

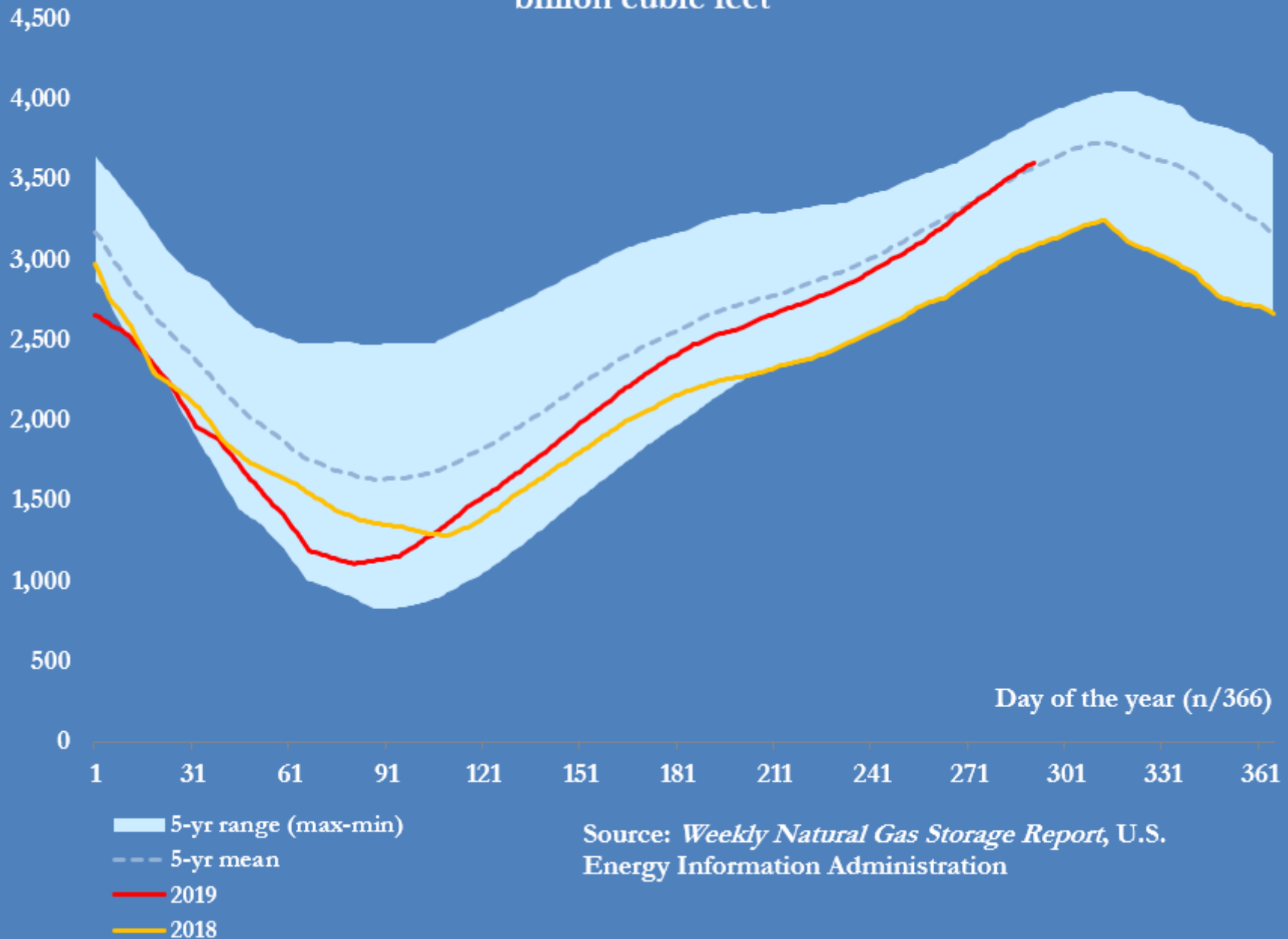
U.S. natural gas

Selected indicators

JOHN KEMP
REUTERS

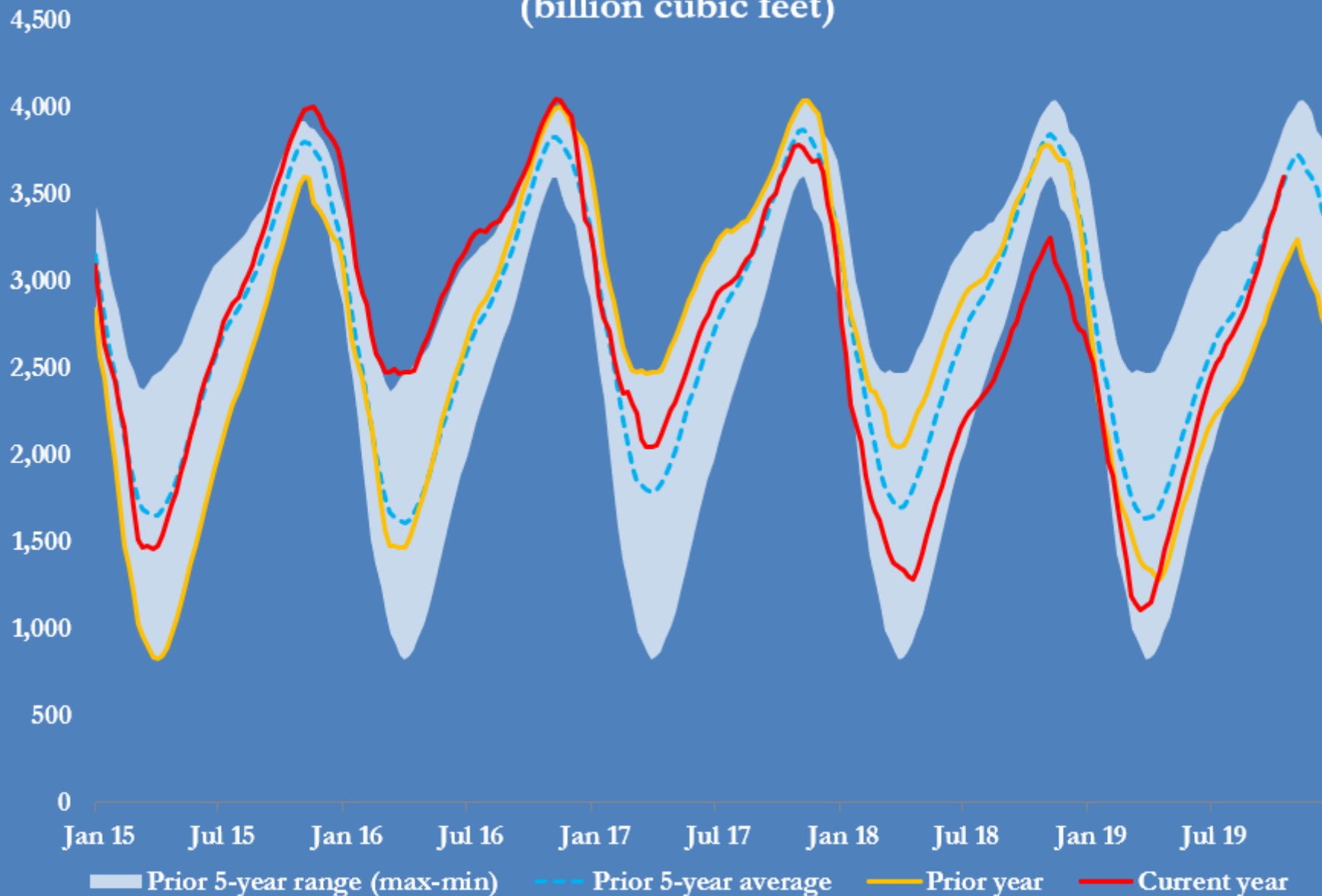
29 October 2019

U.S. working gas stocks in underground storage billion cubic feet



Source: *Weekly Natural Gas Storage Report*, U.S. Energy Information Administration

