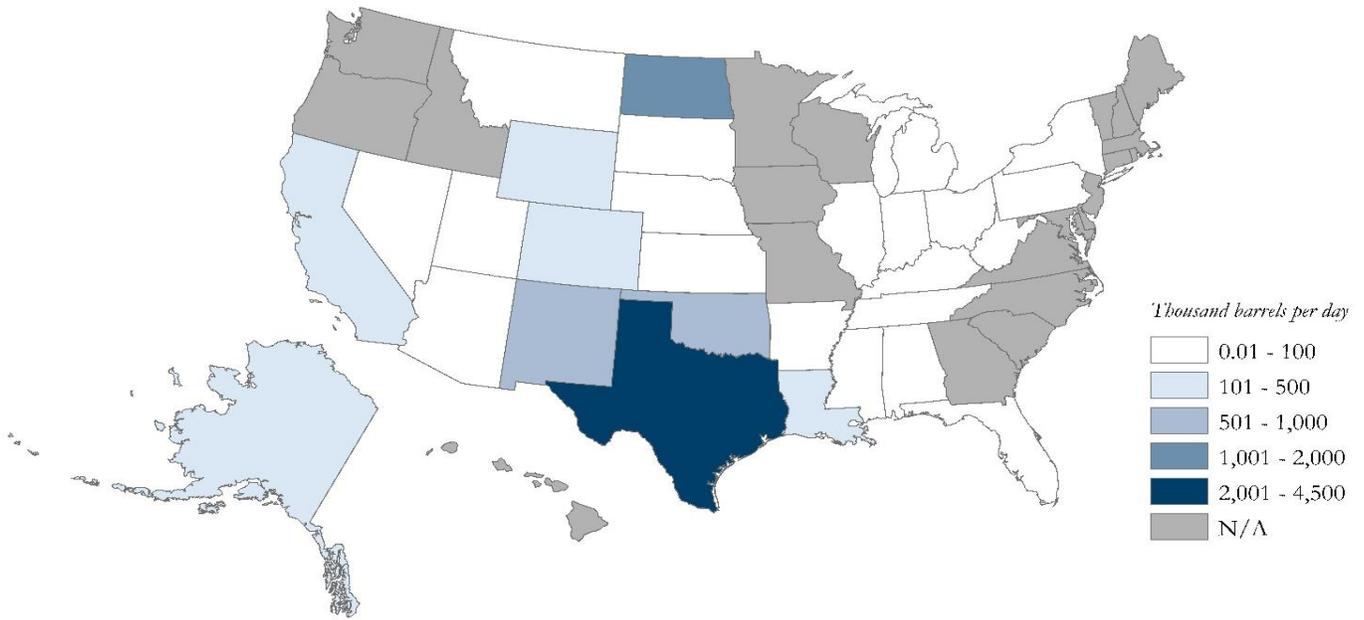
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	866	860	862	744
Gas	186	182	188	190
Misc	1	2	2	1
<b>Total</b>	<b>1053</b>	<b>1044</b>	<b>1052</b>	<b>935</b>

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	0.7%	0.5%	16.4%
Gas	-	2.2%	-1.1%	-2.1%
Misc	-	-50.0%	-50.0%	0.0%
<b>Total</b>	-	<b>0.9%</b>	<b>0.1%</b>	<b>12.6%</b>

