2009 Illinois Farm Economics Summit

The Profitability of Illinois Agriculture:
Profitability at a Crossroads

Sponsored by:

Dates/Locations

- Monday, December 14, 2009 - Champaign, IL
  - I Hotel and Conference Center
- Tuesday, December 15, 2009 - Bloomington, IL
  - Interstate Center
- Wednesday, December 16, 2009 - Galesburg, IL
  - Best Western Prairie Inn
- Thursday, December 17, 2009 - Rochelle, IL
  - Hickory Grove
- Friday, December 18, 2009 - Mt. Vernon, IL
  - Holiday Inn

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
2009 Illinois Farm Economics Summit

The Profitability of Illinois Agriculture: Profitability at a Crossroads

7:45 – 8:00 am..........................Registration and Coffee

8:15 – 8:30 am.........................Introduction and Overview
   - Todd Gleason

8:30 – 9:00 am........................Crop and Livestock Price Prospects for 2010
   - Darrel Good

9:00 – 9:30 am........................2010: Farm Returns at a Crossroads
   - Gary Schnitkey

9:30 – 10:00 am.......................Speculation and Price Volatility: Implications for Farmer Marketing
   - Scott Irwin

10:00 – 10:30 am......................Break

10:30 – 11:00 am.....................Climate Change Policy and Agriculture
   - Bryan Endres

11:00 – 11:30 am.....................Using ACRE and Crop Insurance to Manage Risk
   - Nick Paulson

11:30 – 12:00 pm....................Economic Crisis: Linkages to Agriculture and Farmland Values
   - Paul Ellinger

12:00 – 12:30 pm....................Question and Answer/Wrap-Up

12:30 – 1:30 pm......................Lunch ( Included)
CORN: Corn demand in late 2009 was a mixed bag. Ethanol demand for corn was supported by larger ethanol production mandates in 2010 and much higher ethanol prices. Export and domestic feed demand were weak, reflecting a slow economic recovery and declining domestic livestock numbers. Stocks of U.S. corn at the end of the 2009-10 marketing year are expected to be near the level of the previous two years. A modest increase in corn acreage may be required in 2010. Corn prices are expected to be supported in 2010 and 2011 by a combination of relatively small inventories, increasing ethanol mandates, modest economic recovery, and by a higher rate of inflation in the U.S. economy. The average price of corn in Illinois is projected to be near $3.80 for the 2009-10 marketing year and near $4.00 for 2010-11.

SOYBEANS: Export demand for U.S. soybeans received a boost in 2009 from a drought reduced harvest in South America and aggressive buying by China in an attempt to build inventories. Domestic and export demand for soybean meal was weakened by declining livestock prices and production. The record large U.S. harvest of 2009 is expected to result in some increase in stocks by the end of the 2009-10 marketing year. In addition, more acreage and a return to normal yields are expected to result in a large South American harvest in 2010. Like corn prices, soybean prices are expected to receive some support from a combination of economic recovery and a higher rate of inflation in 2010 and 2011. The average farm price of soybeans in Illinois is expected to be near $9.80 during the 2009-10 marketing year and near $10.00 for the 2010-11 marketing year.

WHEAT: World wheat production was large in 2009, even though the U.S. crop was slightly smaller than in 2008. Export demand for soft red winter wheat became extremely weak in the last half of 2009. A sizeable build up in world and U.S. wheat inventories is expected during the 2009-10 marketing year. The late corn and soybean harvest of 2009 was thought to have resulted in another decline in seeding of soft red winter wheat. Illinois wheat producers received an average price of $5.89 for the 2008 crop, but the average for the 2009 crop will likely be close to $3.90. The average price for the 2010 crop is expected to be near $4.50.

HOGS: The average price of hogs received by Illinois producers was at a 6 year low in 2009. Large supplies of pork coupled with weak demand resulted in an average price of about $45. For 2010, producers report intentions to reduce supplies by about 2.5 percent and there is some hope that both domestic and export demand will recover as the U.S. and world economies stabilize. Seasonal price patterns should continue in 2010, with the lowest prices in the first and fourth quarters and the highest prices in the spring and summer. For the year, the average price is expected to be near $48.