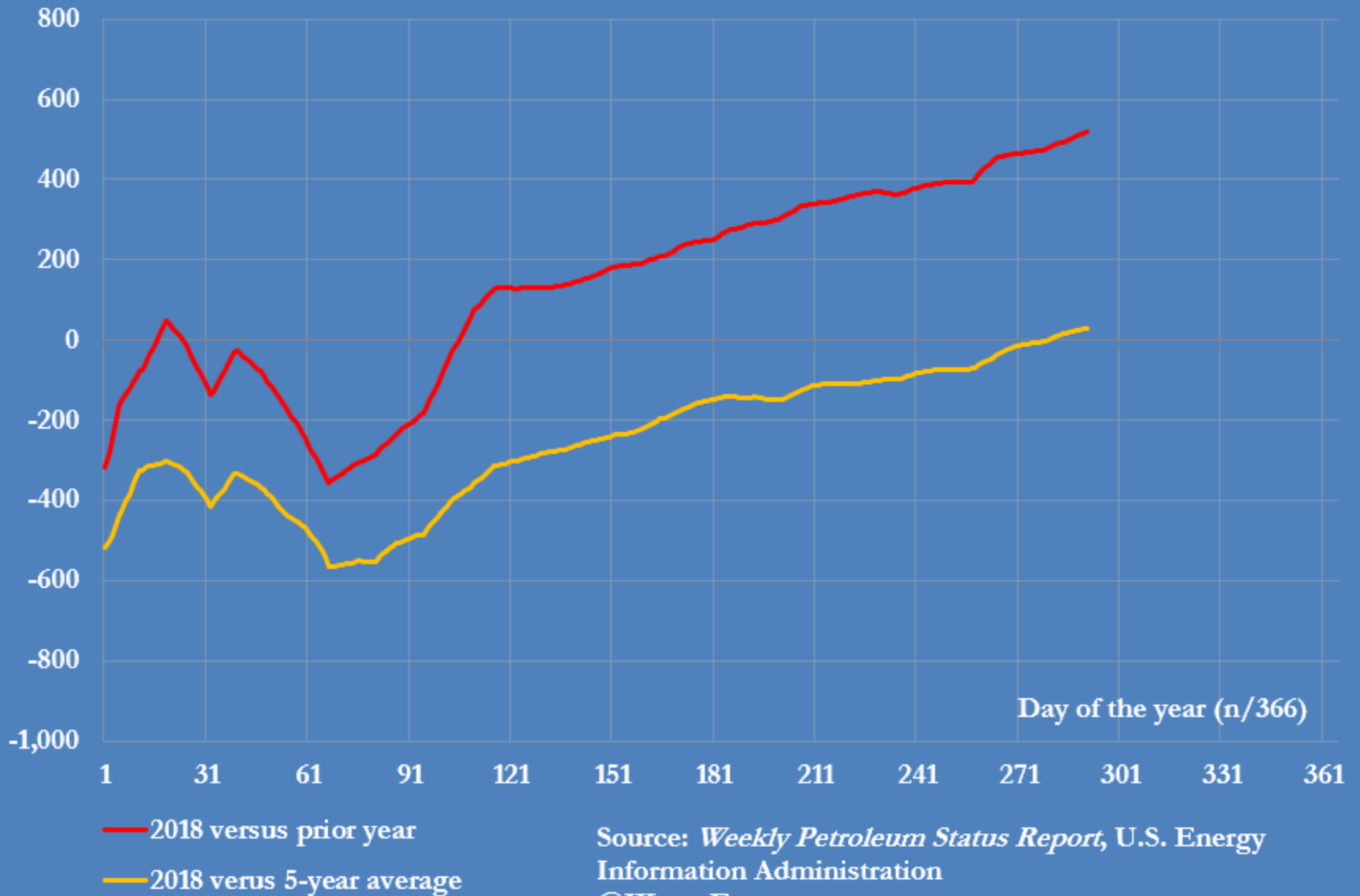
U.S. working gas stocks in underground storage (billion cubic feet)



Source: U.S. Energy Information Administration

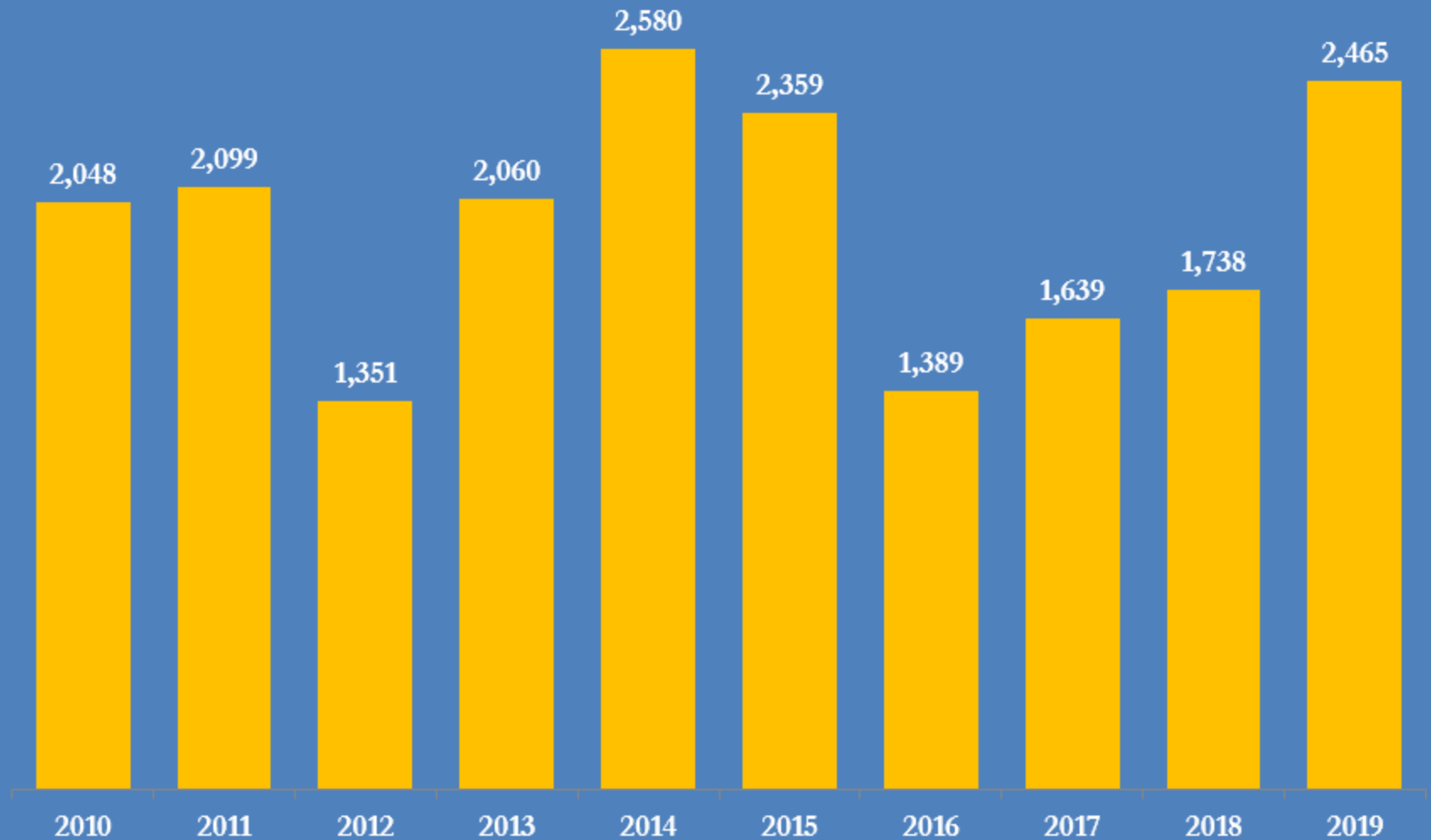
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U.S. working gas stocks in underground storage (L48) change versus same point in 2018 and 5-year average (bcf)



Source: *Weekly Petroleum Status Report*, U.S. Energy Information Administration
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Increase in U.S. natural gas stocks between April 1 and Oct 18 each year between 2010 and 2019