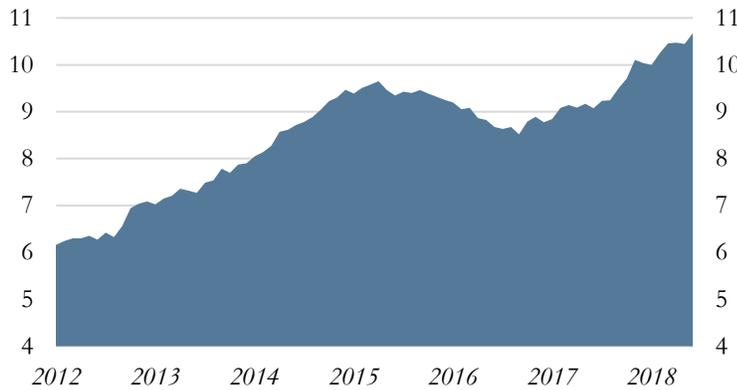
Source: Baker Hughes/Haver Analytics

June 2018 U.S. Crude Oil Production

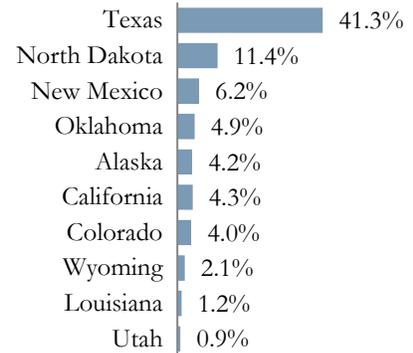


Source: Baker Hughes/Haver Analytics

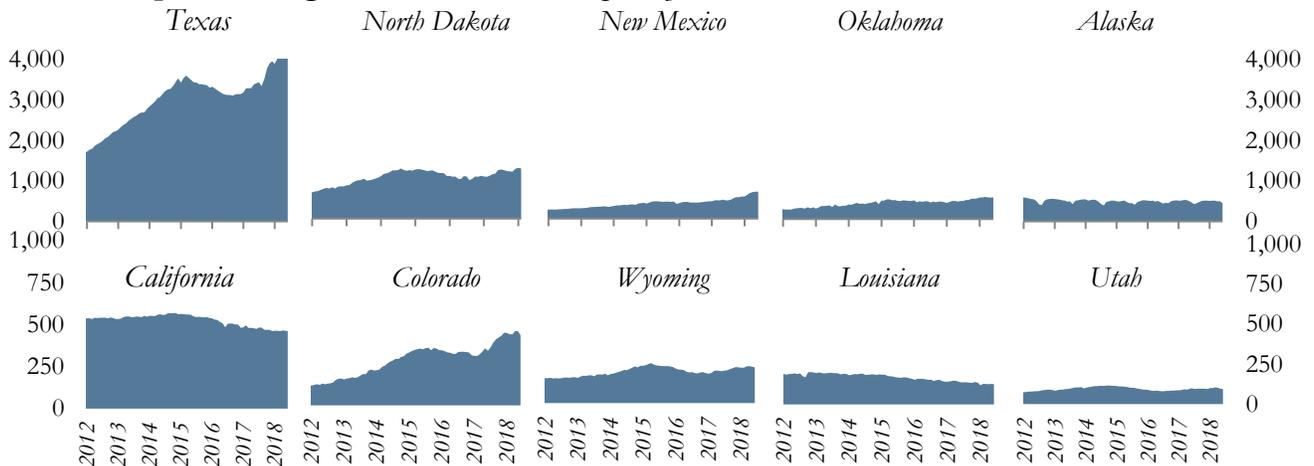
Monthly U.S. Production, million barrels per day



June, 2018 Share of Production

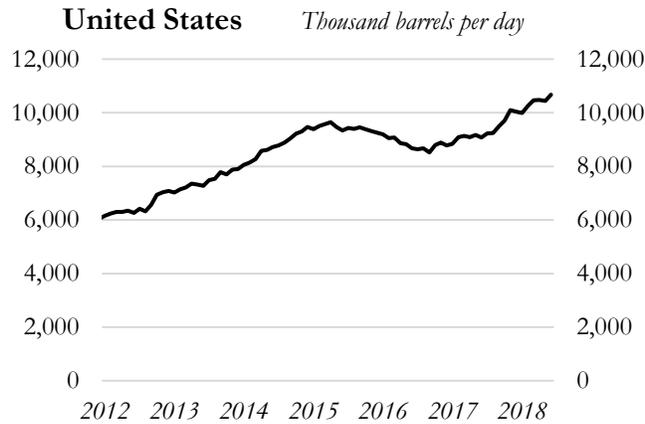


Top Producing States, thousand barrels per day

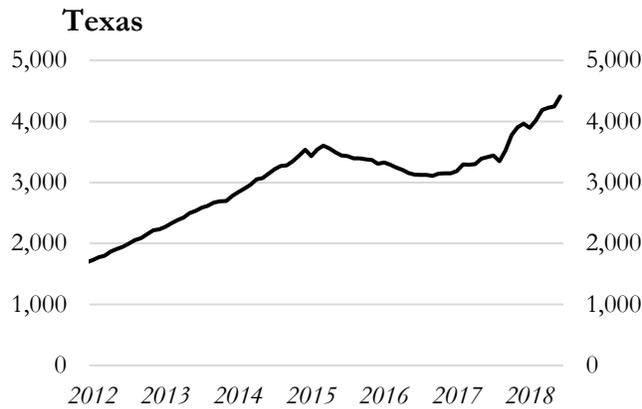


Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

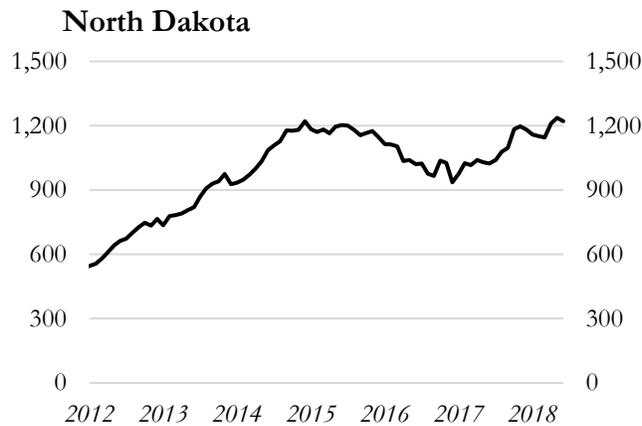
Data through June 2018



United States		Change from
Thousand barrels per day		
Jun-18	10,674	
Month Ago	10,443	2.2%
3 Months Ago	10,461	2.0%
6 Months Ago	10,040	6.3%
1 Year Ago	9,074	17.6%



Texas		Change from
Thousand barrels per day		
Jun-18	4,410	
Month Ago	4,245	3.9%
3 Months Ago	4,185	5.4%
6 Months Ago	3,963	11.3%
1 Year Ago	3,415	29.2%
Share of U.S. Production		41.3%



North Dakota		Change from
Thousand barrels per day		
Jun-18	1,220	
Month Ago	1,236	-1.3%
3 Months Ago	1,145	6.6%
6 Months Ago	1,183	3.2%
1 Year Ago	1,023	19.3%
Share of U.S. Production		11.4%



