

# THE U.S. Energy DATABOOK

*A summary of national and global energy indicators*



MAY 5, 2021

FEDERAL RESERVE BANK of KANSAS CITY

## SUMMARY OF CURRENT ENERGY CONDITIONS

Since the last edition of the U.S. energy databook, the energy sector continued to stabilize. With improvements in the global pandemic and improved economic activity, energy demand, oil prices, and production are showing signs of recovery. In March, the number of total active drilling rigs in the United States rose 2.3 percent from a month ago, and is up 14.6 percent from three months ago. Although U.S. crude oil production was showing signs of recovery in the early portion of this year, February crude production fell 11 percent from January, due to disruption from the polar vortex. U.S. crude production remains 23 percent below last year's levels. For the week ending April 30th, West Texas Intermediate (WTI) crude oil averaged \$63.47 per barrel and North Sea Brent averaged \$66.96 per barrel, rising 4.6 percent and 5.1 percent in the last month, respectively. The Henry Hub natural gas spot price averaged \$2.88 per million Btu for the week ending April 30th, increasing 13.3 percent in the last month. U.S. crude oil and petroleum products exports grew 8.3 percent in the last month and imports rose by 4.7 percent. Global demand for petroleum was roughly flat in the first quarter of 2021 and global petroleum production rose 0.83 percent in April 2021.

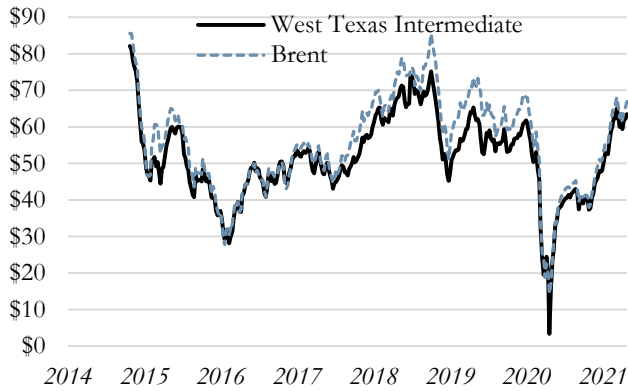
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S.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



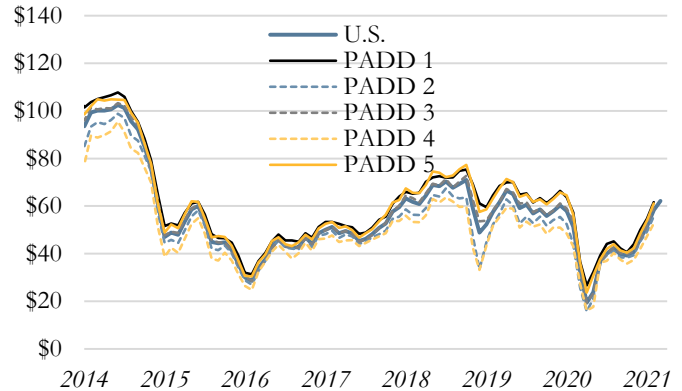
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through April 30, 2021

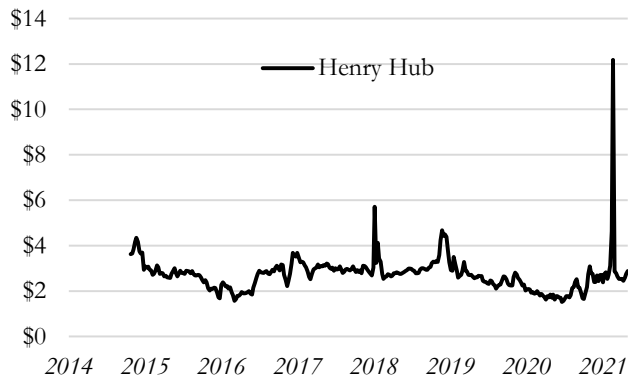
Weekly Oil Spot Prices, per barrel



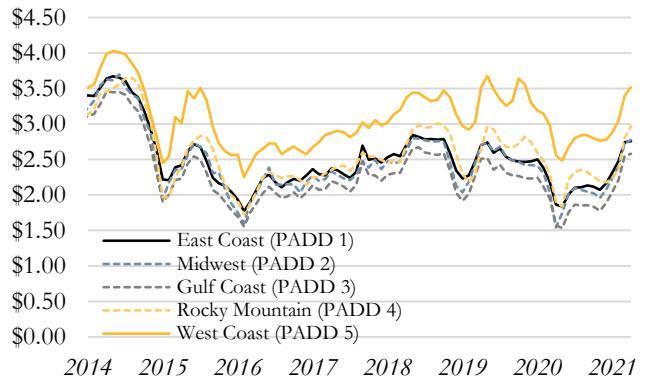
Refiner Acquisition Cost of Oil\*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Monthly Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

	Current	1 Week	1 Month	3 months	6 Months	1 Year
Weekly Spot Prices	4/30/21	Ago	Ago	Ago	Ago	Ago
West Texas Intermediate	\$63.47	\$1.29	\$2.81	\$10.95	\$26.15	\$47.76
Brent	\$66.96	\$1.62	\$3.28	\$11.78	\$29.05	\$49.91
Henry Hub	\$2.88	\$0.12	\$0.34	\$0.17	-\$0.21	\$1.17

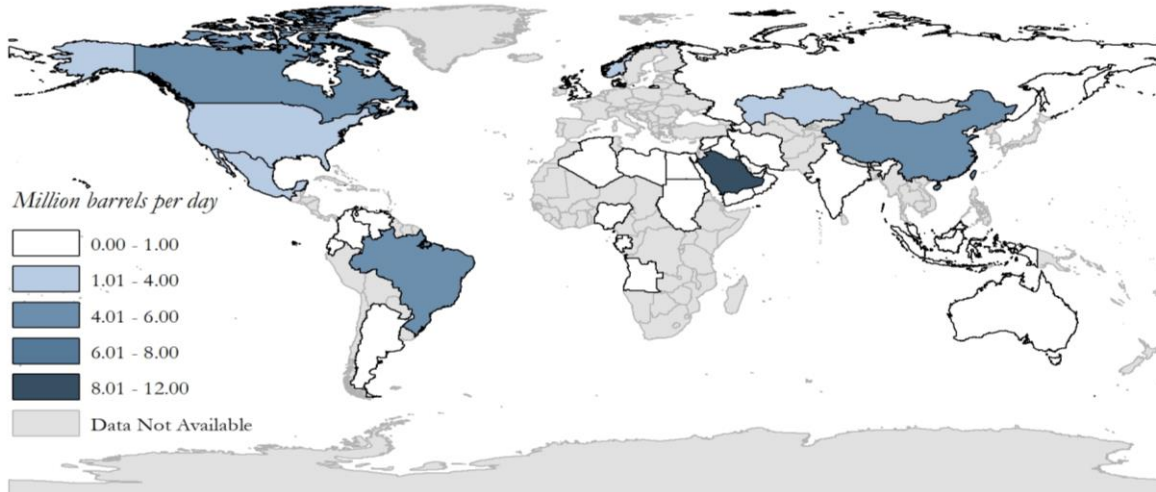
Monthly Gasoline Spot Prices, Change from

	Current	1 Month	3 months	6 Months	1 Year
Geographic Area	Apr-21	Ago	Ago	Ago	Ago
East Coast (PADD 1)	\$2.76	\$0.01	\$0.45	\$0.64	\$0.89
Midwest (PADD 2)	\$2.78	\$0.05	\$0.55	\$0.75	\$1.23
Gulf Coast (PADD 3)	\$2.58	\$0.03	\$0.54	\$0.75	\$1.01
Rocky Mountain (PADD 4)	\$2.97	\$0.17	\$0.74	\$0.71	\$1.07
West Coast (PADD 5)	\$3.52	\$0.12	\$0.64	\$0.72	\$0.96

