The Value of the US Dollar and its Impact on Oil Prices: Evidence from a Non-linear Asymmetric Cointegration Approach

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The Value of the US Dollar and its Impact on Oil Prices: Evidence from a Non-linear Asymmetric Cointegration Approach

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Abstract
The dynamic relationship between the real oil price and the US real effective exchange rate (REER) is one of the most important relationships for policy practitioners, however, the literature has largely disagreed on the direction of causation when cointegration was found. This paper addresses this issue and provides new evidence by using an approach that accounts for the potential of asymmetric cointegration and multiple structural breaks. This was done using Threshold Autoregressive (TAR) and Momentum TAR (MTAR) models. Some key findings emerge: first, the variables are cointegrated with significant asymmetric error-correction adjustments, and the US REER is found to be weakly exogenous in this process. When exogenous shocks cause disequilibrium, then the adjustment is slower in the case of when a downward adjustment of real oil prices is needed to regain equilibrium, compared to the case of when an upward adjustment is needed. This asymmetry could be driven by downward rigidity in oil prices. Second, it follows that long-run causation is unidirectional, going from the US REER to real oil prices, however, there is bidirectional causation in the short run. The estimations accounted for four structural breaks found in the sample. Overall findings imply that countries exporting to the US may lose competitiveness in the long run not only because of an increased conversion price but also through the upward pressure on oil prices. From a US perspective, increased competitiveness leads to increased real oil prices, which may temper the gains of oil intensive exports in the long run.

JEL Classification: C2, C5, F3, F4
Key words: Asymmetric Cointegration, Structural Break, Oil prices, US Dollar

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