

Commodity Markets and Food Security

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“Global Cooperation for Sustainable Growth and Development – Views from G20 Countries” - Conference, New Delhi, ICRIER

Sept. 13-14, 2011

Outline

- *The state of food markets and cost of volatility*
- *Explaining food price volatility*
- *Proposed policy actions for G20*

Food price – drivers: old and new

Old Fundamentals

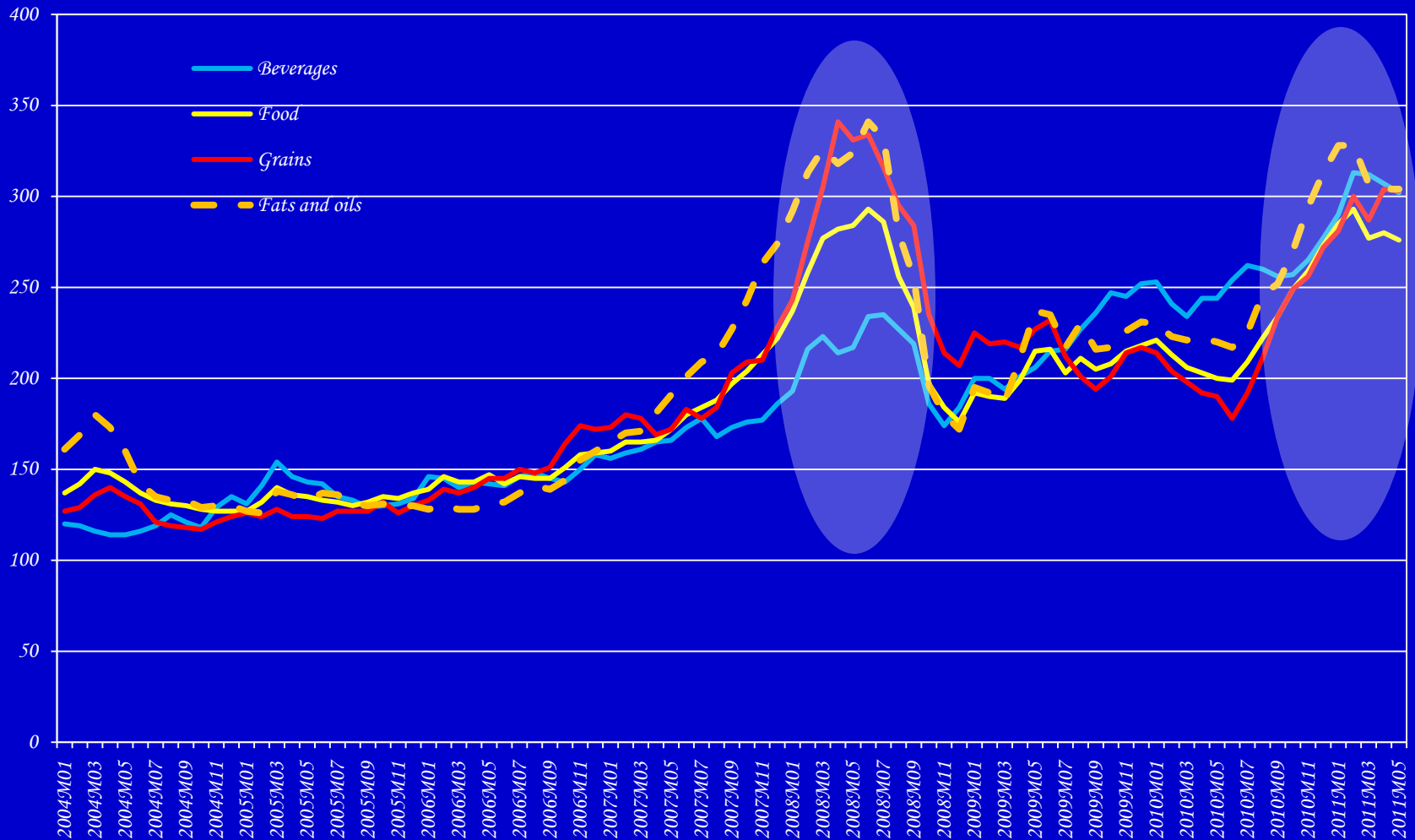
- *supply / demand / stocks remain main drivers*
- *the source of old fundamentals is changing from US to emerging economies such as China, India, Brazil, etc.*

