

# **1996 Pricing Performance of Market Advisory Services for Corn and Soybeans**

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January 1998

AgMAS Project Research Report 1998-01

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## **DISCLAIMER**

The advisory service marketing recommendations used in this research represent the best efforts of the AgMAS Project staff to accurately and fairly interpret the information made available by each advisory program. In cases where a recommendation is vague or unclear, some judgment is exercised as to whether or not to include that particular recommendation or how to implement the recommendation. Given that some recommendations are subject to interpretation, the possibility is acknowledged that the AgMAS track record of recommendations for a given program may differ from that stated by the advisory service, or from that recorded by another subscriber. In addition, the net advisory prices presented in this report may differ substantially from those computed by an advisory service or another subscriber due to differences in simulation assumptions, particularly with respect to the geographic location of production, cash and forward contract prices, expected and actual yields, carrying charges and government programs.

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## Abstract

The purpose of this research report is to present an evaluation of advisory service pricing performance in 1996 for corn and soybeans. Specifically, the average price received by a subscriber to an advisory service is calculated for corn and soybean crops harvested in 1996. It is important to recognize that the performance results in this report address only the pricing, or return, element of risk management.

The total number of “advisory programs” evaluated is 26 for corn, and 24 for soybeans. The term “advisory program” is used because several advisory services have more than one distinct marketing program. A directory of the advisory services included in the study can be found at the **Agricultural Market Advisory Service (AgMAS) Project** website (<http://www.aces.uiuc.edu/~agmas/>).

In order to evaluate the returns to the marketing advice produced by the services, the AgMAS Project purchases a subscription to each of the services included in the study. The information is received electronically via DTN. Staff members of the AgMAS Project read the information provided by each advisory service on a daily basis.

Certain explicit assumptions are made to produce a consistent and comparable set of results across the different advisory programs. These assumptions are intended to accurately depict “real-world” marketing conditions. Several key assumptions are: 1) the marketing window for the 1996 crops is September 1, 1995 - August 31 1997, 2) cash prices and yields refer to a Central Illinois producer, and 3) all storage is assumed to occur off-farm at commercial sites.

The average net advisory price across all 26 corn programs is \$2.63 per bushel. The range of net advisory prices for corn is quite large, with a minimum of \$2.08 per bushel and a maximum of \$3.12 per bushel. The average net advisory price across all 24 soybean programs is \$7.27 per bushel. As with corn, the range of net advisory prices for soybeans is substantial, with a minimum of \$6.80 per bushel and a maximum of \$7.80 per bushel.

Of the marketing programs for corn, five achieve a net price that is within (plus or minus) 10 cents of the harvest cash price of \$2.81 per bushel. Two of the advisory programs achieve a net price more than 10 cents higher than the harvest price, while 19 programs achieve a net price that is more than 10 cents per bushel below the harvest price. For soybeans, only one of the advisory programs is within (plus or minus) 10 cents per bushel of the harvest cash price of \$6.95 per bushel. However, 21 of the 24 programs achieve a net price that is more than 10 cents per bushel above the harvest price, with only two services more than 10 cents per bushel below the harvest price.

## Introduction to the AgMAS Project

US agriculture has entered a period of increased economic uncertainty. The 1996 *Federal Agricultural Improvement and Reform Act* (FAIR) represents an especially profound change in the operating environment of agriculture. For the first time in over sixty years, the majority of producers have complete flexibility in their crop production and marketing activities. Additional changes will be caused by the full implementation of NAFTA and GATT and the growing world demand for agricultural products.

In this rapidly changing environment, risk management plays a more important role in the overall management of farm businesses. The use of private-sector advisory services to secure marketing and price risk management advice is expected to increase as producers respond to the rising demand for risk management strategies. Market advisory services already are quite popular with many producers. Surveys indicate that producers rank market advisory services highly in terms of usefulness (e.g. Patrick and Ullerich)<sup>1</sup>.

Despite their expected importance in the future and current popularity, surprisingly little is known about the risk management strategies recommended by these services and their associated performance. There is a clear need to develop an ongoing "track record" of the performance of these services. Information on the performance of advisory services will assist producers in identifying successful alternatives for marketing and price risk management.

The **Agricultural Market Advisory Service (AgMAS)** Project, initiated in the Fall of 1994, addresses the need for information on advisory services. The project is jointly directed by Dr. Darrel L. Good and Dr. Scott H. Irwin of the University of Illinois at Urbana-Champaign. Correspondence with the AgMAS Project should be directed to: Tom Jackson, AgMAS Project Manager, 434A Mumford Hall, 1301 West Gregory Drive, University of Illinois at Urbana-Champaign, Urbana, IL 61801; voice: (217)333-2792; fax: (217)333-5538; email: tejackso@uiuc.edu. The AgMAS project also has a website that can be found at the following address: <http://www.aces.uiuc.edu/~agmas/>.

