Inconsistency between Theory and Practice in Policy Recommendation by International Organizations for Excessive Volatility

Maximo Torero

m.torero@cgiar.org
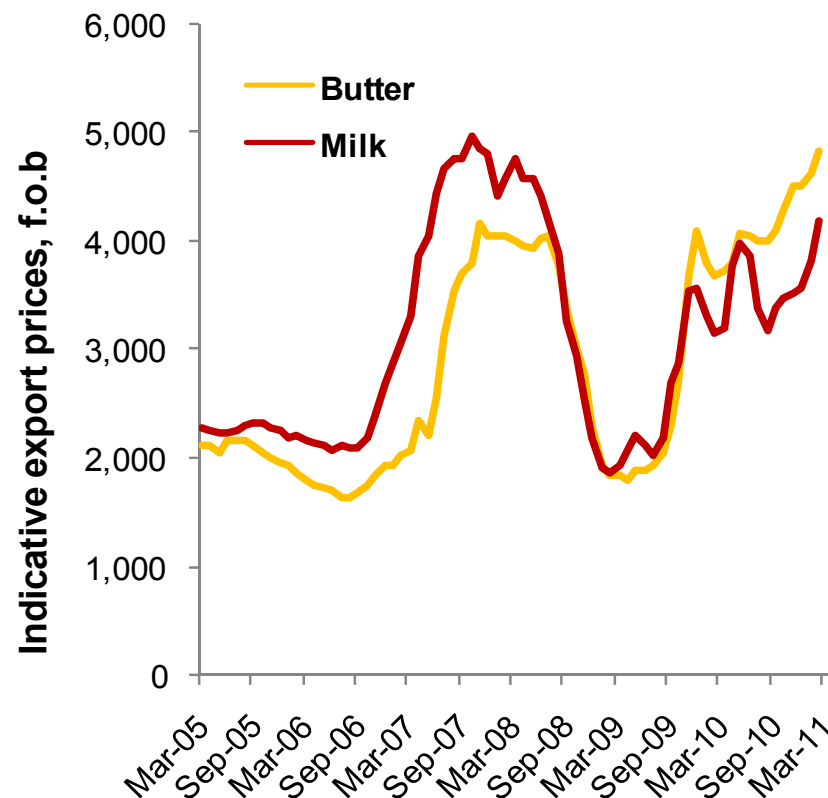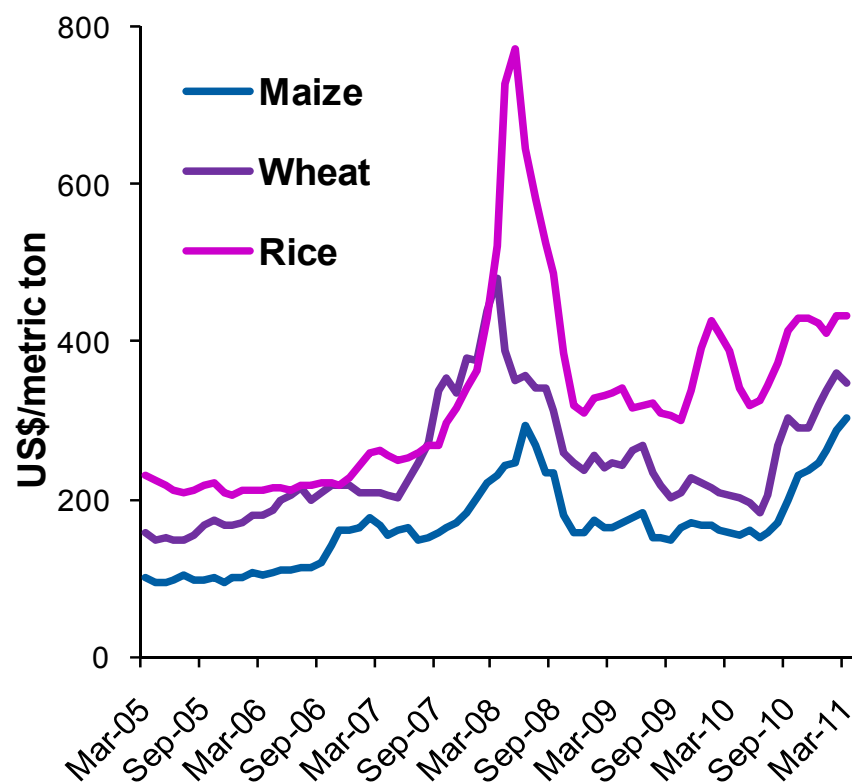
Commodity Market Instability and Asymmetries in Developing
Countries: Development Impacts and Policies
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What we learned from 2007-08?

Evolution of prices

Source: FAO (Food and Agriculture Organization of the United Nations). 2011. International commodity prices database. Available at www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en. Maize = US No.2, Yellow, U.S. Gulf; Wheat = US No.2, Hard Red Winter ord. prot, US f.o.b. Gulf; Rice = White Broken, Thai A1 Super, f.o.b Bangkok; Butter = Oceania, indicative export prices, f.o.b.; and Milk = Whole Milk Powder, Oceania, indicative export prices, f.o.b.
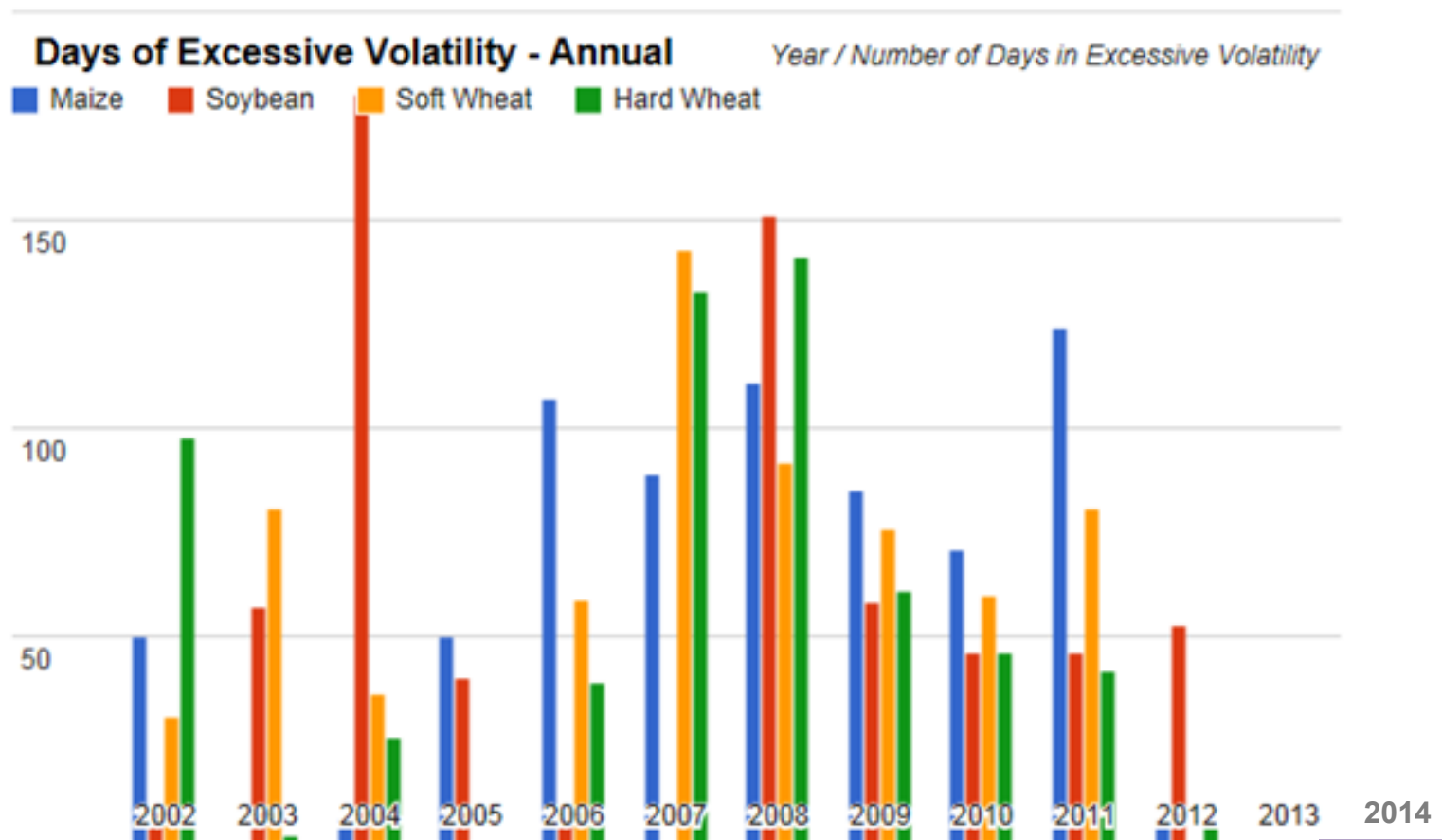
Real price evolution. Index=100 in 1960

