

WSJ, Forbes send mixed signals on production forecasts

Early this year *the Wall Street Journal* asserted that oil and gas companies, in large part, are overestimating their reserves and production from unconventional plays.

“Two-thirds of projections made by the fracking companies between 2014 and 2017 in America’s four hottest drilling regions appear to have been overly optimistic, according to the analysis of some 16,000 wells operated by 29 of the biggest producers in oil basins in Texas and North Dakota,” stated the *WSJ* article.

That translates to 10 percent less oil and gas than forecast — an underperformance of 1-billion BOEs.

Forbes countered with an editorial stating that modeling entities around the world, including big banks, systematically underestimate production growth for shale oil and gas.

The *WSJ* aggregated and analyzed financial information at company levels in the U.S. while *Forbes* took a 30,000-ft view of industry, looking at forecasts from the U.S. Energy Information Administration and others. Different sets of metrics yielded different answers.

Spending outpaces revenues

The *WSJ* used interviews and industry sources to identify the culprits -- quicker-than-assumed production-decline rates, over-concentrations of well densities and forecasting based on insufficient sample sizes of wells.

“Academic research has suggested that data from at least 60 wells, producing for six months or more, would be needed for accurate forecasts,” *WSJ* stated. “Yet some companies and analysts have made predictions based on fewer than 10 wells.”

The *WSJ* also said that the 29 tracked companies spent \$112 billion more in cash than generated from operations in the last 10 years, according to a financial information source.

“The Journal’s findings suggest current production levels may be hard to sustain without greater spending because operators will have to drill more wells to meet growth targets,” stated the *WSJ*.

The publication also stated that producers began using the term EURs (estimated ultimate recoveries) when prices dropped this decade to de-emphasize reserves, which are commercially recoverable under current economic conditions.

The *Journal* found that some producers factored in 50-year field lives into the EUR calculations to pad them out — that, despite economic realities that 80 percent of a well’s lifetime production from unconventional reservoirs occurs in the first two years, by some accounts.

The *WSJ* also noted that the enterprise value (EV) of selected U.S. oil companies in 2017 averaged 2.8 times the value of proved reserves compared to 1.7 times in 2007. The wider the

value gap, the weaker the financial fundamentals. The formula for EV is market capitalization plus total debt less cash and cash equivalents.

