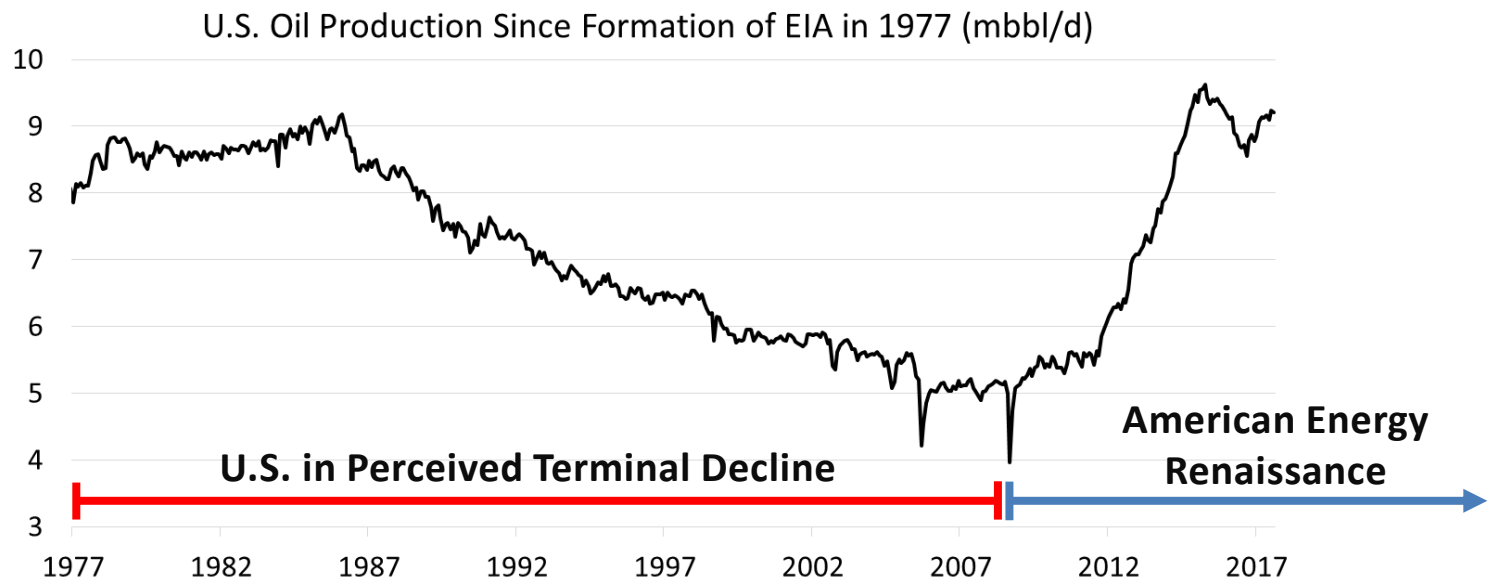


# EIA

November 16, 2017

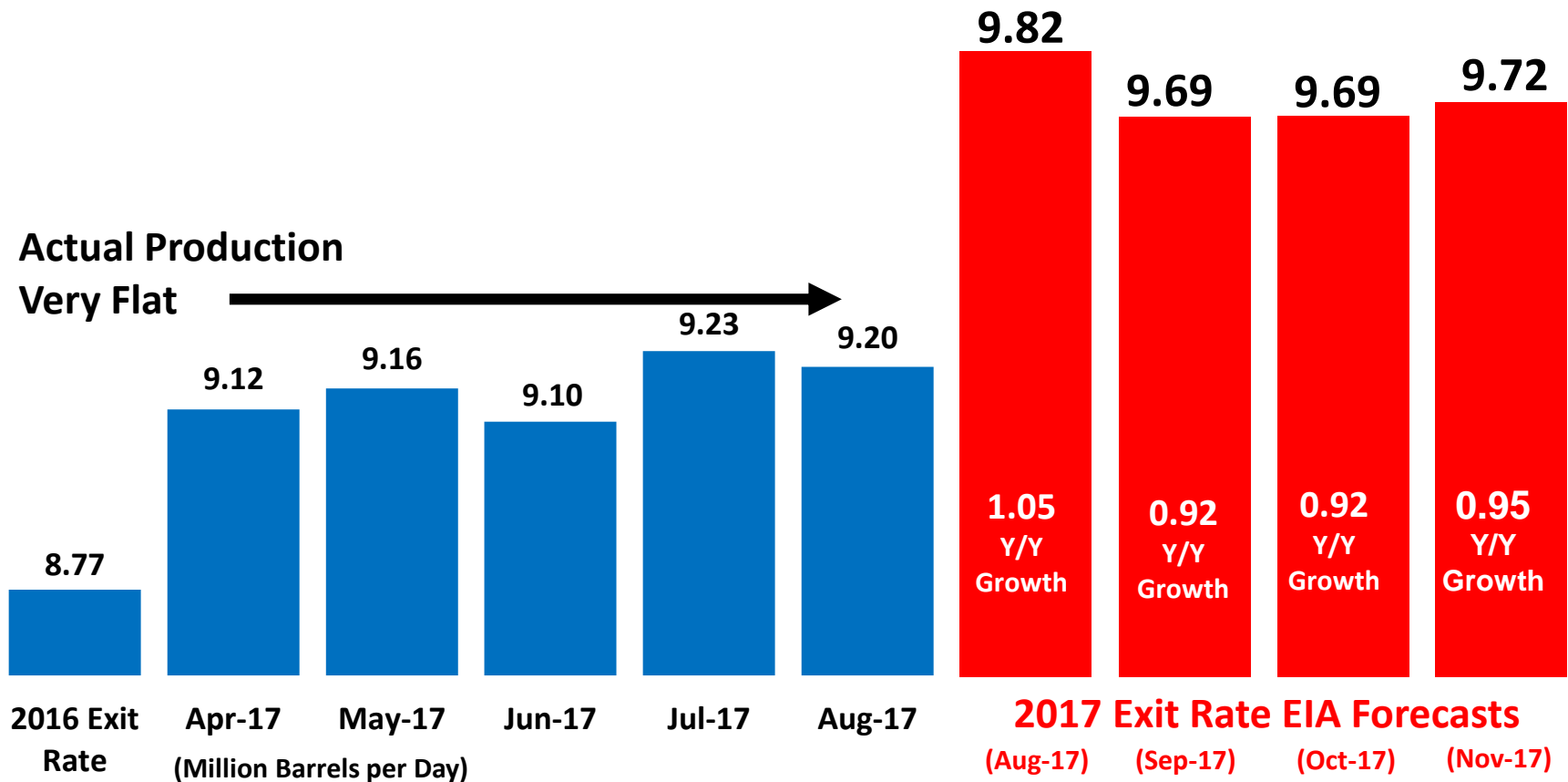
# New Era Of Energy In America Requires Even More Sophisticated Methods Of Forecasting

