

# THE U.S. Energy DATABOOK

*A summary of national and global energy indicators*



MARCH 27, 2017

FEDERAL RESERVE BANK of KANSAS CITY

## SUMMARY OF CURRENT ENERGY CONDITIONS

The number of active drilling rigs in the United States increased 7.3 percent from last month, and was 74.4 percent above year-ago levels. Crude oil production fell 1 percent in December 2016, while natural gas production decreased 2.1 percent in December. West Texas Intermediate (WTI) crude oil averaged \$47.28 per barrel for the week ending March 24th, while North Sea Brent averaged \$50.10 per barrel for the same week. The Henry Hub natural gas spot price averaged \$2.95 per million Btu for the week ending March 24th. U.S. crude oil and petroleum products imports fell 4.7 percent and exports fell 0.4 percent through March 17th. Globally, oil production rose 0.2 percent in February, and global oil demand rose 0.2 percent in the fourth quarter of 2016.

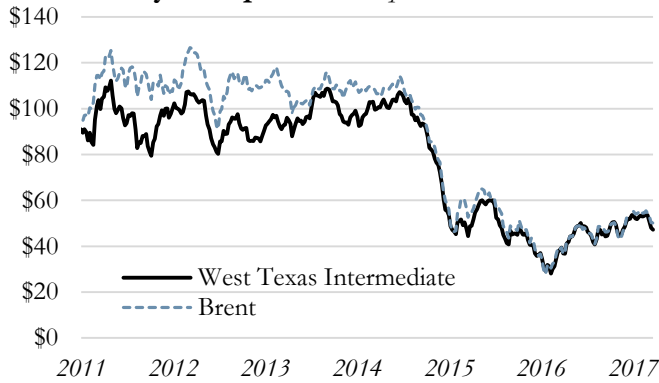
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S.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



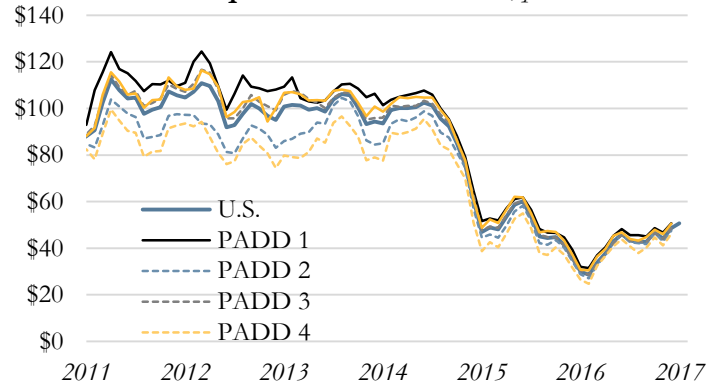
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through March 24, 2017

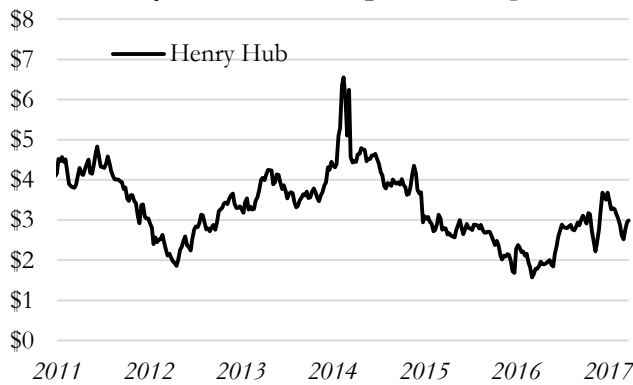
Weekly Oil Spot Prices, per barrel



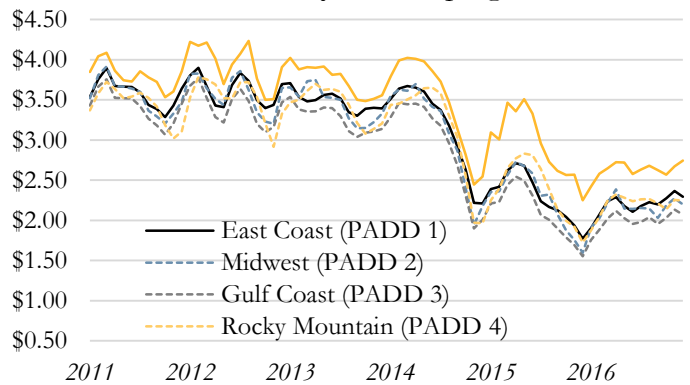
Refiner Acquisition Cost of Oil\*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

Weekly Spot Prices	Current 3/24/17	1 Week Ago	1 Month Ago	6 Months Ago	1 Year Ago	Peak (2011-17)
West Texas Intermediate	\$47.28	-\$0.75	-\$6.75	\$2.68	\$7.83	-\$65.02
Brent	\$50.10	-\$0.19	-\$5.30	\$3.86	\$10.69	-\$76.52
Henry Hub	\$2.95	\$0.20	\$0.08	-\$0.07	\$1.16	-\$3.60

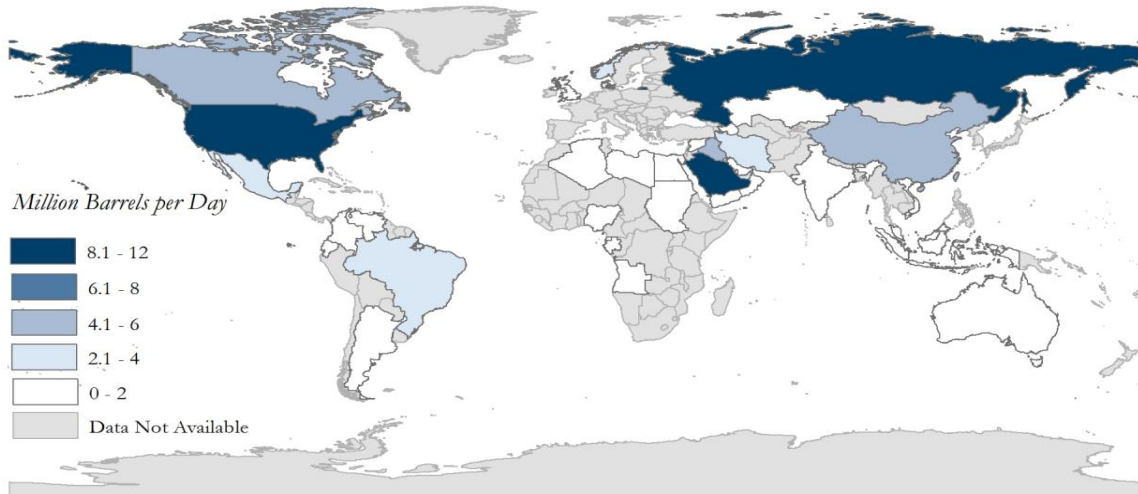
Gasoline Monthly Spot Prices, Change from

Geographic Area	Current Feb-17	1 Month Ago	6 Months Ago	1 Year Ago	Peak (2011-17)
East Coast (PADD 1)	\$2.29	-\$0.07	\$0.19	\$0.52	-\$1.61
Midwest (PADD 2)	\$2.20	-\$0.07	\$0.06	\$0.60	-\$1.72
Gulf Coast (PADD 3)	\$2.07	-\$0.06	\$0.12	\$0.52	-\$1.70
Rocky Mountain (PADD 4)	\$2.25	-\$0.01	\$0.01	\$0.52	-\$1.54
West Coast (PADD 5)	\$2.74	\$0.07	\$0.17	\$0.49	-\$1.49