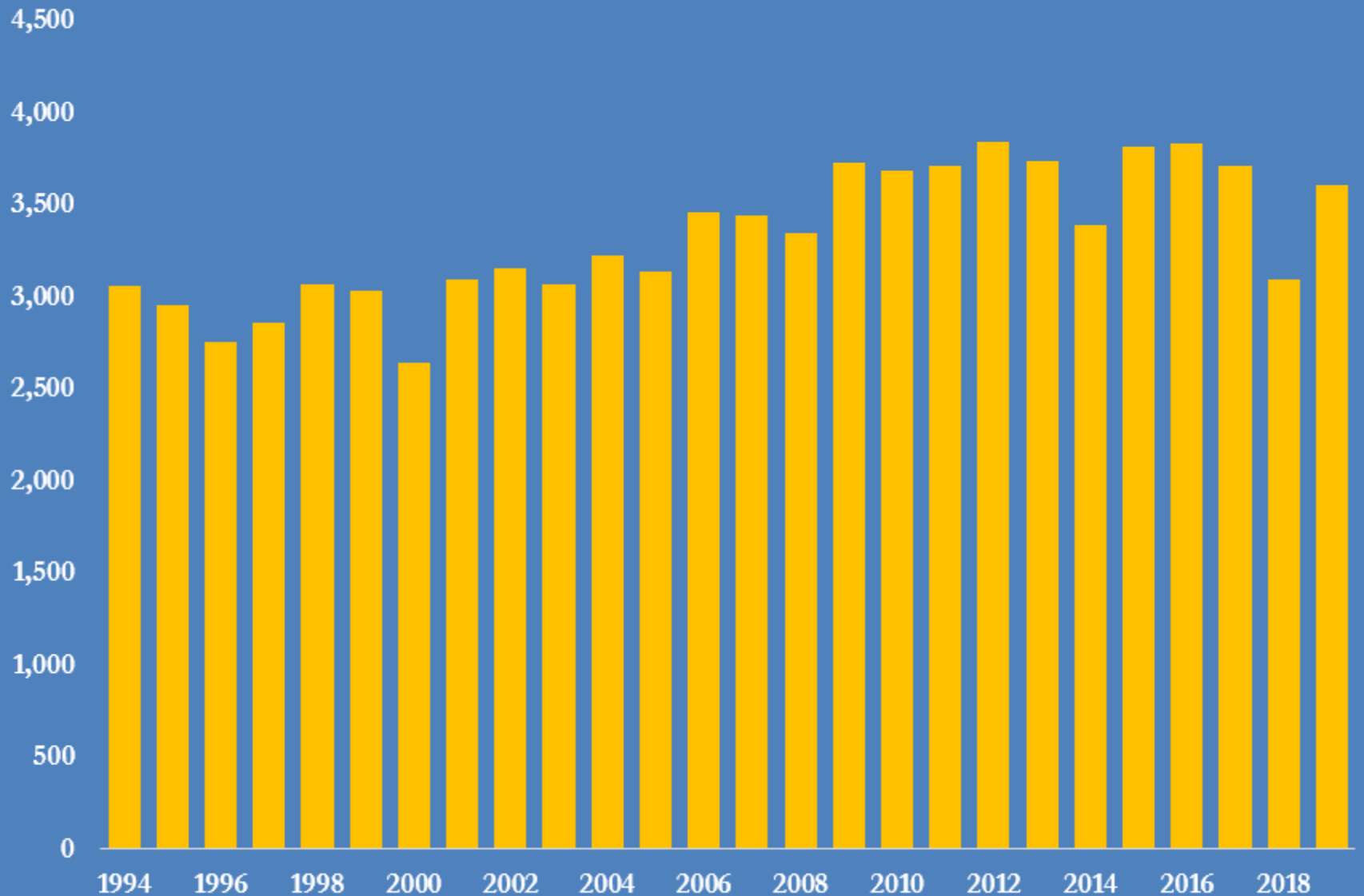


Source: US Energy Information Administration

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U.S. gas stocks at end of second week in Oct, 1994-2019

billion cubic feet



Source: U.S. Energy Information Administration

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U.S. natural gas prices for calendar years 2020 and 2021

Front-month Henry Hub futures, U.S.\$ per million British thermal units

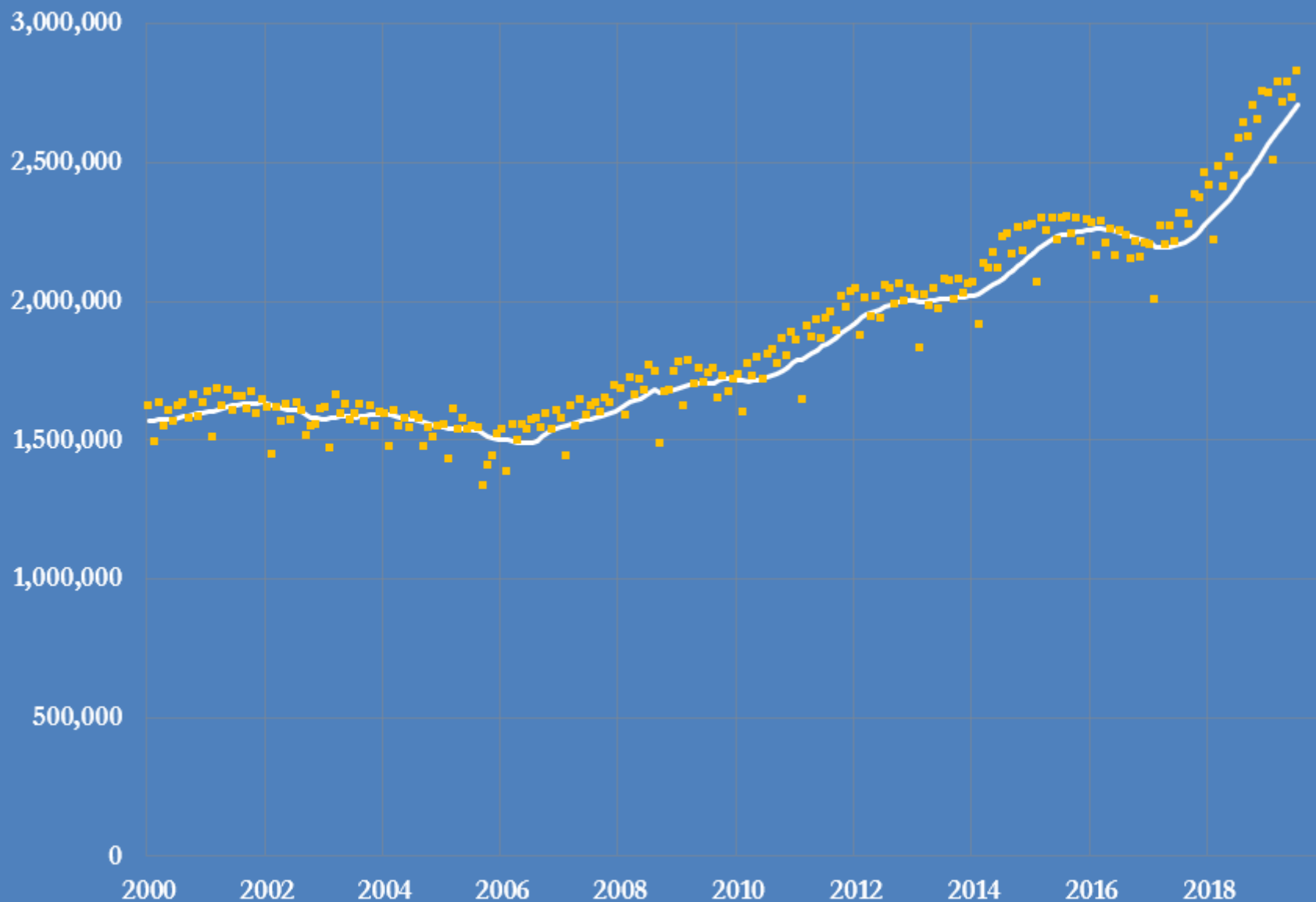


— Calendar 2020
..... Calendar 2021

Source: New York Mercantile Exchange
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U.S. natural gas production, 2000-2019

