

## **GLOBALIZED WORLD ECONOMY AND AGRICULTURE IN DEVELOPING COUNTRIES**

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### **ABSTRACT**

The rise and fall and increased volatility of commodity prices, and especially food prices, have captured headlines and stimulated a wide range of analytical activity and policy discourse. It has caused and continues to cause hardship in many developing countries, has led to social unrest in scores of these countries and, according to FAO, has added 75 million people to the number of undernourished and reversed progress toward the MDG hunger target. It is therefore important to have a comprehensive understanding of the factors leading to the food price surge in order to better analyze the market and policy implications for the near-term and long-term. Added to the food price crisis of 2008 was the financial crisis of 2009, which also impacts food and agricultural markets. All of these shocks are more severe for low income populations, especially in food deficit areas.

Agricultural markets are traditionally very volatile due to weather variation and very inelastic short run supply and demand. Also, rapid technological change since the end of WWII has combined with inelastic demand for food to generate declining real agricultural prices. Consumers have been the ultimate beneficiaries of agricultural technology, while farmers have had to continually grow in size as well as to improve technological and financial practices to offset price declines. Governments in high income countries adopted various support and protective trade policies to protect their farmers from these price declines, which often contributed further to low prices. This long-term decline in real prices has periodically been interrupted by price spikes that were mostly caused by yield declines due to poor weather. The largest and most prolonged price surge since the end of WWII was largely driven by macroeconomic shocks, including the first and second oil price surge in the 1970s, high inflation, dollar depreciation and the collapse of the Bretton Woods currency system. In real terms, the price surge in the early 1970s was more severe than the recent one and was more persistent than the weather induced price shocks that came in subsequent years. One important question is whether the current price surge will ultimately lead back to the long run declining real price path or will leave real prices on a higher long term path.

The increasing interdependence of food and energy markets is explored in terms of its long term influence on commodity market behavior if the role of biofuels and energy prices continue

to be an important and growing factor in food markets. These factors are explored further in the context of possible future developments to assess whether each is expected to be a persistent influence on markets and prices, a temporary or a very uncertain one. The most recent FAPRI analyses for the next decade are analyzed and compared to longer term projections from other sources. The results of this analysis have implications for future challenges and opportunities, especially for agricultural development policy in developing countries.

What is described is a rather rapid transition from the decades-long period of falling real prices of grains and food more generally to a new market environment in which commodity and food prices are, higher, more volatile and more tightly linked to petroleum prices. Much of the market behavior seen during the past few years is linked to the growing interdependence of energy and agricultural markets. This market behavior and the conditions surrounding it are likely to continue, and the prospects of returning to the patterns of the previous decades are less likely.

We have seen world markets turn around and many commodity prices have declined significantly from their peaks. However, this evidence of price retreat has yet to appear or is appearing more slowly in many developing countries, as seen in FAO's regional food price. It means that markets that are insulated from or not well integrated with world markets may not in the near-term see the benefits of increased world production or reduced prices in the world market. Moreover, it is clear that rising commodity prices have more impact on food prices of consumers in low income countries than on those in high income countries. Aside from the higher share of income spent on food, the commodity price itself is a larger share of the household food cost in a low income country. Likewise, the food import bills have grown faster in developing countries. The food import bill of developing countries is estimated to increase by nearly 35 percent from 2007-2008 and 32 percent for LIFDCs. This is after another sharp rise the previous year. The scarcity of trade financing during the current financial crises only compounds this problem.

The market conditions that have developed since 2005 and that seem likely to continue, even if food price increases have abated somewhat, raise challenges and offer opportunities. The challenge is how to provide safety nets for the most vulnerable populations that have been thrust into a much more desperate financial situation because of sharply higher food prices. The opportunity is that higher prices offer a chance to increase incomes from food production in many rural areas where agriculture is the main source of income and employment. To meet these challenges and exploit the opportunities, national and international policy actions are being recommended.

