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2007 U.S CORN PRODUCTION RISKS: WHAT DOES HISTORY TEACH US?

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INTRODUCTION

From May to October each year, the corn market typically finds direction from the prospective size of the U.S. corn crop. Expectation about crop size starts with the USDA's March *Prospective Plantings* report, changes with the USDA weekly reports of planting progress and crop conditions and the June *Acreage* report, and culminates with the USDA monthly production forecasts beginning in August. Corn prices are especially sensitive to the prospective size of the U.S. crop in years when stocks are relatively low and/or in years of robust demand for corn. During those periods, a substantial shortfall in production would be very disruptive to the corn market, require significant adjustments by end users, and have the potential to increase food prices. Instances of substantial shortfalls in the size of the U.S. crop when stocks were low and demand was strong have been rare (1974 and 1995), but years with the potential for such an occurrence have been more numerous. The current year is one of those years. Market participants are highly sensitive to prospective crop size and corn prices have been quite volatile early in the 2007 production cycle. It may be very helpful, then, to provide an early assessment of potential U. S. corn production in 2007 and the likely impact on corn prices and the implications for market participants and policy makers.

SETTING

The current U.S. corn market is generally characterized by four factors: 1) rapidly expanding consumption due primarily to increasing quantities of corn used for ethanol production, 2) declining inventories, 3) high prices, and 4) reported intentions to increase planted acreage.

The USDA estimates that corn used for ethanol production totaled 1.323 billion bushels in the 2004-05 marketing year and 1.603 billion bushels in the 2005-06 marketing year. Use is projected at 2.15 billion bushels during the current marketing year. The Renewable Fuels Association reported that as of May 8, 2007, 118 bio-refineries were in operation with annual production capacity of 6.1 billion gallons of ethanol. In addition, eight existing plants were expanding capacity and 79 plants were under construction. Those additions were estimated to have annual production capacity of 6.4 billion gallons. The USDA's World Agricultural Outlook Board (WAOB) forecasts that 3.4 billion bushels of corn will be used for ethanol production in the 2007-08 marketing year. In the very near future, annual ethanol production capacity will exceed 12.5 billion gallons. If corn remains the predominant feed stock for ethanol production, nearly 4.5 billion bushels could be used annually (assuming a conversion ratio of 2.8 gallons of ethanol per bushel of corn) beginning late in the 2007-08 or early in the 2008-09 marketing year.

Year-ending stocks of U.S. corn reached a 17-year high of 2.114 billion bushels on September 1, 2005, but stocks were at 1.967 billion bushels on September 1, 2006, and the USDA projects stocks on September 1, 2007 to be only 937 million bushels. Consumption during the 2006-07 marketing year is expected to be a record 11.575 billion bushels, 1.04 billion more than produced in 2006. As a result of prospects of declining inventories and the need for U.S. producers to plant more corn in 2007, corn prices moved sharply higher beginning in September 2006. July 2007 corn futures increased from about $2.70 in September 2006 to a high of $4.60 in February 2007. U.S. producers responded to the high prices, reporting intentions to plant 90.454 million acres of corn in 2007, 12.1 million more than planted in 2006. Prices moved lower following the report of those intentions, but December 2007 futures remained near $3.70 in mid-May, at the extreme high end of the historical range of prices for this time of year.

If all of the intended corn acreage is planted, acreage not harvested for grain is near a normal level, and the U.S. average yield is near a trend value, the 2007 corn crop would be near 12.29 billion bushels. Such a crop would be 16.7 percent larger than the 2006 crop and 4.1 percent larger than the record crop of 2004. Even such a large crop, however, would not be large enough to accommodate the current level of domestic feed use (5.85 billion bushels), exports (2.2 billion bushels), processing uses (3.525 billion bushels), and an expected 1.25 billion bushel increase in ethanol use of corn during the 2007-08 marketing year. With slow planting progress early in the season, there was some concern that not all of the intended acreage would get planted and/or the U.S. average yield could be below trend in 2007. However, planting was progressing at a normal pace by May 13. Any substantial shortfall in production would not only result in a further reduction in domestic inventories, but could require some reduction in the anticipated level of consumption. Prices would have to be high enough to force such a reduction. The concern is that supplies could be small enough to require large reductions in use, very high corn prices, and escalating food prices. At the extreme, shortfalls could be large enough to bring government intervention into the allocation process.

ESTIMATING PRODUCTION RISK

Production risk is defined here as the potential difference between actual production and expected production. The methodology used here to quantify that risk is to calculate the probability distribution of the historical differences between actual production and expected production in the spring of the year. The period 1970 through 2006 is used to calculate that historical distribution of the differences. Actual production is the USDA estimate of crop size in the January *Crop Production* report released following harvest. For the purposes of this analysis, expected production in the spring of the year is calculated in a three step process. First, expected planted acreage is the acreage intended to be planted as reported by the USDA in the March *Prospective Plantings* report. Second, expected harvested acreage for grain is calculated as acreage intended to be planted minus the 5-year moving average difference between actual planted acreage and acreage harvested for grain. Third, expected harvested acreage is multiplied by the U.S. average trend yield. The trend yield is calculated as the linear trend of actual yields from 1960 through the year previous to the current year. For example, the trend yield for 1970 is calculated from actual average yields from 1960 through 1969. For 1971, the trend is calculated from actual yields from 1960 through 1970, and so on.

