Global Macroeconomic Overview

- Sustained and widespread real economic growth for the decade averaging 3.1%.

- Industrialized countries including, the US, EU-15, and Japan post average growth rates of 3.3%, 1.9%, and 1.8%.

- China, India and other Asian economies continue their high growth rates in the coming decade at 7.6% and 6.1%.

- South America shows strong economies with Brazil and Argentina growing at 3.6% and 4.4%.
Global Macroeconomic Overview

- Strengthening of the Euro and many other OECD currencies against the US dollar (around 1.2 to 3.8 % per year in the next 5 years), inducing increased competitiveness of US exports.

- South American currencies appreciate against the dollar in 2005. From 2006 on, all currencies depreciate at 2.3% to 3.7% for Brazil and Argentina.

- Strengthening of currencies in many CEECs, Baltic, and CIS countries continue relative to the dollar.

- Strengthening of currencies in Malaysia, Taiwan, and Thailand. The Chinese Yuan appreciates by 1.9% annually in the next decade.
Average Growth in Exchange Rate

Percent

-4 -2 0 2 4

AU NZ EU-15 HU PO CN TH CA AR BR

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Policy and Other Assumptions

- EU CAP Reform and Enlargement.
  - EU Sugar Reforms

- Full implementation of the URAA commitments for developed and developing countries.

- Recovery from BSE and AI shocks. Limited impact of FMD in Brazil.

- Rising interest in renewable fuels.
  - Mandatory 2% blend of biodiesel in 2008.
  - EU’s Renewable Fuels Directive of 2003
Meat Outlook Overview

- SPS shock, BSE in North America, AI in Asia and Russia, and FMD in South America shape the short-run outlook outcomes.
- Demand growth drive long-run outlook.
- After reaching historic highs in the last three years, meat prices adjust downwards in the short-run and strengthens again in ???.
- Rising income drives per capita meat consumption to increase by 6.8 kg per person per year in the next decade.
- Strong meat demand fuels trade and production to increase by 25.6% and 20.4%, respectively.
- South American countries gain increasing market share in world meat trade.
- After losing 7 percentage points of market share in 2004, the U.S. regains 4 percentage points by 2010, and maintains its share the rest of the decade.
Change in Average Per Capita Consumption

Kg per person

Meat
Dairy
Oil
Sugar
Grains
Change in Average Per Capita Consumption

<table>
<thead>
<tr>
<th>Percent</th>
<th>Meat</th>
<th>Dairy</th>
<th>Oil</th>
<th>Sugar</th>
<th>Grains</th>
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<td>2.0</td>
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</tbody>
</table>
Japanese Beef Supply and Utilization

Thousand mt

Production | Consumption | Net Imports

1995 | 1997 | 1999 | 2001 | 2003 | 2005 | 2007 | 2009 | 2011 | 2013 | 2015
Thai Broiler Supply and Utilization

Thousand mt

Production
Consumption
Net Exports
Per Capita Average Meat Consumption

kg per person

1999 2001 2003 2005 2007 2009 2011 2013 2015

Beef  Pork  Poultry

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China Livestock Net Trade

Thousand mt

Beef  Pork  Broiler

2005  2015

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Dairy Outlook Overview

- Steady Asian import, declining EU exports and currency appreciation in major exporter raise prices of milk products.

- EU milk production is restricted by marketing milk quota averaging at 142 million mt.

- China expands milk production meet growing demand with 3.8% growth in dairy cows and 3% growth in productivity.
EU Dairy Product Net Trade

Thousand mt

1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

Butter Cheese NFD WMP
FOB Northern European Dairy Product Prices

Dollars per mt

Butter  Cheese  NFD  WMP

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Meat Production and Feed Use

Thousand mt


Meat Production: Yellow Bars
Coarse Grain Feed Use: Red Line
Oilseed Meal Feed Use: Blue Line

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World Feed Grain Outlook Overview

- Growth in livestock sector of Asian and Latin American countries drives the increase in demand for feed grains.

- Stronger prices increase area. Combined with yield growth production increases. Increase in area grows supply in the short-run, while yield improvement is the major source of growth in the long-run.

