

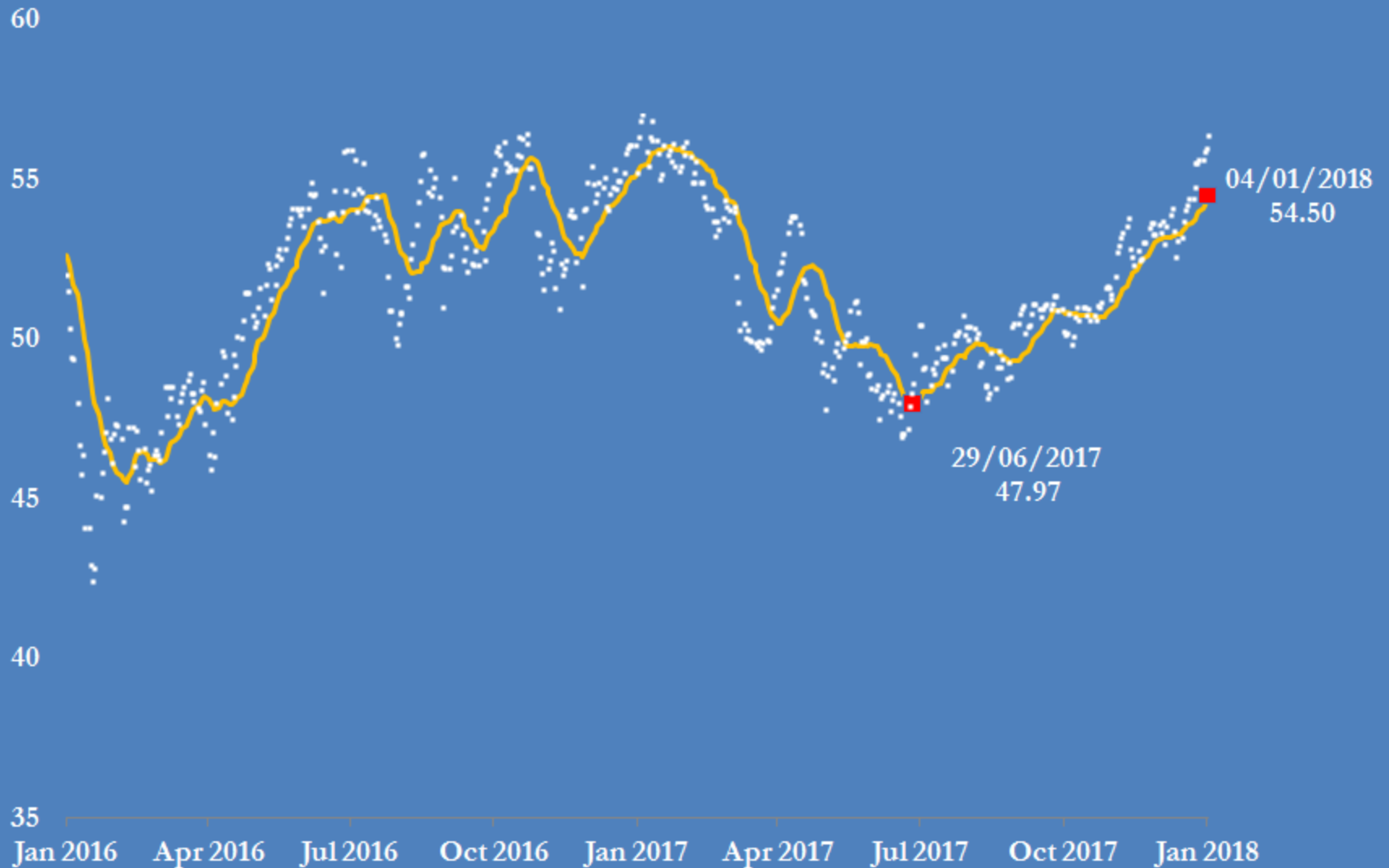
U.S. shale production

Selected indicators

JOHN KEMP
REUTERS

5 Jan 2018

U.S. shale forward hedging indicator WTI calendar strip 2019 (US\$/bbl)