\*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

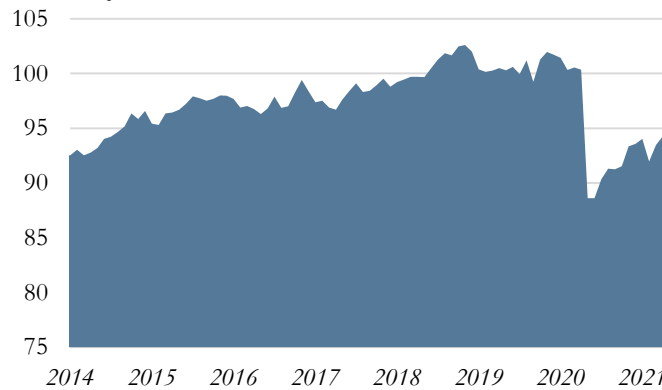
April 2021 Global Petroleum Production



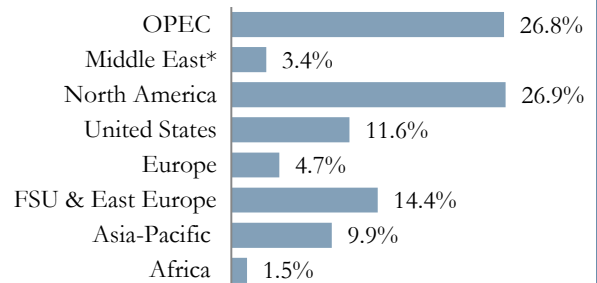
Source: Energy Information Administration/Haver Analytics

April 2021

Monthly Global Petroleum Production, million barrels per day

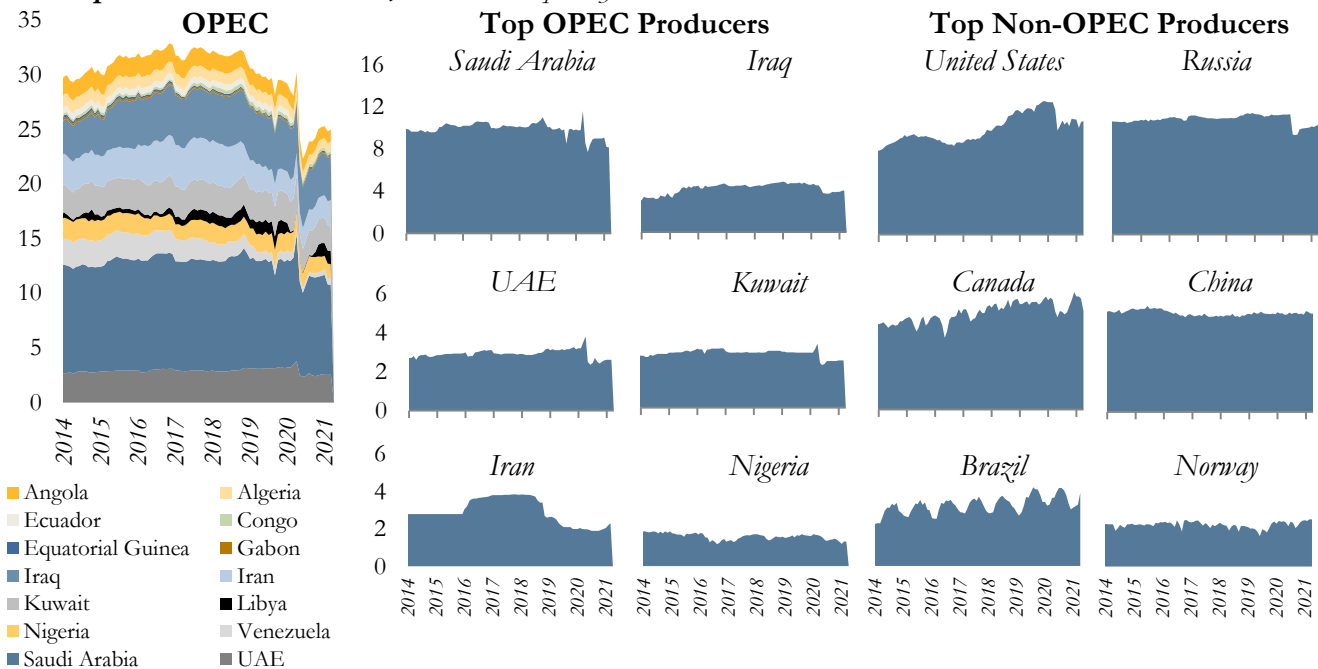


Regional Share of Production



\*Excludes OPEC

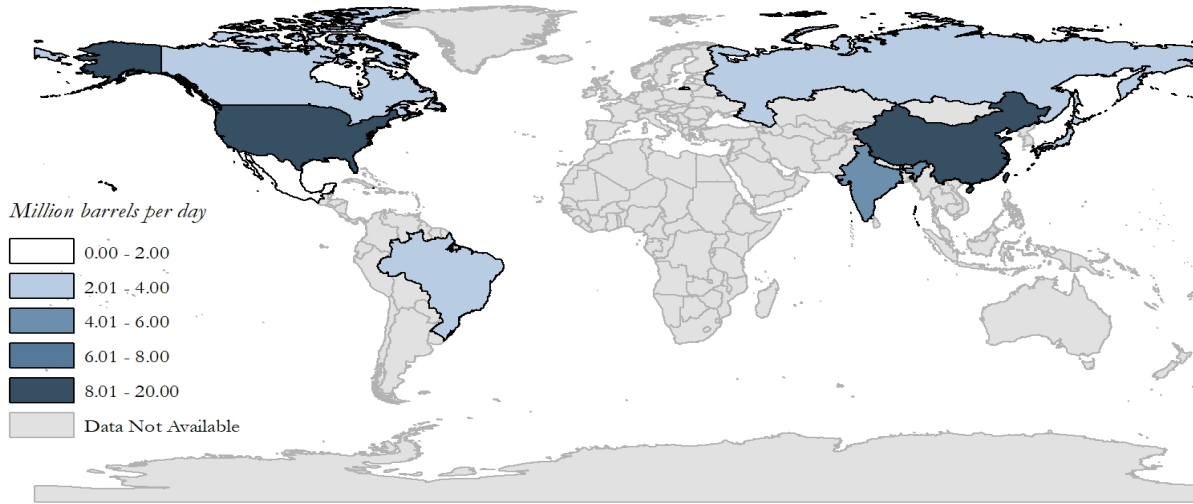
Top Crude Oil Producers, million barrels per day



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

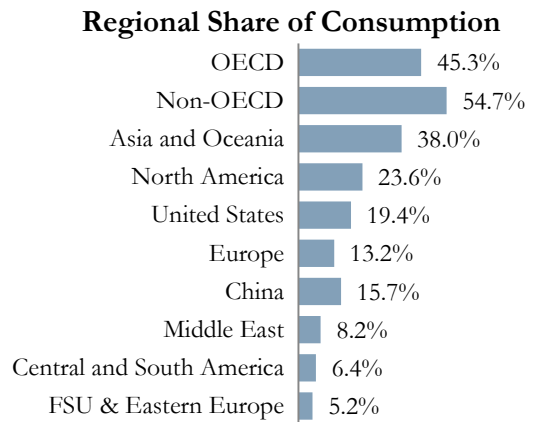
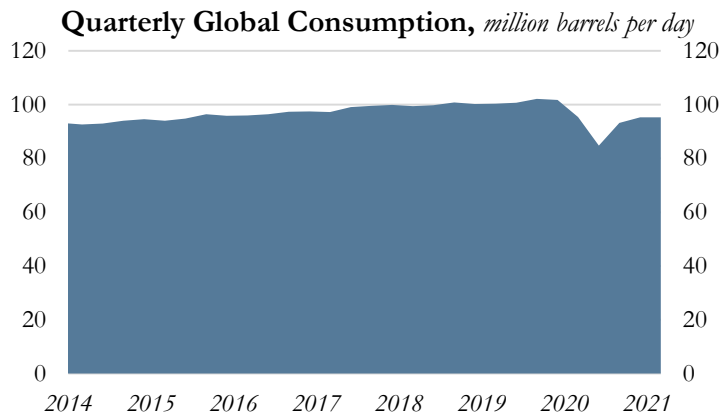
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