New Fundamentals

- *Energy market linkages*
- *Financial market linkages*
- *Speculation, in combination with trade policy*

Level Change, Volatility, Spikes

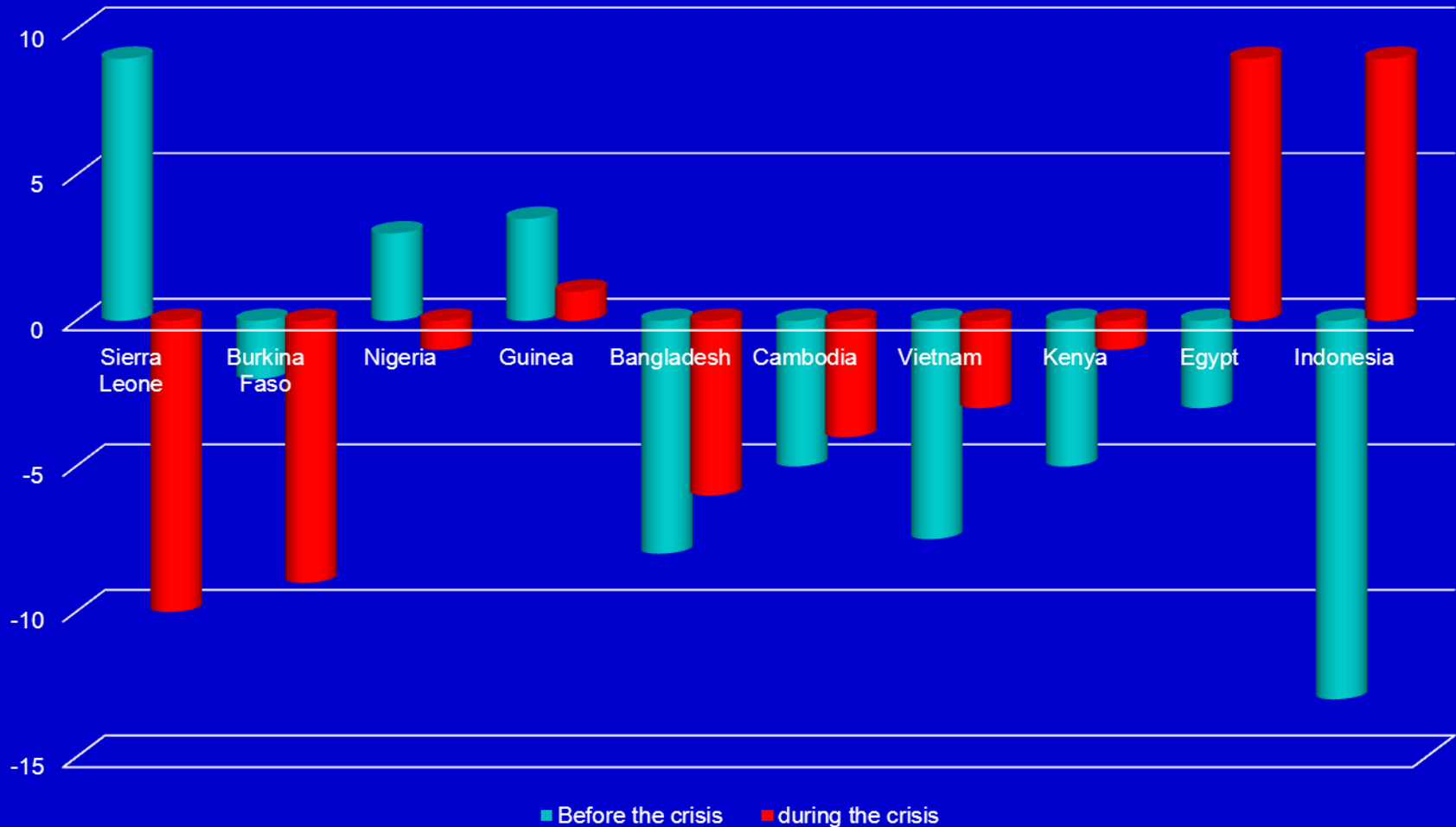
2004 - 2011: food price indices (monthly)