CATTLE: The average price of steers and heifers received by Illinois producers was at a 5 year low of $84 in 2009. U.S. beef production in 2009 was down about 2.5 percent from production in 2008, but exports were a little weaker than in 2008. In addition, domestic demand suffered from the economic downturn and high unemployment rates. For 2010, beef production is expected to decline another 1.5 percent and exports are expected to make a good recovery. A decline in per capita beef supplies and better performance in the domestic economy should provide support for beef and cattle prices. The average price for steers and heifers in Illinois in 2009 is projected to be near $90.
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Additional Resources

The slides for this presentation can be found at:
http://www.farmdoc.uiuc.edu/presentations/IFES_2009

For current outlook information, see:
http://www.farmdoc.uiuc.edu/marketing/newsletters.html
http://www.agmanager.info/livestock/marketing/default.asp
http://www.agecon.purdue.edu/extension/prices/index.asp
http://cattlemarketanalysis.org/
Corn and soybeans returns will be significantly lower in 2009 than returns in 2007 and 2008. Record high returns in 2007 and 2008 were due to much higher crop prices caused by increased use of corn in ethanol production. The 2009 return levels are down from 2007 and 2008 levels because of higher costs, causing 2009 levels to be more in line with returns experienced between 2003 through 2005.

Costs have increased dramatically within recent years. In central Illinois, total non-land costs for corn is projected at $542 per acre in 2009, a $114 increase over 2008 costs and a $302 per acre increase over 2006 costs. Not included in these costs increases are land cost increases. For high-productivity farmland, average cash rents increased by $60 per acre between 2006 and 2009.

Current budgets suggest that 2010 returns will be higher than 2009 returns because of lower fertilizer and drying costs. According to the Agricultural Marketing Service (U.S.D.A.), anhydrous ammonia prices averaged $1,136 per ton across Illinois in fall 2008. During fall 2009, ammonia prices averaged $430 per ton, a decline of 62 percent over 2009 prices. Similarly, DAP prices fell by 66% and potash prices by 38 percent from fall 2008 to fall 2009.

Due to a late planting and a cool summer, moisture levels of harvested corn were significantly above average in 2009. This then led to much higher drying costs. For commercial drying, corn drying costs will be $50 per acre higher than in a typical production year. An expectation of more normal growing conditions leads to lower projected 2010 drying costs.

While above 2009 levels, 2010 returns are below 2007 and 2008 levels and are near 2006 levels. Revenues in 2009 are projected using a corn price of $4.00 per bushel and a soybean price of $10.00 per bushel. These prices are near 2007 and 2008 levels, causing 2007, 2008 and projected 2009 gross revenues to be similar. Returns in 2010 are below 2007 and 2008 levels because of substantially higher costs. While 2010 costs are projected lower than 2009 costs, they are still high according to historical averages.

Continuing uncertainty exists about costs. Crude oil has increased in recent months. On December 1, 2009, the crude oil price at Cushing Ok was $78 per barrel, an increase of about $18 from $60 per barrel prices during the summer. Chicago Mercantile Exchange crude oil futures prices are indicative of rising prices, with some experts projecting prices over $100 per barrel. Up to this point, natural gas prices have not increased since summer, but future prices point to increasing prices. Rising energy prices often signal higher fertilizer costs. Therefore, risks of higher fertilizer costs exist.

Low returns in 2009 relative to 2007 and 2008 returns are indicative of the possible swings in agricultural returns. Both prices and costs in agriculture are now highly linked to energy prices. Energy prices can vary a great deal, leading to uncertainty about agricultural returns.
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Additional Resources

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Links:
Crop budget and production information are available in the management section of farmdoc:
http://www.farmdoc.illinois.edu/manage/
B-weekly estimates of fertilizer prices in Illinois are available at:
http://search.arms.usda.gov/mnreports/gx_gr210.txt
Oil prices are available at:
http://www.aia.doe.gov/
Commodity prices have been extraordinarily volatile during the last several years. A worldwide controversy has erupted about the role of speculation—especially by ‘long-only’ index funds—in the recent boom and bust cycle. The debate has found its way to the halls of the U.S. Congress, where legislators have considered measures to curb “excessive” speculation and the Commodity Futures Trading Commission (CFTC) recently moved to more strictly enforce speculative position limits. Concerns about the impact of index funds have been voiced most loudly by some hedge fund managers, policy-makers, and commodity end-users. The main concern is that speculative buying by index funds in commodity futures created a “bubble,” with the result that commodity prices far exceeded fundamental values at the peak.