Some might argue that a higher trend yield estimate should be used for more recent years since yields have increased at a faster rate since 1996. The argument is that

increases in the U.S. average yield has been accelerated by more rapid development and adoption of new technology, particularly in the form of improved seed genetics. However, careful examination of state average yield data for Illinois, Indiana, and Iowa since 1996 suggests that the increasing trend value has resulted from generally more favorable growing season weather conditions in the Corn Belt rather than an increased rate of technology development or adoption. Technology may currently be developing and adopted at a faster rate than in the past and could eventually result in an accelerated trend increase in corn yields, but the effects were not yet observed through 2006. For now, the long-term linear trend is likely still the best forecast of expected yield prior to the growing season and is used in this analysis.

An alternative methodology for determining expected production is to simply use the WAOB production forecast made in May of each year. While the WAOB procedure for calculating the May forecast (expected production) has changed some over time, the general procedure is similar to that used here. The WAOB production forecast is based on planting intentions, an expectation for harvested acreage based on the historical relationship between planted and harvested acreage, and an expected yield based on trend. That forecast has been made each year since 1975. The differences between actual and expected production from 1975 through 2006 using the WAOB forecast are highly correlated (+0.96) to the differences using the methodology in this paper. The distribution of differences between actual and expected production, in 10 percent increments, is also very similar for the two methodologies. The advantages of using the methodology outlined for this paper are: 1) the calculation of expected production can be made sooner, with the release of the *Prospective Plantings* report, and 2) the methodology has had a smaller forecast error than the WAOB methodology.

The calculation of annual differences between actual and expected U.S. corn production from 1970 through 2006 is shown in the data appendix and a plot of the differences over time is presented in Figure 1. The frequency distribution of those differences, in increments of 10 percentage points, is depicted in Figure 2. Since 1970 (37 years), actual U.S. corn production relative to expected production in the spring has been as follows:

10 to 20 percent larger----5 years-----13.5%
0 to 10 percent larger--17 years- ----45.9%
0 to 10 percent smaller-- 8 years-----21.6%
10 to 20 percent smaller-- 3 years-------8.1%
20 to 30 percent smaller---1 year--------2.7%
30 to 40 percent smaller---1 year--------2.7%
More than 40 percent smaller-2 years--5.4%

Actual production was larger than expected production in 22 years and smaller in 15 years. Actual production was within 10 percent of expected production in 25 of the 37 years (67.5 percent). The distribution of the differences, however, is skewed to the left, meaning that there were more extreme shortfalls in production than there were extreme positive differences in actual and expected production. The annual percentage differences between actual and expected production, ordered from low to high, are shown in Table 1. Production was more than 40 percent below expected production in 1974 and in 1988. The largest positive difference, 16.7 percent, was in 1979.

On average, most of the historical difference between actual and expected production was due to the difference between actual and expected (trend) yield rather than the difference between actual and expected harvested acreage. The relationship between the difference in expected production and the difference in expected yield is shown in Figures 3. While there were a few exceptions, the two differences have been highly correlated. As a result, probability distributions are similar for the

two differences and the current analysis could be conducted with either. We have used the distribution of production differences in order to make use of all information.

EXPECTED PRODUCTION DISTRIBUTION FOR 2007

For 2007, expected U.S. corn production is calculated as:

(90.454 million acres planted minus 7.772 million acres not harvested for grain) X 148.6 bushels per acre = 12.29 billion bushels.

This calculation is smaller than the expected production forecast of 12.465 billion bushels used by the USDA's World Agricultural Outlook Board in the May 11, 2007 issue of *World Agricultural Supply and Demand Estimates.* That forecast used a trend yield calculation of 150.3 bushels, slightly higher than the trend calculation used here.

Using 12.29 billion bushels as the expected production in 2007, a 10 percent difference from actual production is 1.229 billion bushels. Actual crop size in increments of 10 percent difference from expected production would be:

+20 percent =	14.75 billion bushels
+10 percent =	13.52 billion bushels
-10 percent =	11.06 billion bushels
-20 percent =	9.83 billion bushels
-30 percent =	8.60 billion bushels
-40 percent =	7.37 billion bushels

Since the largest positive difference between actual and expected production has been 16.7 percent, 14.34 billion bushels is used as the upper end of the production distribution for 2007. Similarly, since the largest negative difference between actual and expected production has been 40.5 percent, 7.36 billion bushels is used as the lower end of the production distribution.

