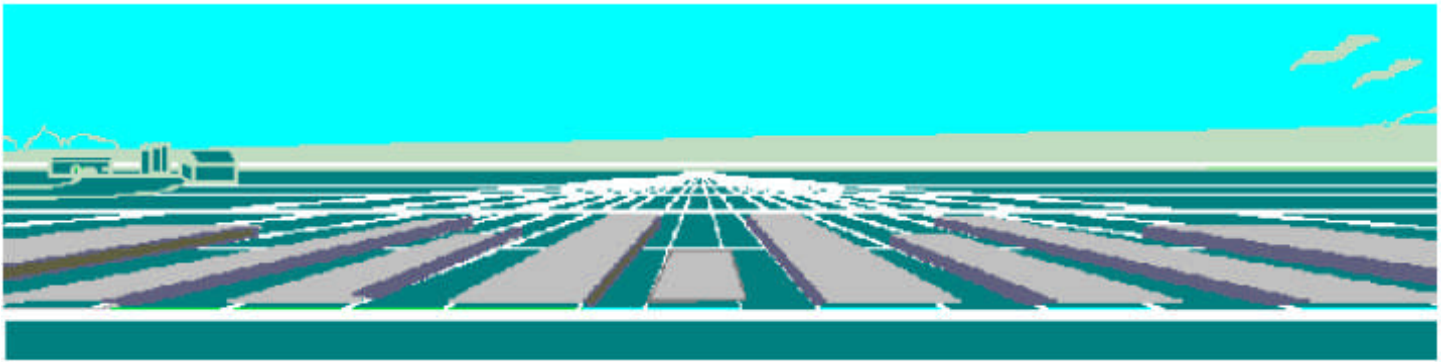


Iowa Farm Outlook



February 15, 2007

Ames, Iowa

Econ. Info. 1952

New Assumptions in the Estimated Returns Series

The Economics Department at Iowa State University has prepared monthly Estimated Returns to Feeding Livestock in Iowa since the 1960s. Each month the costs and returns are calculated based on a set of constant production assumptions and prices for inputs and outputs that change over time. These returns are not meant to represent any one operation, but rather serve as a barometer of profitability for hog and cattle feeders.

Periodically, the production assumptions are evaluated and revised to more accurately reflect the enterprises we try to represent. The last update was in 2000. We have again updated the technical coefficients beginning with January 2007. We have provided a comparison of how the new return series would have looked over the 2001-2006 period under the new versus old assumptions. Also provided is an explanation of the assumption changes and discussion of the difference between the old and new series. These are available online at the following web site:

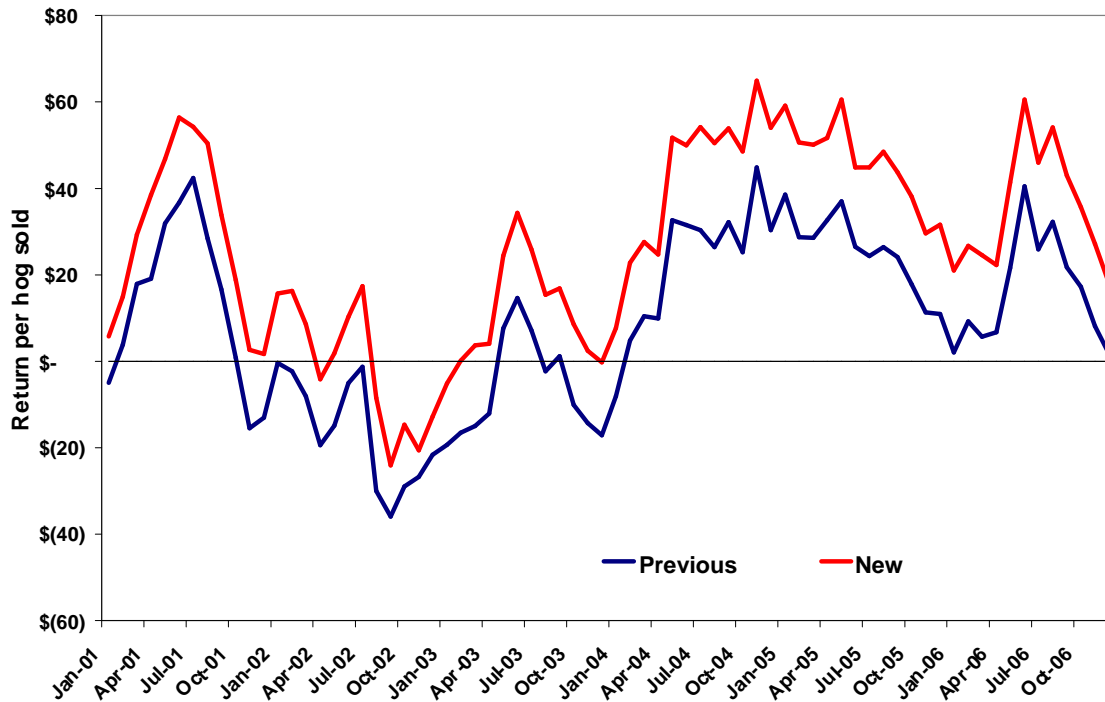
http://www.econ.iastate.edu/faculty/lawrence/Lawrence_website/livestockreturns.htm

