Commodity Speculation: Good? Bad? Ugly?

Craig Pirrong

Bauer College of Business

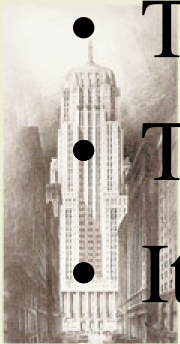
University of Houston

The Usual Suspect

- Whenever commodity prices spike or crash, speculation is blamed
- This is a hardy perennial that dates back to the 19th century—and earlier (look at Ch. V, Book IV, of *Wealth of Nations*)
- The past 5 years have been no exception

Speculators Do What?

- Frequently imprecision in the bill of indictment against speculators
- Do they affect prices? If yes, so what?
- They can affect them by making them more accurate reflections of fundamentals—that's a good thing
- They can affect risk premia in beneficial ways
- They can potential distort prices
- It's the last possibility that should be worrisome

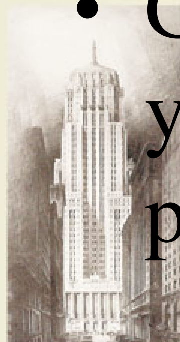


How Can Speculators Distort Prices?

- Many indictments of speculation specify almost hydraulic mechanisms by which it distorts prices: money flows into ETFs, commodity funds, etc., and this pushes prices in the direction of the flows
- These stories frequently make little sense (money doesn’t flow into commodities per se, at expiration speculators are often trading in the opposite direction that they are allegedly pushing prices)

How Can We Test?

- There are inherent difficulties in testing for speculative effects, and particularly distortions created by speculation: if we knew what the price “should” be, we wouldn’t need markets to discover them
- Speculation hard to measure
- Granger causality problematic measure even if you think you’ve measured speculation properly



Look Beyond Prices

- Prices guide the allocation of resources, meaning if prices are distorted, quantities should be distorted
- This implies that looking at quantities is the best way to determine whether speculation has distorted prices
- In particular, if speculators are artificially increasing prices, this should reduce consumption and increase production=>accumulation of stocks *in the hands of speculators*
- Other models (e.g., Caballero) et al predict a similar phenomenon

Some Examples

- International Tin Council
- Hunt Silver Episode
- Government Price Supports

The Recent Experience

- This speculative fingerprint of distortion has been absent in commodity markets—including energy—in the post-2005 period.
- For the most part, stocks and prices have moved how you would expect when driven by fundamentals
- Copper as an example
- Moreover, some non-storable or costly to store commodities have "bubbled"; these cannot have been driven by the speculative mechanism posited by critics

A Caveat

- It may be the case that there are positive co-movements between prices and inventories, but this can happen in well-functioning markets
- Specifically, Pirrong (2011) shows that increases in economic uncertainty cause higher prices and inventories
- So positive co-movements are likely a necessary but not sufficient condition for speculative distortion

What Does Speculation Do?

- I believe that speculation affects prices, but the price it affects is the risk premium/market price of risk
- Hirshleifer (1989), Acharya et al (2010), Pirrong (in progress)
- This channel can lead to changes in prices and inventories, but these changes are salutary
- Entry of spec capital=>lower cost hedging=>greater inventories=>lower volatility and higher average prices

Detecting This Effect

- I’ve experimented with a dynamic programming model that generates these effects
- The effects are there, but are very hard to detect using statistical methodologies
- Main effect is that inventory levels are substantially higher when hedging is cheaper
- Some suggestive evidence in Verleger (2010)

Other Issues

- High frequency trading and algorithmic trading
- Policy responses: namely, position limits
  - In a nutshell: the limits proposed by the CFTC are over-inclusive, will not eliminate many kinds of distorting speculation (if it in fact exists), and will interfere with the efficient transfer of risk