## **KEYWORDS**

food prices, financial crisis, price volatility, biofuels, market outlook, developing countries

## **REFERENCES**

FAO. (2008a) “Soaring food prices: facts, perspectives, impacts and actions required.” 3-5 June 2008. HLC/08/INF/1. 50 pp.

[http://www.fao.org/fileadmin/user\\_upload/foodclimate/HLCdocs/HLC08-inf-1-E.pdf](http://www.fao.org/fileadmin/user_upload/foodclimate/HLCdocs/HLC08-inf-1-E.pdf)

Meyers, William H. and Seth Meyer. (2008) “Causes and Implications of the Food Price Surge” FAPRI-MU Report “12-08. December 2008. 53pp

[http://www.un.org/esa/policy/wess/wesp2009files/wesp09bkggroundpaper\\_meyer.pdf](http://www.un.org/esa/policy/wess/wesp2009files/wesp09bkggroundpaper_meyer.pdf)

[http://www.fapri.missouri.edu/outreach/publications/2008/FAPRI\\_MU\\_Report\\_12\\_08.pdf](http://www.fapri.missouri.edu/outreach/publications/2008/FAPRI_MU_Report_12_08.pdf)

Von Braun, J., A. Akhter, K. Asenso-Okyere, S. Fan, A. Gulati, J. Hoddinott, R.

Pandya-Lorch, M. W. Rosegrant, M. Ruel, M. Torero, T. van Rheenen and K. von Grebmer.

“High Food Prices: The What, Who, and How of Proposed Policy Actions.” Policy Brief May 2008 Washington, DC: International Food Policy Research Institute.

<http://www.ifpri.org/PUBS/ib/FoodPricesPolicyAction.pdf>

World Bank. (2008) “Rising food prices: Policy options and World Bank response.” 11pp.

[http://siteresources.worldbank.org/NEWS/Resources/risingfoodprices\\_backgroundnote\\_apr08.pdf](http://siteresources.worldbank.org/NEWS/Resources/risingfoodprices_backgroundnote_apr08.pdf)

# Globalized World Economy and Agriculture in Developing Countries

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## Outline

- A market with more volatile prices, stronger agriculture and energy linkages
  - Prices: past, present and future projections
  - Where from and where to?
- FAPRI projections of global market prospects
  - Highlights of results
  - Key movers and shakers
  - Main uncertainties
- Challenges and opportunities
- Policy priorities
  - Short term
  - Long term