\*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

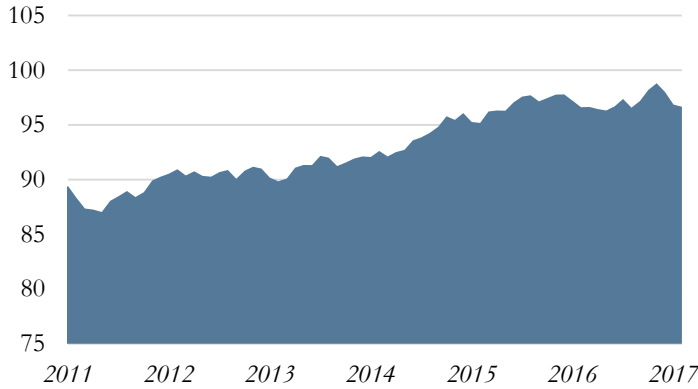
February 2017 Global Petroleum Production



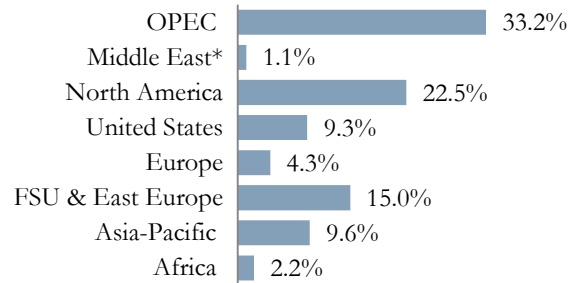
Source: Energy Information Administration/Haver Analytics

February 2017

Global Petroleum Production, million barrels per day

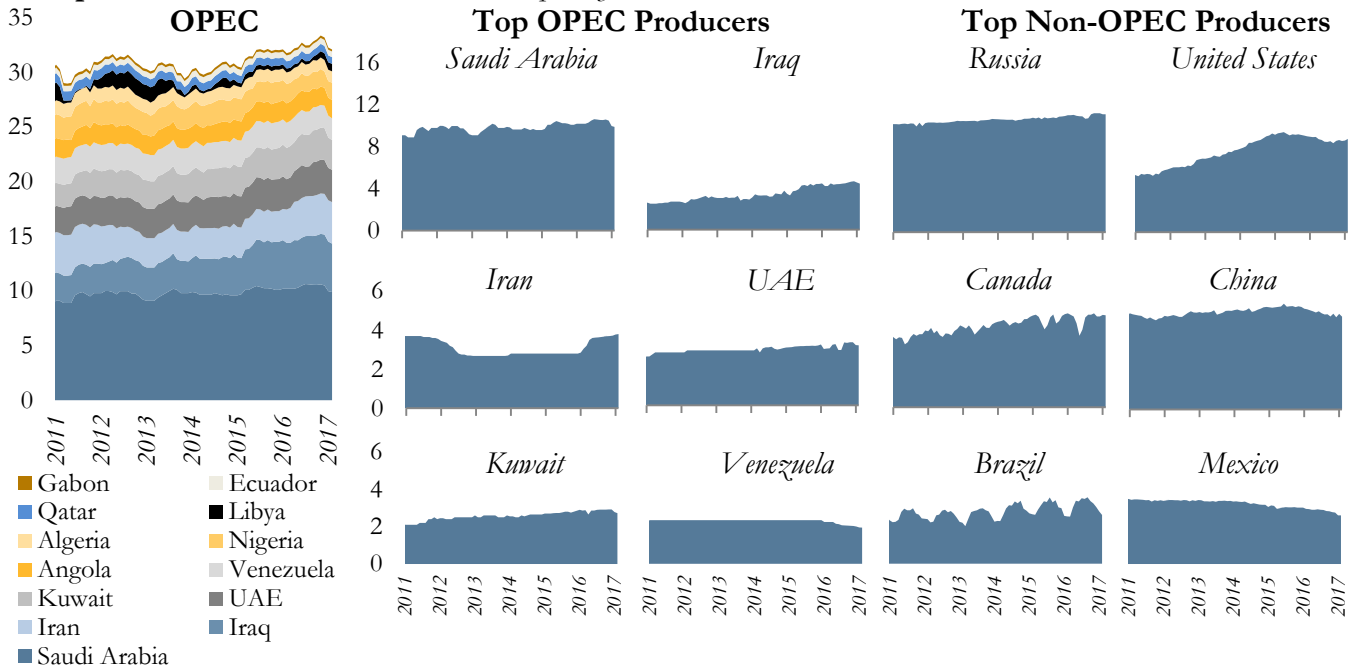


Regional Share of Production



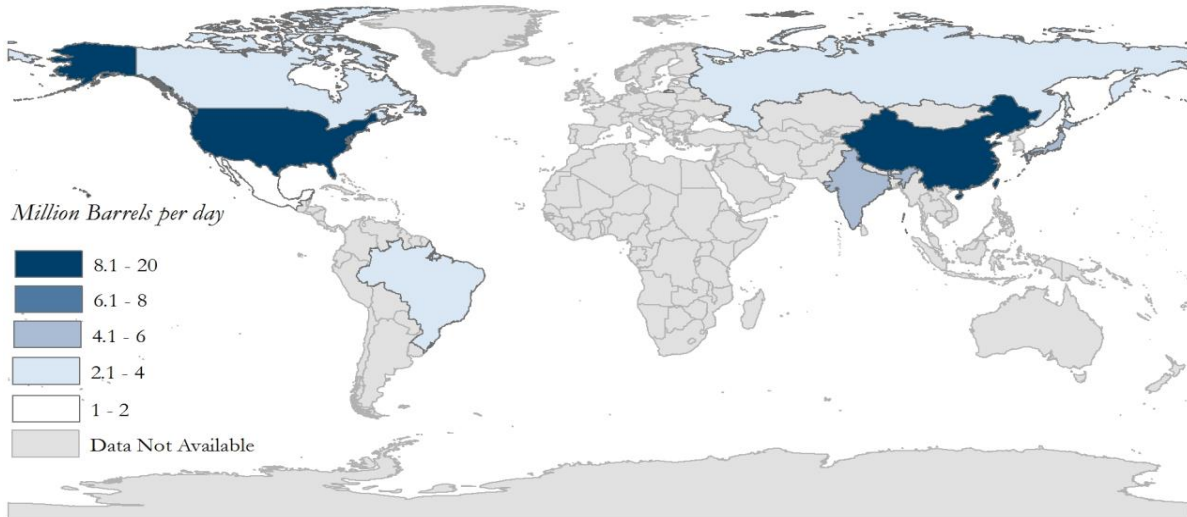
\*Excludes OPEC

Top Crude Oil Producers, million barrels per day



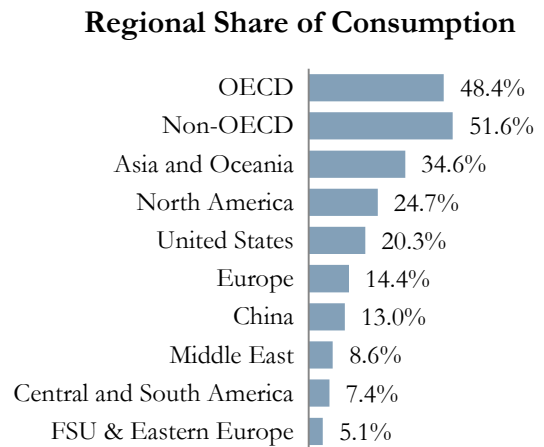
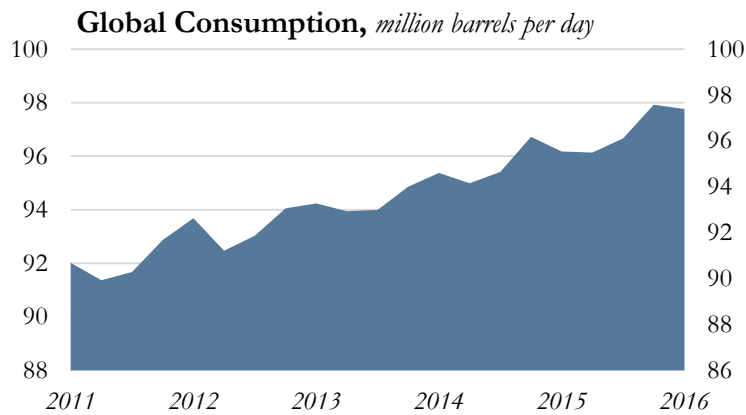
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Fourth Quarter 2016 Global Petroleum Consumption