Soybeans ($/bushel)   Corn ($/bushel)
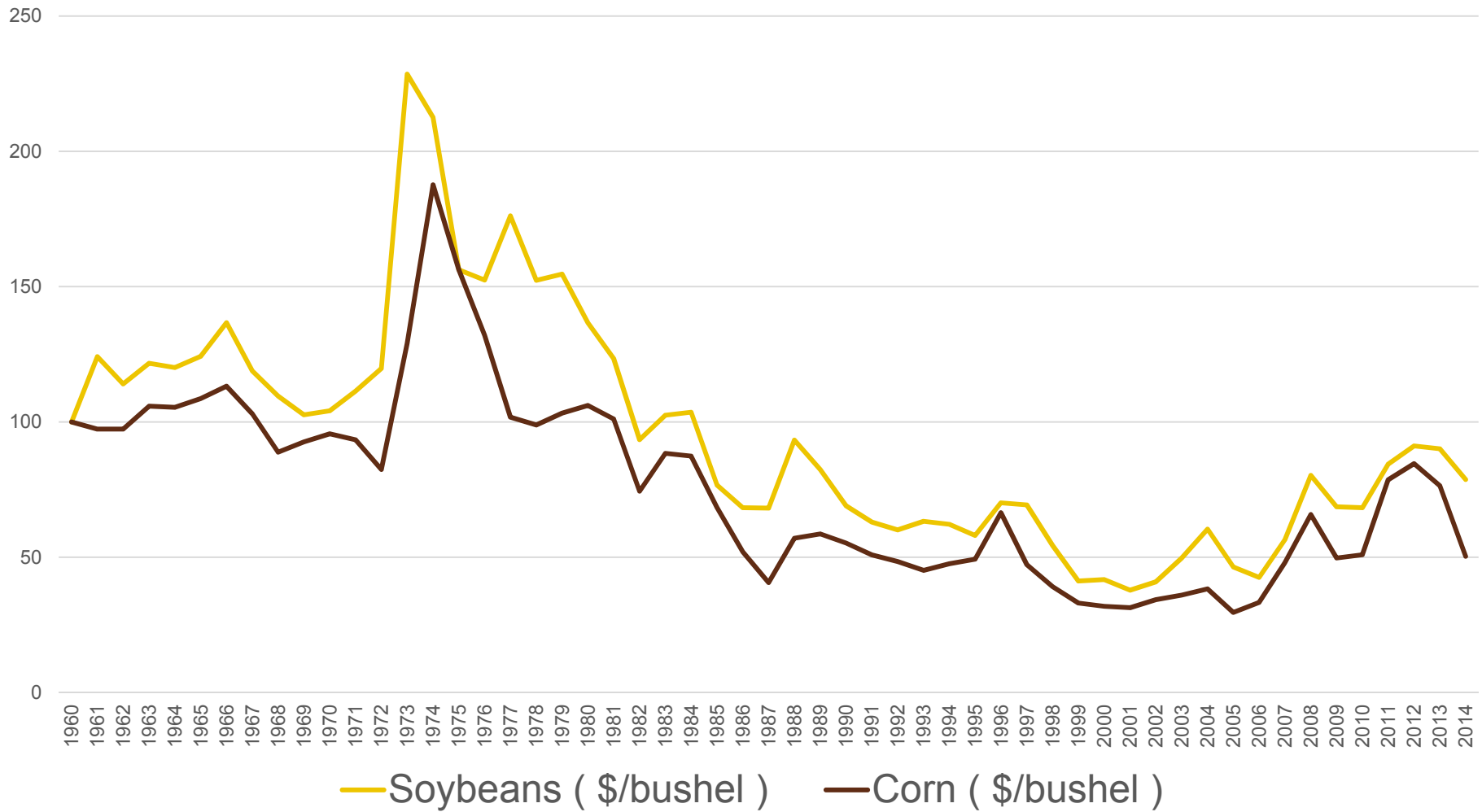
Measuring Excessive Price Volatility

- NEXQ (Nonparametric Extreme Quantile Model) is used to identify periods of excessive volatility [www.foodsecurityportal.org/excessive-food-price-variability-early-warning-system-launched]

- First we estimate a dynamic model of the daily evolution of returns using historic information of prices since 1954. The model is a fully *nonparametric location scale model (mean and variance through time can vary with time)*¨

- Second we combine the model with the extreme value theory to estimate quantiles of higher order of the series of returns allowing us to classify each return as extremely high or not.

- Finally, the periods of excessive volatility are identified using a binomial statistic test that is applied to the frequency in which the extreme values occur within a 60 days window

Periods of Excessive Volatility

Days of Excessive Volatility - Annual — Year / Number of Days in Excessive Volatility

Legend: ■ Maize ■ Soybean ■ Soft Wheat ■ Hard Wheat

Note: This figure shows the results of a model of the dynamic evolution of daily returns based on historical data going back to 1954 (known as the Nonparametric Extreme Quantile (NEXQ) Model). This model is then combined with extreme value theory to estimate higher-order quantiles of the return series, allowing for classification of any particular realized return (that is, effective return in the futures market) as extremely high or not. A period of time characterized by extreme price variation (volatility) is a period of time in which we observe a large number of extreme positive returns. An extreme positive return is defined to be a return that exceeds a certain pre-established threshold. This threshold is taken to be a high order (95%) conditional quantile, (i.e. a value of return that is exceeded with low probability: 5 %). One or two such returns do not necessarily indicate a period of excessive volatility. Periods of excessive volatility are identified based a statistical test applied to the number of times the extreme value occurs in a window of consecutive 60 days.