Dry gas, million cubic feet, monthly and 12-month average

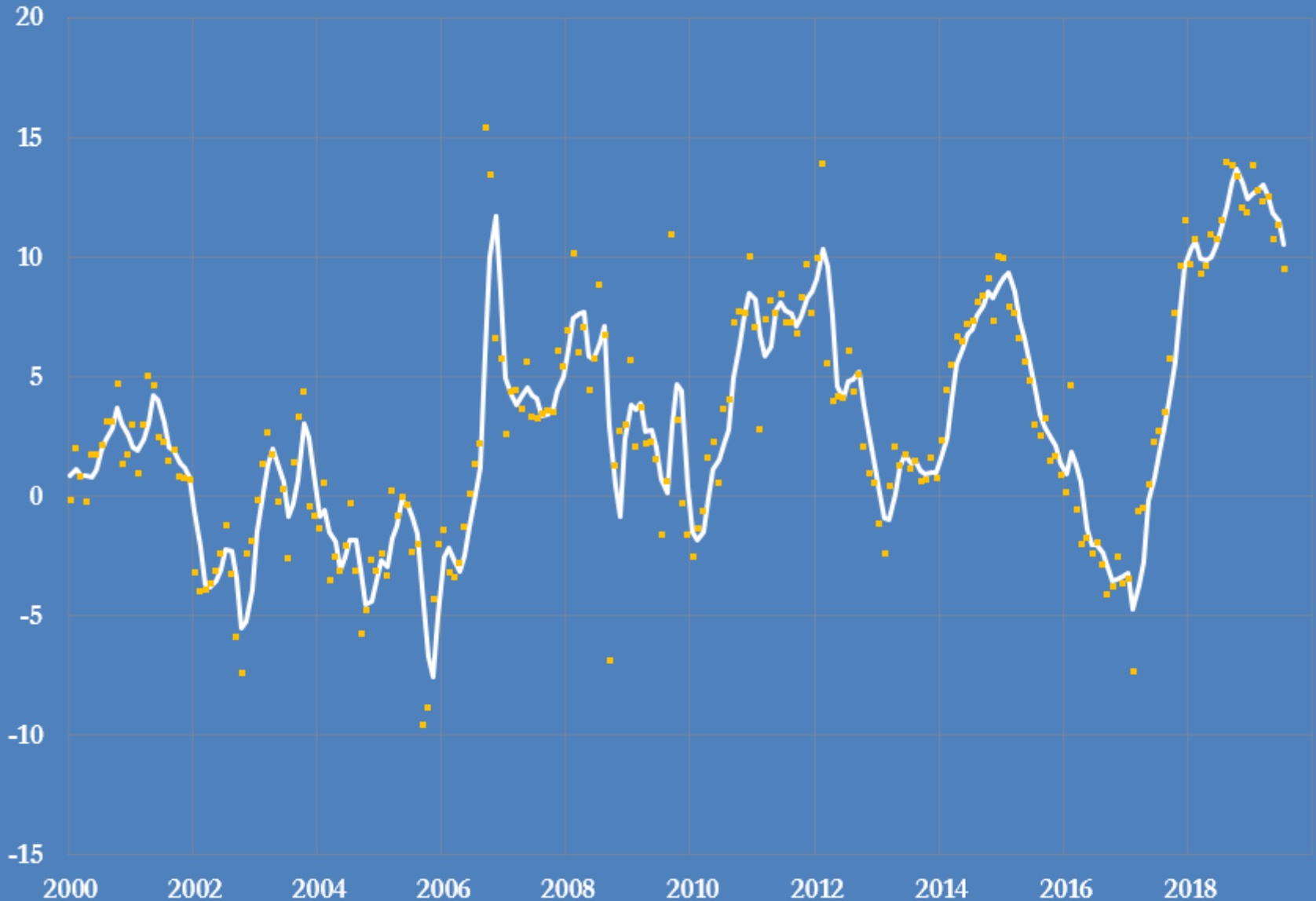


Source: U.S. Energy Information Administration

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U.S. natural gas production, 2000-2019

Dry gas, percent change from prior year, monthly and 3-month average

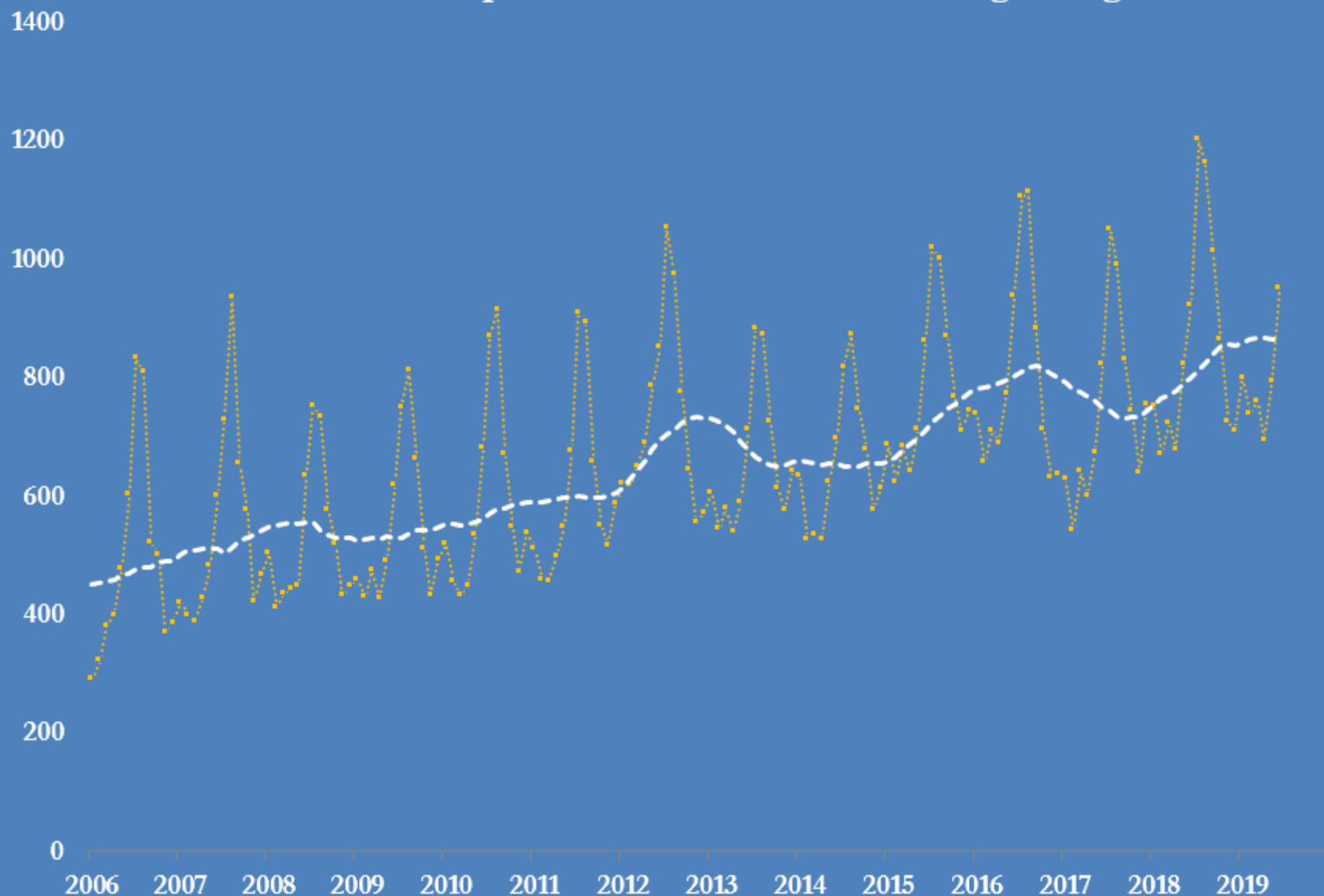


Source: U.S. Energy Information Administration

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Consumption of gas by U.S. power producers, 2006-2019