*EIA data is on a world stage as the U.S. is now the world's swing producer.*



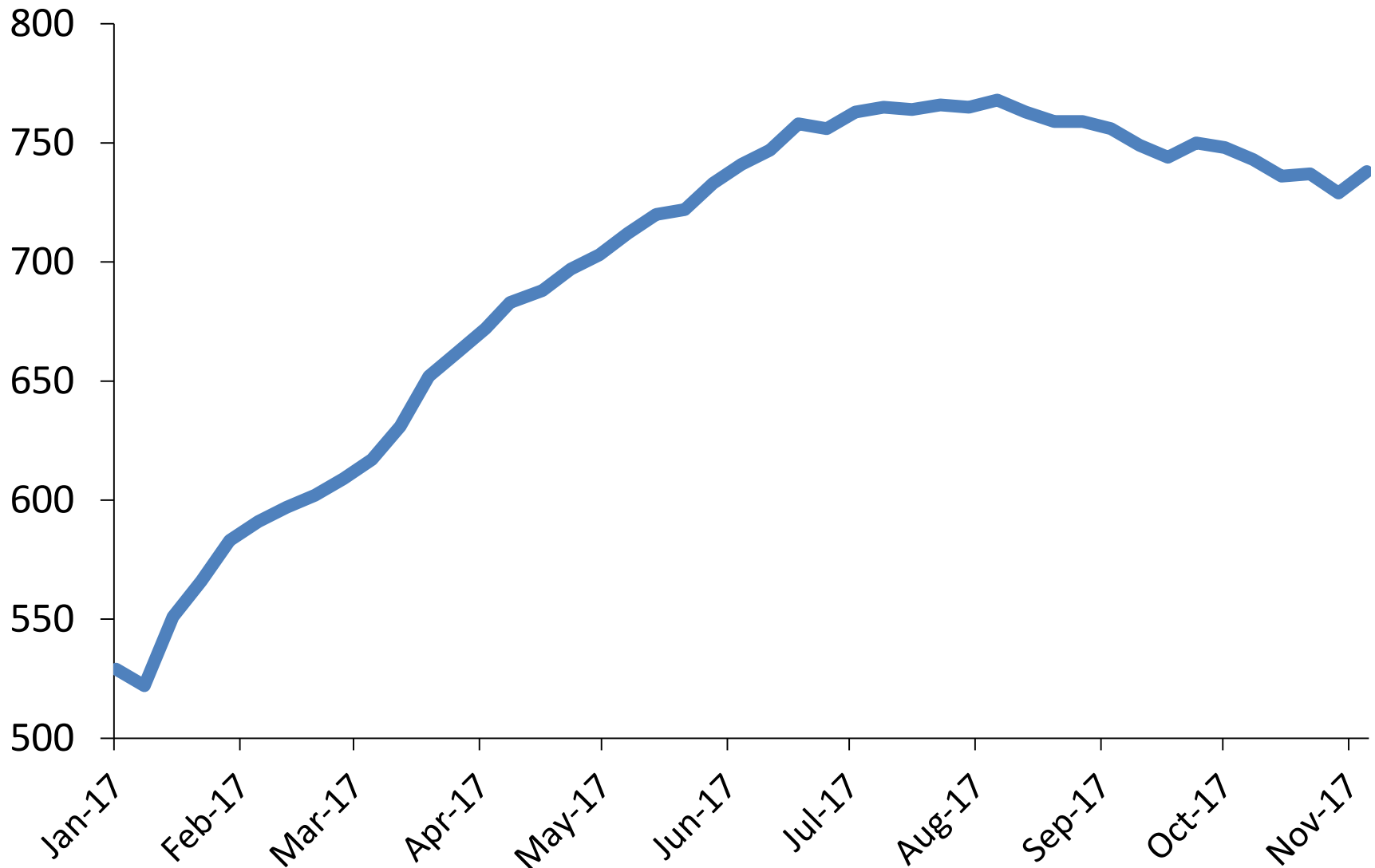
# EIA Still Overstating 2017 Exit Rate Forecasts

Although EIA reduced their forecasts in September after DEPA's August presentation, they remain on the high side by 220,000 bbls or more.



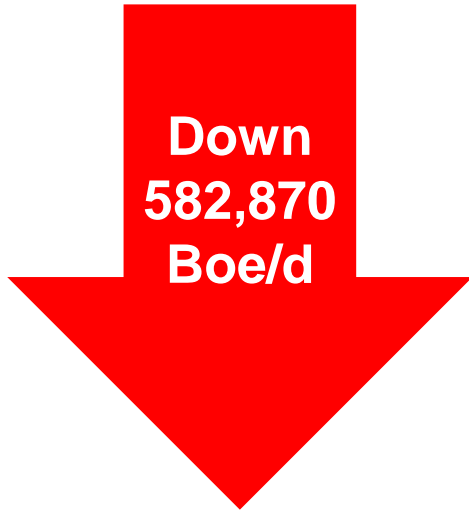


# U.S. Oil Rig Count



# U.S. Production By Public Reporting Companies: 2Q 2017

13 Companies



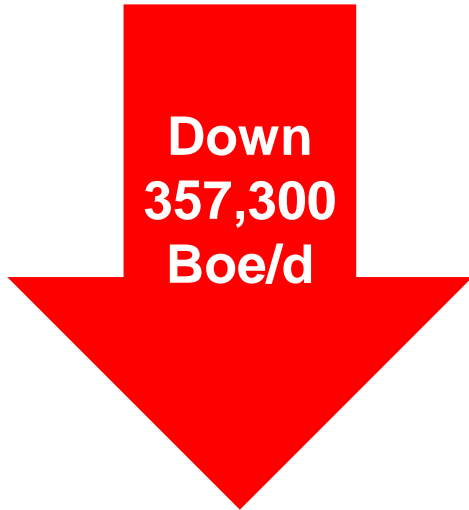
**Total 2Q17 Production:**  
-139,485 Boe/d  
Down .78%



