The Food vs. Fuel Controversy

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World Food Prices

A real turn-up
IMF food prices, 2000=100

Sources: IMF; US Bureau of Economic Analysis

Shooting up
Grain prices, $ terms, January 2nd 2007=100

Sources: Chicago Board of Trade; Jacksons
World Food Prices

WORLD FOOD COMMODITY PRICES

$US/tonne

SOURCE: FAO/OECD
# World Food Prices

## Increases in Food and Oil Prices (%)

<table>
<thead>
<tr>
<th>2002 to March 2008</th>
<th>Corn</th>
<th>Wheat</th>
<th>Rice</th>
<th>Soybeans</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal $</td>
<td>143</td>
<td>217</td>
<td>199</td>
<td>171</td>
<td>308</td>
</tr>
<tr>
<td>Real $</td>
<td>46</td>
<td>91</td>
<td>80</td>
<td>63</td>
<td>145</td>
</tr>
<tr>
<td>Real Euros</td>
<td>37</td>
<td>79</td>
<td>69</td>
<td>53</td>
<td>130</td>
</tr>
</tbody>
</table>

Source: Farm Foundation, 2008
## World Food Prices

### Food Price Inflation 2007-08

<table>
<thead>
<tr>
<th>Country</th>
<th>Food Price Inflation</th>
<th>Expenditure Share on Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>5.1</td>
<td>10</td>
</tr>
<tr>
<td>China</td>
<td>23.3</td>
<td>28</td>
</tr>
<tr>
<td>India</td>
<td>5.8</td>
<td>33</td>
</tr>
<tr>
<td>Egypt</td>
<td>13.5</td>
<td>42</td>
</tr>
<tr>
<td>Haiti</td>
<td>11.8</td>
<td>50</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>25.6</td>
<td>62</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>14.2</td>
<td>65</td>
</tr>
</tbody>
</table>

Source: OECD and FAO, 2008
World Food Prices

- Food crisis occurred in many countries simultaneously – political protests in 30
- May have reduced purchasing power of urban and rural poor by 20%
- 1.5 billion on 1-2$/day – World Bank estimated food price increases would push another 100 million in poverty
World Food Prices

2007 - 2008 IMPACT OF PROJECTED FOOD PRICE INCREASES ON TRADE BALANCES

- Large losers (trade balance worsening > 1% 2005 GDP)
- Moderate losers (trade balance worsening < 1% 2005 GDP)
- Moderate gainers (trade balance improving < 1% 2005 GDP)
- Large gainers (trade balance improving > 1% 2005 GDP)
- No data

SOURCE: The World Bank
Key Drivers of Food Prices

◊ Complex set of forces combined to push up prices:

■ Global changes in demand and supply

■ Depreciation of US $

■ Growth in production of biofuels
Demand and Supply

- Rapid growth in developing countries – shift from cereals to animal protein
- Slowdown in agricultural productivity growth – change from surplus to shortage, stocks tight
- Weather shocks (Australia) in 2006/07 exacerbated price impact of low stocks
- Export policies also made situation worse (Argentina, China, India, Ukraine, Vietnam)
Changing food demand

More people, more grain; more money, more meat

World wheat demand and population growth
% increase on previous year

Population

Wheat

1962 70 75 80 85 90 95 2000 06

2.5

2.0

1.5

1.0

0

Source: Goldman Sachs

World meat consumption and GDP growth*
% change on previous year

GDP*

Meat

1980 85 90 95 2000 06

3

2

1

0

*Estimates based on GDP per person
Demand

- In developing countries, real GDP grew on average by 7.3% over period 2003-07
- High income elasticities for food contributed to strong demand for meats and grains
- China and India have not impacted world prices as much as might be expected:
  - both following policies to be self-sufficient
  - neither are major traders of most commodities
China: Corn Market

Source: Farm Foundation, 2008
China: Wheat Market

Source: Farm Foundation, 2008
China: All Oils

Source: Farm Foundation, 2008
China: Rice

Source: Farm Foundation, 2008
Agricultural productivity

- Investment in agricultural research in developing countries has fallen since 1980s
- New investment will only generate payoffs through higher yields after 5-10 years
- Policies to allow adoption of existing technologies may have a more rapid payoff, i.e. GM crops
Declining Stocks

Stocks-to-Use Ratio for Total Grains* in World (1960-2009)

*Feed grains + wheat + rice

Source: Farm Foundation, 2008
Declining Stocks

Chart 4
Falling inventories
Strong demand has been a key factor underlying dwindling inventories of major food crops.
(demand for major food crops; year-on-year changes; million metric tons) (number of days)

Inventory cover days (right scale)

- Corn used in U.S. ethanol production (left scale)
- China (left scale)
- Other emerging and developing economies (left scale)
- Industrial countries (left scale)

Source: U.S. Department of Agriculture.
1 Period average.
US $ and Commodity Prices

Source: Farm Foundation, 2008
What is causation – does low US $ drive up commodity prices, or do high commodity prices drive US $ down?

Some analysts argue high oil prices drive US $ down:

- oil exporters import more from Europe than US, and hold less oil revenues in US $

- US Federal Reserve targets core (excludes oil and food prices) not overall inflation, pushing down US $ due to “looser” monetary policy

However, there are channels through which a fall in nominal US $ can raise commodity prices in US $
US $ and Commodity Prices

Purchasing power and cost channel:
- most commodities priced in US $, so depreciation makes commodities less expensive, thereby stimulating demand

Asset channel:
- falling US $ reduces returns on US $-denominated assets in foreign currencies, making commodities more attractive asset
- US $ depreciation risks US inflation, prompting move to commodities as hedge against inflation
Biofuels and Food Prices

- Brazil and US leading producers of ethanol
- Recent surge in US ethanol production set in context of Federal biofuels mandate, ethanol blending subsidy and import tariff
- 2004-07, most of increase in global corn production (55 million tons) went into US ethanol production (50 million tons)
- Growing demand for ethanol driven by high oil prices, which then affects corn prices: $2.26/bushel at $40/barrel → $6.33/bushel at $120/barrel (Farm Foundation, 2008)
Biofuels and Food Prices

- Various estimates of impact of biofuels on food prices: (i) USDA, 2-3%, (ii) IMF, 20-30%, (iii) World Bank, 65%

- Wide range of conclusions reflects different prices being measured (farm, wholesale, retail) and different time periods for data analyzed

- World Bank (2008) estimate: 140% increase in food price index (2002-08): 15% (energy/fertilizer prices), 20% (US$), 105% (biofuels and related effects of stocks, land-use, speculation, and export controls)

- While cause(s) of increase in food prices is complex, appears to be a connection between food and fuel