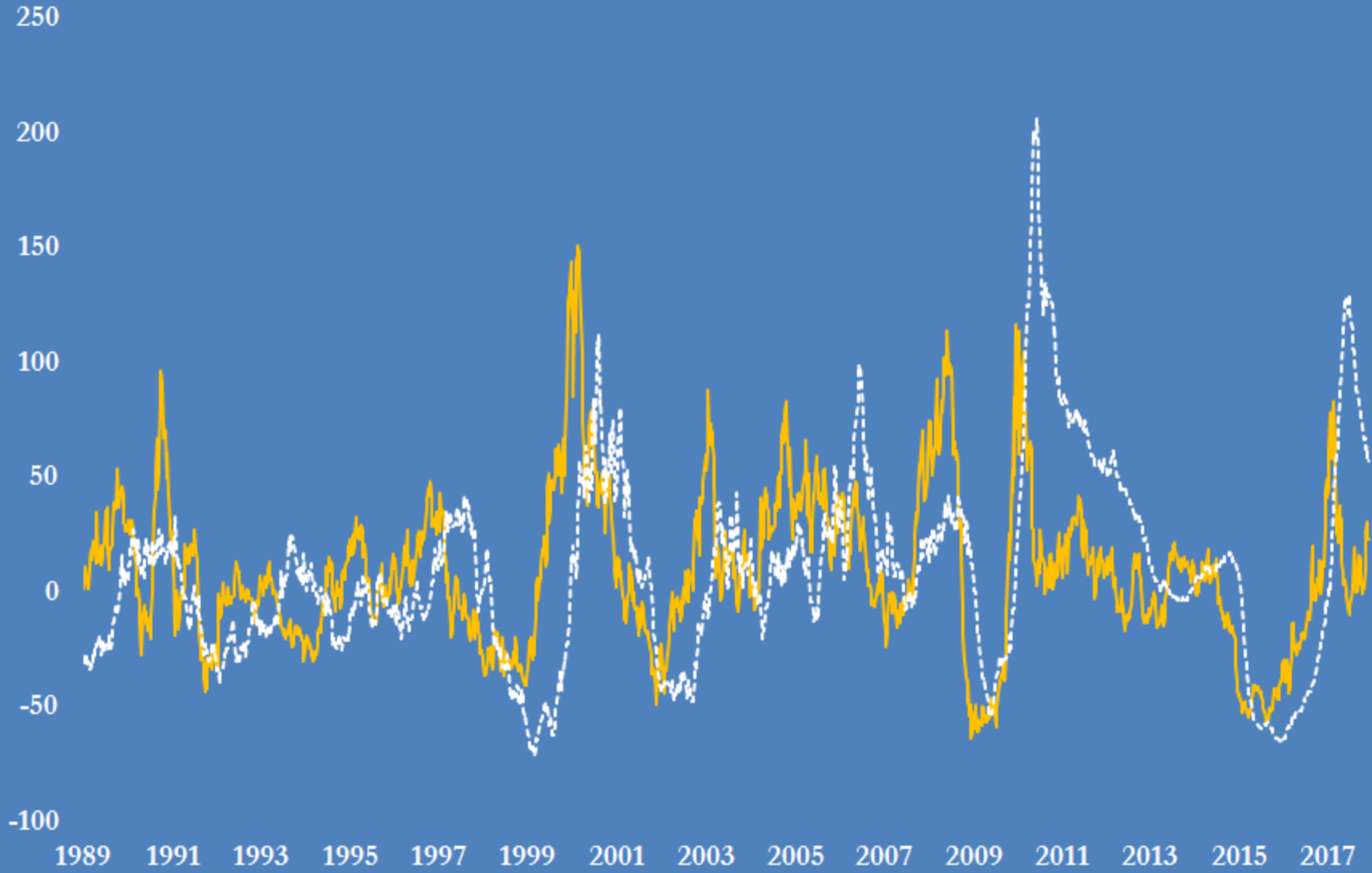


— 20-day running average
• Daily close

Source: New York Mercantile Exchange
@JKempEnergy

U.S. crude oil prices and drilling activity

12-month percent change

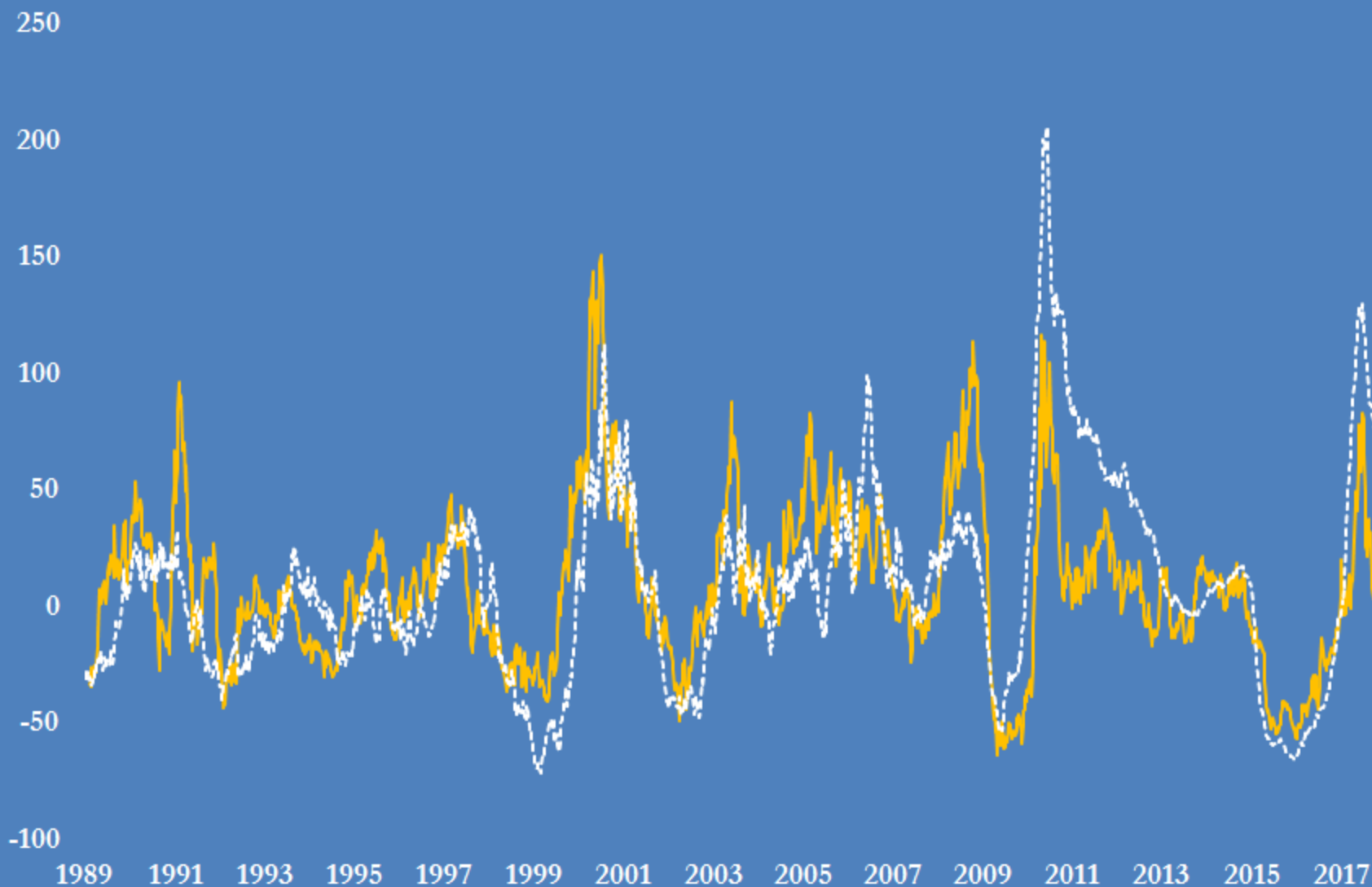


— WTI price (front-month futures contract)
- - - - U.S. oil rig count (Baker Hughes)

Sources: New York Mercantile Exchange, Baker Hughes; @JKempEnergy

U.S. crude oil prices and drilling activity

12-month percent change (WTI prices leading by 19 weeks)



— WTI price (front-month futures contract)
----- U.S. oil rig count (Baker Hughes)

