Energy and Financial Market Linkages

Robert Vigfusson
Federal Reserve Board

Commodity Prices And Exchange Rate

- Since 2002, the dollar has depreciate against foreign currencies.
- Since 2002, the price of oil has increased sharply.
- How are those two facts linked?

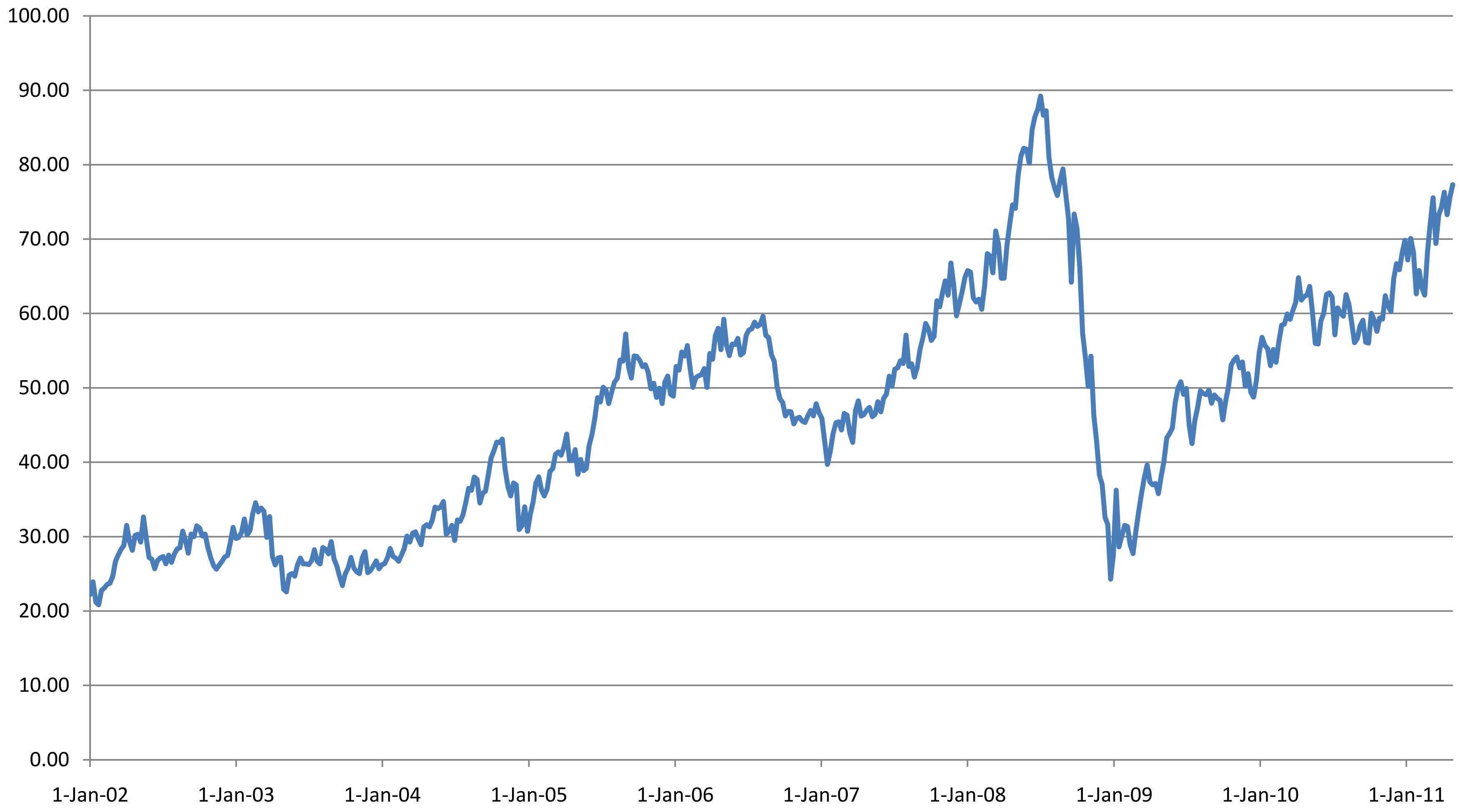
Price of Oil (WTI) in Dollars

Price of Euros in Dollars

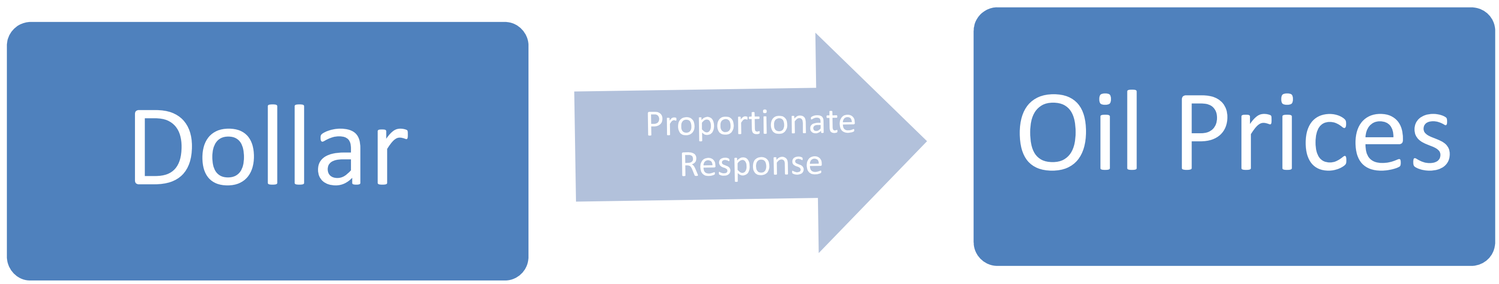