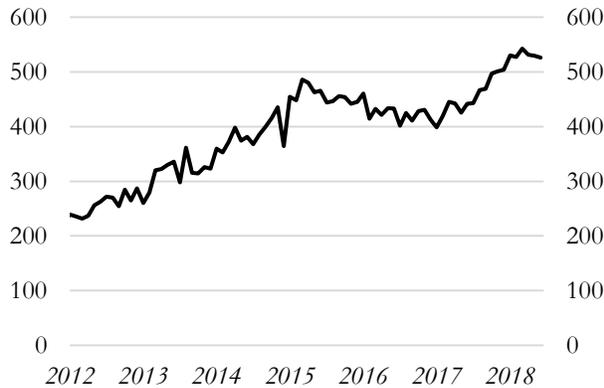
New Mexico		Change from
Thousand barrels per day		
Jun-18	657	
Month Ago	652	0.8%
3 Months Ago	623	5.4%
6 Months Ago	537	22.4%
1 Year Ago	444	47.9%
Share of U.S. Production		6.2%

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

Data through June 2018

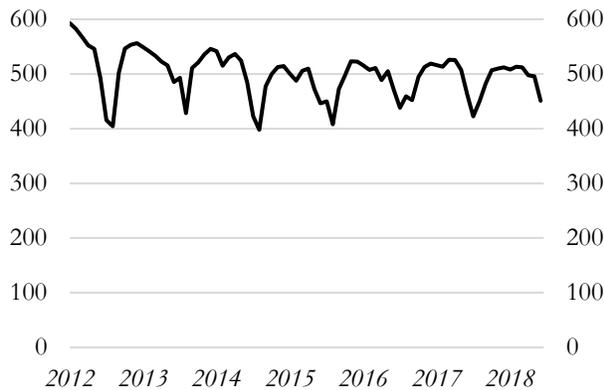
**Oklahoma**

Thousand barrels per day



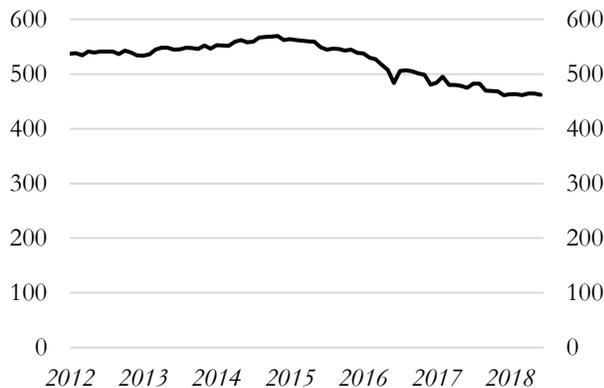
	<b>Oklahoma</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Jun-18	526	
Month Ago	529	-0.7%
3 Months Ago	543	-3.1%
6 Months Ago	504	4.4%
1 Year Ago	442	19.1%
Share of U.S. Production	4.9%	

**Alaska**



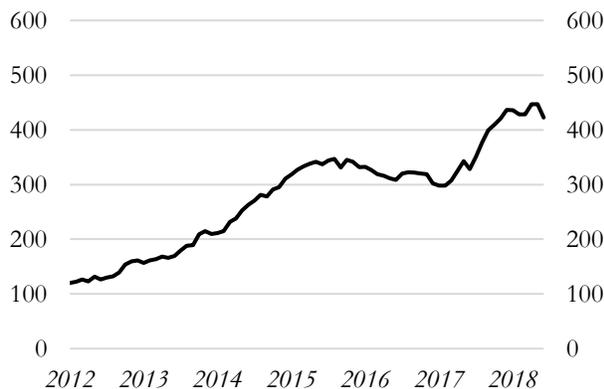
	<b>Alaska</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Jun-18	451	
Month Ago	496	-9.1%
3 Months Ago	512	-12.0%
6 Months Ago	512	-12.0%
1 Year Ago	463	-2.6%
Share of U.S. Production	4.2%	

**California**



	<b>California</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Jun-18	462	
Month Ago	464	-0.5%
3 Months Ago	462	0.0%
6 Months Ago	461	0.1%
1 Year Ago	475	-2.7%
Share of U.S. Production	4.3%	

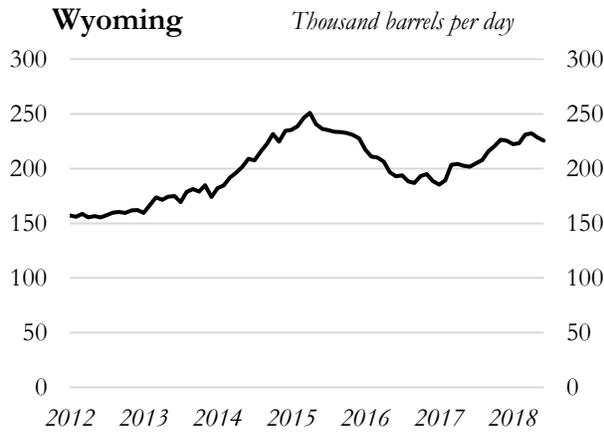
**Colorado**



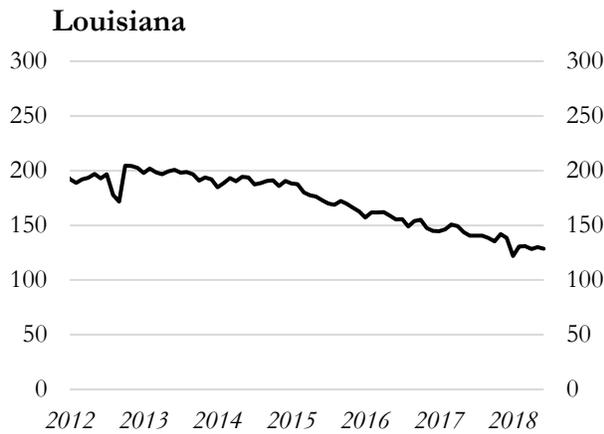
	<b>Colorado</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Jun-18	423	
Month Ago	447	-5.4%
3 Months Ago	428	-1.3%
6 Months Ago	436	-3.2%
1 Year Ago	328	28.8%
Share of U.S. Production	4.0%	