There are some large changes in the assumptions pertaining to the swine enterprises. Previously, the model was developed to reflect a farm with approximately 160 sows farrow to finish on one site using a combination of facilities and primarily family labor. The new series is based on a 1,200 sow farrow to finish operation with multi-site production. The facilities are more expensive. Labor is more efficient, but at a higher wage rate. The hogs have better feed efficiency, heavier carcasses, and receive the “average hog” price rather than the “base price”. As a result the new farrow-to-finish and feeder pig finishing returns are higher than under the previous series. The cattle feedlot returns are lower than the previous series because of rising non-feed cost. The model reflects improved cattle performance, but higher facility and equipment cost, trucking expense, labor wages, and vet-med costs.

We want to stress that the purpose of these monthly estimates is to monitor costs and returns from month to month and year to year. They are not intended to represent any one individual, but rather the industry in general.

Figure 1 compares the returns under the new and previous assumptions over the past six years. Under the new assumptions returns are consistently higher, due primarily to the change in marketing price and increased slaughter weight.

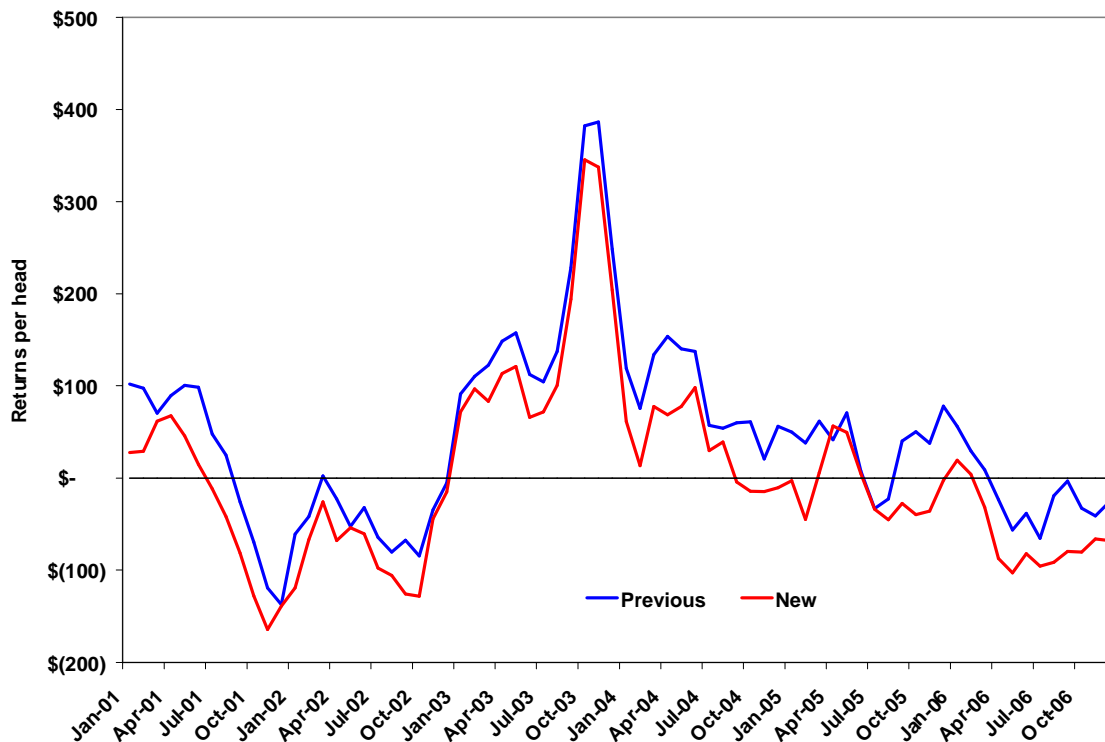
Figure 1. Returns to Farrow to Finish Enterprise under New and Old



Assumptions

Figure 2 is a graph of returns to finishing steer calves under the new and previous assumptions. The estimated returns would have been lower due a higher wage rate for labor, a different and higher priced feeder cattle market, and other increased costs of production.

Figure 2. Returns to Finishing Steer Calves under New and Previous Assumptions



The detailed report on the new assumptions is available at the website referenced previously. Labor costs per hour are now the same for both cattle and swine enterprises and include the cost of benefits commonly offered. Finally, a new series tracking returns to finishing weaned pigs has also been added.

Shane Ellis

World Crop Outlook Update & USDA 10-Year Projections

USDA's February 9 U.S. supply-demand projections showed no changes in the corn balance sheet from last month. USDA economists lowered their projected 2006-07 U.S. soybean exports by 20 million bushels and increased 8/31/07 projected bean carryover stocks by 20 million bushels. At the same time, the projected season average price range was raised from \$5.75-\$6.45 to \$5.90-\$6.45 per bushel. The higher price projections reflect recent soybean market strength in response to indications that farmers will shift a substantial acreage from soybeans to corn this spring. The U.S. wheat balance sheet was unchanged from last month, except for narrowing the projected range for the marketing year average price from \$4.15-\$4.45 to \$4.20-\$4.30 per bushel.