- As the euro strengthens against the dollar, the price of dollar-denominated oil gets cheaper when expressed in euros.
- Holding everything else equal, Europeans should therefore buy more oil, pushing up the dollar price of oil.
- Through this mechanism, one for one price increase would seem to be the maximum effect.

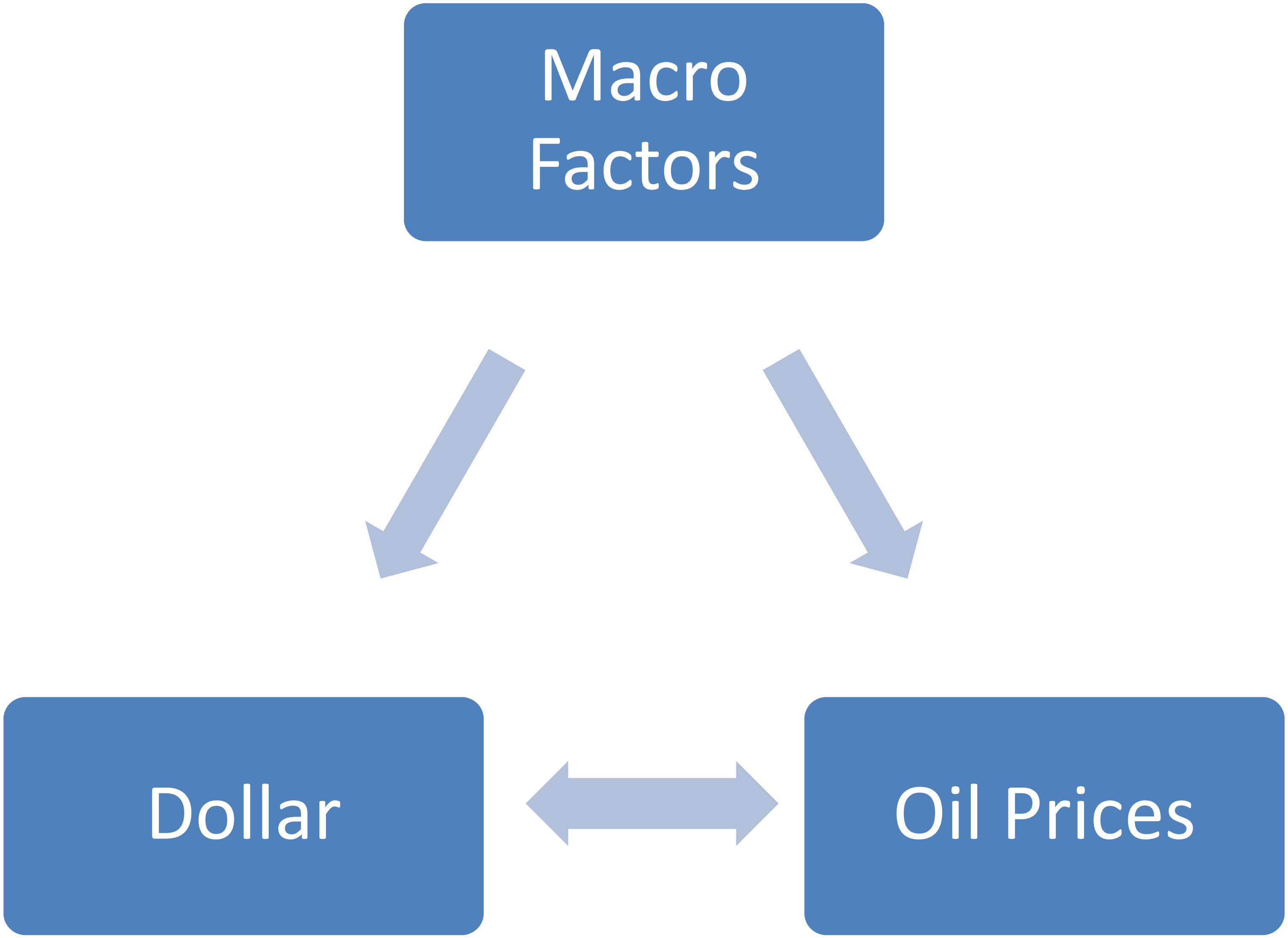
Commodity Prices and Exchange Rates
Regression of Daily Changes in Oil Prices on the Exchange Rate
(90 Day Window)

