

Plunging Oil Prices: Impact on the U.S. and State Economies



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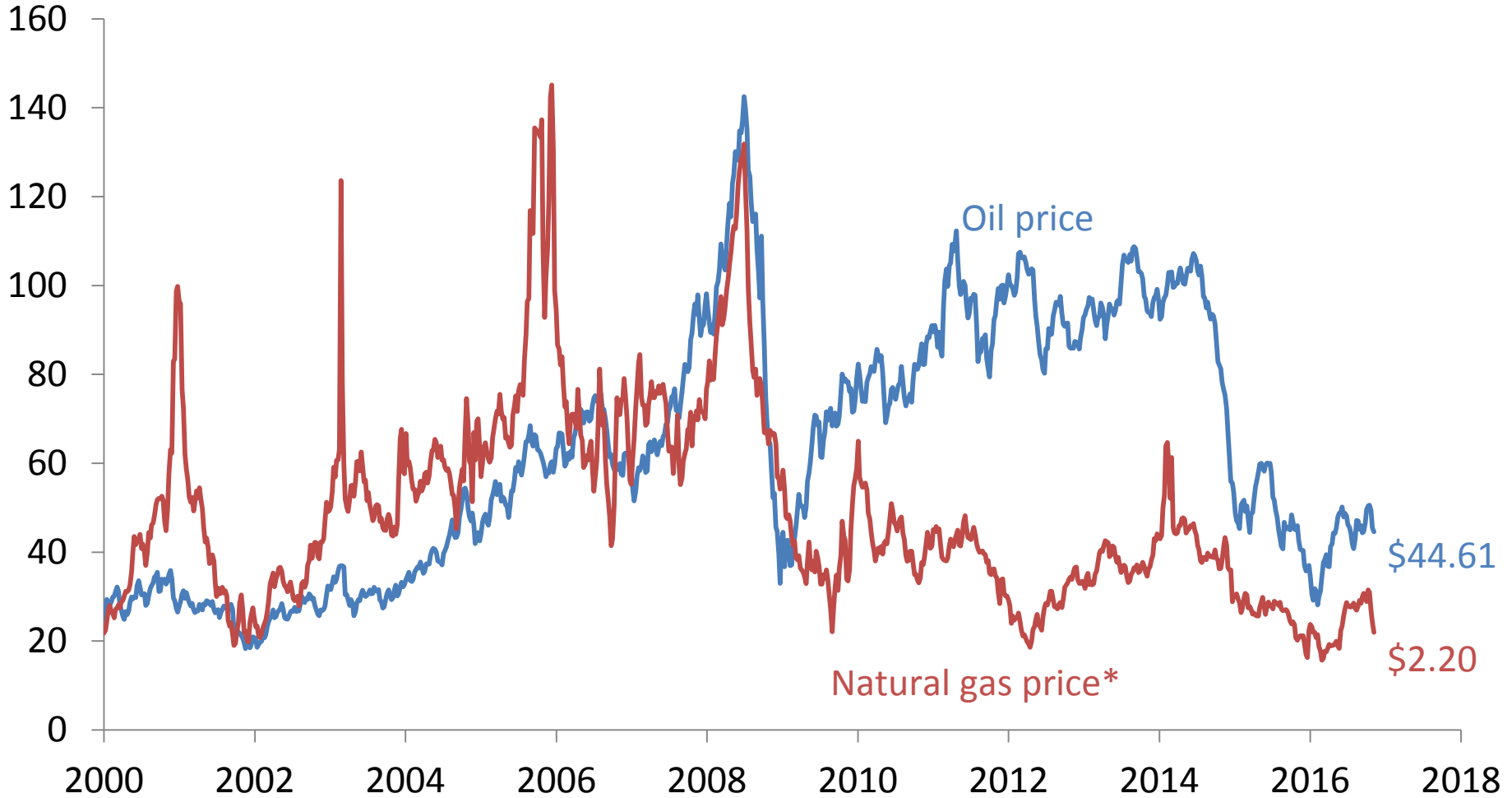
Federal Reserve Bank of Dallas

November 17, 2016



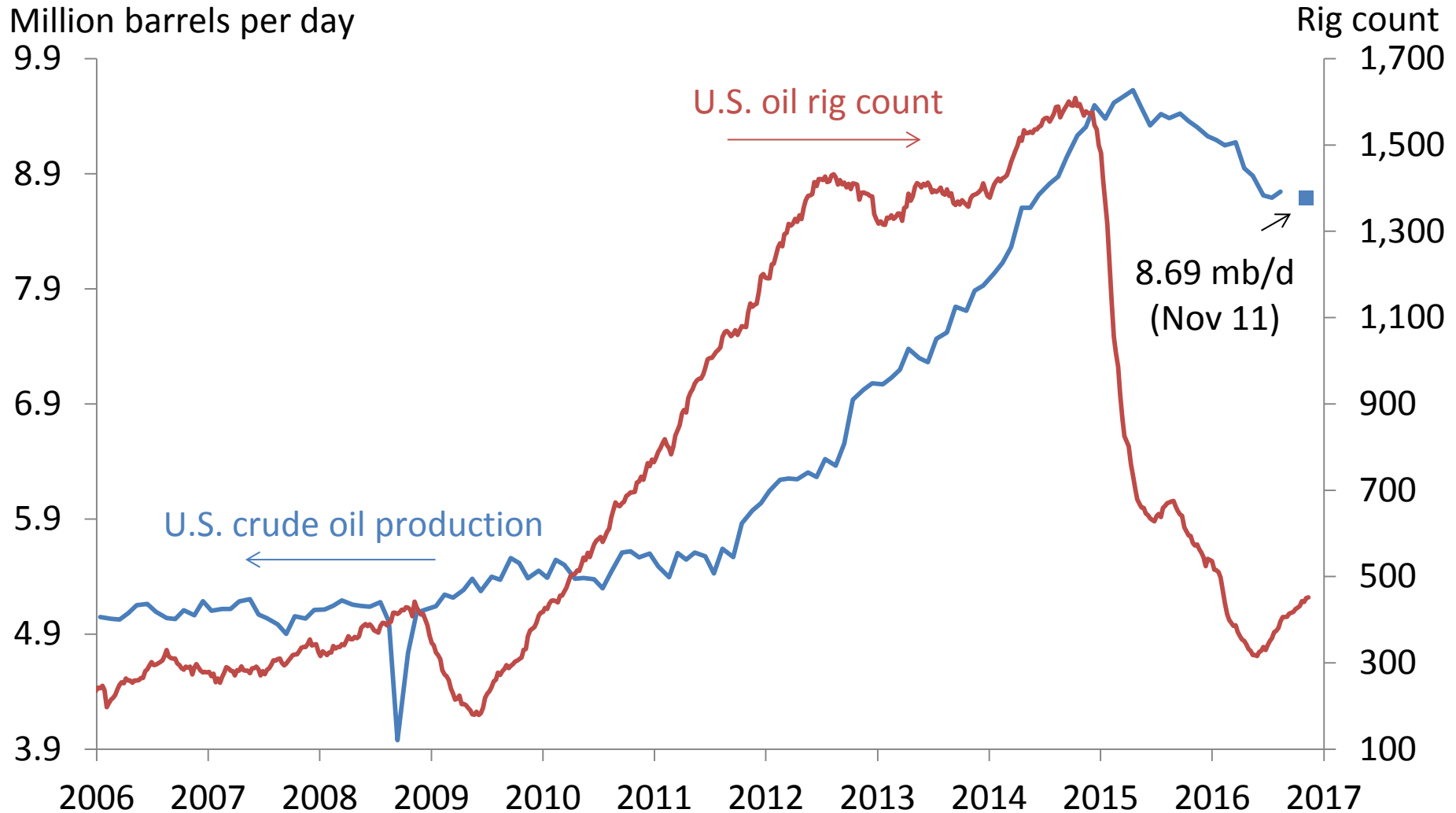
Oil and gas prices volatile

Nominal price, weekly



*Natural gas price is multiplied by ten. Oil is priced in \$/barrel, while natural gas is priced in \$/million British thermal units. Last data points are for the week ending November 11, 2016.
SOURCES: Energy Information Administration; *Wall Street Journal*.

Rig count up and oil production steady



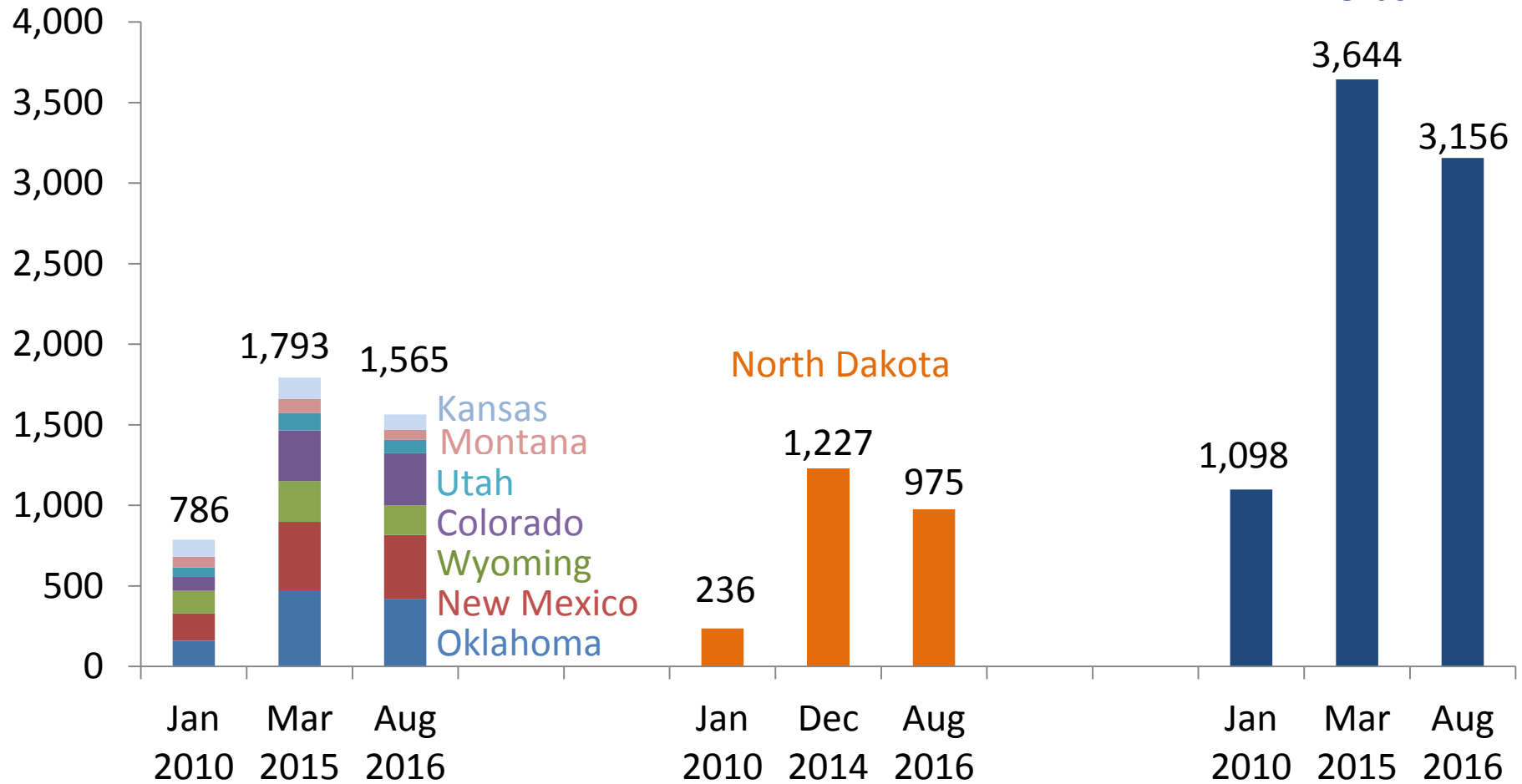
NOTE: Last monthly production data is 8.7 mb/d for August. Nov 11 data point is a weekly estimate.
SOURCES: Energy Information Administration; Baker Hughes.

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U.S. shale oil production

Thousand barrels per day



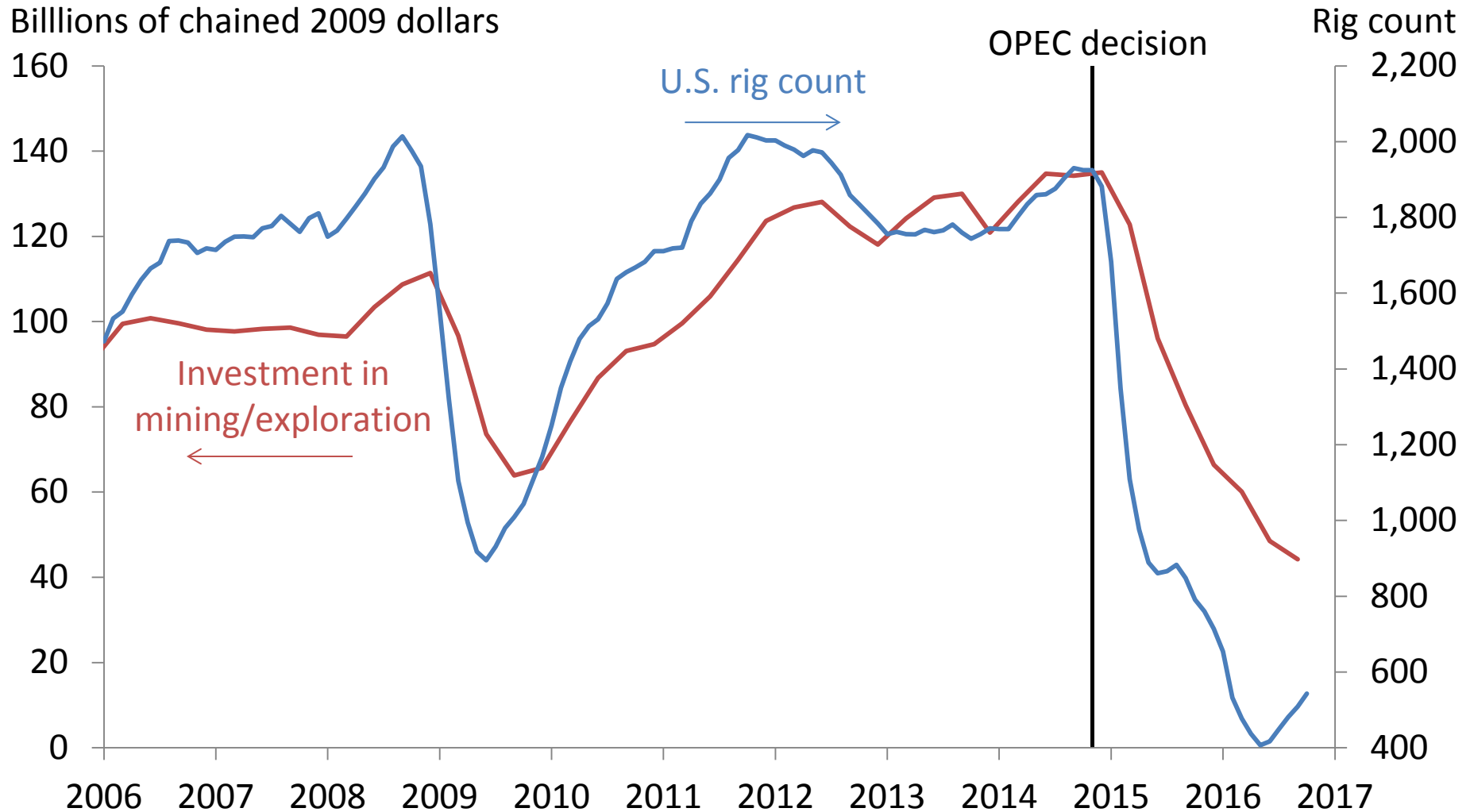
SOURCE: Energy Information Administration.

