A Global Picture of Corn Supplies Animal Feed Use and Non-Feed Uses

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FAPRI
Food and Agricultural Policy Research Institute

The Way Economists Think and Model: Feed Market

- Feed grain demand is influenced by livestock production, grain price & meal/gluten prices
- Meat & dairy production influenced by price of meat & dairy & feed prices
- Meat & Dairy consumer demands are determined by income, prices, demographics, & SPS status

The Way Economists Think and Model: HFCS Market

- Corn use in HFCS production depends on HFCS production & technology
- HFCS production depends on HFCS price, corn price, & technology
- HFCS use depends on sugar & HFCS prices, output of sweetener-intensive food, and policy
- Sweetener-intensive food consumption depends on income, prices, health information & policy
- Reasoning on food use (non HFCS) of corn is similar to dairy & meats' use of corn

The Way Economists Think and Model: Ethanol Market

- Corn use in ethanol production depends on ethanol production & technology
- ethanol production depends on ethanol price, corn price, energy prices, capacity, & technology
- Ethanol use depends on gasoline consumption, policy mandates, and relative ethanol/gasoline prices
- Gasoline consumption depends on gasoline prices

The Way Economists Think and Model: Corn Supply, Net Trade, & World Equilibrium

- Corn production depends on relative returns (corn & competing crops)
- Returns determined by policy, & producer prices
- Corn trade is determined residually: supply net of all uses (feed, HFCS, other food, ethanol, & others)
- Exchange rate & policies in each country influence the price received & paid for corn
- World price brings world market to equilibrium: world total imports = world total exports

10-Year FAPRI Outlook

- Takes forecasts of income, population, inflation, exchange rates, energy prices from Global Insight
- Assumes policies on the book will last 10 years
- Assumes average weather
- Recent technology improvements will continue
- Biology of livestock and cost of adjustments

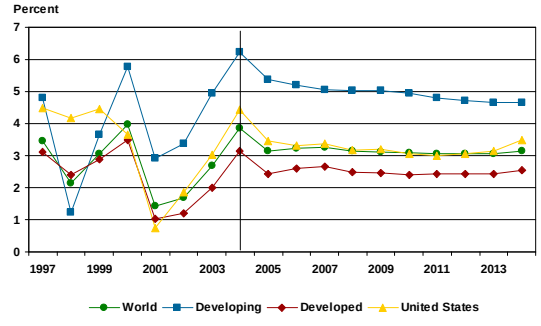
Policy and Other Assumptions

- 2002 U.S. Farm Security and Rural Investment Act
- 1995 URAA
- NAFTA
- 2004 EU enlargement and associated EU CAP reforms
- SPS cases (BSE in North America and HPAI in Asia)

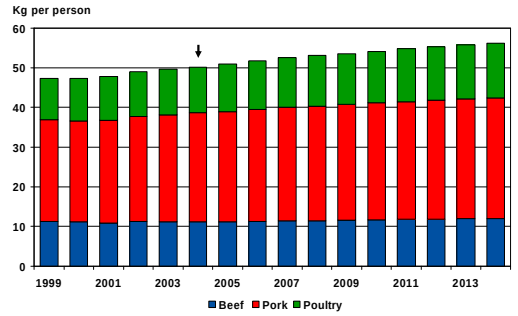
Highlights of Feed Grain Outlook

- Higher meat production in the world translates to stronger demand and production of feed grains
- China becomes a corn net importer to meet the growing demand from the expanding meat and dairy sectors. Imports exceeding 7 mmt by 2014/15
- The US is the dominant supplier in the coarse (corn) grain market. Argentina is the only main competitor expanding exports. The US increases its exports & market share

Real GDP (Income) Growth Rates



World Average Per Capita Meat Consumption



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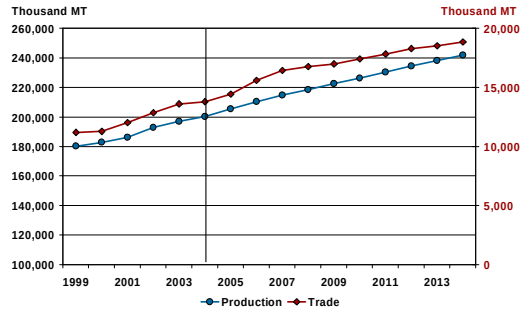
World Meat Production and Trade



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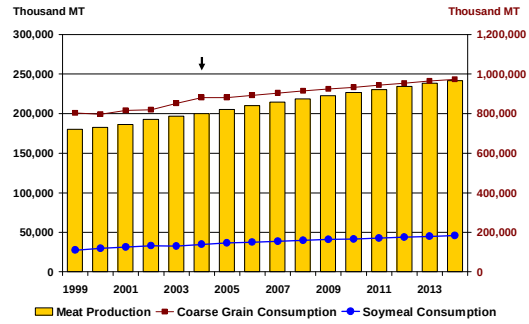
World Meat Production and Feed Grain Use