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

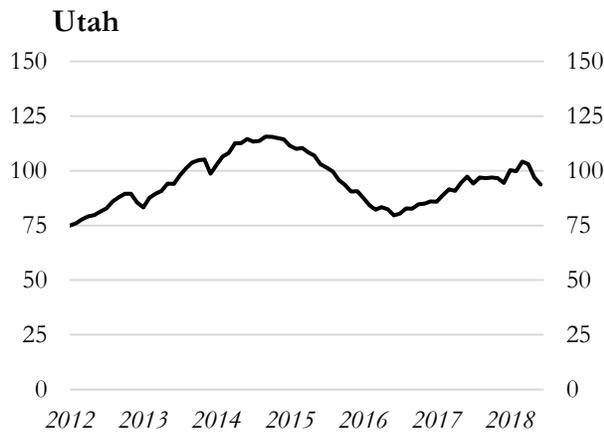
Data through June 2018



	Wyoming	Change
	Thousand barrels per day	from
Jun-18	226	
Month Ago	228	-1.2%
3 Months Ago	231	-2.4%
6 Months Ago	225	0.1%
1 Year Ago	202	11.9%
Share of U.S. Production	2.1%	



	Louisiana	Change
	Thousand barrels per day	from
Jun-18	129	
Month Ago	130	-1.0%
3 Months Ago	131	-1.6%
6 Months Ago	138	-7.0%
1 Year Ago	141	-8.4%
Share of U.S. Production	1.2%	

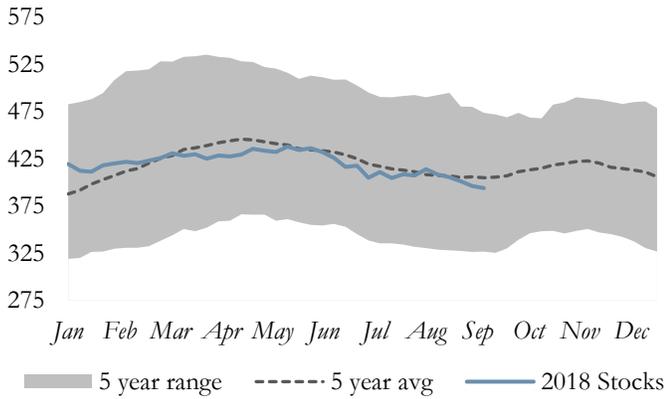


	Utah	Change
	Thousand barrels per day	from
Jun-18	94	
Month Ago	97	-3.4%
3 Months Ago	104	-10.1%
6 Months Ago	94	-0.9%
1 Year Ago	97	-3.9%
Share of U.S. Production	0.9%	

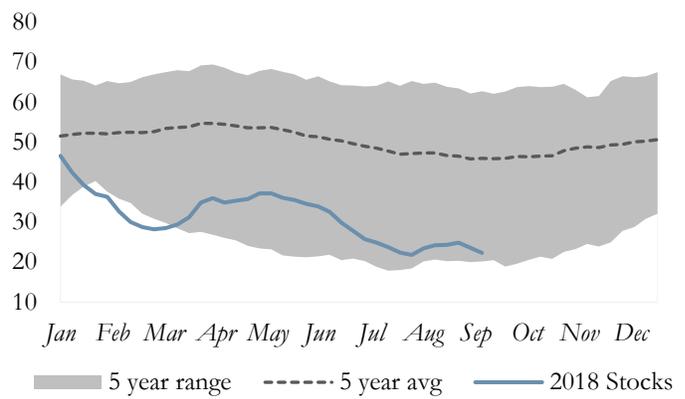
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

September 2018 Weekly U.S. Crude Oil Stocks

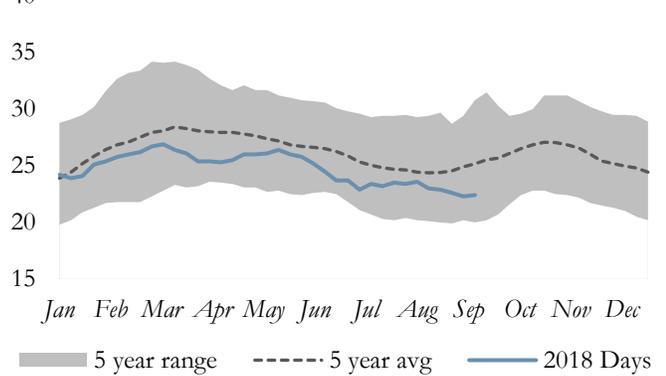
U.S. Oil Stocks, million barrels\*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