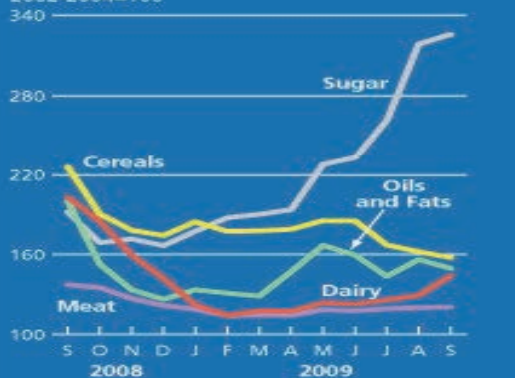
### FAO Food Price Index

2002-2004=100



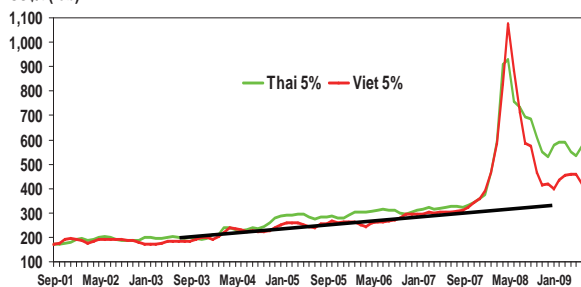
### Food Commodity Price Indices

2002-2004=100



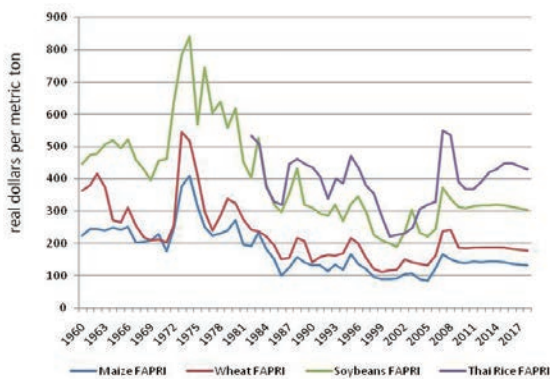
## Rise and Fall of Rice Prices

US\$/t (fob)



Data Source: World Bank and USDA

## Historical and projected real commodity prices, 2007\$



## “Where from” story

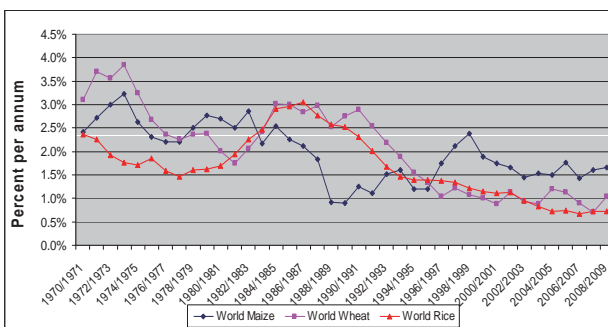
- Gradual declining in stocks set the stage
  - Declining real prices, aided by OECD subsidies
  - Slowing production growth
  - Area declining
  - Yield growth slowing
  - Consumption growth also slowing but not as much
- Then the perfect storm

## World Crop Productivity and Consumption by decade

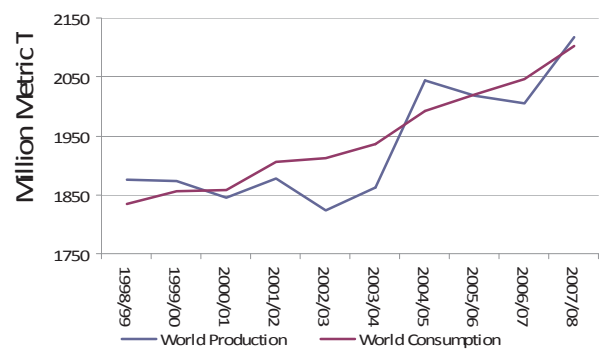
|                            | 1960-1970 | 1970-1980 | 1980-1990 | 1990-00 | 2000-07 |
|----------------------------|-----------|-----------|-----------|---------|---------|
| <b>Grains</b>              |           |           |           |         |         |
| Yields                     | 2.7       | 1.9       | 2.1       | 1.22    | 1.59    |
| Area                       | 0.5       | 0.9       | -0.5      | -0.32   | 0.44    |
| Production                 | 3.3       | 2.8       | 1.6       | 0.89    | 2.03    |
| Consumption                | 3.3       | 2.6       | 1.7       | 0.94    | 1.7     |
| <b>Grains and Oilseeds</b> |           |           |           |         |         |
| Area                       | 1.6       | 1.3       | -0.03     | 0.18    | 0.79    |
| Production                 | 4.0       | 3.0       | 2.0       | 1.29    | 2.32    |
| Consumption                | 4.1       | 2.9       | 2.0       | 1.31    | 2.05    |

Source: USDA PSD

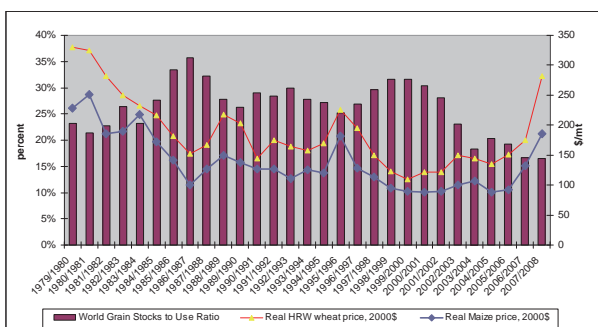
## Exponential Growth Rates for Yields Previous 10 years