billion cubic feet per month with 12-month moving average

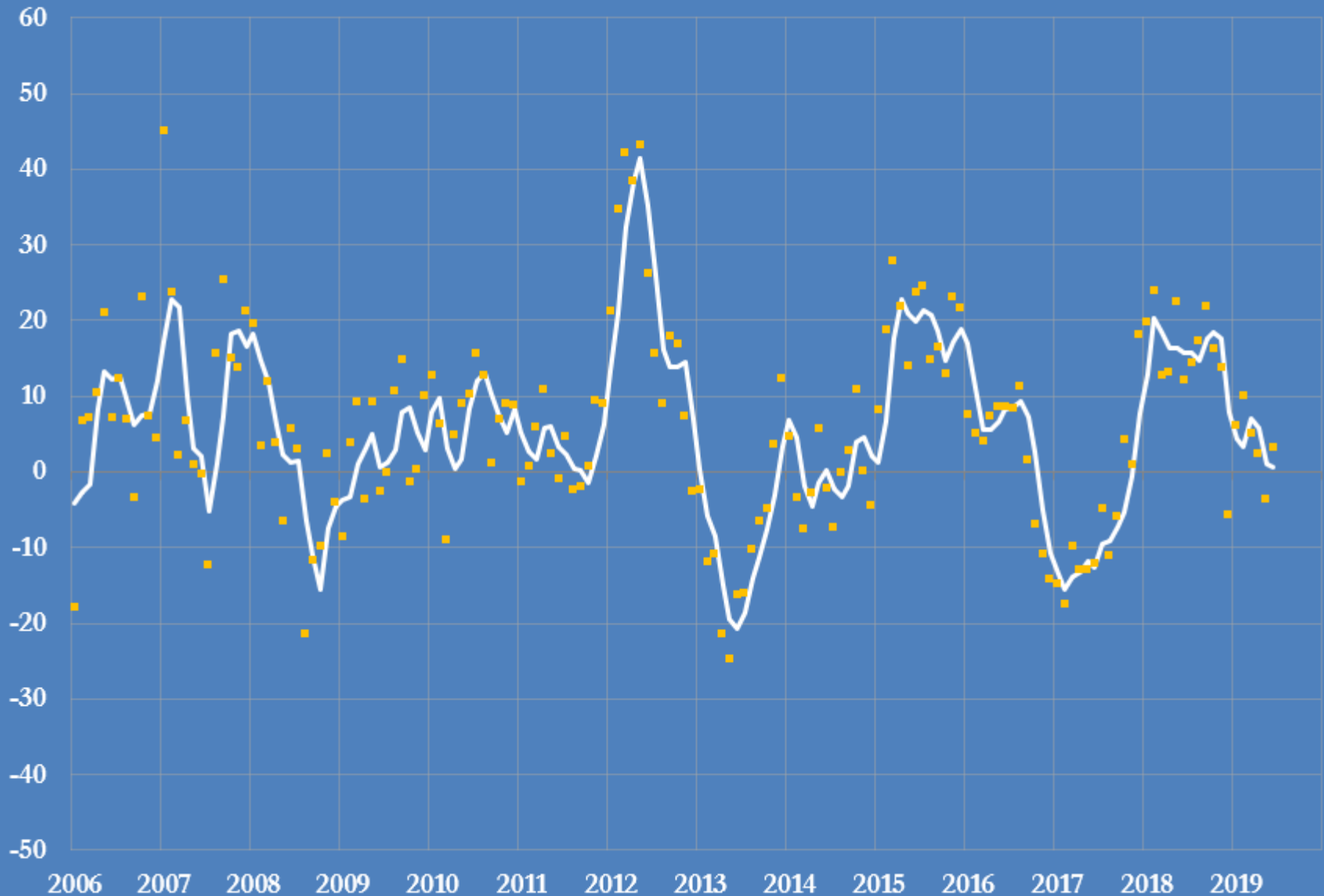


Source: US Energy Information Administration

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Consumption of natural gas by U.S. power producers

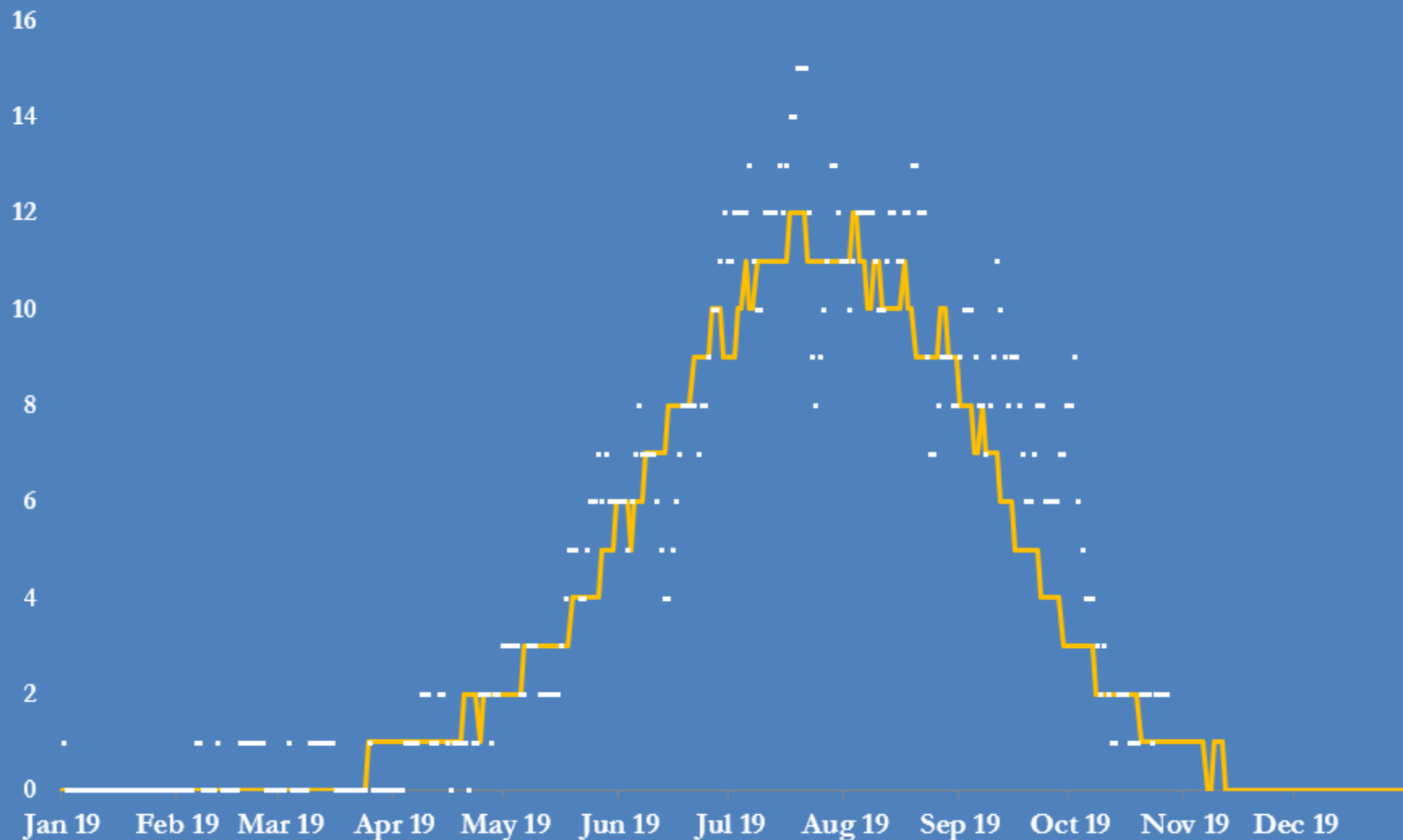
Percent change from prior year, monthly and three-month average



Source: US Energy Information Administration

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U.S. cooling demand: daily population-weighted cooling degree days in 2019 versus long-term average (CONUS)