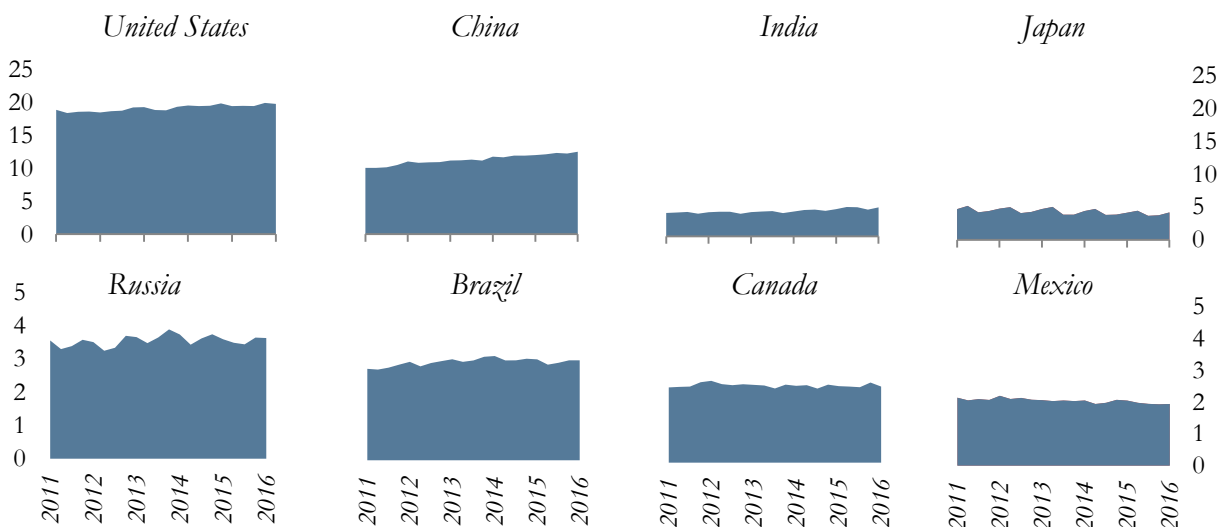


Source: Energy Information Administration/Haver Analytics

Fourth Quarter 2016



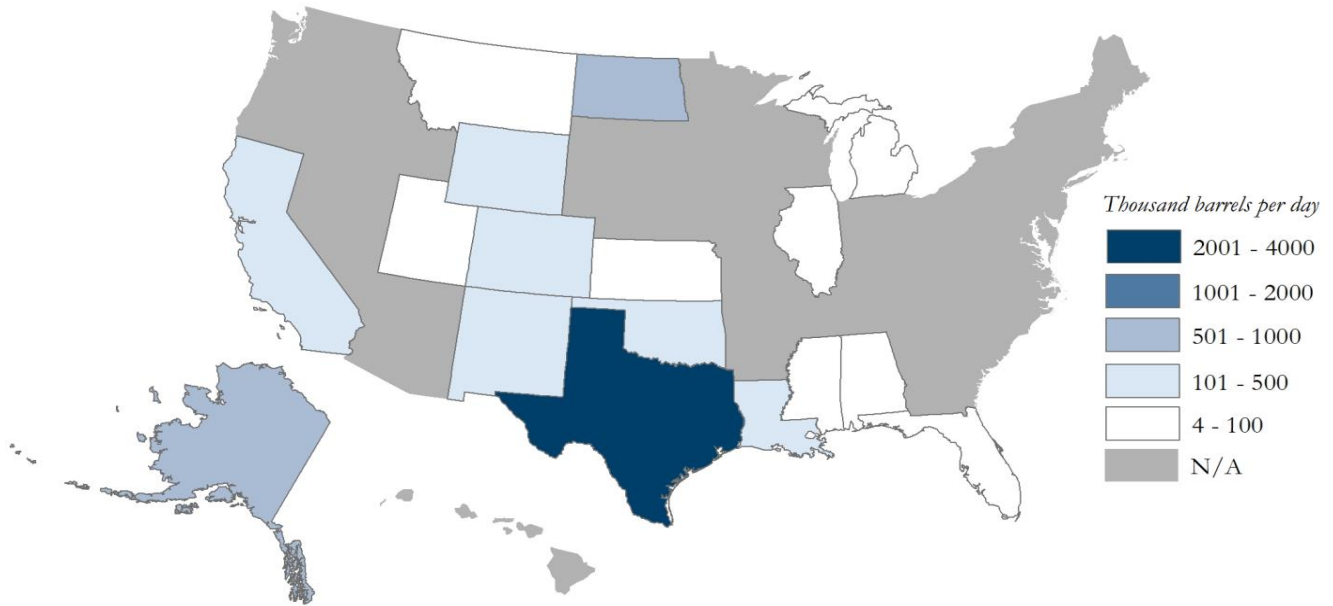
Top Petroleum Consumers, million barrels per day