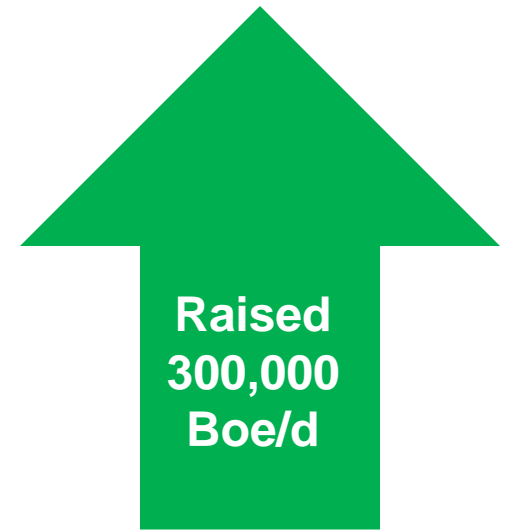
28 Companies

# U.S. Production By Public Reporting Companies: 3Q 2017

27 Companies



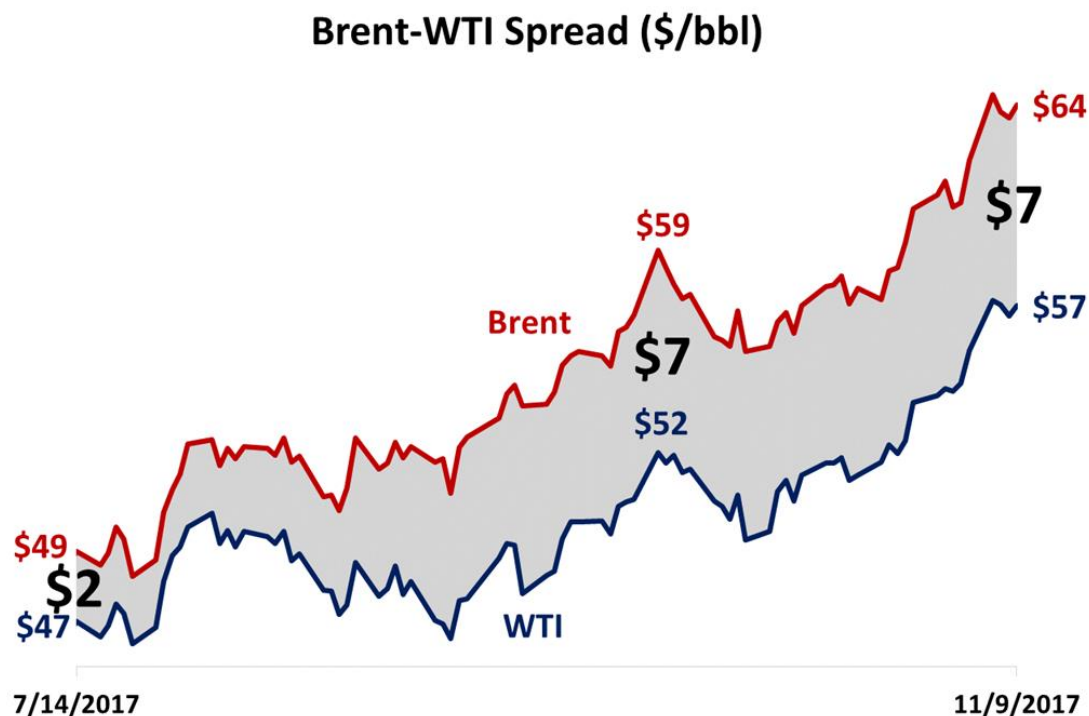
**Total 3Q17 Production:**  
-57,300 Boe/d  
Down .53%