While the case for a bubble in commodity prices seems obvious to many, the arguments simply do not withstand careful scrutiny. There are logical inconsistencies in the arguments made by bubble proponents as well as several instances where the bubble story is not consistent with observed facts. Recent studies also show that the build-up in commodity index contracts and the peak level of index holdings in grain futures markets pre-dates the 2007-2008 increase in prices for which they are blamed. Formal statistical tests in the same studies fail to find a statistical link between commodity index positions and futures price movements. The data trends and statistical tests are not consistent with the argument that index funds caused a bubble in commodity futures prices. In sum, there is little evidence that the recent boom and bust in commodity prices was driven by a speculative bubble.

Even if commodity futures prices were not driven by speculative forces, farmers still must deal with an environment of highly volatile prices. Prospects for large ranges in annual price movements suggest that producers may find more value in the use of futures options contracts to protect profitable price levels, but also capture higher prices should they occur. In addition, expectations for large ranges in prices may continue to limit the forward pricing opportunities offered by grain merchandisers. Those limitations may take the form of shorter time horizons for forward contracting production and/or in weak basis levels for forward contract bids. Fewer pricing opportunities from merchandisers, may require producers to manage price risk directly with the use of futures and options contracts. Direct use of futures and the related risk of margin requirements have obvious cash flow and credit implications for producers. In some instances, merchandisers may continue to offer a full array of pricing alternatives, but require producers to participate in the margining of the underlying futures and options positions.
Commodity Index Trader (CIT) % of Open Interest and Nearby Futures Price in CBOT Corn, January 6, 2004 - September 9, 2009

CIT % Open Interest (left scale)

Futures Price (right scale)

Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
May-04
May-05
May-06
May-07
May-08
May-09
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09

Additional Resources

The slides for this presentation can be found at:
http://www.farmdoc.uiuc.edu/presentations/IFES_2009

Links to additional materials:
Market Instability in a New Era of Corn, Soybean, and Wheat Prices
http://www.choicesmagazine.org/magazine/article.php?article=56
Devil or Angel? The Role of Speculation in the Recent Commodity Price Boom (and Bust)
http://ageconsearch.umn.edu/handle/53083
Bubbles, Froth, and Facts: The Impact of Index Funds on Commodity Futures Prices
http://www.farmdoc.illinois.edu/irwin/research/BubblesFrothFacts.pdf
Spreads and Non-Convergence in CBOT Corn, Soybean, and Wheat Futures: Are Index Funds to Blame?
http://www.farmdoc.illinois.edu/irwin/research/PoorConvergencePerformance.pdf
This session provides an overview of proposed laws and regulations designed to address climate change and the resulting impact on agricultural operations in Illinois. This includes a discussion of estimated greenhouse gas (GHG) emissions attributed to agriculture, an analysis of the agricultural offset opportunities available as part “cap and trade” legislative proposals, and alternative regulatory programs to minimize carbon dioxide (CO₂) emission under the Clean Air Act.

Global climate change may have both positive and negative impacts on agricultural production. For example, Agricultural Research Service (ARS) and University of Illinois scientists are examining the soybean yield suppressing effects of atmospheric ozone concentrations in relation to predicted elevated CO₂ levels. From a productivity perspective, agriculture will have to adapt to these changing conditions.

On the other hand, agriculture is an energy intensive industry with direct consumption of multiple carbon-based energy sources, including gasoline, diesel fuel, liquid petroleum, natural gas and electricity. In addition, nitrogen and other fertilizer inputs require significant energy resources. This direct and indirect energy consumption accounted for almost 15 percent of total agricultural input expenses. GHG emissions attributed to agricultural production activities include carbon dioxide (CO₂), methane (CH₄) and Nitrous Oxide (N₂O). Based on their relative global warming potentials, scientists convert GHG emissions into CO₂ equivalents (CO₂eq). In total, agricultural operations accounted for approximately 7 percent of GHG emissions in the United States.

To better measure domestic GHG emissions, the Consolidated Appropriations Act of 2008 directed the EPA to develop a mandatory reporting regime for GHGs. The final rule requires covered entities to begin monitoring emissions as of January 1, 2010, with annual emissions reports commencing in 2011. The rule, however, exempts agricultural operations except manure management systems that emit CH₄ and N₂O (combined) greater than 25,000 metric tons of CO₂eq/year. EPA estimates that only 107 livestock operations nation-wide reach the reporting threshold.