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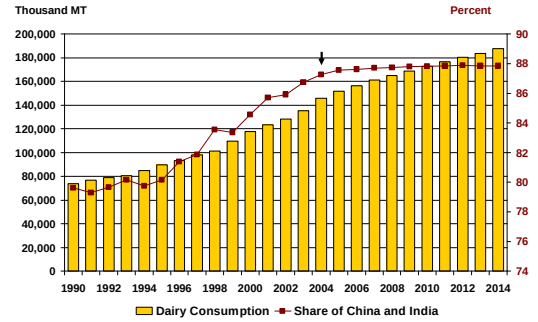
Asian Dairy Consumption



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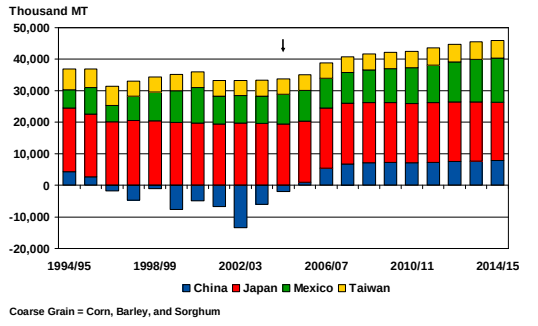
Coarse Grain Major Importers



Coarse Grain = Corn, Barley, and Sorghum

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Food Grain Outlook

- Per capita food grain consumption declines
- Population growth in regions lacking productive potential expands trade, exerting upward pressure on prices to increase given the thin food grain world market
- South American producers gain market share

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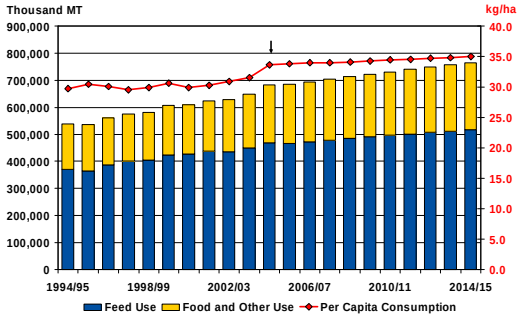
World Corn Feed, Food Use, and Per Capita Consumption



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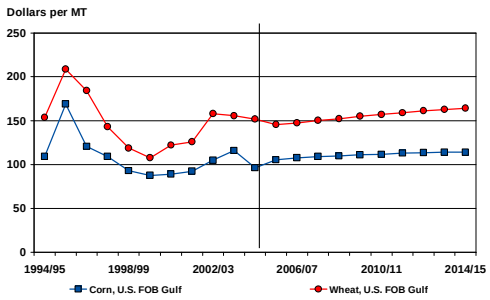
World Grain Prices



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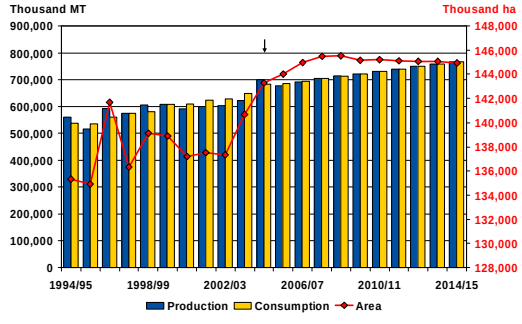
World Corn Area, Production, and Consumption



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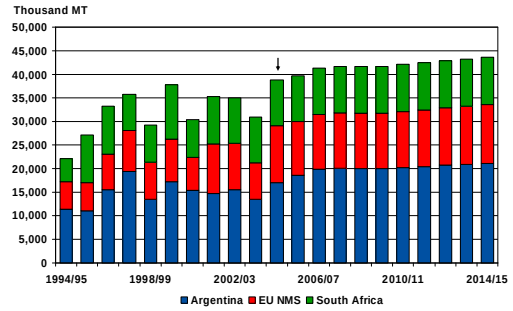
Corn Production by Major Competitors



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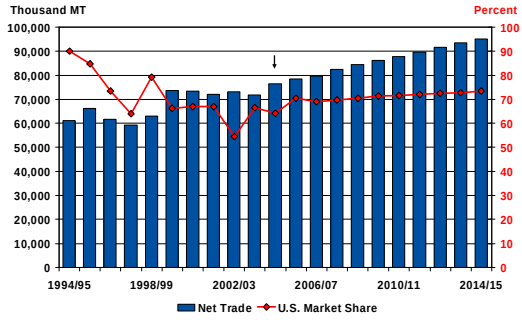
World Corn Trade and U.S. Market Share