Source: Martins-Filho, Torero, and Yao 2010. See details at http://www.foodsecurityportal.org/soft-wheat-price-volatility-alert-mechanism

What is happening today

HARD WHEAT
Low Volatility 3/25/14

593 days in low volatility

Zoom: 1 X
Viewing Years: 2012 - 2014

SOFT WHEAT
Low Volatility 3/25/14

741 days in low volatility

Zoom: 1 X
Viewing Years: 2012 - 2014

Two explanations for exacerbation of prices

Explanation 1: Wrong policies

Export bans and restrictions
– Because of highly concentrated markets
– Simulations based on MIRAGE model showed that this explains around 30% of the increase of prices in basic cereals
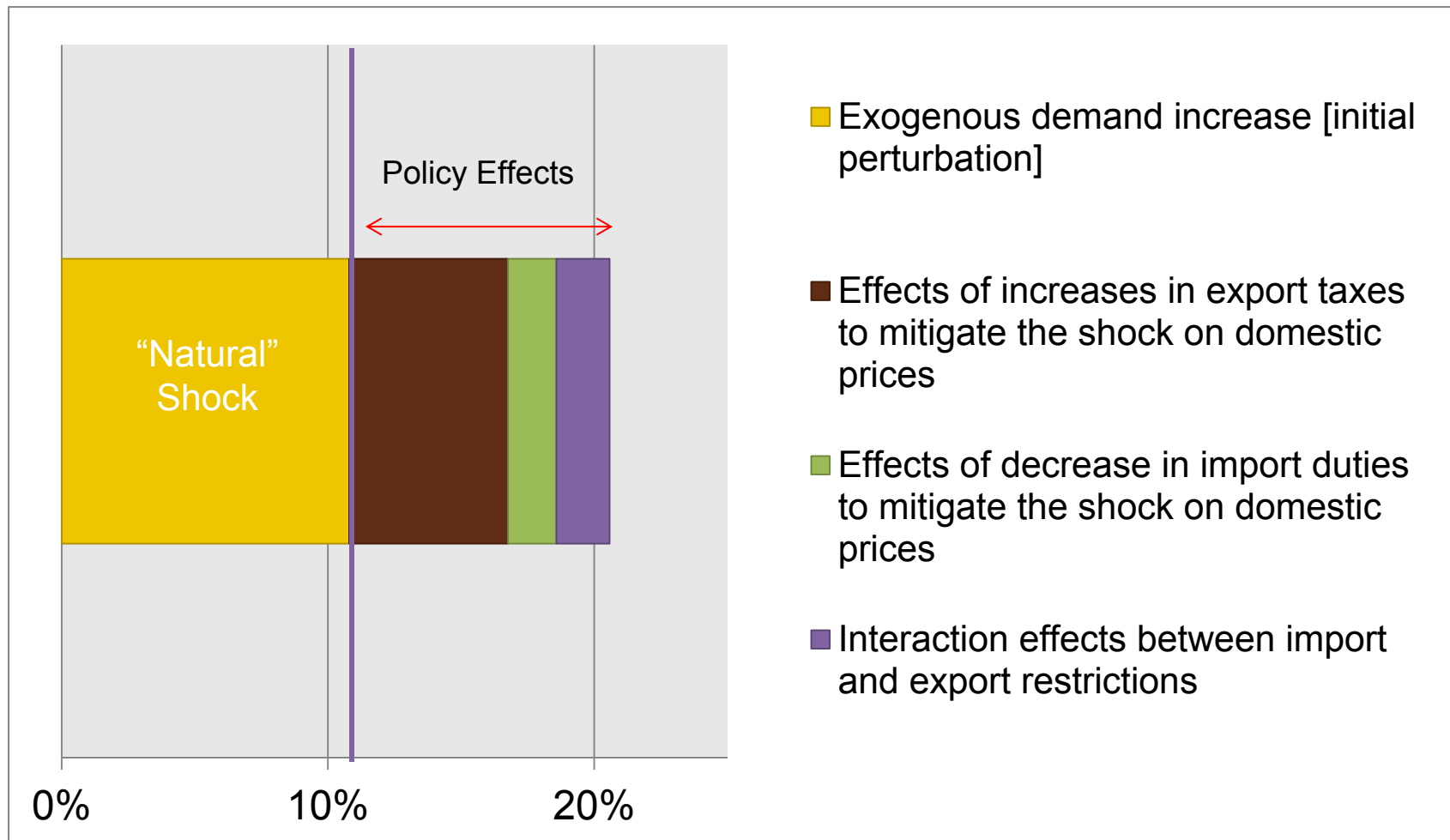
Other government policies
– National reserves
– Price stabilization
– Input subsidies
– Food subsidies

Explanation 2: Speculation in the futures markets

- Significant increase of volume of globally traded grain futures & options
- Governments increasingly curb hoarding (e.g. India, Pakistan, Philippines)
- Non-commercial share in future transactions increase
- etc

E1: Effects on world prices of trade policy reactions for selected countries

Policy Effects

"Natural" Shock

- Exogenous demand increase [initial perturbation]

- Effects of increases in export taxes to mitigate the shock on domestic prices

- Effects of decrease in import duties to mitigate the shock on domestic prices

- Interaction effects between import and export restrictions

0%   10%   20%

Source: Bouet and Laborde, 2009. MIRAGE simulations

Trade factors and their role

Martin and Anderson: Trade distortions and Food Price Surges

- Changes in trade policies contributed very substantially to the increases in world prices of the staple crops in both the 1974 and the 2008 price surges

- In 2007-8, insulating policies in the market for rice explained almost 40% in the increase in the world market for rice

- But key point is:

"The absolute symmetry between insulating actions taken through export restrictions and import barrier reductions. While economists tend to be more critical of the use of import barriers as creating instability in world markets, they frequently applaud import barrier reductions undertaken in the same context. There may be some basis for this support if the reduction is believed to be permanent once undertaken. If, however, it is undertaken purely on a temporary basis, as a way to reduce the instability of domestic prices, the effects on the instability of world prices are clearly quite symmetric. From a policy viewpoint, there remains an important distinction, however, because the multilateral trading system has quite different rules in the two cases (see Bouet and Laborde 2010)."

Trade factors and their role

- If you raise export taxes in a big agricultural country this will raise world prices (through a reduction in world supply) and it will be bad for small net food importing countries => A problem!

- But reduction of import duties has exactly the same effect: an increase of world prices through an expansion of demand on world markets. But you will not be criticized because it's a liberal policy!

- And when you add augmentation of export taxes in big food exporting countries and reduction of import duties in big food importing countries => real disaster for small food importing countries

- So the question is : should we ask for a freeze of trade policies during food crisis.