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

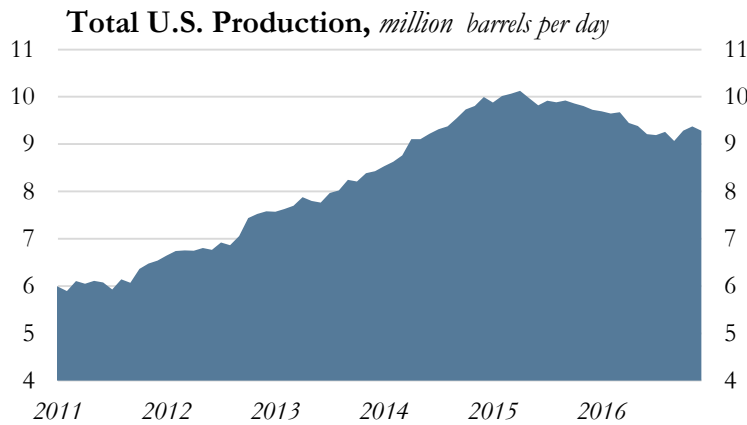


December 2016 U.S. Crude Oil Production

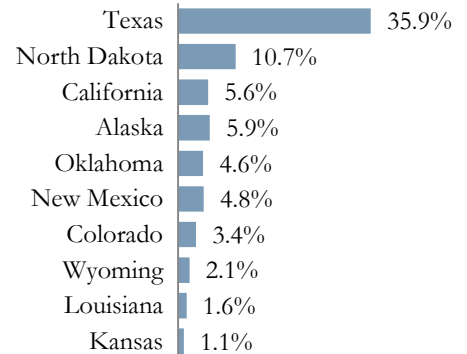


Source: Energy Information Administration/Haver Analytics

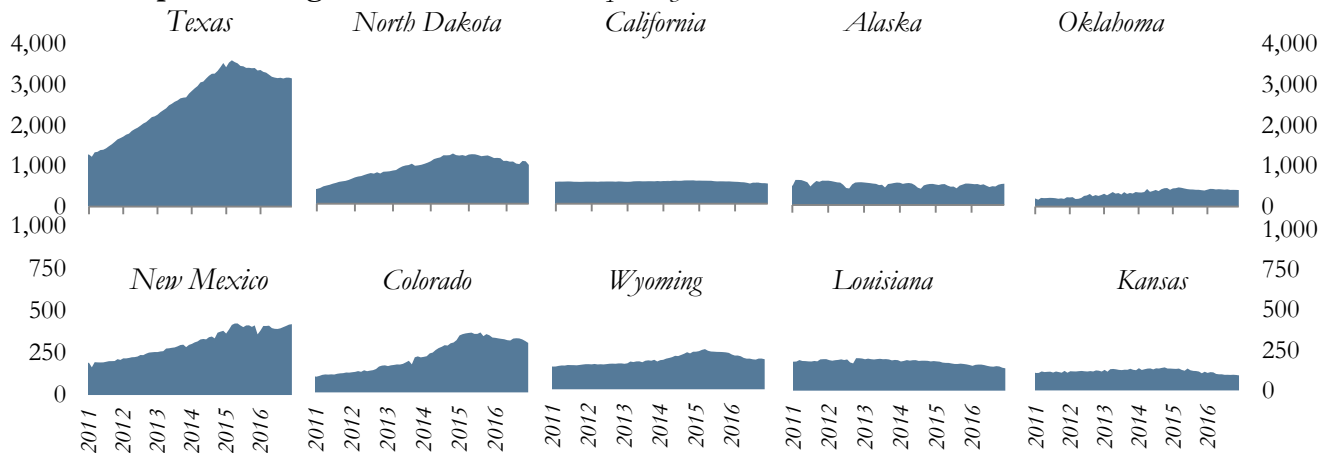
December 2016



Share of Production

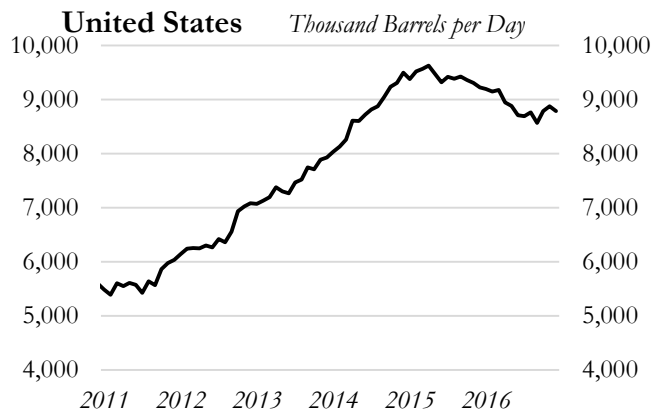


**Top Producing States, thousand barrels per day**

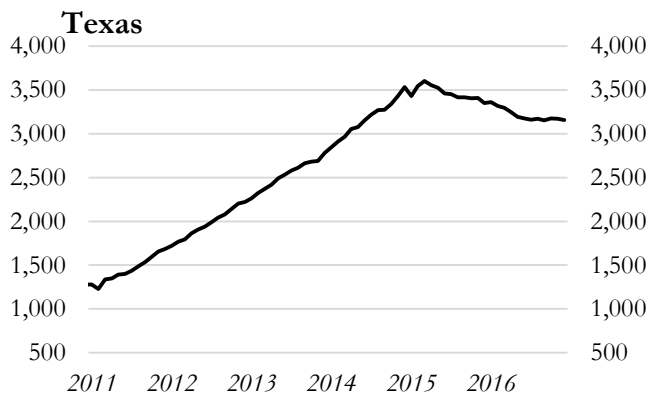


Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

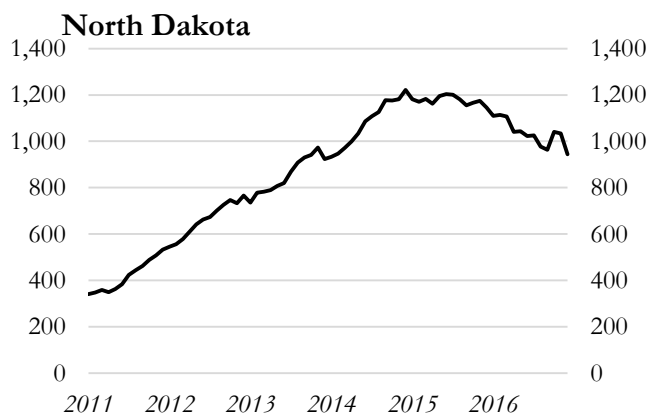
Data through December 2016



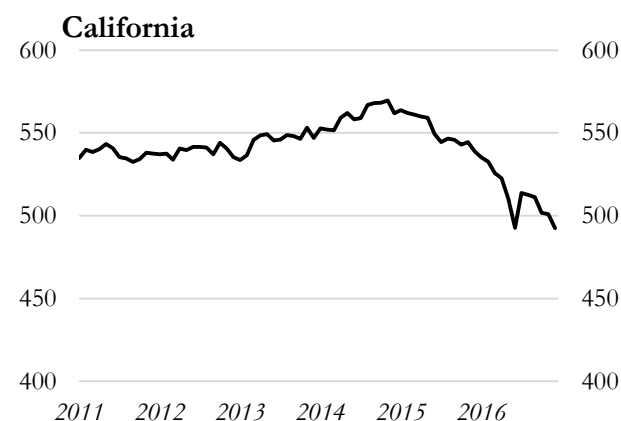
	<b>United States</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Dec-16	8,783	
Month Ago	8,874	-1.03%
3 Months Ago	8,567	2.5%
6 Months Ago	8,711	0.8%
1 Year Ago	9,225	-4.8%



	<b>Texas</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Dec-16	3,155	
Month Ago	3,172	-0.5%
3 Months Ago	3,152	0.1%
6 Months Ago	3,174	-0.6%
1 Year Ago	3,348	-5.8%
Share of U.S. Production		35.9%



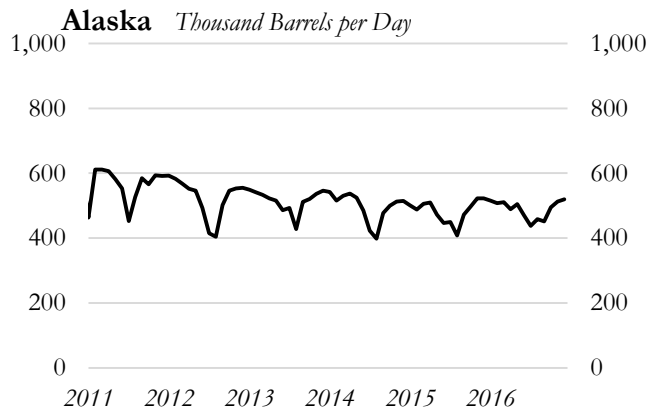
	<b>North Dakota</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Dec-16	944	
Month Ago	1,033	-8.7%
3 Months Ago	964	-2.1%
6 Months Ago	1,023	-7.7%
1 Year Ago	1,145	-17.6%
Share of U.S. Production		10.7%