These projections continue to show a very tight corn supply situation. With enough new ethanol plants currently under construction to double the industry's capacity, it looks clear that a large increase in corn plantings will be needed this year. That prospect appears likely to keep old-crop July corn futures in a trading range of about \$4.10-\$4.50 per bushel (with some chance of a brief break to \$3.96) until prospective acreage becomes more clear from USDA's March 30 planting intentions report.

On March 30, USDA also will release its March 1 grain stocks report. The stocks numbers will allow analysts to estimate December-February corn feeding. Domestic feeding is still the largest source of demand for corn, by a wide margin. Livestock marketing weights have been relatively heavy in recent months, although higher feed costs may bring some reduction in weights and accompanying reductions in feed use. Recent cold weather may also have supported feed demand. Cold weather tends to increase feed needs some due to increased maintenance energy needs of animals in outside lots. In the southwest, late fall wheat pasture was slightly more available than a year earlier and may also have impacted grain feeding. Given these various influences on feeding rates and the large cattle and hog numbers, we expect feed use from the March stocks numbers to be relatively large. Contacts in the Southern Plains indicate high corn prices and a strong corn basis likely will cause increased wheat feeding in beef feedlots from June through August this year. That should modestly reduce summer corn feed demand.

At this writing, Midwest ethanol plants are bidding modestly over \$4 per bushel for corn to be delivered in July and early August. Prospects for sharply reduced soybean plantings and uncertainty about the final size of Brazil and Argentina's spring-harvested soybean crops should provide strong support for soybean prices prior to the USDA planting intentions report.

Larger Southern Hemisphere Corn Crops Expected

The significant changes in the February 9 USDA report were in projections for Southern Hemisphere corn and soybean crops to be harvested this spring. Argentina's corn crop estimate was raised 2 million metric tons (about 79 million bushels) from last month. Compared with last year, the crop is projected to be up 205 million bushels or 33%. In addition, USDA raised its estimate of this season's Brazilian corn crop by 4 million tons or 158 million bushels from the January estimate. If the final crop size reaches this level, it would be up 10% or 169 million bushels from last year. A substantial part of the Brazilian production is double-cropped after soybeans and grows during the dry season. Approximately 15% of the soybean crop has been harvested in the northern areas at this writing. Soil moisture for replanting with corn has been excellent so far, although frequent rains may delay bean harvesting and corn plantings in some areas. In South Africa, prospects have deteriorated slightly and USDA lowered its projections of South Africa's spring corn harvest by 0.5 million tons (20 million bushels) from last month. Even so, the crop is expected to be up 37% or 101 million bushels from last year's drought-reduced level.

These updated Southern Hemisphere crop estimates show potential corn production to be up 475 million bushels from the 2006 harvest. At the same time, corn exports from these countries are projected to

be up only 215 million bushels. Combined corn imports by Brazil and South Africa are projected to be down 82 million bushels from last season. ***The net effect of these changes is that about 300 million bushels more Southern Hemisphere corn will be available to world markets than last year, if the projections materialize.*** The difference between production increases and availability of corn for world markets is due to increased domestic corn use and increased carryover stocks after the stocks drawdown that resulted from last year's weather problems.

New-crop Southern Hemisphere corn exports will compete with U.S. corn from late May through at least early winter. They will be spread over the last third of the current marketing year and the first several months of the 2007-08 marketing year. Increases in these supplies are reflected in the corn export projections in our balance sheet for 2006-07 and for 2007-08. Foreign wheat and barley crops will be other influences on summer 2007 as well as 2007-07 U.S. corn exports. Early indications point to a substantial increase in Northern Hemisphere winter wheat crops, after less than ideal weather in a number of areas last year. In international markets, feed wheat is a big competitor of corn.

Needed Slowdown in U.S. Corn Export Sales & Shipments

USDA's projected U.S. corn exports for the current marketing year are up 4.8% from last season. Cumulative export sales through February 1 **are up 23%** and cumulative export inspections (shipments) **are up 17%** from the same period a year earlier. ***To reach current official projections, export shipments from now through the end of August will need to be 2.6% below a year earlier. Weekly corn export sales will need to slow dramatically in the months ahead to reach the projections.***

Argentine Soybean Crop Estimate Raised

USDA left its February 9 Brazilian soybean crop estimate unchanged from last month. At 56 million tons, the crop is projected to be 37 million bushels or 1.9% above last year. Trade sources estimate planted soybean acreage to be 7% lower than a year ago, but favorable weather in most areas points to better yields than in 2006. One important area of uncertainty, however, is Mato Grosso, the leading soybean producing state. Frequent rains in parts of the state are delaying harvest and making it difficult to spray for Asian soybean rust in fields that are not yet mature. There is some risk of quality deterioration in fields where harvesting is being delayed.