Trade factors and their role

- There is a need to differentiate effects between small and large countries

- As shown by Laborde and Bouet (2010), using both partial and general equilibrium theoretical models when large countries have an objective of constant food domestic prices, in the event of an increase in world agricultural prices the optimal response is to decrease import tariffs in net food-importing countries and to increase export tariffs in net food-exporting countries.

- The later decision is welfare improving while the former is welfare reducing: it is the price to pay to get domestic food prices constant.

- Small countries are harmed by both decisions.

Trade factors and their role

- The costs of a lack of cooperation in and regulation of (binding process) such policies in a time of crisis

- Is there a need to call for international regulation, in particular because small net food-importing countries may be substantially harmed by these beggar-thy-neighbor policies that amplify the already negative impact of the food crisis

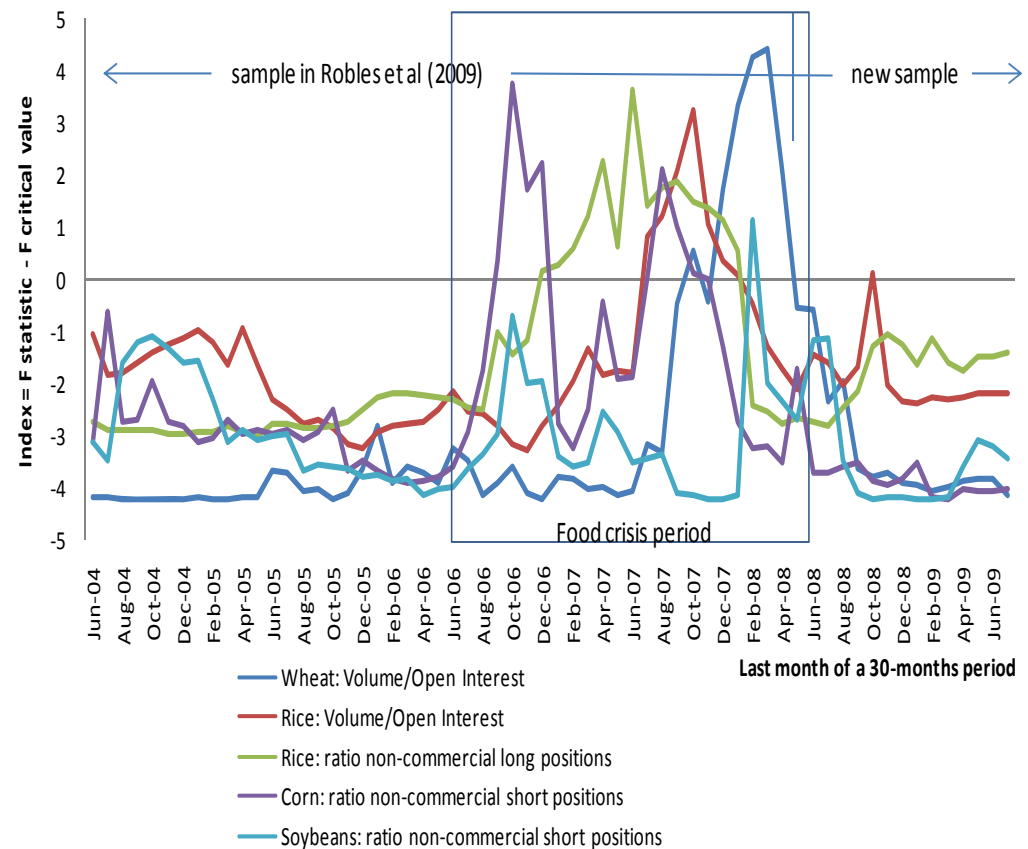- Can WTO dispute resolution mechanisms be used?

Evidence of Granger causality

Evidence of speculation influencing commodity prices
(positive numbers on vertical axis shows evidence of influence)

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

Index = F statistic - F critical value

sample in Robles et al (2009)   new sample

Food crisis period

Last month of a 30-months period

— Wheat: Volume/Open Interest
— Rice: Volume/Open Interest
— Rice: ratio non-commercial long positions
— Corn: ratio non-commercial short positions
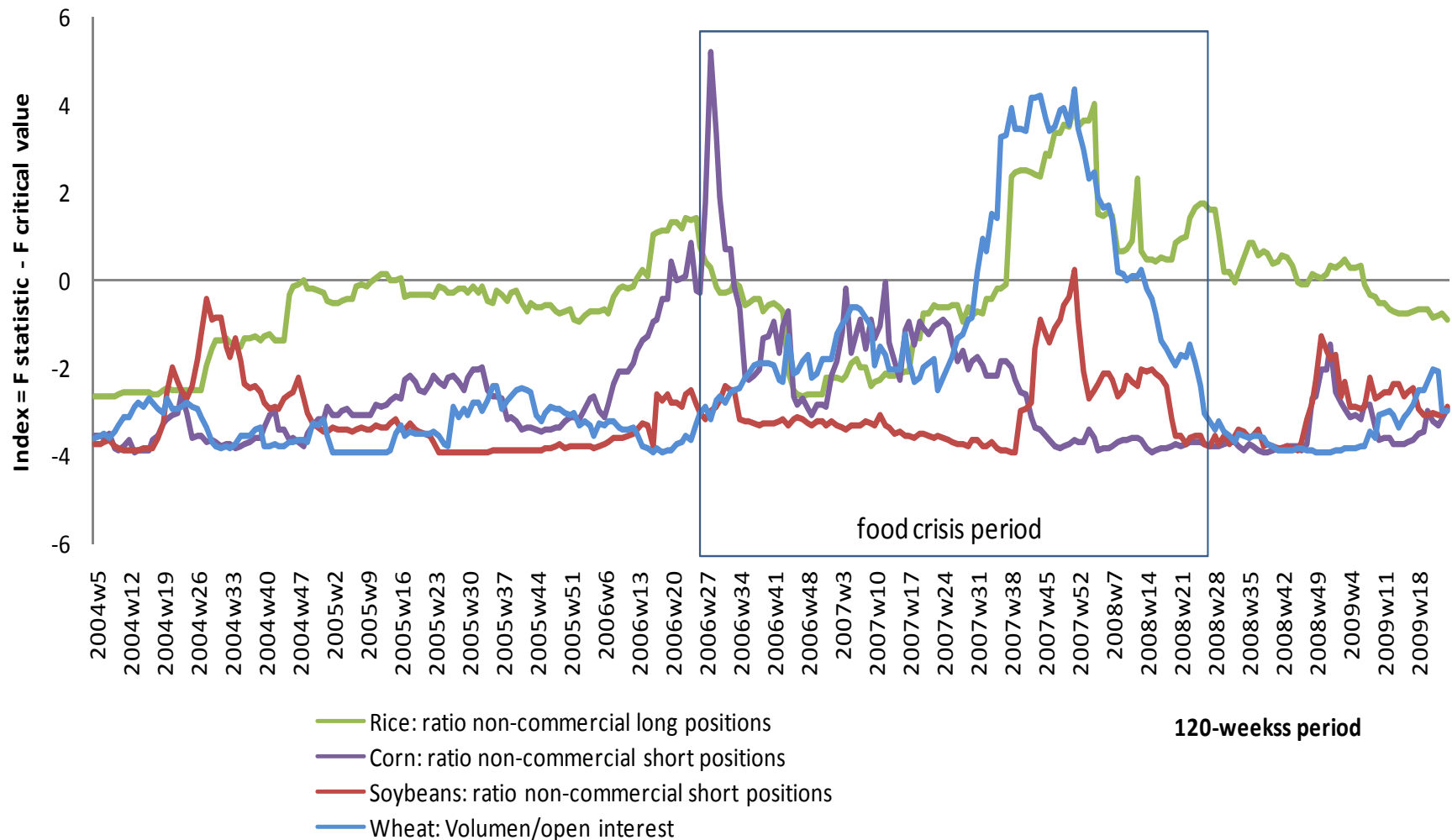— Soybeans: ratio non-commercial short positions

