

THE U.S. Energy DATABOOK

A summary of national and global energy indicators



SEPTEMBER 23, 2019

FEDERAL RESERVE BANK of KANSAS CITY

SUMMARY OF CURRENT ENERGY CONDITIONS

In September, the number of total active drilling rigs in the United States continued to decrease, dropping 5.2 percent from a month ago and 17.6 percent from a year ago. In June 2019, U.S. crude oil production edged down 0.3 percent and natural gas production declined 2.2 percent. For the week ending September 13th, West Texas Intermediate (WTI) crude oil averaged \$56.16 per barrel and North Sea Brent averaged \$62.74 per barrel, an increase of 1.5 percent and 7.7 percent in the last month, respectively. The Henry Hub natural gas spot price averaged \$2.64 per million Btu for the week ending September 13th, jumping up 19.5 percent in the last month. U.S. crude oil and petroleum products exports rose 7.1 percent while imports fell 9.5 percent in the last month. Global demand for petroleum inched up 0.5 percent the second quarter of 2019, and global petroleum production expanded 0.7 percent in August 2019.

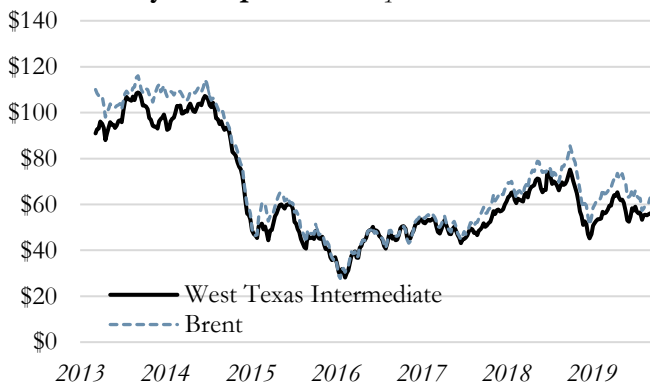
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S.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



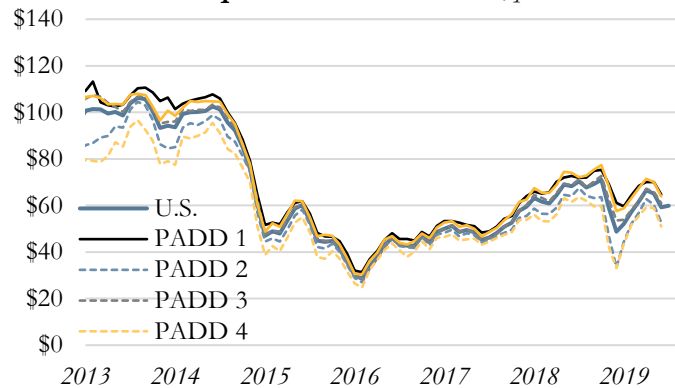
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through September 13, 2019

Weekly Oil Spot Prices, per barrel



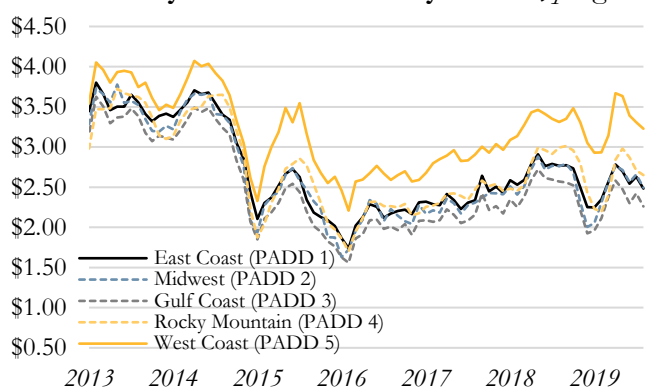
Refiner Acquisition Cost of Oil*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Monthly Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

Weekly Spot Prices	Current 9/13/19	1 Week Ago	1 Month Ago	3 months Ago	6 Months Ago	1 Year Ago
West Texas Intermediate	\$56.16	\$0.43	\$0.85	\$3.64	-\$1.65	-\$12.80
Brent	\$62.74	\$2.51	\$4.49	-\$0.45	-\$2.97	-\$15.37
Henry Hub	\$2.64	\$0.18	\$0.43	\$0.23	-\$0.25	-\$0.29

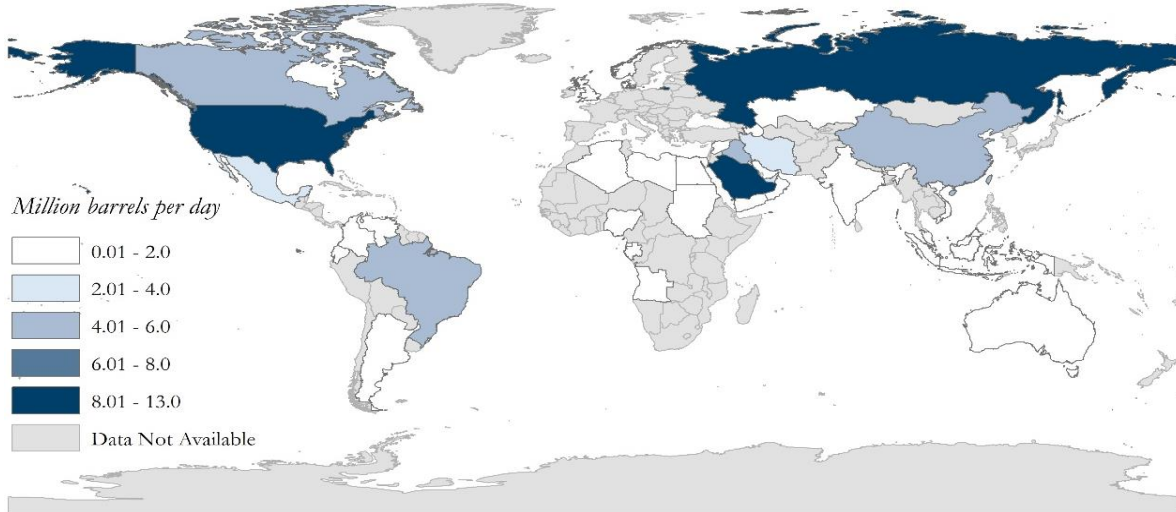
Monthly Gasoline Spot Prices, Change from

Geographic Area	Current Aug-19	1 Month Ago	3 months Ago	6 Months Ago	1 Year Ago
East Coast (PADD 1)	\$2.48	-\$0.15	-\$0.21	\$0.13	-\$0.28
Midwest (PADD 2)	\$2.50	-\$0.16	-\$0.22	\$0.19	-\$0.27
Gulf Coast (PADD 3)	\$2.26	-\$0.16	-\$0.21	\$0.15	-\$0.31
Rocky Mountain (PADD 4)	\$2.65	-\$0.06	-\$0.33	\$0.46	-\$0.34
West Coast (PADD 5)	\$3.23	-\$0.08	-\$0.41	\$0.29	-\$0.08

*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

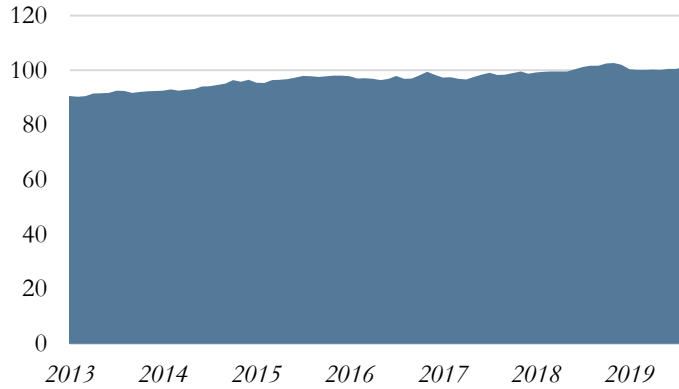
August 2019 Global Petroleum Production



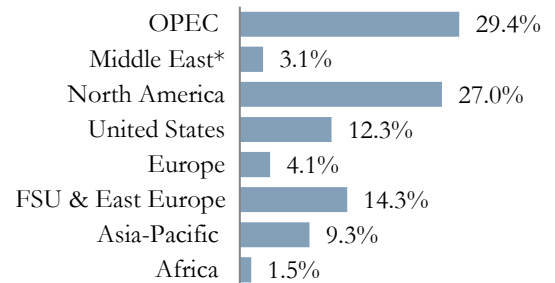
Source: Energy Information Administration/Haver Analytics