12 Companies

# Unrealistic Growth Projections Disadvantage U.S. Market

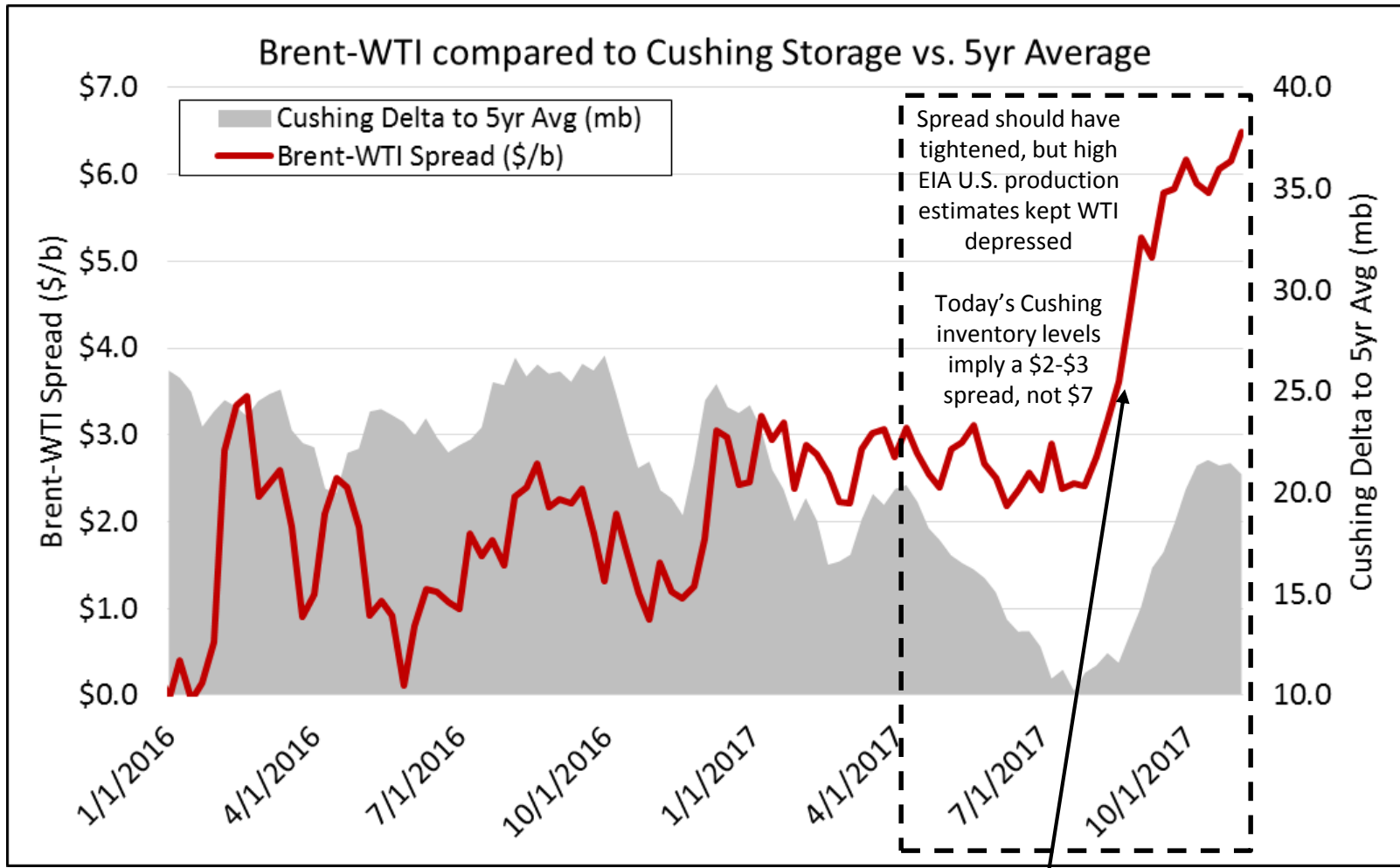
- Brent, the overseas benchmark, trades at an artificially elevated premium to WTI because U.S. growth is overstated.
- This is a 10% disadvantage.
- This puts America last, not first.