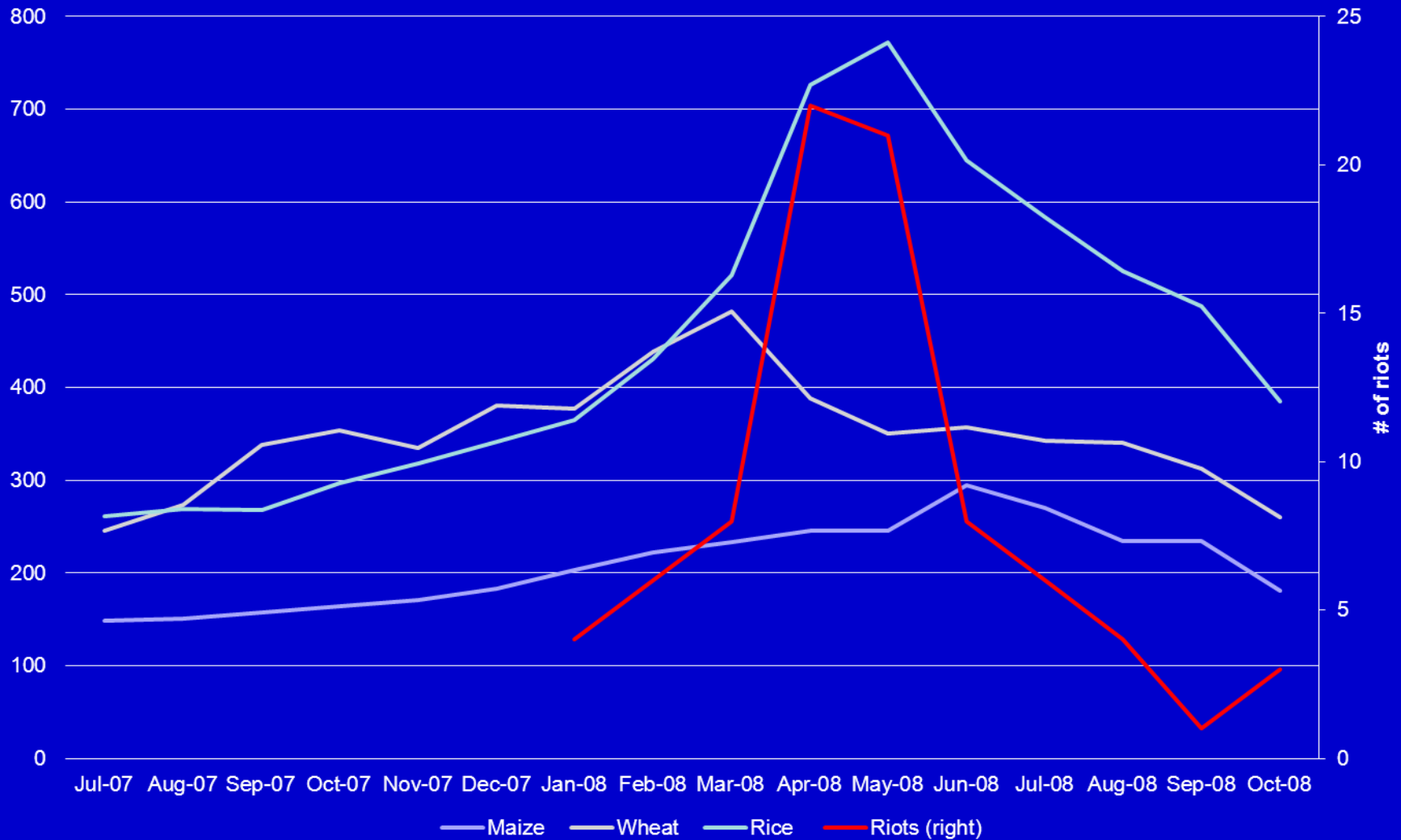
Human costs:

Food crises have made child malnutrition worse

The growth impacts of the 2007-08 food crisis on child malnutrition--stunt



Food crisis has triggered riots



Source: von Braun, 2009

Cost components of volatility

- 1. increased hunger and disease*
- 2. reduction of investment incentives*
- 3. distorted asset markets (land prices and commodities)*
- 4. fiscal and macro-economic effects*
- 5. growing political insecurity*

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Food price volatility drivers?