The probability distribution of expected production for 2007, then, based strictly on the historical differences between actual and expected production is as follows:

13.52 to 14.34 billion----13.5%
12.29 to 13.52 billion—-45.9%
11.06 to 12.29 billion-----21.6%
9.83 to 11.06 billion-----8.1%
8.60 to 9.83 billion-------2.7%
7.37 to 8.60 billion-------2.7%
7.36 to 7.37 billion-------5.4%

Based on historical distributions, there is a 67.5 percent probability that the 2007 crop will be between 11.06 billion and 13.52 billion bushels, or within 10 percent of expected production. There is an 18.9 percent chance of a crop smaller than 11.06 billion bushels, which would require substantial rationing of use, and a 13.5 percent chance of a crop larger than 13.52 billion bushels, which would likely lead to a build-up of inventories during the 2007-08 marketing year.

It could be argued that a conditional probability distribution for the difference between actual and expected production in 2007 should be constructed based on information already known about 2007 yield potential. That is, based on such factors as planting progress, weather conditions to date, and the National Weather Service forecast for general summer weather conditions, one might delete some historical observations on the difference between actual and expected production, arguing that the conditions that existed in those years have already been precluded from happening in 2007, and then recalculate the probability distribution. We have chosen not to attempt to calculate such a conditional probability for two reasons. First, not enough is yet known to completely defend the deletion of any historical observations. Second, there are only two years that might be strong candidates for elimination (1988 and 1993). Production in 1988 (drought) was 40.4 percent less than expected and production in 1993 (flood) was 33.2 percent

less than expected. Deleting those two years would reduce the probability of production in 2007 falling more than 30 percent below expected production from 8.1 percent to 2.9 percent. The probability is relatively small in both cases and the difference does not substantially influence the choice of production scenarios to consider for 2007.

PRODUCTION SCENARIOS

There will be important consumption, price, and perhaps policy implications of the actual size of the 2007 U.S. corn crop. Those implications may be very different for a crop near the expected level, a crop much smaller than expected, and a crop much larger than expected. The implications of four possible scenarios are briefly examined here— a crop at the expected level (12.29 billion bushels), a crop 10 percent larger than expected (13.519 billion bushels), a crop 10 percent smaller than expected (11.061 billion bushels), and a crop 20 percent smaller than expected (9.832 billion bushels). The range from 10 percent above expected production to 20 percent below expected production acknowledges the higher probability of a large negative difference in actual and expected production relative to the probability of a large positive difference in actual and expected production and covers about three-quarters of the historical distribution. A scenario for a "bumper" crop that exceeds 10 percent of expected production is not developed, but the results of such a crop would include, lower prices, larger consumption, and larger year-ending stocks than projected under the scenario of a crop 10 percent larger than expected. Similarly, a scenario for a "disaster" crop that is more than 20 percent below expected production is not developed, but the implications of such a crop are discussed. For each production scenario, a 2007-08 marketing year balance sheet projecting supply, consumption by category, year-ending stocks, and marketing year average farm price is developed. The rational for the consumption and price projections are presented along with a brief discussion of the possible implications for market participants and the possible policy implications, particularly the implications of a very small crop.

CONSUMPTION AND PRICE IMPLICATIONS

Potential supply and consumption balance sheets for the 2007-08 U.S. corn marketing year for each of the four production scenarios developed in the previous section – 12.29 billion bushels, 13.519 billion bushels, 11.061 billion bushels, and 9.832 billion bushels are presented in Table 2. The consumption projections for the scenario reflecting expected crop size (12.29 billion bushels) are similar to the May, 11, 2007 projections by the USDA's WAOB.

A crop of 12.29 billion bushels would allow for a substantial increase in consumption of U.S. corn during the 2007-08 marketing year. Based on the pace of construction of processing capacity, the USDA projects a 1.25 billion bushel increase in corn used for ethanol production, to a total of 3.4 billion bushels. Other processing uses would likely be near 1.4 billion bushels, reflecting a continuation of a very slow growth rate. Corn exports will likely decline from the 2.2 billion bushels expected this year due to large competing supplies in South America. We project a 9 percent decline, to a total of 2 billion bushels. Feed and residual use of corn will also likely decline from the level of the current year as byproduct feed from the ethanol industry provides more competition. Byproduct feed from a 1.25 billion bushel increase in corn used for ethanol production would substitute for about 150 million bushels of corn feeding if 75 percent of the byproduct is used in the domestic market. Allowing for some modest increase in livestock numbers, a 100 million bushel decline in corn feeding is forecast, to a total of 5.75 billion bushels. Total use might be near 12.55 billion bushels, 975 million more

than expected use for the current year, leaving year ending stocks at only 692 million bushels, or 5.5 percent of expected use. Under that scenario, the 2007-08 marketing year average price of corn might be near $3.30. The WAOB May 11 forecasts were for consumption of 12.465 billion bushels, year-ending stocks of 947 million bushels, and a marketing year average price in a range of $3.10 to $3.70. At the close of trade on May 17, 2007 the futures market reflected an average farm price for the year ahead near $3.70.

A crop 10 percent larger than expected would likely result in lower prices, increased consumption, and larger carryover stocks. We project larger use in each category except non-ethanol processing uses (Other) of corn. A crop of 13.519 billion bushels could result in total consumption of 12.9 billion bushels, year ending stocks of 1.566 billion (12.1 percent of projected use) and a 2007-08 marketing year average price near $2.60.