First Quarter 2021 Global Petroleum Consumption

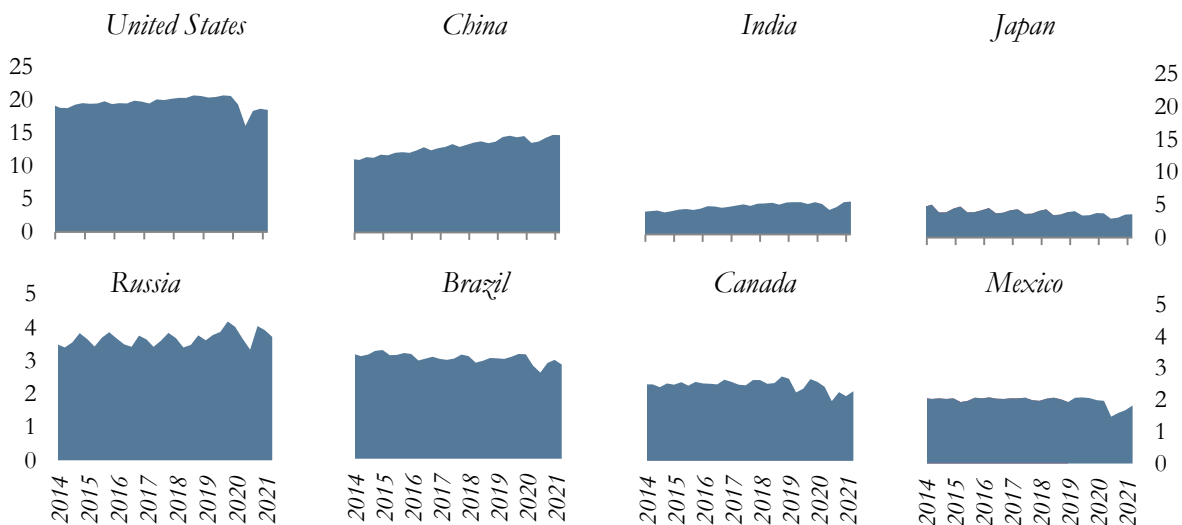


Source: Energy Information Administration/Haver Analytics

First Quarter 2021

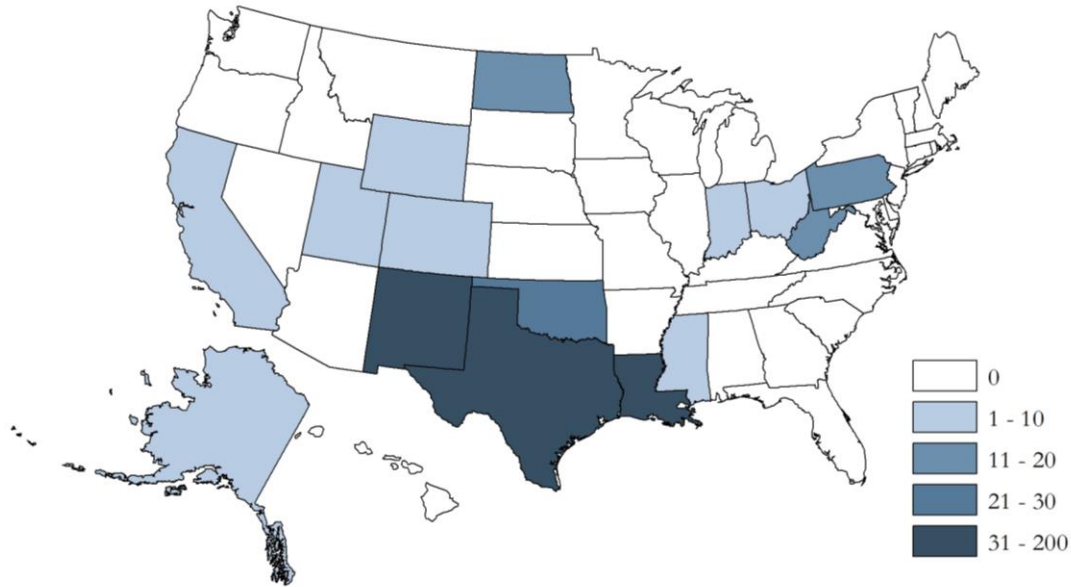


Top Petroleum Consumers, million barrels per day



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

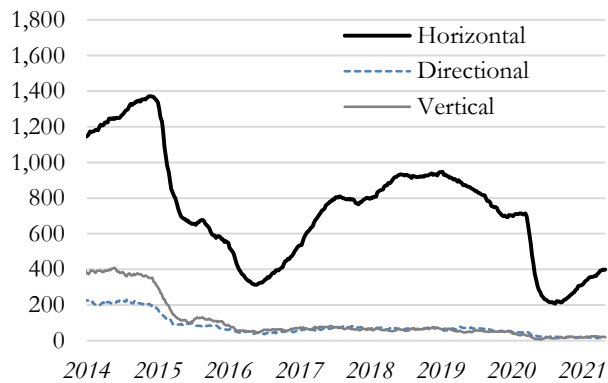
April 2021 Weekly Active Oil & Gas Drilling Rig Counts



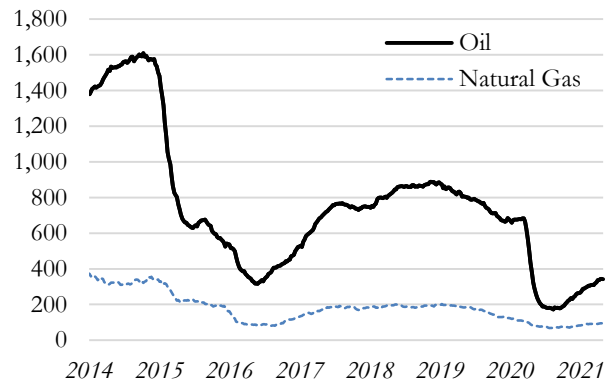
Source: Baker Hughes/Haver Analytics

April 30, 2021

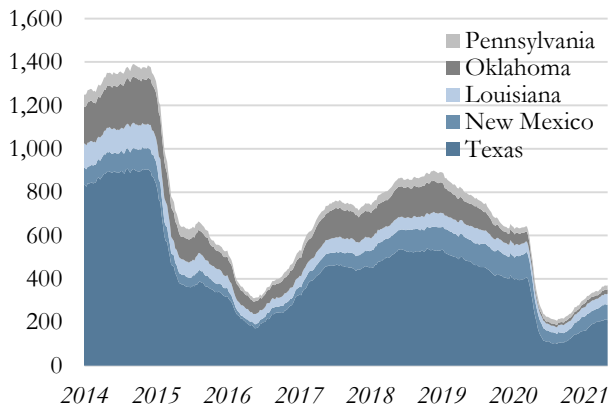
U.S. Active Drilling Rigs by Trajectory



U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

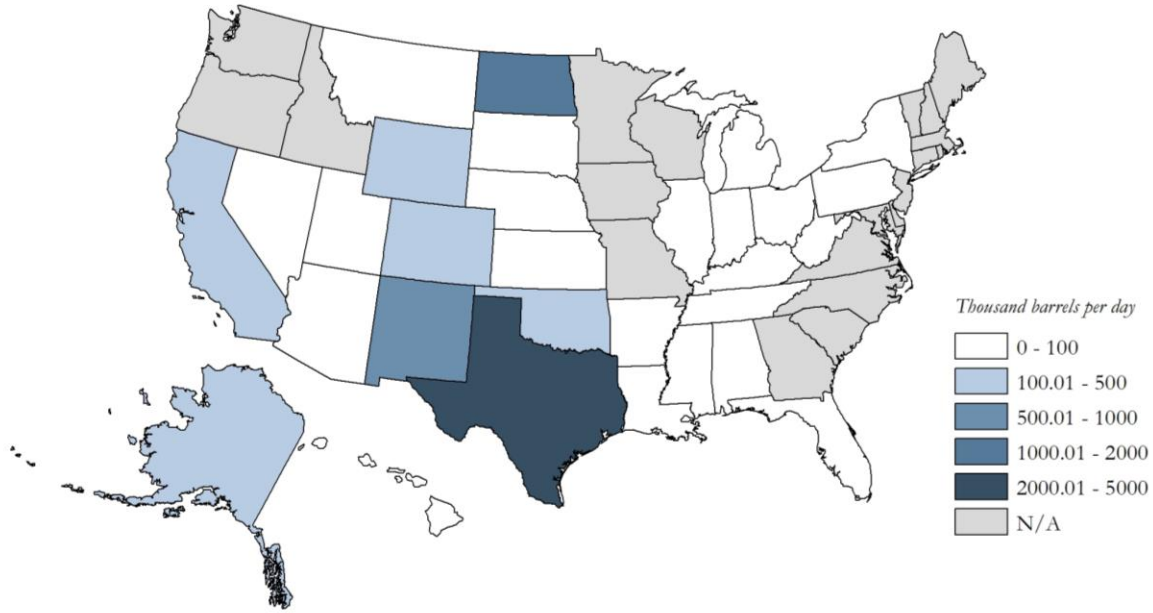
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	342	337	295	325
Gas	96	91	88	81
Misc	2	2	1	2
<b>Total</b>	<b>440</b>	<b>430</b>	<b>384</b>	<b>408</b>