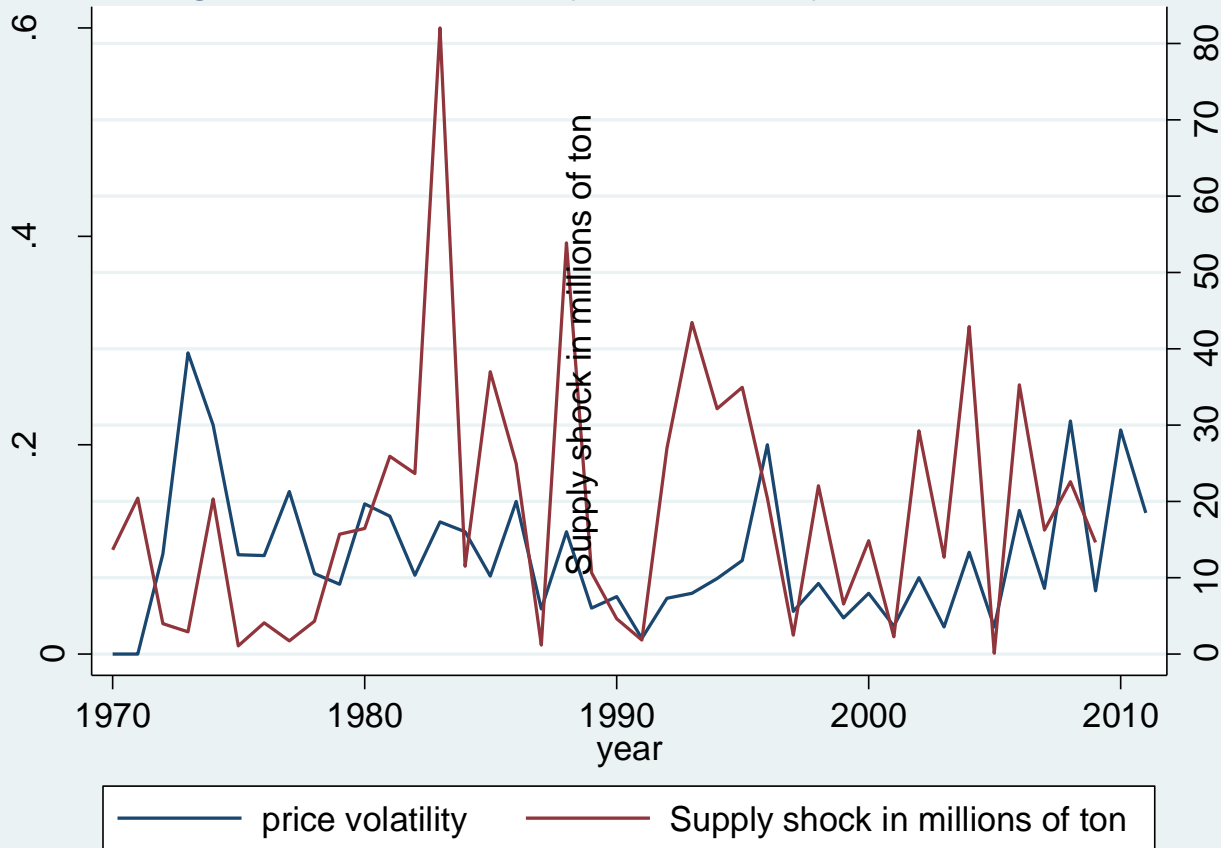
VOLATILITY OF FOOD PRICE

= f [SUPPLY SHOCKS;

*ENERGY PRICE VOLATILITY;
FINANCIAL CRISES]*

Volatility and supply shocks (e.g. maize)