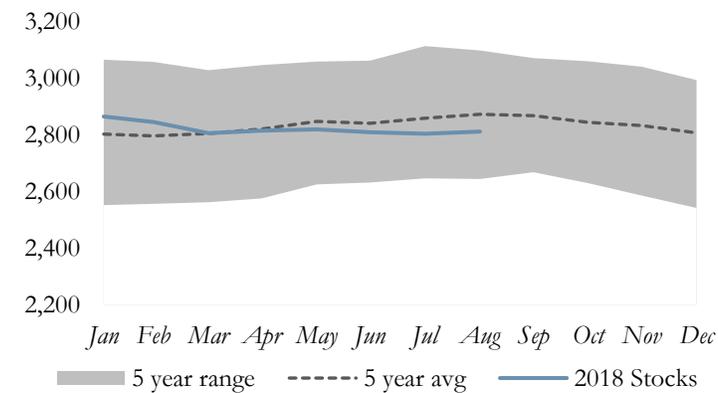
Crude Oil Stocks

	1 Week Ago	1 Year Ago
U.S.	-0.5%	-16.6%
Cushing, OK	-5.3%	-62.6%
Days of Supply	0.4%	-27.3%
East Coast (PADD 1)	5.0%	-9.3%
Midwest (PADD 2)	-0.7%	-26.8%
Gulf Coast (PADD 3)	-0.8%	-15.7%
Rocky Mountain (PADD 4)	2.5%	3.2%
West Coast (PADD 5)	-1.7%	-2.4%

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

August 2018 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels

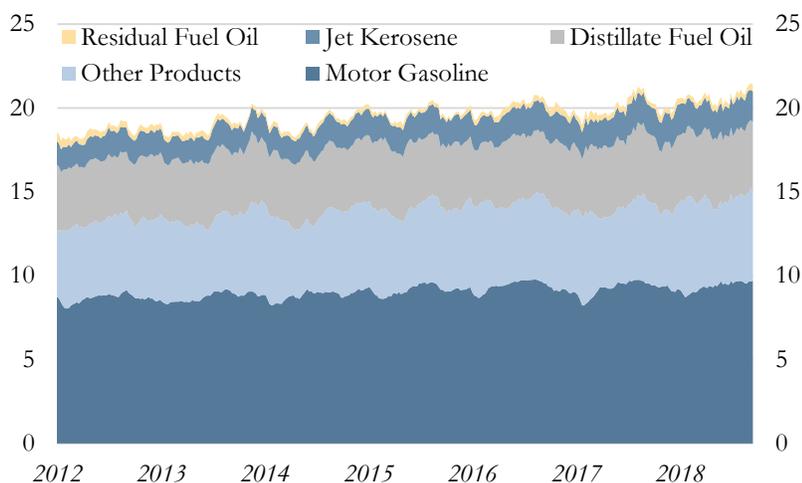


Petroleum Stocks	Million Barrels	Change from
Current Month	2,812	
1 Month Ago	2,804	0.3%
3 Months Ago	2,820	-0.3%
6 Months Ago	2,846	-1.2%
1 Year Ago	2,999	-6.2%

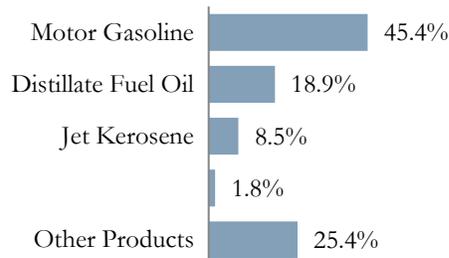
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

### September 2018 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 9/14/18	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
All Products	21,376	20,807	20,343	20,487	20,386
Motor Gasoline	9,704	9,547	9,468	9,276	9,517
Distillate Fuel Oil	4,042	3,909	4,013	3,899	4,074
Jet Kerosene	1,812	1,835	1,735	1,723	1,726
Residual Fuel Oil	394	366	280	322	225
Other Products	5,424	5,150	4,847	5,267	4,844

U.S. Consumption by Product, Change from

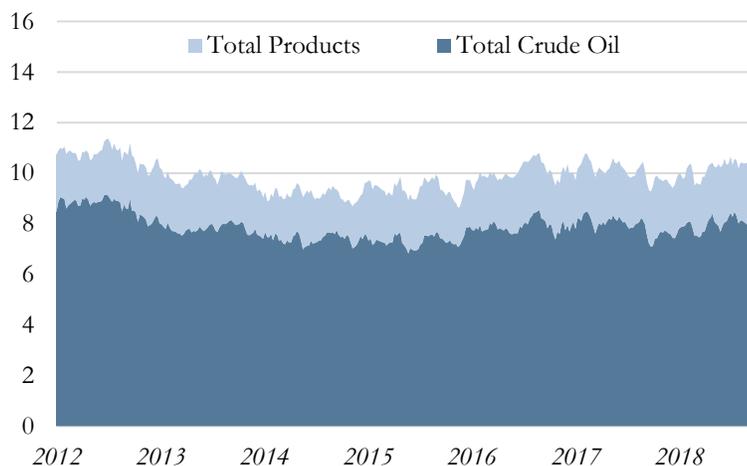
	Current 9/14/18	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
All Products	-	2.7%	5.1%	4.3%	4.9%
Motor Gasoline	-	1.6%	2.5%	4.6%	2.0%
Distillate Fuel Oil	-	3.4%	0.7%	3.7%	-0.8%
Jet Kerosene	-	-1.3%	4.4%	5.2%	5.0%
Residual Fuel Oil	-	7.7%	40.7%	22.4%	75.1%
Other Products	-	5.3%	11.9%	3.0%	12.0%