A crop 10 percent smaller than expected, at 11.061 billion bushels, would force consumption of corn for all purposes to be slightly less than during the current marketing year and one billion bushels less than projected with production at the expected level. For this and the following analysis, we assume that the year-ending stocks-to-use ratio cannot be reduced below 4 percent. This assumption follows from the idea that the minimum carryover is the amount needed to keep the corn marketing "pipeline" full. It is not known with certainty how large that need is, but in the most recent year of serious rationing of use (1995-96), stocks were reduced to 5 percent of consumption. Assuming that year-ending stocks cannot be reduced below 4 percent of consumption, use would be limited to 11.55 billion bushels and year ending stocks reduced to 463 million bushels. Prices would have to be high enough to ration use of the crop. Use of corn by category would be determined by the price elasticity of demand in each category. It is likely that the demand for ethanol, as well as other processing uses of corn, is relatively price inelastic and that the demand for corn as livestock feed is relatively price elastic. That is, as prices increase, consumption of corn for processing uses would likely decline by a smaller percentage than feed use of corn. Profit margins would be reduced or eliminated in the feed sector at lower corn prices than in the processing sector. The magnitude of the price elasticity of export demand is probably between the value for the other two categories, but closer to the elasticity of feed demand than processing demand since most corn is exported for livestock feed. Use of 11.55 billion bushels would be about 8 percent less than use under the scenario with expected production. The estimates by category in the balance sheet reflect the following percentage reductions:

Feed-------down 11.5 percent
Exports----down 10 percent
Ethanol----down 3 percent
Other-------down 3 percent

While these projections by category reflect the general pattern expected, actual use by category could deviate substantially from these projections. The important point is that total consumption would be restricted to a total of only about 11.55 billion bushels.

Corn prices would have to go to levels high enough to restrict consumption to the level of available supplies. A period of very high prices, probably exceeding the high experienced in the spring of 1996, would likely occur in order to accomplish the necessary rationing and the average farm price would likely exceed $4.00. There are no historical observations on which to base the average price forecast, but an average near $4.25 is projected.

A crop 20 percent smaller than expected would magnify the need for rationing outlined under the previous scenario. A crop of 9.832 billion bushels and year ending stocks of 414 million (4 percent of

use) would allow consumption of only 10.37 billion bushels, 17.4 percent (2.18 billion bushels) less than consumption with a crop of 12.29 billion bushels. Compared to the scenario of expected production, use by category is forecast to decline as follows:

Feed-------down 22.6 percent
Exports—down 20 percent
Ethanol---down 10 percent
Other -----down 10 percent

As in the previous scenario, consumption by category could deviate substantially from these projections, but total consumption would be limited by available supplies. A period of extremely high prices would be required in order to force such a large reduction in use. To reduce corn use for ethanol production, for example, corn prices would have to be high enough so that the most inefficient plants were unable to recoup variable costs of ethanol production. With ethanol prices near $2.20 per gallon, that price could be near $6.00. The average farm price for the year would likely exceed $5.00 per bushel and is forecast at $5.25. The high prices would force a substantial reduction in livestock numbers, increasing meat supplies in the short run, but resulting in much smaller supplies after that. Meat production could eventually decline 10 to 15 percent, resulting in escalating retail meat prices. The high prices would have significant negative financial implications for livestock producers, forcing some to discontinue production entirely.

IMPLICATIONS FOR MARKET PARTICIPANTS AND POLICY MAKERS

The historical distribution of the difference between actual U.S. corn production and production expected in the spring of the year suggests that there is an 80 percent probability that the 2007 crop will be between 10 percent smaller than expected (11.061 billion bushels) and 16.7 percent larger than expected (14.466 billion bushels). Production in this range would likely have few, if any, policy implications. While a crop smaller than the expected crop of 12.29 billion bushels would require use to be less than projected, a production shortfall of 10 percent or less would likely be managed by price signals, requiring no policy intervention. Market participants would have to manage higher corn prices. Larger shortfalls in production, however, might be more problematic due to: 1) the very small level of old crop stocks that will be on hand at the beginning of the 2007-08 marketing year, and 2) the very robust demand for corn expected from the ethanol sector. The historical pattern of the difference between actual and expected production suggests that the odds of a shortfall of 10 percent or more is not trivial. Shortfalls exceeding 10 percent occurred, on average, about once in five years since 1970. Shortfalls exceeding 20 percent of expected production would require significant rationing and very high prices, with potentially very negative implications for some users of corn. Shortfalls of that magnitude have occurred, on average, about once in 12 years since 1970.

An important public policy question, then, is, with an extreme shortfall in production, would the market be allowed to allocate the crop among users or would such a shortfall in corn production induce government intervention? The norm from past experience with rationing has been to allow the market to allocate the crop, with the largest adjustments taking place in the livestock sector. However, there has been one exception. Short supplies and high soybean prices in 1973 resulted in an embargo on U.S. exports. Such an embargo on corn exports might be considered following a large shortfall in production, but the potential negative impact on longer-term trade relationships would make an embargo a very unpopular alternative. The financial implications of high corn prices for livestock producers might evoke intervention in the allocation of supplies between domestic livestock producers and processors of corn.