Sources: New York Mercantile Exchange, Baker Hughes; @JKempEnergy

U.S. crude oil prices and drilling activity 12-month percent change (WTI prices leading by 19 weeks)

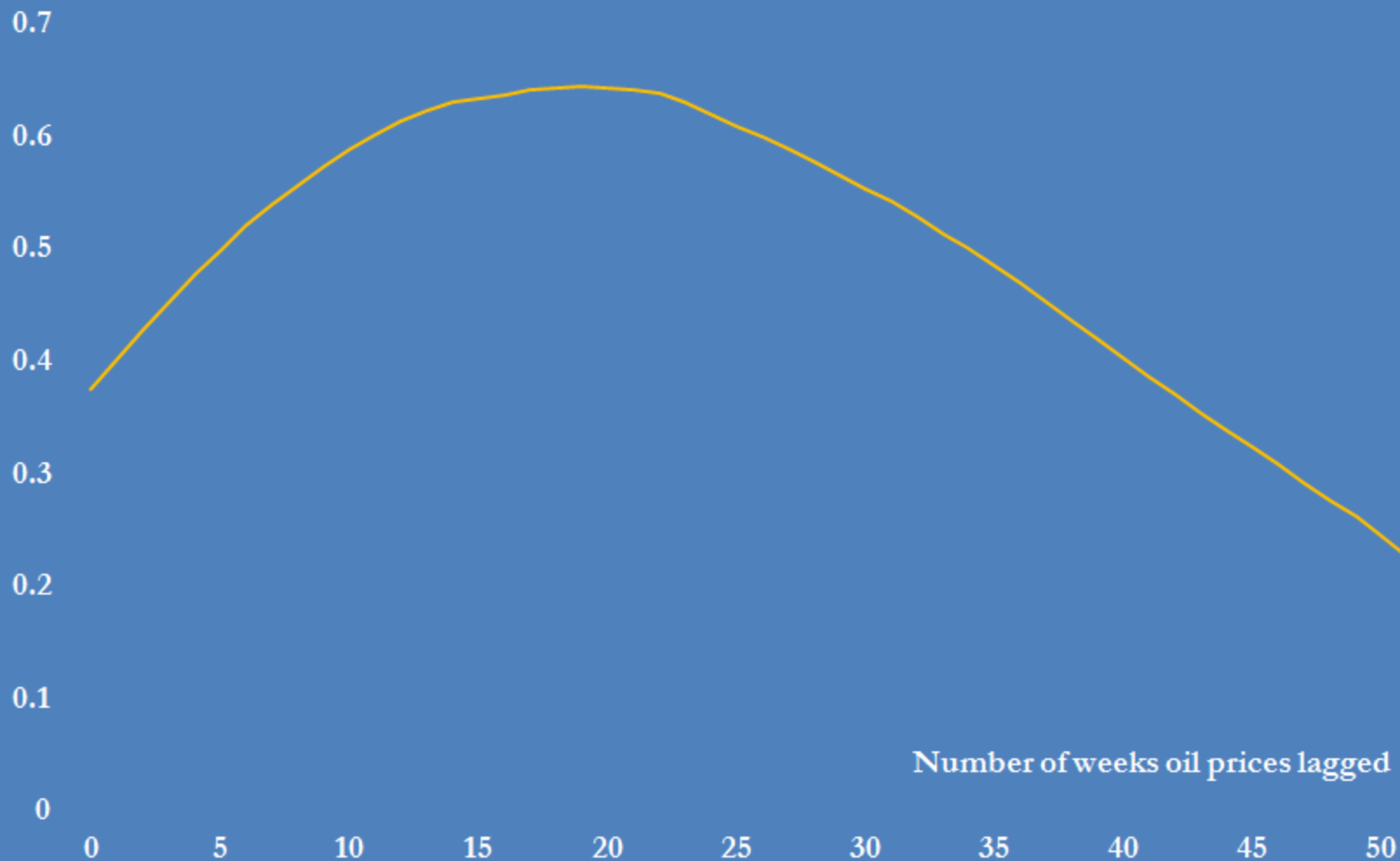


— WTI price (front-month futures contract)
- - - - U.S. oil rig count (Baker Hughes)