- U.S. increases its market share at the expense of Argentina and EU New Member States.
Coarse Grain Major Importers

Coarse Grain = Corn, Barley, and Sorghum
Corn Net Imports by Major Regions

Thousand mt


-10,000 0 10,000 20,000 30,000 40,000 50,000 60,000 70,000

Asia Latin America Middle East Africa

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Corn Production by Major Competitors

Thousand mt

- Argentina
- EU NMS
- South Africa

World Coarse Grain Net Trade and U.S. Market Share

Thousand mt


Percent

Corn Barley Sorghum U.S. Market Share
Oilseed Outlook Overview

- Oilseed sector grows with strong demand for both oil and meal products driven by population and income growth, and expansion of the livestock sector.
- Both growth in area and improvement in yield contribute to increase in production.
- About 76% of increase in area is due to soybean area expansion in South America.
- China’s support of its domestic crushing industry drive faster growth in soybean trade compared to oil and meal products.
- Room for area expansion in South America dampens price growth in the next decade.
- Increasing interest in renewable fuels.
World Vegetable Oil Consumption

Thousand mt


Soy Oil Sunflower Oil Rapeseed Oil Peanut Oil Palm Oil
World Soybean Area and Yield

Million ha

mt per ha


Area Yield
World Soybean and Products Trade

Thousand mt


- Soybeans
- Soybean Meal
- Soybean Oil
Brazilian and Chinese Soybean Trade

Thousand mt

- China Imports
- Brazil Exports


Values: 0, 5,000, 10,000, 15,000, 20,000, 25,000, 30,000, 35,000, 40,000, 45,000, 50,000, 55,000, 60,000
World Food Grain Outlook Overview

- Food grain per capita consumption declines with growth in income as consumers “trade-up” away from staple crops to protein rich products.
- With declining per capita consumption, demand growth comes mainly from population growth.
- Growth in consumption in regions such as Asia, Africa, and the Middle East with limited potential to meet expanding demand fuels growth in trade and strengthen food grain prices.
- Long-run production growth driven by yield improvement.
- Australia, the EU, and Argentina regain market share, while Canada and the U.S. lose market share.
World Per Capita Food Grain Consumption

kg per person


Wheat Rice
World Grain Prices

Dollars per mt

- Blue square: Corn, U.S. FOB Gulf
- Red circle: Wheat, U.S. FOB Gulf
- Green triangle: Rice, FOB Bangkok 100% B Grade

Years and prices:
- 1995/96
- 1999/00
- 2003/04
- 2007/08
- 2011/12
- 2015/16
World Wheat Feed and Food Use

Thousand mt

- 0
- 200,000
- 400,000
- 600,000
- 800,000


- Feed Use
- Food Use
World Wheat Area and Yield

Million ha

mt per ha

Area

Yield


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World Rice Area and Milled Yield

<table>
<thead>
<tr>
<th>Year</th>
<th>Million ha</th>
<th>mt per ha</th>
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<tr>
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<td>2015/16</td>
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</table>
Other Crop Outlook Overview

- **Sugar**
  - Sugar reform in the EU tightens world excess supply fueling prices to rise.
  - Area and yield growth drive increase in production.

- **Ethanol**
  - Rising interest in renewable fuels boost world ethanol trade and sustains price strength in the outer period.
  - Brazil expands ethanol production to meet growth in domestic and export demand.

- **Cotton**
  - Chinese cotton consumption and imports sustain modest price strength under consecutive large world crops.
World Sugar Stocks-to-Use Ratio vs. Price

- FOB Caribbean Price
- Stocks-to-Use Ratio

Dollars per mt

Percent

0 5 10 15 20 25 30 35

0 5 10 15 20 25 30 35

World Ethanol Price and Net Trade

Million gallons


Dollars per gallon


Net Exports
World Ethanol Price

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Share of Sugarcane in Ethanol Production

percent

World Cotton Trade

Thousand mt


Brazil Net Export  China Net Import

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Crops include wheat, rice, corn, sorghum, barley, soybean, rapeseed, peanuts, and sunflower.
Thank You!