August 2019

Monthly Global Petroleum Production, million barrels per day

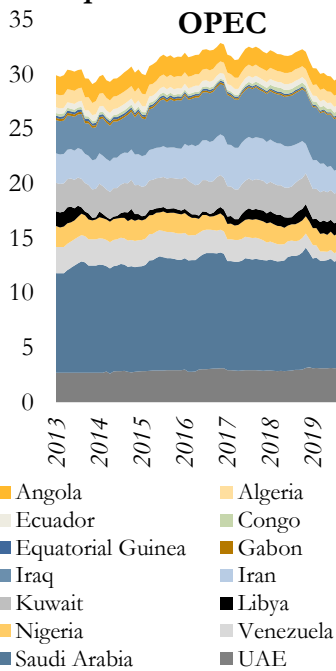


Regional Share of Production

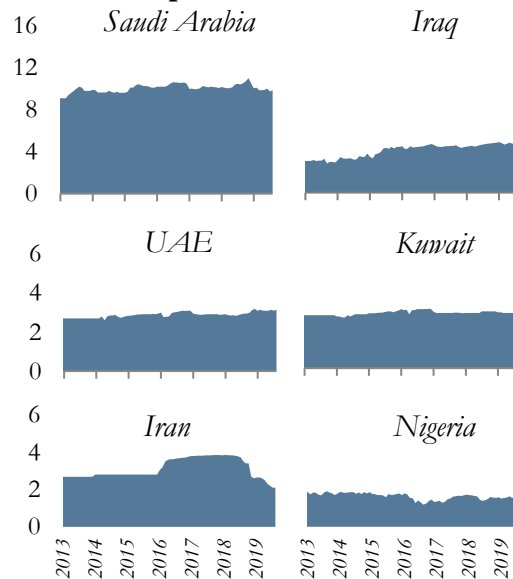


*Excludes OPEC

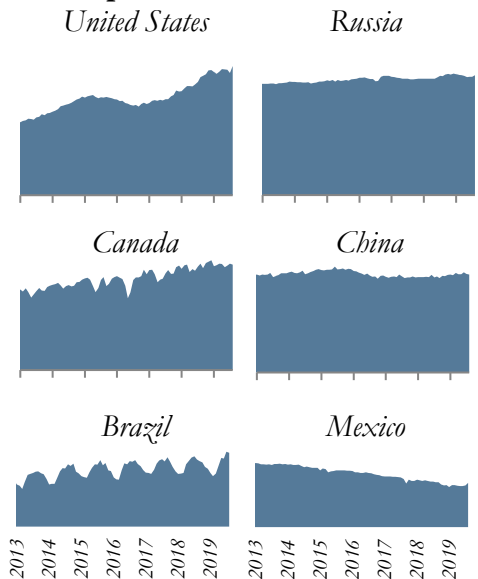
Top Crude Oil Producers, million barrels per day



Top OPEC Producers



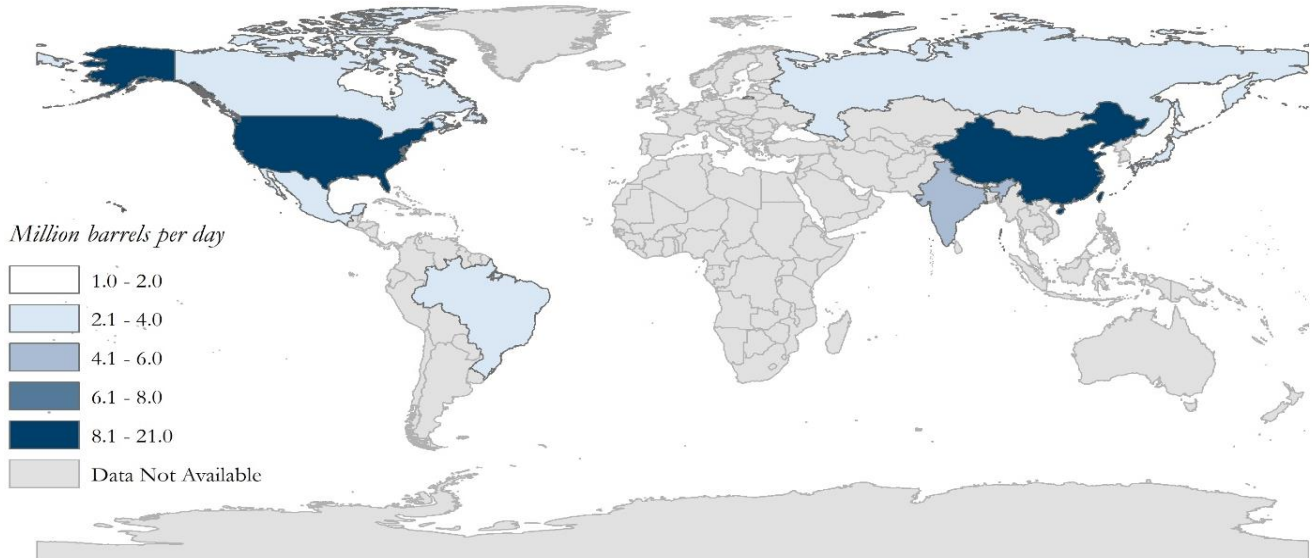
Top Non-OPEC Producers



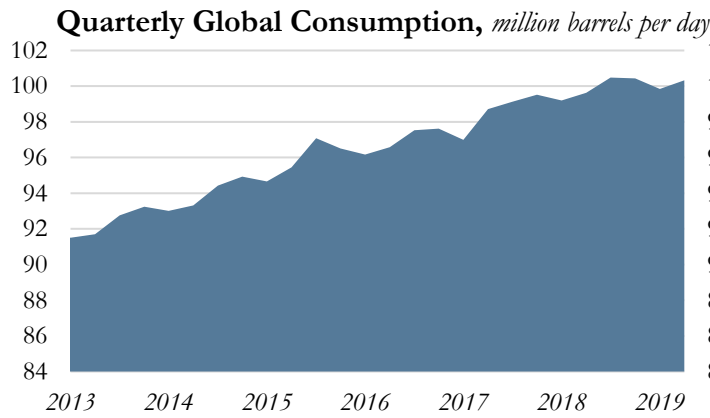
Note: OPEC country production values are for crude oil and non-OPEC country data is for petroleum production.