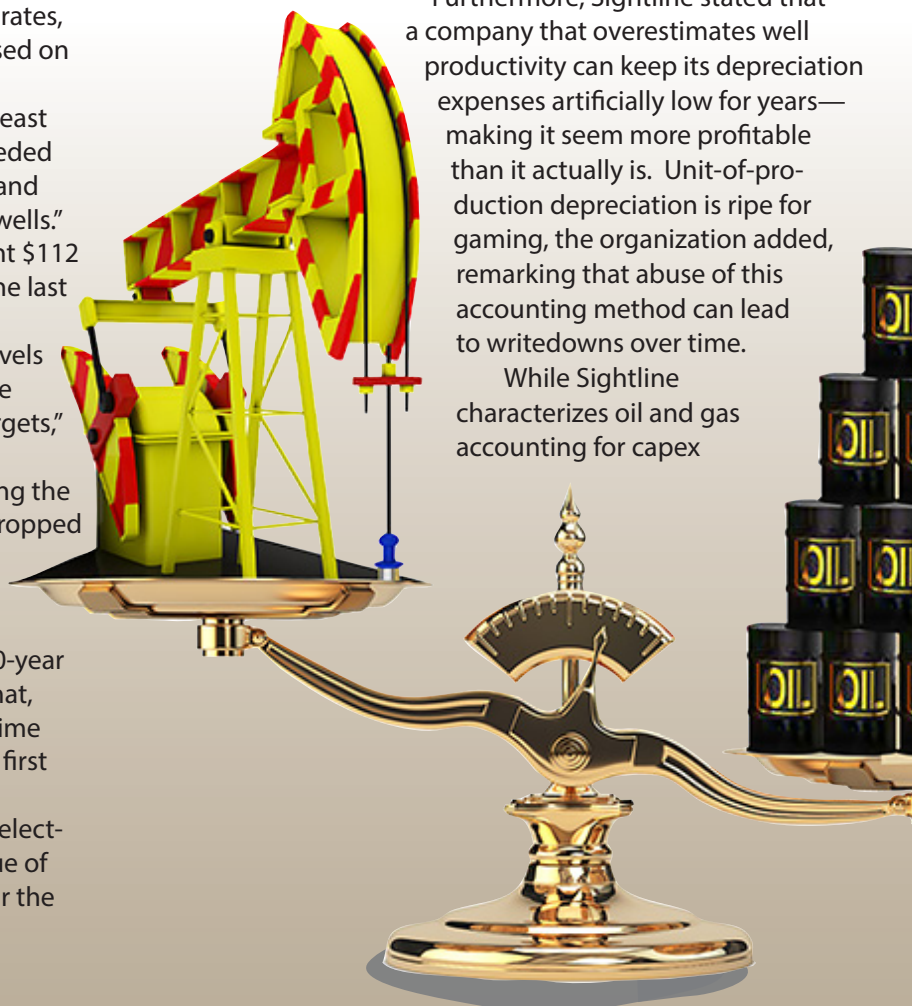
Fracking depreciation dodge

To question the financial health of the industry, Sightline Institute, a nonprofit think tank, pointed to what it depicted as a less-than-transparent oil and gas accounting system. Two months ago, Sightline posted a blog, “The Fracking Depreciation Dodge,” which stated that oil and gas companies in the shale “use a variety of accounting tricks to distract investors from the fundamental weakness of their business models.”

Specifically, the institute examined accounting concepts involving capital expenditures and depreciation. “Capex doesn’t really count as spending at all. It is considered an investment rather than an expense. After a company makes a capital expenditure, its accounts show a decrease in cash, but an offsetting increase in the value of its capital assets,” the blog stated. “Massive capital outlays will affect cash balances. But they will have no immediate effect on a company’s tally of profits and losses.”

Furthermore, Sightline stated that a company that overestimates well productivity can keep its depreciation expenses artificially low for years—making it seem more profitable than it actually is. Unit-of-production depreciation is ripe for gaming, the organization added, remarking that abuse of this accounting method can lead to writedowns over time.

While Sightline characterizes oil and gas accounting for capex





on Oil and Gas Reserves

and DD&A as “tricks,” by some accounts, it fails to acknowledge that most investors are savvier than that.

For a primer on oil and gas accounting fundamentals, including depreciation, please see “Basic Petroleum Accounting for Petroleum Engineers,” SPE technical paper No. 162907-MS, 2012, by **Dan Olds**, managing senior vice president at Ryder Scott. It is available for purchase at www.onepetro.org/.

No cause for panic

Forbes pointed to surging U.S. oil production growth as evidence that shale economics are not eroding. The editorial cited gained efficiencies, lower break-even points (BEPs) and better technology as mitigating factors.

“In the wake of the price collapse of 2014-2017, oil and gas companies have been forced to cut their breakeven costs to stay afloat,” *Forbes* stated. “There were over 100 E&Ps that went belly-up during the period. Now, our shale producers have breakevens of just \$50 to \$55 per barrel, down from over \$80 a few years back.”

A BEP does not account for sunk costs, such as acreage and overhead, making it a “more forgiving” hurdle rate than life-cycle economics. Still, signs are that cost recovery is strengthening.

Rystad Energy, the primary source for the *WSJ* article, stated earlier this year that the average well completed over the last two years in Wolfcamp A is profitable at \$45 a barrel. Wolfcamp in the Delaware Permian Basin is a so-called “hotspot.”

Forbes stated that “the Shale Revolution has been rising so quickly that EIA predictions for 5, 10, or 15 years down the road are being surpassed in a single year’s time. ... We are now producing 80 percent more crude oil than the EIA predicted we would be back in 2012.”

Earlier this year, the EIA *Annual Energy Outlook 2019* stated, “U.S. crude oil production continues to set annual records through 2027 and remains greater than 14-million barrels per day through 2040.

Lower 48 onshore tight oil development continues to be the main source of growth in total U.S. crude oil production.”

In March, the Paris-based International Energy Agency (IEA) issued its annual oil market forecast, which focuses on international energy supply and demand.

The IEA report stated, “The United States will lead oil-supply growth over the next six years, thanks to the incredible strength of its shale industry, triggering a rapid transformation of global oil markets. By 2024, the United States will export more oil than Russia and will close in on Saudi Arabia – a

pivotal milestone that will bring greater diversity of supply in markets.”

The *Forbes* editorial added that shale may be the safest long-term investment of all, because significant-scale replacements simply do not exist. At press time, the article was posted at <https://www.forbes.com/sites/judeclemente/2019/01/13/u-s-shale-oil-and-natural-gas-underestimated-its-whole-life/#693cf144b596>.

For a related article, please see “Permian Basin: Is the sky really falling?” at https://www.ryderscott.com/wp-content/uploads/2018NL_October.pdf?r=false. It covers the industry debate on how to best forecast oil and gas production from tight formations — an issue that has intensified, as evaluators pore over a growing cache of historical well data.