For Argentina, USDA analysts project production at 44 million metric tons, 73 million bushels larger than indicated last month and 129 million bushels or 9% larger than last year. The increase is due to increased plantings and favorable weather. ***Combined production in Brazil and Argentina is projected to be 166 million bushels larger than last spring. The increase is equivalent to 15% of U.S. soybean exports.***

Cumulative U.S. soybean export sales from last September 1 through February 1 are up 30% from the same period last season. Export inspections (shipments) to date are up 24%. ***To reach current USDA projections, export shipments from now through August 31 will need to be up 5.7% from a year earlier.***

Market Implications for Corn & Soybeans

Both the corn and soybean markets for the last several months have been supported by (1) the need for corn prices high enough to slightly ration domestic corn feeding and export demand and (2) the need for a sharp increase in corn plantings this spring to over-come the current large production-use gap and a sharp increase in corn processing for ethanol that is almost certain to occur in the 2008-09 marketing year. Indications that farmers are planning a substantial shift of cropland from soybeans and cotton to corn has strengthened soybean prices. The acreage shift points to a tightening of U.S. soybean supplies next season and most likely for the next few years. However, the percentage strength in bean prices has been much less than in corn. ***A year ago, corn and soybean prices in north central Iowa were \$1.78 and \$5.33 per bushel, respectively. On February 14, 2007, they were \$3.74 and \$6.86 per bushel. In other words, cash corn prices in this part of Iowa today are 110% higher than a year ago while bean prices are up 29%.*** The more limited response of the soybean market reflects (1) indications that greater strength in soybean prices would trigger expanded South American plantings next fall and (2) potential difficulty in making biodiesel from virgin soybean oil competitive with other alternatives if bean prices were sharply higher. At least half-a-dozen alternative feedstocks can be used to

produce biodiesel. Alternatives include recycled cooking oils (yellow grease), corn oil, cottonseed, sunflower, rapeseed, and palm oils, and animal fats. In contrast, corn is the main feedstock for producing ethanol at this time.

USDA 10-Year Base-Line Projections

Each year in February, USDA releases updated projections from its 10-year global economic baseline projections model. The baseline is intended to show potential impacts if current policies and a detailed set of assumptions continue for the projection period. The results can be useful in testing impacts of policy changes and unanticipated shocks to the agricultural system. Its authors stress that the baseline is not a set of forecasts, although many have used the results for that purpose.

The model was run using data available in December 2006. Some numbers in the results were out of date when the projections were released on February 14. The results did not reflect the January 12 downward revisions of 2006 crops or recent adjustments in official feed and export projections. In the USDA projections balance sheet below, we have inserted the latest 2006 crop estimates and updated the feed and export numbers to reflect the February 9 USDA supply-demand report. We have included only the projections through 2010-2011, although USDA's projections go out to 2016-17.

The most important part of these results is the projected corn volume to be processed for ethanol in the years immediately ahead. To supply growing ethanol demand, USDA economists project a 9% increase in 2007 U.S. planted corn acreage and a 12% increase in harvested acreage – with less corn for silage than last year. Their projected 2007 U.S. average yield is 153.1 bushels per acre – 4 bushels higher than last year. After

USDA 2/14/07 long-term U.S. corn projections, with numbers adjusted for 1/12/07 downward revised 2006 crop & lower '06-07 feed use -- R. Wisner						
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Supply Variables:						
Planted mil. A.	81.8	78.6	86.0	89.0	89.0	90.0
Harv. Mil. A.	75.1	70.6	78.8	81.8	81.8	82.8
Bu./acre	148.0	149.1	153.1	155.0	156.9	158.8
Begin. Stocks, Mil. Bu.	2,114	1,967	752	477	437	397
Production, Mil. Bu.	11,114	10,535	12,065	12,680	12,835	13,150
Imports, Mil. Bu.	9	10	15	20	25	20
Total Supply, Mil. Bu.	13,237	12,512	12,832	13,177	13,297	13,567
Demand Variables, Mil. Bu.:						
Feed & resid.	6,141	5,975	5,825	5,775	5,725	5,750
Food, seed, & indust.	2,981	3,535	4,605	5,115	5,325	5,435
Fuel alcohol use 1/	1,603	2,150	3,200	3,700	3,900	4,000
Exports	2,147	2,250	1,925	1,850	1,850	1,925
Total use	11,270	11,760	12,355	12,740	12,900	13,110
Ending stocks, Mil. Bu.	1,967	752	477	437	397	457
Stocks/use ratio, %	17.5	6.4	3.9	3.4	3.1	3.5
Stocks, wks. supply	9.1	3.3	2.0	1.8	1.6	1.8
Farm price, \$/Bu.	2.00	3.00	3.50	3.60	3.75	3.55
Loan rate, \$/Bu.	1.95	1.95	1.95	1.95	1.95	1.95
Variable costs of production (dollars):						
Per acre	194	207	216	222	225	228
Per bushel	1.31	1.37	1.41	1.43	1.43	1.43
Return over var. cost, \$/A.	132	247	319	336	363	336

adjustments for the January and February production, USDA's own currently lower feed use, and its latest slightly increased exports for the current season, the projections show extremely tight corn supplies for the next five years. ***Ending August 31 stocks drop to a 3.3 weeks supply this year and are followed by a 2.0 weeks' supply next year (from the 2007 crop). In the following three years, ending stocks with the USDA acreage, yield, and demand projections would range from a 1.6 to a 1.8 weeks' supply at the end of August. It is highly unlikely that stocks could drop that low, about 4 to 5 weeks before sizeable volumes of new-crop corn are available to the market. At the end of August in 1996, U.S. corn carryover stocks dropped to a 2.6 weeks supply. That year, cash corn prices in Iowa were at or above \$5 per bushel for almost 6 months.***