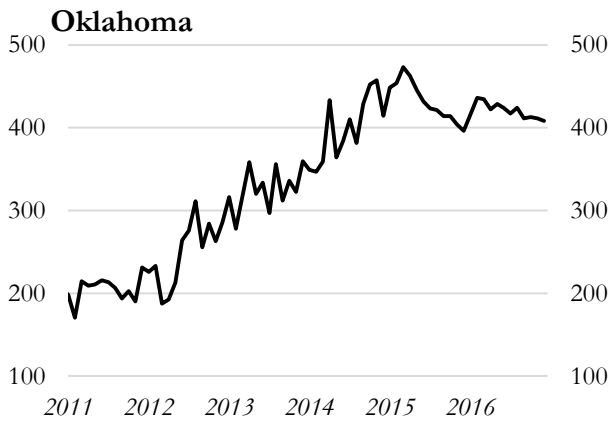
	<b>California</b> <i>Thousand barrels per day</i>	<i>Change from</i>
Dec-16	493	
Month Ago	501	-1.7%
3 Months Ago	511	-3.6%
6 Months Ago	493	0.0%
1 Year Ago	539	-8.6%
Share of U.S. Production		5.6%

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

Data through December 2016



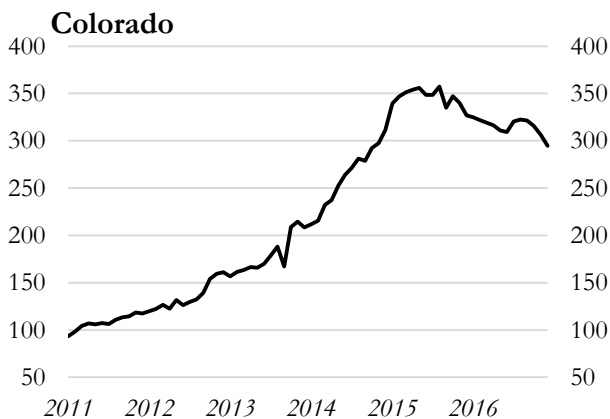
	<b>Alaska</b>	<i>Change</i>
	<i>Thousand barrels per day</i>	<i>from</i>
Dec-16	519	
Month Ago	513	1.2%
3 Months Ago	452	14.9%
6 Months Ago	470	10.4%
1 Year Ago	522	-0.6%
Share of U.S. Production	5.9%	



	<b>Oklahoma</b>	<i>Change</i>
	<i>Thousand barrels per day</i>	<i>from</i>
Dec-16	408	
Month Ago	411	-0.8%
3 Months Ago	411	-0.8%
6 Months Ago	424	-3.6%
1 Year Ago	396	3.0%
Share of U.S. Production	4.6%	



	<b>New Mexico</b>	<i>Change</i>
	<i>Thousand barrels per day</i>	<i>from</i>
Dec-16	419	
Month Ago	417	0.6%
3 Months Ago	402	4.3%
6 Months Ago	392	7.0%
1 Year Ago	359	16.9%
Share of U.S. Production	4.8%	

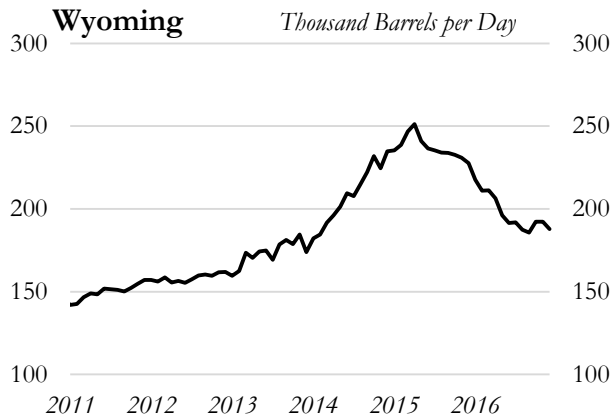


	<b>Colorado</b>	<i>Change</i>
	<i>Thousand barrels per day</i>	<i>from</i>
Dec-16	295	
Month Ago	306	-3.7%
3 Months Ago	322	-8.4%
6 Months Ago	309	-4.7%
1 Year Ago	327	-9.8%
Share of U.S. Production	3.4%	

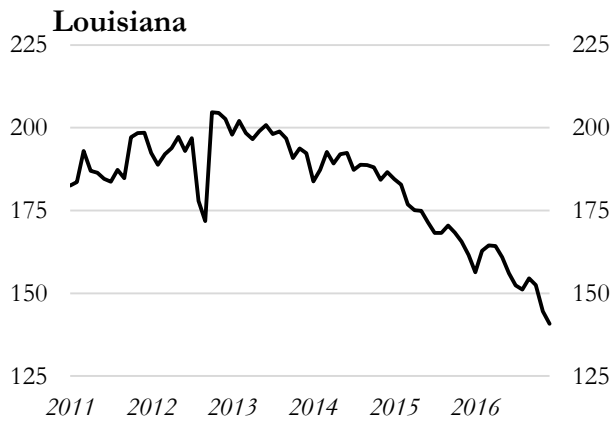
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics



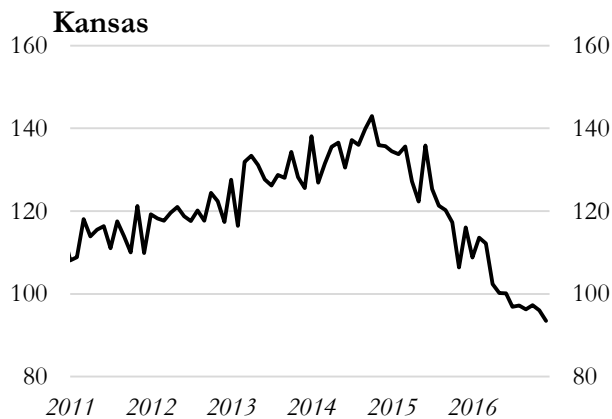
Data through December 2016



<b>Wyoming</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Dec-16	188	
Month Ago	192	-2.3%
3 Months Ago	186	1.2%
6 Months Ago	192	-1.9%
1 Year Ago	228	-17.5%
Share of U.S. Production	2.1%	



<b>Louisiana</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Dec-16	141	
Month Ago	145	-2.6%
3 Months Ago	155	-8.9%
6 Months Ago	156	-9.8%
1 Year Ago	162	-12.9%
Share of U.S. Production	1.6%	

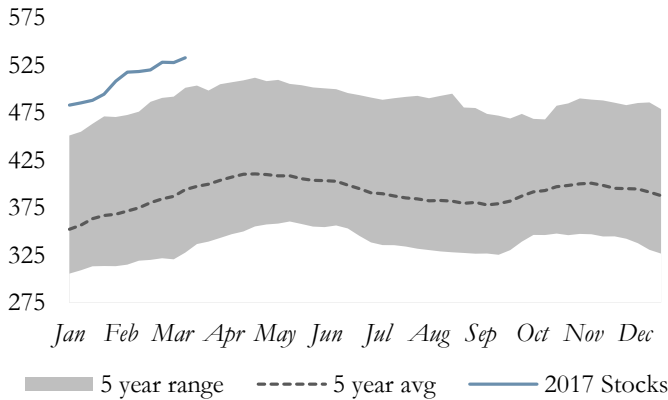


<b>Kansas</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Dec-16	93	
Month Ago	96	-2.7%
3 Months Ago	96	-3.0%
6 Months Ago	100	-6.6%
1 Year Ago	116	-19.5%
Share of U.S. Production	1.1%	

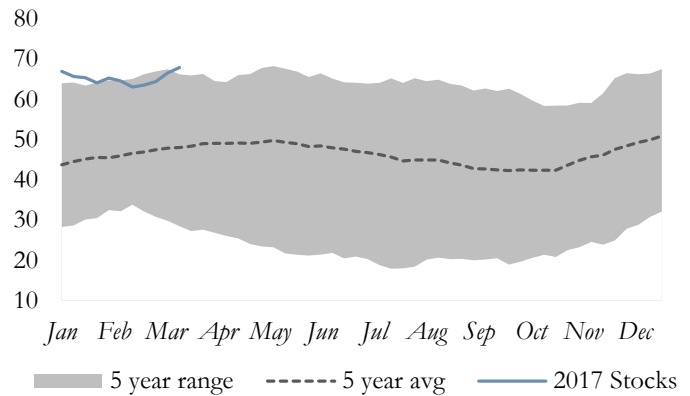
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