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

Second Quarter 2019 Global Petroleum Consumption

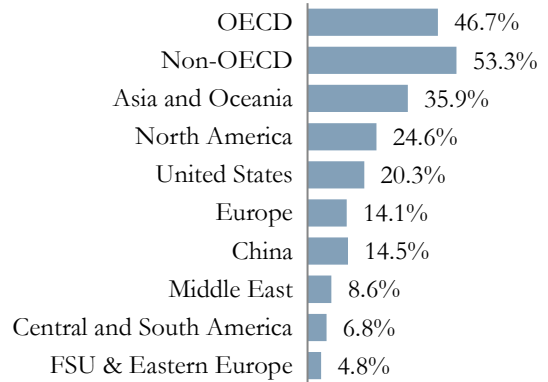


Source: Energy Information Administration/Haver Analytics

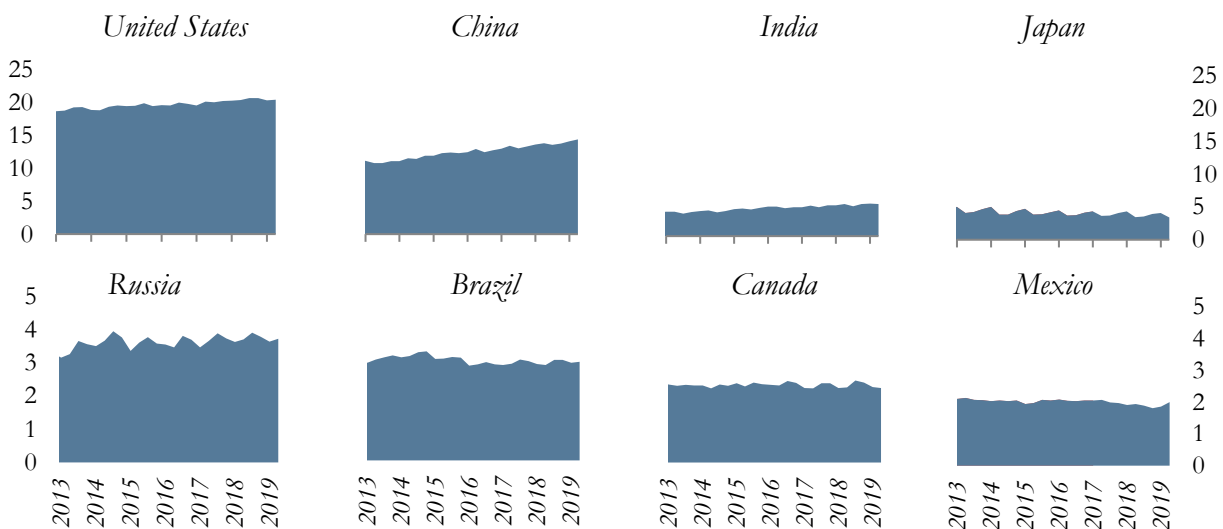


Second Quarter 2019

Regional Share of Consumption

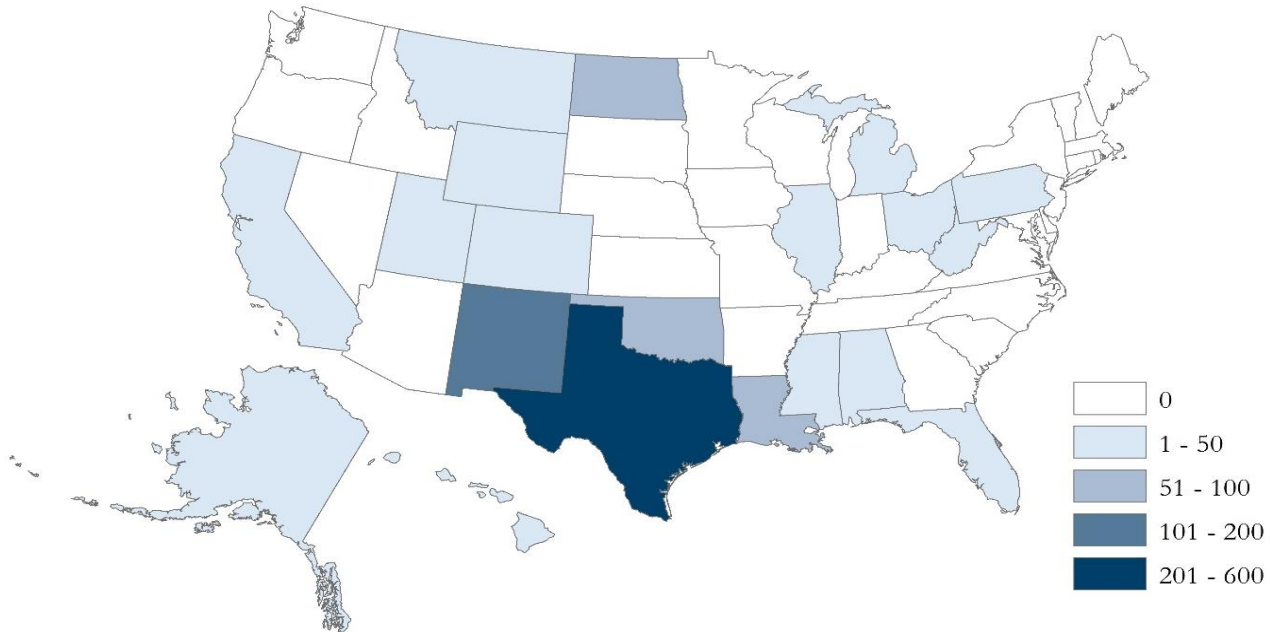


Top Petroleum Consumers, million barrels per day



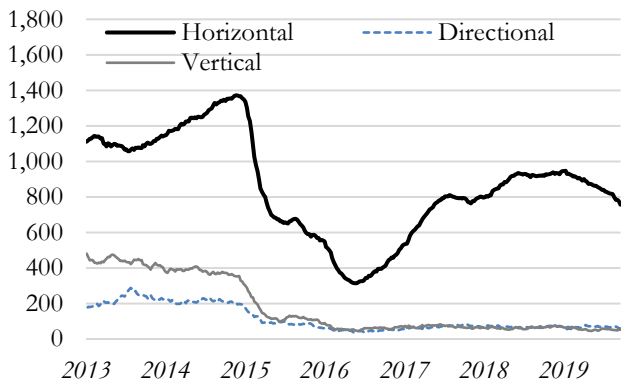
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

September 2019 Weekly Active Oil & Gas Drilling Rig Counts



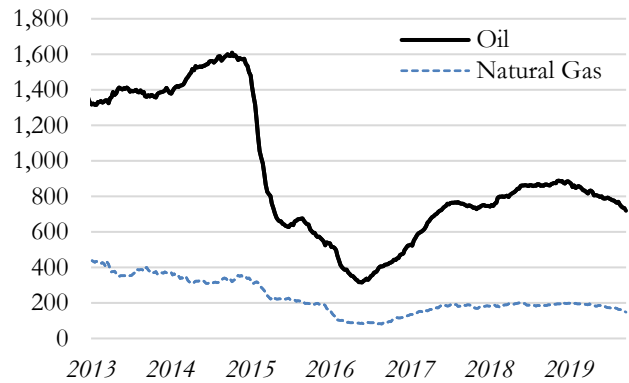
Source: Baker Hughes/Haver Analytics

U.S. Active Drilling Rigs by Trajectory

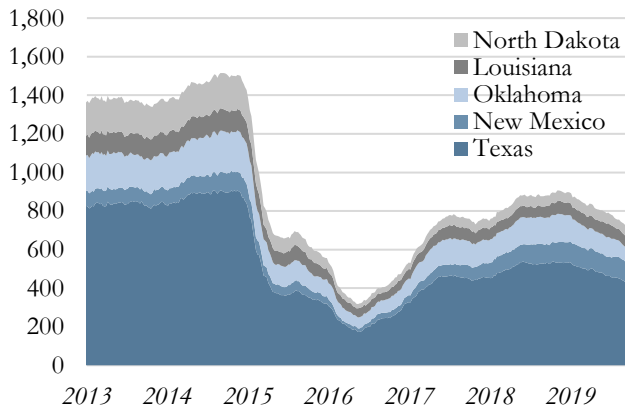


September 20, 2019

U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

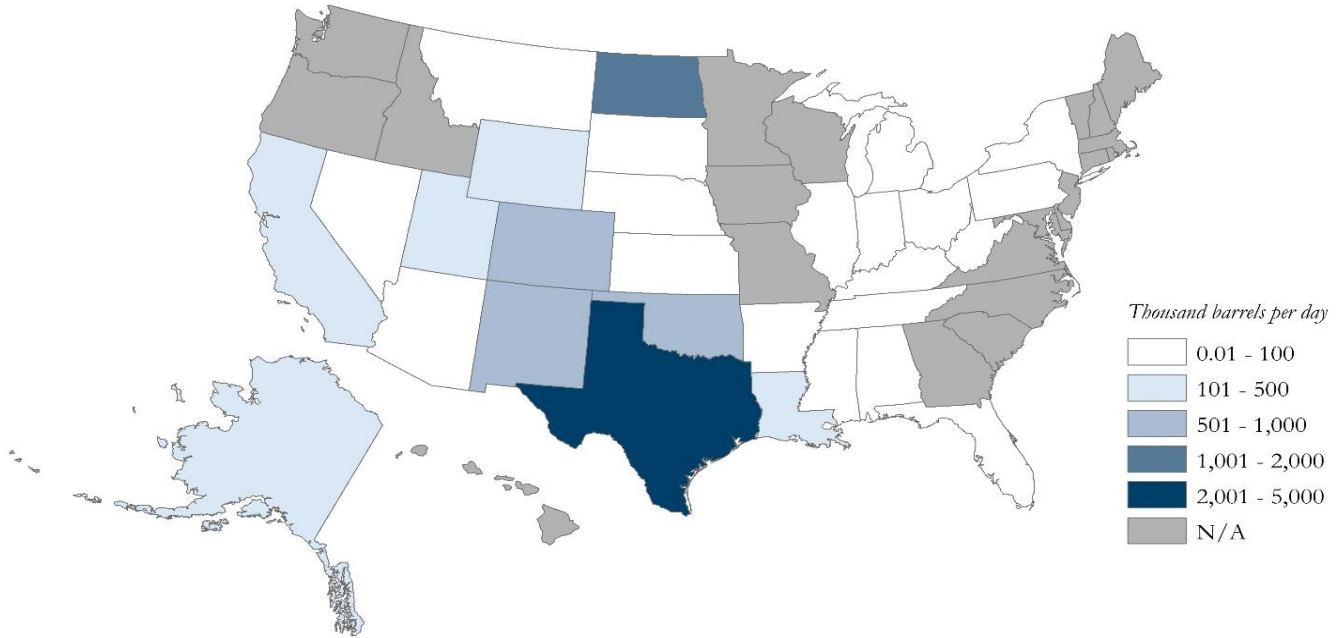
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	719	754	789	866
Gas	148	162	177	186
Misc	1	0	1	1
Total	868	916	967	1053

