

Volatility in Commodity Markets: Causes and Impacts on the Poor

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Sept. 22, 2011

Outline

- **Food markets, poverty, costs of volatility**
- **Explaining food price volatility**
- **Proposed policy actions for G20**

Food price – drivers: old and new

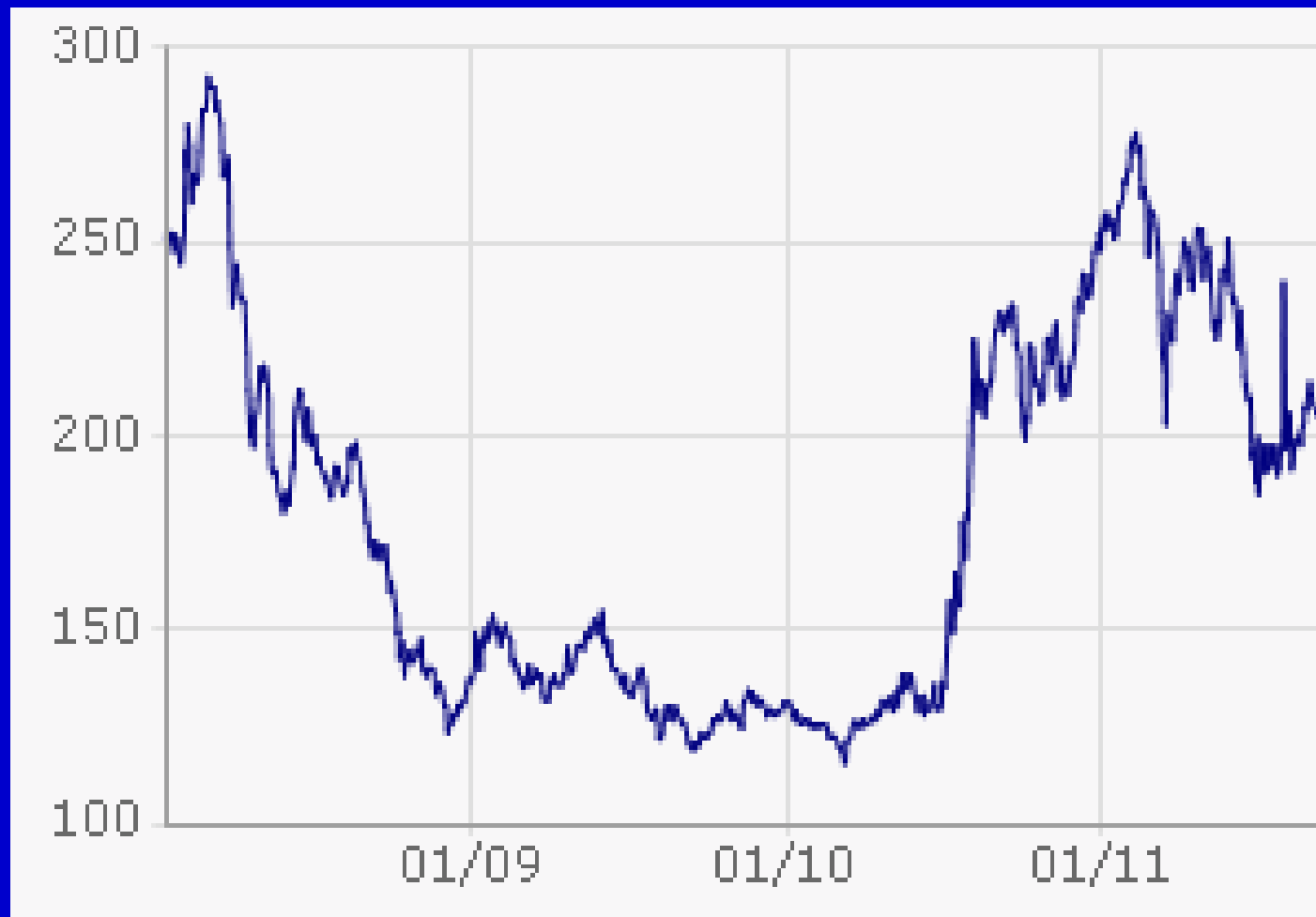
Old Fundamentals

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

New Fundamentals

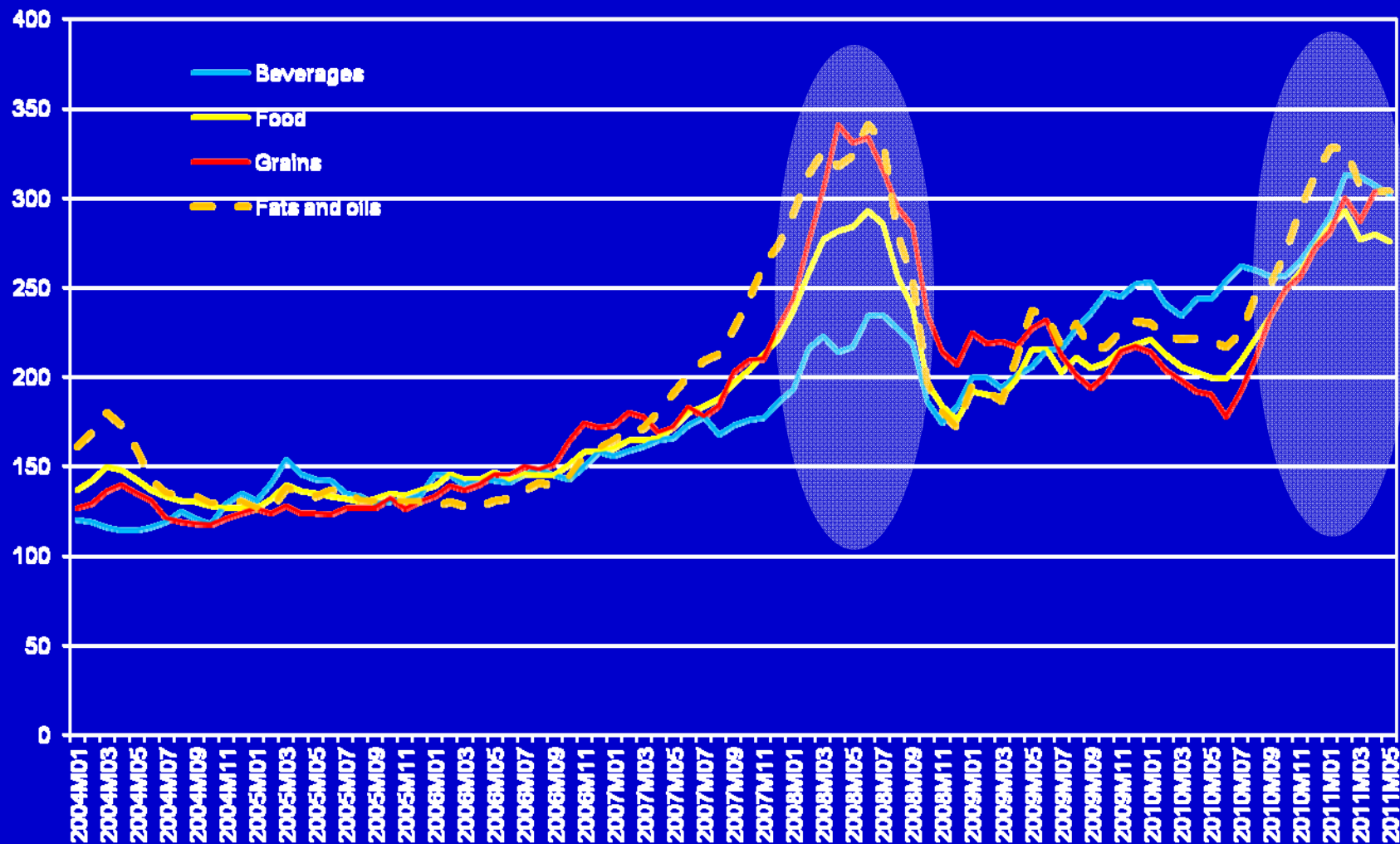
- Energy market linkages
- Financial market linkages
- Speculation, in combination with trade policy

