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**Comments on:**

**Inflation Premium and Oil Price Uncertainty**

**by Paul Castillo, Carlos Montoro y Vicente Tuesta.**

# Inflation Premium and Oil Price Uncertainty

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- *This paper develops a New Keynesian model with micro-foundations, aimed at studying the interaction between oil price volatility, inflation and monetary policy.*
- *A standard New Keynesian model is modified to incorporate oil as an input for the production of intermediate goods. A CES production function is used, with an elasticity ( $\epsilon < 1$ ) that reflects the low degree of substitutability of oil in production.*
- *Then, the equilibrium conditions are solved with a second-order Taylor approximation.*

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- *The second-order approximation has the advantage that incorporates the effects of oil price volatility on equilibrium, while linear solutions do not.*
- *Also, a second-order approximation allows to establish a relationship between the volatility of oil prices and the inflation mean level. The authors define this extra inflation mean level as an inflation premium that changes over time.*
- *The paper has several interesting results, some of them are:*

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- 1. The second-order solution shows that oil price volatility generates additional inflation, as it modifies the way firms determine their prices.***
- 2. The calibrated model is able to generate an inflation path that is close to that observed in the United States during both, pre-Volcker and post-Volcker periods. The model is less successful in replicating the moments of the nominal interest rate and those of output. However, the model is successful in replicating qualitatively inflation, output and interest rates changes within the sub-samples.***
- 3. A positive inflation premium is obtained, allowing the model to generate an inflation series that closely follows that of the United States in both sub-samples, without requiring a differentiation of monetary regimes between both periods.***

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*Some points of the paper for further discussion are.*

- i. Since the model incorporates only oil price shocks, the endogenous variables inherit the statistical properties of that shock. It would be wise to introduce other shocks, in particular productivity shocks, as it has been found that it accounts for a large part of output variation.*
- ii. The paper points out to optimal monetary policy. Nevertheless, an optimal policy is not derived. An alternative is to specify the central bank loss function.*

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- ***Another issue that should be detailed is the methodology to calculate the oil price in real terms, as it seems that the price index determined within the model was not used to deflate it, while the real wage and other real variables are obtained by deflating the nominal series with such index.***
  
- ***Finally, it is important to discuss that the effects of oil price volatility on inflation may have diminished since the 70s. The following could account for this:***
  - ***A lower intensity of fossil energy sources in production***
  - ***Higher labor productivity and profitability of firms allow to absorb cost-push shocks***
  - ***The development of markets of derivatives based on commodities allow a more efficient risk allocation and insulates firms from price hikes.***