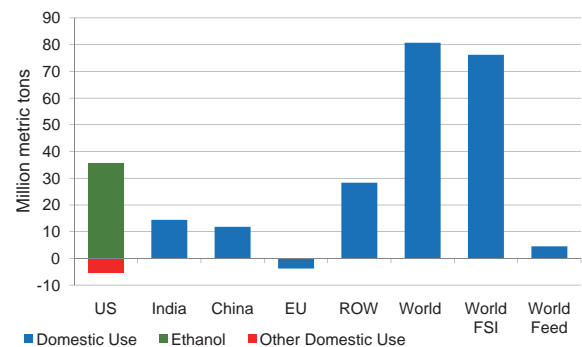
## Grain Production and Consumption



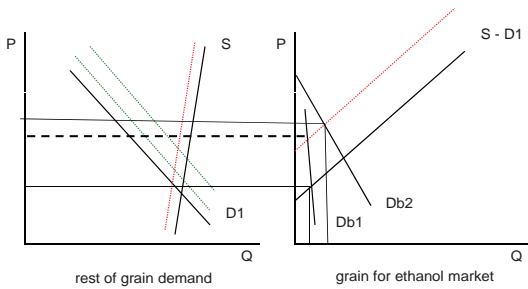
## World grain stocks and real prices



## Change in grain\* domestic use between 2005/06 and 2007/08



### Diagram of a perfect storm



### The Perfect Storm

- Depreciation of the US dollar
- Increased petroleum prices
  - Higher Crop input prices
  - Higher transport cost
  - Higher biofuel incentive
- Lower production and exports
  - EU 27
  - Australia
  - Ukraine and Canada

### The Perfect Storm (cont)

- Increasing export restrictions and decreasing import barriers
- Acreage response to relative prices
- Resilient (inelastic) world demand
- Biofuel feedstock demand
  - Maize in US, Veg oil in the EU
- Even lower stocks and stocks to use
- Non-commercial traders (volatility veneer)

### Why did prices rise, then decline? Can it ALL happen again?

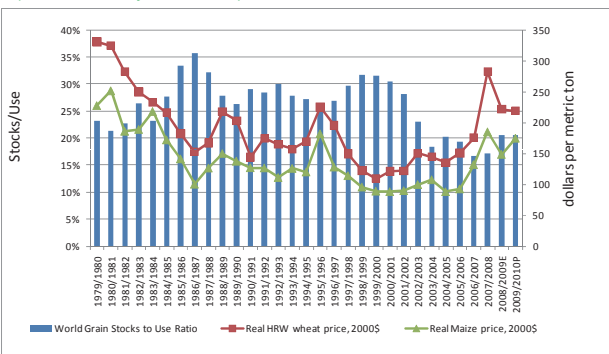
#### Why prices rose

- Reduced grain production in Europe, Australia
- Economic growth in Asia and elsewhere
- Weaker dollar
- Higher petroleum prices
- Rapid biofuel expansion
- Policy interventions
- Speculation rose

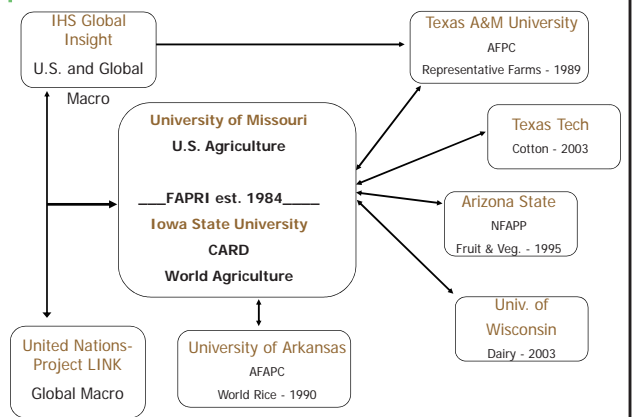
#### Why prices fell

- Sharp increase in global grain production in 2008
- Financial crisis and world economic slowdown
- Stronger dollar
- Lower petroleum prices
- Slower biofuel growth
- Many interventions stop
- Speculation declined