Wheat Price last 5 years (EUR / ton)



Level Change, Volatility, Spikes

2004 - 2011: food price indices (monthly)



High food price volatility reaches the poor in different ways

- **Poor countries** are affected by food price shocks (non-linear transmission elasticities)
- **Poverty effects** depend on
 1. prevalence of poverty and inequality
 2. consumption patterns and structures of price change
 3. spatial pattern of price change (incl. urban, rural)
 4. income sources of the poor (incl. farming)

Real change in prices in Honduras and Nicaragua 2006-08

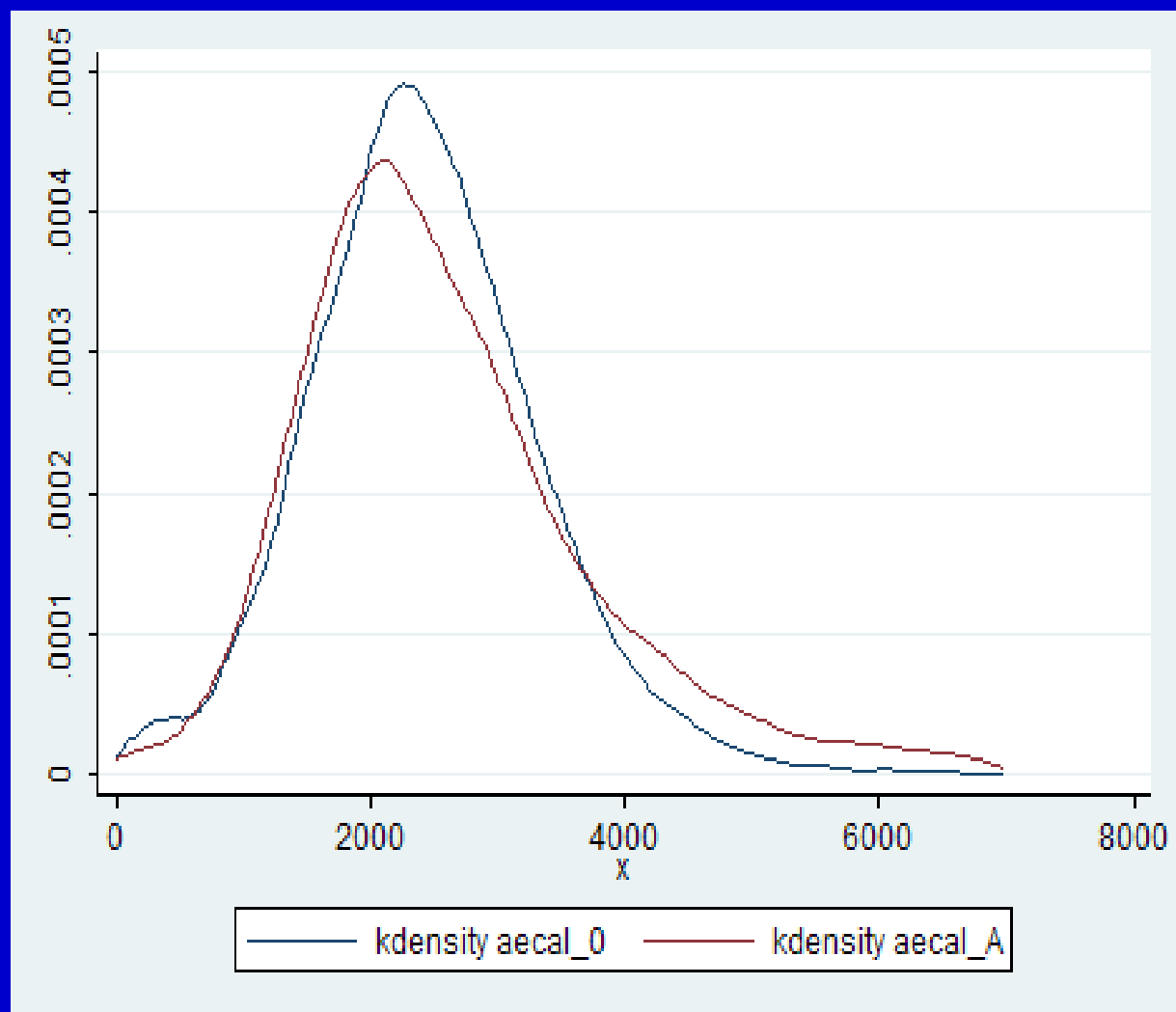
Group	Honduras	Nicaragua
1. Rice	24%	18%
2. Corn	19%	28%
3. Breads	13%	28%
4. Beans, roots, vegetables, and fruits	18%	35%