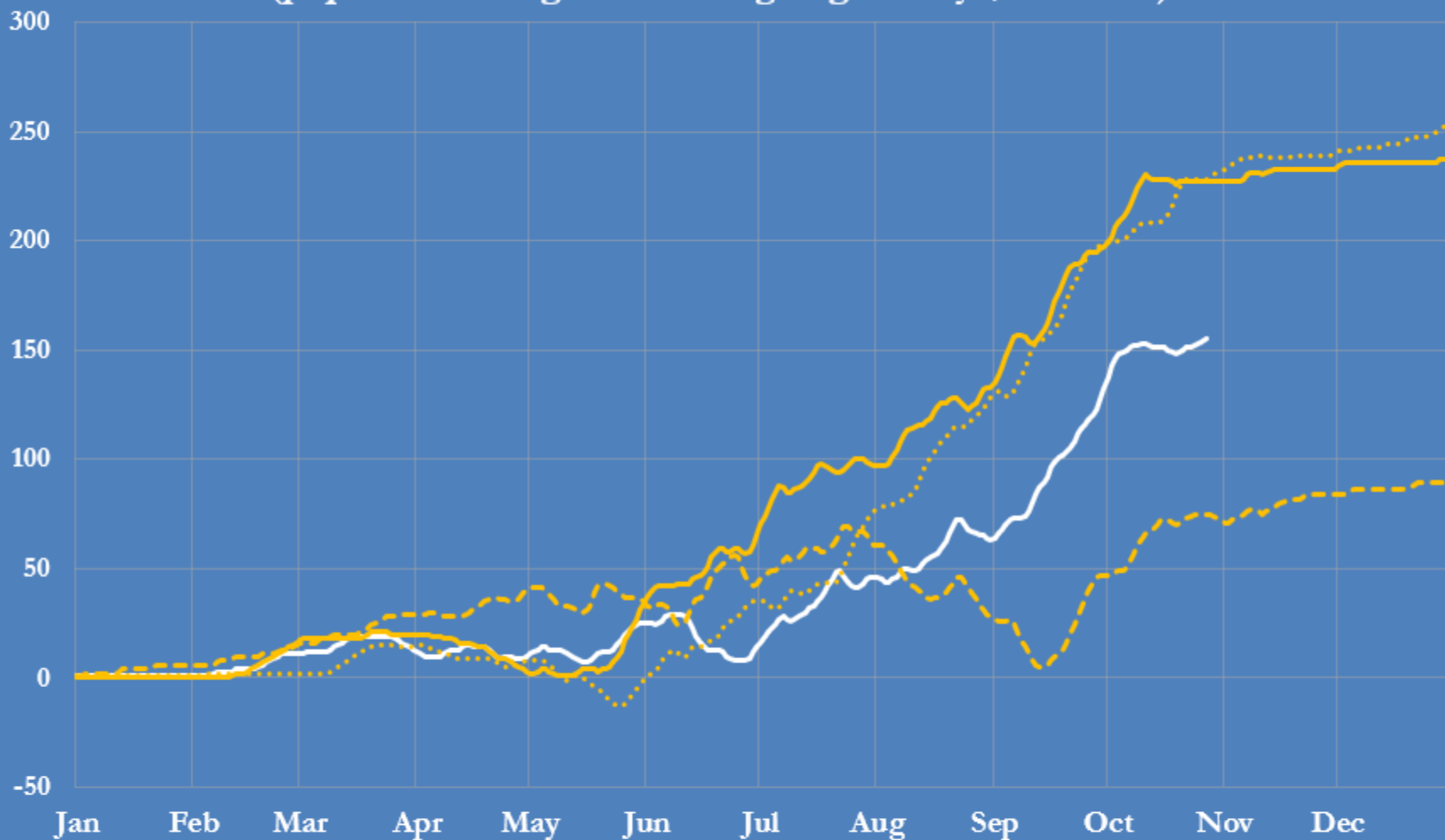


— Long-term average

· 2018 actuals

Source: Climate Prediction Center, US National Oceanic and Atmospheric Administration

U.S. cooling demand: cumulative deviation from normal (population-weighted cooling degree days, CONUS)



- Cooling Year 2019
- Cooling Year 2018
- - - Cooling Year 2017
- Cooling Year 2016

Source: Climate Prediction Center, U.S. National Oceanic and Atmospheric Administration, @JKempEnergy

U.S. natural gas stocks versus cooling demand

Weekly change in stocks vs population-weighted CDDs

Stock Chg
bcf

140

120

100

80

60

40

20

0

-20

0

25

50

75

100

125

PWCDDs

$$y = -0.0218x^2 + 1.5134x + 80.664$$

$$R^2 = 0.8571$$

$$y = -0.0191x^2 + 1.1164x + 60.38$$

$$R^2 = 0.6542$$

$$y = -0.0132x^2 + 0.5544x + 92.264$$

$$R^2 = 0.7931$$

$$y = -0.0164x^2 + 1.0163x + 58.065$$

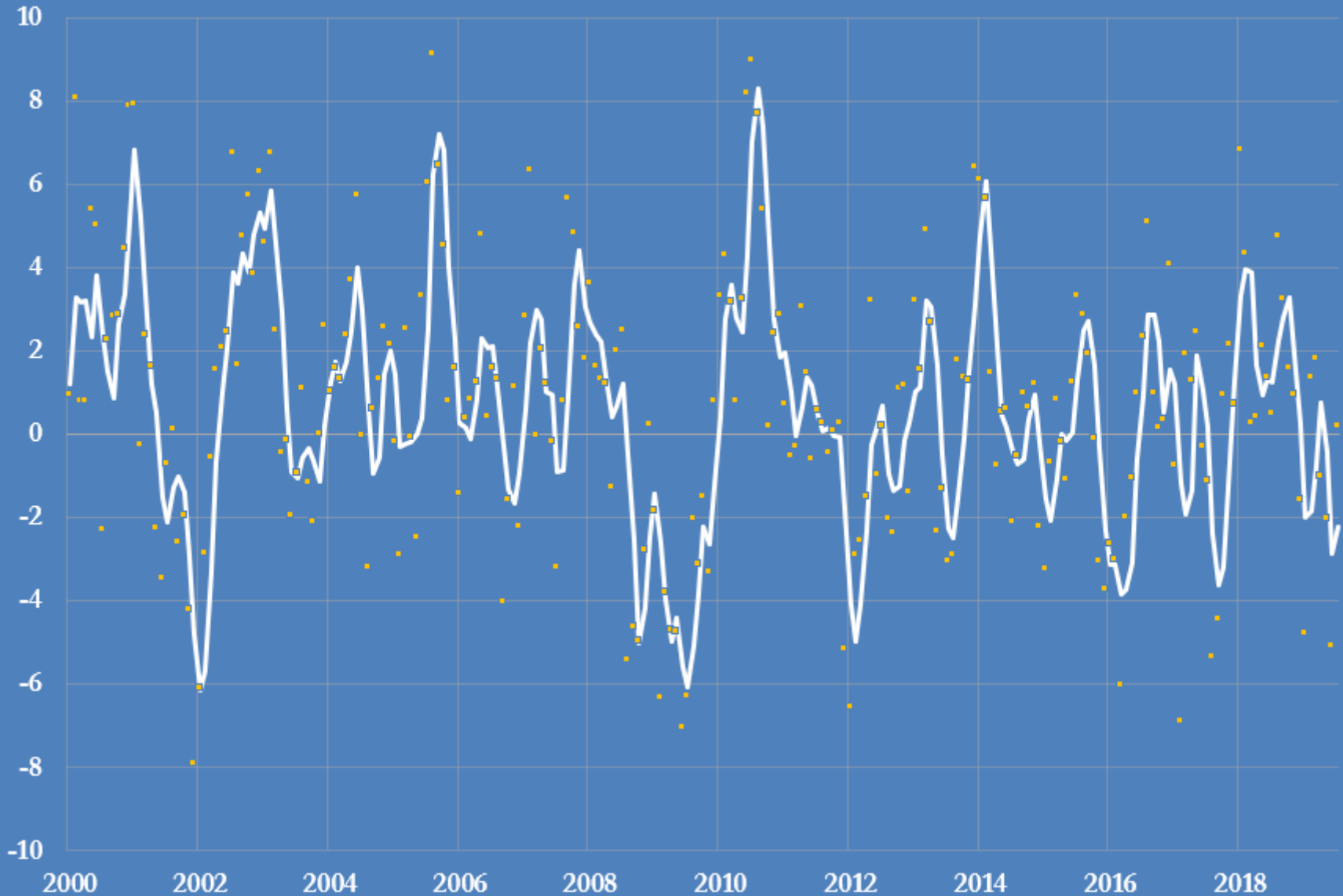
$$R^2 = 0.9013$$

- ◆ Cooling Year 2016 (May-Sep)
- ◆ Cooling Year 2017 (May-Sep)
- ◆ Cooling Year 2018 (May-Sep)
- ◆ Cooling Year 2019 (May-Sep)