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IMPACT ON U.S. ECONOMY

Oil investment plunges



SOURCES: Baker Hughes; Bureau of Economic Analysis.

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Oil and gas bankruptcies rose in 2015...

U.S. Oil and Gas Bankruptcy Filings and Debt, 2015

	Producers	Services	All Firms	Total Debt (billions USD)
Q1	4	5	9	2.87
Q2	6	7	13	1.02
Q3	14	9	23	9.95
Q4	12	12	24	8.33
Annual	36	33	69	22.18



...and continued in 2016

U.S. Oil and Gas Bankruptcy Filings and Debt, 2016

	Producers	Services	All Firms	Total Debt (billions USD)
Q1	15	14	29	4.73
Q2	27	26	53	45.79
Q3	9	21	30	8.11
October	1	9	10	4.27
Ytd	52	70	122	62.89

NOTE: Bankruptcies for services firms are updated through October 25.
Bankruptcies for producers are updated through October 19.
SOURCE: Haynes and Boone, LLP.

Most of 2016 bankruptcies are in Texas

Oil and Gas Bankruptcy Filings and Debt, May 16, 2016

	Texas		U.S.	
	Bankruptcies	Total Debt (billions USD)	Bankruptcies	Total Debt (billions USD)
Producers	28	27.03	52	49.51
Services	40	4.09	70	13.38
All Firms	68	31.12	122	62.89

NOTE: Bankruptcies for services firms are updated through October 25.

Bankruptcies for producers are updated through October 19.

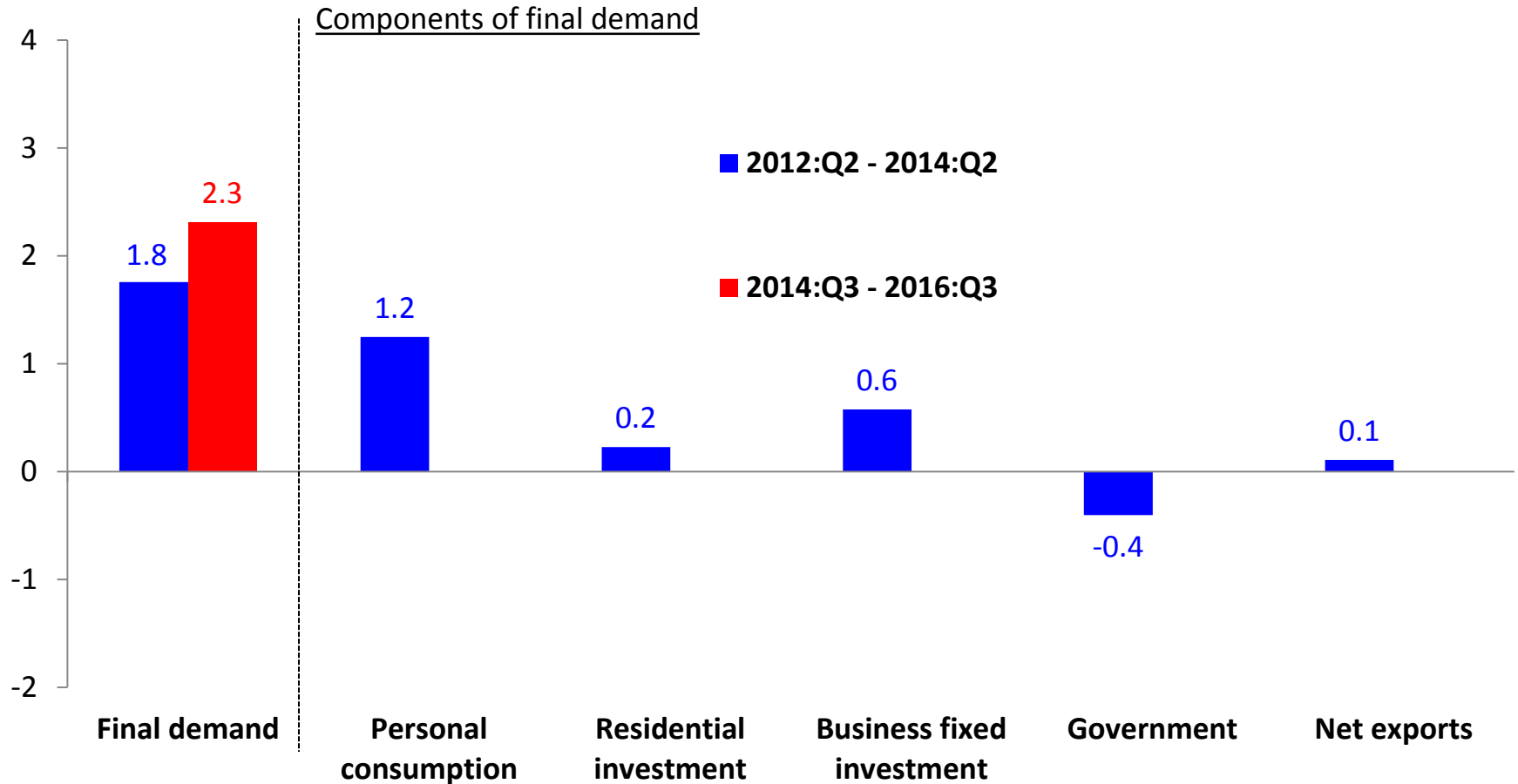
SOURCE: Haynes and Boone, LLP.

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Low oil prices boosted growth in final demand

Contribution to real growth,
percentage points, SAAR

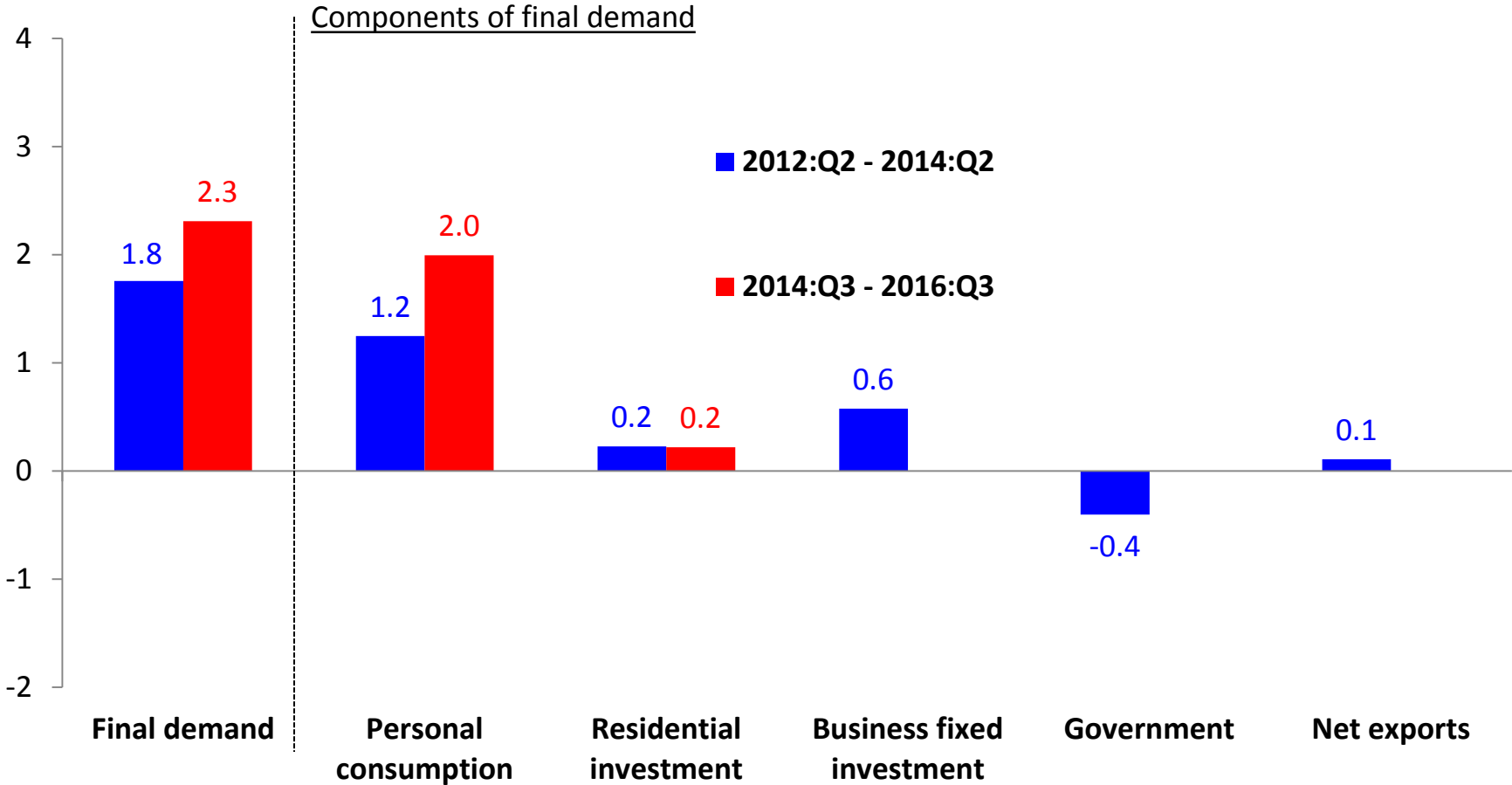


NOTE: Components do not sum exactly to final demand due to rounding.
SOURCE: Bureau of Economic Analysis.



Households benefit from low energy prices and a strong dollar

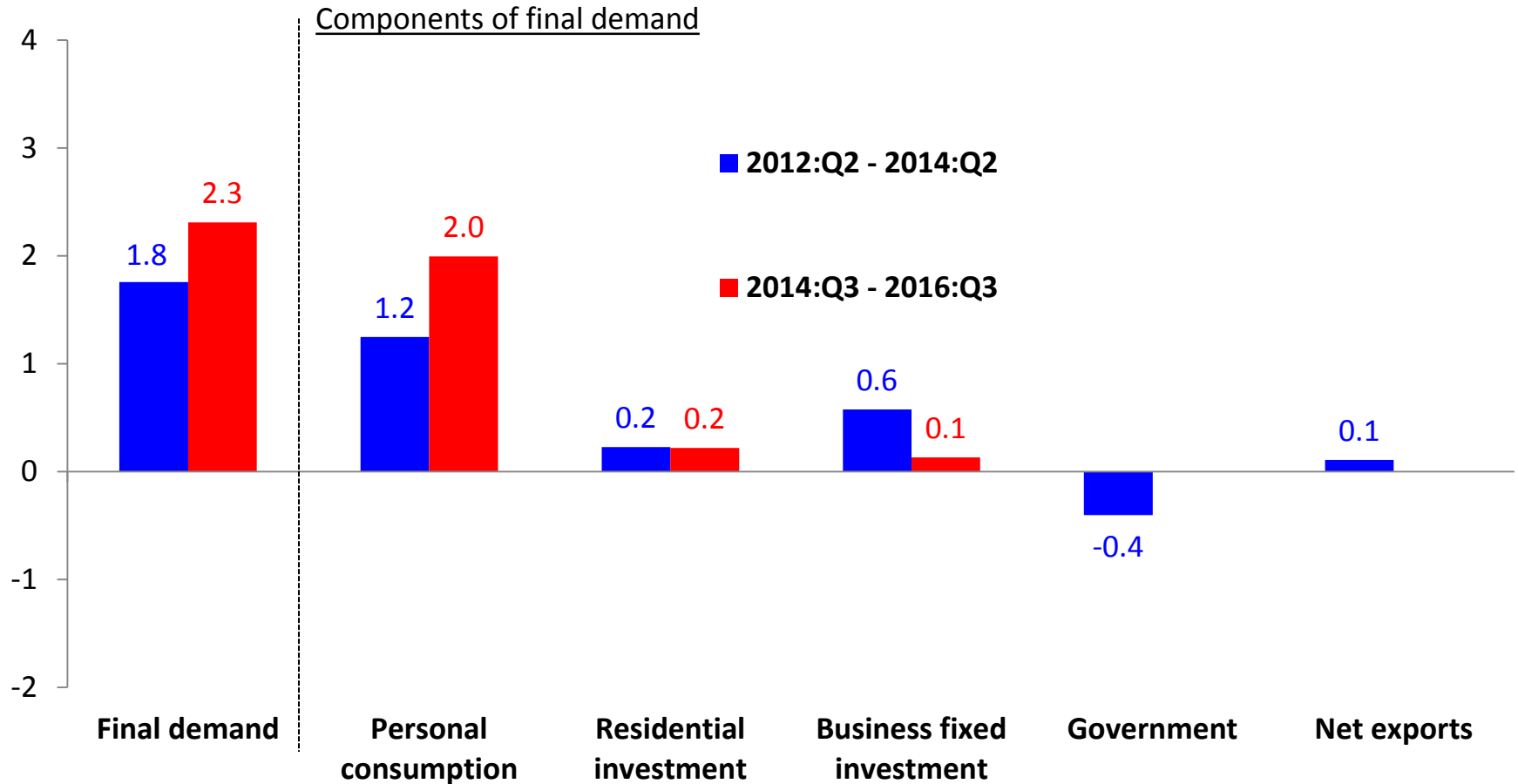
Contribution to real growth,
percentage points, SAAR



NOTE: Components do not sum exactly to final demand due to rounding.
SOURCE: Bureau of Economic Analysis.