March 2017 U.S. Crude Oil Stocks

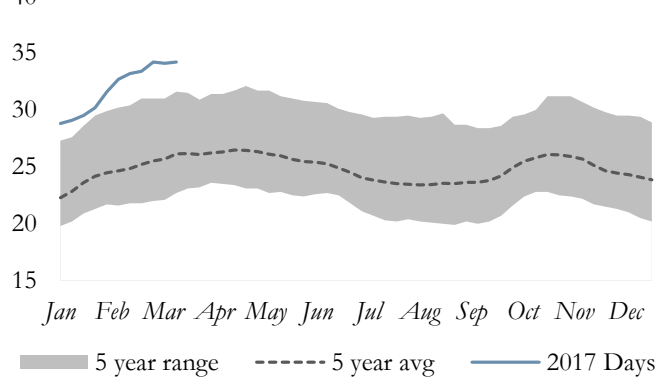
U.S. Oil Stocks, million barrels\*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



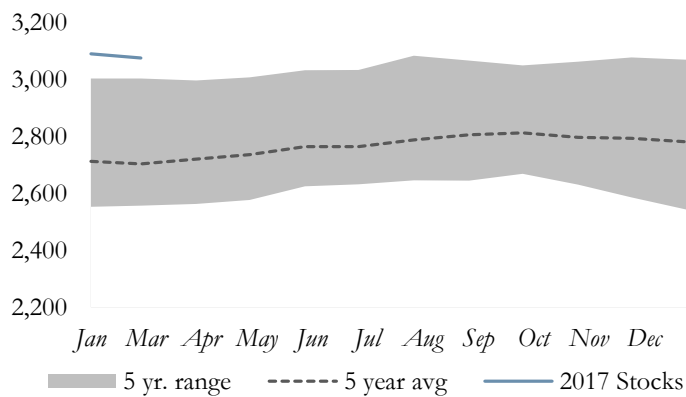
Crude Oil Stocks

	1 Week Change from Ago	1 Year Ago
U.S.	0.9%	6.3%
Cushing, OK	2.1%	2.6%
Days of Supply	0.3%	8.2%
East Coast (PADD 1)	1.5%	13.0%
Midwest (PADD 2)	2.0%	4.3%
Gulf Coast (PADD 3)	0.0%	6.5%
Rocky Mountain (PADD 4)	1.8%	28.8%
West Coast (PADD 5)	2.2%	0.7%

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

February 2017 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



Petroleum Stocks

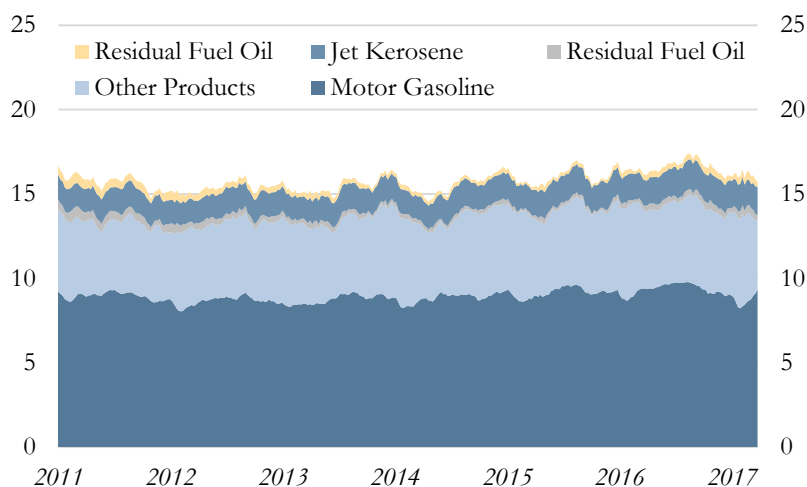
	Million Barrels	Change from
Current Month	3,076	
1 Month Ago	3,091	0.49%
3 Months Ago	3,078	0.1%
6 Months Ago	3,067	-0.3%
1 Year Ago	3,004	-2.3%

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

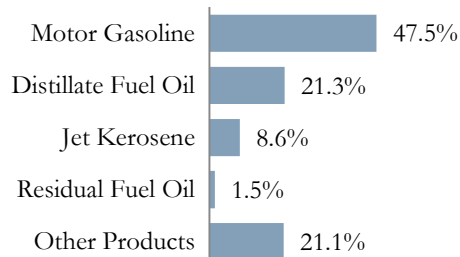
### March 2017 Weekly U.S. Demand for Petroleum Products

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 Month	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
All Products	19,623	19,833	19,887	20,047	19,495
Motor Gasoline	9,312	8,681	9,045	9,383	9,404
Distillate Fuel Oil	4,184	3,967	4,063	3,542	3,699
Jet Kerosene	1,686	1,496	1,659	1,630	1,504
Residual Fuel Oil	300	491	266	333	331
Other Products	4,141	5,198	4,854	5,159	4,557

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

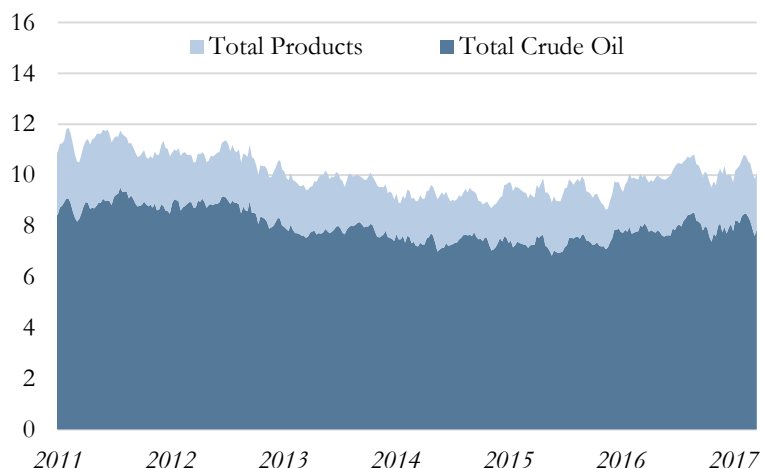
	Current Month	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
All Products	-	-1.1%	-1.3%	-2.1%	0.7%
Motor Gasoline	-	7.3%	3.0%	-0.8%	-1.0%
Distillate Fuel Oil	-	5.5%	3.0%	18.1%	13.1%
Jet Kerosene	-	12.7%	1.6%	3.4%	12.1%
Residual Fuel Oil	-	-38.9%	12.8%	-9.9%	-9.4%
Other Products	-	-20.3%	-14.7%	-19.7%	-9.1%

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

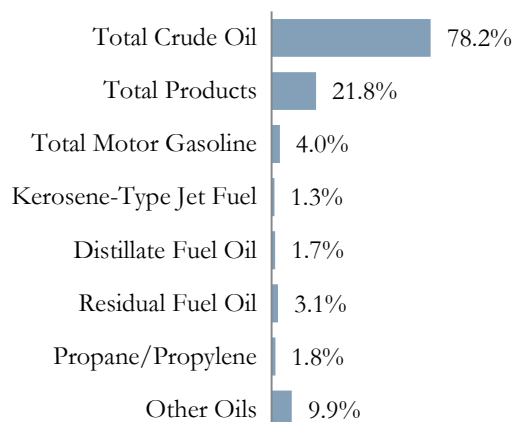
### March 2017 U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product\*