At this stage of the 2007 growing season, there is certainly no indication of a substantial shortfall in U.S. corn production, nor are we predicting such an outcome. Discussion of market and policy implications of such a shortfall, then, may appear to be premature, unrealistic, or even alarmist. It is important to recognize, however, that the worst-case scenarios for corn production in 2007 (shortfalls exceeding 20 percent) were not analyzed. History indicates that shortfalls in production as large as 30 or 40 percent, though unlikely, are possible. The focus of the analysis here is not to forecast crop size, but to draw attention to the implications of crop size. Market participants and policy makers should be particularly aware of the consequences of a large shortfall in 2007 corn production. Market participants can develop plans to manage a shortfall in production and policy makers can consider appropriate responses to a significant shortfall. Developing policy responses in advance of the problem would allow input from market participants, provide for fair and reasoned policies, and allow for smoother implementation of the policies if needed. Even if a shortfall is avoided in 2007, the risk will continue for at least the next couple of years given the current low level of inventories, the current incentives for expansion of ethanol production, the lack of alternative feed stocks for ethanol production, and the need to continue to increase U.S corn acreage.

The current situation in the corn market may have other policy implications. Corn prices are expected to remain generally high and extremely volatile for an extended period of time. The combination of a low level of stocks and an increasing portion of corn consumption occurring in the ethanol sector, where demand is relatively price insensitive, suggests that prices will be extremely responsive to small changes in U.S. and world production prospects or changes in demand for corn in any other sector. Prices of other commodities will also be influenced as the market attempts to allocate production resources, primarily land, among the various crops. Provisions of the new "farm bill" are expected to reflect this changing environment of high and volatile crop prices. In addition, careful consideration of potential market impact should be given to policies encouraging additional bio-fuels production. Other considerations might include provision for a corn reserve in years of large production to provide a buffer for a future shortfall in production.

Table 1. Percentage Difference Between Actual U.S. Corn Production and Expected Production in the Spring, 1970-71 through 2006-07 Marketing Years

1974-75	-40.5
1988-89	-40.4
1993-94	-33.2
1983-84	-28.0
1970-71	-19.9
1995-96	-14.8
2002-03	-10.6
1980-81	-9.2
1991-92	-8.9
1976-77	-6.3
1977-78	-4.6
1997-98	-2.9
1975-76	-2.3
1973-74	-2.2
1984-85	-0.2
1999-00	0.1
2001-02	0.4
1989-90	0.6
1996-97	1.1
1990-91	1.4
2003-04	1.7
2006-07	2.1
1998-99	2.4
2000-01	4.2
2005-06	4.2
1982-83	4.9
1987-88	5.0
1986-87	6.1
1971-72	6.9
1972-73	7.0
1981-82	8.2
1992-93	10.0
1978-79	10.8
1985-86	11.5
1994-95	14.2
2004-05	14.8
1979-80	16.7

Table 2. Potential Supply and Consumption Balance Sheets for the 2007-08 U.S. Corn Marketing Year

	2006-07 USDA WASDE	2007-08: Expected Production	2007-08: 10% Larger Production	2007-08: 10% Smaller Production	2007-08: 20% Smaller Production
Supply (million bushels)					
Beginning Stocks	1,967	937	937	937	937
Imports	10	15	10	15	15
Production	10,535	12,290	13,519	11,061	9,832
TOTAL	12,512	13,242	14,466	12,013	10,784
Consumption (million bushels)					
Feed and Residual	5,850	5,750	5,850	5,090	4,450
Exports	2,200	2,000	2,150	1,800	1,600
Ethanol	2,150	3,400	3,500	3,300	3,060
Other	1,375	1,400	1,400	1,360	1,260
TOTAL	11,575	12,550	12,900	11,550	10,370
Ending Stocks	937	692	1,566	463	414
Ending Stocks/Use	8.1%	5.5%	12.1%	4.0%	4.0%
Average Farm Price	$3.10	$3.30	$2.60	$4.25	$5.25

Note: USDA WASDE estimates for 2006-07 were released on May 11, 2007.