In 2003, the Chicago Climate Exchange (CCX) created a voluntary GHG emissions cap for member companies. Between 2003 and August 2009, agricultural and forestry operations registered on the CCX (sold) 34,309,200 offsets, each representing a metric ton of CO₂eq. In June 2009, the U.S. House of Representatives passed H.R. 2454, the American Clean Energy and Security Act of 2009, which includes a mandatory federal GHG emission “cap and trade” program. Based on 2005 emissions, the “cap” requires a 17 percent GHG reduction by 2020 and an 83 percent reduction by 2050. Title V of the bill, however, explicitly exempts agricultural facilities from the emissions “cap.” More importantly, Title V delegated to the Secretary of USDA authority to develop rules for the implementation of carbon offsets for the agricultural and forestry sectors. Although the “cap” gradually will increase the costs of energy intensive agricultural inputs, a December 2009 revised analysis of H.R. 2454 by USDA concluded that the ability to “trade” or sell offsets to capped entities, combined with the expected increase in commodity prices, would provide an annualized annuity value of $22 billion to agriculture, with 30 percent of the gains occurring in the Corn Belt, and an additional $3 billion associated with the sale of afforestation offsets, 40 percent of which is attributed to the Corn Belt.
If Congress fails to cap or otherwise reduce GHG emissions, the EPA, based on a 2007 U.S. Supreme Court ruling, will take action. The ironic twist in the federal climate change debate is that if agricultural groups successfully scuttle congressional initiatives, the alternative EPA-crafted rules, based on the Clean Air Act, may well impose greater GHG restrictions on agricultural operations (as opposed to the categorical exclusion contained in H.R. 2454) and relatively less lucrative offset opportunities.

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**Additional Resources**

The slides for this presentation can be found at:
http://www.farmdoc.illinois.edu/presentations/IFES_2009

Links to additional materials:
USDA, Agricultural Research Service, *Forum-Managing Agriculture in a Climate of Change*  
http://www.ars.usda.gov/is/AR/archive/nov09/index.htm
USDA, Preliminary Analysis of the Effects of HR 2454 on U.S. Agriculture (July 2008)  
Intergovernmental Panel on Climate Change, *Climate Change 2007—Mitigation of Climate Change* (Chapter 8, Agriculture)  
This presentation will examine the outlook for ACRE and crop insurance payments for the 2009 crop year for corn, soybeans, and wheat in Illinois. Also, the relationship between ACRE and available crop insurance policies will be illustrated using results based on an historical analysis of these programs.

Expectations for ACRE payments on corn and soybean acres in Illinois have shaped up to be quite different from forecasts made earlier this summer. The ACRE program would not trigger payments in 2009 if current yield and price projections hold. This is due to recent increases in expected corn and soybean prices, and projected yield levels near or slightly above the ACRE program yield guarantees for both crops. In contrast, enrolled wheat producers can expect to receive large payments in the range of $70 to $85 per acre throughout much of the state. The large payments expected on wheat acres are driven mainly by expected wheat prices falling well below program guarantees, and also by the 2009 average wheat yield in Illinois being slightly below its historical average.

In terms of crop insurance, the final harvest price for revenue insurance on corn acres fell below the planting price. However, the harvest price is only 8% below the guarantee, which means that yield losses will be required to trigger indemnity payments even at higher coverage levels. In contrast, the harvest price for soybeans is well above the planting price. This implies that yield losses on soybean acres will need to be relatively more dramatic to trigger indemnity payments for individual revenue plans that do not carry the harvest price option. The area insurance plans (i.e. GRP and GRIP) are most likely to trigger payments in certain counties in the Southwest region of the state on corn and soybean acres, although payments are expected to be relatively small and triggered only at higher coverage levels. Harvest delays due to wet weather may also impact eligibility for crop insurance coverage.

Based on a historical analysis using data from FBFM farms across the state, the relationship between the ACRE and crop insurance programs was analyzed. Results indicate a number of key results. First, ACRE does not provide an adequate substitute for individual crop insurance. This is most evident for years where crop insurance payments are triggered regionally due to yield losses. For example, the ACRE program would not have triggered payments on corn acres in 1980 or in 1995, but roughly half of the farms in the state would have been eligible for revenue or yield insurance at an 85% coverage level. This result holds even when ACRE is compared to the coverage offered by the area insurance plans. ACRE payment years do not necessarily coincide with payment years for the GRP or GRIP plans.

