

An International Comparison of OPEC Announcements Effect on Stock Indices

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Overview

Following the early 1970s oil prices' shocks and their consequences on western economies, several studies as the seminal work of Hamilton (1983) concluded that oil prices changes are influential in predicting stock markets movements. On another note, the Organization of Petroleum Exporting Countries (OPEC) accounts for 40% of the produced oil in the world and for 60% of the exported oil internationally (see EIA and Matsumoto et al. (2012)). The impact of OPEC's production quota announcements (namely increase, cut or maintain production quotas) on oil prices have been subject to debate among researchers, policy makers and regulators. Some argue this impact to be weak or declining over time as more non-OPEC members increase their market shares and new sources of non-conventional oil are being exploited (US shale oil, Canada's tar sands or Brazil's deep sea offshore oil to cite some). Others support the idea that this impact is time varying depending on the prevailing market conditions. Therefore, OPEC's production quota announcements seem to have an impact on stock markets through oil prices. The purpose of this paper is to investigate the informational role of OPEC and its (potential) contribution to stock prices formation. More precisely, we aim at assessing how OPEC announcements affect equity markets in developed economic regions (North America, Europe, South Asia Pacific and Japan). Even though, the literature has largely investigated the effect of oil prices on stock markets and has equally investigated the link between OPEC's quota announcements on oil prices, few papers analyzed directly the effect of such announcements on stock markets (see, for instance, Guidi et al., 2006 and Gupta and Banerjee, 2019). It is worth pointing out that these studies are country-centric. We substantially extend these studies by operating an international comparison.

Methods

We employ the event study methodology to study OPEC's quotas announcements on stock prices over the period 1992-2022. This period includes sub-periods characterized by high volatile oil prices and by more calm sub-periods. This allows us both to examine if stock prices reacted distinctly to OPEC's announcements during these sub-periods and to assess the robustness of our results. To compute abnormal returns, we use a 4-factor Fama-French model (market portfolio, size, book-to-market and momentum effects) and the residuals are modeled by an Exponential GARCH (EGARCH) process, developed by Nelson (1990), in order to capture the random volatility of stock prices. As a proxy for the market portfolio, we construct weighted indices for each region.

Results

As expected, oil producers (North America) are positively impacted by cut OPEC decisions, while net oil-importing regions (Europe, Asia Pacific and Japan) are negatively impacted. This effect is more pronounced during turbulent (high volatility) periods. In contrast, increase decisions significantly influence oil-importing regions without having an effect on oil producers. Maintain decisions are neutral on stock indices.

Conclusions

Our results above mentioned clearly indicate that OPEC's quotas announcements affect stock prices, but, however, the magnitude of this impact depends on both the type of the quota and the region. Our study can be extended on two main directions. Firstly, to refine the analysis, we could examine this impact on each and every economic sector. Secondly, a more comprehensive study, could be focused on individual stocks. This should be very informative to stock fund managers who are interested in the reaction of stock prices to OPEC announcements and for diversification purposes.