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

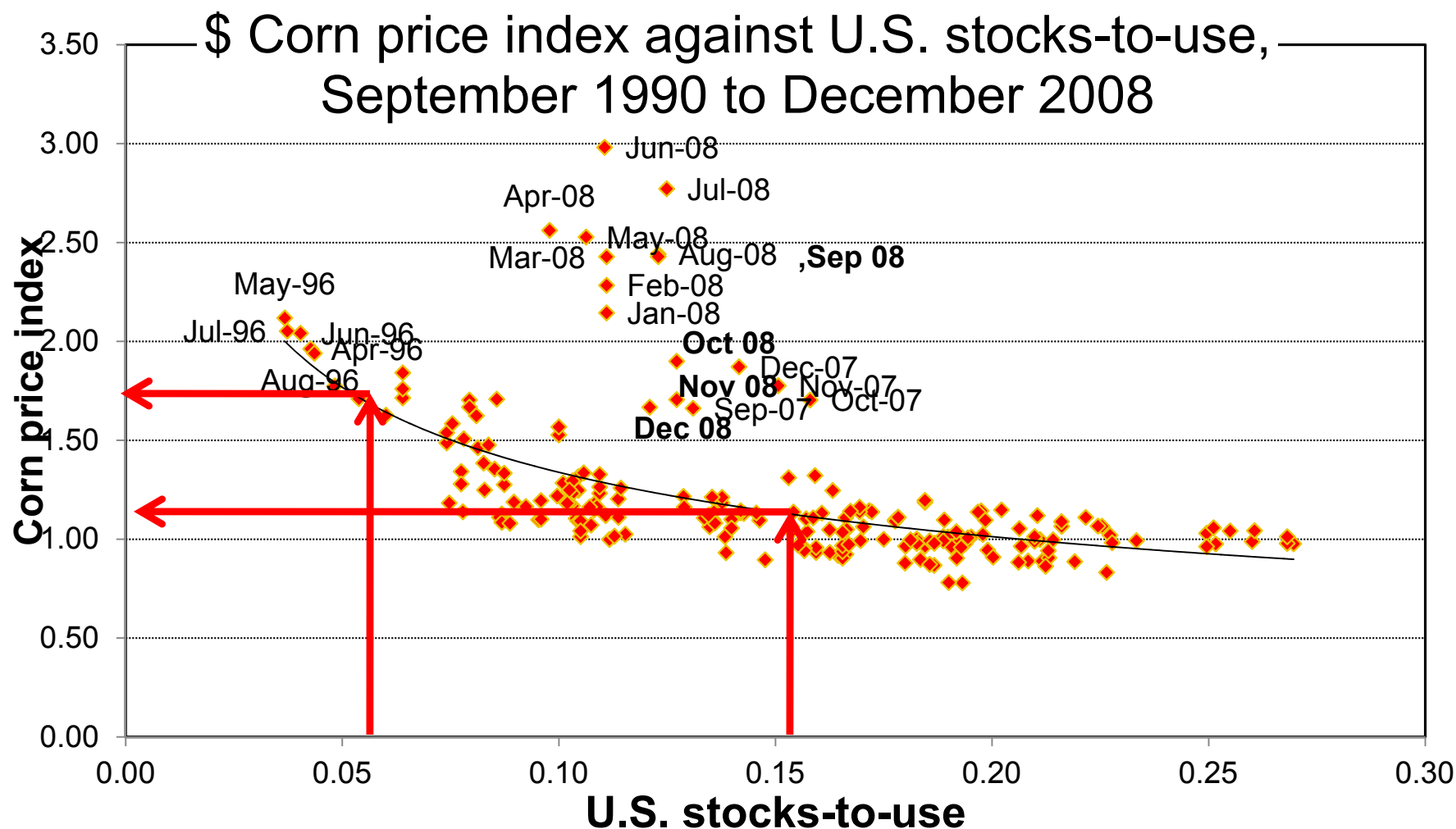Source: Robles, Torero, and von Braun (2009)

Evidence of Granger causality – data frequency

Evidence of speculation influencing commodity prices

(positive numbers on vertical axis shows evidence of influence)

Index = F statistic - F critical value

food crisis period

120-weekss period

Rice: ratio non-commercial long positions

Corn: ratio non-commercial short positions

Soybeans: ratio non-commercial short positions

Wheat: Volumen/open interest

More on financial activity and/or speculation in futures markets…

$ Corn price index against U.S. stocks-to-use, September 1990 to December 2008

Source: Phillip Abbott (2009)

Potential impacts of financial activity and speculation on agricultural commodities prices

- ## Masters and White (2008)
  - "Commodity index replication trading strategies have grown from $13 billion in 2003 to $317 billion in July 2008 "at the same time, the prices for the 25 commodities that make up these indices have risen by an average of over 200%".

- ## Papers that support evidence of speculation
  - Marco Lagi et al. (2011)
  - Cook and Robles (2009)
  - Mayer, 2009, Timmer, 2009, Trostle, 2008, FAO, 2010, IFPRI et al., 2011
  - David Frenk (2010) – criticizes all work of Irwin and Sanders
  - However, the econometric tests results may not lead to identify a significant effect for long periods of time (Rapsomanikis, 2009)

- ## Papers against evidence of speculation
  - Irwin and Sanders (2010), Irwin, S. H., Sanders, D. R., Merrin, R., P., 2009, Irwin, S., H., 2013
  - Georg Valentin Lehecka (2013)
  - Irwin, Sanders and Merrin (2009)

Spots and future move together

Granger causality test of weekly returns in spot and futures markets, 1994 - 2009

# lags	H_0: Futures returns does not Granger-cause spot returns				H_0: Spot returns does not Granger-cause futures returns			
	Corn	Hard Wheat	Soft Wheat	Soybeans	Corn	Hard Wheat	Soft Wheat	Soybeans
1	167.47***	263.03***	169.85***	15.44***	6.10***	2.20	0.40	0.55
2	116.20***	186.92***	106.61***	21.24***	2.09	0.02	0.01	0.47
3	77.58***	135.27***	75.33***	20.74***	2.24*	0.11	0.27	1.75
4	58.56***	100.84***	57.92***	16.93***	2.08*	0.97	1.50	1.41
5	48.65***	79.91***	46.38***	14.57***	1.66	1.32	1.59	1.28
6	40.63***	65.92***	38.36***	12.41***	1.59	1.21	1.64	1.06
7	34.76***	56.21***	32.90***	11.51***	2.12**	1.45	1.76*	0.96
8	30.95***	49.91***	29.37***	10.35***	1.97**	1.21	1.46	1.06
9	27.62***	44.64***	26.09***	9.38***	1.58	1.10	1.25	1.04
10	24.80***	40.89***	23.44***	9.05***	1.45	1.21	1.21	1.03

*10%, **5%, ***1% significance. F statistic reported.