### World grain stocks and real prices (WASDE May 12, 2009)



### FAPRI-Missouri/ISU - Consortium



## “Where to” story

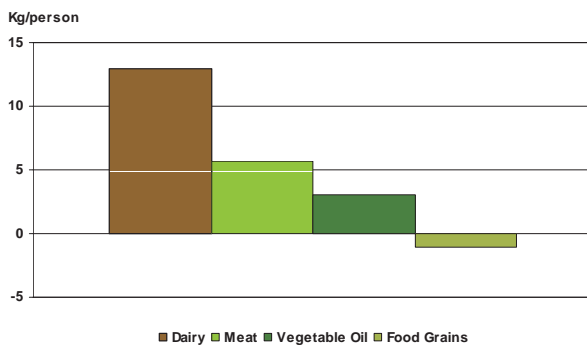
- Good weather and yields in 08/09, but costs and poor weather dampen 09/10 growth, **except oilseeds**
- Price surge has abated
- Trade “safeguard” interventions mostly gone
- Biofuel growth slowed, but policies remain
- Strong influence of petroleum price continues

## Key elements of baseline assumptions

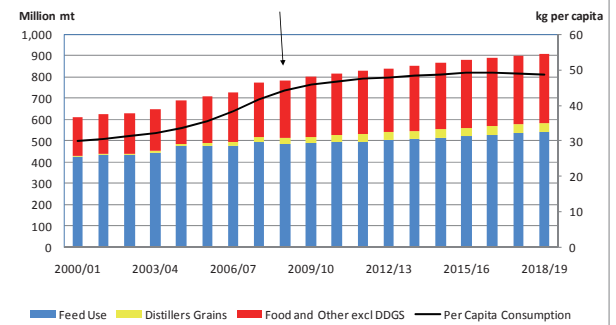
- Macroeconomic Variables
- Agricultural Policies
- Technology
- Normal Weather



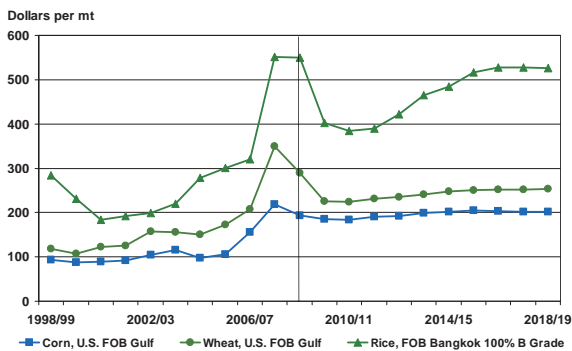
## Changes in per capita food consumption 2008-2018



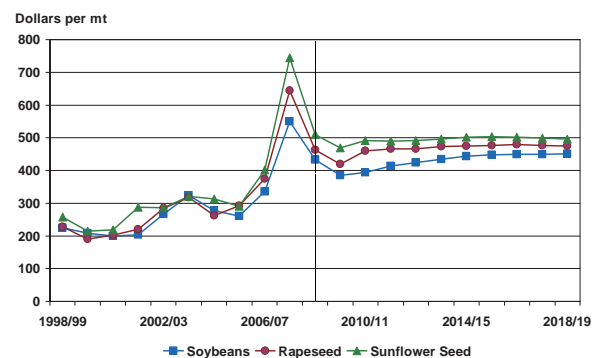
## World corn use and per capita consumption