Real change in observed consumer prices between first quarter 2006 and first quarter 2008. Observed prices come from corresponding country's bureau of statistics

Source: M.Torero, IFPRI, 2009

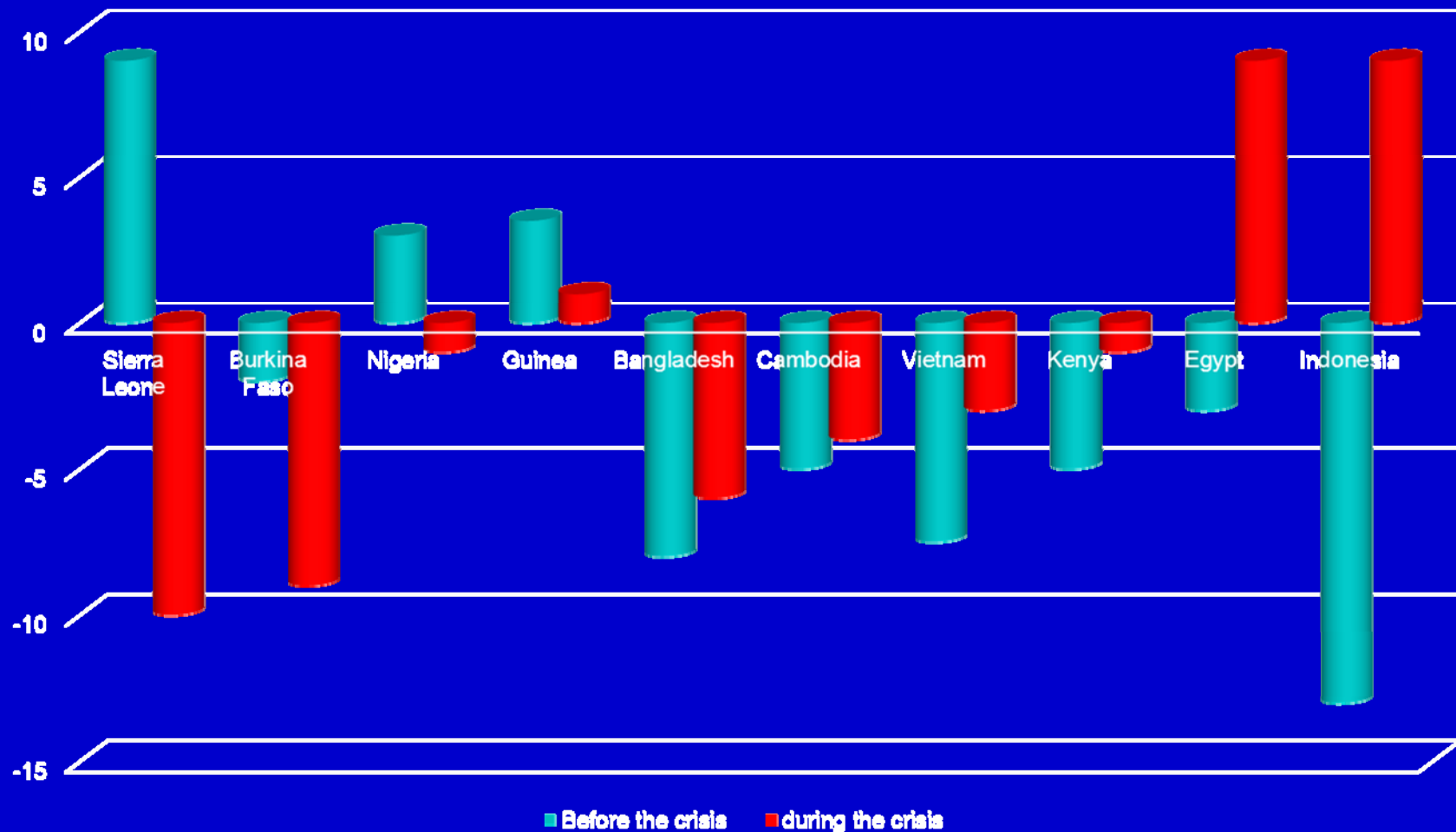
Calorie consumption – Honduras