Note: The Schwartz Bayesian Criterion (SBC) suggests lag structures of 2, 3, 2 and 3 for corn, hard wheat, soft wheat and soybeans, respectively. The Akaike Information Criterion (AIC) suggests lag structures of 8, 3, 4 and 5, respectively.

Period of analysis January 1994 - July 2009 for corn and soybeans, and January 1998 - July 2009 for hard and soft wheat.

It appears that futures prices Granger-cause spot prices.

Source: Hernandez & Torero (2009)

Additional linear causality tests

Tests were also performed on sample sub periods to analyze if the dynamic relation between spot and futures markets has changed across time.

1. Causality tests for separate 2-year periods.

2. Causality tests for each sample sub period corresponding to a different farm program (1990, 1996, 2002 & 2008 Farm Bills).

3. Rolling causality tests: repeated tests over 104-week periods by rolling the subsample period one week ahead until the available data is exhausted.

4. Nonparametric causality tests were performed to uncover potential nonlinear dynamic relations between spot and futures markets.
   The test proposed by Diks and Panchenko (2006) is implemented.

Overall, it appears that futures markets have generally dominated spot markets in the past years. Source: Hernandez & Torero (2009)

Effects of excessive volatility

Excessive price volatility is bad for producers

- High price volatility increase expected producer losses

- High price volatility increases misallocation of resources

- Increased price volatility through time generates the possibility of larger net returns in the short term

Effects over producers: A simple model for producers' profit maximization

▶ Producers of agricultural commodities do not have market power. As a result, output decisions are made taking market price as given.

▶ Let $c(y; w)$ be the producer cost function, where y denotes output and w denote input prices and let marginal cost be denoted by $c'(y; w)$.

▶ P is a *random* variable that denotes market price.

▶ P has distribution given by F_P with expected value $\mu_P = \int p \, dF_P(p)$ and variance $\sigma_P^2 = \int (p - \mu_P)^2 \, dF_P(p)$.

▶ Profit maximization requires $\mu_P = c'(y^*; w)$.

Source: Martins-Filho, & Torero ,(2010)

A simple model for producers' profit maximization

- ▶ Producer output cannot be adjusted with the speed at which prices change, producers attain suboptimal profits (L) whenever $P \neq \mu_P$.

- ▶ Now, assume without loss of generality that the optimal level of output for price P is $y > y^*$. Then lack of output adjustment produces a loss in profit given by

$$L = -Pdy + \int_{y^*}^{y} c'(\alpha; w)d\alpha \text{ where } dy = y - y^*. \quad (1)$$

A simple model for producers' profit maximization

▶ If $c'(y; w) = b(w) + 2c(w)y$ where $b(w)$ and $c(w)$ are constants, then

$$L = -\frac{1}{4c(w)}(P - \mu_P)^2.$$

▶ Expected loss in profits is

$$E(L) = \frac{1}{4c(w)}E(P - \mu_P)^2 = \frac{1}{4c(w)}\sigma_P^2. \qquad (2)$$

▶ There is, consequently, a monotonically increasing relationship between volatility (σ_P) and expected losses.

Effects over Consumers

Is there empirical evidence of a link between volatility of major agricultural commodities and consumer welfare?

Problems:

- Consumer welfare is notoriously difficult to measure due to income effects associated with price changes.
- It is not uncommon in developing countries for consumers to be producers of agricultural commodities.
- Models for the dynamic evolution of conditional volatility are often based on restrictive stochastic models

Measuring effects over relative prices

We then consider the following generalized nonparametric model:

$$Y_{tjF} = G\left(h^{\frac{1}{2}}(r_{t-1,\ldots,}r_{t-p}), W_{tj}\right) + \alpha_j + U_{tj}$$

for $t = p + 1, \ldots, T, j = 1, \ldots, J$

Where

Y_{tjF} is the relative share of the price index associated with element F of the consumption basket j,

$G(.): R \rightarrow (0,1)$ is an unknown link function,

$h^{\frac{1}{2}}(.)$ *is the conditional volatility* of the commodity return process and $\{e_t\}$ is an independent identically distributed process with mean zero and variance one

$W_{ti} = (X_j\, Z_t\, V_j)$ is a vector containing covariates that may vary with time, with country or both (oil prices, monthly index of economic activity, imports, M1),

α_j are country specific fixed effects and

U_{tj} represent realizations of an independent and identically distributed stochastic process which subsumes ε_t.

Impact of Wheat Volatility on Breads and Cereals

Country	Model	Result
India	Model 1	$\Theta_{VOLWCBOT}>0^*$, $\Theta_{VOLWKCBT}>0^*$
	Model 2	$\Theta_{LVOLWCBOT}<0$, $\Theta_{LVOLWKCBT}>0^*$
El Salvador	Model 1	$\Theta_{VOLWCBOT}>0$, $\Theta_{VOLWKCBT}>0^*$
	Model 2	$\Theta_{LVOLWCBOT}<0^*$, $\Theta_{LVOLWKCBT}>0^*$
Guatemala	Model 1	$\Theta_{VOLWCBOT}<0$, $\Theta_{VOLWKCBT}>0$
	Model 2	$\Theta_{LVOLWCBOT}<0^*$, $\Theta_{LVOLWKCBT}>0^*$
Honduras	Model 1	$\Theta_{VOLWCBOT}>0^*$, $\Theta_{VOLWKCBT}>0^*$
	Model 2	$\Theta_{LVOLWCBOT}>0^*$, $\Theta_{LVOLWKCBT}>0^*$
Nicaragua	Model 1	$\Theta_{VOLWCBOT}>0$, $\Theta_{VOLWKCBT}>0^*$
	Model 2	$\Theta_{LVOLWCBOT}<0$, $\Theta_{LVOLWKCBT}>0$
Panama	Model 1	$\Theta_{VOLWCBOT}>0$, $\Theta_{VOLWKCBT}>0$
	Model 2	$\Theta_{LVOLWCBOT}>0^*$, $\Theta_{LVOLWKCBT}>0$
Peru	Model 1	$\Theta_{VOLWCBOT}<0$, $\Theta_{VOLWKCBT}>0^*$
	Model 2	$\Theta_{LVOLWCBOT}<0$, $\Theta_{LVOLWKCBT}>0^*$

* Indicates significant at the 0.95 level

What to do?

