USDA / Food and Agricultural Policy Research Institute (FAPRI) Projections of Ethanol's Effects on Agriculture

Information Source: Lyn Kirschner, USDA, 3/22/07

FAPRI released their projections this week and like the USDA Projections ethanol has a large influence on the agriculture sector.

Here is a short side-by-side comparison of the FAPRI and USDA projections followed by the FAPRI press release that includes a link to the full FAPRI report. I have added to the press release text a few comparative USDA figures.

USDA – FAPRI Projections Side by Side

Item	FAPRI	USDA
2007 Corn Acreage Increase	8.4 million ac	7.4 million ac
2008 Total Corn Acreage	90 million ac	89 million ac
2016 Total Corn Acreage	87.7 million ac	90 million ac
2007 Corn Used for Ethanol	4.0 billion bu.	3.2 billion bu.
2016 Corn Price	3.04	3.30
2016 Corn Yield *	172.6 Bu/Ac	170.2 Bu/Ac
2016 Price of Oil (nominal)	$50.00 / barrel	$73.10 / barrel
2016 Total Ethanol Production **	12.8 billion gal	12 billion gal
2016 Cellulosic Ethanol Production	0.75 billion gal	0.25 billion gal
2016 CRP Acreage ***	31.89 million ac	39.2 million ac
2016 Total CRP Payments ****	2.233 billion	3.0 billion

* 151.2 bushels pre acres currently
** 2007 ethanol production 7.0 billion gallons. Renewable Fuel Standard calls for 7.5 billion gallons of ethanol blended with gasoline by 2012.
*** USDA assumes a rise to the current CRP cap while FAPRI models the CRP acres. 2006 CRP acreage total is 36.1 million acres.
**** 2006 CRP payments were approximately $1.8 billion.

WASHINGTON (March 6, 2007) – High corn prices are expected to bring major shifts in crop production the next two years, bringing an additional 8.4 million acres [USDA 7.4 million acres] into corn in 2007.

Ethanol, based on corn, has become a driving force in the 2007 agricultural economic baseline prepared for the U.S. Congress by the Food and Agricultural Policy Research Institute (FAPRI).

Expected corn use for ethanol almost doubles in the 2007 crop year from the 2005 crop and exceeds 4 billion bushels [USDA 3.2 billion] or 32 percent of the nation's corn crop by 2009.

Increasing ethanol production drives the corn price from a $2 per bushel average in the two previous crop years to slightly above $3 per bushel [USDA corn prices range from $3.30 to $3.75] in every year of the 10-year baseline.

Current prices run above those levels exceeding $4 per bushel. “Those prices are higher than our projections, as the market encourages producers to plant more corn in 2007 to feed the growing ethanol industry,” said Pat Westhoff, FAPRI analyst.

U.S. farmers have not planted 85 million acres of corn since 1949. The FAPRI projection of 86.7 million acres [USDA 86 million acres] in 2007 fell midrange in current trade projections. FAPRI projects almost 90 million acres [USDA 89 million acres] in 2008.

While corn gains acres, soybeans give up the most, falling to 70.5 million acres [USDA 71 million acres] in 2007 from 75.5 million acres in 2006. Wheat area, most of which was planted last fall, increased to 60.1 million acres[USDA 60 million acres] in 2007, but drops in following years to 57 million acres by 2016.

The FAPRI baseline was prepared by think tanks at the University of Missouri-Columbia and Iowa State University, Ames. MU maintains computer models of the U.S. agricultural economy. ISU tracks global markets. Economists at other universities participate.

“So much depends on the price of petroleum,” Westhoff said. MU FAPRI uses a baseline assumption that the oil price falls to $50 per barrel in 2016 [USDA $73.1 nominal dollars or $50.5 in 2000 dollars]. Forecasts on oil, interest rates and other macroeconomics come from the private forecasting firm Global Insight.

FAPRI assumes normal weather and continuation of present farm policies, including current biofuel incentives through the 10-year baseline.

Computer runs of 500 alternative scenarios show prices can be much higher, or much lower, than averages in the baseline, depending on weather, oil prices and other factors.

“Current tax polices that support biofuel are slated to expire in 2008 and 2010,” Westhoff said. “If the credits expire, the results could be sharply lower biofuel production, corn and soy oil demand and crop prices.”

The current outlook depends on the price of corn not becoming too high, removing profits from the ethanol plants. Baseline projections show ethanol production remains profitable; but increasing production and falling petroleum prices result in lower ethanol prices. Lower ethanol prices and higher corn prices squeeze projected margins for ethanol plants, eventually slowing growth in plant capacity.

High crop prices increase net income for grain farmers; however higher feed costs cut profits of livestock feeders.

Overall, net farm income dropped $26 billion dollars in 2006 from a record high of $85 billion in 2004, with higher input costs largely responsible. Net farm income will rise $7 billion in 2007 to $66 billion and remain above $60 billion in later years.

Cash receipts for cattle and calves reached a record $50.7 billion in 2006, but decline to $47.9 billion by 2010.

“As more expensive corn increased the cost of feeding cattle, feedlots bid down feeder cattle prices,” said Scott Brown, MU FAPRI livestock analyst. “This trend continues through the baseline, as feed costs remain high.”

Poultry producers reacted quickly to higher feed costs, reducing production in the third quarter of 2006. “Slowing growth in poultry is a rarity,” Brown said. “Broiler production is expected to grow only 1.6 percent annually through the baseline, compared with 3 percent annual growth for the previous 10 years.

Three years of profits for hog producers will end in 2007. The price of producing pork is expected to go up 6 cents a pound, or 16 percent.

Food cost increases remain moderate in spite of higher grain prices. Annual growth in the food Consumer Price Index will average near 2 percent long term, near the general inflation rate, Brown said.

While grain prices play a part in food cost increases, 80 percent of consumer food costs come from other factors, including labor, fuel and packaging.

Fruit and vegetable costs spiked in 2006 and are expected to continue high, given weather-related losses.

Cost of food eaten away from home outpaced home meals in 2005. This trend is expected to continue.

Federal spending for farm programs is lowered by higher grain prices. Direct payments, counter-cyclical payments and marketing loans peaked at $16 billion in the 2005 crop year. Those same payments total $7.7 billion for the current marketing year. Payments drop to $6.7 billion by the end of the baseline in 2016, with direct payments accounting for $5.3 billion.

The baseline, which will be used to analyze the 2007 Farm Bill, has been given to the Senate and House agricultural committees and U.S. Department of Agriculture.

Universities cooperating in the analysis are Texas A&M which maintains representative farm models to track impact of policy changes at the local level; Texas Tech tracks the cotton trade; University of Arkansas follows rice production; and Arizona State tracks fruit and vegetable markets.

The ethanol boom required major additions to the FAPRI models. “We made lots of changes in our models to keep up with the rapidly evolving industry.” Westhoff said. “U.S. energy policies may have a bigger impact on U.S. farm income than the farm bill.” Pages have been added to the briefing book on biodiesel, corn processing and other areas of the biofuel economy.

The full report of the FAPRI U.S. Baseline Briefing Book is available on the MU FAPRI website.

FAPRI is funded in part by the U.S. Congress to give independent analysis of proposed legislation. MU FAPRI receives additional funding from the MU Agricultural Experiment Station at the MU College of Agriculture, Food and Natural Resources.

Sources: Pat Westhoff, Scott Brown (573) 882-3576