

Are Energy Executives Rewarded for Luck?

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From January 2014 to January 2016, oil prices fell from nearly \$100 per barrel to just over \$30 per barrel. In those same two years, the CEOs of 30 large U.S. oil and gas exploration companies lost an average of over half a million dollars each in annual compensation. Perhaps in no other industry are the fortunes of so many executives so dependent on a single global commodity price.

In this paper, we analyze executive compensation data from 78 U.S. oil and gas companies over a 24-year period. We document a strong correlation between crude oil prices, company value, and executive compensation. In our primary specification, a 10% increase in company value driven by oil prices leads to a 2% increase in executive compensation. Across specifications, we cannot rule out that executive compensation responds just as much to changes in firm value driven by oil prices as it does to generic changes in firm value.

We then perform a series of additional analyses to better understand the mechanisms. First, we show that this oil-price effect is robust to including time-varying controls for capital expenditures and labor. Second, we show that the oil price effect holds for both CEOs and non-CEOs. Third, we show that the oil price effect is widespread across the different individual components of executive compensation, including not only total compensation, but also bonuses and long-term cash incentives. Fourth, we show that the oil price effect is larger at companies with more insiders on the board. Finally, we show that the oil price effect is asymmetric, with executive compensation increasing more with rising oil prices than it decreases with falling oil prices.

We then discuss potential interpretations, drawing from the existing literature on executive compensation. An influential analysis by Bertrand and Mullainathan (2001) interprets regression results similar to ours as evidence of rent extraction, in which executives are able to co-opt the pay-setting process. Indeed, it is difficult to reconcile this oil price effect with the predictions of standard contracting models in which companies should “filter out” oil prices and other forms of observable luck (Holmstrom, 1979). Still, there are ways to reconcile the oil price effect with models in which firms are maximizing returns to shareholders. For example, one could imagine that when oil prices are high, additional executive effort is needed, and so compensation rises to induce that effort. As in much of the rest of the literature, we are unable to sharply distinguish shareholder value and rent extraction interpretations. Part of the challenge, as explained by Murphy (2013), is that these two views are not mutually exclusive, with both forces impacting compensation to varying degrees across firms and over time.

Our results provide a window into executive compensation in a dynamic, multi-billion dollar sector. The United States is the world’s largest producer of oil and natural gas. The annual value of U.S. oil and natural gas production exceeds \$200 billion, and the firms in our sample have a total market value of almost half a trillion dollars. Reflecting the size of this industry, the dollar value at stake in executive pay is substantial: total compensation of oil and gas executives in the latter part of our sample is almost \$1 billion per year.

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