At the global level

Option 1: Physical reserves

- **Determination of optimum stock, which is politically loaded**,
  - Predicting supply and demand and where the potential shortfalls in the market may be can be extremely difficult
  - Reserves are dependent on transparent and accountable governance

- **Level of costs / losses**
  - Reserves cost money and stocks must be rotated regularly
  - The countries that most need reserves are generally those least able to afford the costs and oversight necessary for maintaining them
  - The private sector is better financed, better informed, and politically powerful, putting them in a much better position to compete

- **Uncertainties that strategic reserves can bring about in the market place**.
  - Reserves distort markets and mismanagement and corruption can exacerbate hunger rather than resolving problems

Option 2: Regulation of Future exchanges

Should we reform commodity exchanges by:

- limiting the volume of speculation relative to hedging through regulation;
- making delivery on contracts or portions of contracts compulsory; and/or
- imposing additional capital deposit requirements on futures transactions.

Answer: Requires several conditions to be effective

Problem 1: not binding regulation - we have seen triggers were not activated and also not clear incentives. On option is to use the excessive volatility measure as a trigger.

Problem 2: Inter-linkages between exchanges

Option 2: Regulation of Future exchanges

Methodology: We use three MGARCH models: the interrelations between markets are captured through a conditional variance matrix *H*, whose specification may result in a tradeoff between flexibility and parsimony. We use three different specifications for robustness checks:

- Full T-BEKK models (BEKK stands for Baba, Engle, Kraft and Kroner), are flexible but require many parameters for more than four series.
- Diagonal T-BEKK models are much more parsimonious but very restrictive for the cross-dynamics.
- Constant Conditional Correlation Model (CCC) models allow, in turn, to separately specify variances and correlations but imposing a time-invariant correlation matrix across markets.

Data:
- In the case of corn, we examine market interdependence and volatility transmission between USA (CBOT), Europe/France (MATIF) and China (Dalian-DCE);
- for wheat, between USA, Europe/London (LIFFE) and China (Zhengzhou-ZCE); and for soybeans, between USA, China (DCE) and Japan (Tokyo-TGE).
- We focus on the nearby futures contract in each market and account for the potential impact of exchange rates on the futures returns and for the difference in trading hours across markets.

Source: Hernandez, Ibarra and Trupkin (2011)

Option 2: Regulation of Future exchanges

- The results show that the correlations between exchanges are positive and clearly significant for the three agricultural commodities, which implies that there is volatility transmission across markets.

- In general, we observe that the interaction between USA (CBOT) and the rest of the markets considered (Europe and Asia) is higher compared with the interaction within the latter.

Source: Hernandez, Ibarra and Trupkin (2011)

Pope says food commodity speculation hurts fight against hunger

BY **PHILIP PULLELLA**

ROME | Thu Nov 20, 2014 7:19am EST

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1 OF 2. Pope Francis walks with U.N. Food and Agriculture Organization (FAO) Director-General Jose Graziano da Silva as he leaves at the end of a meeting at the FAO headquarters in Rome November 20, 2014.
CREDIT: REUTERS/ANDREAS SOLARO/POOL

Option 3: AMIS

- Better information of reserves for key staples
- Early warning system of prices and excessive volatility
- Modeling and better forecasting prices and volatility
- Understanding price transmission to consumers and producers

At the country level

Policies Proposed on Global Food Crises Response Program (GRFP) and G8's document by 2008

- **Short term policies:**
  - Tariffs and VAT reductions
  - Social Protection - Targeted Cash Transfer (TCT) and Conditional Cash Transfer (CCT), if not available then School Feeding Programs or Food for Work
  - Price stabilization policies: Trade policies (against export bans and restrictions and in favor of promotion of regional trade)
  - Use of strategic grain reserves (buffer stocks) to lower prices – second best option
  - Food subsidies – second best option
  - Price controls on strategic staples or on trader margins – Not recommended

- **Medium and long term policies:**
  - Policies to increase productivity and enhancement of post harvest practices
  - Investment in rural and trade-related infrastructure
  - Input subsidies – smart subsidies and seed and fertilizer quality control
  - Strengthening Access to Finance and Risk Management Tools
  - Price Risk Management tools developed
  - Early Warning and Weather Risk Management for Food Crop Production

Policies Proposed after 2008

- **Short term policies:**
  - Export bans, export taxes, reduction of import tariffs, or import subsidies where classified as bad practices
  - Food Reserves:
    - Timmer (2010) advises governments to hold rice buffer stocks to reduce volatility in the domestic market.
    - Gouel and Jean (2012) argue that buffer stocks do not provide relief when there are sharp increases in international food prices
    - Furthermore, domestic buffer stocks posit other problems. First, as they aim to control general prices, they are less effectively targeted toward the neediest populations (Wright, 2009). Second, storage can be expensive. Rashid and Lemma (2011) find that, for most African countries, the cost of holding a metric ton of food was between $20-46.

- **Medium and long term policies:**
  - Input subsidies - *market smart* approach to input subsidies
  - Investment in R&D
  - Irrigation
  - Policies to reduce post-harvest losses (improved handling harvests and storage)
  - Information systems
  - Rural roads

Review of operational loans

a. **Mozambique**: Overall, consistent with the policy recommendations during 2007/08 and after 2008. The government allowed pass-through of international prices while protecting vulnerable groups (expanding PSA program). In addition, through the GFRP operation, the WB supported the implementation of reforms to increase agricultural productivity through the provision of infrastructure and public goods (technology adoption, construction of silos, agricultural infrastructure, etc.).

b. **Bangladesh**: Overall, consistent with the policy recommendations on trade during 2007/08 but not consistent with later WB research after 2008. Specifically, the GFRP operation was used in accordance with the GFRP framework to support the reduction of import duties for rice and wheat, and there was an increase of public food stocks (at least partially to act as price buffers) from 1 to 1.5 million tons. On the other hand, it is important to mention that the increased public targeting for aid programs is positive. However, most of it was untargeted and had severe leakages (e.g. large share of budget allocated to Open Market Sales).

Review of operational loans

c. **Philippines:** On the consistent side, as a result of the GFRP operation, the government launched the Household Targeting System for Poverty Reduction (NHTS-PR) and introduced a CCT (Pantawid Pamilya). Finally, they pushed for a regional rice reserve mechanism through ASEAN. In addition, the country was engaged in large rice import tenders, exacerbating increases in international food prices, but the GFRP made the government commit, as part of the loan, to change its tendering policy in a way that would put less pressure on prices. However, currently the National Food Authority (NFA) has the monopoly over rice imports. NFA still concentrates a significant proportion of its food aid budget, which is poorly targeted. NFA's reserves act as a buffer stock for price stabilization.

d. **Djibouti**: On the consistent side, when the crisis started, there were few social protection mechanisms; the government was able to expand the WFP-operated food assistance program in rural areas. On the inconsistent side with the post-2008 recommendations but consistent with the GFRP framework and official policy of the World Bank, they eliminated the consumption tax rates on five basic staples; this policy was not effective in reducing consumer food prices. Low pass-through rates were probably due to high concentration in the food market (few importers and distributors) and security risks posed by pirates in international waters.