Price of Oil (WTI) in Euros



- Simple mechanism should explain at most one-for-one response by commodity prices to the dollar.
- Data shows a stronger relationship.
- Reverse causality extending from commodity prices to exchange rates.
- Both variables have been responding to other factors.


Dollar
Proportionate Response
Oil Prices



Macro Factors
Dollar
Oil Prices

Macro Factors

- Long list
  - Outlook for demand
  - Supply Shocks
  - Changes in Relative Risk Aversion

Speculation

- Discussion of commodity prices often leads to discussion of speculation.
- The term speculation is a broad label that gets applied to several different kinds of traders with very different motivations.
- To begin a productive discussion, it is useful to define terms.

Types of Speculators

- Characterize speculators as belonging to four main types:
  - Speculators that hold Physical Inventory based on a desire to control the market.
  - Speculators that participate in the financial market to manipulate the market.
  - Speculators that hold Physical Inventory based on the expectation of higher prices in the future.
  - Speculators that participate in the financial market to gain exposure to commodity price risk.

Speculators that hold Physical Inventory based on a desire to control the market.

- – Acquire a large share of the physical market in an attempt to raise prices
- – Hunt Brothers, (Silver)
- – Mr. Copper (Yasuo Hamanaka) (1990s)

Costs

Distorts the market.

Sends the wrong price signals to producers and consumers.