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

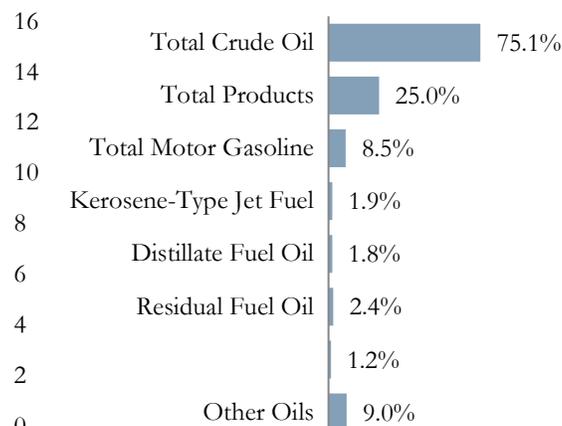
## September 2018 Weekly U.S. Imports of Crude Oil &amp; Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product\*

Thousand barrels per day

	Current 9/14/18	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>7,704</b>	<b>8,053</b>	<b>8,080</b>	<b>7,487</b>	<b>7,209</b>
<b>Total Products</b>	<b>2,560</b>	<b>2,325</b>	<b>2,258</b>	<b>2,065</b>	<b>2,107</b>
Total Motor Gasoline	867	792	853	555	639
Kerosene-Type Jet Fuel	199	145	164	121	148
Distillate Fuel Oil	188	162	134	204	104
Residual Fuel Oil	246	323	284	207	165
Propane/Propylene	128	102	107	157	129
Other Oils	923	802	717	821	913
<b>Total Imports</b>	<b>10,264</b>	<b>10,378</b>	<b>10,338</b>	<b>9,552</b>	<b>9,316</b>

U.S. Imports by Product, Change from

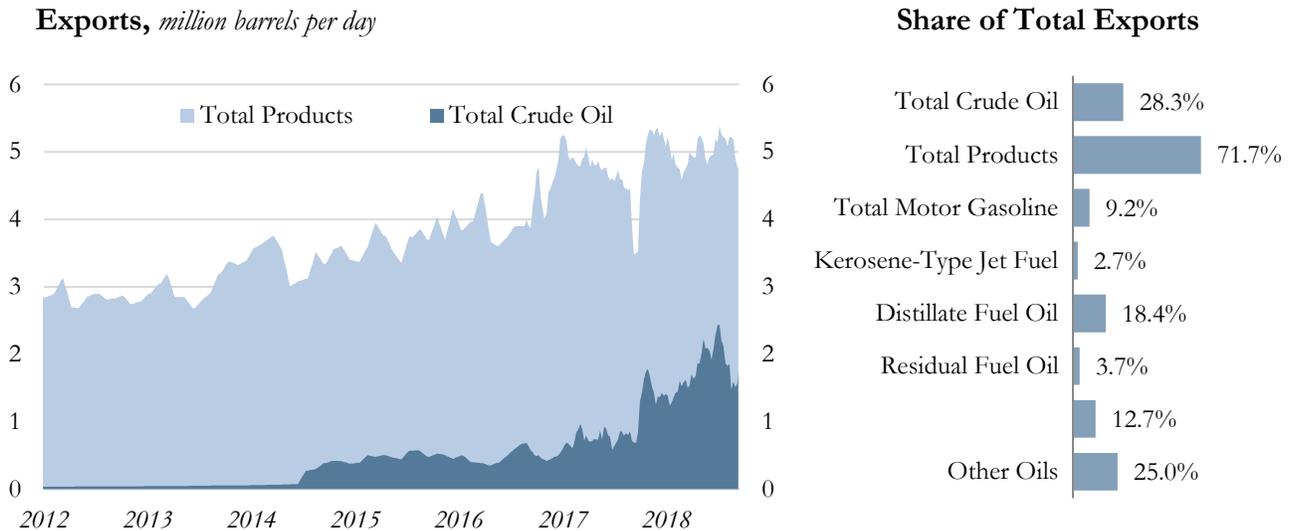
	Current 9/14/18	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>-4.3%</b>	<b>-4.7%</b>	<b>2.9%</b>	6.9%
<b>Total Products</b>	-	<b>10.1%</b>	<b>13.4%</b>	<b>24.0%</b>	<b>21.5%</b>
Total Motor Gasoline	-	9.5%	1.6%	56.2%	35.7%
Kerosene-Type Jet Fuel	-	37.2%	21.3%	64.5%	34.5%
Distillate Fuel Oil	-	16.0%	40.3%	<b>-7.8%</b>	80.8%
Residual Fuel Oil	-	<b>-23.8%</b>	<b>-13.4%</b>	18.8%	49.1%
Propane/Propylene	-	25.5%	19.6%	<b>-18.5%</b>	<b>-0.8%</b>
Other Oils	-	15.1%	28.7%	12.4%	1.1%
<b>Total Imports</b>	-	<b>-1.1%</b>	<b>-0.7%</b>	<b>7.5%</b>	<b>10.2%</b>