Mining and manufacturing firms have scaled back cap ex plans, and investment growth has slowed

Contribution to real growth,
percentage points, SAAR

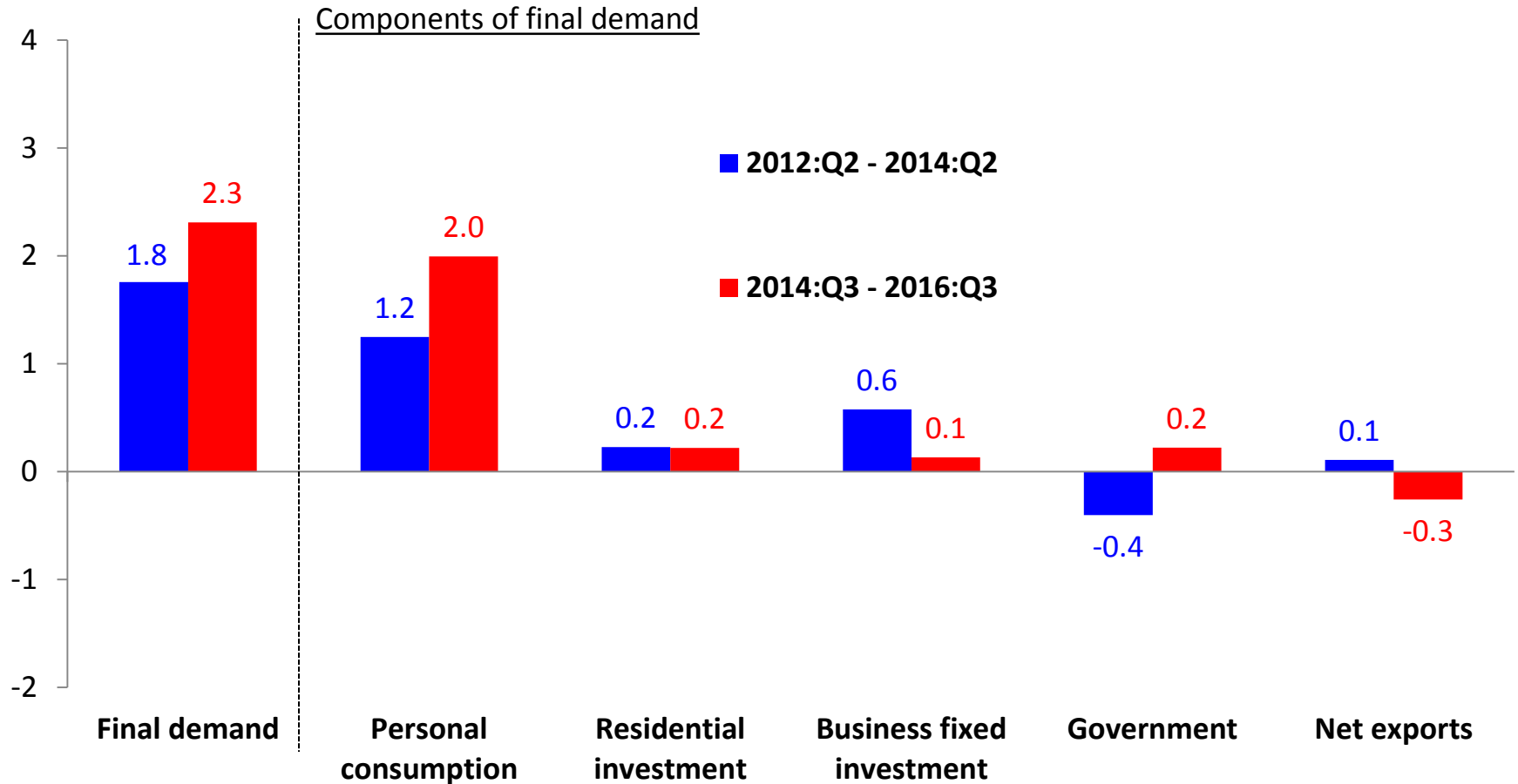


NOTE: Components do not sum exactly to final demand due to rounding.
SOURCE: Bureau of Economic Analysis.



Government purchases and the strong dollar have also affected final demand

Contribution to real growth,
percentage points, SAAR



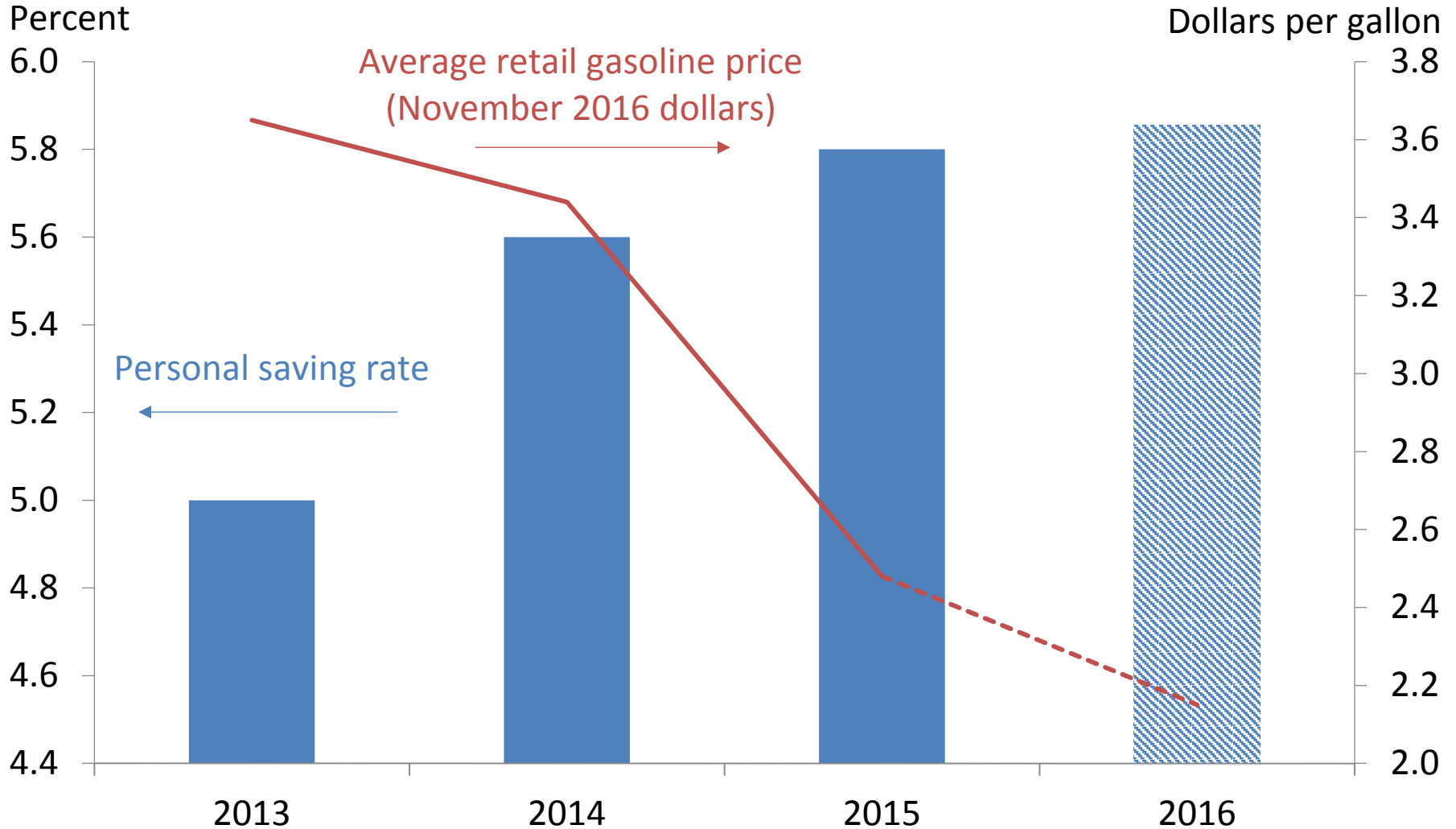
NOTE: Components do not sum exactly to final demand due to rounding.
SOURCE: Bureau of Economic Analysis.

Why didn't low oil prices have a larger positive effect on the economy?

- Oil price changes have asymmetric effects on the economy
- Increases in oil prices impact the economy more than oil price declines
 - Oil price increase: Σ (negative reallocation effects + negative price effects)
 - Oil price decline: Σ (negative reallocation effects + positive price effects)
- Increased saving



Savings rates up slightly with low gasoline prices

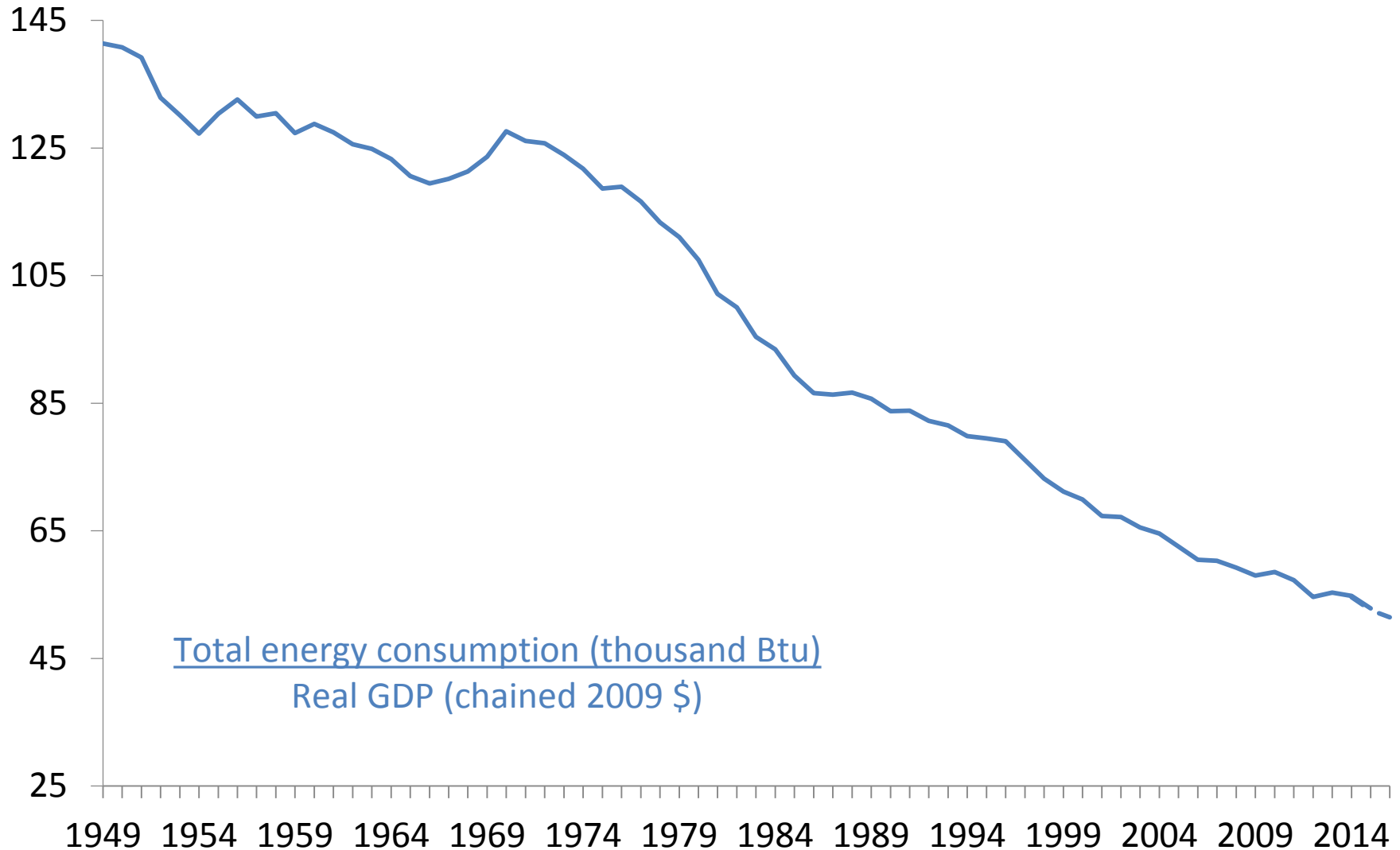


NOTES: 2016 gasoline price is a forecast. 2016 savings rate is the monthly average through September.

SOURCES: Bureau of Economic Analysis; Bureau of Labor Statistics; Energy Information Administration; calculations by the Dallas Fed.

Energy consumption to GDP ratio continues to fall

Index, 1982=100



Total energy consumption (thousand Btu)
Real GDP (chained 2009 \$)

NOTE: Dashed line is the reference case forecast from the EIA's Annual Energy Outlook (2016).
SOURCE: Energy Information Administration.