Before (blue) and after (red) of the increase in prices



Human costs: Food crises have made child malnutrition worse

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



Economics saw market volatility costs as low: broader approach needed

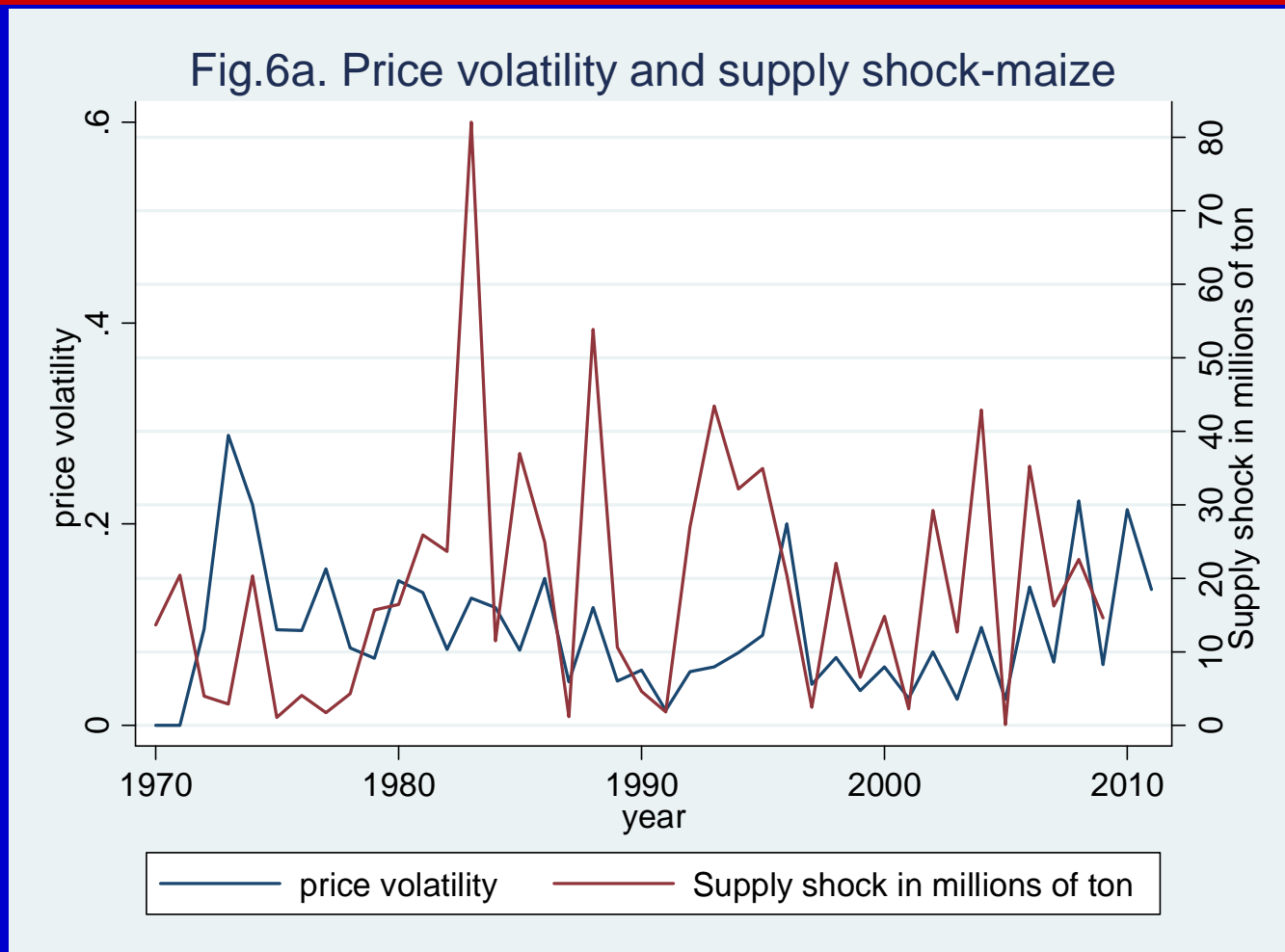
Cost components of volatility:

- 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. political insecurity**

Food price volatility drivers?

***VOLATILITY OF FOOD PRICE
= f [SUPPLY SHOCKS;
DEMAND SHOCKS;
FINANCIALIZATION]***

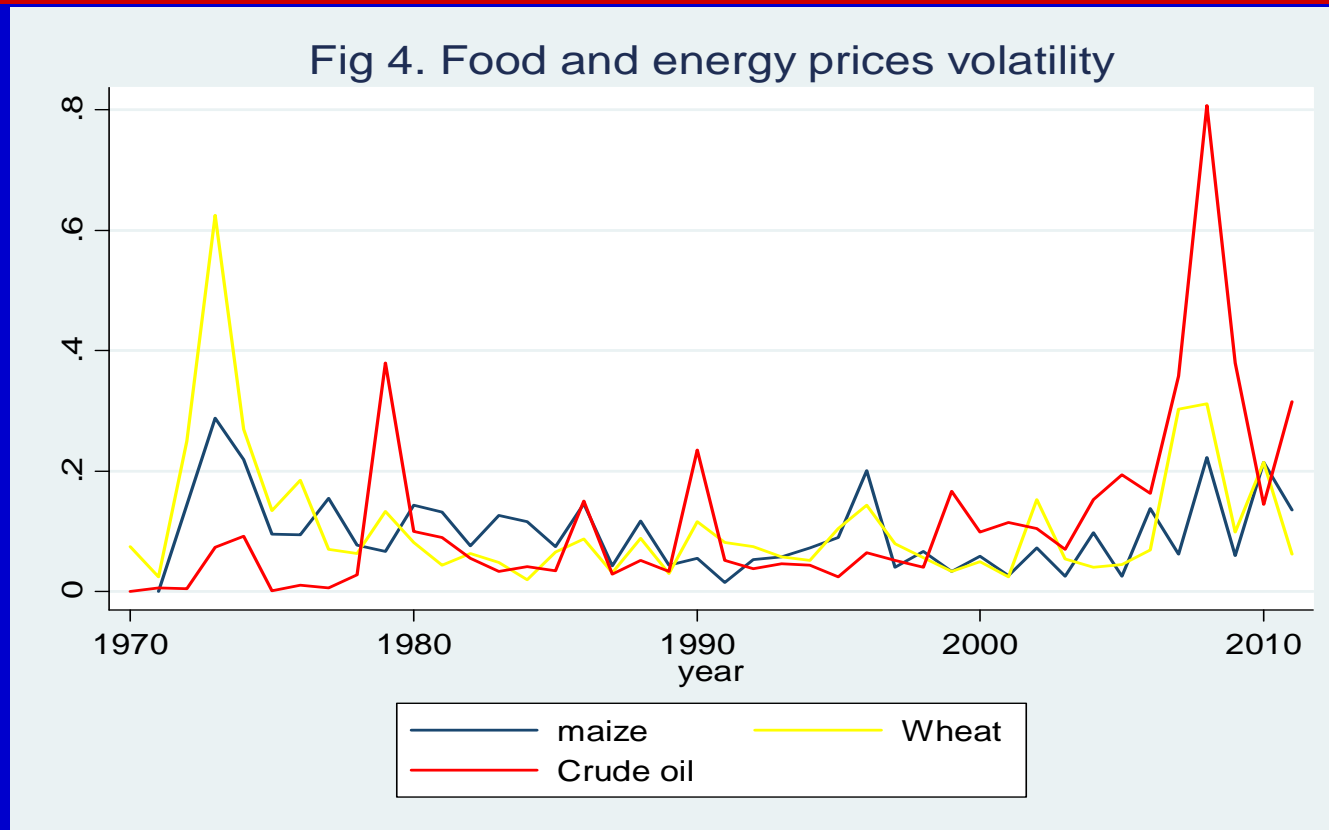
Volatility and supply shocks (e.g. maize)