\*Totals may not sum due to component rounding

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

September 2018 Weekly U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages



U.S. Exports by Product\*

Thousand barrels per day

	Current 9/14/18	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>1,871</b>	<b>1,477</b>	<b>2,074</b>	<b>1,501</b>	<b>689</b>
<b>Total Products</b>	<b>4,748</b>	<b>5,220</b>	<b>4,966</b>	<b>4,821</b>	<b>3,497</b>
Total Motor Gasoline	610	670	601	692	532
Kerosene-Type Jet Fuel	180	216	216	196	81
Distillate Fuel Oil	1,217	1,198	1,299	1,099	887
Residual Fuel Oil	248	391	365	268	265
Propane/ Propylene	841	1,091	854	870	511
Other Oils	1,653	1,655	1,632	1,697	1,221
<b>Total Exports</b>	<b>6,618</b>	<b>6,697</b>	<b>7,041</b>	<b>6,322</b>	<b>4,186</b>

U.S. Exports by Product, Change from

	Current 9/14/18	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>26.7%</b>	<b>-9.8%</b>	<b>24.7%</b>	171.6%
<b>Total Products</b>	-	<b>-9.0%</b>	<b>-4.4%</b>	<b>-1.5%</b>	<b>35.8%</b>
Total Motor Gasoline	-	-9.0%	1.5%	-11.8%	14.7%
Kerosene-Type Jet Fuel	-	-16.7%	-16.7%	-8.2%	122.2%
Distillate Fuel Oil	-	1.6%	-6.3%	10.7%	37.2%
Residual Fuel Oil	-	-36.6%	-32.1%	-7.5%	-6.4%
Propane/ Propylene	-	-22.9%	-1.5%	-3.3%	64.6%
Other Oils	-	-0.1%	1.3%	-2.6%	35.4%
<b>Total Exports</b>	-	<b>-1.2%</b>	<b>-6.0%</b>	<b>4.7%</b>	<b>58.1%</b>

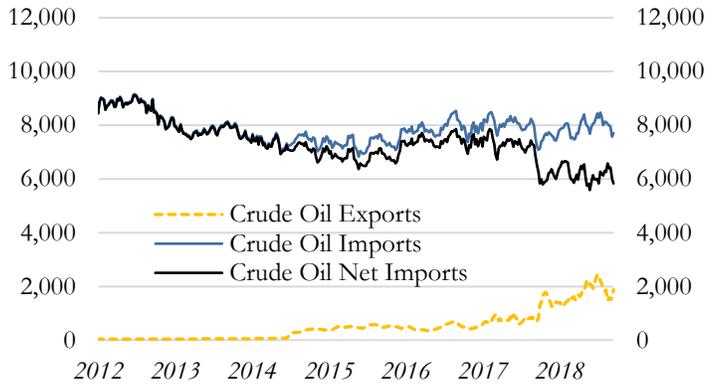
\*Totals may not sum due to rounding

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

September 2018 Weekly U.S. Net Imports of Crude Oil & Petroleum Products

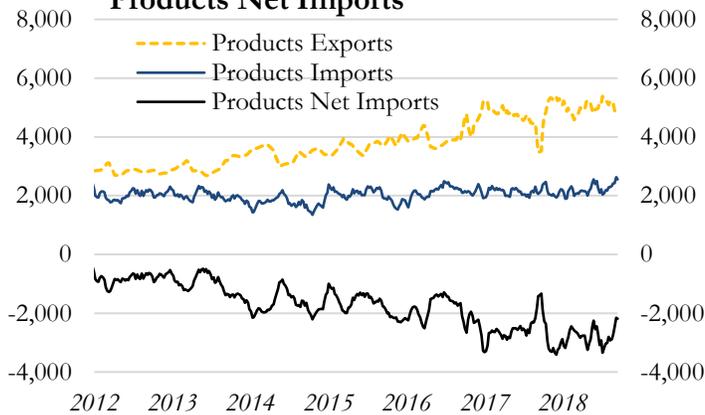
4-Week Averages, Thousand barrels per day

Crude Oil Net Imports



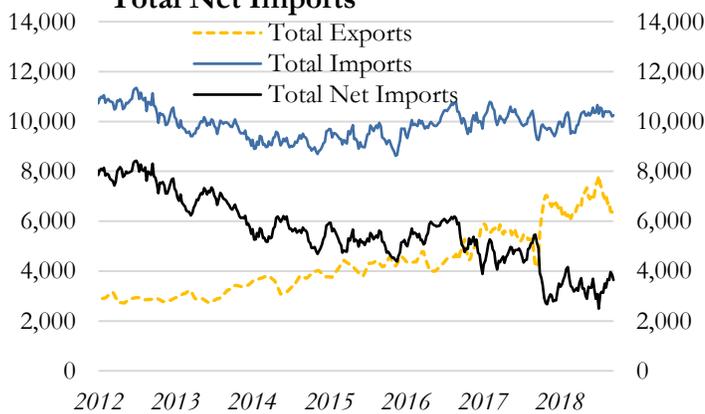
Crude Oil Net Imports		Change
Thousand barrels per day		from
9/14/18	5,833	
Month Ago	6,576	-11.3%
3 Months Ago	6,005	-2.9%
6 Months Ago	5,986	-2.6%
1 Year Ago	6,520	-10.5%

Products Net Imports



Products Net Imports		Change
Thousand barrels per day		from
9/14/18	-2,188	
Month Ago	-2,895	-
3 Months Ago	-2,709	-
6 Months Ago	-2,756	-
1 Year Ago	-1,390	-