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	1.5%	15.9%	5.2%
Gas	-	5.5%	9.1%	18.5%
Misc	-	0.0%	100.0%	0.0%
<b>Total</b>	-	<b>2.3%</b>	<b>14.6%</b>	<b>7.8%</b>

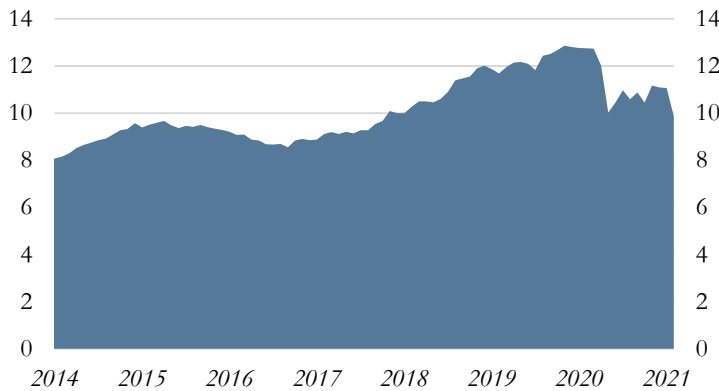
Source: Baker Hughes/Haver Analytics

February 2021 U.S. Crude Oil Production



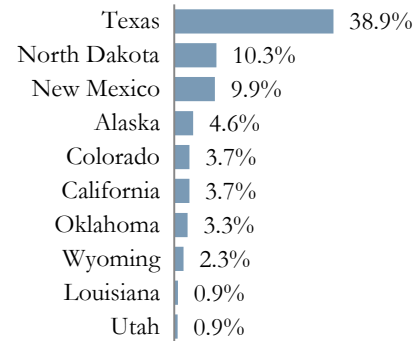
Source: Energy Information Administration/Haver Analytics

Monthly U.S. Production, million barrels per day

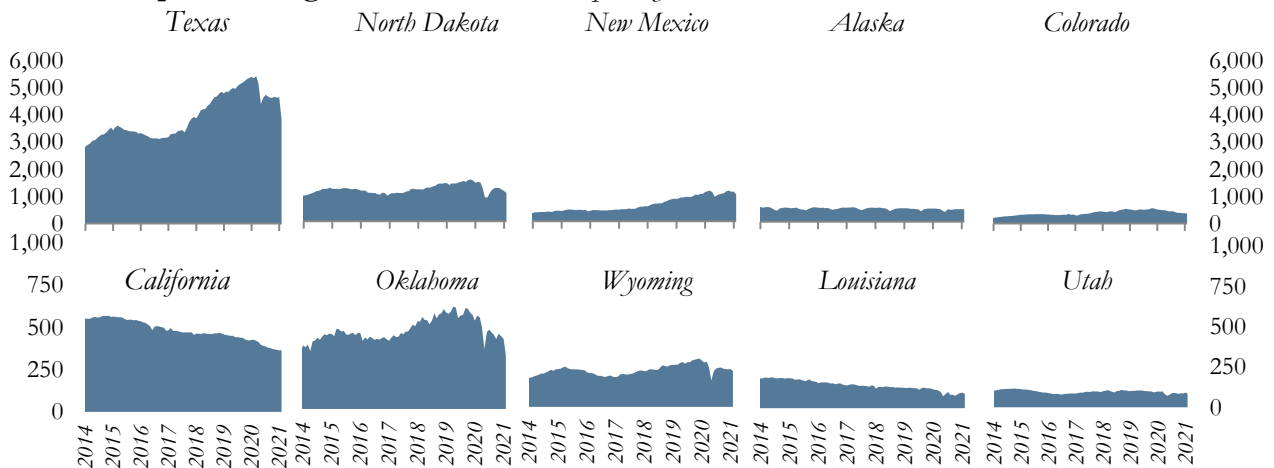


February 2021

Share of Production



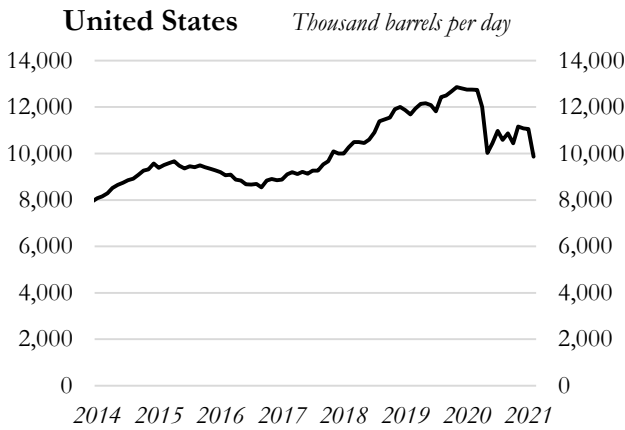
Top Producing States, thousand barrels per day



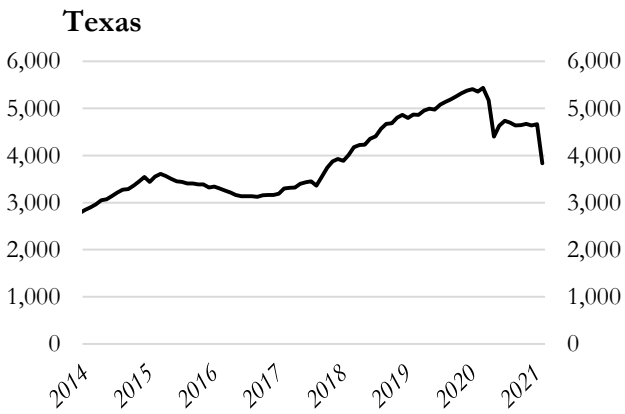
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics



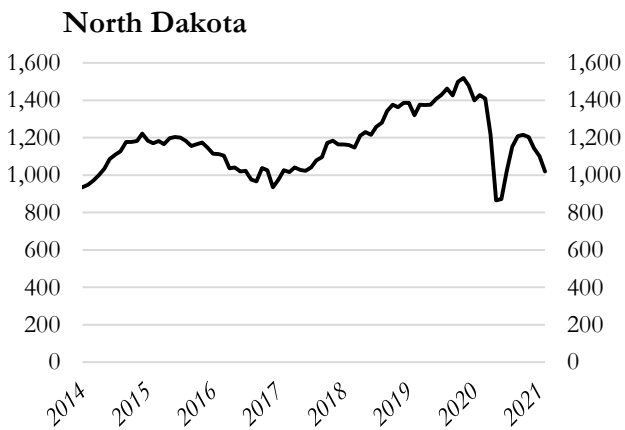
Data through February 2021



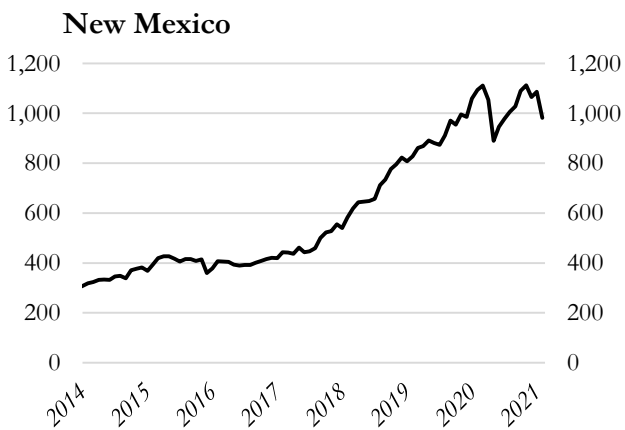
United States		Change from
Thousand barrels per day		
Feb-21	9,862	
Month Ago	11,059	-10.8%
3 Months Ago	11,168	-11.7%
6 Months Ago	10,584	-6.8%
1 Year Ago	12,746	-22.6%