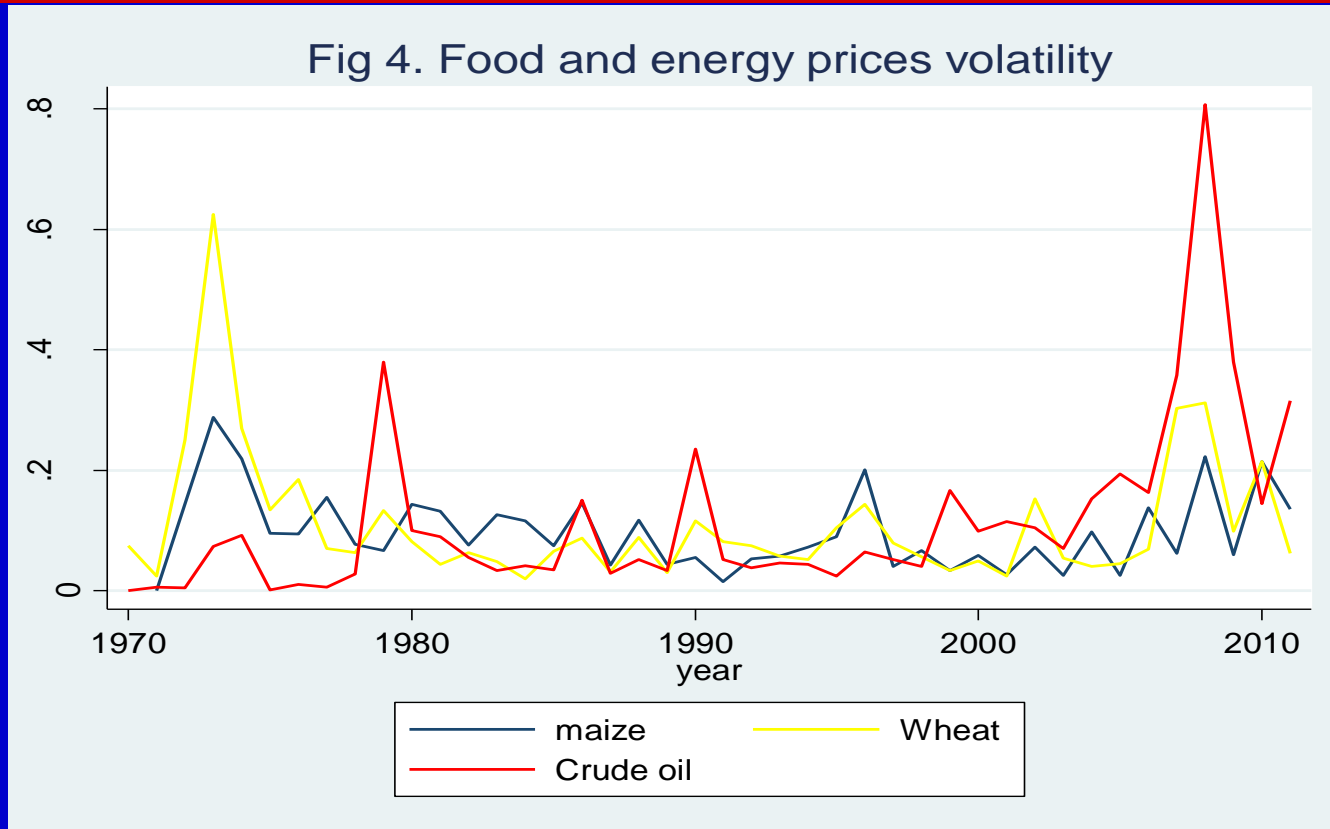
Fig.6a. Price volatility and supply shock-maize



Volatility is measured as the coefficient of variation of monthly prices

Supply shock is measured as the absolute value of difference between de-trended supply and the actual supply