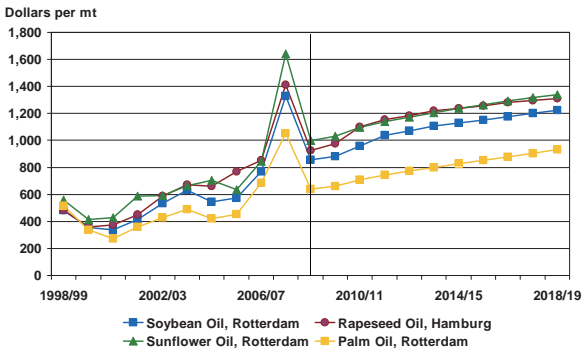
## World grain prices



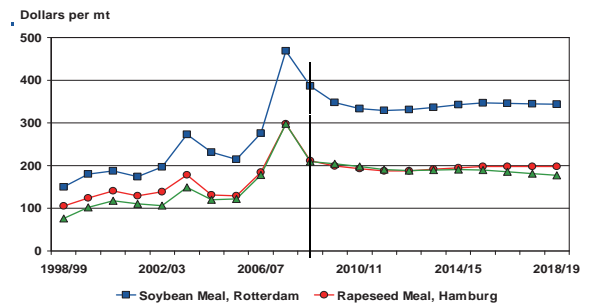
## World oilseed prices



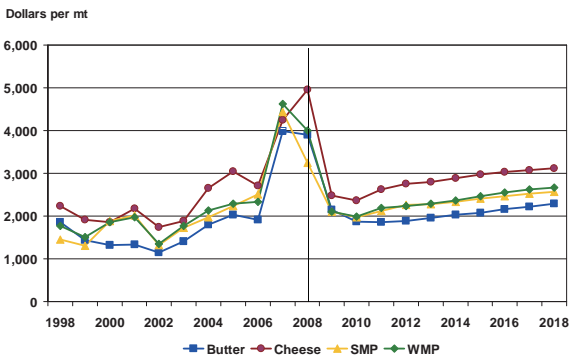
## World vegetable oil prices



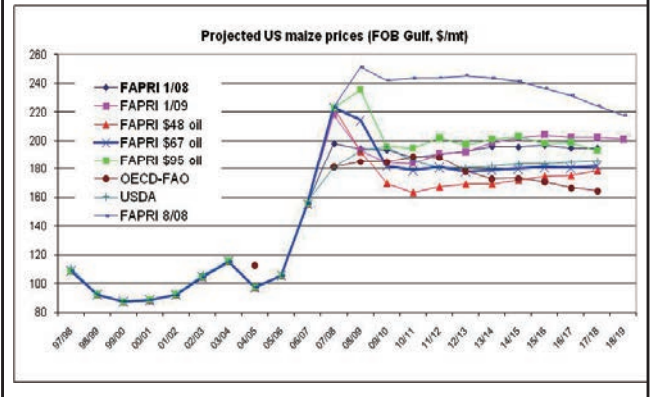
## World Protein Meal Prices



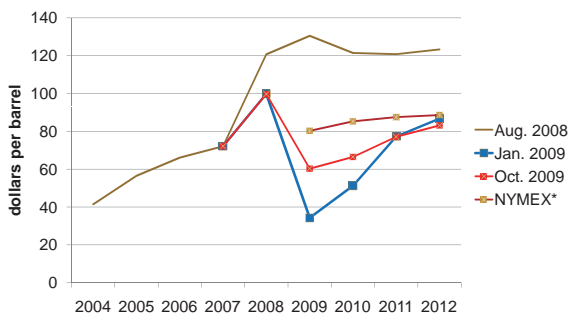
## FOB Northern European dairy product prices



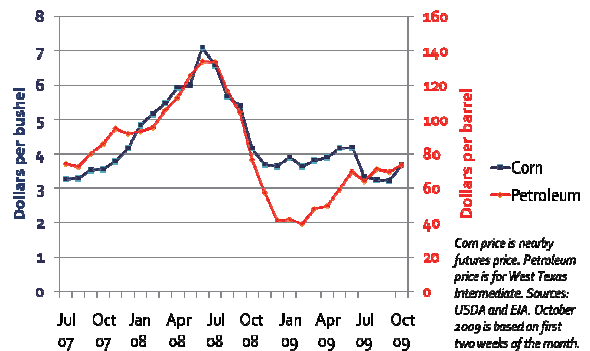
## Why do projections differ?