Texas		Change from
Thousand barrels per day		
Feb-21	3,832	
Month Ago	4,668	-17.9%
3 Months Ago	4,671	-18.0%
6 Months Ago	4,696	-18.4%
1 Year Ago	5,359	-28.5%
Share of U.S. Production		38.9%



North Dakota		Change from
Thousand barrels per day		
Feb-21	1,019	
Month Ago	1,101	-7.4%
3 Months Ago	1,204	-15.4%
6 Months Ago	1,152	-11.5%
1 Year Ago	1,427	-28.6%
Share of U.S. Production		10.3%

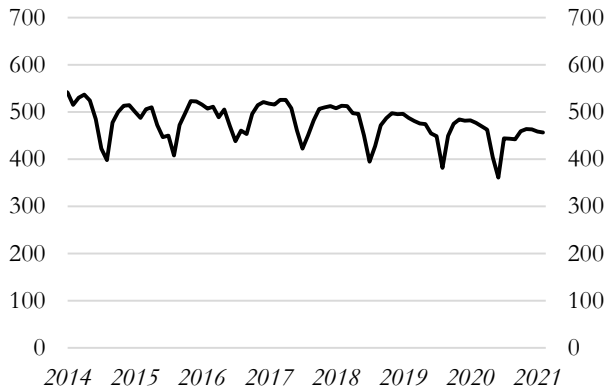


New Mexico		Change from
Thousand barrels per day		
Feb-21	981	
Month Ago	1,086	-9.6%
3 Months Ago	1,112	-11.8%
6 Months Ago	1,005	-2.4%
1 Year Ago	1,094	-10.3%
Share of U.S. Production		9.9%

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

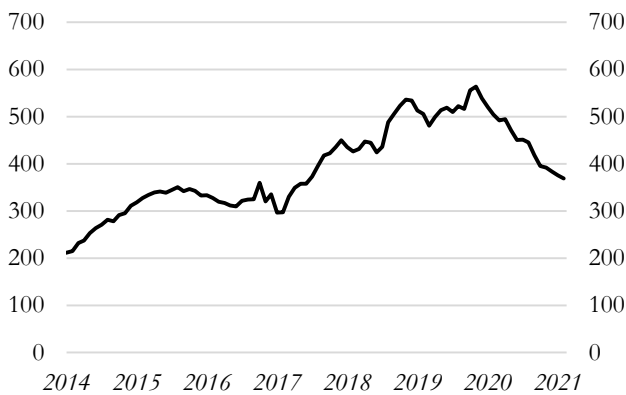
Data through February 2021

**Alaska** *Thousand barrels per day*



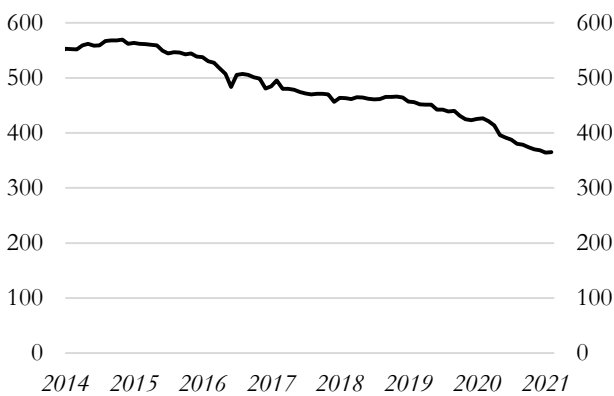
	<b>Alaska</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-21	457	
Month Ago	458	-0.4%
3 Months Ago	464	-1.6%
6 Months Ago	444	2.9%
1 Year Ago	477	-4.2%
Share of U.S. Production	4.6%	

**Colorado**



	<b>Colorado</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-21	369	
Month Ago	376	-1.7%
3 Months Ago	392	-5.9%
6 Months Ago	445	-17.1%
1 Year Ago	504	-26.8%
Share of U.S. Production	3.7%	

**California**



	<b>California</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-21	365	
Month Ago	364	0.2%
3 Months Ago	370	-1.4%
6 Months Ago	380	-4.0%
1 Year Ago	427	-14.4%
Share of U.S. Production	3.7%	

**Oklahoma**



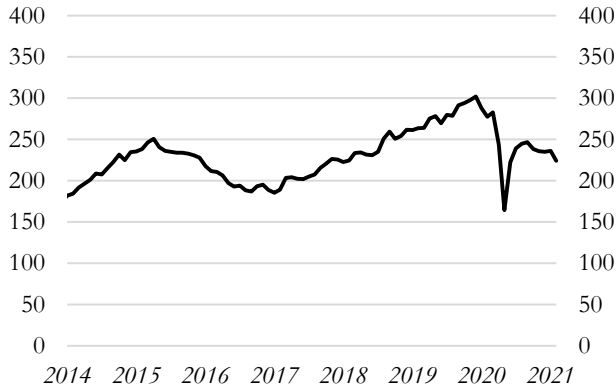
	<b>Oklahoma</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-21	321	
Month Ago	419	-23.3%
3 Months Ago	452	-28.9%
6 Months Ago	459	-30.1%
1 Year Ago	559	-42.5%
Share of U.S. Production	3.3%	

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



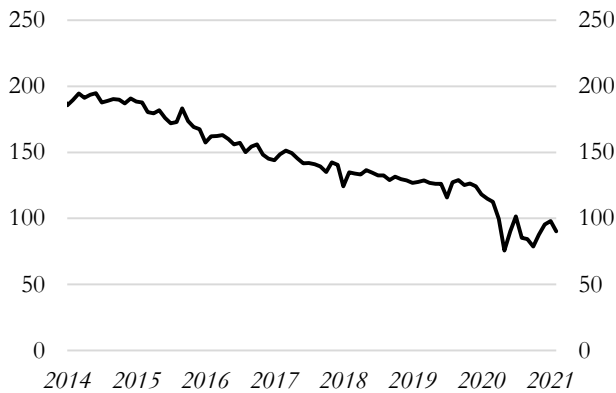
Data through February 2021

**Wyoming** *Thousand barrels per day*



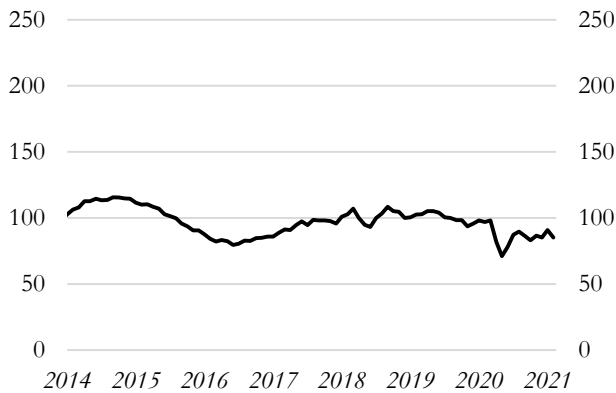
<b>Wyoming</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-21	224	
Month Ago	236	-5.1%
3 Months Ago	236	-4.9%
6 Months Ago	245	-8.4%
1 Year Ago	277	-19.1%
Share of U.S. Production		2.3%

**Louisiana**



<b>Louisiana</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-21	90	
Month Ago	98	-7.8%
3 Months Ago	88	3.0%
6 Months Ago	85	5.8%
1 Year Ago	115	-21.4%
Share of U.S. Production		0.9%