Source: U.S. Climate Prediction Center, U.S. Energy Information Administration, @JKempEnergy

U.S. electricity consumption, 2000-2019

percent change from prior year, monthly and three-month average

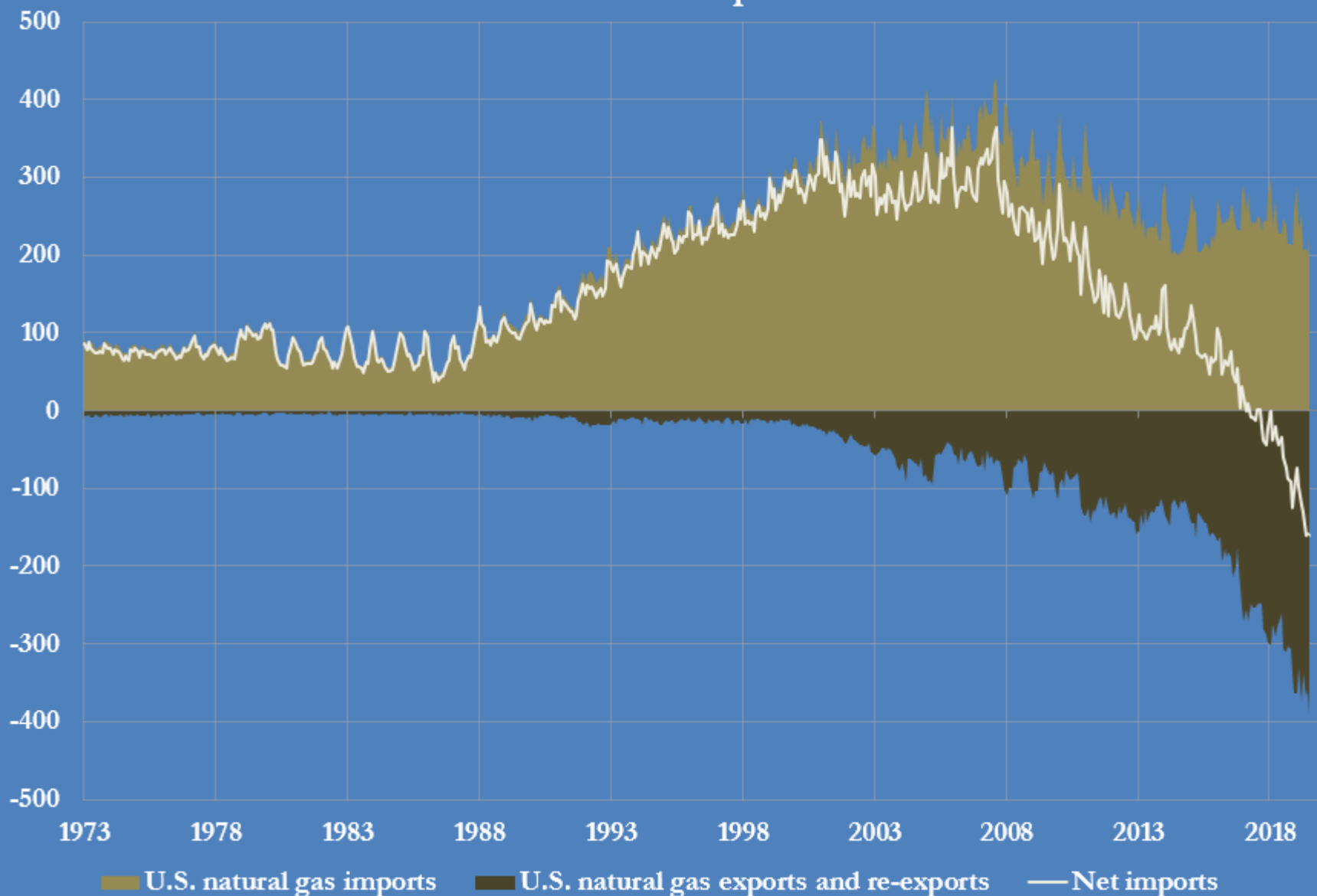


Source: U.S. Energy Information Administration

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U.S. net imports of natural gas, 1973-2019