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	-4.6%	-8.9%	-17.0%
Gas	-	-8.6%	-16.4%	-20.4%
Misc	-	-	0.0%	0.0%
Total	-	-5.2%	-10.2%	-17.6%

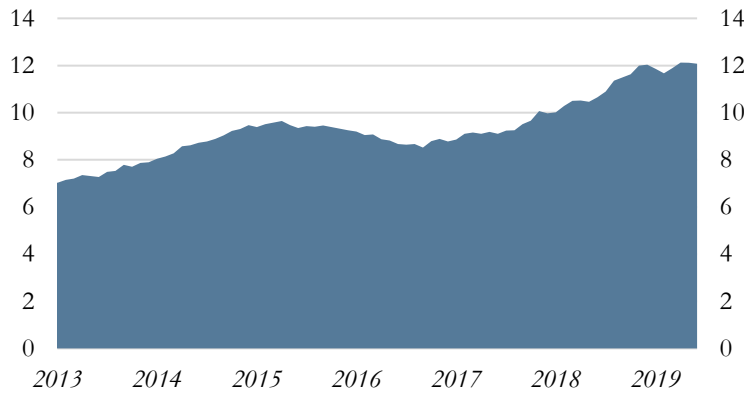
Source: Baker Hughes/Haver Analytics

June 2019 U.S. Crude Oil Production

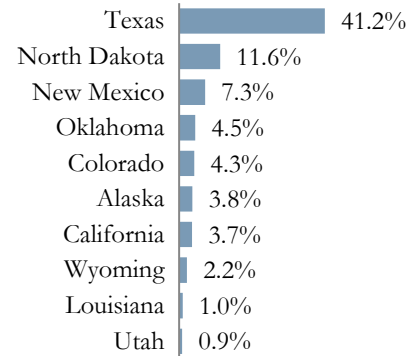


Source: Baker Hughes/Haver Analytics

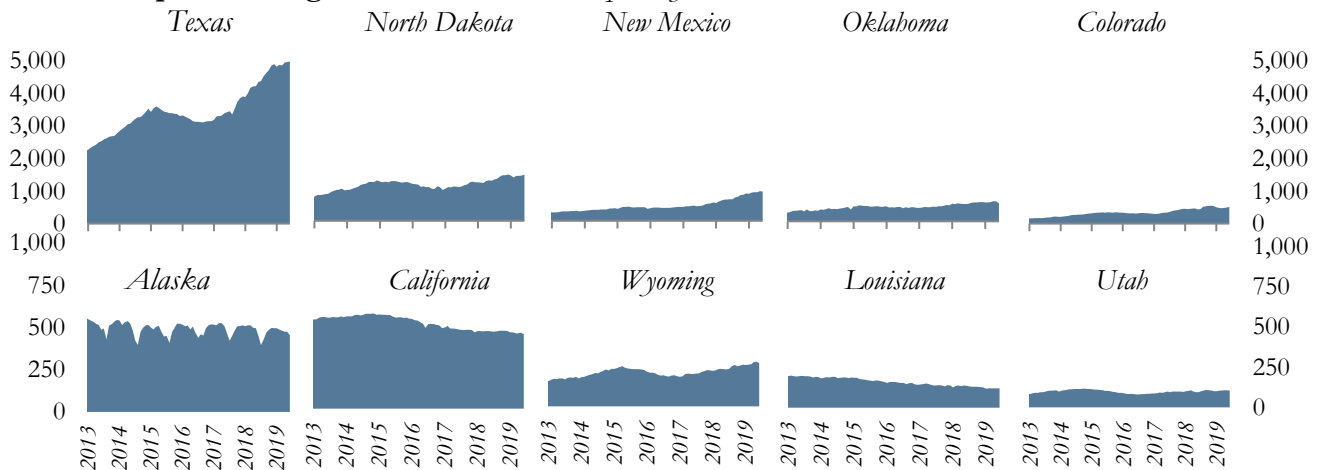
Monthly U.S. Production, million barrels per day



June 2019 Share of Production



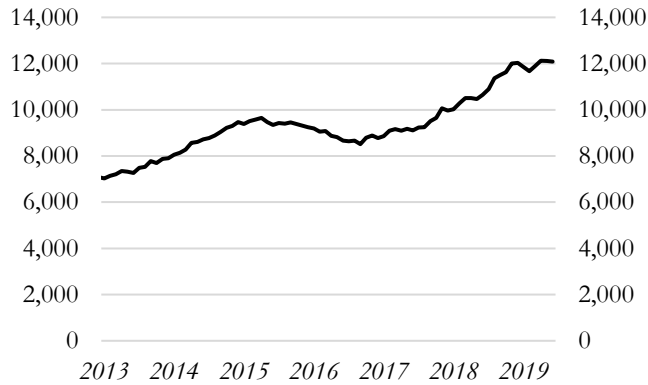
Top Producing States, thousand barrels per day



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

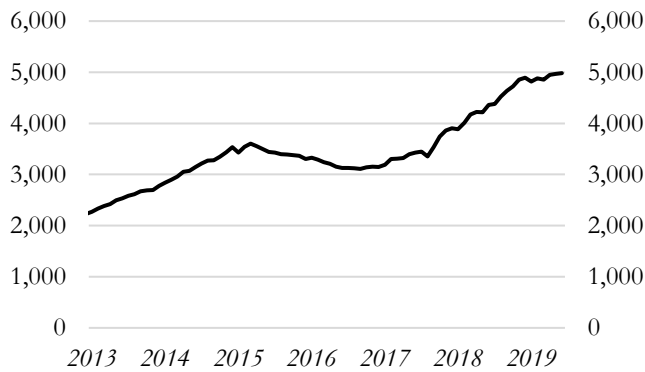
Data through June 2019

United States *Thousand barrels per day*



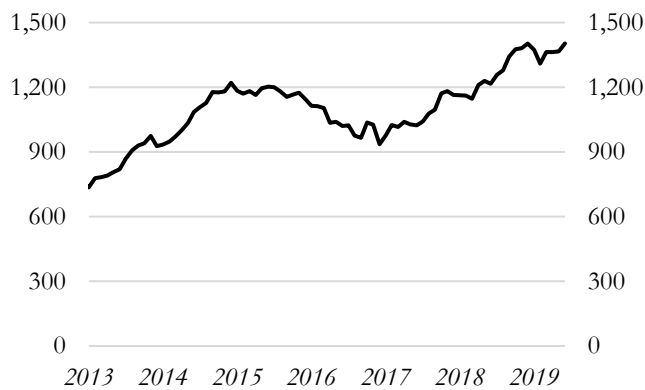
United States		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	12,082	
Month Ago	12,115	-0.3%
3 Months Ago	11,892	1.6%
6 Months Ago	12,038	0.4%
1 Year Ago	10,649	13.5%