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

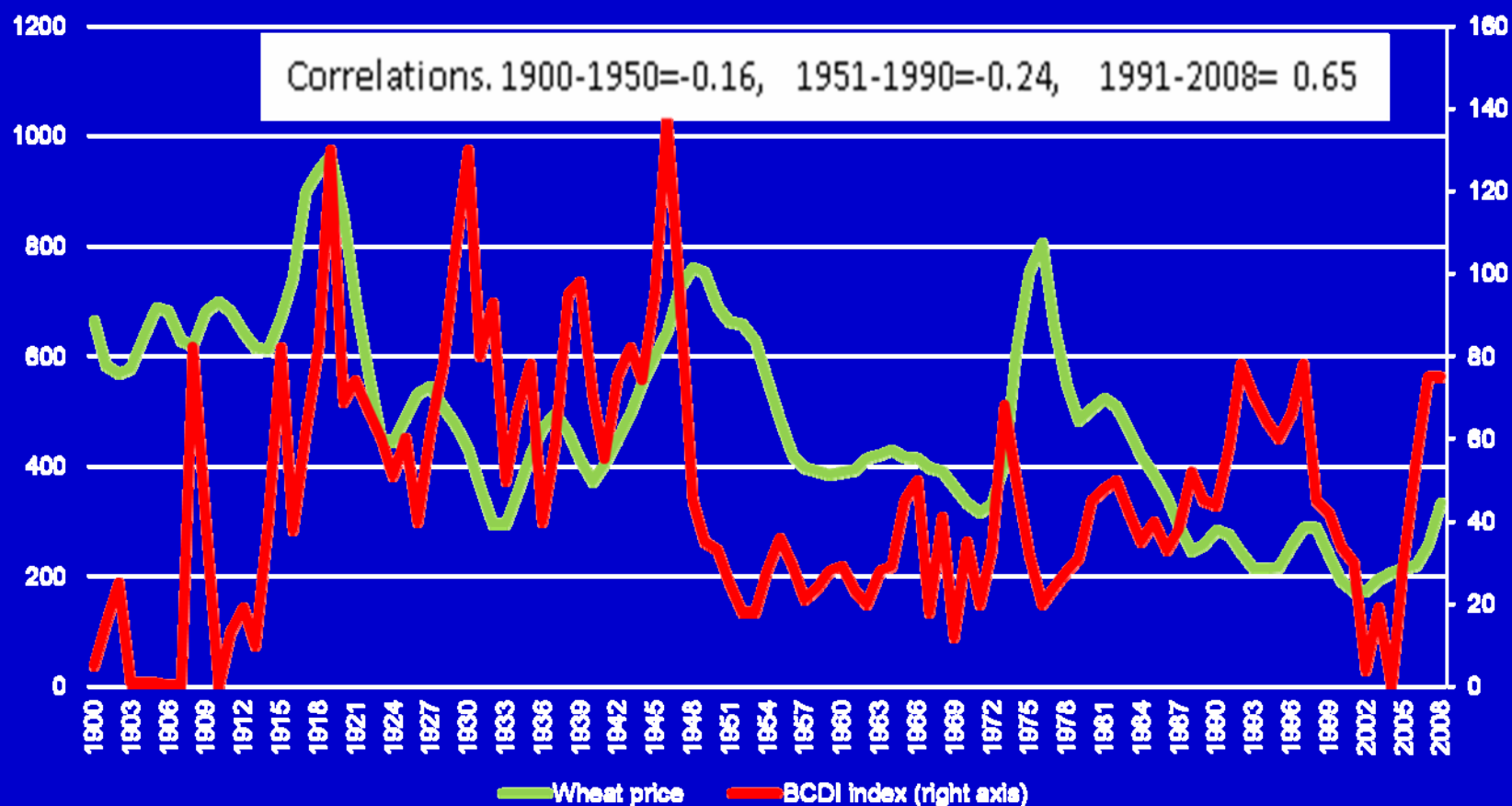
Volatility and demand shocks (oil price and bio fuels)