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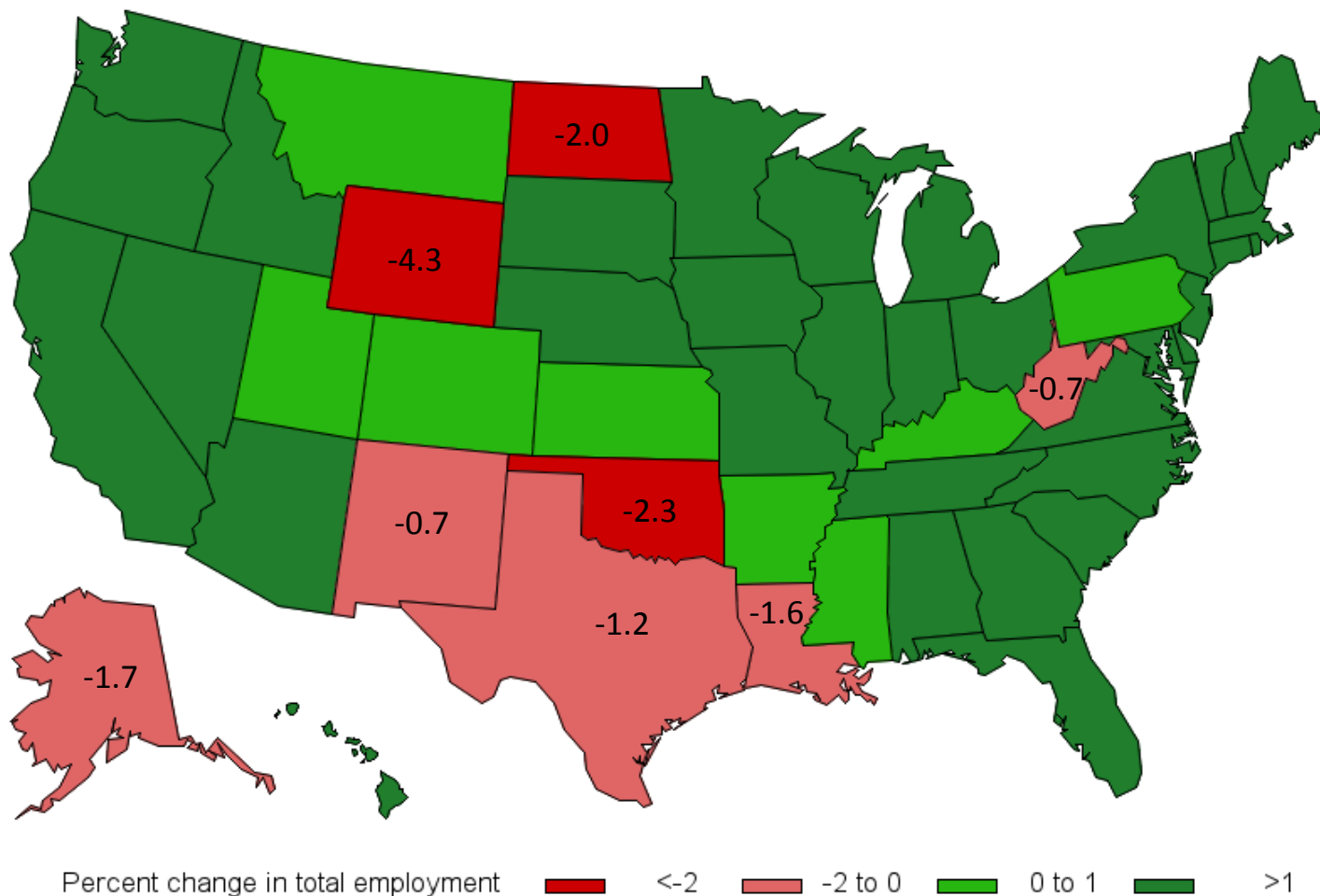


IMPACT ON STATE ECONOMIES



Low oil prices benefit most states

(Effect of a 50% decline in oil prices on employment)



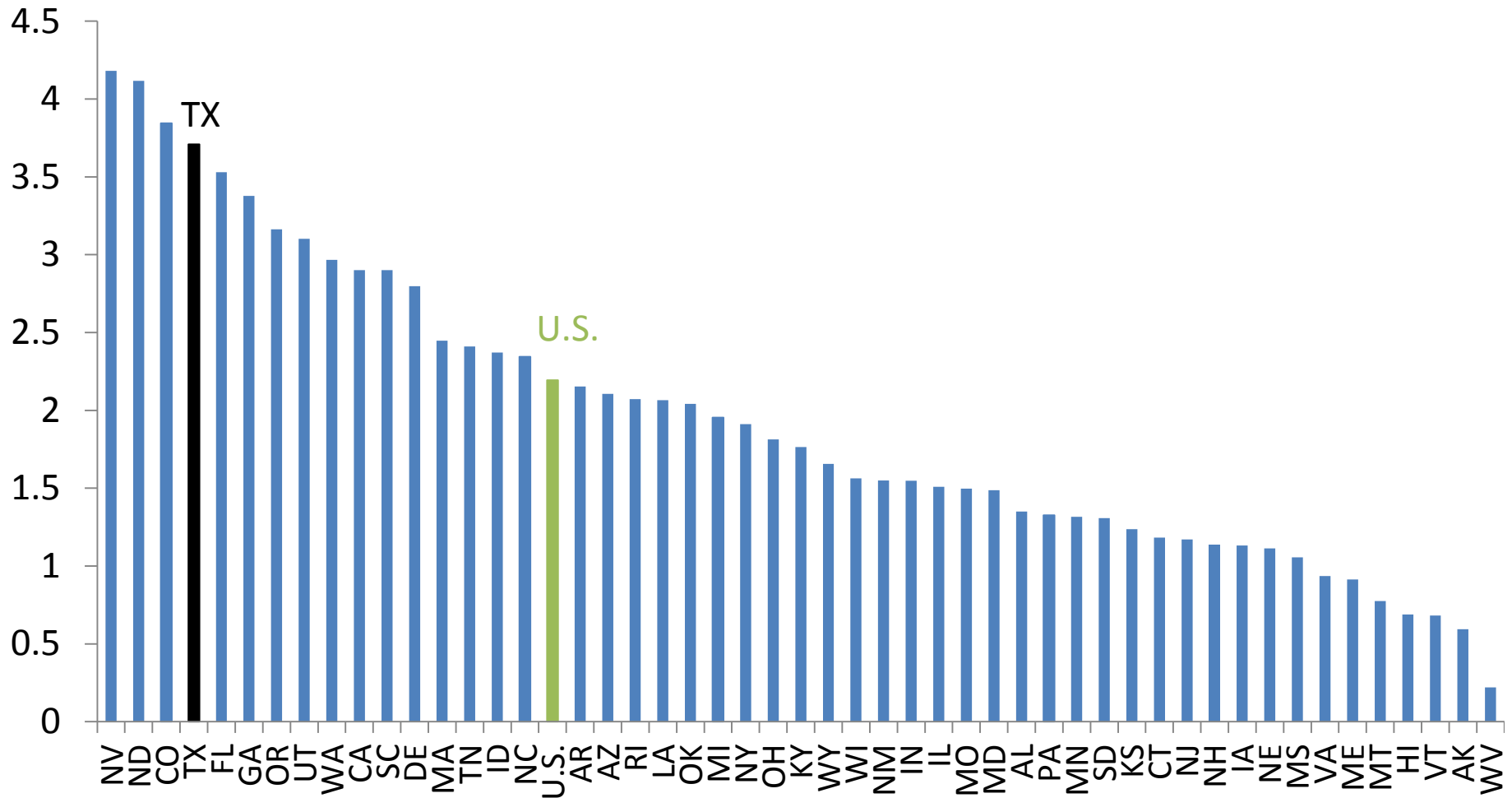
SOURCE: "The Shale Gas and Tight Oil Boom: U.S. States' Economic Gains and Vulnerabilities," by Stephen P.A. Brown and Mine K. Yücel, Council on Foreign Relations, *Energy Brief*, Oct. 2013.

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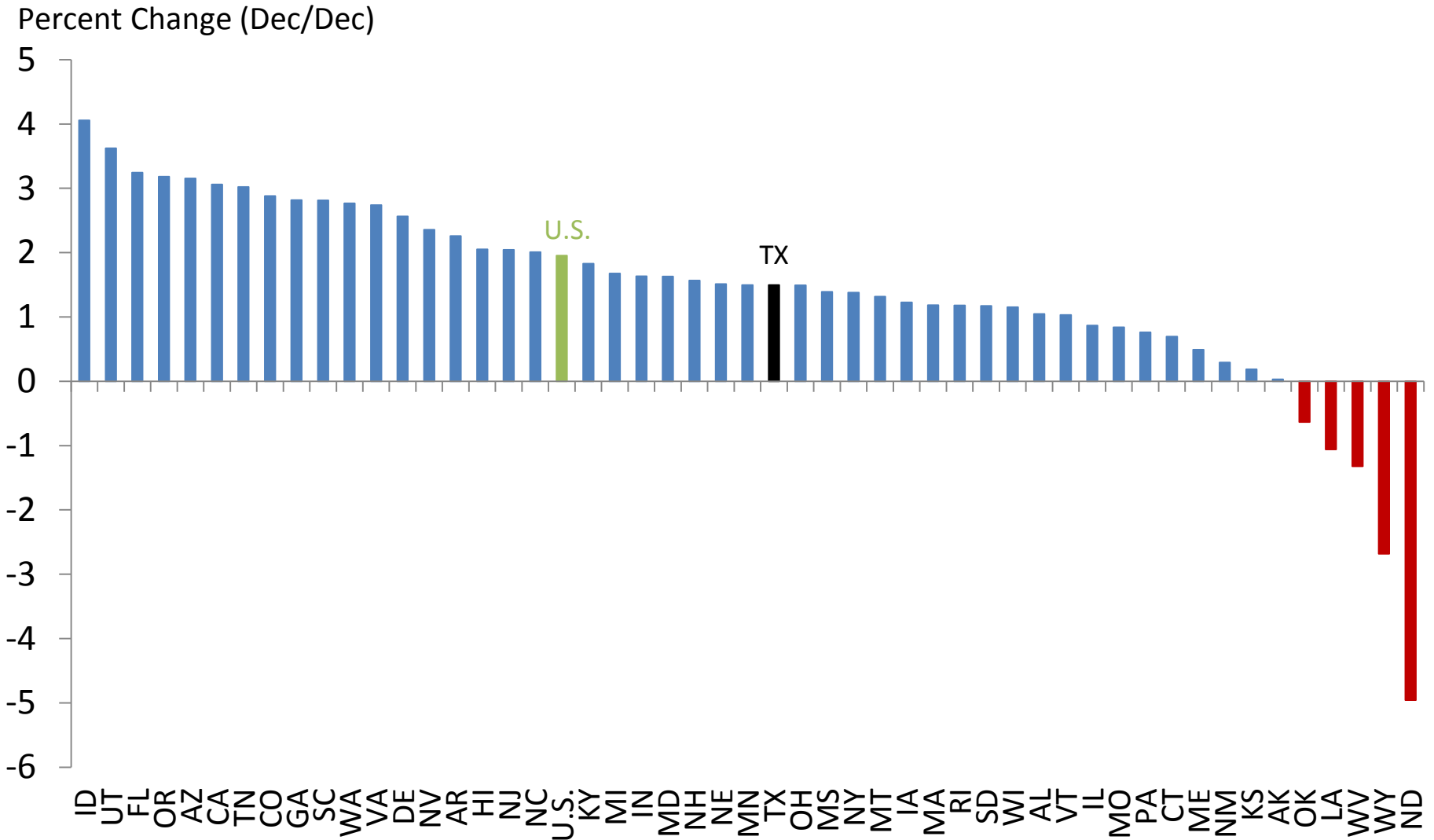
Energy states did well in 2014

Percent Change (Dec/Dec)



SOURCE: Bureau of Labor Statistics.