Texas



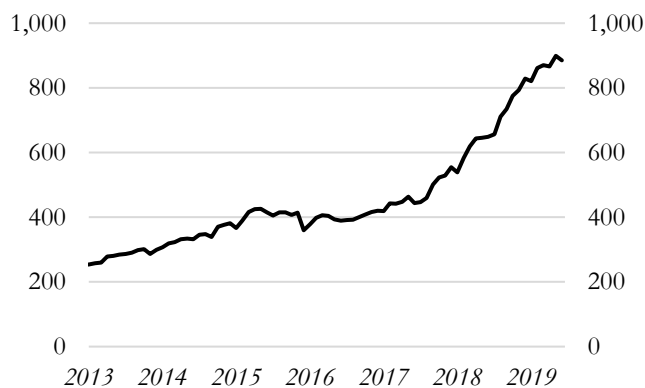
Texas		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	4,982	
Month Ago	4,969	0.3%
3 Months Ago	4,857	2.6%
6 Months Ago	4,896	1.8%
1 Year Ago	4,359	14.3%
Share of U.S. Production		41.2%

North Dakota



North Dakota		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	1,403	
Month Ago	1,367	2.6%
3 Months Ago	1,363	2.9%
6 Months Ago	1,403	0.0%
1 Year Ago	1,216	15.3%
Share of U.S. Production		11.6%

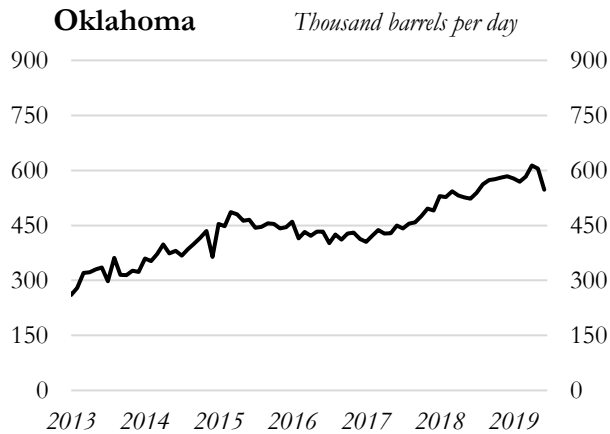
New Mexico



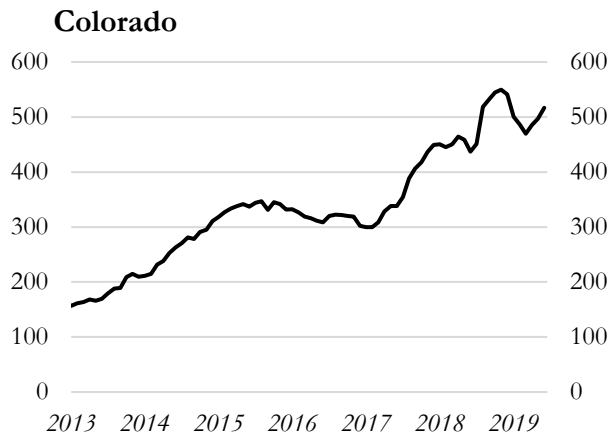
New Mexico		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	885	
Month Ago	899	-1.6%
3 Months Ago	870	1.7%
6 Months Ago	829	6.7%
1 Year Ago	649	36.3%
Share of U.S. Production		7.3%

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

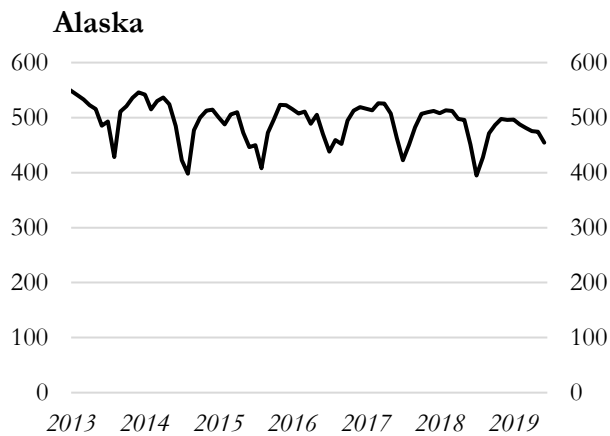
Data through June 2019



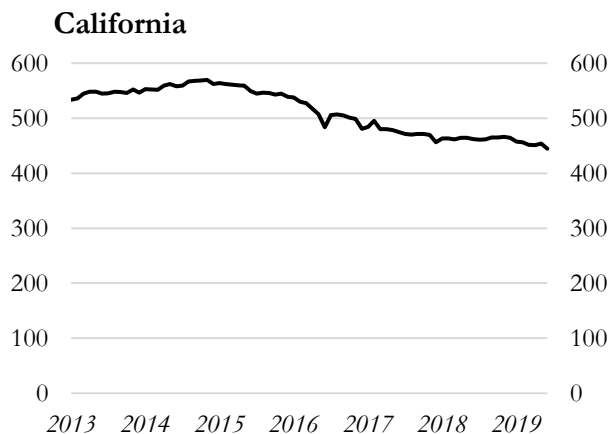
Oklahoma		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	547	
Month Ago	605	-9.5%
3 Months Ago	583	-6.2%
6 Months Ago	584	-6.3%
1 Year Ago	523	4.7%
Share of U.S. Production		4.5%



Colorado		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	516	
Month Ago	497	3.9%
3 Months Ago	470	10.0%
6 Months Ago	541	-4.6%
1 Year Ago	437	18.1%
Share of U.S. Production		4.3%



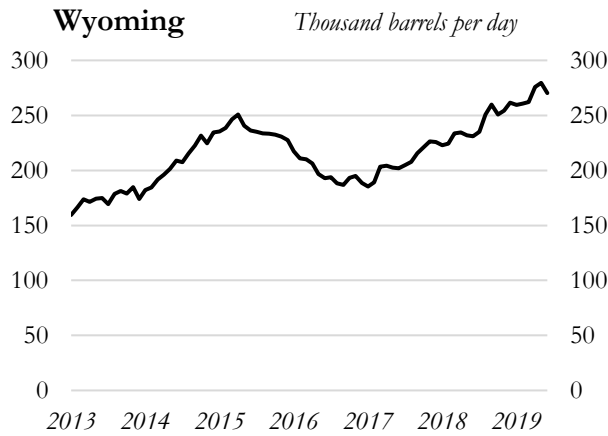
Alaska		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	455	
Month Ago	474	-4.1%
3 Months Ago	481	-5.5%
6 Months Ago	496	-8.3%
1 Year Ago	451	0.9%
Share of U.S. Production		3.8%



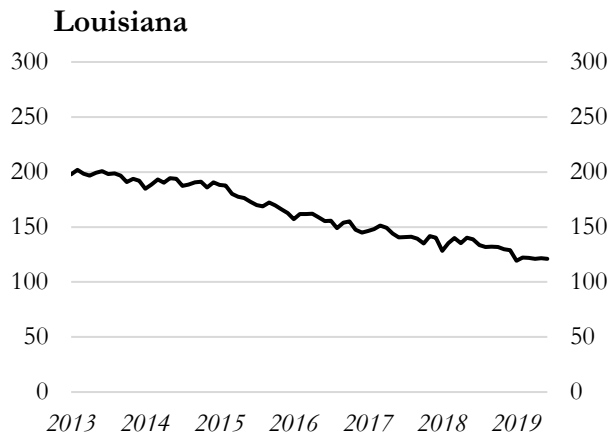
California		<i>Change from</i>
<i>Thousand barrels per day</i>		
Jun-19	445	
Month Ago	454	-2.1%
3 Months Ago	452	-1.6%
6 Months Ago	464	-4.3%
1 Year Ago	462	-3.7%
Share of U.S. Production		3.7%