## Petroleum price forecasts from IHS Global Insight \*NYMEX June futures, 10/22/09



## Corn and petroleum prices

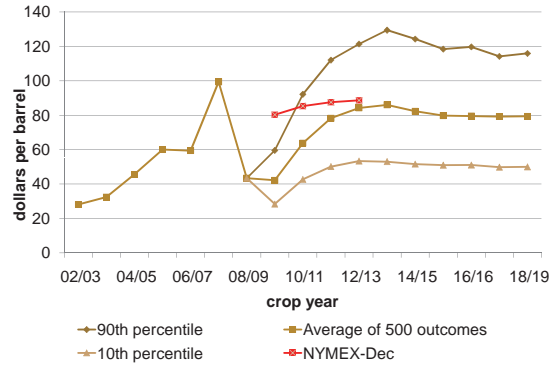




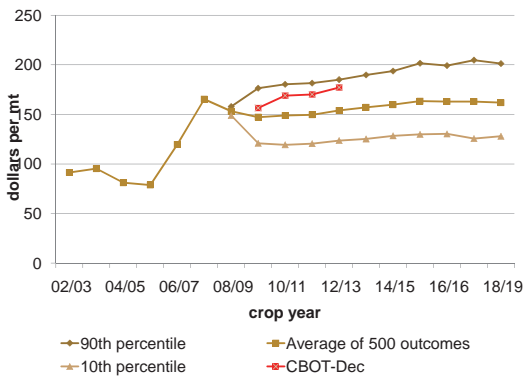
## Unknowns and uncertainties

- Major uncertainties (stochastic analysis)
  - Oil price
  - US dollar
  - The global financial crisis and impacts on demand growth, trade financing
  - Weather