The USDA 10-year projections of corn used for ethanol look quite conservative for the later years, judging from plants already under construction and plants that are almost ready to break ground. ***Based on this information, it looks likely that either more corn acres and/or a higher yield will be needed than USDA is projecting for the next several years, or livestock feeding and corn exports will need to decline more than the projections indicate.***

Figure 1 shows USDA's current 10-year projections of the amount of corn to be processed for ethanol, along with its annual 10-year projections released in February of each year since 2003. ***The USDA economic model has been unable to keep up with rapid growth of the ethanol industry. Its ethanol projections have been well below the actual corn processing level for several years.*** In the chart, we also show an alternative projection for the next few years, based on current processing capacity, new capacity currently under construction, and estimates of capacity almost ready to break ground. Our numbers are conservative when compared with those of several industry analysts that are tracking planned plants very closely. Crude oil and gasoline prices will be key determinants of whether some plants that are about ready to break ground will delay construction. Crude oil prices have increased about \$9 per barrel (18%) in the last month, after a sharp break in prices from mid-December to mid-January. The ethanol market has been quite volatile in the last two years. Since last June, daily Iowa rack or wholesale ethanol prices have ranged from a high of about \$3.97 to a low of about \$1.97 per gallon. In the last six weeks, they have ranged from a high of about \$2.58 per gallon to a low of about \$1.85. At this writing they are about \$2.18 per gallon. Each \$0.10 change in the price of ethanol changes the maximum price plants can pay for corn by about \$0.28 per bushel if other input costs and distillers grain prices remain unchanged. Merchandisers at ethanol plants cope with risks in the ethanol and corn markets by forward contracting ethanol in periods of market strength and buying corn on market breaks. At the low point in ethanol prices in mid-January, spot returns probably were near or in some cases below break-even prices for new plants with high debt costs. Since then, ethanol prices have strengthened and appear to be offering profit opportunities for well-managed new plants. As long as at least moderate profit potential for new plants is available, the industry will continue to expand. Planned and proposed plant capacity nation-wide at this writing, if all plants were built, appears to be more than enough to use the entire 2006 U.S. corn crop – with no allowance for feed, food, and export demand. Many planned plants that are 15 to 18 months or more away from approval of financing and obtaining needed permits may not be built because of changing economics. That is reflected in our projections. Key variables influencing profitability are the price of ethanol – which is related to crude oil prices—and the price of corn.

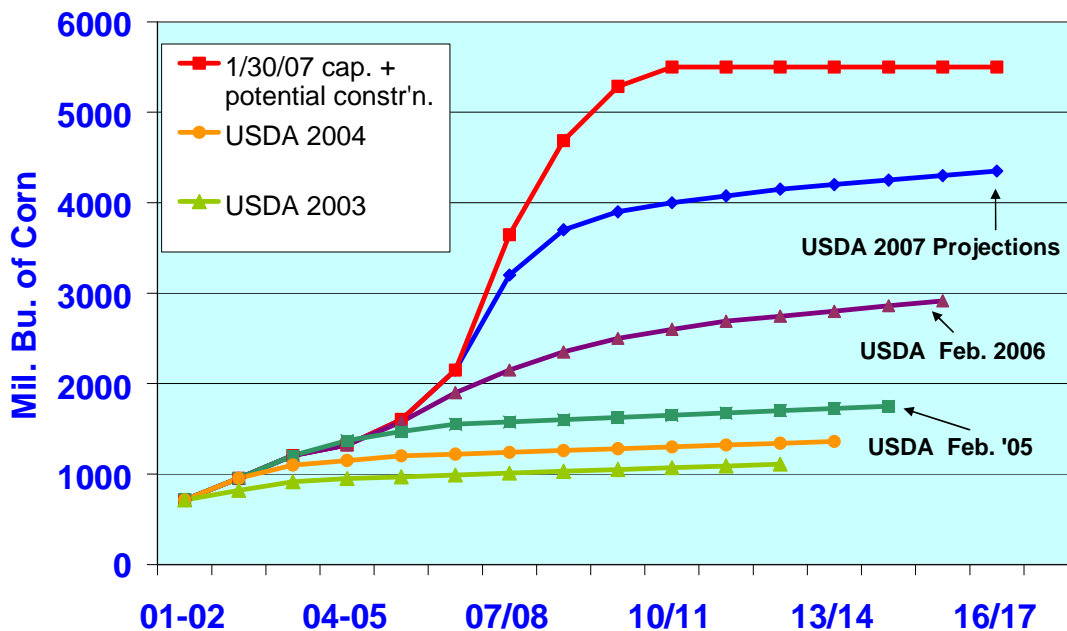
Major implications from USDA's updated long-term projections are that (1) corn prices will likely need to be high enough to increase 2007 corn plantings by more than the 9% shown by USDA, (2) potential grain price responsiveness to any widespread Corn Belt weather concerns is very large, (3) risk management will be extremely important for livestock producers and other users of corn, and (4) high corn prices likely will cause some reduction in livestock feeding and corn exports, starting this summer.