Thousand barrels per day

	Current Week	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>7,863</b>	<b>8,360</b>	<b>7,921</b>	<b>8,089</b>	<b>8,104</b>
<b>Total Products</b>	<b>2,187</b>	<b>2,186</b>	<b>2,116</b>	<b>2,097</b>	<b>1,921</b>
Total Motor Gasoline	399	568	643	664	538
Kerosene-Type Jet Fuel	131	113	209	152	194
Distillate Fuel Oil	171	197	181	113	198
Residual Fuel Oil	313	205	218	242	237
Propane/Propylene	178	200	167	84	116
Other Oil	995	903	697	841	639
<b>Total Imports</b>	<b>10,050</b>	<b>10,546</b>	<b>10,037</b>	<b>10,186</b>	<b>10,025</b>

U.S. Imports by Product, Change from

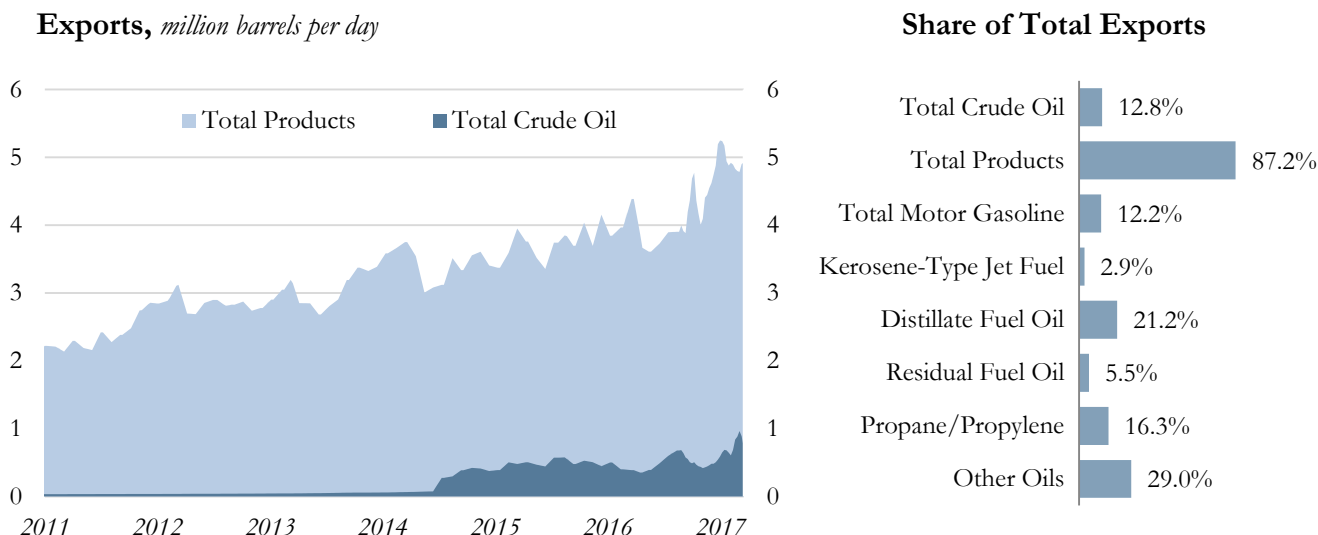
	Current Week	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>-5.9%</b>	<b>-0.7%</b>	<b>-2.8%</b>	<b>-3.0%</b>
<b>Total Products</b>	-	<b>0.0%</b>	<b>3.4%</b>	<b>4.3%</b>	<b>13.8%</b>
Total Motor Gasoline	-	-29.8%	-37.9%	-39.9%	-25.8%
Kerosene-Type Jet Fuel	-	15.9%	-37.3%	-13.8%	-32.5%
Distillate Fuel Oil	-	-13.2%	-5.5%	51.3%	-13.6%
Residual Fuel Oil	-	52.7%	43.6%	29.3%	32.1%
Propane/Propylene	-	-11.0%	6.6%	111.9%	53.4%
Other Oil	-	10.2%	42.8%	18.3%	55.7%
<b>Total Imports</b>	-	<b>-4.7%</b>	<b>0.1%</b>	<b>-1.3%</b>	<b>0.2%</b>

\*Totals may not sum due to component rounding

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

### March 2017 U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages



#### U.S. Exports by Product\*

Thousand barrels per day

	Current Week	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>721</b>	<b>838</b>	<b>504</b>	<b>551</b>	<b>387</b>
<b>Total Products</b>	<b>4,923</b>	<b>4,829</b>	<b>4,877</b>	<b>4,194</b>	<b>4,385</b>
Total Motor Gasoline	690	802	949	591	398
Kerosene-Type Jet Fuel	163	207	233	161	162
Distillate Fuel Oil	1,199	994	1,105	1,114	1,331
Residual Fuel Oil	311	341	252	238	364
Propane/Propylene	922	1,123	869	662	632
Other Oil	1,639	1,363	1,469	1,429	1,498
<b>Total Exports</b>	<b>5,645</b>	<b>5,667</b>	<b>5,381</b>	<b>4,745</b>	<b>4,772</b>

#### U.S. Exports by Product, Change from

	Current Week	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>-14.0%</b>	<b>43.1%</b>	<b>30.9%</b>	86.3%
<b>Total Products</b>	-	<b>1.9%</b>	<b>0.9%</b>	<b>17.4%</b>	<b>12.3%</b>
Total Motor Gasoline	-	<b>-14.0%</b>	<b>-27.3%</b>	16.8%	73.4%
Kerosene-Type Jet Fuel	-	<b>-21.3%</b>	<b>-30.0%</b>	1.2%	0.6%
Distillate Fuel Oil	-	20.6%	8.5%	7.6%	<b>-9.9%</b>
Residual Fuel Oil	-	<b>-8.8%</b>	23.4%	30.7%	<b>-14.6%</b>
Propane/Propylene	-	<b>-17.9%</b>	6.1%	39.3%	45.9%
Other Oil	-	20.2%	11.6%	14.7%	9.4%
<b>Total Exports</b>	-	<b>-0.4%</b>	<b>4.9%</b>	<b>19.0%</b>	<b>18.3%</b>

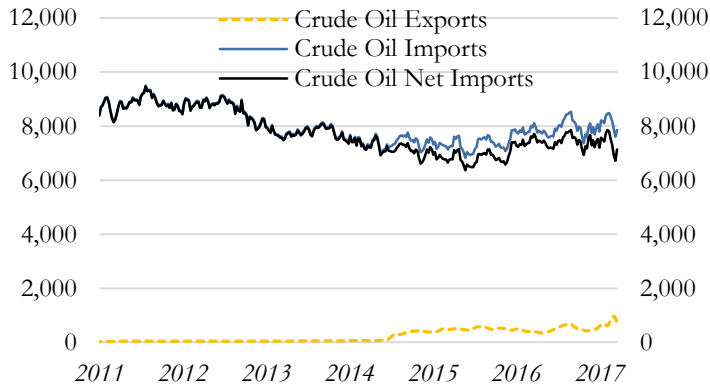
\*Totals may not sum due to rounding

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

### March 2017 U.S. Net Imports of Crude Oil & Petroleum Products

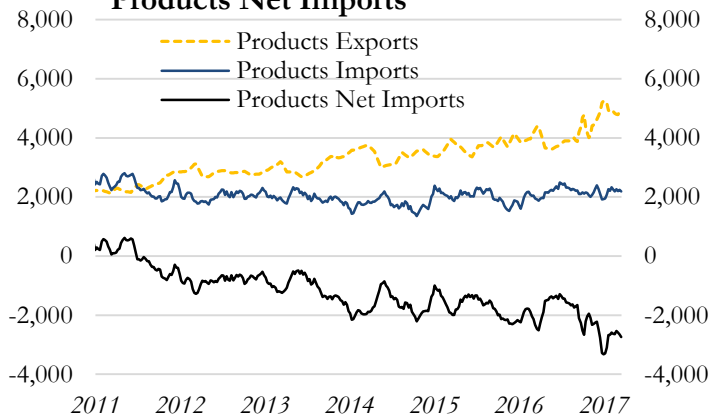
4-Week Averages, Thousand barrels per day