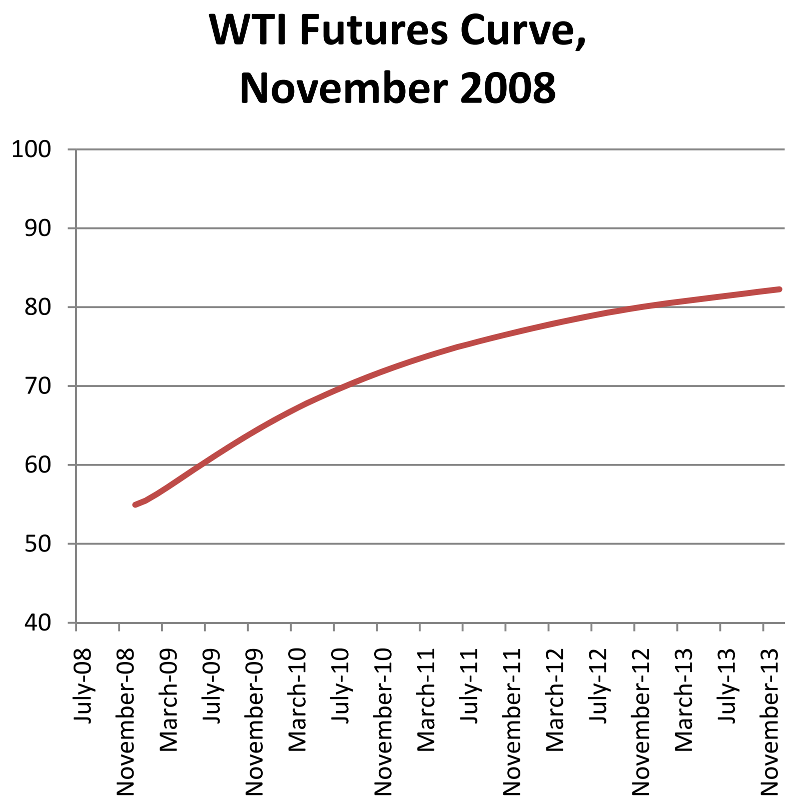
Speculators that participate in the financial market to manipulate the market.

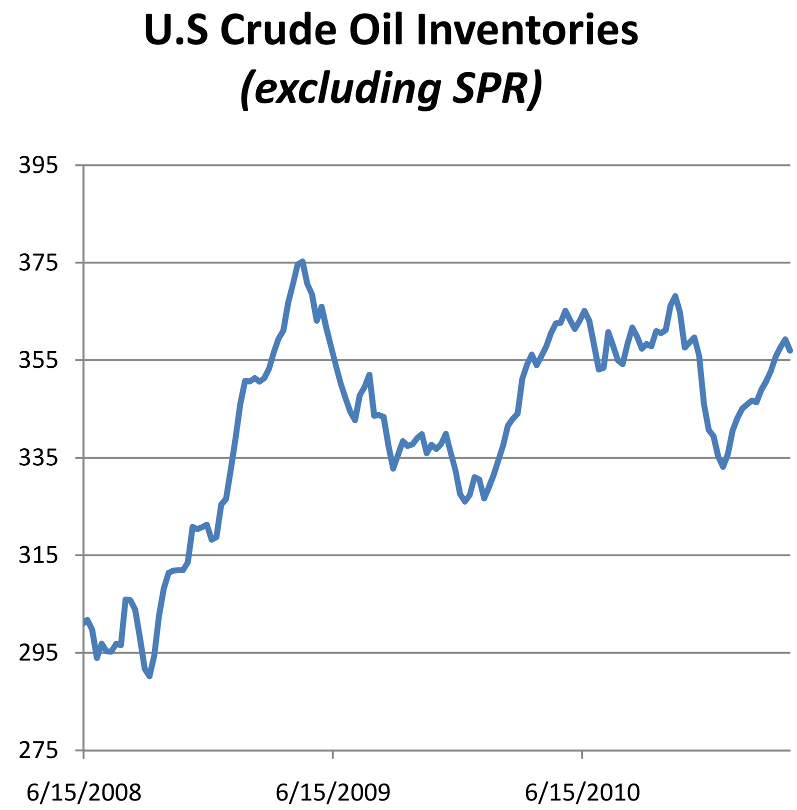
- Use Trading Strategies in An Attempt to Dominate The Financial Market.
- Examples are less clear cut.
  - Amaranth
    - Had large positions on natural gas market. (financial, never held physical inventory).
    - When prices dropped because of abundant supply of the physical commodity, Amaranth lost billions.
    - CFTC charged that Amaranth tried to manipulate prices on settlement days. (CFTC settled with the company. Trader just recently was fined.)
- **Costs:** Distorts the market.

Speculators that participate in the financial market to gain exposure to commodity price risk.