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

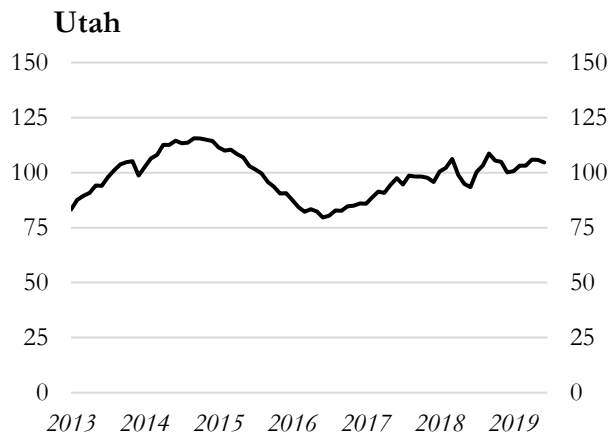
Data through June 2019



Wyoming		Change
Thousand barrels per day		from
Jun-19	270	
Month Ago	280	-3.3%
3 Months Ago	262	3.1%
6 Months Ago	261	3.4%
1 Year Ago	231	17.0%
Share of U.S. Production		2.2%



Louisiana		Change
Thousand barrels per day		from
Jun-19	121	
Month Ago	122	-0.4%
3 Months Ago	122	-0.6%
6 Months Ago	129	-6.0%
1 Year Ago	139	-12.8%
Share of U.S. Production		1.0%

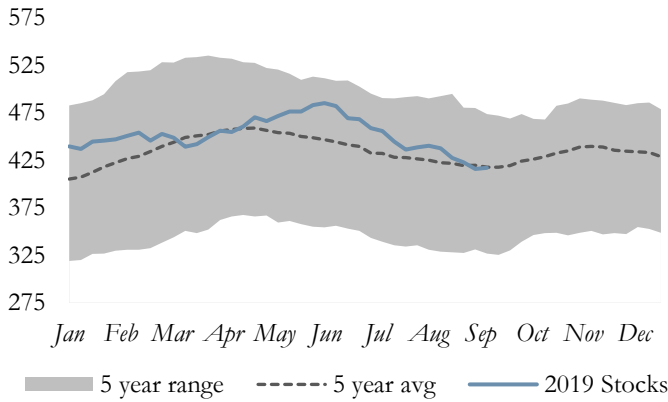


Utah		Change
Thousand barrels per day		from
Jun-19	105	
Month Ago	106	-1.2%
3 Months Ago	103	1.4%
6 Months Ago	100	4.5%
1 Year Ago	93	12.0%
Share of U.S. Production		0.9%

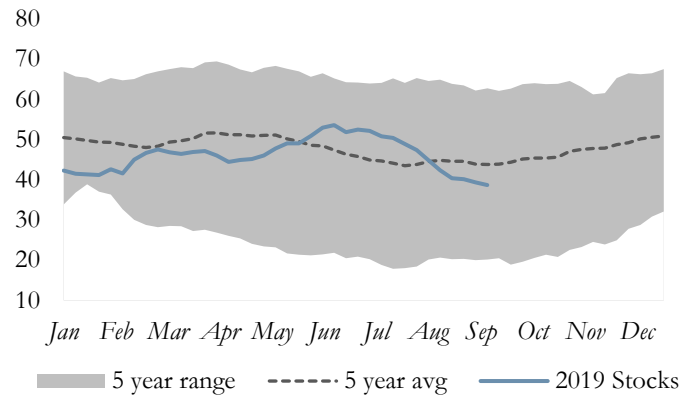
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

September 2019 Weekly U.S. Crude Oil Stocks

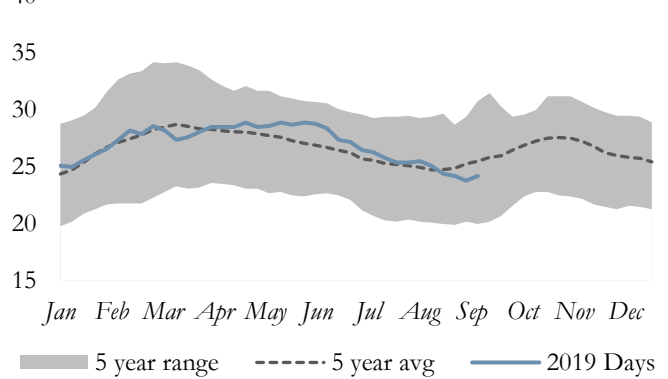
U.S. Oil Stocks, million barrels*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



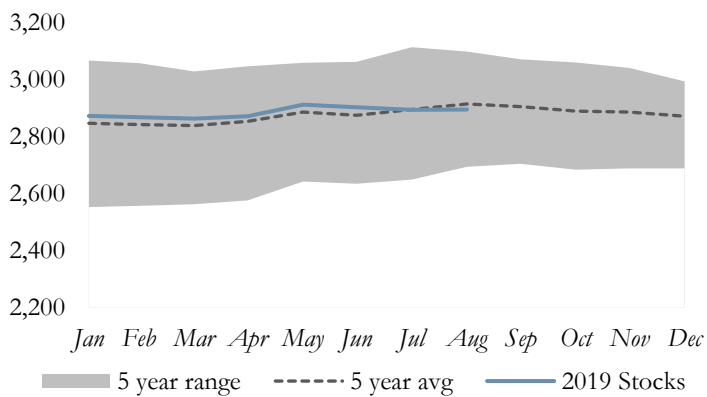
Crude Oil Stocks

	1 Week Change from Ago	1 Year Ago
U.S.	0.3%	5.8%
Cushing, OK	-1.6%	73.2%
Days of Supply	1.7%	8.0%
East Coast (PADD 1)	3.0%	-13.7%
Midwest (PADD 2)	-1.7%	16.2%
Gulf Coast (PADD 3)	0.9%	6.2%
Rocky Mountain (PADD 4)	1.9%	-12.2%
West Coast (PADD 5)	1.0%	-5.4%

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

August 2019 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



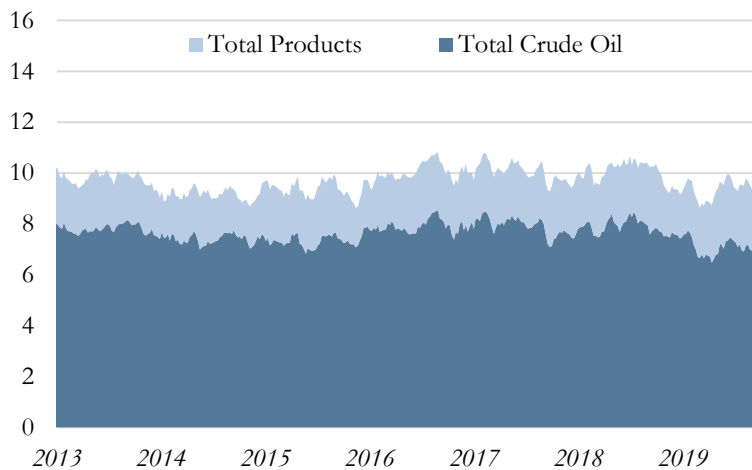
Petroleum Stocks	Million Barrels	Change from
Current Month	2,895	
1 Month Ago	2,894	0.0%
3 Months Ago	2,912	-0.6%
6 Months Ago	2,868	0.9%
1 Year Ago	2,852	1.5%

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

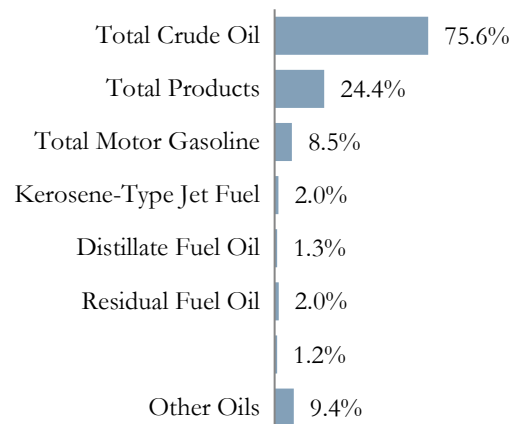
September 2019 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product*

Thousand barrels per day

	Current 9/13/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	6,652	7,186	7,467	6,649	7,704
Total Products	2,145	2,538	2,458	2,066	2,560
Total Motor Gasoline	745	1,008	930	599	867
Kerosene-Type Jet Fuel	172	171	158	223	199
Distillate Fuel Oil	110	173	144	229	188
Residual Fuel Oil	173	205	177	135	246
Propane/Propylene	107	117	121	178	128
Other Oils	827	855	916	702	923
Total Imports	8,797	9,724	9,925	8,715	10,264