Figure 1. Percentage Difference Between Actual U.S. Corn Production and Expected Production in the Spring, 1970-71 through 2006-07 Marketing Years

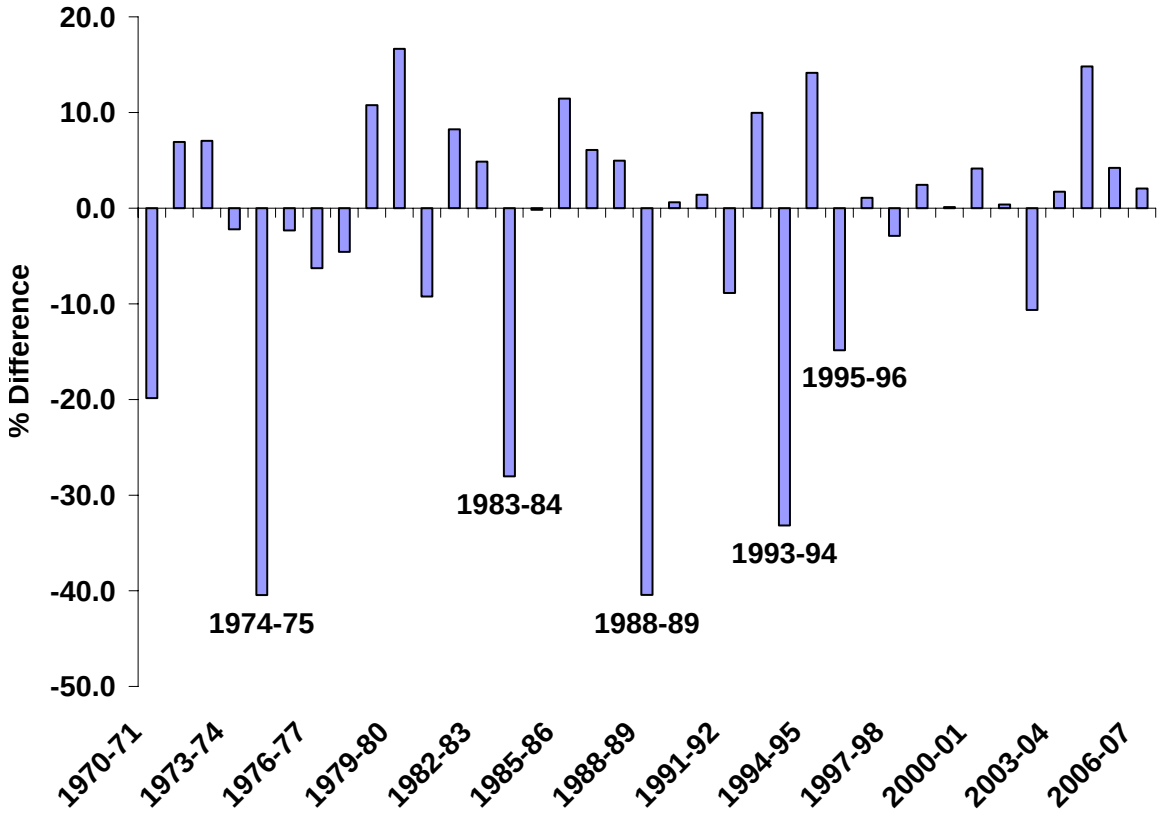


Figure 2. Frequency Distribution of the Percentage Difference Between Actual U.S. Corn Production and Expected Production in the Spring, 1970-71 through 2006-07 Marketing Years