Sources: New York Mercantile Exchange, Baker Hughes; @JKempEnergy

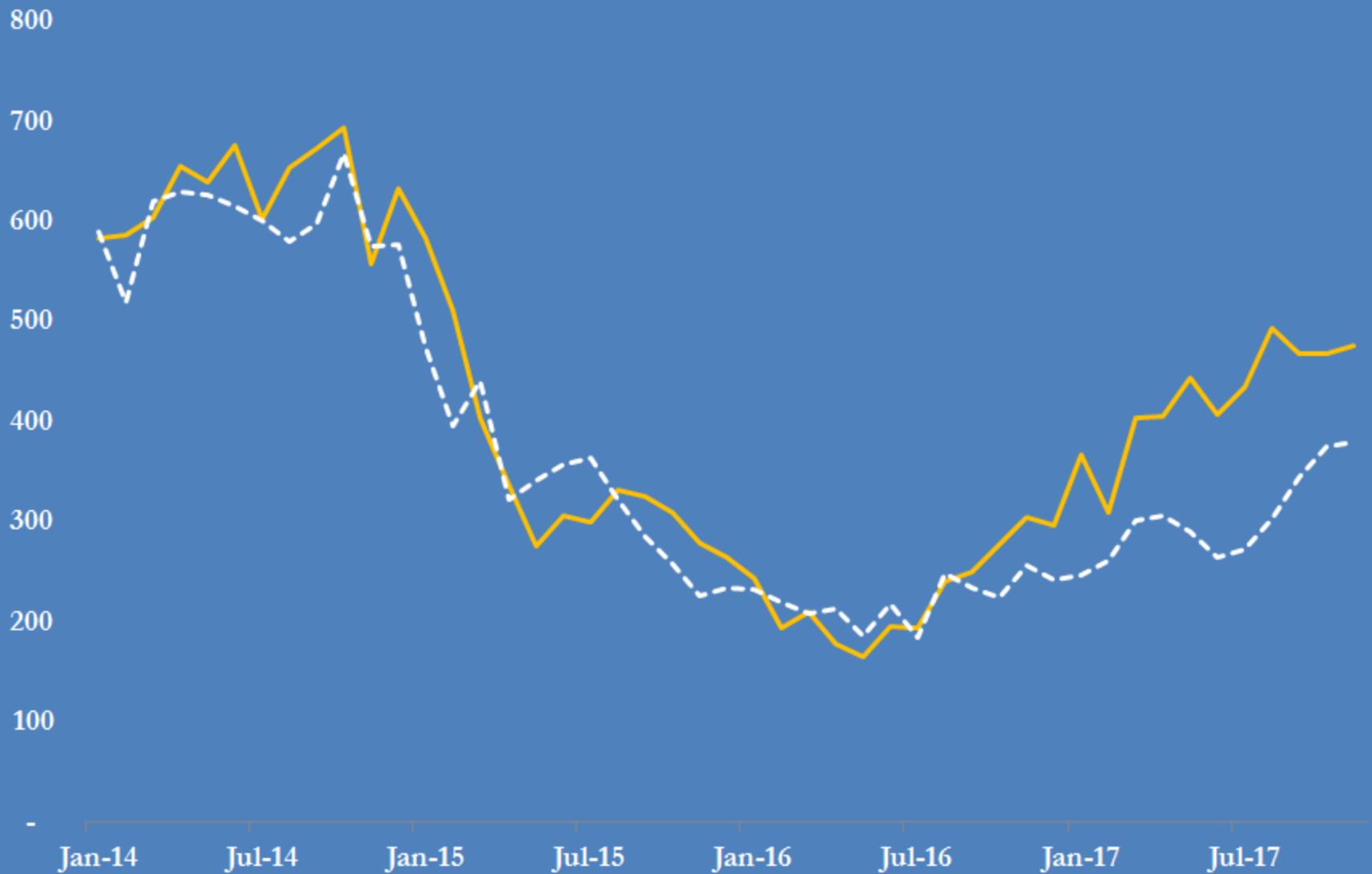
Correlation coefficient between U.S. drilling activity and oil prices