USDA returns over variable costs shown in the bottom line of the above table do not include land costs. A substantial part of the higher grain prices already is starting to be capitalized into cash rents. When land rents are included, returns in the 2008 and later years likely will be lower than shown by these projections.

Historical Performance of USDA Ethanol Projections

Figure 1 below includes the just-released USDA corn processing for ethanol projections to 2016-17 along with USDA 10-year projections released in February of each year since 2003. **Note that previous projections have been very substantially conservative. This year's 2008-09 USDA projections are significantly below existing capacity and new capacity currently under construction. The 2008-09 marketing year will start 18.5 months from now, and nearly all plants currently under construction should be on line by that time.** Our alternative projections (in red) show the corn-based ethanol industry leveling off at approximately 5.5 billion bushels of corn being processed for ethanol in 2009-10. Slightly less than a billion bushels of new construction beyond capacity currently being built and plants that are almost ready to break ground could push ethanol capacity to 5.5 billion bushels or around 15.5 billion gallons. Ethanol production at that level would be equivalent in gallons (not BTUs) to about 11% of current U.S. gasoline consumption.

Figure 1. USDA Feb. '07 & Previous 10-Yr. Projections of Corn for Ethanol, Plus Existing & Under Construction Capacity + Likely Construction to 2010



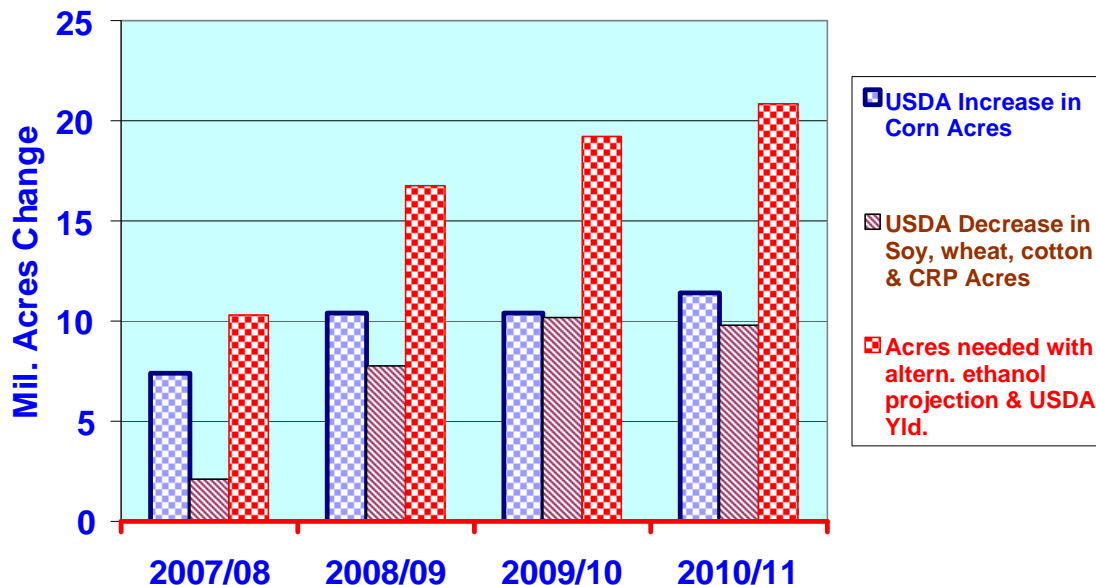
Global forces tending to bring an eventual leveling off of corn processing for ethanol include (1) rising corn prices and (2) a likely decline in wholesale ethanol prices to levels closer to gasoline as production increases. At this writing, spot rack or wholesale ethanol prices in Iowa are about 53 cents per gallon above spot wholesale gasoline prices. That's just above the \$0.51 per gallon blending credit and is being supported above gasoline partly by clean air additive needs. When those needs are over-supplied, additional ethanol production is expected to be priced as a substitute for gasoline. Ethanol's energy content per gallon is about 2/3 that of gasoline, although higher octane of ethanol compensates partially in fuel mileage impacts.

USDA's Soybean Projections to 2010-11

The soybean balance sheet resulting from USDA's long-term global projections model is shown below, with the latest adjustments in U.S. 2006 production and export projections included. The results show August 31, 2007 U.S. soybean carryover stocks at a very large 10.2 weeks' supply – in contrast to corn's 3.3 weeks' supply. For soybeans, the carryover (with favorable weather) declines to 2008-09 and then levels off at slightly over a 4-week supply. Important assumptions behind these projections are that (1) corn processing for ethanol increases no faster than USDA has projected, (2) that a significant part of the increase in corn acres comes from sources other than soybeans, and (3) yields are favorable in both the U.S. and South America throughout the projection period.

