

Long-Run Relationship of Crude Oil, Coal and Natural Gas Prices

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Abstract

In this study, we investigate the long-run relationships between three primary energy prices: crude oil, coal, and natural gas. For this purpose, it employs two different types of tests: first, the Johansen's tests based on his maximum likelihood estimation method and second, the Park (1990)'s tests based on Park (1992)'s Canonical Cointegration Regression. Johanesen test results suggest that the no cointegration hypothesis can be rejected, but one cointegraion relationship or two cointegrataion relationship hypotheses are not rejected. Park's tests show some evidence that there is a cointgration relationship between natural gas/crude oil and a cointegration relationship between natural gas/coal. The evidence for coal/crude oil is somewhat mixed. Overall, the results are consistent with the view that at least, there are two cointegration relationships among the three energy prices. (JEL C12, Q40, Q43)

Keywords: Crude oil price, Coal price, Natural gas price, Cointegration, Johansen test, CCR test