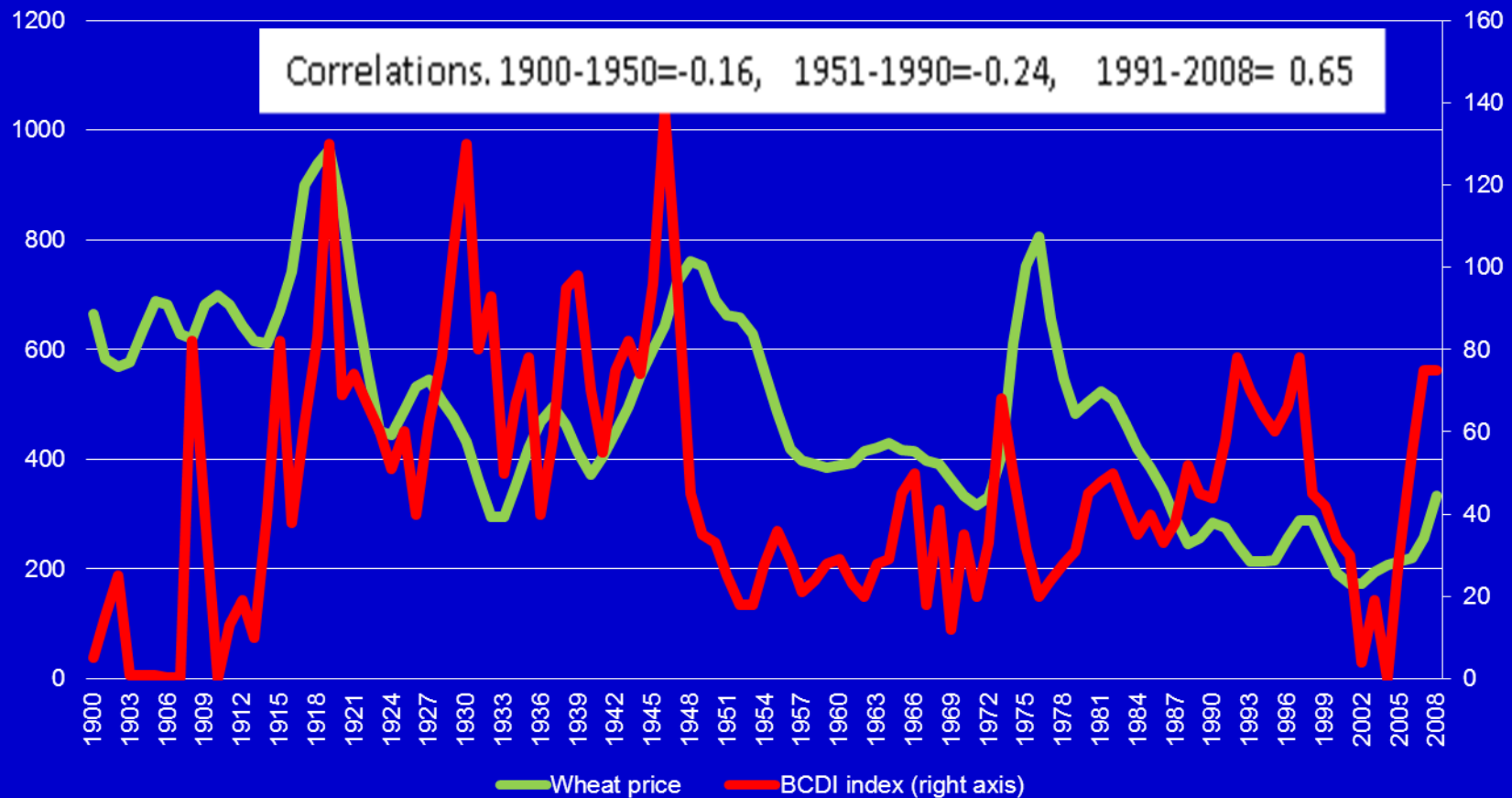
Volatility and oil price



- The association was positive until 1996,
- Remained strongly negative until the food crisis started in late 2006
- After the crisis the correlation is not only positive but it becomes stronger.

Volatility and Financial Crises

Fig.9. wheat price and financial crises 1900 - 2008



Source: BCDI index from Reinhart and Rogoff (2009), Wheat prices are interpolated from BLS 2008, Godo 2001, NBER 2008, OECD 2005, U.S. Census Bureau 2008, and United Nations 1999

Volatility boosted by Speculation in futures markets

- *The speculation effect depends on the 'nervousness' of the market*
- *stabilizes when the market is less nervous through price discovery*
- *destabilizes when the market become nervous as a result of changes in fundamentals, policies and structures*
- *Unconditional control of speculative transaction undermines the stabilization effect*