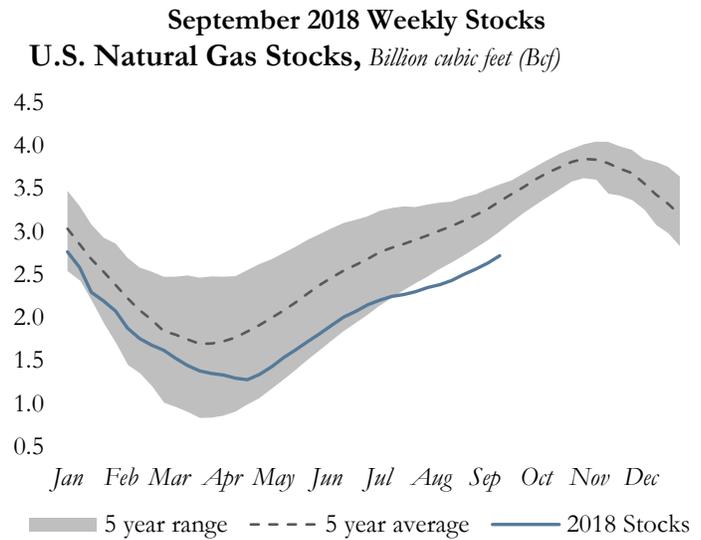
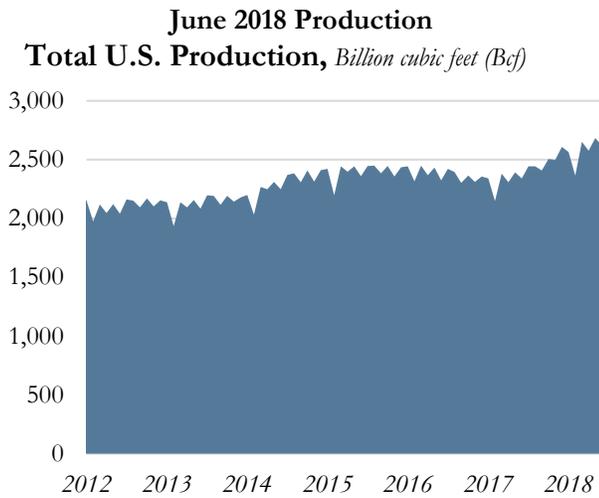
Total Net Imports



Total Net Imports		Change
Thousand barrels per day		from
9/14/18	3,645	
Month Ago	3,681	-1.0%
3 Months Ago	3,297	10.6%
6 Months Ago	3,230	12.8%
1 Year Ago	5,130	-28.9%

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

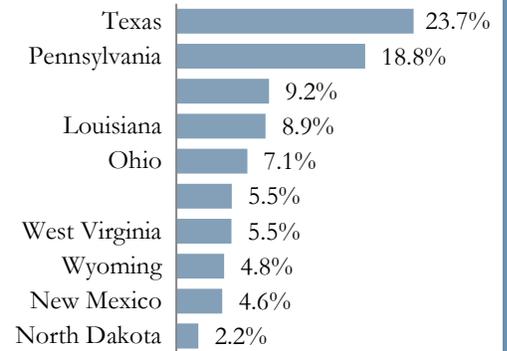
U.S. Natural Gas Production & Stocks



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	2,618	2,683	2,651	2,607	2,341
U.S. Stocks	2,722	2,435	2,008	1,446	3,408

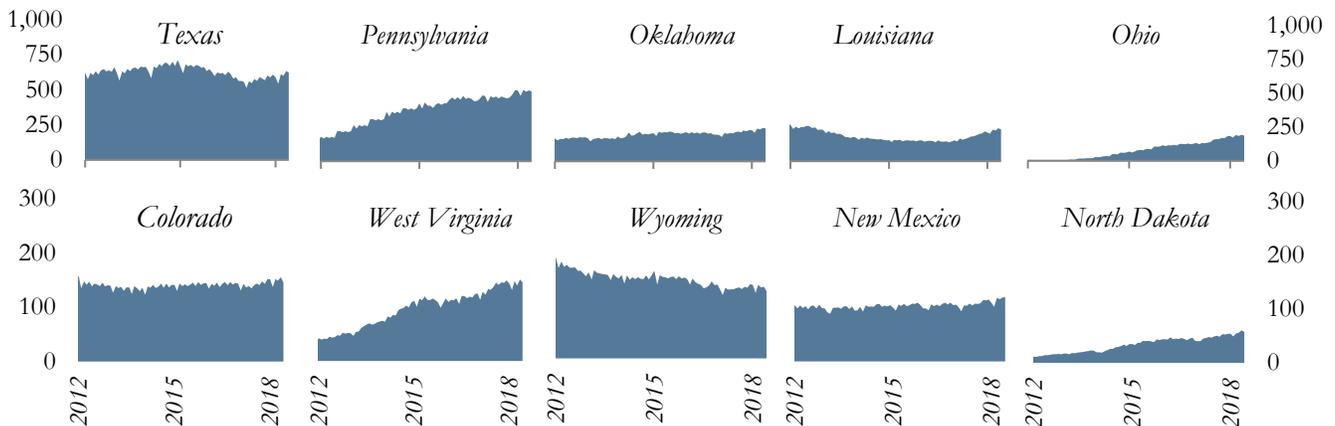
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	-2.4%	-1.2%	0.4%	11.9%
U.S. Stocks	-	11.8%	35.6%	88.2%	-20.1%

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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