U.S. Imports by Product, Change from

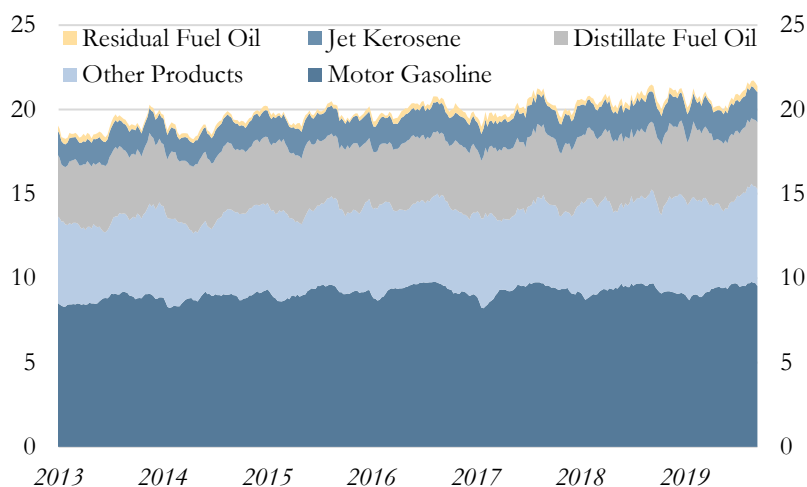
	Current 9/13/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	-	-7.4%	-10.9%	0.0%	-13.7%
Total Products	-	-15.5%	-12.7%	3.8%	-16.2%
Total Motor Gasoline	-	-26.1%	-19.9%	24.4%	-14.1%
Kerosene-Type Jet Fuel	-	0.6%	8.9%	-22.9%	-13.6%
Distillate Fuel Oil	-	-36.4%	-23.6%	-52.0%	-41.5%
Residual Fuel Oil	-	-15.6%	-2.3%	28.1%	-29.7%
Propane/Propylene	-	-8.5%	-11.6%	-39.9%	-16.4%
Other Oils	-	-3.3%	-9.7%	17.8%	-10.4%
Total Imports	-	-9.5%	-11.4%	0.9%	-14.3%

*Totals may not sum due to component rounding

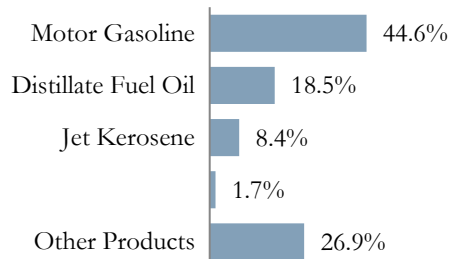
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

September 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

	<i>Current</i> 9/13/19	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	21,383	21,461	20,709	21,065	21,376
Motor Gasoline	9,529	9,692	9,660	9,148	9,704
Distillate Fuel Oil	3,961	3,847	4,025	4,220	4,042
Jet Kerosene	1,787	1,908	1,822	1,847	1,812
Residual Fuel Oil	356	333	331	232	394
Other Products	5,750	5,681	4,871	5,618	5,424

U.S. Consumption by Product, Change from

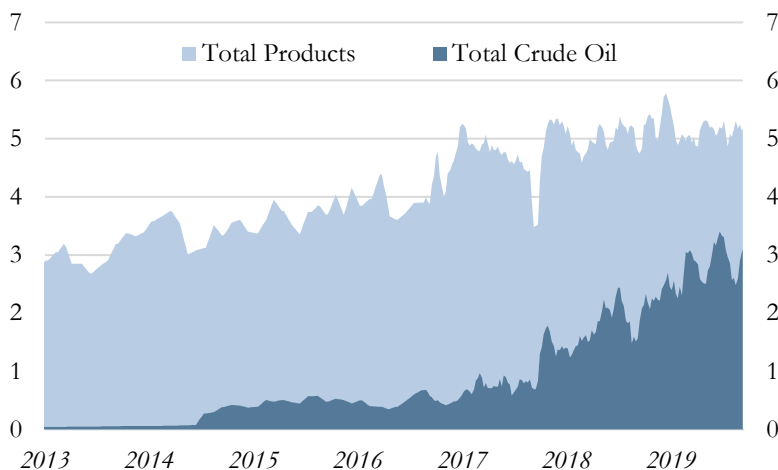
	<i>Current</i> 9/13/19	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	-	-0.4%	3.3%	1.5%	0.0%
Motor Gasoline	-	-1.7%	-1.4%	4.2%	-1.8%
Distillate Fuel Oil	-	3.0%	-1.6%	-6.1%	-2.0%
Jet Kerosene	-	-6.3%	-1.9%	-3.2%	-1.4%
Residual Fuel Oil	-	6.9%	7.6%	53.4%	-9.6%
Other Products	-	1.2%	18.0%	2.3%	6.0%

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

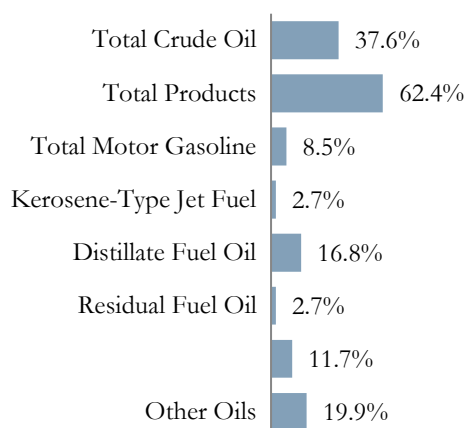
September 2019 Weekly U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages

Exports, million barrels per day



Share of Total Exports



U.S. Exports by Product*

Thousand barrels per day

	Current 9/13/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	3,138	2,481	3,290	3,025	1,871
Total Products	5,203	5,305	5,108	4,928	4,748
Total Motor Gasoline	712	679	639	829	610
Kerosene-Type Jet Fuel	228	230	178	168	180
Distillate Fuel Oil	1,400	1,496	1,369	1,118	1,217
Residual Fuel Oil	228	280	259	234	248
Propane/Propylene	977	1,001	1,139	839	841
Other Oils	1,659	1,620	1,524	1,740	1,653
Total Exports	8,341	7,786	8,398	7,953	6,618

U.S. Exports by Product, Change from

	Current 9/13/19	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	-	26.5%	-4.6%	3.7%	67.7%
Total Products	-	-1.9%	1.9%	5.6%	9.6%
Total Motor Gasoline	-	4.9%	11.4%	-14.1%	16.7%
Kerosene-Type Jet Fuel	-	-0.9%	28.1%	35.7%	26.7%
Distillate Fuel Oil	-	-6.4%	2.3%	25.2%	15.0%
Residual Fuel Oil	-	-18.6%	-12.0%	-2.6%	-8.1%
Propane/Propylene	-	-2.4%	-14.2%	16.4%	16.2%
Other Oils	-	2.4%	8.9%	-4.7%	0.4%
Total Exports	-	7.1%	-0.7%	4.9%	26.0%

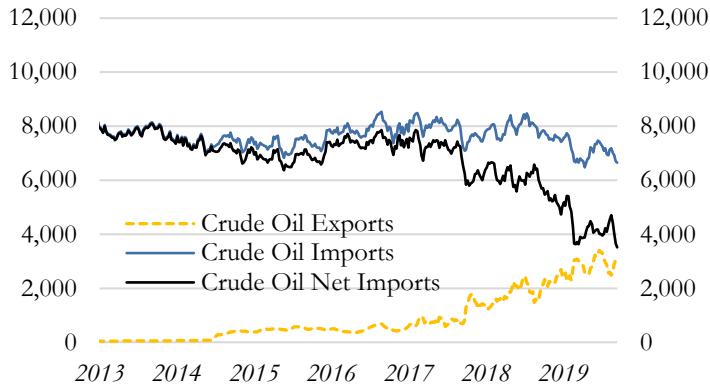
*Totals may not sum due to rounding

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

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

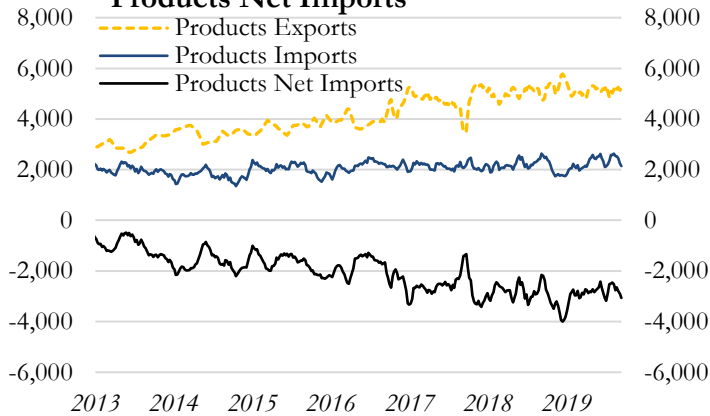
4-Week Averages, Thousand barrels per day