Second, the ACRE program tends to be driven almost entirely by price movements. Out of all the years in which ACRE payments would have been triggered on corn acres in Illinois over the past 30 years, major yield losses at the aggregate state level were responsible for triggering those payments only 20% of the time (1983 and 1988).

Some farmers may be able to couple yield insurance with ACRE rather than an individual revenue plan. This strategy may offer comparable levels of risk reduction at a lower net cost. However, because of the differences in coverage afforded by ACRE and available insurance plans, the preferred combination of the two types of programs will vary across
operations. Based on this analysis, producers are encouraged to carefully consider the decision to adjust their insurance choices based on ACRE program enrollment.

### Notes

### Additional Resources

The slides for this presentation can be found at: [http://www.farmdoc.illinois.edu/presentations/IFES_2009](http://www.farmdoc.illinois.edu/presentations/IFES_2009)

Additional Links:
- ACRE Resources section on [farmdoc](http://www.farmdoc.illinois.edu/policy/index.asp)
- Crop Insurance section on [farmdoc](http://www.farmdoc.illinois.edu/cropins/index.asp)
Fallout from the recent financial crisis has deeply impacted most economic sectors. Global credit losses and writedowns have exceeded $2.8 trillion, U.S. unemployment has risen by 8.2 million, and there have been 148 bank failures since July 2008. In addition, the aggregate wealth of U.S. households has declined nearly $10 trillion from peak levels. Although financial and credit markets have rebounded, some credit channels remain impaired and economic recovery has been sluggish. Production agriculture has not been immune to the crisis. A direct impact of the credit crisis has been on global economic growth that resulted in a contraction of aggregate demand for agricultural commodities.

**Health of U.S. Consumer**

The road to economic recovery largely depends on the confidence and financial health of the U.S. consumer. Over 70% of third quarter 2009 GDP is personal consumption expenditures. A major factor impacting personal consumption is employment. The unemployment rate fell slightly to 10% in November 2009, but it is up 5.3% from November 2007. Underemployed workers, a broader measure that includes those that are working part-time when they would prefer full-time work, have more than doubled in two years to 17.2%.

Falling residential real estate prices is another substantial factor in consumers’ financial health. The Case-Schiller Home Price index has fallen more than 30% off peak levels. Nearly 10.7 million households, or 23% of homeowners with mortgages, have negative equity as of the third quarter 2009.

Despite some modest improvements, the financial health of the U.S. consumer shows considerable vulnerability. Over 15 million workers are unemployed and another 11.5 million are underemployed. Households have lost $3.6 trillion and $8.3 trillion from declines in real estate and financial asset values, respectively.

**Government Borrowing and Deficit**

Government borrowing has substantially increased during this recession. The government programs have resulted in an estimated federal debt held by the public of $8.5 trillion in 2009, or approximately 60% of GDP. This level of federal debt is an increase of 45% over the past fiscal year and 147% over the past decade. The level of debt will continue to put pressure on federal deficits, the value of the dollar, and inflation. The Congressional Budget Office estimates the 2009 deficit to be $1.7 trillion (12% of GDP), followed by two more years of deficits that exceed $1 trillion.

**Linkages to Land Values**

Despite the negative economic conditions, land values on high quality farmland remain strong. The continued strength of land values will likely depend on farm profitability levels, interest rates, energy prices, and inflation. These factors have strong linkages to the general economic climate. A simple method to approximate land values is to estimate a net return to land that accounts for all costs except for land costs. This net return can then be interpreted as the maximum funds available for cash rent. Dividing the net return by a capitalization rate provides an approximation for farmland values. These calculations result in maximum per acre cash rent levels (per acre farmland prices) of $265 ($5,888) for northern Illinois, $263 ($5,844) for central Illinois high productivity, $225 ($5,000) for central Illinois low productivity, and $154 ($3,422) for southern Illinois.
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Links to additional materials:
Bureau of Economic Analysis http://www.bea.gov/
Congressional Budget Office http://www.cbo.gov/
White House Budgets, Office of Management and Budget http://www.whitehouse.gov/omb/
U.S. State and Farm Income Data http://www.ers.usda.gov/data/farmincome/finidmu.htm