Comments on “Speculation in the Oil Market”
by Luciana Juvenal and Ivan Petrella

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Methodological comment: sign restrictions versus informative priors

Example: if demand curve shifts right, then quantity supplied should increase

Question: by how much?
Prior distribution of supply elasticity

- $\eta > 0$ (improper)
- $0 < \eta < 0.025$
Prior distribution of supply elasticity

\[
\Gamma(\alpha=1.3, \beta=0.01)
\]

\[\eta > 0 \text{ (improper)} \]

\[0 < \eta < 0.025\]

\[\Gamma(\alpha=1.3, \beta=0.01)\]
Advantages of informative priors over sign restrictions:

• Sign restrictions produce set estimates, not unique point

• Could be more concrete in discussing historical episodes.
  
  E.g., supply shock reduced production by x million barrels, speculation added y million barrels to inventories

• Can see how results change with weaker priors
Prior distribution of supply elasticity

- $\eta > 0$ (improper)
- $0 < \eta < 0.025$
- $\Gamma(\alpha=1.3,\beta=0.01)$
- $\Gamma(\alpha=1.3,\beta=0.02)$
Speculation defined as “the purchase of commodities ... in anticipation of a financial gain at time of resale.”

Reduces quantity available to consumers today, increases price today.
If it results in more product being available to consumers at a future date when the product is more valuable, speculation is good.

If it results in more product being available to consumers at a future date when the product is less valuable, speculation is bad.

Good speculation is profitable to the speculator, bad speculation is not.
This paper’s identification strategy-- if we see that:

(1) price is higher than expected
(2) inventories are higher than expected
(3) supply is lower than expected

Then we will assume that this likely resulted from an increase in speculation
Example: suppose there is news that a military conflict in the Middle East is developing

• supply begins to fall
• price begins to rise
• inventories built up at beginning of conflict, then are drawn down
Key focus of paper: what happened last decade
Key price run-up was Oct 2007 to June 2008
Weekly U.S. ending stocks of crude oil (excluding SPR), thousands of barrels
Total global oil production, 2002-2011 (millions of barrels per day)

World real GDP increased 17.5% (logarithmically) from 2004 to 2008
Projected demand growth assuming constant price and income elasticity = 0.75

2011 shortfall = 12.5 mb/d (13.4% of world production)
Sample calculations

• Price of oil at end of 2004 was $50/barrel (in 2011 dollars)

• If we assume price elasticity of 0.1, price today should be \((50)\exp(0.1344/0.1) = 192/\text{barrel}\) (value reached in June 2008 was $147)

• If we assume price elasticity of 0.2, price today should be \((50)\exp(0.1344/0.2) = 98/\text{barrel}\)
Summary

• Speculation as the paper defines it is probably a good thing
• This method for estimating the contribution of speculation is not convincing
• The paper concludes that speculation historically mattered very little and not at all for the price spike of 2007-2008
• The most important fact is stagnating global production since 2005