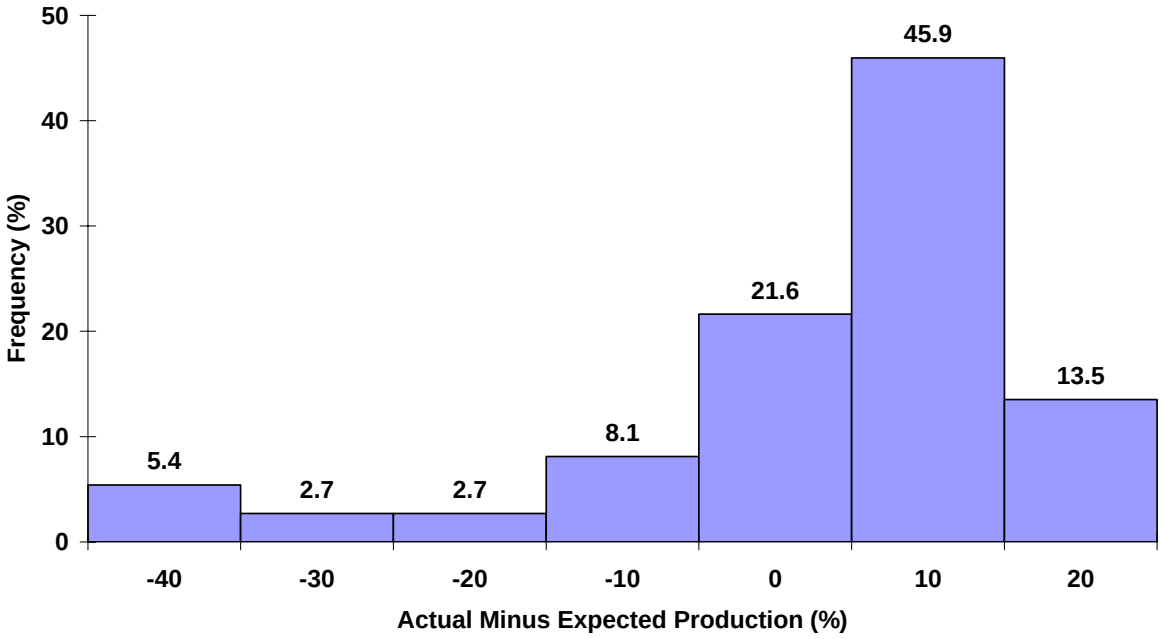
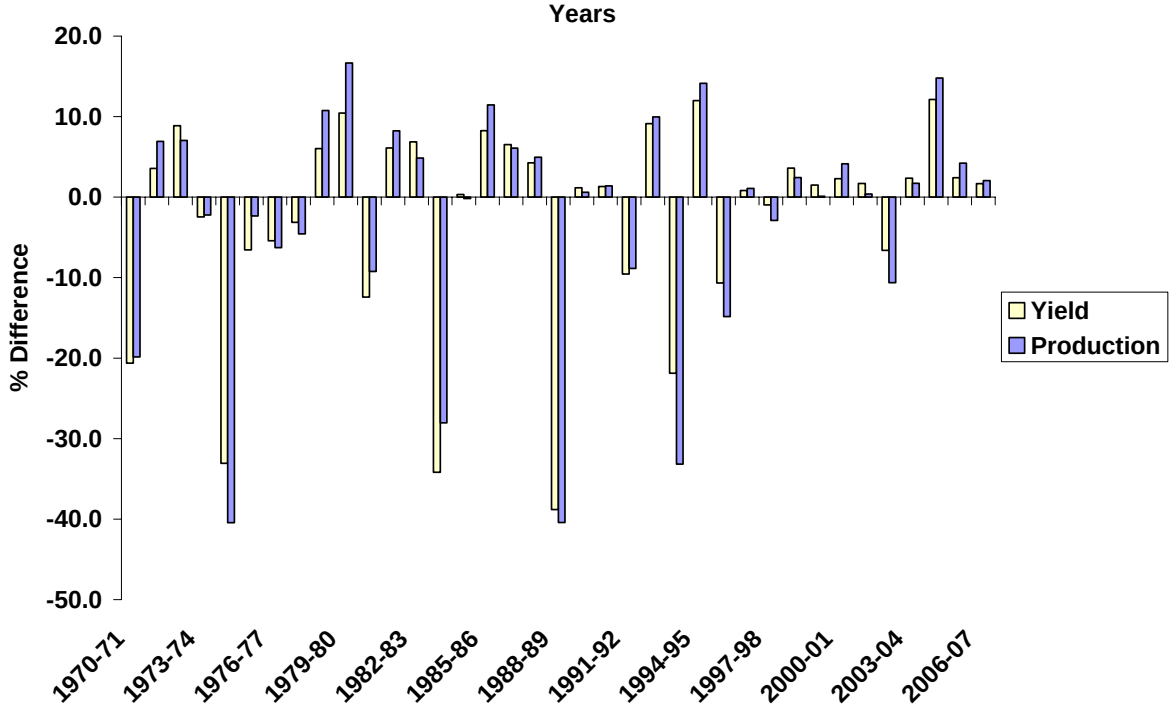


Figure 3. Percentage Difference Between Actual U.S. Corn Production/Yield and Expected Production/Yield in the Spring, 1970-71 through 2006-07 Marketing Years