Baker Hughes U.S. oil rig count correlated with WTI prices lagged by number of weeks shown



Sources: New York Mercantile Exchange, Baker Hughes
@JKempEnergy

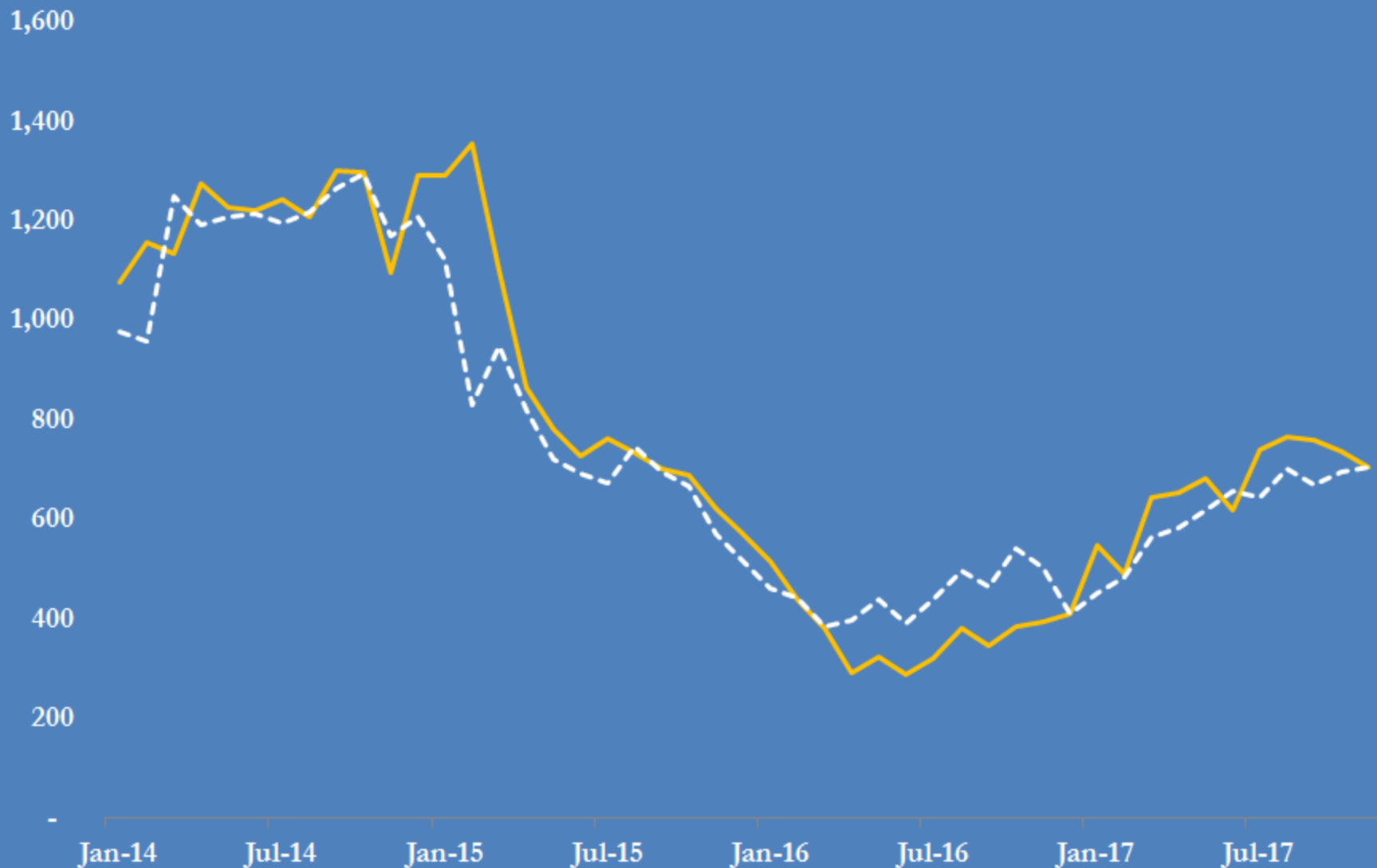
Permian Basin new wells drilled and completions per month