# What Has The Forecast Cost the U.S. in 2017?

\$4 Billion In Revenue, Royalties And Associated Tax Dollars

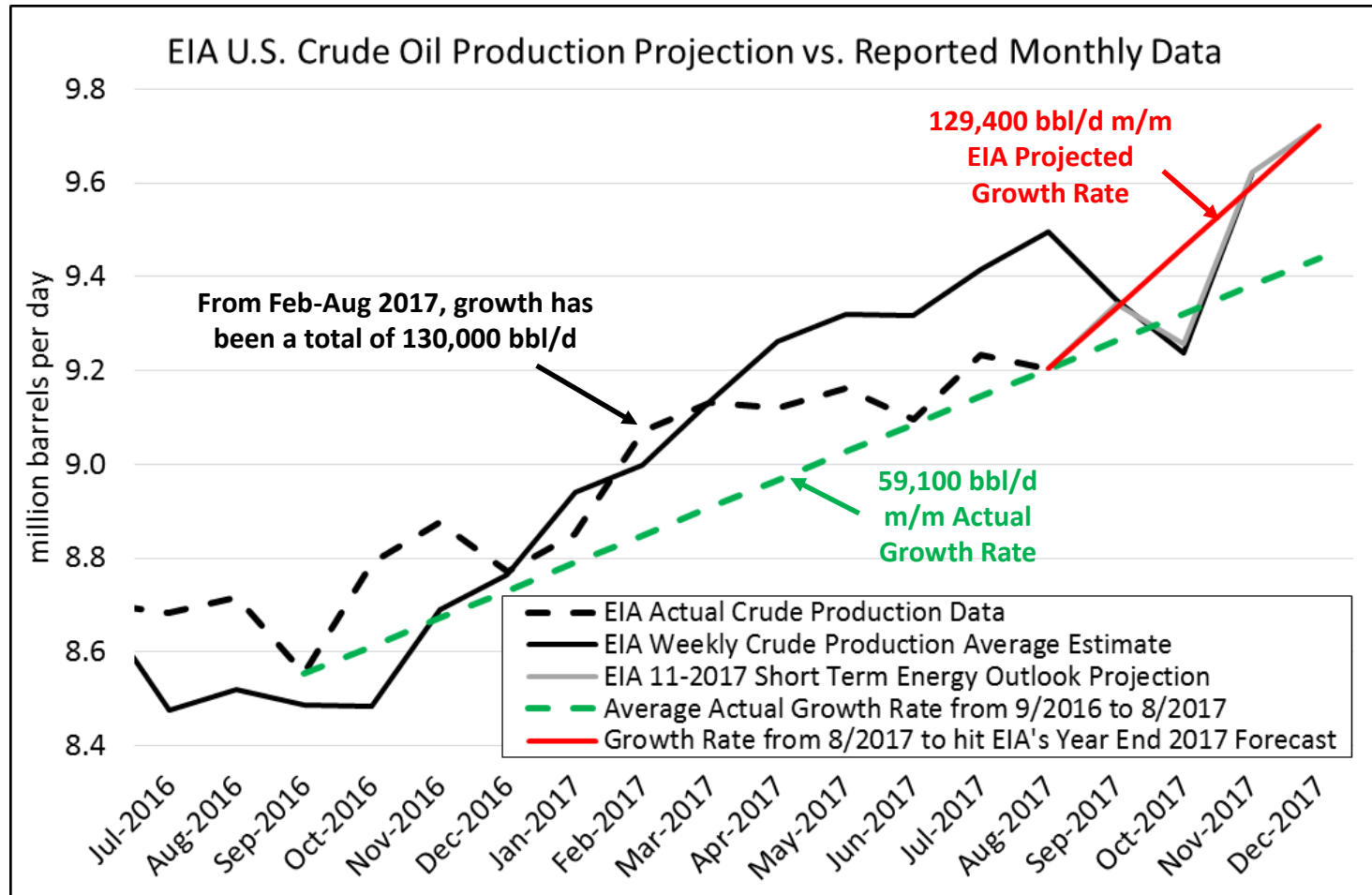


# EIA Must Be Responsive To Changing Dynamics On A Timely Basis

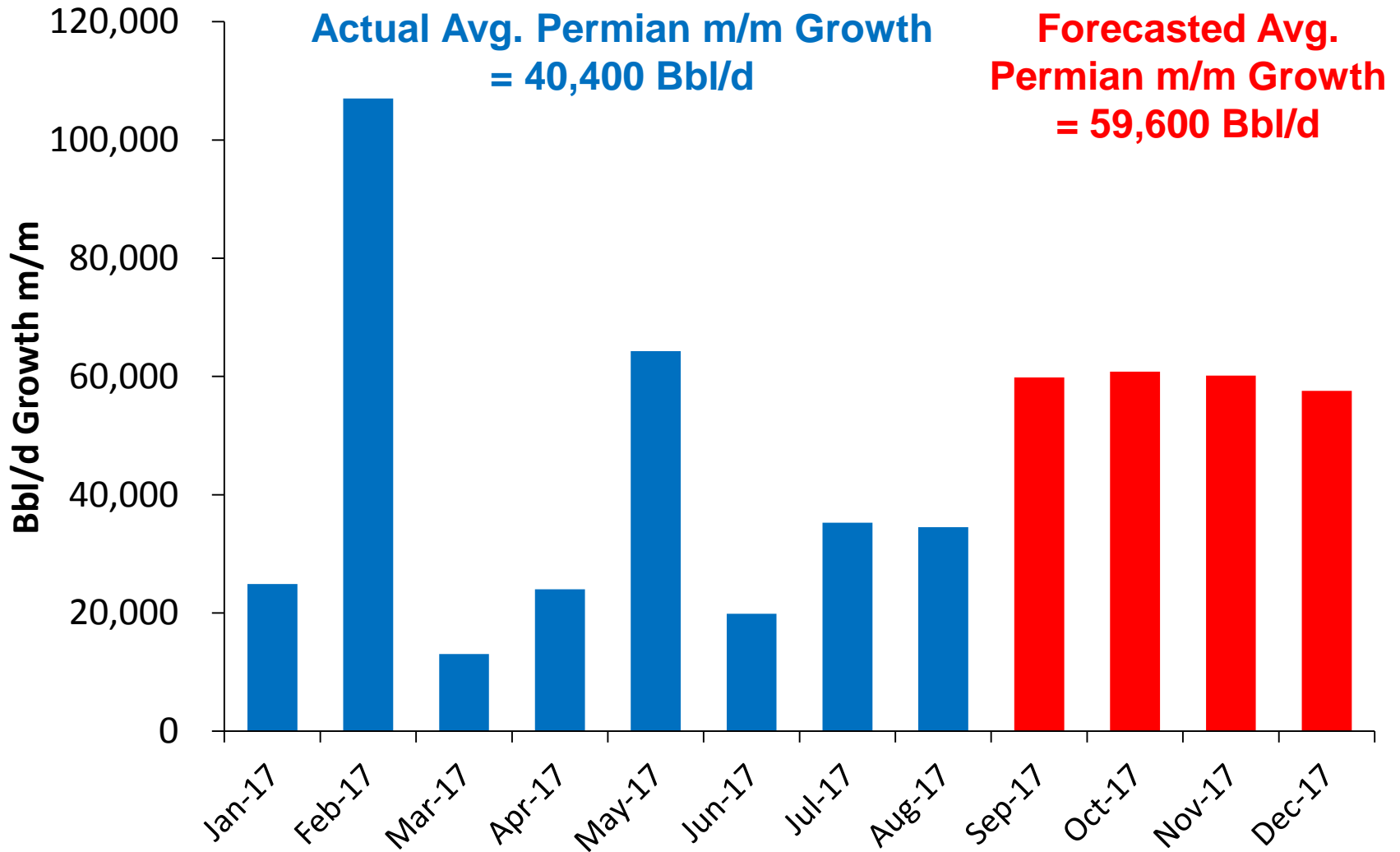
- Considering that the U.S. energy industry has the capability to oversupply the market, the EIA should engage industry to understand and respond to critical market dynamics.
- Capital markets have changed. Shareholders want return on their investment. Growth at any cost / cash flow neutral no longer applies.

