PROBABLE OIL&GAS RESERVES: EFFECT ON STOCK RETURNS

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Overview

Oil and gas reserves are the most important assets of oil and gas companies. A source of confusion for investors in oil companies is that reserves quantities and values are uncertain estimates. Reserves are typically classified according to probabilities of recovery from underground reservoirs. All U.S. listed companies are required to disclose proved reserves but not probable reserves, thus leaving out potentially important information for investors and financial analysts. This study addresses the impact on market valuation of various classifications of reserves amounts.

Methods

We collect data from 94 companies that do disclose information on probable reserves. From their annual financial accounts, we collect two types of reserve amounts, namely proved developed and probable reserves, representing two different degrees of commercial maturity. In addition, we collect the firm's total annual shareholder returns. We regress the returns on changes in different reserve classes and a set of control variables including risk factors and changes in the oil and gas prices.

Since the relationship between stock returns and reserves might change over time, we analyse the impact of the shale gas revolution, using a dummy-variable approach.

Results

We find that with oil&gas company returns are positively associated with changes in proved oil&gas reserves, but not with changes in probable reserves. While we find that information on probable reserves do not have an impact on stock returns measured over the entire time period, this is not the case since 2009, coinciding with the onset of the shale gas revolution.

Conclusions

Our results suggest that proved developed reserves are the main type of reserves used by investors to forecast future cash flows. However, we do find a structural shift in the association between returns and gas reserves after 2009, coinciding with the Shale gas revolution. The effect can be explained by the impact of Shale gas on the natural gas prices in North America.

From late 2014 to end-2015, the crude oil prices fell from above 100 USD/barrel to less than 40 USD/barrel. Many commentators suggested that the recent U.S. onshore Shale oil boom was the culprit, flooding the markets with oil. In many ways the Shale oil boom resembles the Shale gas boom, but the effects will only reveal themselves in the years to come. Our results can therefore also be relevant for understanding the recent Shale oil boom and the how it may have affected the valuation of oil and gas companies.

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