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# Weathering the Price Storm: The Importance of Reducing Oil and Gas Production Costs in Texas

 [Romany Webb](#)
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Ask any oil and gas producer about the risks facing industry and you're sure to hear one word: PRICES! After rising throughout much of the 2000s, oil and gas prices have plunged over the last two years, reaching levels not seen in over a decade. Oil is currently trading for less than [\\$40 a barrel](#), roughly 70 percent below where it was in March 2014. Gas is not faring much better, with prices hovering around [\\$2 per million British thermal units](#) (Btu), compared to over \$6 in early 2014. A return to higher prices is not expected anytime soon, with [most analysts](#) predicting that oil and gas prices will remain at current levels throughout 2016, and possibly even beyond. Others are less optimistic, suggesting that oil prices could drop further, to [\\$20 or less](#) a barrel, while gas may collapse [below \\$2](#) per Btu.

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Sustained low prices have forced many oil and gas producers out of business. A recent [study](#) found that 80 oil companies filed for bankruptcy between September 2014 (when oil prices were over \$92 a barrel) and December 2015 (when prices were down to \$50 a barrel). That's an increase of over 470 percent, compared with the same period a year earlier (i.e., September 2013 to December 2014), when just 17 companies filed for bankruptcy. The worst may, however, be yet to come. A report, published last month by Deloitte, found that one-third of oil and gas producers are at high risk of bankruptcy in 2016. This could have serious economic impacts, particularly in oil and gas producing states.

The effects of declining oil and gas prices are already being felt here in Texas. The [Federal Reserve Bank of Dallas](#) reported an acceleration in bankruptcies in energy intensive areas of the state in 2015. Throughout the year, there were significant job losses in the energy industry, as well as related sectors. This contributed to a slowdown in economy activity, with the Texas growth rate falling from 5.2 percent in calendar year 2014, to just 1.4 percent between January and October 2015 (the latest period for which data is available). Growth is likely to decline even further over the coming year.

[According to the Texas Railroad Commission](#) (RRC), despite the low prices, state oil production rose by 10 percent in 2015 (compared to 2014 levels), exceeding 1 billion barrels for the first time since 1978. There are, however, signs of an impending slowdown. Production from existing wells has fallen in recent months – down 200,000 barrels per day since March 2015 – as has new well development. In 2015, the RRC permitted just 10,500 [new oil and gas wells](#), a 59 percent reduction compared to 2014 levels, and the lowest yearly total in more than a decade. The [rig count](#) (i.e., the number of drilling rigs actively exploring for or developing oil and gas) is at its lowest level in almost 20 years.

The declines have not been uniform across all oil and gas producing regions. According to the [Federal Reserve](#), production has fallen sharply in the Eagle Ford basin in central Texas, but remained fairly stable in the Permian basin to the west. This is due to differences in the costs of production in the two regions. Faced with sustained low prices, and seeking to maintain profit margins,

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producers are increasingly shifting their operations, away from higher cost regions, towards less expensive areas. This does not bode well for Texas.

A new [report](#), published last week by the U.S. Energy Information Administration (EIA), suggests that the costs of producing oil and gas in Texas are higher than many other regions. The report, prepared by IHS Global Inc. (IHS) for EIA, compares production costs in five onshore oil and gas plays, namely: (1) the Marcellus shale, found principally in Pennsylvania and West Virginia; (2) the Bakken formation in north eastern Montana and western North Dakota; (3) the Eagle Ford shale in south Texas's Gulf Coast basin; (4) the Midland basin in north west Texas; and (5) the Delaware basin on Texas-New Mexico border. For each play, IHS studied actual costs from 2006 to 2015, and provided forecasts through 2018. It included both capital costs and operating expenses associated with drilling oil and gas wells.

The IHS study found capital costs ranging from \$4.9 million to \$8.3 million per well across the five plays. For each play, the study calculated average costs per well and costs per unit of output, as of 2014. Both of these metrics suggest that the two Texas plays are among the most expensive to develop. Average costs per well were calculated at \$7.7 million in the Midland basin and \$7.6 million in the Eagle Ford, compared to \$7.1 million in the Bakken, and \$6.6 million in both the Delaware and Marcellus. The Midland basin also had the highest unit costs (i.e., per barrel of oil equivalent). Unit costs in the Eagle Ford were lower than the Bakken, but still well above the Delaware and Marcellus.

IHS attributed the cost variation between plays to differences in the local geology which necessitate use of different production processes. Across all five plays, most wells are developed using hydraulic fracturing (fracking), whereby fluid is injected underground at high pressure to fracture the rock, releasing oil and gas. The amount of fluid used, and the chemicals and proppant added thereto, varies between plays, contributing to the cost differentials. Comparing the Marcellus and Eagle Ford basins, for example, high formation pressure in the latter necessitates the use of more expensive artificial proppants, whereas cheaper natural proppants can be used in the former. This is one reason why

average well development costs are lower in the Marcellus than the Eagle Ford.

Given the current cost differentials, oil and gas production can be expected to shift away from the Texas basins, to the Marcellus and other formations. The situation could, however, reverse before too long. The IHS study found that, while per unit drilling costs are currently high in the Midland and Eagle Ford basins, they are declining rapidly. From 2010 to 2014, costs in the Midland basin saw a 28 percent reduction in costs, while costs fell 46 percent in the Eagle Ford. (Over the same period, costs remained fairly stable in the Marcellus and Delaware basins, and increased in the Bakken). This was due, in large part, to enhancements in well design, drilling, and completion practices. Further improvements, including increases in drilling rates (i.e., feet per day) and the ability to drill more wells from a single pad, are expected to lead to further cost reductions. Such reductions are vital if the industry is to withstand sustained low prices.

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