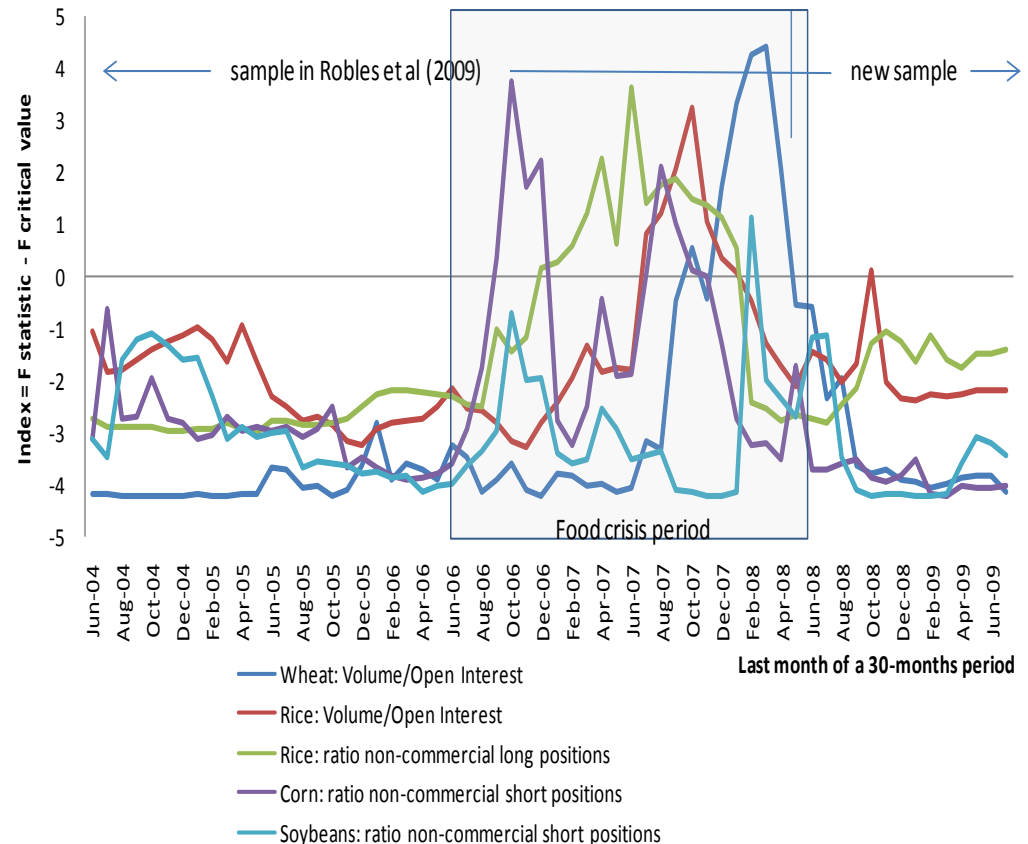
Speculation - Evidence of causality in the 2008 spike



"Changes in supply and demand fundamentals cannot fully explain the recent drastic increase in food prices."

Evidence of speculation influencing commodity prices

(positive numbers on vertical axis shows evidence of influence)



Note: Positive numbers on vertical axis show evidence of influence.

Source: Robles, Torero, and von Braun (2009)

Volatility in global food markets and determinants (wheat, maize)

	<i>Pooled</i>
<i>Supply Shock in millions of tons</i>	<i>0.0014</i> <i>(0.006)</i>
<i>Financial crisis</i>	<i>0.001</i> <i>(0.06)</i>
<i>Oil price volatility</i>	<i>0.235</i> <i>(0.00)</i>
<i>Constant</i>	<i>-0.004</i> <i>(0.85)</i>
<i>R-square</i>	<i>0.52</i>
<i>N</i>	<i>46</i>

- *The effect of supply shocks, financial crisis and oil price volatility on food price volatility (P-values)*

Elasticities: % increase of food price volatility due to a 1% increase in supply shocks (0.22), financial crises index (0.6) and oil price volatility (0.32).

Source: von Braun, Tadesse, IEA-Paper, 2011.

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Strategic agenda

- 1. Promote pro-poor agriculture growth with technology and institutional innovations*
- 2. Expand social protection and child nutrition action*
- 3. Reduce market volatility*

What to do about volatility?

1. *Keep trade open at times of global and regional food shortage is a must*
2. *Regulation of food commodity markets? (only as part of financial markets)*
3. *Establish grain reserves policy at global level (emergency reserve, shared physical reserves, and a virtual reserve)*

Required international institutional arrangements

- *Unilateral food market actions lead to global collective action failures*
- *The agenda is too complex for declarations and for delegation of selected issues to selected current international agencies*
- *A new multilateral organization is needed to watch matters and to guide policy and to engage in curbing food price volatility: an “international grain reserves bank”.*