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Food and Agricultural Policy Research Institute
Major Sugar Exporters

Million mt


Australia Brazil EU-25 Guatemala Thailand
World Rice Production, Use, and Per Capita Consumption

Million mt

kg per person


Production Use Per Capita Consumption
### EU-15 CAP Reform and Enlargement

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<th>Policy</th>
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<td>(euro per ha)</td>
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World Wheat Stocks-to-Use Ratio vs. Price

Dollars per mt

Percent

U.S. FOB Gulf Price  Stocks-to-Use Ratio

World Wheat Area, Production, and Consumption

Thousand mt

Thousand ha


Production
Consumption
Area
World Rice Stocks-to-Use Ratio vs. Price

Dollars per mt


Percent

FOB Bangkok 100% B Grade  Stocks-to-Use Ratio
World Rice Trade

Thousand mt

World Corn Area, Production, and Consumption

Thousand mt


Thousand ha

Area

Production

Consumption
World Corn Feed, Food Use, and Per Capita Consumption

Knight mt

0 50,000 100,000 150,000 200,000 250,000 300,000 350,000 400,000 450,000


kg/ha

0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0

Feed Use Food and Other Use Per Capita Consumption

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World Corn Trade and U.S. Market Share

Thousand mt

Net Trade  U.S. Market Share


0 10,000 20,000 30,000 40,000 50,000 60,000 70,000 80,000 90,000

Percent

0 10 20 30 40 50 60 70 80 90

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World Oilseed Area

Thousand ha


Soybeans  Rapeseed  Sunflower  Peanuts  Palm Oil
World Sugar Stocks-to-Use Ratio vs. Price

- Percent
- Dollars per mt

- FOB Caribbean Price
- Stocks-to-Use Ratio

Major Sugar Importers

Million mt


Indonesia Japan Russia and Ukraine South Korea United States
Major Beef Importing Countries

Thousand mt

1999  2001  2003  2005  2007  2009  2011  2013  2015

China  Japan  Russia  Mexico  South Korea  Egypt  Philippines
Beef Export Market Share (percent)

2001-2005
- Australia: 22.5%
- Brazil: 7.1%
- New Zealand: 7.6%
- India: 8.9%
- Argentina: 8.9%
- Canada: 20.1%

2006-2010
- Australia: 20.9%
- Brazil: 9.0%
- New Zealand: 9.1%
- India: 8.6%
- Argentina: 8.3%
- Canada: 27.9%

2011-2015
- Australia: 21.0%
- Brazil: 8.9%
- New Zealand: 8.2%
- India: 8.9%
- Argentina: 8.6%
- Canada: 26.9%
World Broiler Production and Trade

Thousand mt

Production  Trade

1999 2001 2003 2005 2007 2009 2011 2013 2015

0 10,000

0 1,000
Major Broiler Importing Countries

Thousand mt

1999 2001 2003 2005 2007 2009 2011 2013 2015

China  Japan  Russia  Hong Kong  Saudi Arabia  Mexico

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Broiler Export Market Share

2001-2005
- U.S.: 32.1%
- Brazil: 15.3%
- EU: 5.9%
- Thailand: 5.9%

2006-2010
- U.S.: 41.5%
- Brazil: 11.9%
- EU: 7.6%
- Thailand: 7.6%

2011-2015
- U.S.: 39.5%
- Brazil: 10.6%
- EU: 7.6%
- Thailand: 7.6%
FOB Northern European Dairy Product Prices

Dollars per mt

- Butter
- Cheese
- NFD
- WMP

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Annual Growth in Milk Production and Total World Output

N. America | S. America | EU | Russia & Ukraine | Asia | Oceania

Thousand mt

EU-15 Dairy Production

Thousand mt

Million mt

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

Butter Cheese NFD WMP Milk
Cheese Net Exports for Selected Countries

Thousand mt

- Argentina
- Australia
- EU-15
- New Zealand
- Ukraine
Cheese Net Imports for Selected Countries

Thousand mt

- Japan
- Mexico
- Russia
- United States
- Other Asia
WMP Net Exports for Selected Countries

Thousand mt

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

Argentina • Australia • EU-15 • New Zealand • Other Exporters
NAFTA Real GDP Growth Rates

Percent

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

United States  Canada  Mexico
World Meat Trade and U.S. Market Share

Million mt

Percent


U.S. Other Exporters U.S. Market Share (percent)
EU-15 Beef Supply and Utilization

Production, Consumption, Net Exports (tmt), Ending Stock (tmt)
Brazilian Soybean Production and Utilization

- Thousand mt

- Production
- Consumption
- Net Exports


- Thousand mt

- 0 5,000 10,000 15,000 20,000 25,000 30,000 35,000 40,000 45,000 50,000

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Chinese Soybean Production and Utilization

Thousand mt

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Consumption</th>
<th>Net Imports</th>
</tr>
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<tbody>
<tr>
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<td>10,000</td>
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<tr>
<td>2015/16</td>
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