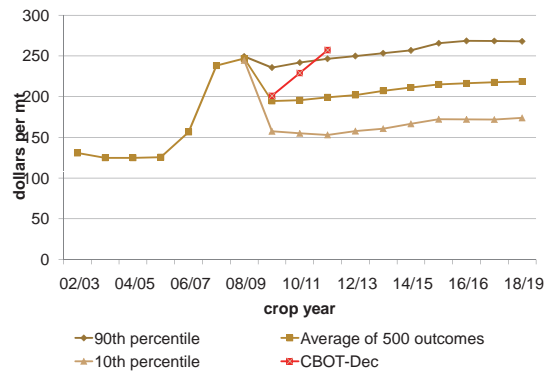
## Oil price distribution



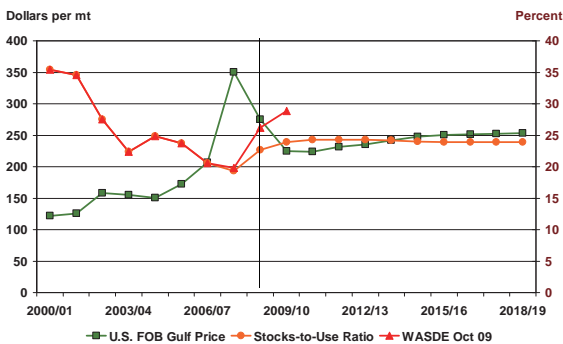
## Maize US farm price uncertainty



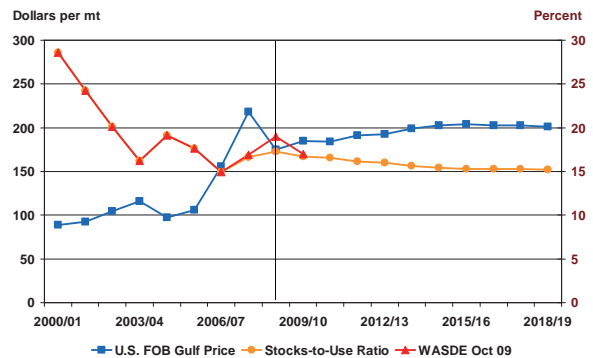
## Wheat US farm price uncertainty



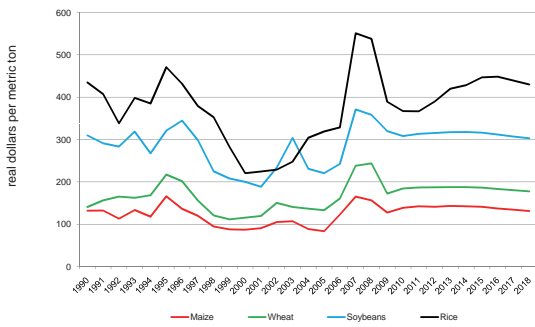
## World wheat stocks-to-use ratio vs. price, Jan 09 outlook vs Oct 09



## World corn stocks-to-use ratio vs. price Jan 09 outlook vs Oct 09

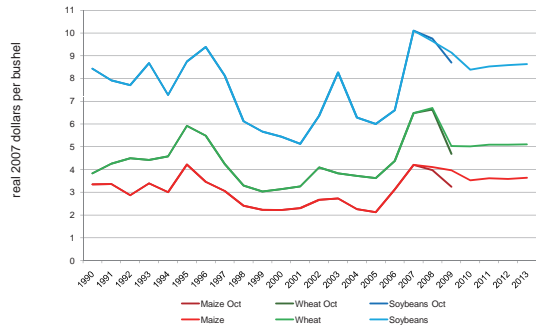


## US Real Prices, Jan 09 outlook



## Real US Farm Prices, Jan 09 outlook vs Oct 09

(WASDE Oct 9, 2009)



## A more uncertain future

1. Road to economic recovery?
2. Timing and size of oil price volatility?
3. Will biofuel policies change?
4. Will other policies be unstable?
5. Will DDA be completed in near term?
6. Wider range of possible outcomes
7. Complicated decision making and planning
8. Larger impacts on low income consumers

## Challenge and Opportunity

1. Challenge - how to provide safety net measures for the most vulnerable populations
2. Opportunity - higher prices can increase incomes from food production in rural areas where agriculture is the main source of income and employment
3. National and international policy actions needed
  - Short run
  - Long run

## Policy priorities

- **Short run** (Twin track approach)
  - Expand **food assistance** and early warning and rapid response capacities
  - Target **food production programs** with inputs, credit and extension education packages
  - Accelerate local adaptation and dispersion of currently **existing technology**
  - Complete the **Doha Round** of trade negotiations and improve disciplines on trade distorting policies, including export restrictions

## Policy priorities

- **Long run** (but start yesterday)
  - **Investment (not land grabs)** in agric. development AND R&D for production and post harvest
  - Improve **market functioning** to facilitate price transmission in developing countries
  - **Restore trust** in the international trading system, e.g. improved multilateral or plurilateral rules and agreements
  - **Risk management tools** for farmers
  - Invest in social protection or **safety net measures** to protect vulnerable populations

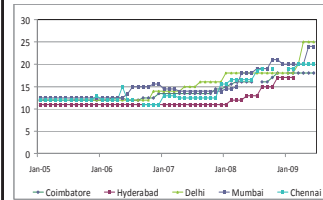
Thank you!

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## Rice Retail Prices in Major Markets

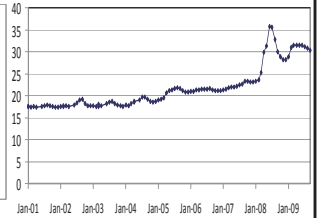
### India

Rs/kg



Data Source: Indian Ministry of Agriculture

pesos/kg **Philippines**



Data Source: BAS (Philippines)