**Utah**

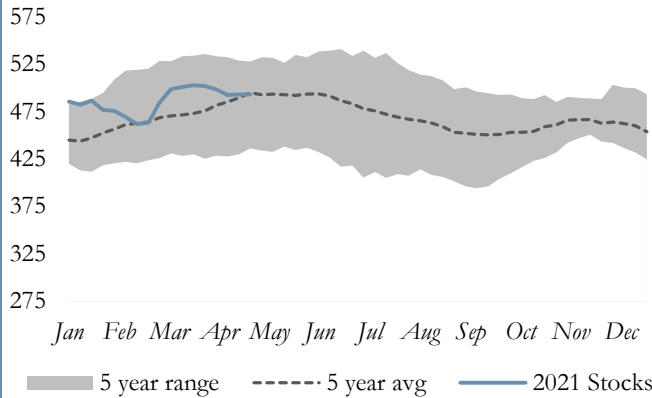


<b>Utah</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-21	85	
Month Ago	91	-6.3%
3 Months Ago	87	-1.6%
6 Months Ago	90	-5.0%
1 Year Ago	97	-12.1%
Share of U.S. Production		0.9%

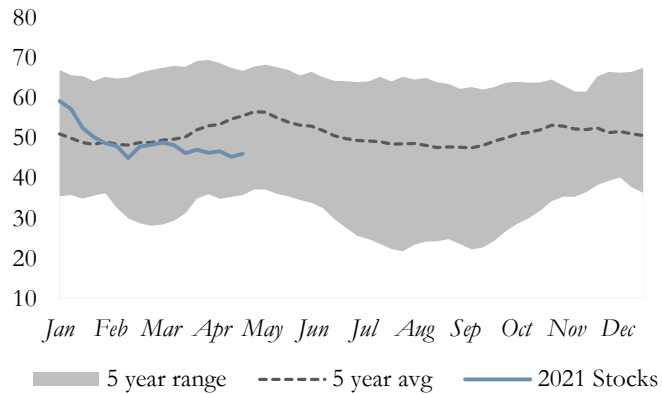
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

January 2021 Weekly U.S. Crude Oil Stocks

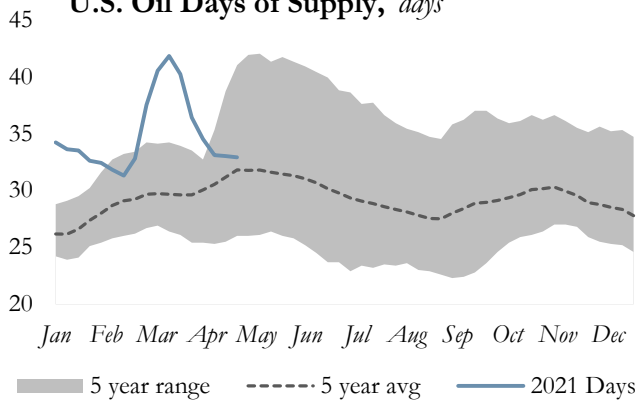
U.S. Oil Stocks, million barrels\*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



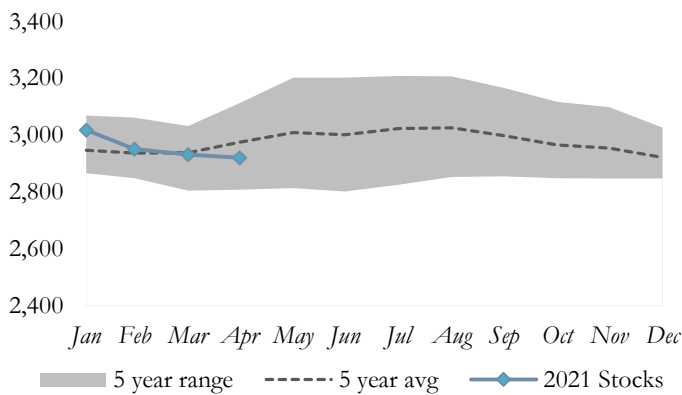
Crude Oil Stocks

	1 Week Change from Ago	1 Year Change from Ago
U.S.	0.0%	-6.5%
Cushing, OK	1.6%	-27.3%
Days of Supply	-0.3%	-19.8%
East Coast (PADD 1)	20.4%	-14.9%
Midwest (PADD 2)	2.1%	-14.9%
Gulf Coast (PADD 3)	-1.8%	-0.1%
Rocky Mountain (PADD 4)	3.1%	1.9%
West Coast (PADD 5)	0.3%	-17.4%

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

January 2021 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



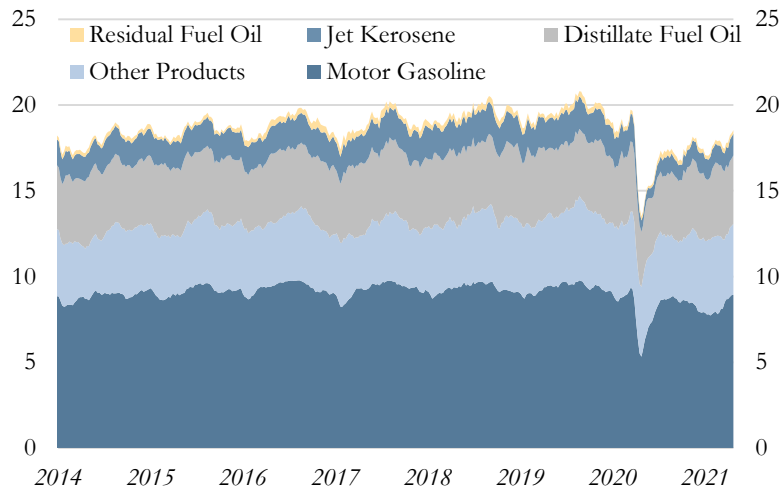
Petroleum Stocks

	Million Barrels	Change from
Current Month	2,920	
1 Month Ago	2,932	-0.4%
3 Months Ago	3,018	-3.2%
6 Months Ago	3,116	-6.3%
1 Year Ago	3,112	-6.2%

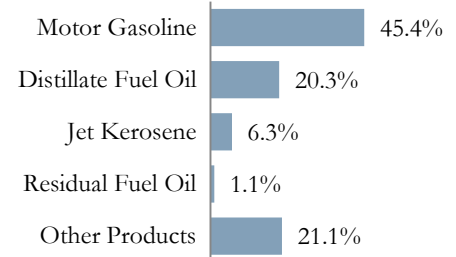
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

**April 2021 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> 4/23/21	<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	19,680	19,155	18,996	18,891	14,525
Motor Gasoline	8,926	8,669	7,729	8,576	5,329
Distillate Fuel Oil	3,994	4,055	3,668	3,968	3,214
Jet Kerosene	1,245	1,064	1,178	1,017	658
Residual Fuel Oil	219	232	198	263	235
Other Products	4,146	3,778	4,404	3,834	4,065

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

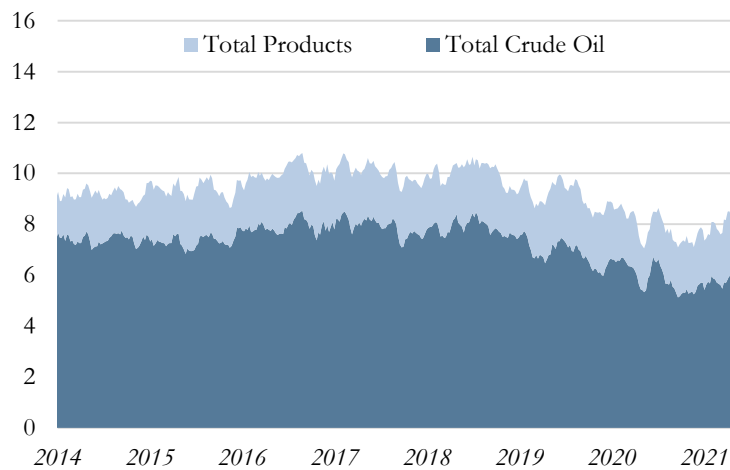
	<i>Current</i> 4/23/21	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	-	2.7%	3.6%	4.2%	35.5%
Motor Gasoline	-	3.0%	15.5%	4.1%	67.5%
Distillate Fuel Oil	-	-1.5%	8.9%	0.7%	24.3%
Jet Kerosene	-	17.0%	5.7%	22.4%	89.2%
Residual Fuel Oil	-	-5.6%	10.6%	-16.7%	-6.8%
Other Products	-	9.7%	-5.9%	8.1%	2.0%