Figure 3 shows USDA projected changes in corn acreage and in combined acreage of the other four groups of cropland. *Note that for 2007 and 2008, the increase in projected corn acres exceeds the decrease in acreage of the other categories by a large amount. This implies that USDA projections for soybean planted acreage this year and in 2008 may be too high.*

Figure 3. USDA Feb. 2007 Long-term Projections, Crop Acreage Changes to 2010-11 vs. 2006



Also note our corn acreage projections shown in red that would be needed to meet the higher alternative levels of corn-based ethanol production shown in Figure 1. For these needed corn acreages, we have used the USDA corn yield projections. This chart also reinforces the view that the projected reductions in soybean acres may be conservative and the increase in wheat acres may not be realistic under conditions of a rapidly growing corn-based ethanol industry.

Figures 4 and 5 also show further indications that the projected decline in soybean acres may under-state the actual potential. Figure 4 shows USDA projected average returns over variable cost per acre for producing corn and soybeans. *The projections show returns over variable cost that are \$90 to \$160 per acre larger for corn than for soybeans.* Variable costs are the costs that would not be incurred if the crop was not planted and harvested. *Consider a modest-sized Midwest cash grain farm with 1,800 crop acres and a 50/50 corn/soybean rotation in the past. Income over variable costs for this farm could be increased by \$81,000 to \$144,000 annually by shifting the entire soybean half of the cropland to corn. Many Midwest crop farms are substantially larger than this. If the numbers are correct, rational farmers would be expected to shift much more of their land out of soybeans and into corn than the projections indicate.*

Figure 5 shows USDA's projected U.S. marketing year average farm prices for corn and soybeans to 2010-2011. Corn prices are projected to reach a marketing year average peak of \$3.75 in 2009-10, with soybean prices peaking at \$7.30 in the same year. A key question is whether \$3.75 corn prices will stop the ethanol expansion. At this writing, Iowa ethanol processors are bidding modestly over \$4 per bushel for corn for summer delivery and new plants are still being built.

Figure 6 shows USDA's projected yields along with historical yields since 1965. Note that corn yields are projected to continue increasing more rapidly than soybeans. The U.S. average corn yield is projected to reach 170.2 bushels per acre in 2017. That would be up 14% from last year. The U.S. soybean yield for 2017 is projected to reach 45.6 bushels per acre – an increase of 6.8% from 2006. With the rapid expansion of ethanol, much more corn will need to come from a continuous corn cropping pattern. Agronomic research indicates a yield reduction should be expected from that cropping pattern when compared with a corn/soybean

rotation. With cropland shifting from soybeans to corn in the best producing areas, a higher percentage of the soybean crop is likely to be grown in drier areas of the Great Plains and on former CRP land, where yield potential is less than in the heart of the Midwest.

Another key issue for the grain markets in the years ahead is “How much corn and soybean yield variability might occur in case of widespread droughts such as in the 1980s or other years of low yields such as the 1993 flood year. With carryover stocks projected to be at low levels, both corn and soybean prices could be explosive in case of U.S. average yields dropping 7 to 10 percent below the long-run trend. Table 3 shows Illinois crop reporting district corn yields that resulted from its 2005 drought.

Figure 4. USDA Feb. 2007 Long-term Projections, Projected Corn & Soybean Returns Over Variable Cost