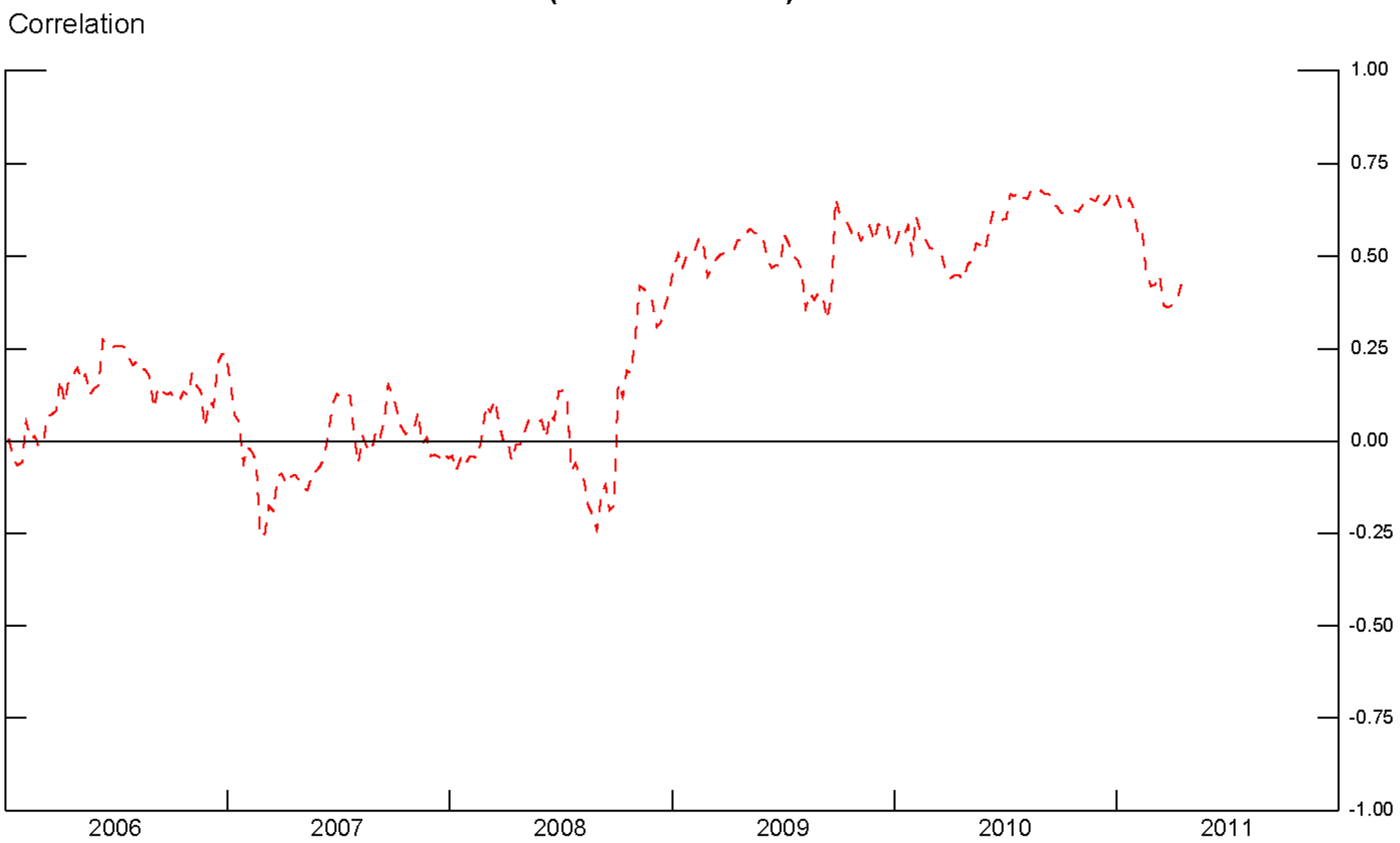
- Passive Commodity Index Investors
  - Go Long
  - Size does not matter.   Being too large might actually be a problem. (roll-return)
  - Benefits
    - Investors Benefit from Portfolio Diversification.
    - Commodity Producers Likely Benefit From Lower Cost of Hedging.

Speculators that hold Inventory based on the expectation of higher prices in the future.

- 



Correlation of Weekly Changes in Oil Prices and Equity Prices
(30 Week Window)



Conclusions

- The links between exchange rates and the dollar are more subtle than just a dollar pricing story.

- In talking about speculators, it is important to define terms.