Data Appendix

	Planted Acreage			Actual Acreage				Expected Values					Actual - Expected Production	
Year	March Intentions	June Estimate	Actual	Harvested for Grain	Not Harvested for Grain	Actual Yield	Actual Production	Planted Acreage	Acreage Not Harvested for Grain	Acreage Harvested for Grain	Yield	Production	Billion Bushels	%
1960/61			81.425	71,422	10.003	54.7	3.907							
1961/62			65.919	57,634	8.285	62.4	3.598							
1962/63			65.017	55,726	9.291	64.7	3.606							
1963/64			68.771	59,227	9.544	67.9	4.019							
1964/65			65.823	55,369	10.454	62.9	3.484							
1965/66			65.171	55,392	9.779	74.1	4.103							
1966/67			66.347	57,002	9.345	73.1	4.168							
1967/68			71.156	60,694	10.462	80.1	4.860							
1968/69			65.126	55,980	9.146	79.5	4.450							
1969/70			64.264	54,574	9.690	85.9	4.687							
1970/71	66.662	67.352	66.863	57,358	9.505	72.4	4.152	66.662	9.684	56.978	87.3	4.976	-0.824	-19.9
1971/72	71.480	74.651	74.179	64,123	10.056	88.1	5.646	71.480	9.630	61.850	85.0	5.255	0.391	6.9
1972/73	68.460	66.846	67.126	57,513	9.613	97.0	5.580	68.460	9.772	58.688	88.4	5.187	0.393	7.0
1973/74	71.571	72.452	72.253	62,143	10.110	91.3	5.671	71.571	9.602	61.969	93.5	5.796	-0.125	-2.2
1974/75	78.803	77.743	77.935	65,405	12.530	71.9	4.701	78.803	9.795	69.008	95.7	6.603	-1.902	-40.5
1975/76	75.290	77.527	78.719	67,625	11.094	86.4	5.841	75.290	10.363	64.927	92.1	5.977	-0.136	-2.3
1976/77	82.727	84.092	84.588	71,506	13.082	88.0	6.289	82.727	10.681	72.046	92.8	6.683	-0.394	-6.3
1977/78	83.923	82.735	84.328	71,614	12.714	90.8	6.505	83.923	11.286	72.637	93.6	6.802	-0.297	-4.6
1978/79	80.237	78.717	81.675	71,930	9.745	101.0	7.268	80.237	11.906	68.331	94.9	6.486	0.782	10.8
1979/80	79.209	79.751	81.394	72,400	8.994	109.5	7.928	79.209	11.833	67.376	98.1	6.606	1.322	16.7
1980/81	82.022	83.478	84.043	72,961	11.082	91.0	6.639	82.022	11.126	70.896	102.3	7.252	-0.613	-9.2
1981/82	83.977	84.677	84.097	74,524	9.573	108.9	8.119	83.977	11.123	72.854	102.3	7.450	0.669	8.2
1982/83	84.735	82.129	81.857	72,719	9.138	113.2	8.235	84.735	10.422	74.313	105.4	7.835	0.400	4.9
1983/84	58.812	60.129	60.207	51,479	8.728	81.1	4.174	58.812	9.706	49.106	108.8	5.344	-1.170	-28.0
1984/85	81.766	79.940	80.517	71,897	8.620	106.7	7.672	81.766	9.503	72.263	106.3	7.685	-0.013	-0.2
1985/86	82.021	83.217	83.398	75,209	8.189	118.0	8.875	82.021	9.428	72.593	108.3	7.858	1.017	11.5
1986/87	78.066	76.646	76.580	68,907	7.673	119.4	8.226	78.066	8.850	69.216	111.6	7.725	0.501	6.1
1987/88	67.556	66.024	66.200	59,505	6.695	119.8	7.131	67.556	8.470	59.086	114.7	6.778	0.353	5.0
1988/89	66.926	67.519	67.717	58,250	9.467	84.6	4.929	66.926	7.981	58.945	117.4	6.922	-1.993	-40.4
1989/90	73.253	72.790	72.322	64,783	7.539	116.3	7.532	73.253	8.129	65.124	114.9	7.486	0.046	0.6
1990/91	74.804	74.574	74.166	66,952	7.214	118.5	7.934	74.804	7.913	66.891	116.9	7.822	0.112	1.4
1991/92	76.124	75.909	75.957	68,822	7.135	108.6	7.475	76.124	7.718	68.406	119.0	8.138	-0.663	-8.9
1992/93	79.007	79.335	79.311	72,077	7.234	131.5	9.477	79.007	7.610	71.397	119.5	8.532	0.945	10.0
1993/94	76.486	74.259	73.239	62,933	10.306	100.7	6.338	76.486	7.718	68.768	122.7	8.440	-2.102	-33.2
1994/95	78.625	78.767	78.921	72,514	6.407	138.6	10.051	78.625	7.886	70.739	122.0	8.628	1.423	14.2
1995/96	75.323	72.800	71.479	65,210	6.269	113.5	7.400	75.323	7.659	67.664	125.6	8.499	-1.099	-14.8
1996/97	79.920	80.355	79.229	72,644	6.585	127.1	9.233	79.920	7.470	72.450	126.1	9.133	0.100	1.1
1997/98	81.416	80.227	79.537	72,671	6.866	126.7	9.207	81.416	7.360	74.056	127.9	9.474	-0.267	-2.9
1998/99	80.781	80.798	80.165	72,589	7.576	134.4	9.759	80.781	7.287	73.494	129.6	9.521	0.238	2.4
1999/00	78.219	77.611	77.386	70,487	6.899	133.8	9.431	78.219	6.741	71.478	131.8	9.421	0.010	0.1
2000/01	77.881	79.579	79.551	72,440	7.111	136.9	9.915	77.881	6.839	71.042	133.8	9.503	0.412	4.2
2001/02	76.693	76.109	75.702	68,768	6.934	138.2	9.503	76.693	7.007	69.686	135.9	9.467	0.036	0.4
2002/03	79.047	78.847	78.894	69,330	9.564	129.3	8.968	79.047	7.077	71.970	137.9	9.922	-0.954	-10.6
2003/04	79.022	79.066	78.603	70,944	7.659	142.2	10.089	79.022	7.617	71.405	138.9	9.915	0.174	1.7
2004/05	79.004	80.968	80.929	73,631	7.298	160.4	11.807	79.004	7.633	71.371	140.9	10.058	1.749	14.8
2005/06	81.413	81.592	81.779	75,117	6.662	148.0	11.114	81.413	7.713	73.700	144.4	10.645	0.469	4.2
2006/07	78.019	79.366	78.327	70,648	7.679	149.100	10.535	78.019	7.623	70.396	146.6	10.319	0.216	2.1
2007/08	90,454							90.454	7.772	82.682	148.6	12.290		

Note: Acreage is reported as million acres, yield as bushels per acre, and production as billion bushels