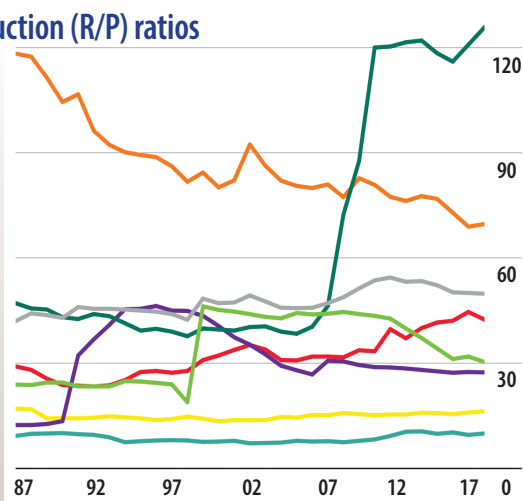
IOCs highgrade portfolios, petroleum reserves drop

S&P Global *Platts* news service recently reported that some IOCs (international oil companies) are high-grading their oil and gas property portfolios while moving away from a strategy of stockpiling reserves to replace annual production.

Reserves-to-production (R/P) ratios

HISTORY

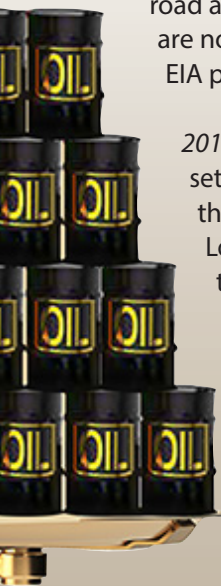
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- Africa
- Asia Pacific
- World



From BP Statistical Review of World Energy

“Where a company’s production-to-reserve (sic) ratio, or reserves life, was once a proxy for business sustainability, many now see exposure to stranded assets in reserves either too expensive or polluting to extract,” stated *Platts*. The ratio of reserves divided by production is used as a metric to check whether a producer is maintaining a sufficient inventory of assets.

“Shell ...has only replaced its annual production with new reserves twice since 2011 ...” *Platts* reported. “The Anglo-Dutch supermajor is now able to maintain just 8.4 years *Please see Reserves Life Ratio on page 8*



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Reserves Life Ratio – Cont. from page 3

of current production with its proved reserves, the lowest reserves life ratio of its oil major peers.”

Also, Shell claims the U.S. Securities and Exchange Commission is penalizing the company by not allowing it to book reserves committed to its LNG terminals unless a third-party sales contract is in place, reported *Platts*. The supermajor is integrated and markets a lot of its own gas — a practice that it contends keeps some reserves off the books.

Platts also cited other IOCs that “take a more traditional view of growing their reserves,” among them ExxonMobil Corp., which had 14 years of production in early 2018, and ENI SpA, which considers reserves to be a “marker of business sustainability.”

For the full article, please see, “Oil majors wrestle with reserves as industry health measure” at <https://blogs.platts.com/2019/02/28/oil-majors-reserves-health-measure/>.

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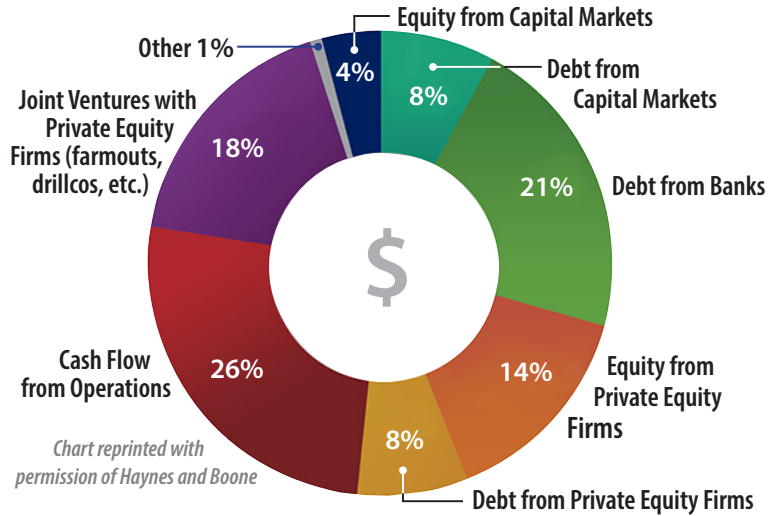
JVs get nod over debt, equity

Results of the spring borrowing-base redeterminations survey of Haynes and Boone LLP yielded the following expectations for reserves-based lending:

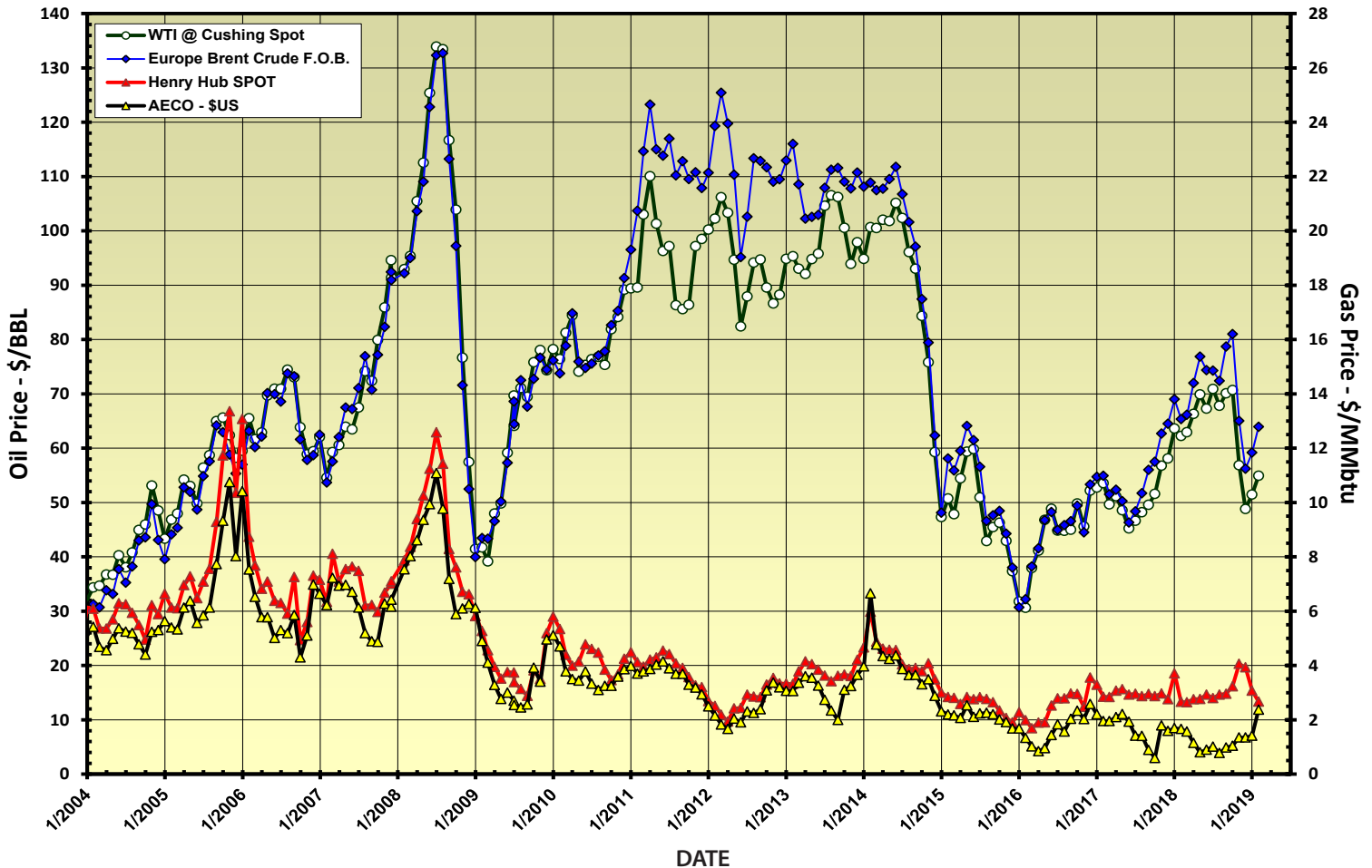
- Most respondents — comprising producers, oilfield service companies, energy lenders, private equity firms and others — expect spring borrowing bases to remain the same or slightly decline.
- Producers have hedged 40 to 60 percent of their production, making it less likely that borrowing bases will dramatically change.
- Sourcing capital through joint-venture transactions is gaining favor, as equity and debt go by the wayside.
- 2019 will be a difficult year to monetize assets.

For the full survey results, which include charts and graphs, please go to http://www.haynesboone.com/-/media/files/energy_bankruptcy_reports/borrowing_base_redeterminations_survey.ashx?la=en&hash=855F00BF4B92E6EA14A5C8B-30B2268A4EA0C43E7.

Planned sources of capital for 2019



Price history of benchmark oil and gas in U.S. dollars



Published, monthly-average, cash market prices for WTI crude at Cushing (NYMEX), Brent crude and Henry Hub and AECO gas.