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

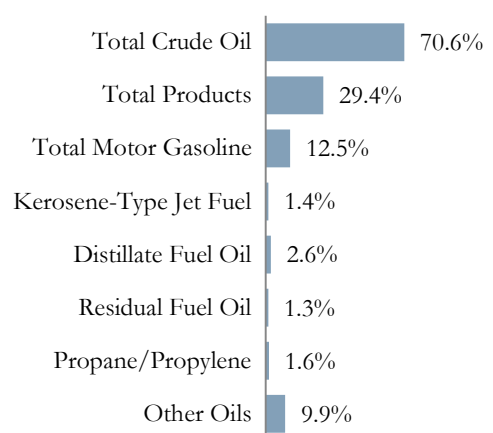
April 2021 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product\*

Thousand barrels per day

	Current 4/23/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>6,034</b>	<b>5,686</b>	<b>5,679</b>	<b>5,450</b>	<b>5,448</b>
<b>Total Products</b>	<b>2,507</b>	<b>2,474</b>	<b>1,901</b>	<b>2,086</b>	<b>1,802</b>
Total Motor Gasoline	1,069	761	449	554	373
Kerosene-Type Jet Fuel	122	113	159	200	152
Distillate Fuel Oil	221	525	396	221	210
Residual Fuel Oil	112	169	142	181	184
Propane/Propylene	138	181	162	112	101
Other Oils	846	724	593	810	783
<b>Total Imports</b>	<b>8,541</b>	<b>8,160</b>	<b>7,580</b>	<b>7,536</b>	<b>7,250</b>

U.S. Imports by Product, Change from

	Current 4/23/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>6.1%</b>	<b>6.3%</b>	<b>10.7%</b>	10.8%
<b>Total Products</b>	-	<b>1.3%</b>	<b>31.9%</b>	<b>20.2%</b>	<b>39.1%</b>
Total Motor Gasoline	-	40.5%	138.1%	93.0%	186.6%
Kerosene-Type Jet Fuel	-	8.0%	-23.3%	-39.0%	-19.7%
Distillate Fuel Oil	-	-57.9%	-44.2%	0.0%	5.2%
Residual Fuel Oil	-	-33.7%	-21.1%	-38.1%	-39.1%
Propane/Propylene	-	-23.8%	-14.8%	23.2%	36.6%
Other Oils	-	16.9%	42.7%	4.4%	8.0%
<b>Total Imports</b>	-	<b>4.7%</b>	<b>12.7%</b>	<b>13.3%</b>	<b>17.8%</b>

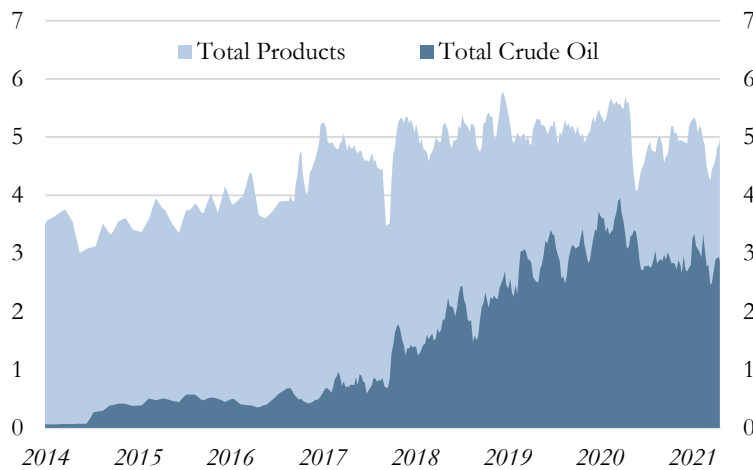
\*Totals may not sum due to component rounding

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

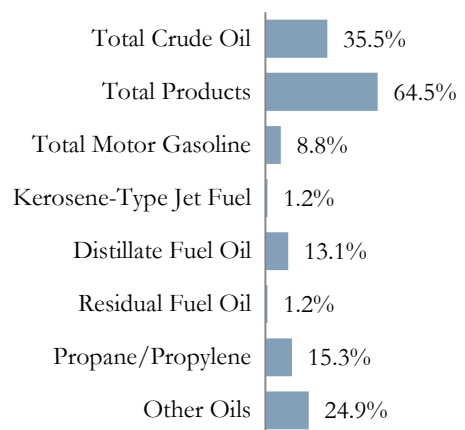
**April 2021 Weekly U.S. Exports of Crude Oil & Petroleum Products**

*4-Week Averages*

**Exports, million barrels per day**



**Share of Total Exports**



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

*Thousand barrels per day*

	<i>Current</i> 4/23/21	<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>
<b>Total Crude Oil</b>	<b>2,776</b>	<b>2,702</b>	<b>3,062</b>	<b>2,823</b>	<b>3,115</b>
<b>Total Products</b>	<b>5,035</b>	<b>4,510</b>	<b>5,065</b>	<b>5,061</b>	<b>5,597</b>
<i>Total Motor Gasoline</i>	684	558	754	714	804
<i>Kerosene-Type Jet Fuel</i>	97	55	55	56	152
<i>Distillate Fuel Oil</i>	1,023	749	964	1,109	1,266
<i>Residual Fuel Oil</i>	96	121	90	109	99
<i>Propane/Propylene</i>	1,192	1,149	1,291	1,198	1,199
<i>Other Oils</i>	1,945	1,879	1,911	1,876	2,078
<b>Total Exports</b>	<b>7,811</b>	<b>7,212</b>	<b>8,127</b>	<b>7,884</b>	<b>8,712</b>

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

	<i>Current</i> 4/23/21	<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>
<b>Total Crude Oil</b>	-	<b>2.7%</b>	<b>-9.3%</b>	<b>-1.7%</b>	-10.9%
<b>Total Products</b>	-	<b>11.6%</b>	<b>-0.6%</b>	<b>-0.5%</b>	<b>-10.0%</b>
<i>Total Motor Gasoline</i>	-	22.6%	-9.3%	-4.2%	-14.9%
<i>Kerosene-Type Jet Fuel</i>	-	76.4%	76.4%	73.2%	-36.2%
<i>Distillate Fuel Oil</i>	-	36.6%	6.1%	-7.8%	-19.2%
<i>Residual Fuel Oil</i>	-	-20.7%	6.7%	-11.9%	-3.0%
<i>Propane/Propylene</i>	-	3.7%	-7.7%	-0.5%	-0.6%
<i>Other Oils</i>	-	3.5%	1.8%	3.7%	-6.4%
<b>Total Exports</b>	-	<b>8.3%</b>	<b>-3.9%</b>	<b>-0.9%</b>	<b>-10.3%</b>

