RELATIONSHIP BETWEEN OIL PRICES AND EQUITY VALUES IN THE ENERGY INDUSTRY: THE INFLUENCE OF ENDING U.S. OIL EXPORT BAN

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ABSTRACT

This study investigates the relationship between oil prices and the equity values of five S&P energy subindustries upon lifting of U.S. oil export ban in 2015. The analysis of asymmetric dynamic conditional correlations over 2010-2019 period reveals that the interdependence between oil and stock prices in the equipment, integrated, and exploration subindustries has increased only modestly after the event. The equity values in the refining and storage subindustries do not find a change in the existing relationship with WTI. There is evidence that return correlations are time-varying, but negative return shocks do not appear to raise correlations any further than positive return shocks.

Keywords: *U.S. oil export ban, oil prices, stock prices, energy industry, dynamic conditional correlation*

1. INTRODUCTION

In response to the 1973 oil embargo by OPEC, the U.S. banned most crude oil exports to stabilize domestic oil prices in 1975. The shale-oil boom that started in the early 2010s pushed the benchmark price of American crude, West Texas Intermediate (WTI), below the European reference price, Brent, since an excess of oil could not be exported. On December 16th, 2015, Congress voted to end the 40-year-old export ban, which was backed by the U.S. oil industry (The Economist, January 7, 2016).

In this paper we examine how the lifting of the 1970's-era restrictions on U.S. crude oil exports changed the correlation between WTI and the stock prices in the U.S. oil industry. Oil price changes affect the equity values of oil companies through various channels. For example, a rise in oil prices increases oil producers' revenue directly. However, expensive oil affects consumer confidence negatively and raises the costs of goods and services, both of which indirectly lower the earnings of the energy industry.

A few researchers have investigated the relationship between oil prices and equity returns of oil companies. Balcilar and Ozdemir (2013) find that, during the period 1995-2011, oil futures prices on the New York Mercantile Exchange have a significant predictive power for the S&P 500 energy sector sub-index returns. Sadorsky (2001) reports a significant positive association between the oil and equity values in the Canadian oil and gas sector, and El-Sharif et al. (2005) find similar results for share prices of U.K.-listed oil and gas firms. While these studies examine the sensitivity of the equity values to oil price shocks through different economic and financial conditions, this article conducts an event study of how the ending of the export ban altered the correlation structure of the oil industry's equity values with oil prices.

For a sample period from January 2010 to July 2019, we use the daily closing spot prices of WTI and the stock prices of the S&P 500 companies in the energy subindustries. The subindustries considered are equipment, integrated, refining, storage, and exploration. We exclude two notable episodes of financial distresses from our dataset, namely the global financial crisis of 2007-2009 and the coronavirus pandemic of 2020-2023, to avoid biases in our results due to abnormal behavior of asset prices during these periods.

The price of crude oil fell by 75% starting July 2014 for the next 18 months. This was due to Saudi Arabia forcing OPEC to keep pumping oil despite plummeting prices to drive out high-cost producers from the