Financial “Whac-a-Mole”:
Bubbles, Commodity Prices and Global Imbalances

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Bubbles, Commodity Prices and Global Imbalances

- Bubbles...

![Graph of S&P/Case Shiller National Home Price Index (CPI deflated)]

- Asian Crisis
- Subprime Crisis

- Financial “Whac-a-Mole”
Commodity Prices (2008 USD price of a barrel of WTI)...
Global Imbalances (CA deficits as percent of World GDP)

-2.0%  -1.5%  -1.0%  -0.5%  0.0%  0.5%  1.0%  1.5%


% of World GDP

Asian Crisis

Subprime Crisis

U.S.  Oil Producers  Emerging Asia  Europe & Japan

Financial “Whac-a-Mole”
The Role of Asset Supply.

The Economic Mechanism:

- Global scarcity of asset supply depresses world real interest rates (Caballero, Farhi & Gourinchas (2008));
- Creates an environment that is prone to bubbles: Japan; EM Asia; NASDAQ; US housing market & subprime;
- Financial ‘Whac-a-Mole’: another bubble is likely to emerge somewhere else....
- The financial crisis transforms oil into an asset (or a new bubble):
  - Lower real interest rates make oil inventory accumulation profitable
  - One shock, not two!

Global Imbalances:

- U.S. Financial crisis should provoke a dramatic rebalancing;
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\[ C_t = \theta W_t \]

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\text{numeraire} & \quad X_t^d = C_t / (1 + \alpha) \\
\text{commodities} & \quad p_t Z_t^d = \alpha C_t / (1 + \alpha)
\end{align*} \]

\( X_t \) grows at rate \( g \); \( Z \) is constant.

Asset Supply

Good Assets \( \rightarrow V_t \) \( \{ \delta X_{t+s} \} \)
Inventories \( \rightarrow p_t I_t \)
Rational Bubble \( \rightarrow B_t \)

Asset market equilibrium:

\[ W_t = V_t + p_t I_t + B_t; \]

Inventories:

\[ \dot{p}_t / p_t \leq r_t \text{ with equality when } I_t \text{ or } \dot{I}_t > 0; \]

Low asset supply:

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The impact of the subprime crisis.
Global Rebalancing.

Two regions: $U$ (US) and $M$ (Produces $Z$). Start with Bubble located in $U$ and no inventories.

- **Long Run Rebalancing:**
  - Inventories increase asset supply and limit asset demand from $M$.
  - Smaller CA deficits in $U$. More rebalancing.

- **Short Run Rebalancing:**
  - Inventories are still low, but $M$ is richer because of high $p$;
  - Implies even lower interest rates and recycling of petrodollars from $M$ to $U$.
  - With low short run price-elasticity, less rebalancing.
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Global Imbalances with price-elasticity < 1

Panel A: Real Interest Rate (percent)

Panel B: normalized commodity prices

Panel C: p*I/W

Panel D: CA/X, U-region
Orders of Magnitude...

Initial Conditions:

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<th>Data Value</th>
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<td>Crude Oil Prices (%)</td>
<td>98</td>
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<tr>
<td>Current Account (% of GDP)</td>
<td>2.80</td>
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Inventories & Speculation

- US and OECD recorded crude oil inventories have decreased since September 2006 (EIA)

  This is not a concern for three reasons:
  - Inventories respond slowly to financial crisis;
  - Observed inventories reflect two opposing forces: increased demand from EM and speculation;
  - Producers may be the most efficient inventory holders: inventories consist of the stock of proven in-the-ground oil reserves;

Speculation and Policy

- Futures (& futures’ taxation) have no effect on the equilibrium;
- Taxing inventories reduces the price increase in the short run only, but exacerbates the asset shortage in the long run.
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The paper provides an asset view of the current crisis and related developments;

- The central feature is a chronic global shortage of financial assets;
- This shortage explains the sharp rise in oil prices and the limited global rebalancing following the subprime crisis;
- A more complete picture would include reversals, overshooting and firesales. The central message would remain the same: bad news for US financial markets is good news for oil and vice versa;
- The ultimate solution lies in the ability of EMs to produce sound stores of value.
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Oil and Stocks

\[ \Delta p_t = \alpha + \beta \Delta S_t + \epsilon_t \]

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<td>(2.74)</td>
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*First Stage regressions (dependent variable S&P 500)*

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<td>291</td>
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Commodity Prices
Energy + biofuels

Financial “Whac-a-Mole”
Brookings 16 / 18
Commodity Prices
Metals

Caballero, Farhi & Gourinchas ()
Financial “Whac-a-Mole”
Brookings 17 / 18
Commodity Prices

Foodstuff

WHEAT  
SOYBEAN  
SUGAR  
HOG  
CATTLE  
CPI

Financial “Whac-a-Mole”