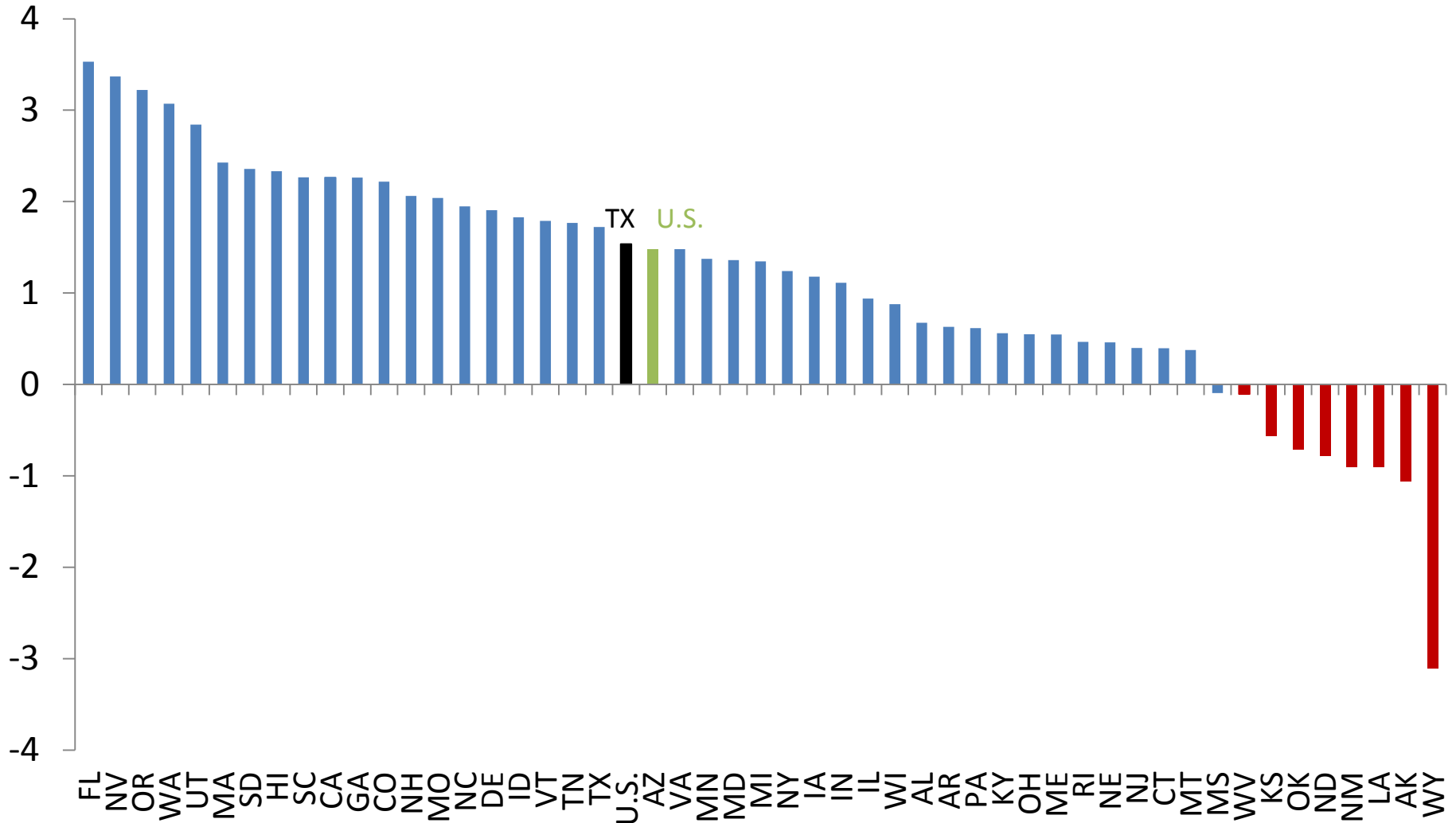
Energy states lost jobs in 2015



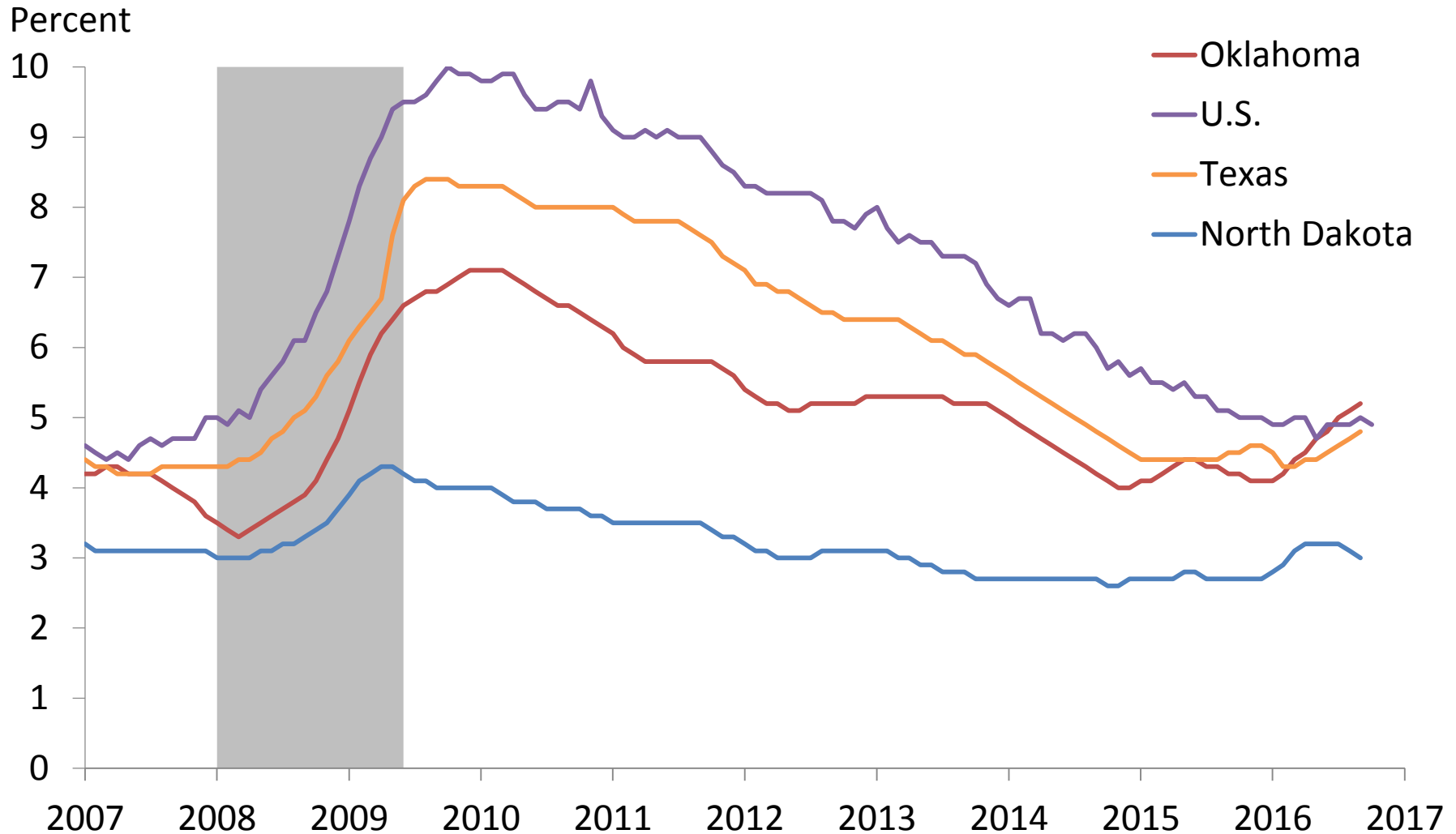
SOURCE: Bureau of Labor Statistics.

In 2016, Texas 21st in job growth

YTD percent change, SAAR



Unemployment rates are up in oil-producing states



NOTE: Shaded bar indicates a U.S. recession.

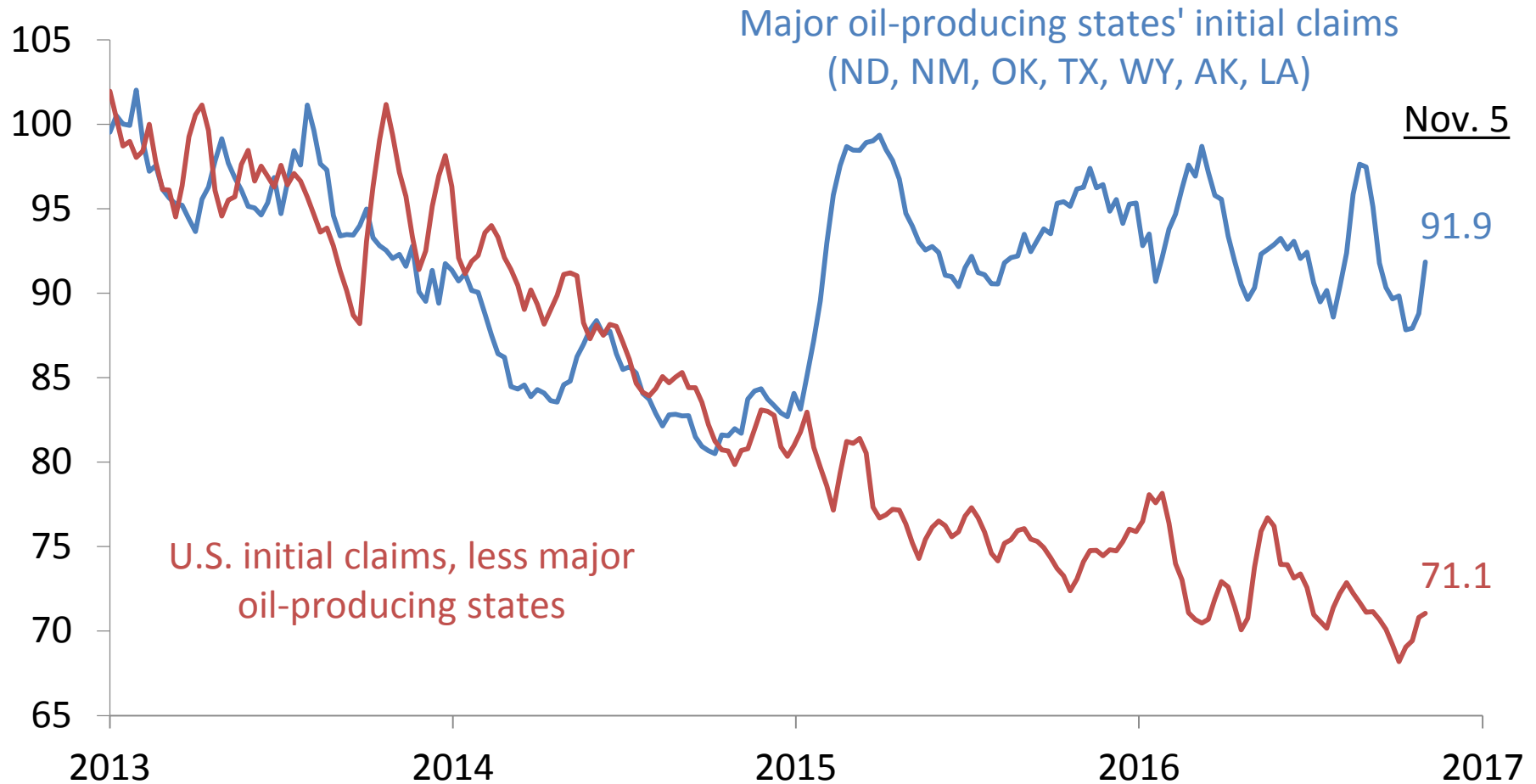
SOURCES: Department of Labor; calculations by the Dallas Fed.

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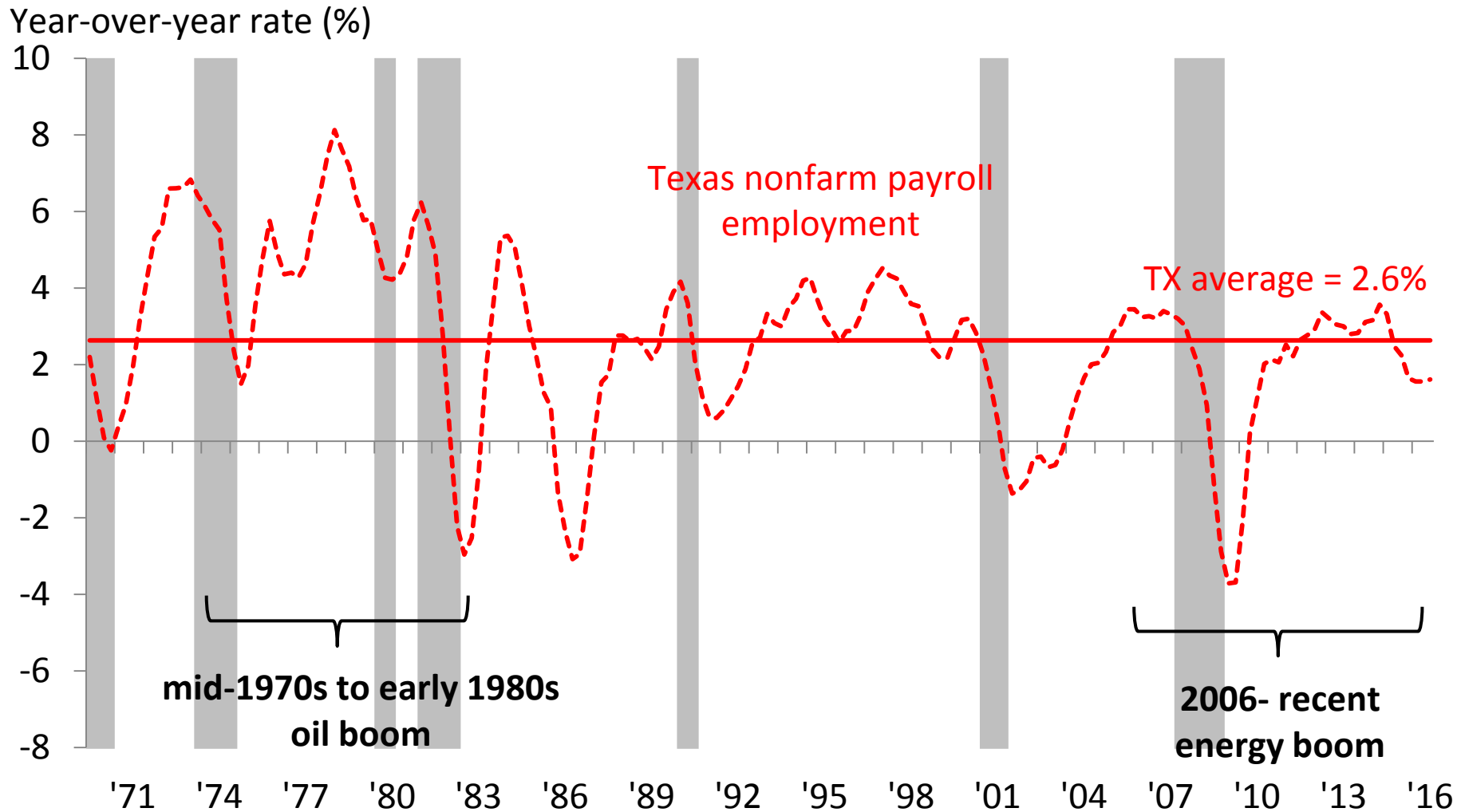


Layoffs have spiked in oil-producing states

Index, 4-week moving average,
Jan. 2013 = 100



Texas job growth outpaces the U.S., especially during energy booms



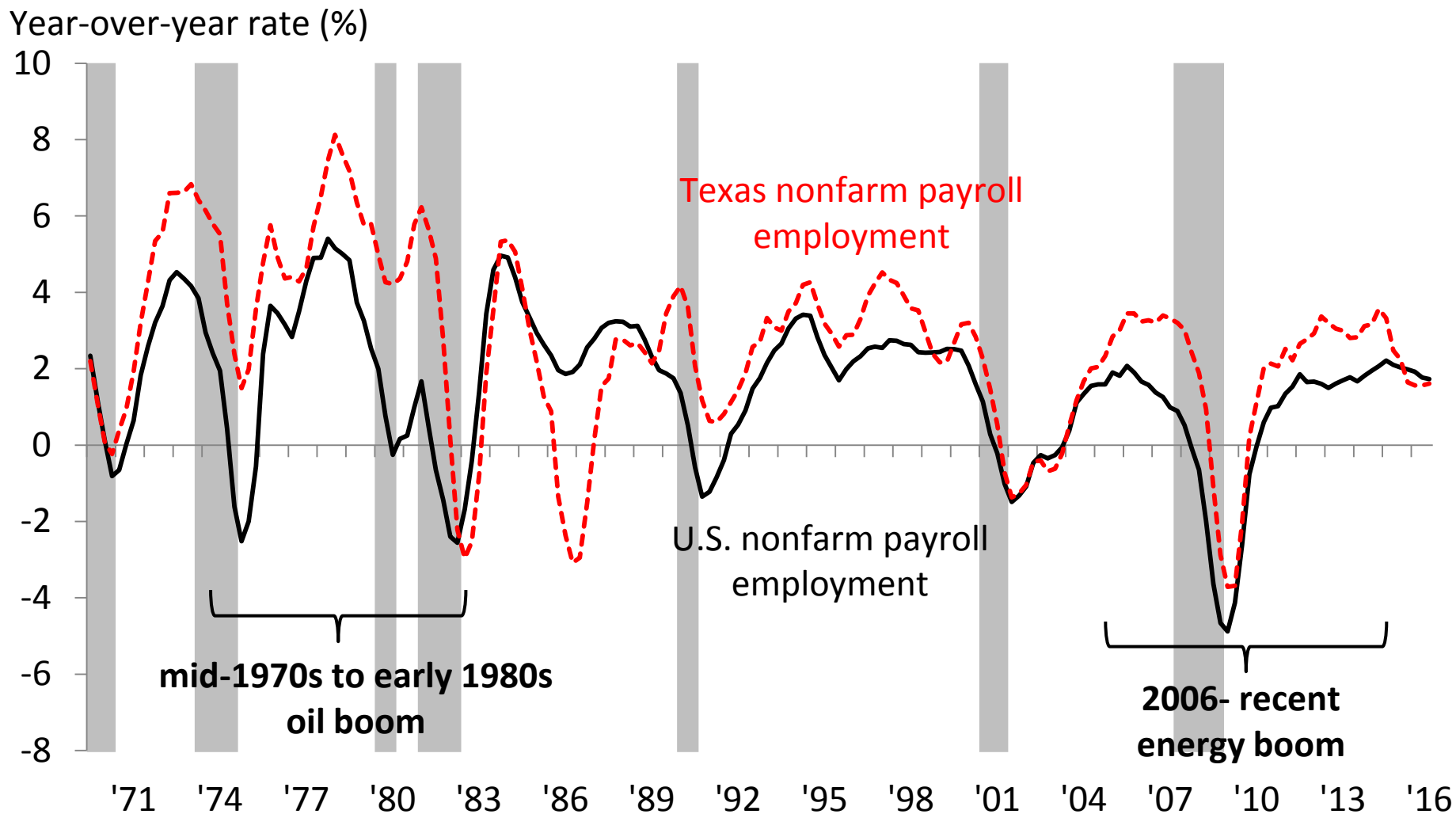
NOTE: Shaded bars indicate U.S. recessions.

SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; authors' calculations.

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Texas job growth outpaces the U.S., especially during energy booms



NOTE: Shaded bars indicate U.S. recessions.

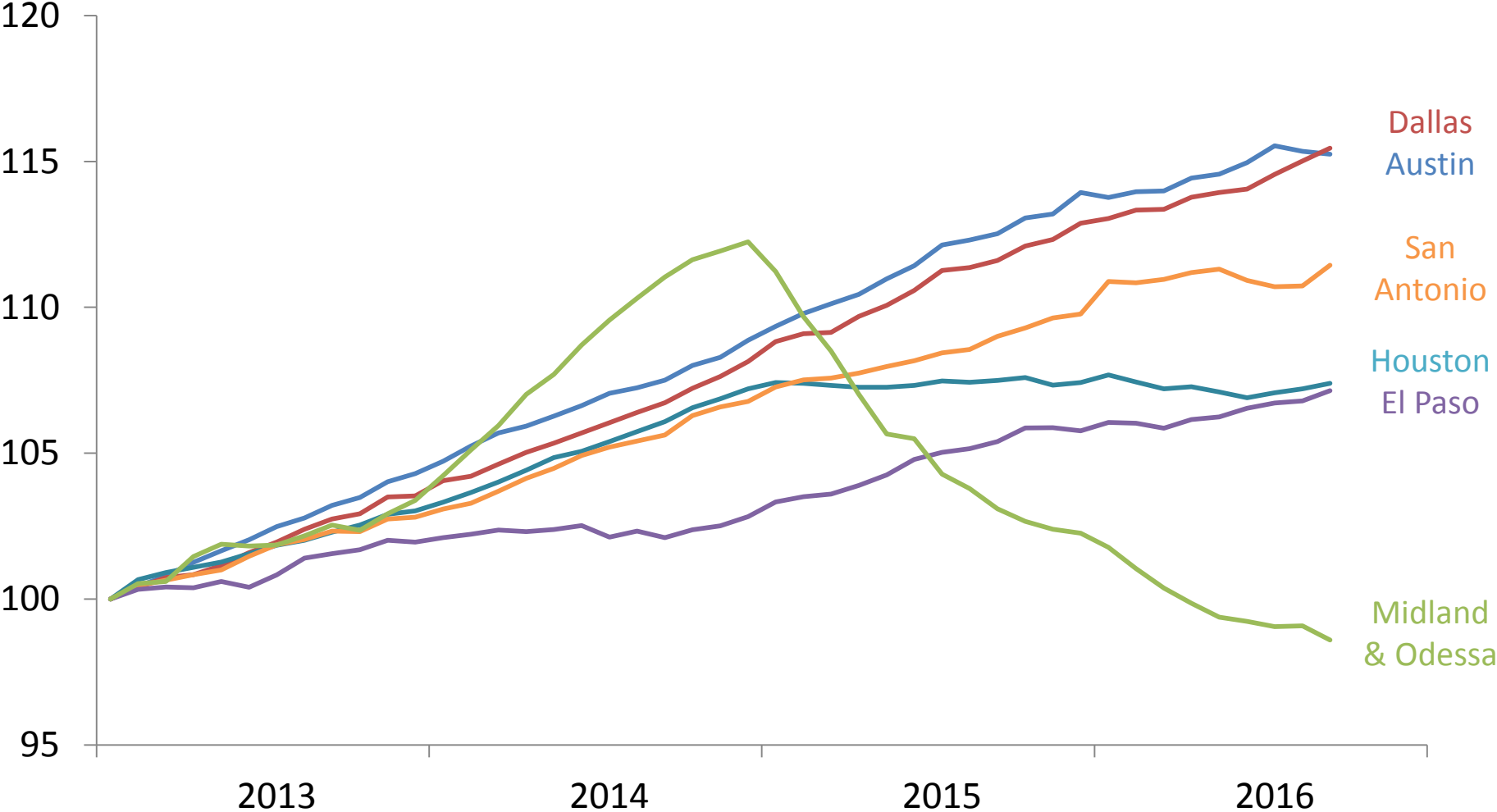
SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; authors' calculations.

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Metro employment growth rates diverge

Index, Jan. '13=100, SA



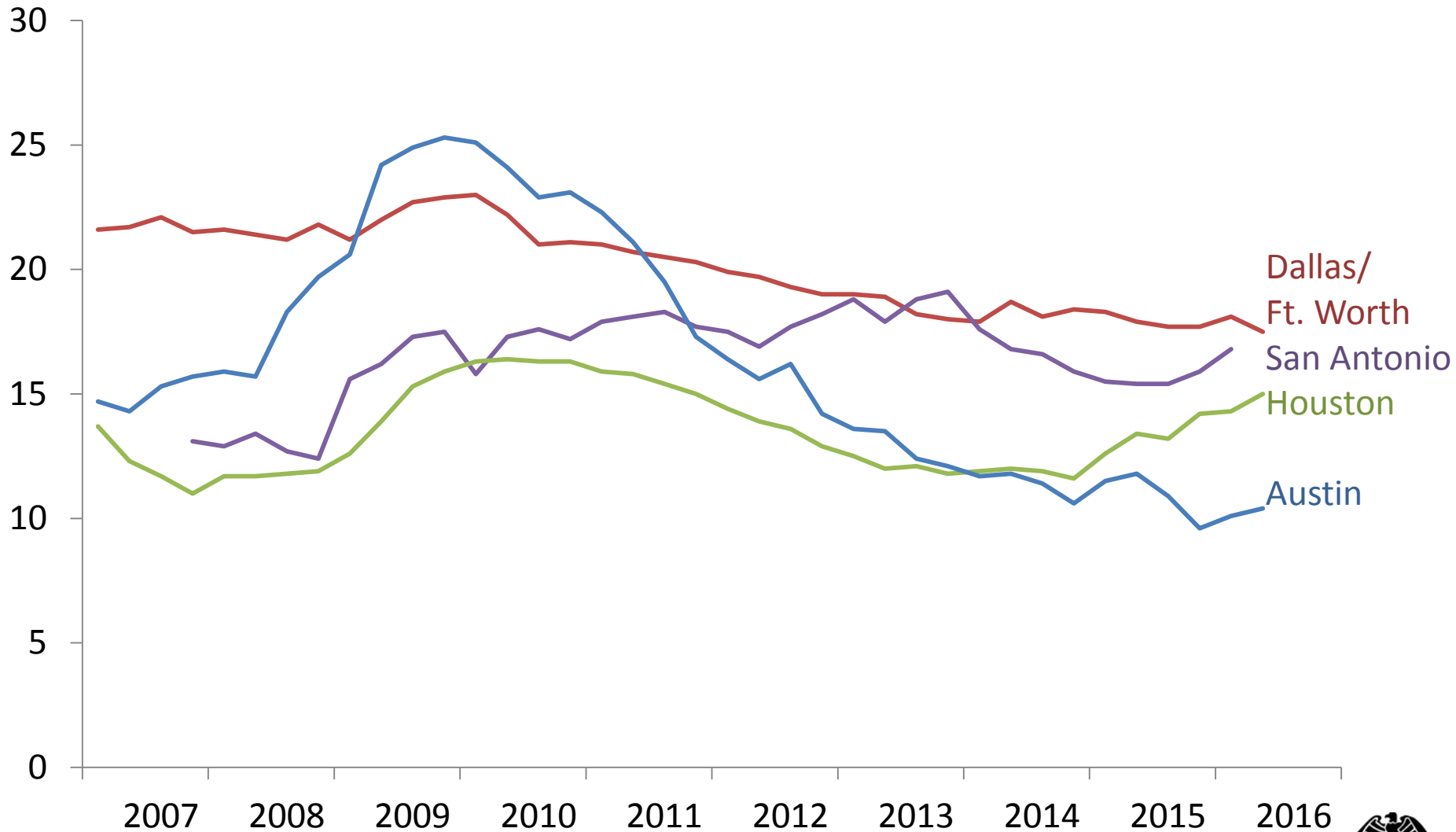
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SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; seasonal adjustments by FRB Dallas.

Low oil price impacts office market

Vacancy rate (percent)



Dallas/
Ft. Worth
San Antonio
Houston
Austin

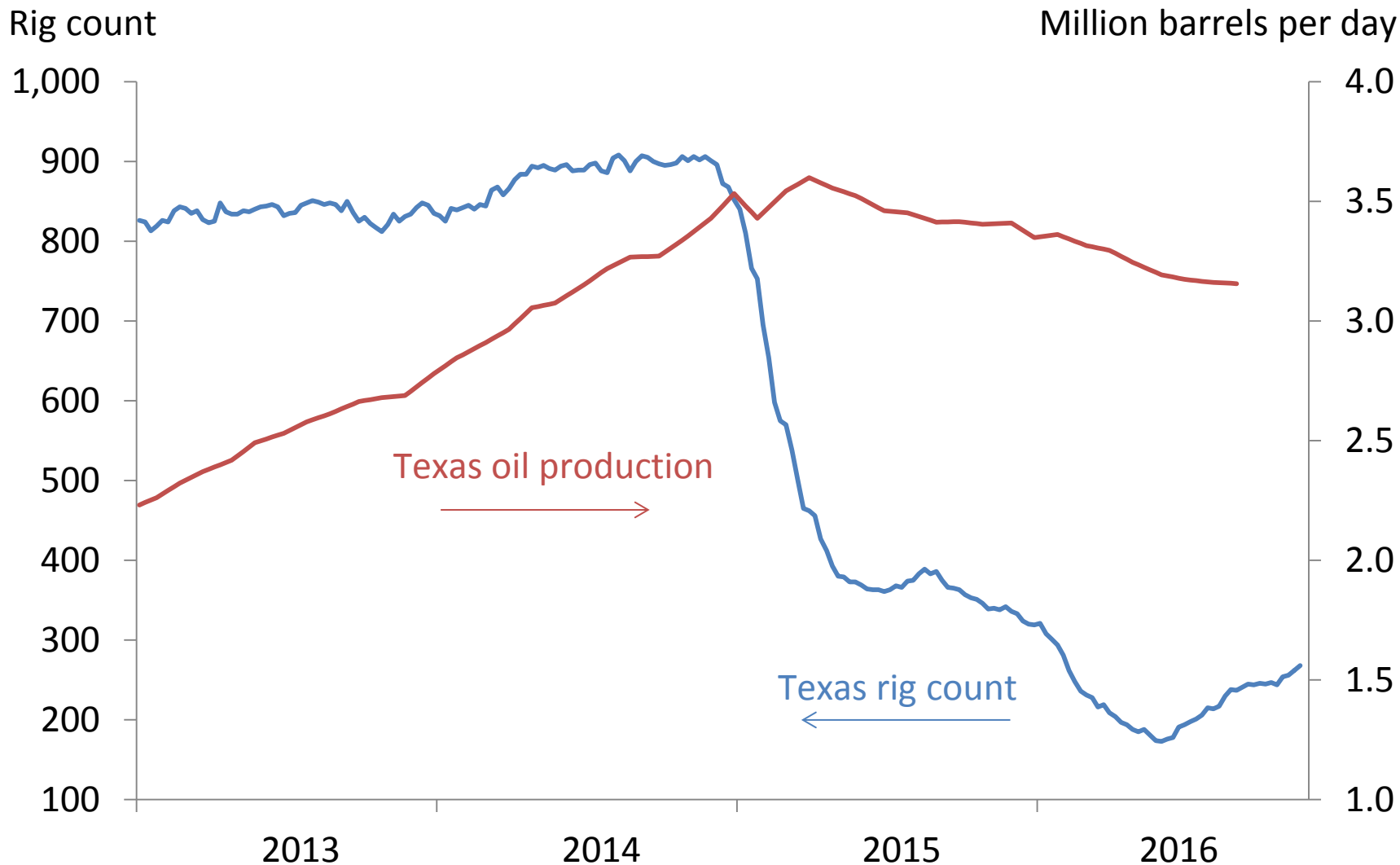
NOTE: Data through Q2 2016 for DFW, Houston and Austin; Q1 2016 for San Antonio.

SOURCES: CBRE.