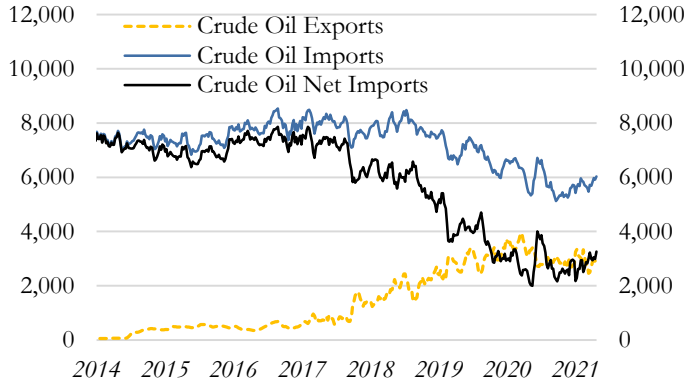
\*Totals may not sum due to rounding

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

**April 2021 Weekly U.S. Net Imports of Crude Oil & Petroleum Products**

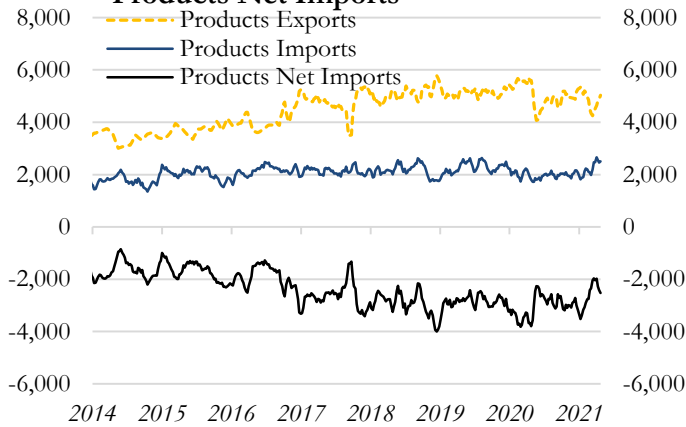
*4-Week Averages, Thousand barrels per day*

**Crude Oil Net Imports**



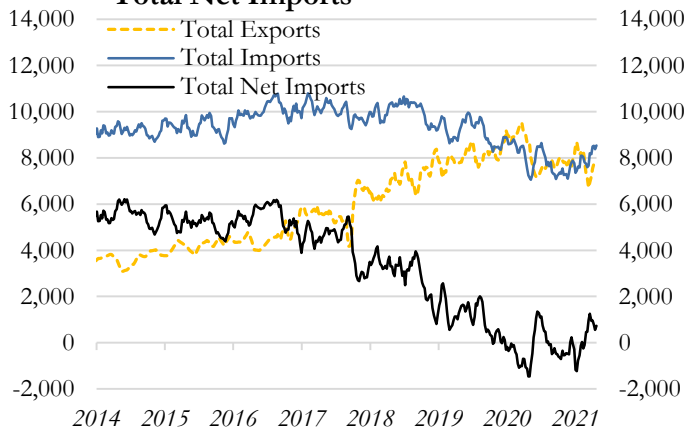
<b>Crude Oil Net Imports</b>		<i>Change</i>
<i>Thousand barrels per day</i>		<i>from</i>
4/23/21	3,259	
Month Ago	2,984	9.2%
3 Months Ago	2,617	24.5%
6 Months Ago	2,627	24.1%
1 Year Ago	2,333	39.7%

**Products Net Imports**



<b>Products Net Imports</b>		<i>Change</i>
<i>Thousand barrels per day</i>		<i>from</i>
4/23/21	-2,528	
Month Ago	-2,036	-
3 Months Ago	-3,164	-
6 Months Ago	-2,975	-
1 Year Ago	-3,795	-

**Total Net Imports**

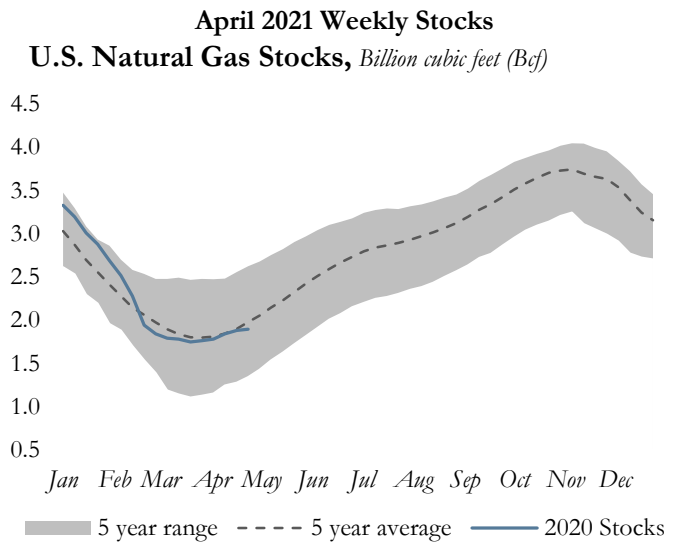
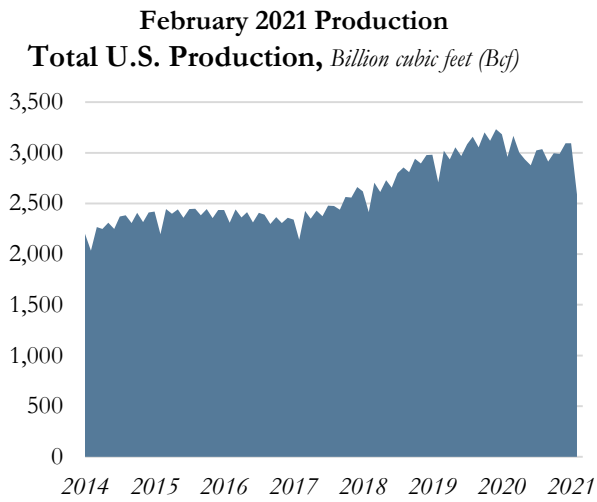


<b>Total Net Imports</b>		<i>Change</i>
<i>Thousand barrels per day</i>		<i>from</i>
4/23/21	731	
Month Ago	948	-
3 Months Ago	(547)	-
6 Months Ago	(347)	-
1 Year Ago	(1,462)	-

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



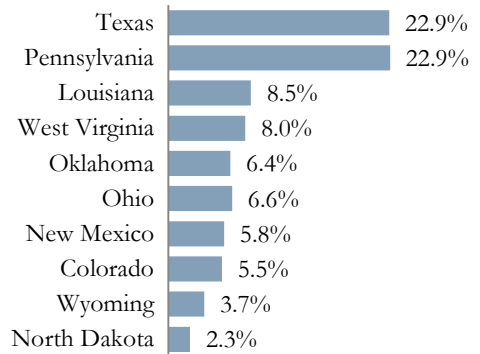
### U.S. Natural Gas Production & Stocks



#### 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	2,588	3,093	2,990	3,037	3,002
U.S. Stocks	1,898	1,764	2,881	3,955	2,210

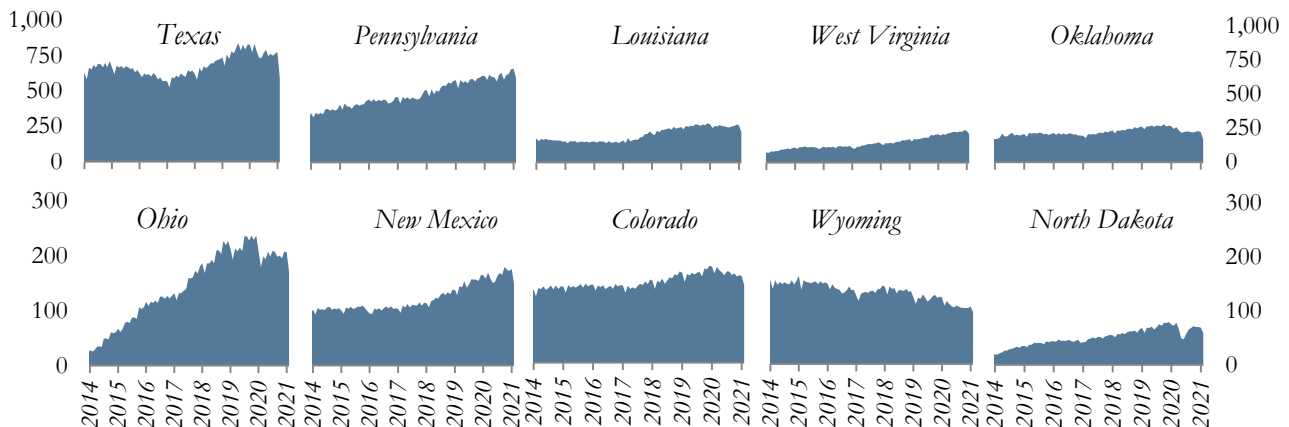
#### Share of Production



#### U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	-16.3%	-13.4%	-14.8%	-13.8%
U.S. Stocks	-	7.6%	-34.1%	-52.0%	-14.1%

#### 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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