The Economics of Food Prices and Considerations for Valuing Food

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Food Expenditures
Share of Disposable Personal Income
1929 - 2009

Percent

Source: USDA

9.47%
Consumer Price Index Components

- Food & Beverages (15.256%)
- Housing (41.020%)
- Apparel (3.562%)
- Transportation (16.875%)
- Medical Care (7.061%)
- Recreation (6.044%)
- Education & Communication (6.797%)
- Other Goods & Services (3.385%)

*Note: Official weights are to 3 decimal place

Source: BLS; The most recent reweighting was in December 2011.
Chart 1. 12-month percent change in CPI for All Urban Consumers (CPI-U), South region, January 2009–January 2012

Percent change

-6.0
-5.0
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
Jan'09 Apr'09 Jul'09 Oct'09 Jan'10 Apr'10 Jul'10 Oct'10 Jan'11 Apr'11 Jul'11 Oct'11 Jan'12

Source: U.S. Bureau of Labor Statistics
<table>
<thead>
<tr>
<th>Rank</th>
<th>Category</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Meats, Poultry and Fish</td>
<td>3.5 - 4.5 %</td>
</tr>
<tr>
<td>2</td>
<td>Fats and Oils</td>
<td>3.5 - 4.5 %</td>
</tr>
<tr>
<td>3</td>
<td>Cereals and Bakery</td>
<td>3.5 - 4.5</td>
</tr>
<tr>
<td>4</td>
<td>Fruits and Vegetables</td>
<td>2.5 - 3.5 %</td>
</tr>
</tbody>
</table>

Source: ERS
Why are food prices so high in 2012?

• High Commodity Prices
• High Energy Prices
Production Accounts for Ten Percent of the U.S. “Food Dollar”

2010 Food dollar for industry groups

- Farm & agribusiness
- Food processing
- Packaging
- Transportation
- Retail trade
- Foodservices
- Energy
- Finance & insurance
- Other

Note: “Other” includes two industry groups: Advertising plus Legal and Accounting. Source: USDA, Economic Research Service, Food Dollar Series.

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Underlying Factors Affecting Commodity and Food Prices

• Growing and More Affluent Global Population

• Faster Income Growth in Developing and Centrally Planned Countries
Faster income growth in developing and former centrally planned countries

Underlying Factors Affecting Commodity and Food Prices

- Growing and More Affluent Global Population
- Faster Income Growth in Developing and Centrally Planned Countries
- Growing Demand for Biofuels
Growth in World Ethanol Market

Source: OECD and FAO Secretariats
Growth in World Biodiesel Market

Source: OECD and FAO Secretariats
Underlying Factors Affecting Commodity and Food Prices

• Growing and More Affluent Global Population
• Faster Income Growth in Developing and Centrally Planned Countries
• Growing Demand for Biofuels
• Stagnating Investments in Agricultural R&D and Slower Growth in Agricultural Productivity
Variables Affecting Food Commodity Prices Year-to-Year

1. Energy prices
Crude Oil (petroleum), Price Index

Source: International Monetary Fund
Variables Affecting Food Commodity Prices Year-to-Year

1. Energy Prices
2. Stocks to Use Ratios
Total world grain & oilseeds\textsuperscript{1}
Stocks-to-use ratio

Source: ERS calculations based on USDA WASDE and PS&D Database: Feb 2012

\textsuperscript{1}Oilseeds = soybeans + rapeseed + sunflowers
Variables Affecting Food Commodity Prices Year-to-Year

1. Energy Prices
2. Stocks to use ratios
3. The Weather
Longer Term Concerns that could affect food prices

• Climate Change

• Water Scarcity
Externality

A cost or benefit not transmitted through prices that is incurred by a party who did not agree to the action causing the cost or benefit
Some General Types of Externalities Associated with Food

- Ecological Effects
- Environmental Quality
- Green House Gases
- Animal Welfare
- Social Costs associated with Labor
- Public Health
Soil to Soil Cycle for Crop-Based Food Production Process

- Harvesting
- Transportation
- Processing
- Packaging
- Marketing

- Seed
- Soil
- Waste
- Disposal
- Consumption

Buy Now!
Soil to Soil Cycle for Animal-Based Food

Feed → Animal Production + Manure Production → Food Processing → Slaughter → Food Processing

Non-point Waste Disposal → Point Source → Consumption

Health
Potential Ecological Effects of Genetically Engineered Seed

- Create new or more vigorous pests
- Harm to non-target species
- Disruption of biotic communities
- Irreparable loss of species diversity or genetic diversity within species

( A.A. Snow, et al, Ecological Society of America)
Some Environmental Costs of Crop and Animal Production

- Soil Erosion and Sedimentation
- Impaired Water Quality
- Overdrawn Aquifers
- Loss of Biodiversity
- Air Pollution – Particulate Matter
- Green House Gas Emissions
Some External Health Impacts of Agricultural Production

- Pesticide exposure
- Pathogens in water systems
- Inhalation of dust
- Bio-stored additions to animal feed
- Resistant antibiotics
Things to Keep in Mind About the External Costs of Food

• Everything is relative.
• The averages mask high variability.
  – Among producers or consumers
  – Across geography
• While not in the price of food, we could be paying through the price of other things.
• Food and agriculture also have positive externalities.