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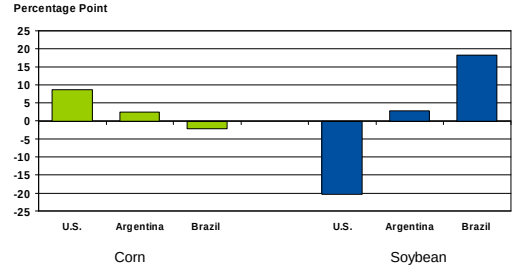
Crops Market Share Change



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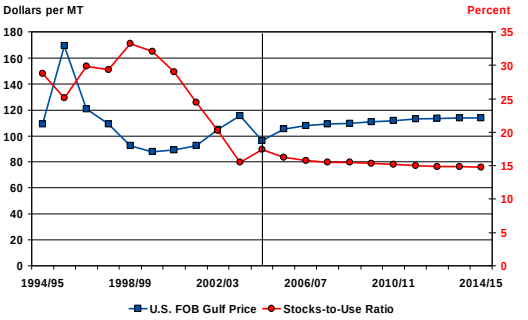
World Corn Stocks-to-Use Ratio vs. Price



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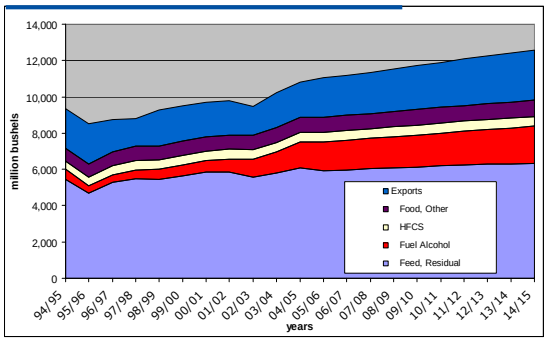
US Corn Use (Before Energy Policy Act)



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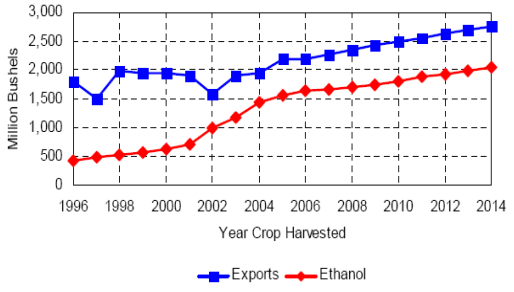
Corn Exports and Use for Ethanol



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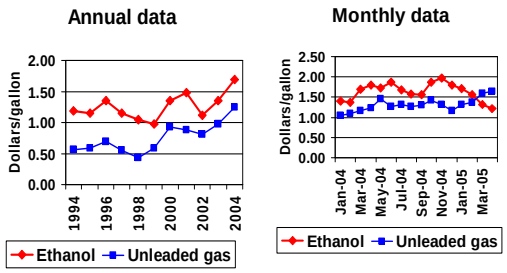
What the 2005 FAPRI Outlook Missed

- No energy bill
- Under-predicts ethanol use worldwide. 2006 Outlook will better account for ethanol growth
- A bit too bullish on US corn exports
- Energy prices' hikes and inversion ethanol/gas prices
- The FAPRI outlook is wrong every year!

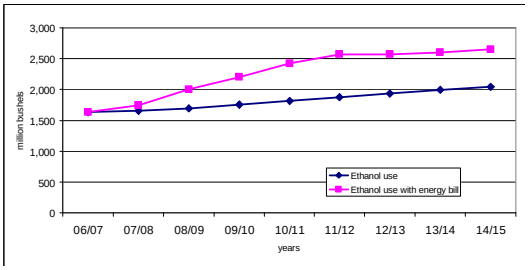
Ethanol & Unleaded Gasoline Wholesale Prices, FOB Omaha



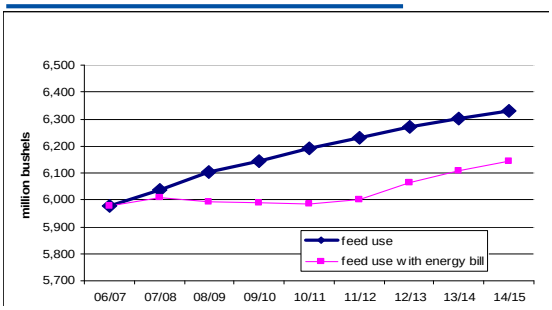
FAPRI UMC Analysis of 2005 Energy Policy Act

- Assumes ethanol use increases to about 7.0 billion gallons by 2012
- Corn use in ethanol increases by 632 million bushels annually over 2010/11 to 2014-15
- Corn price increases by 12.5 cents over baseline levels (5% increase)
- Corn exports fall by 11.4% (302 million bushels)
- Corn production increases by less than 1%
- Feed use falls by 3.3% (200 million bushels)

Corn Used in Ethanol Under Energy Bill



US corn feed use under energy bill



US Corn Exports Under Energy Bill