— Wells drilled
- - - Wells completed

Source: U.S Energy Information Administration
@JKempEnergy

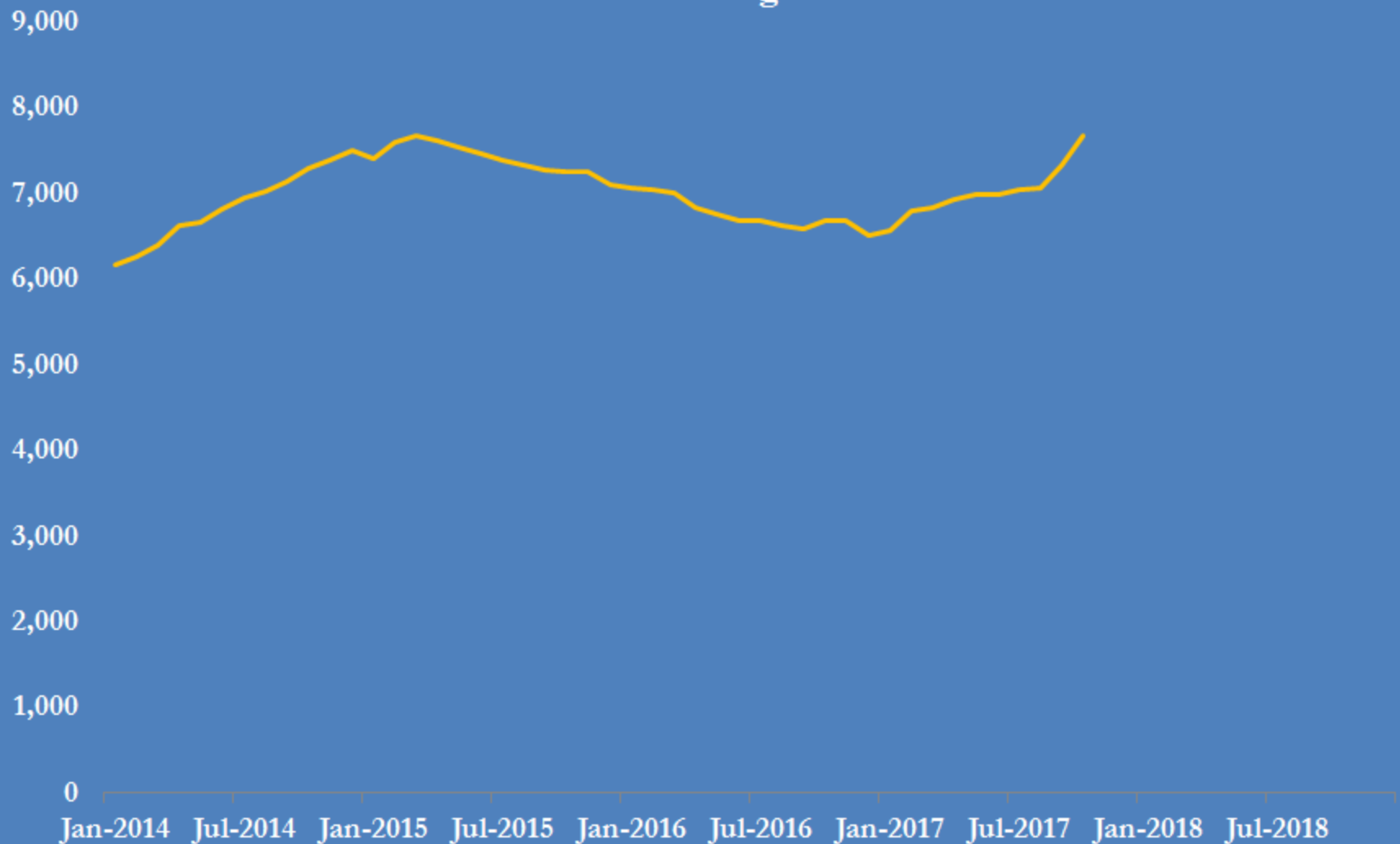
New wells drilled and completions per month ex Permian Basin



