

Decoding the Oil Price Shock: Do Lower Oil Prices Lead to Lower Domestic Production?

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The purpose of this study was to empirically investigate whether changes in the world price of oil has an effect on domestic oil production. I anticipated finding that changes in the price of oil would impact domestic oil production. I found that a negative relationship exists between the price of oil and active drilling rigs and a positive relationship exists between the price of oil and the amount of domestic oil produced in barrels.

Until recently, the Organization of the Petroleum Exporting Countries (OPEC) has determined oil prices by limited the amount of oil each member nation can produce. In 2014, OPEC abandoned these production quotas in order to regain market share lost to American oil producers. As a result, Oil prices have plummeted. While consumers appreciate the lower prices at the pump, cheap oil can have negative implications for states whose economies depend on oil production. Furthermore, cheap Middle Eastern oil can lead to greater oil dependence which will put American consumers at the mercy of oil prices determined by OPEC.

This study hypothesized that lower oil prices would lead to lower domestic production in the United States. According to economic framework, as the price of oil decreases, the amount of oil supplied should decrease as well. This study also estimated that there would be no long term consequences for the current oil price shock. Recent literature suggests that oil prices are more heavily impacted by changes in demand rather than supply. This means that changes in supply are less likely to have long term consequences.

I gathered data ranging from January 1949 to January 2016 of the nominal price of oil, the inflation adjusted price of oil, the number of active domestic drilling rigs, and the amount of domestic oil production in barrels. After compiling the data, I performed regressions using the statistical software STATA. I developed 4 different equations using the data found and was able to determine that a positive relationship exists between the price of oil and the number of active drilling rigs while a negative relationship exists between the price of oil and the amount of domestic production in barrels.

The negative relationship between the price of oil and domestic production in barrels indicates that domestic production is a function of demand. The increased consumer demand derived from lower prices means that production will actually increase. However, drillers will choose to drill fewer wells when prices are lower which means that drill rig count is a more accurate indicator of how prices affect the decision to drill domestically.

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