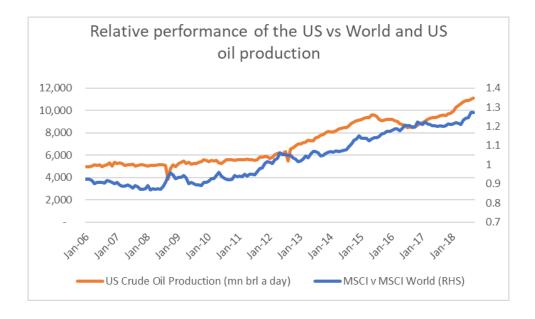


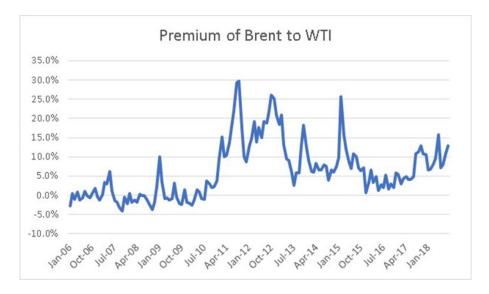
## WILL THE END OF THE SHALE BOOM COINCIDE WITH THE END OF US OUTPERFORMANCE?



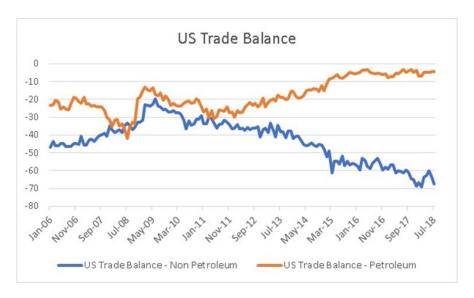
Lower energy costs and rapid increase in oil and natural gas production have been a boon for many different industries in the US, chemical producers have been able to access cheaper feedstock, pipeline companies have been able to operate at full capacity and add new pipelines, utilities have benefitted from lower gas costs and land owners in shale regions have reaped windfalls from rising land prices. Growing US oil production seems to correlate strong with outperformance of US assets.



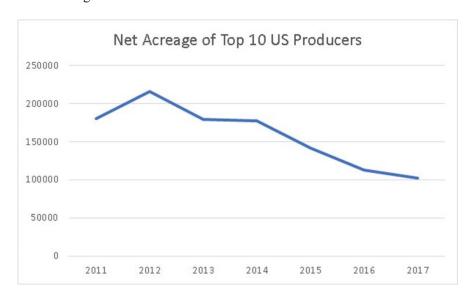
Some may claim this is a spurious correlation, but the growth in US oil production has meant that US oil prices since the financial crisis have traded at a discount to world prices, which is a huge benefit to US manufacturers and consumers. Prior to 2010, US oil prices were often higher than world prices for oil. WTI is a US based oil price, Brent is a Europe based oil price.



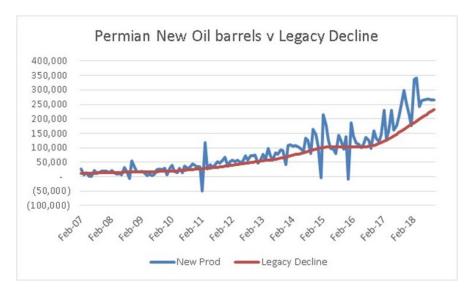
Also, reduced oil imports have allowed US consumers to increase imports of goods and services as net imports of petroleum products has declined.



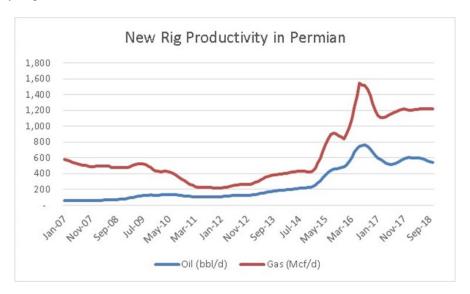
Thus, it seems likely to me that if the US oil industry begins to have problems, the dramatic outperformance of US assets could begin to reverse. One problem area for the US oil industry is that costs have risen. While most US oil drillers report that the breakeven cost of new wells have fallen, the cost of maintaining and growing new and existing oil production has increased dramatically. Buying new acreage used to be important for shale drillers, but with land prices becoming expensive, the largest onshore US oil producers have had to steadily reduce their acreage in the US.



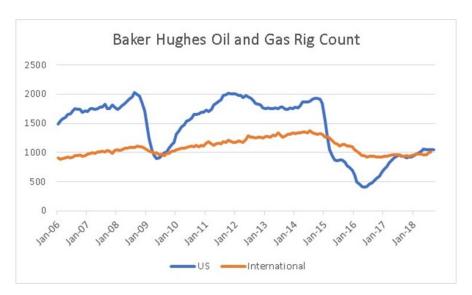
The fall in acreage has also in part been due to more oil production being more concentrated in the Permian region. The issue here is that the decline rate in Permian continues to increase. The decline rate is the amount of oil production that is rolling off from older wells. Another way of thinking about it is that it is the depreciation that the industry must bear. Recent months have seen the legacy decline in the Permian hit an all-time high of 250,000 barrels a day, or 7% of current production.



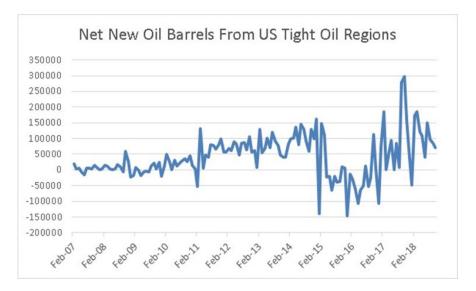
To compound the issue, new wells in the Permian are now tending to produce more gas than oil, a classic sign that oil production from the Permian is likely to get costlier from here.



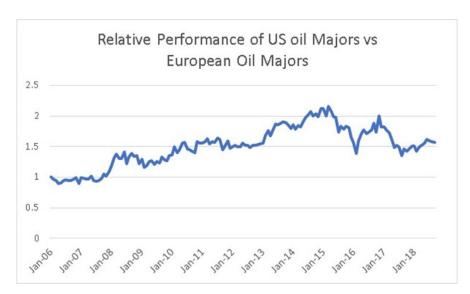
The global oil industry has noticed. For the first time in 10 years, international rig count is increasing without the rig count in the US increasing.



The US shale oil industry is seeing legacy decline rates approaching 500,000 barrels a day and rising. Net new additions are already in decline, and with declining productivity and less rigs being added, net new oil barrels will likely turn negative soon.



The market has been signalling the problems with US shale for a while, with the relative performance of European oil majors being much better than the US since 2015.



Given the changes in the oil market, a narrowing of the spread between US and international oil prices looks likely to me. This could lead to a decline in the relative performance of US assets versus the rest of the world.

## INFORMATION

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