— Wells drilled
- - - Wells completed

Source: U.S Energy Information Administration
@JKempEnergy

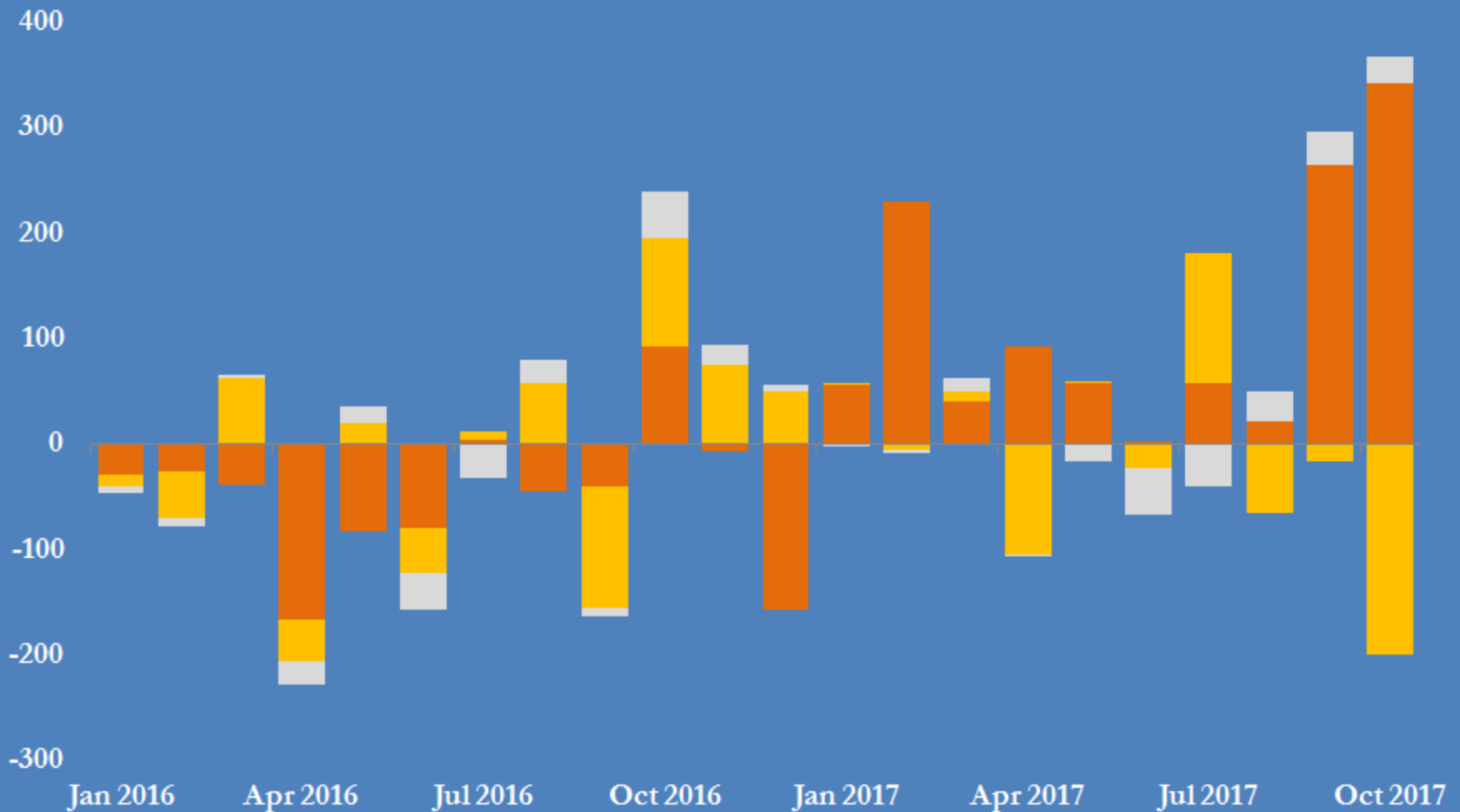
U.S. crude oil production: actual and forecast (000 b/d) Lower 48 states excluding Gulf of Mexico



Source: U.S. Energy Information Administration
@JKempEnergy

U.S. crude oil production

Monthly change in 000 b/d



- Lower 48 states excluding federal Gulf of Mexico
- Federal Gulf of Mexico
- Alaska

Source: Energy Information Administration
@JKempEnergy