Crude Oil Net Imports



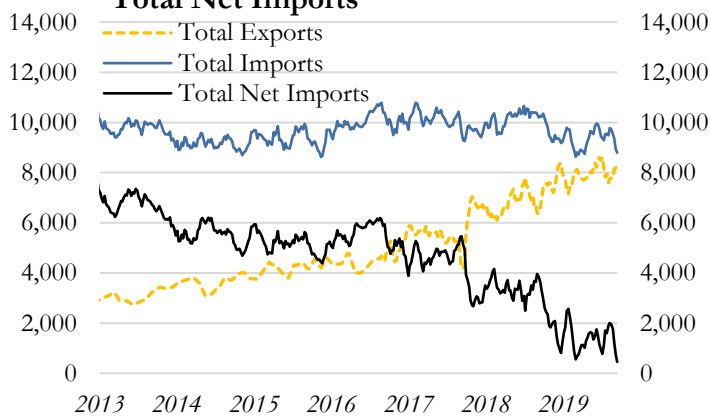
Crude Oil Net Imports		Change
Thousand barrels per day		from
9/13/19	3,514	
Month Ago	4,705	-25.3%
3 Months Ago	4,177	-15.9%
6 Months Ago	3,624	-3.0%
1 Year Ago	5,833	-39.8%

Products Net Imports



Products Net Imports		Change
Thousand barrels per day		from
9/13/19	-3,058	
Month Ago	-2,767	-
3 Months Ago	-2,650	-
6 Months Ago	-2,862	-
1 Year Ago	-2,188	-

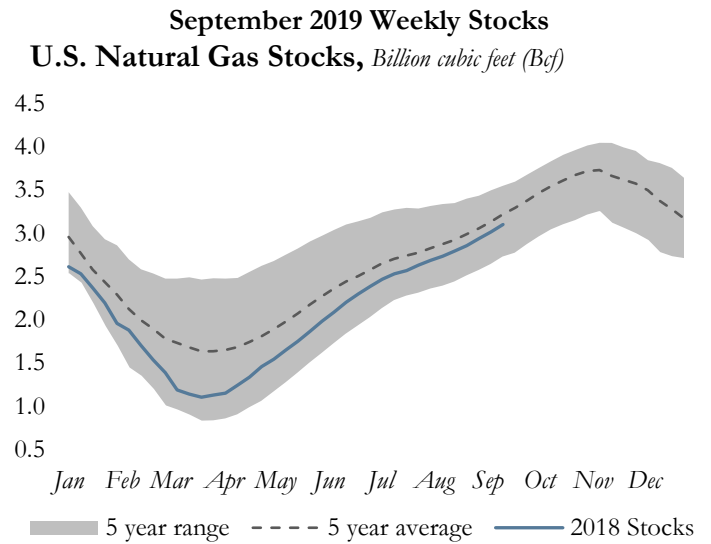
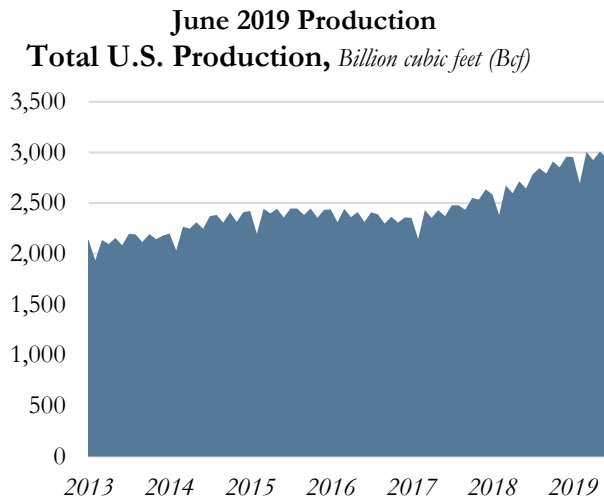
Total Net Imports



Total Net Imports		Change
Thousand barrels per day		from
9/13/19	457	
Month Ago	1,938	-76.4%
3 Months Ago	1,527	-70.1%
6 Months Ago	762	-40.0%
1 Year Ago	3,645	-87.5%

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

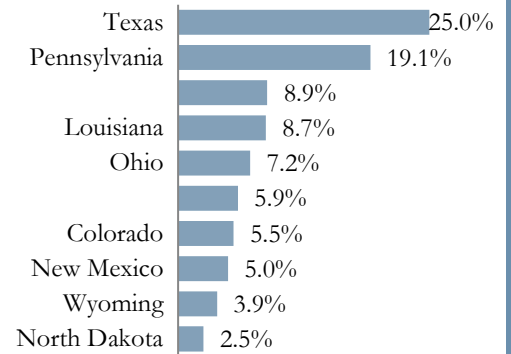
U.S. Natural Gas Production & Stocks



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	2,943	3,009	3,005	2,957	2,641
U.S. Stocks	3,103	2,797	2,203	1,143	2,722

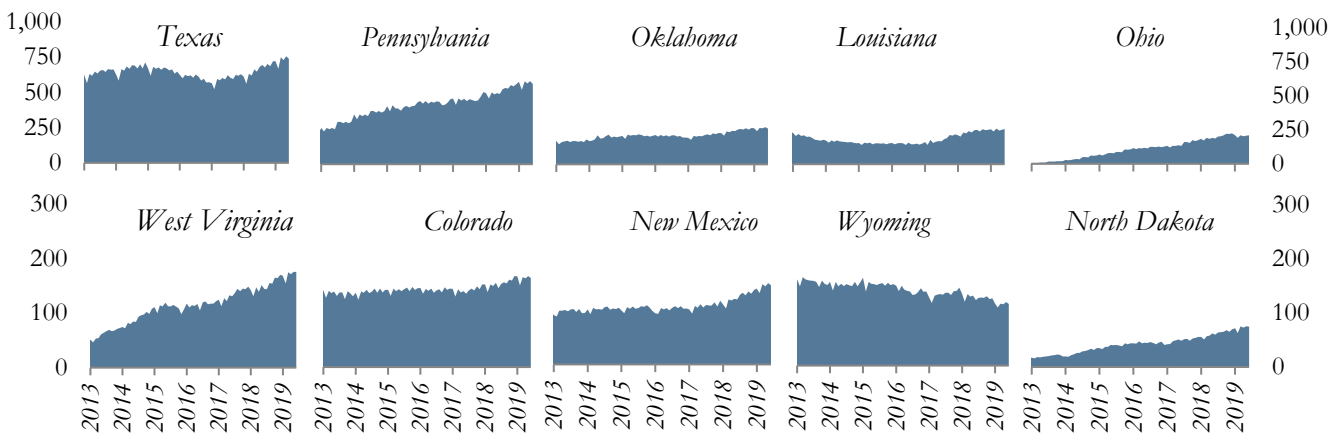
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	-2.2%	-2.1%	-0.5%	11.4%
U.S. Stocks	-	10.9%	40.9%	171.5%	14.0%

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.

Regional Economic Analysis

Sign up to receive *The U.S. Energy Databook* and other publications each month via email using the link below:

<http://www.kansascityfed.org/ealert/>

For more analysis on the U.S. energy industry, read the latest release of *The Tenth District Energy Survey*.

<https://www.kansascityfed.org/research/indicatorsdata/energy>

Additional Resources Available

- Agricultural Surveys
- Banker Resources
- Manufacturing Survey
- Economic Indicators
- Energy Survey
- Economic Research
- Regional Economic Analysis
- Educational Tools
- Speeches

Visit: www.KansasCityFed.org