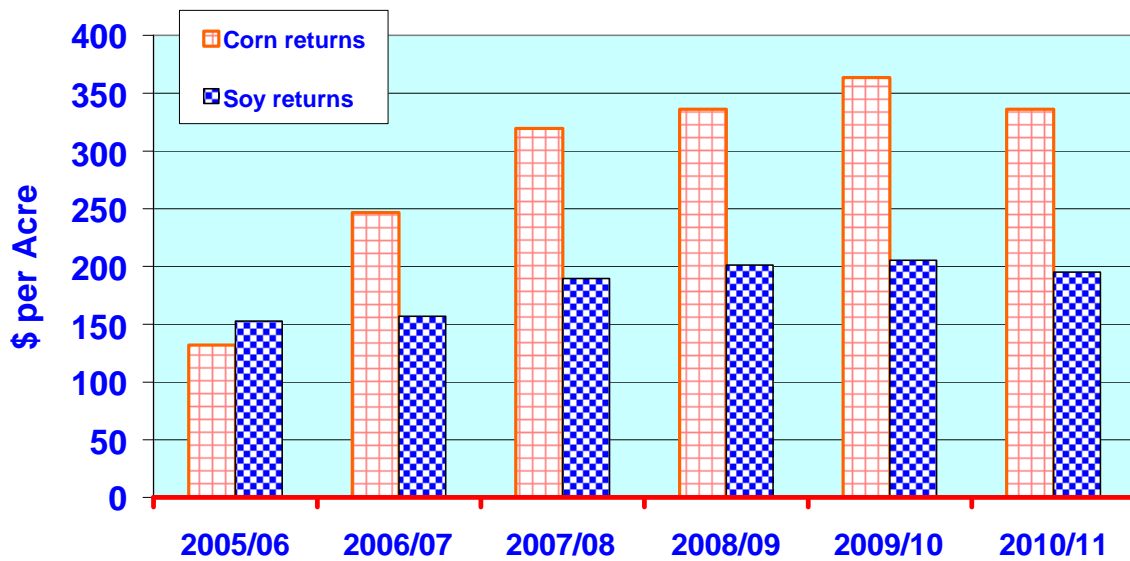


Figure 5. USDA Feb. 2007 Long-term Projections, Projected Corn & Soybean Prices

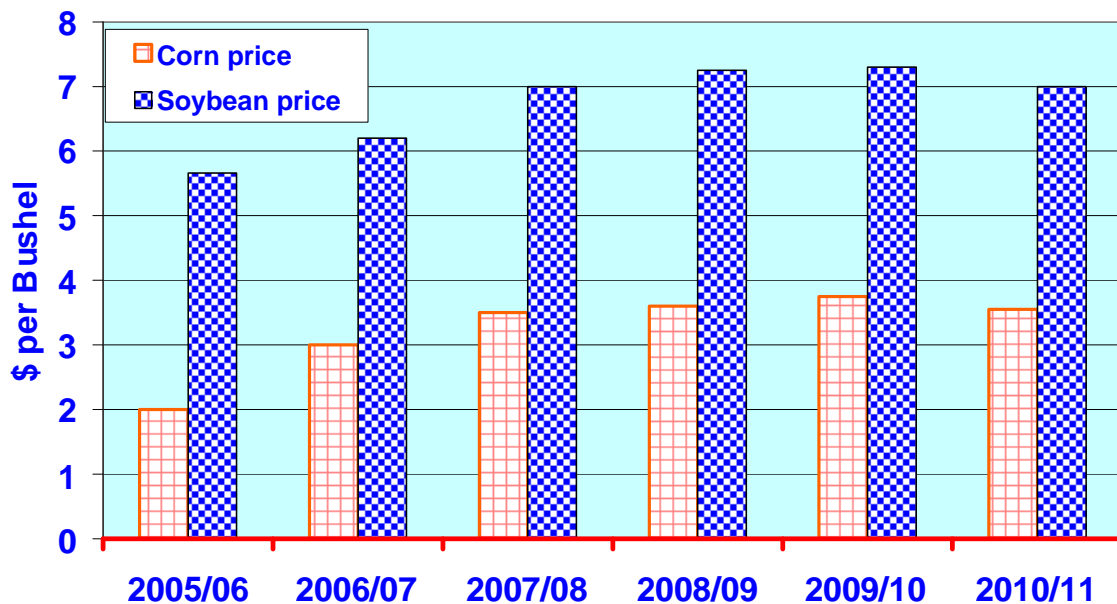
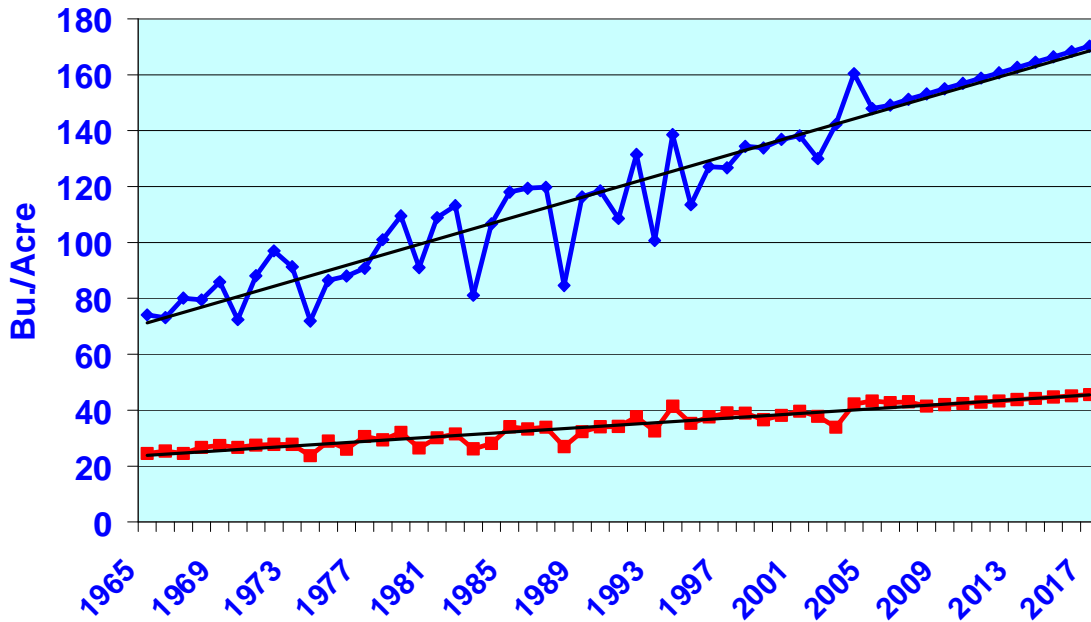


Figure 6. U.S. Corn & Soybean Historical Yields & USDA 2007 Projections to 2017



**Table 3. Illinois Corn Yields
Drought Tolerant?**

Crop Reporting Distr.	<u>2004</u>	<u>2005</u>	<u>% chg.</u>
• NW	184	140	-24
• NE	174	129	-26
• WEST	192	141	-27
• E.SE.	175	139	-21
• SW	158	133	-16
• SE	158	130	-18

Robert Wisner