# U.S. Production Growth Has Moderated

Exceptionally Large Growth Required To Catch Up To EIA's Projections



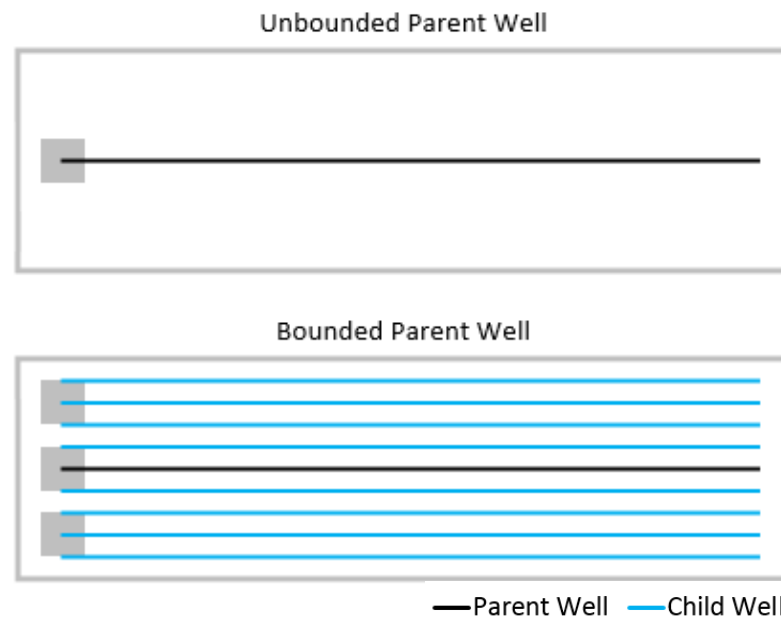
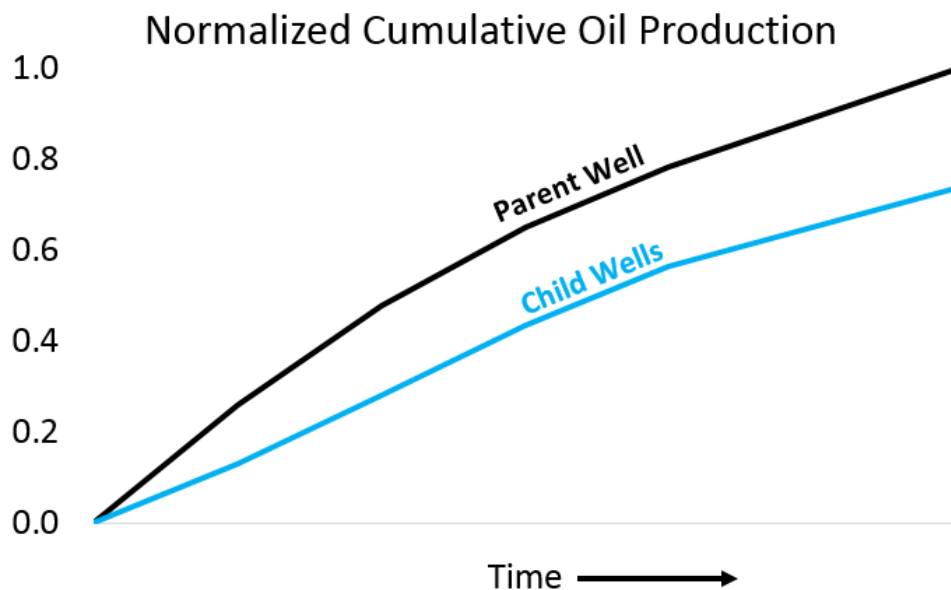
# Permian Growth Per EIA Drilling Productivity Report (Nov-17)



# Well Performance Projections Are Overstated

Many in the industry expected new well productivity gains to continue by as much as 120% per well this year. But as plays mature, new well productivity has declined as more child infill wells have been drilled on pads.

- These parent wells were unbounded.
- Child wells have underperformed parent wells 15-20% in all the shale plays except the Bakken.



# The Market Is Taking Notice Of EIA Discrepancies

**Chart of the day:** U.S. crude production jumped to 9.62 million b/d in the week ended Nov. 3, the highest in weekly EIA data going back to 1983. It's a record, except for the fact that the monthly data — which are deemed more accurate because they don't rely partly on modeling — show that in April 2015, output was slightly higher. Looking back, the weekly data have tended to run ahead of the monthly, both as production drops and then as it recovers.

## OIL PRODUCTION RECORD (SORT OF)

U.S. WEEKLY, MONTHLY DATA PAINT DIFFERENT PICTURES

— WEEKLY U.S. CRUDE OUTPUT — MONTHLY U.S. CRUDE OUTPUT



# Key Points To Integrate Into Forecasts Moving Forward

1. U.S. production growth has moderated
2. Performance projections are overstated
3. Efficiencies are peaking
4. Market pinch points are occurring that limit production (oil and gas pipelines, water handling, infrastructure, etc.)
5. Shareholders are demanding return on investment