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Texas rig count ticks up but oil production continues to decline

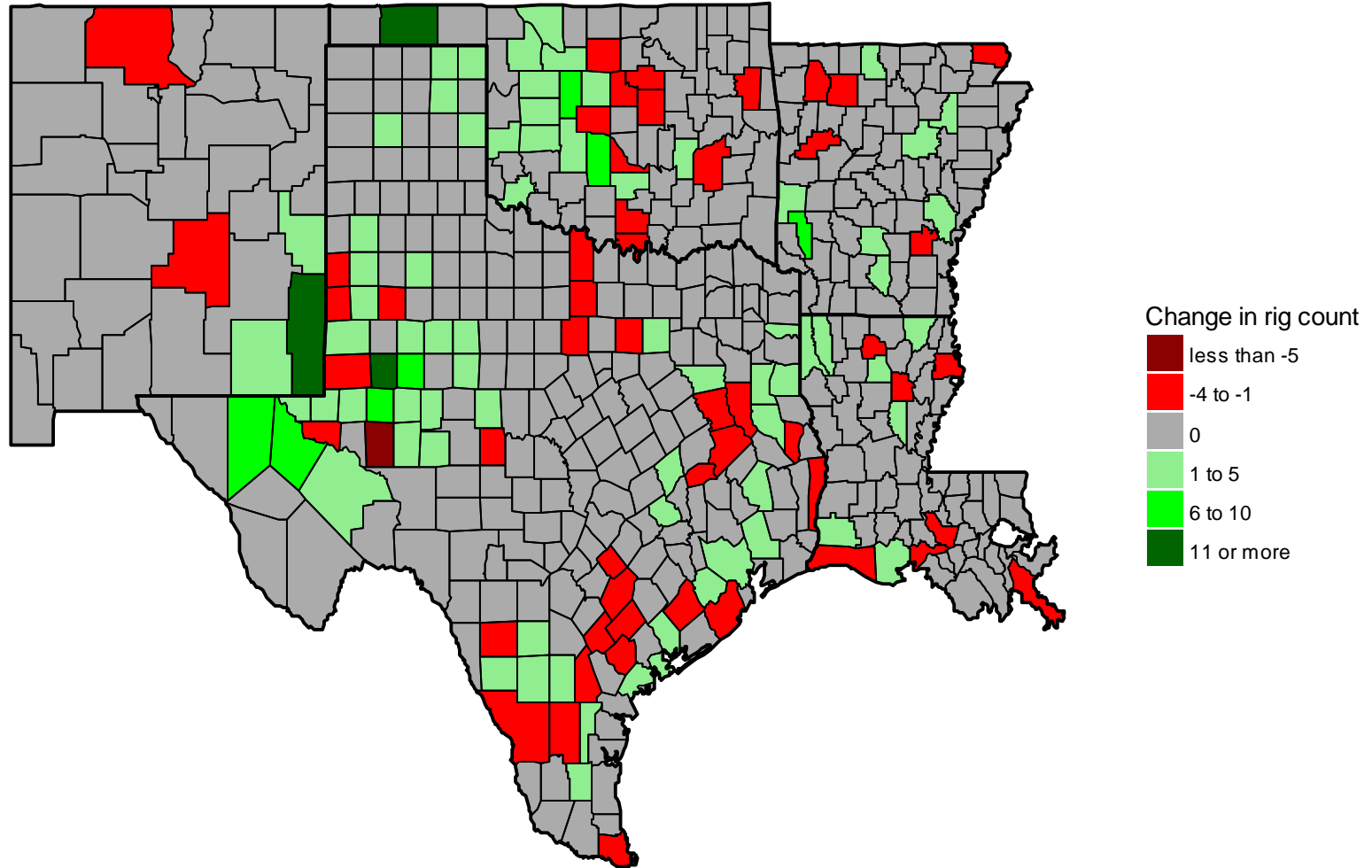


NOTE: Last weekly rig count data point is 268 for the week ending November 11.

Last monthly production data point is 3.156 mb/d for August 2016.

SOURCES: Energy Information Administration; Baker Hughes.

Permian rig count has ticked up since April



NOTE: Plot shows the rig count as of November 11 minus the count as of April 1.

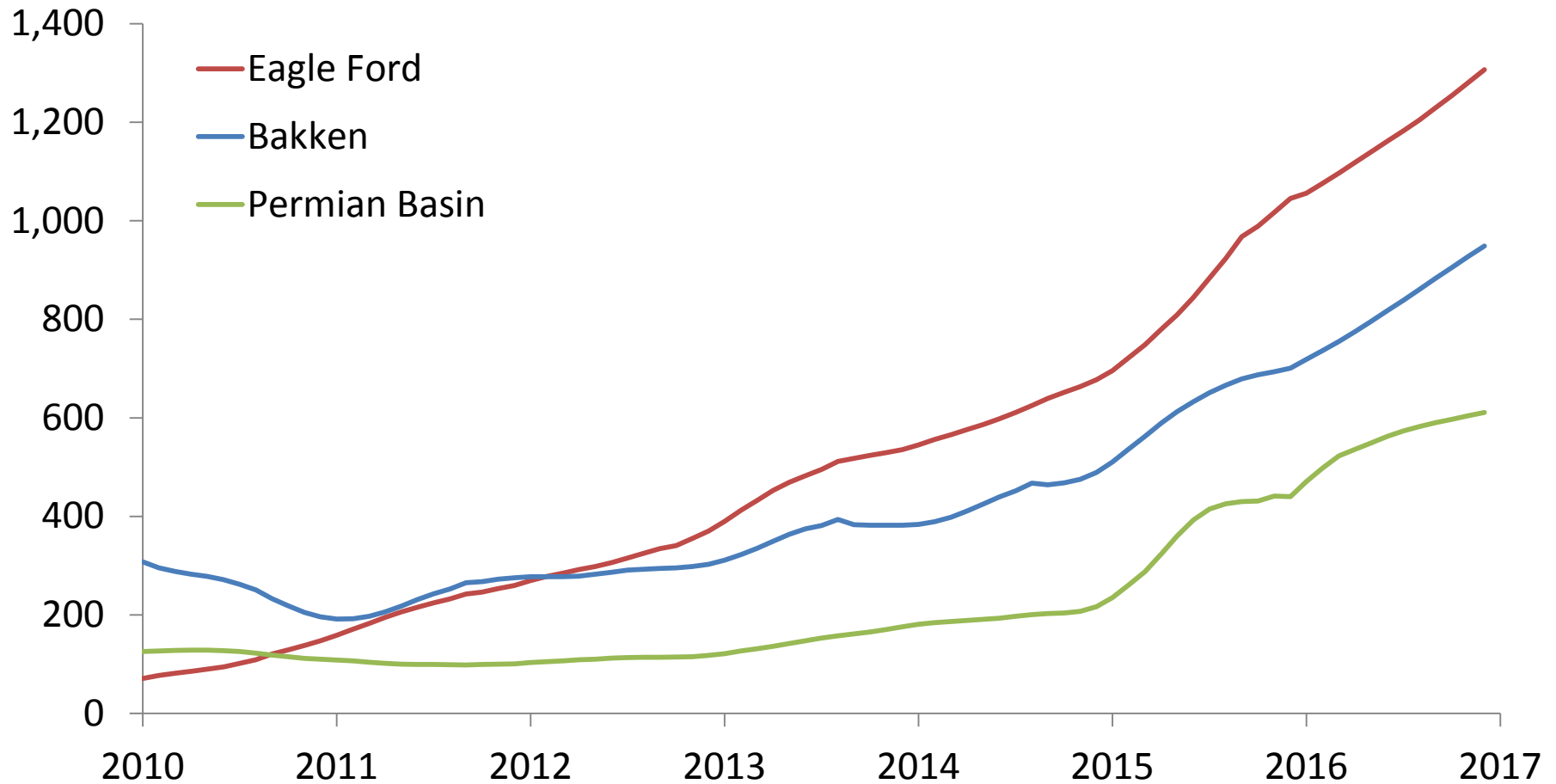
SOURCES: Energy Information Administration; Baker Hughes.

Federal Reserve Bank of Dallas



Drilling productivity continues to increase

New-well oil production per rig,
barrels per day

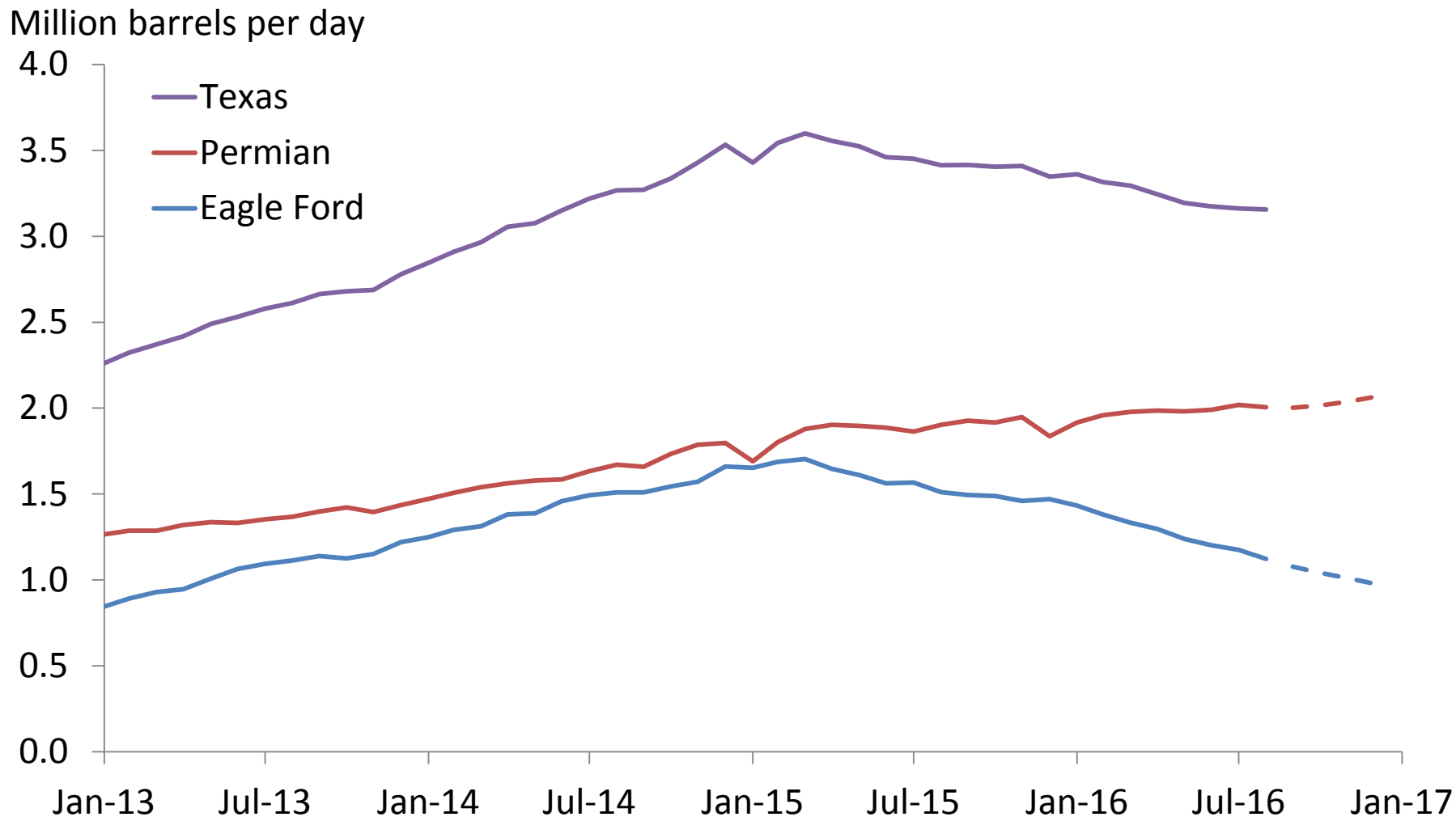


SOURCE: Energy Information Administration.

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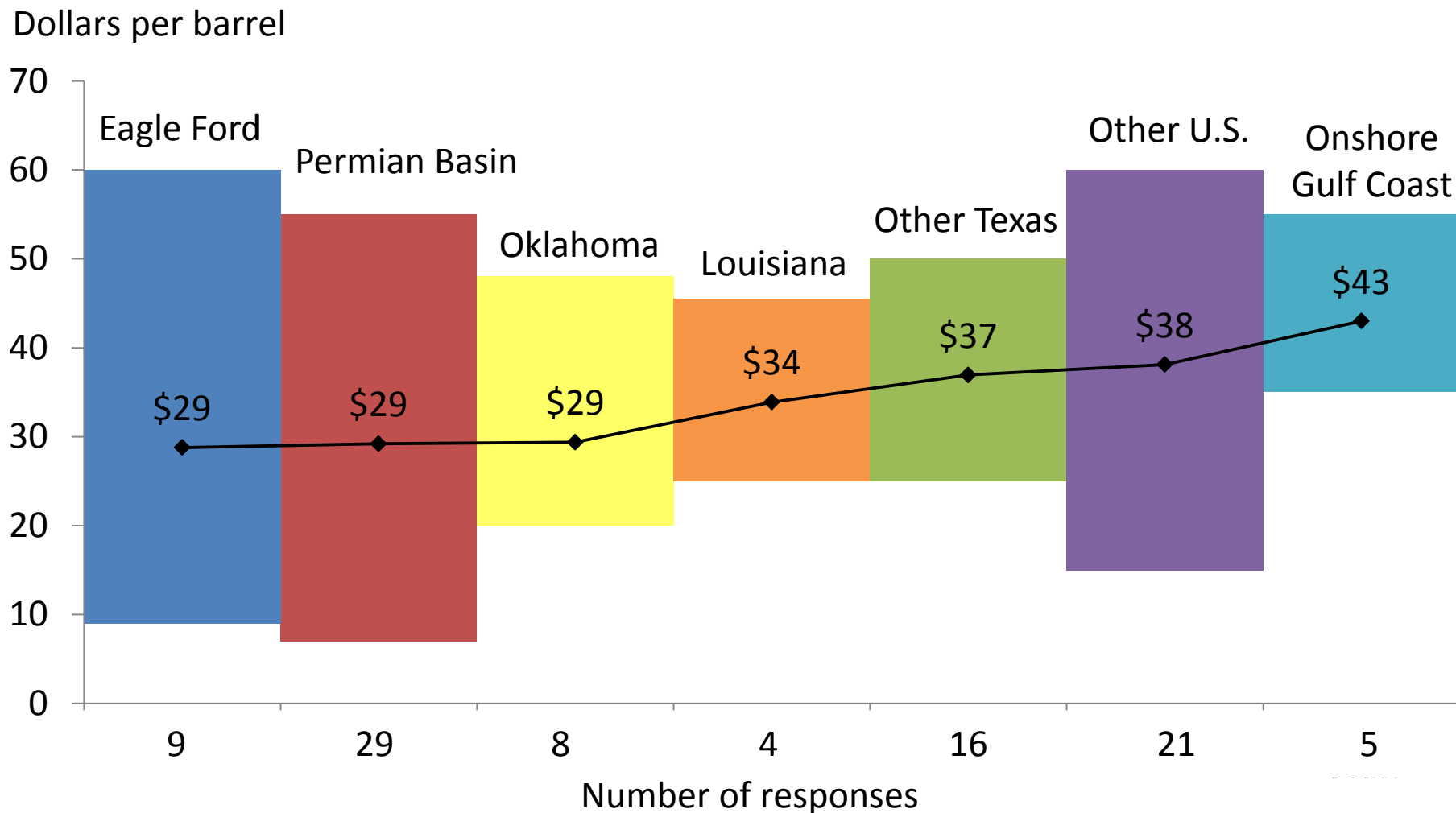


Eagle Ford declines have more than offset steady Permian in Texas



NOTES: Eagle Ford and Permian series are from the EIA's Drilling Productivity Report.
Dashed lines are forecasts through December 2016. Actual data are through August 2016.
SOURCE: Energy Information Administration.