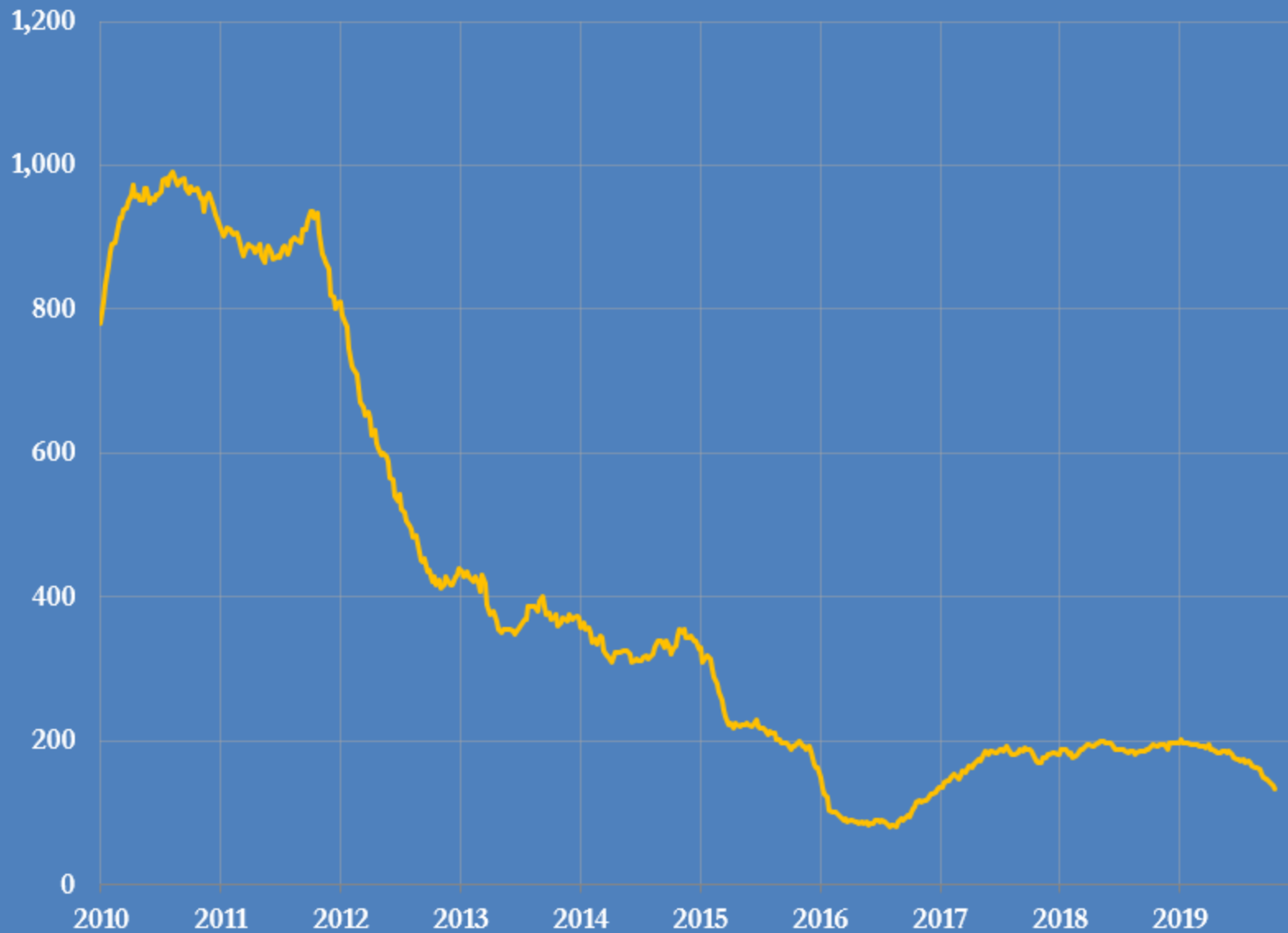
billion cubic feet per month



Source: US Energy Information Administration

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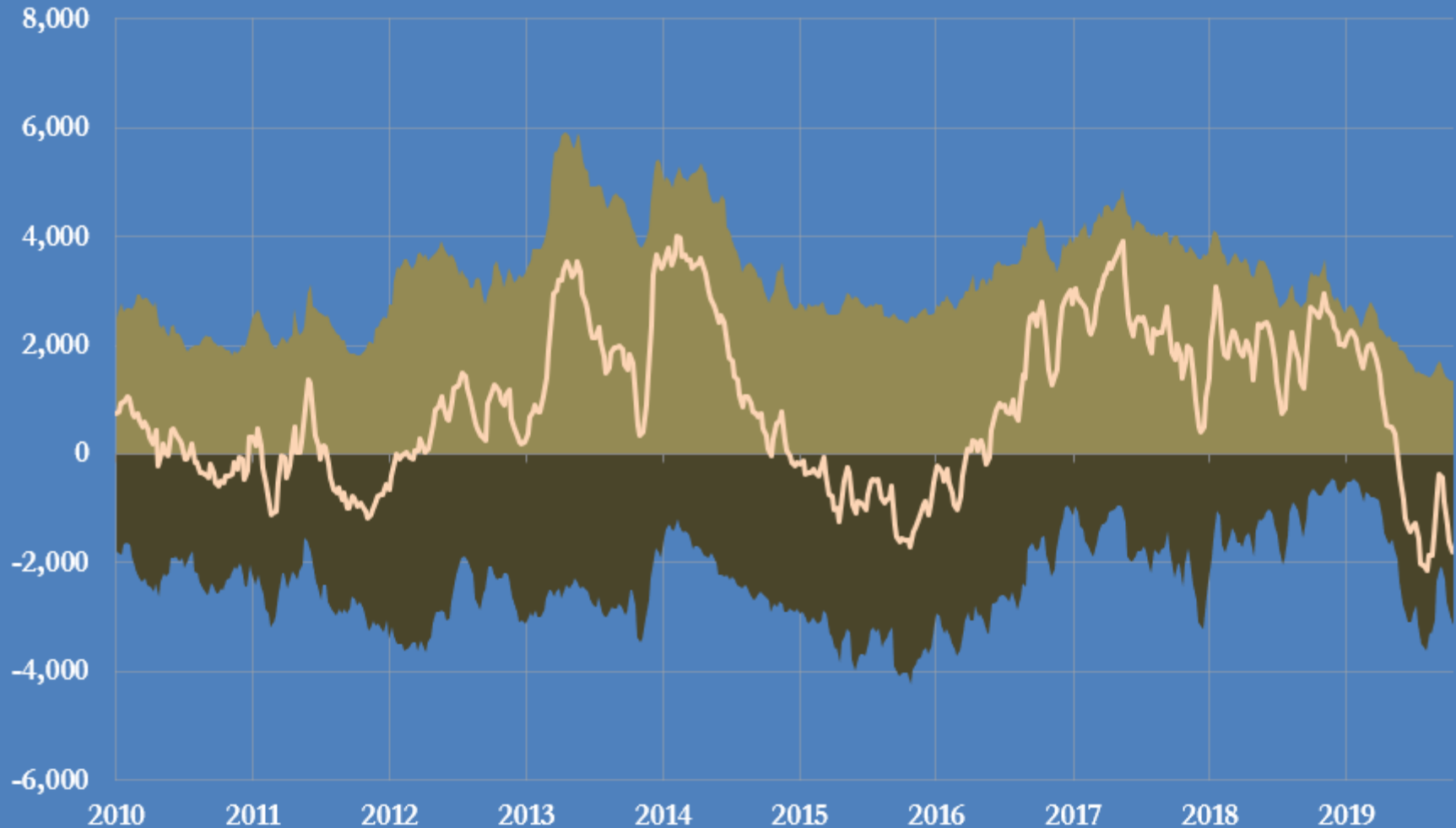
Number of rigs drilling for gas in the United States



Source: Baker Hughes

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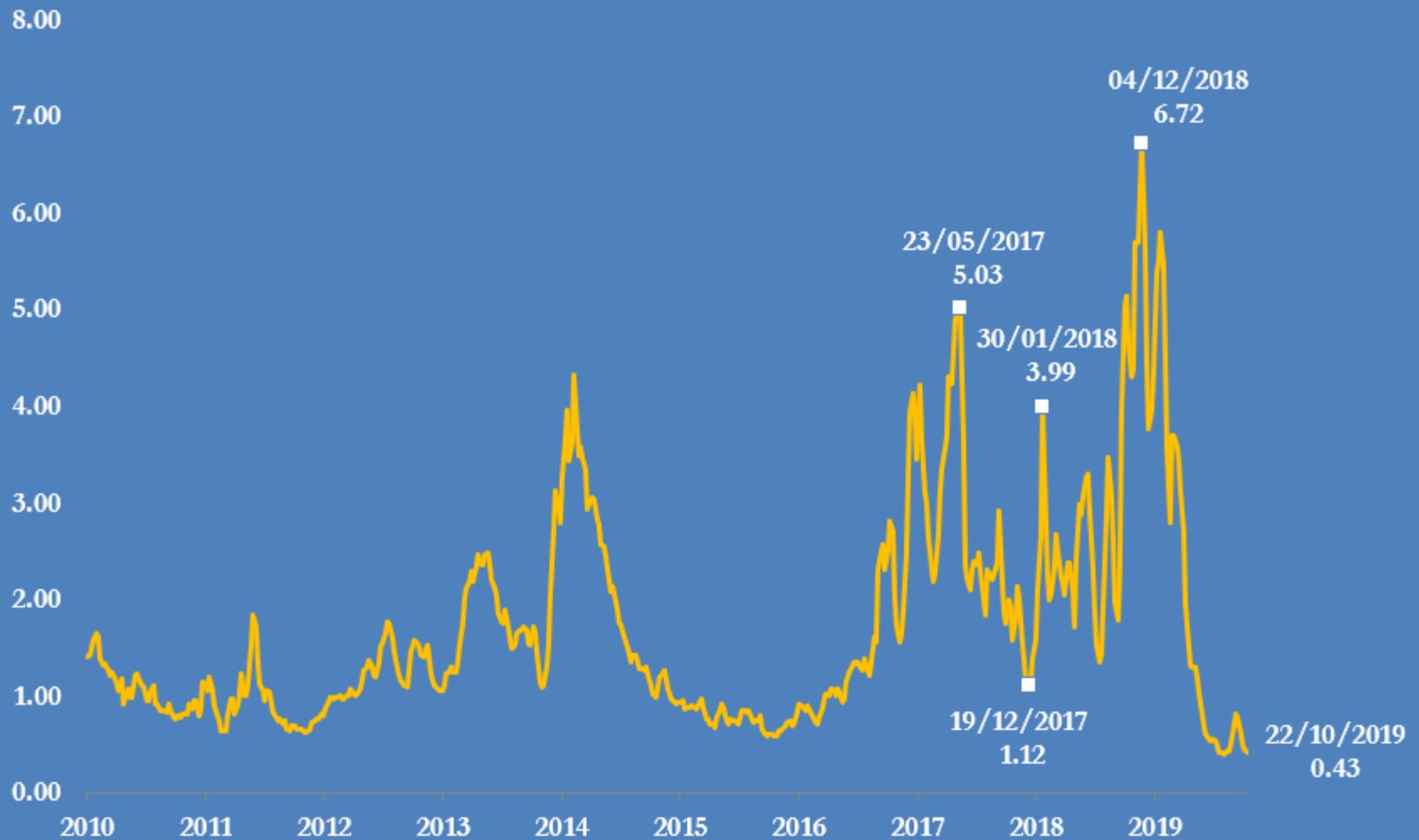
Money managers' long and short positions in US natural gas futures (NYMEX + ICE Henry Hub) billion cubic feet



- Long positions (billion cubic feet)
- Short positions (billion cubic feet)
- Net position (billion cubic feet)

Source: US Commodity Futures Trading Commission
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Ratio of money managers' long to short positions in U.S. natural gas (NYMEX +ICE)



Source: US Commodity Futures Trading Commission
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