- 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.

Financialization – Food Market 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 in global food markets and determinants (wheat, maize)

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

- 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.

Volatility boosted by Speculation in futures markets

Speculation effect partly depends on the 'nervousness' of the market...

- stabilizes when the market is less nervous through price discovery
- destabilizes when the market becomes nervous as a result of changes in fundamentals, policies and structures

Unconditional control of speculative transaction would undermine the stabilization effect

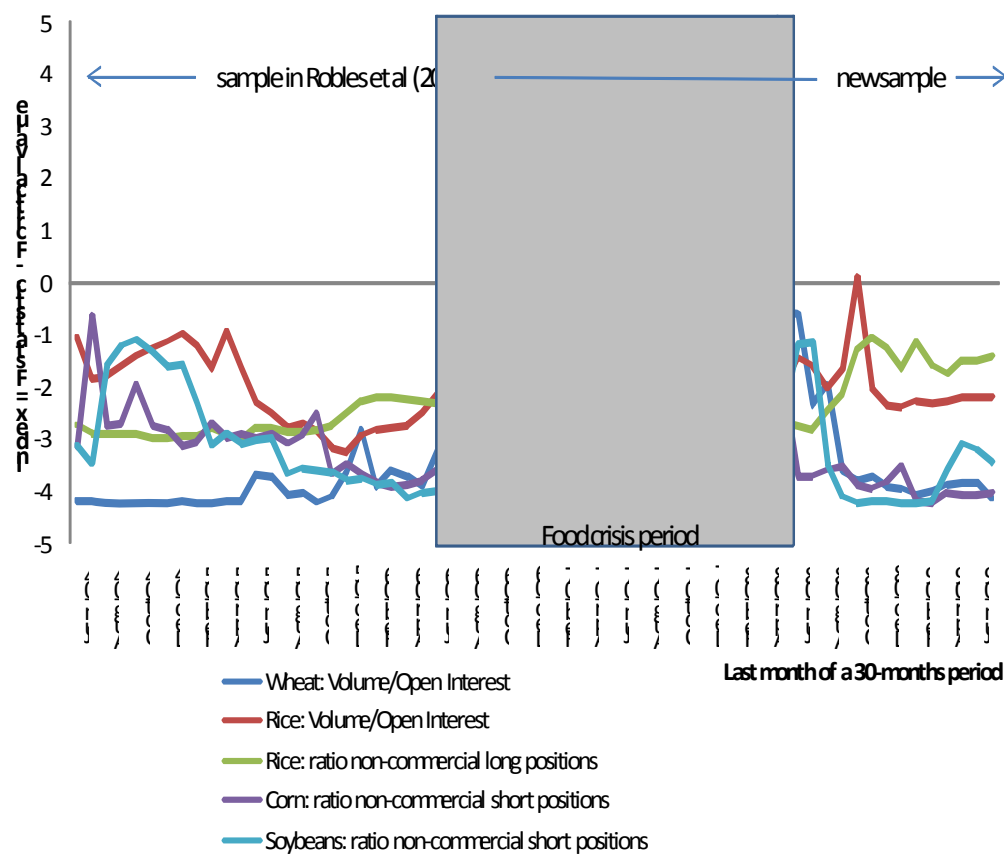
Speculation - Evidence of causality in the 2008 spike



"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)

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”**.