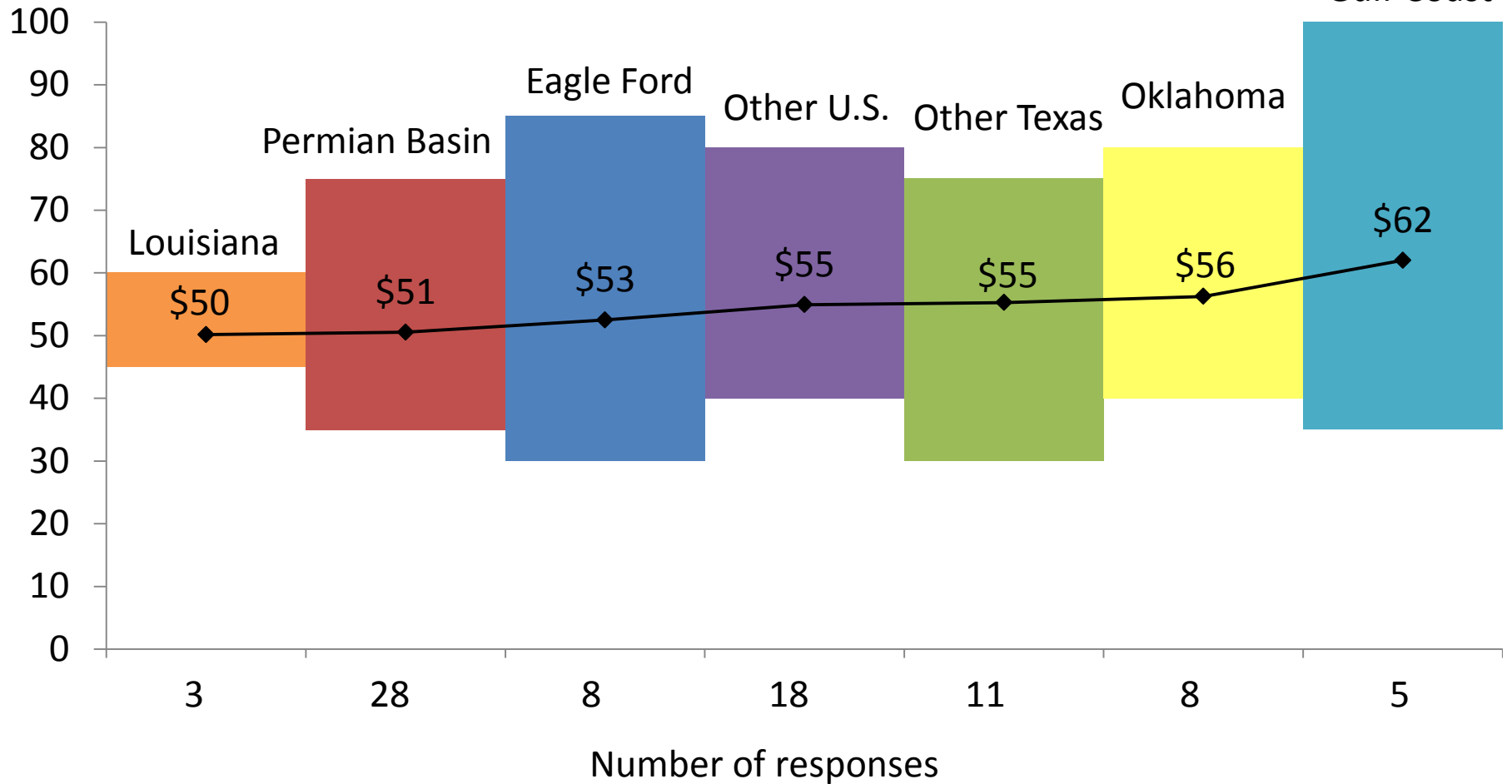
Existing wells won't be shut in at current prices...



NOTES: Line depicts the mean and bars depict the range of responses. 69 E&P firms answered this question from March 16-24, 2016. Other U.S. includes Bakken, Kansas, Gulf of Mexico and others.
 SOURCE: Federal Reserve Bank of Dallas.

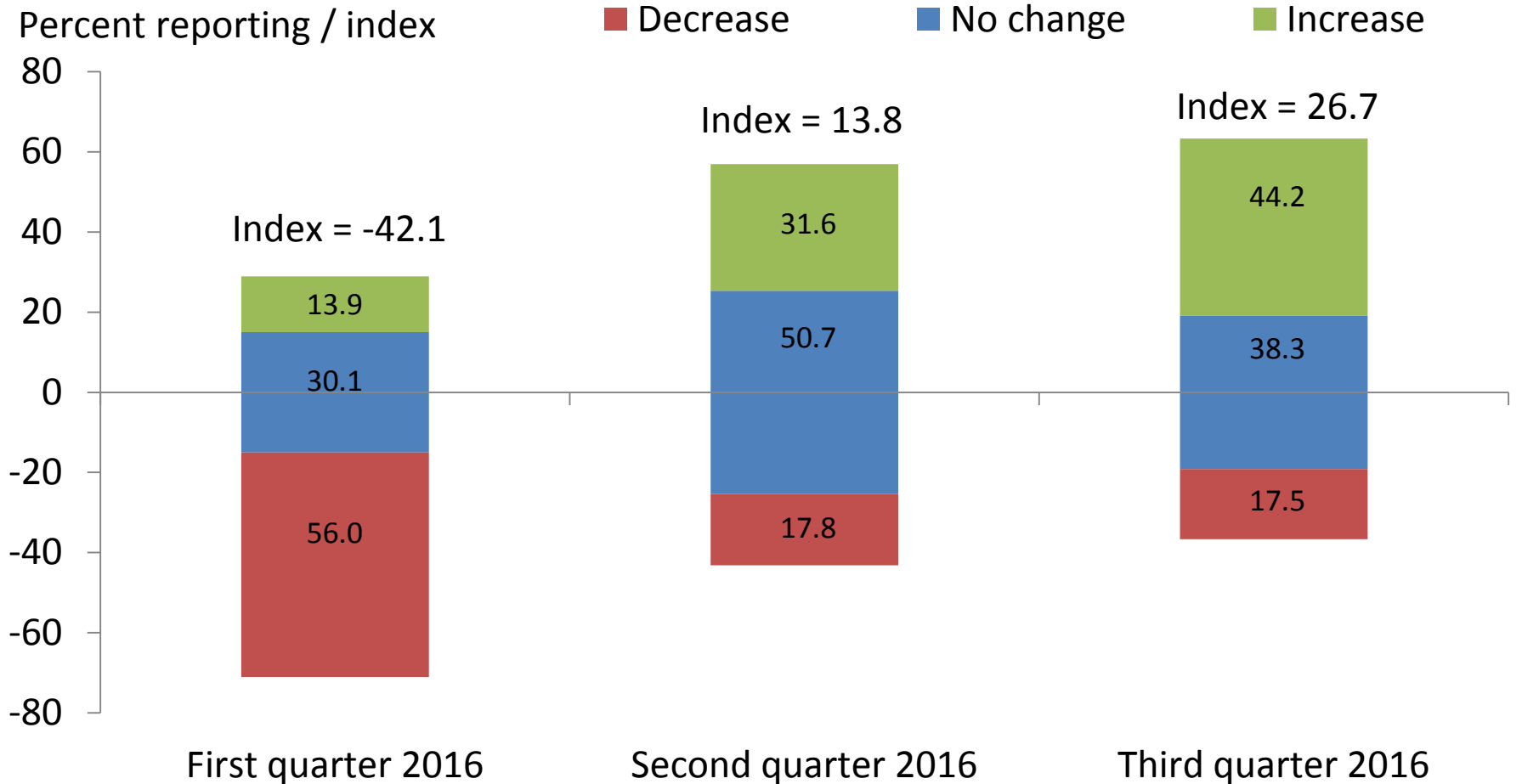
...but prices are still below breakeven for new wells

Dollars per barrel



NOTES: Line depicts the mean and bars depict the range of responses. 63 E&P firms answered this question from March 16-24, 2016. Other U.S. includes Bakken, Kansas, Gulf of Mexico and others.
SOURCE: Federal Reserve Bank of Dallas.

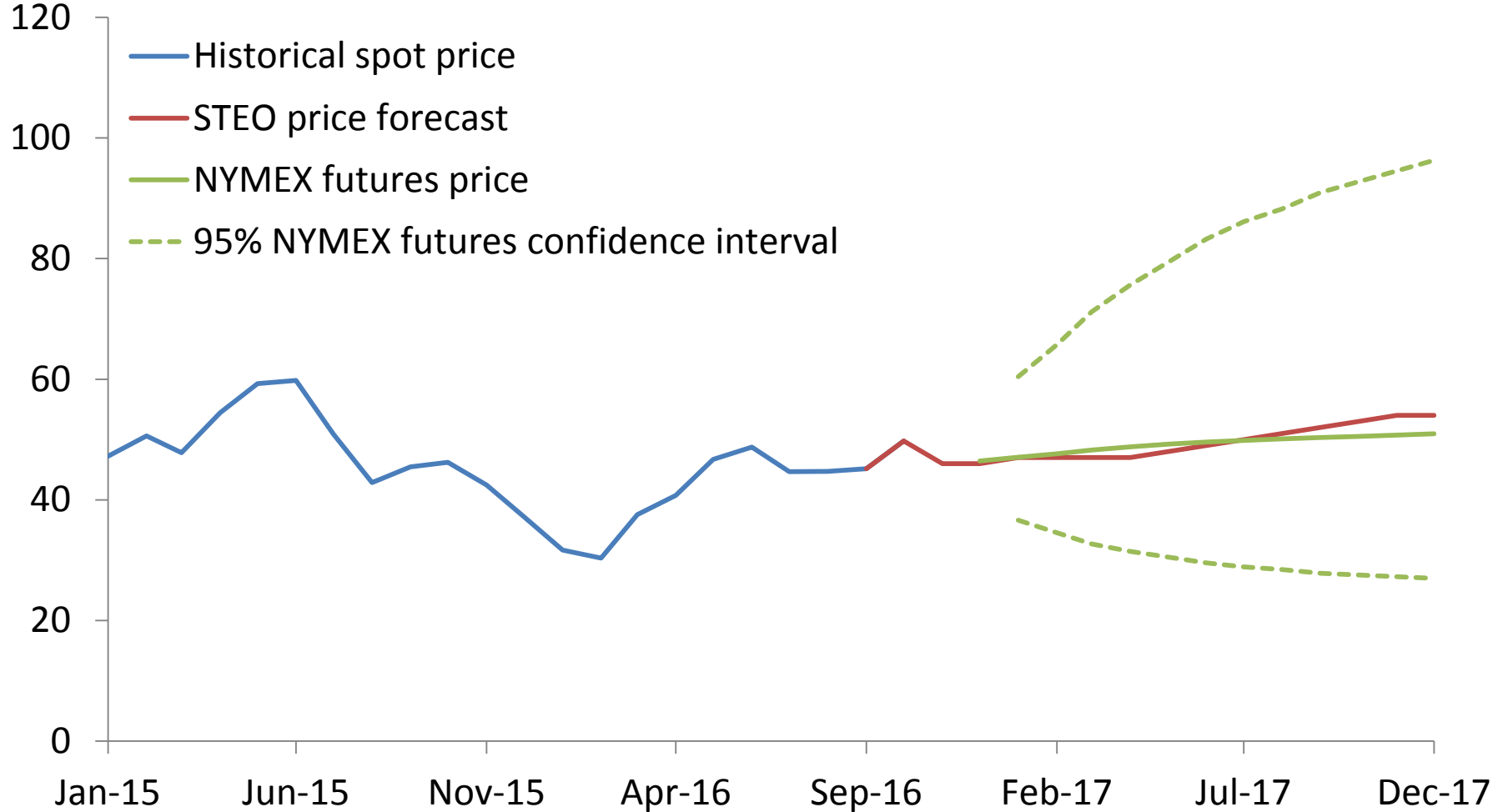
In the current quarter vs. the prior quarter: has your firm's business activity increased, not changed or decreased?



NOTES: Percent reporting decrease is plotted as a negative value. Percent reporting no change is plotted symmetrically around zero. Responses were collected Mar 16-24, Jun 15-23 and Sep 14-22.
SOURCE: Federal Reserve Bank of Dallas.

Crude Price Forecast

Dollars per barrel



SOURCE: Energy Information Administration.

Federal Reserve Bank of Dallas



Outlook

- Plunge in oil prices helped consumers and the overall economy but slowed growth in energy states.
 - Small energy states still in recession.
 - Large, diversified states such as Texas skirted recession.
- Effect of low oil prices on economy not as strong as expected
 - The decline in oil prices coincident with a strong dollar and slower global growth
 - Hurt U.S. manufacturing and exports
- The U.S. and energy importers should continue to benefit from low oil prices
- Rough patch for energy-producing states.



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