Quantifying the Speculative Component in the Real Price of Oil: The Role of Global Oil Inventories

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The broad picture

This paper asks whether *speculation* is behind the surge in the real price of oil between 2003 and 2008 and since 2011

It finds no evidence of a significant role of speculation

Important result from a policy perspective

Plan of the discussion

Review the goals and results of the paper

Connect this work with a recent literature on the role of news

The policy question

Goals

Goal is to assess the role of speculation in the oil market

▸ Graph

Speculation (in this paper): *buying crude oil with the intent of storing it for future use in anticipation of rising oil prices*

Implicit assumption: information available to speculators is not available to the econometrician (or to the suppliers)

How it is done

VAR model with four variables
- oil production
- index of real economic activities
- real crude oil price
- crude oil inventories

Four structural shocks
- flow supply
- flow demand
- speculative demand
- residual demand

Structural shocks are identified with a combination of sign restrictions and bounds on elasticities

How it is done, cont.

Speculative demand: expected shortfall of future oil supply relative to future oil demand. This increases demand for inventories, reduces economic activity (lower oil consumption), increases real oil prices and increases oil production (via the increase in oil prices)

Difference between flow demand and speculative demand? Flow demand is associated with an increase in real activity; speculative demand is associated with a decreases in real activity

These assumptions drive the identification and therefore the results

News

Rapidly growing literature on NEWS on productivity (or other stochastic components)

Speculation in your model is close to NEWS in this literature

In this literature NEWS are

$$u_{z,t} = \varepsilon_{z,t} + \varepsilon_{z,t-n}.$$

The error term of the shock $u_{z,t}$ consists of an unanticipated component ($\varepsilon_{z,t}$,) and an anticipated change n periods in advance ($\varepsilon_{z,t-n}$)

This literature points out that it is difficult to extract information about anticipated shocks via conventional VAR analysis

Use of long-run restrictions (Beaudry and Portier (2006)) or likelihood-based estimation in combination with a theoretical model (Schmitt-Grohe and Uribe (2012))

Survey Data

Role of news can be assessed supplementing the VAR with forward-looking questions in survey data – see Barsky and Sims (2012)

Lambertini, Mendicino and Punzi (2013) use survey questions from the University of Michigan Survey of Consumers to supplement the VAR that includes housing prices, residential investment and other macroeconomic variables

LMP find evidence that NEWS is important for housing market dynamics

Policy Implications

Role of speculation in raising oil prices does not warrant regulation

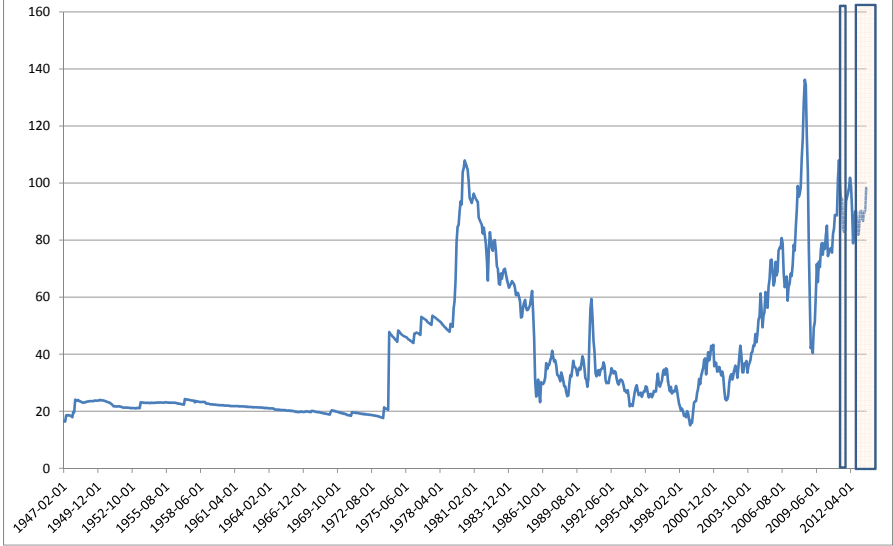How much variation in oil prices is due to speculation?

Volatility and welfare

Conclusions

An interesting and important line of work

Moving forward: micro- and model-based evidence

Real Price of Oil