#### Crude Oil Net Imports



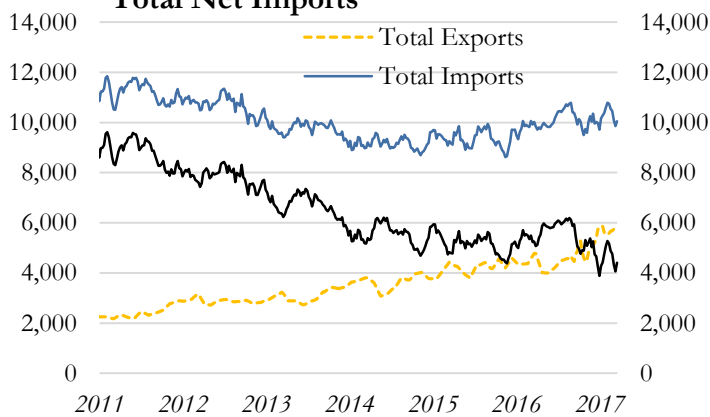
Crude Oil Net Imports		Change
Thousand barrels per day		from
3/17/17	7,142	
Month Ago	7,522	-5.1%
3 Months Ago	7,417	-3.7%
6 Months Ago	7,538	-5.3%
1 Year Ago	7,717	-7.5%

#### Products Net Imports



Products Net Imports		Change
Thousand barrels per day		from
3/17/17	-2,736	
Month Ago	-2,643	-
3 Months Ago	-2,761	-
6 Months Ago	-2,097	-
1 Year Ago	-2,465	-

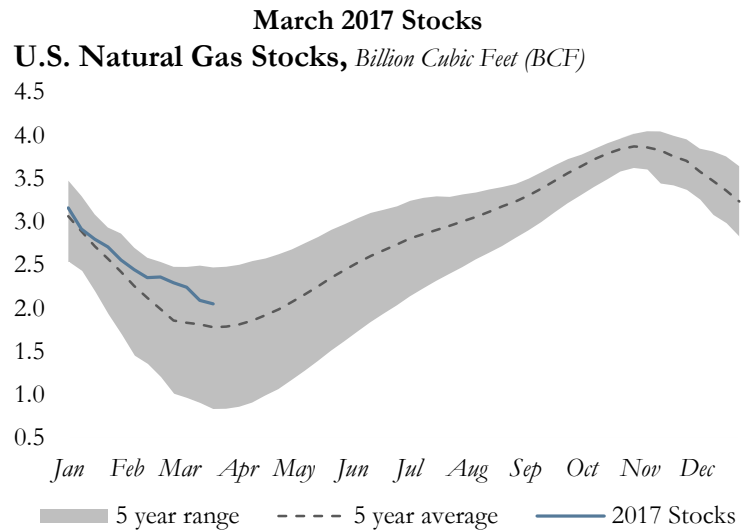
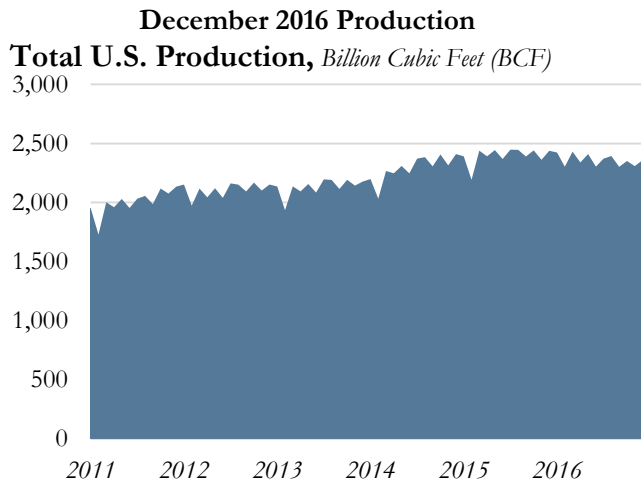
#### Total Net Imports



Total Net Imports		Change
Thousand barrels per day		from
3/17/17	4,405	
Month Ago	4,879	-9.7%
3 Months Ago	4,656	-5.4%
6 Months Ago	5,441	-19.0%
1 Year Ago	5,253	-16.1%

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

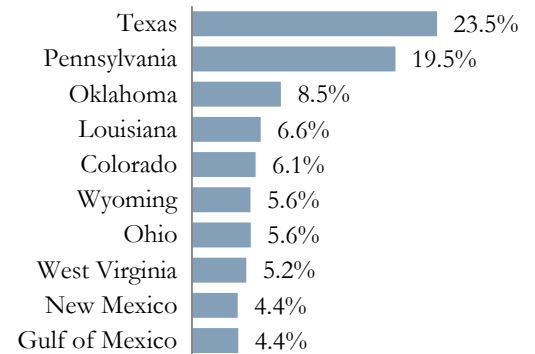
U.S. Natural Gas Production & Stocks



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	2,359	2,309	2,303	2,304	2,438
U.S. Stocks	2,049	2,363	3,360	3,600	2,468

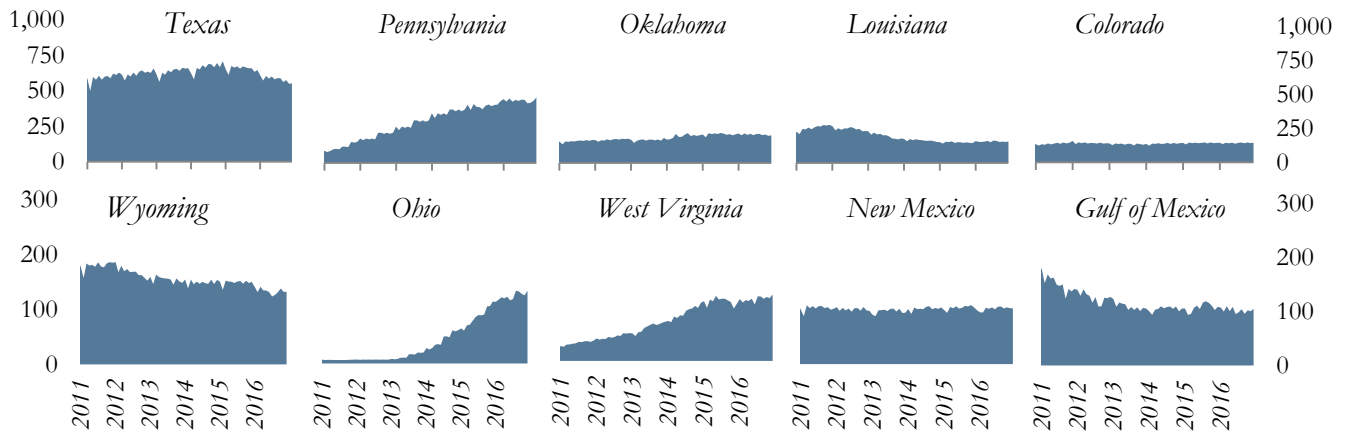
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	-2.1%	-2.4%	-2.3%	3.4%
U.S. Stocks	-	-13.3%	-39.0%	-43.1%	-17.0%

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.

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