Review of operational loans

e. Honduras: Overall, consistent with the policy recommendations. The proposed operation seems to be more oriented to releasing funds for the government to aid the financial sector, given the government is concerned about the effect of increasing food prices on households' real income; therefore, they use the resources as a buffer to mitigate the expected adverse effect on banks' outstanding portfolio of consumer loans. However, the financial sector was not the real target of the operation; it was just the fastest way to transfer cash to the government for more general crisis response policies.

f. Haiti: The GFRP operation resulted in a combination of policies which were both consistent and inconsistent with the policy recommendations. On the consistent side, as a result of the GFRP, a "Program of Action against the High Cost of Living" (with a focus on employment generation through labor intensive works and expansion of food assistance programs) was developed. In addition, they also implemented what they refer to in the GFRP framework as a second best policy, i.e. subsidies to reduce the price of rice between May and December 2008 (US$ 30 million). However, there are specific circumstances that need to be met for the Bank to accept this type of policy (see GFRP Framework document p.26, para. B2). Moreover, post-2008 these policies were not supported.

Review of operational loans

g. Cambodia: On the consistent side: **Despite the initial ban on rice exports in March 2008, they lifted this ban in May 2008 and are currently seeking to promote rice production**. The main policy is to create price incentives by promoting exports (goal of one million tons of milled rice exported by 2015). In addition, they expanded the "Identification of Poor Households Targeting Program" to be applied to safety nets, implemented food for cash and food for work programs, and boosted credit for milling facilities which act as an interface between smallholders and markets. In addition, the GFRP operation subsidized fertilizers by the suspension of the VAT and by implementing a pilot for "smart subsidies" using vouchers to be distributed to smallholders. However, this type of policy was not recommended post-2008, given as it has been shown in the case of Malawi to bring the risk of significant fiscal deficit. Finally, they regulated the fertilizer market in principle to avoid adulteration; however, most of the adulteration appears to happen in Vietnam (from where fertilizer is imported) rather than in Cambodia.

h. Mali: The GFRP operation resulted in policies which were both consistent and inconsistent with the official policy recommendations of the World Bank and with what was recommended after 2008. On the consistent side, they increased seed availability for locally-produced rice varieties and improved marketing channels to facilitate relationships between producer organizations. Finally, they implemented a program of subsidies for equipment, access to water / irrigation, and extension services. On the inconsistent side, they introduced six month VAT and tariff exemptions for rice, implemented a price-stabilizing buffer stock through the Food Security Commission, introduced subsidies on crop inputs which were not "smart subsidies", and finally, despite acknowledgement of weak safety nets, made no efforts to strengthen them.

Review of operational loans

i. Guinea: On the consistent side, in both policies recommended in 2008 and after 2008, they implemented a safety net system to distribute take-home rations for children of families of 5+ members, an Emergency School Feeding and Nutrition Support, and an Emergency Urban Labor-Intensive Public Works Program. On the inconsistent side, the country imposed a ban on agricultural exports in 2007; although it was lifted in 2008 for most products, it was not lifted for rice. Although the GFRP operation did not support this, they could have included a conditionality to be able to obtain the loan. In addition, and consistent with the GRFP framework but not the post-2008 recommendations, with support from the GFRP they were able to eliminate custom duties for low quality rice between June 1 and October 31, 2008 and initiated plans to build an emergency food reserve of 25,000 metric tons, although it is not clear if this is for humanitarian or price-stabilizing purposes. Finally, they implemented the "Emergency Agricultural Productivity Support", which includes the distribution of subsidized seed and fertilizer packages to 70 thousand smallholder farmers, although these were not the type of smart subsidies proposed by the GRFP framework.

j. Burundi: On the consistent side, they scaled up WFP's School Feeding and Nutrition Program. However, funds allocation and the number of beneficiaries fell short of initial goals. In addition, they supported the return of refugees to the country. Finally, and consistent with the GRFP framework but inconsistent with post-2008 recommendations, they implemented exemption of transaction taxes and import duties until July 2009.

Review of operational loans

k. Madagascar: On the consistent side they expanded the Food for Work and School Feeding Programs and introduced a rice intensification campaign through producer associations. This program aims to provide subsidies for selected agricultural technologies through microfinance institutions. Finally, they eliminated the VAT for rice, which although consistent with the GFRP framework, was not consistent with post-2008 recommendations.

l. Sierra Leone: On the consistent side, they protected selected basic services from increasing costs of food and fuel (those for hospital patients, lactating mothers, government's boarding schools, etc.). In addition, they reduced the tariffs for four products; this reduction should be maintained until prices return to pre-crisis levels. On the inconsistent side, they provided fully subsidized rice seed to farmers (71,000 bushes), which were not targeted as the "smart subsidies" strategy recommended in the GFRP.

m. Rwanda: Inconsistent side they implemented the Crop Intensification Program for food crops which included significant market intervention by the government: (a) purchasing fertilizers in bulk in international markets; (b) auctioning fertilizer to private traders; (c) promoting private microcredit for smallholders; and (d) providing additional targeted subsidies through vouchers. This program has significant risks: mis-targeting, crop leakage (i.e. cannot be used for export crops), collusion among traders, and extremely low loan recovery rate (during a pilot in 2008, recovery was only 4%).

Summary of Operations

	Official position of WB during 2007/08		Policies recommended by the World Bank after 2008	
	Consistent	Not Consistent	Consistent	Not Consistent
Mozambique	X		X	
Bangladesh	X			X
Philippines	X		X	X
Djibouti	X		X	X
Honduras	X			X
Haiti	X		X	X
Cambodia	X	X(export ban)	X	X
Mali	X	X	X	X
Guinea	X	X (export ban)	X	X
Burundi	X		X	X
Madagascar	X		X	X
Sierra Leone	X	X	X	X
Rwanda		X		X

What to do?

- **In the short and medium term**: Market-Based Hedging Strategies for coping with excessive volatility

- **In the short term** – Targeted cash transfers (conditional or unconditional) for the most vulnerable groups

- **In the medium and long term**: Measures to access to trade, increase productivity, sustainability and resilience of agriculture

Market-Based Hedging Strategies

- **In countries with well-integrated commodity exchanges**: mechanisms of financial hedges and physical commodity hedges, which integrate price protection into a physical import or export agreement, may be more feasible

- **In countries that don't have this**: it is important first to build the necessary institutional arrangements to advocate for financial risk management instruments

- Use of weather or catastrophe risk transfer instruments should be specially considered

Final Remarks

- Volatility is normal in agriculture the problem is excessive volatility

- **Since 2013 we don't face periods of excessive volatility**

- Clearly, the official recommendations in 2008 were more flexible, especially in regards to trade policies and physical reserves, and in some cases allowed short-term interventions that could end in pervasive market distortions. As a result, most of the operations under the GFRPs were consistent with the official policy recommendations with the exception of Cambodia, Guinea, Sierra Leone, and Rwanda

- On the other hand, if we look at the post-2008 recommendations, all of them will avoid any potentially pervasive market distortions. Even more, regarding trade policies, most of the work of the World Bank will advise against any trade restrictions (on both the import and the export side). In that sense, if we assess ex post the GFRP operations, we find that in many of countries, the policies implemented as a result of the GFRP created policies which were inconsistent to the post-2008 recommendation. This was the case for Bangladesh, Philippines, Mali, Guinea, Burundi, and Sierra Leone

- Is important to assesses effectiveness of policies and specially to assess if the conditions necessary are in place for them to operate.

- Although flexibility could be good it could have important consequences in the medium and long term.

Thanks