Funding for the AgMAS project is provided by the following organizations: American Farm Bureau Foundation for Agriculture; Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture; Economic Research Service, U.S. Department of Agriculture; Ohio Soybean Council; and the Risk Management Agency, U.S. Department of Agriculture.

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<sup>1</sup> Patrick, G.F. and S. Ullerich. "Information Sources and Risk Attitudes of Large Scale Farmers, Farm Managers, and Agricultural Bankers." *Agribusiness*. 12(1996):461-471.

## **Purpose of Report**

The primary purpose of this research report is to present an evaluation of advisory service pricing performance in 1996 for corn and soybeans. Specifically, the average price received by a subscriber to an advisory service is calculated for corn and soybean crops harvested in 1996. The marketing window for the 1996 crops is September 1, 1995 - August 31, 1997. Another purpose of this report is to compare the pricing performance results for the 1996 corn and soybean crops with previously released results for the 1995 crop year.

It is important to recognize that the performance results in this report address the pricing, or return, element of risk management. While certainly useful, these results do not address the issue of risk. Two advisory services with the same net price received may expose producers to quite different risks through the marketing period. Research is currently underway at the AgMAS project to quantify the risk profiles of the different services. A comparison of return and risk will allow a more complete picture of the risk management performance of agricultural market advisory services.

Another important point to consider is that the pricing results are available for only two marketing periods. *It is inappropriate to infer too much information from two crop years' results.* A useful analogy is university yield trials for crop seed. In evaluating the results of crop yield trials, while the results of the most recent year may be of particular interest, firm conclusions about the relative merits of one type of seed versus another can only be drawn after several years of results are available. The same is true for market advisory services.

This report has been reviewed by the AgMAS Review Panel, which provides independent, peer-review of AgMAS Project research. The members of this panel are: Henry Bahn, National Program Leader with the Cooperative State Research, Education, and Extension Service, US Department of Agriculture; Frank Buerskens, independent agribusiness consultant in Bloomington, Illinois; Renny Ehler, farmer in Champaign County, Illinois; Chris Hurt, Professor in the Department of Agricultural Economics at Purdue University; Terry Kastens, Assistant Professor in the Department of Agricultural Economics at Kansas State University and farmer in Rawlins County, Kansas; and Robert Wisner, University Professor in the Department of Economics at Iowa State University.

The next section of the report describes the procedures used to collect the data on market advisory service recommendations. The following section describes the methods and assumptions used to calculate the returns to marketing advice. The third section of the report presents 1996 pricing results for corn and soybeans. The final section presents a summary of the combined results for both the 1995 and 1996 crop years.

## Data Collection

The market advisory services currently included in the study are those available from Data Transmission Network (DTN), via their Ag Daily, DTNstant, and/or DTN FarmDayta services. Not all of the available "premium" services offered by DTN are included in the study. Only those services judged to contain specific marketing advice for agricultural producers are included. The total number of "advisory programs" evaluated for the 1996/97 crop marketing year is 26 for corn and 24 for soybeans, compared with 25 programs each for corn and soybeans in 1995, the first year for which results were calculated.<sup>2</sup> The term "advisory program" is used because several advisory services have more than one distinct marketing program. Agri-Edge, Brock Associates, Pro Farmer, and Stewart-Peterson Advisory Services each have two distinct marketing programs, and Agri-Visor has four distinct marketing programs. Allendale and Ag Line by Doane both provide two distinct programs for corn but only one for soybeans. A directory of the advisory services included in the study can be found at the AgMAS website (<http://www.aces.uiuc.edu/~agmas/>).

In order to evaluate the returns to the marketing advice provided by the services, the first step is to collect the daily recommendations of the services. The AgMAS Project purchases a subscription to each of the services included in this study, and the information is received via DTN. Staff members of the AgMAS Project read the information provided by each advisory service on a daily basis. For the services that provide two daily updates, typically in the morning and at noon, information is read in the morning and afternoon. In this way, the actions of a producer-subscriber are simulated in "real-time."

The recommendations of each advisory service are recorded separately. As noted above, some advisory services offer two or more distinct programs. This typically takes the form of one set of advice for marketers who are willing to use futures and options (although futures and options are not always used), and a separate set of advice for producers who only wish to make cash sales.<sup>3</sup> In this situation, both strategies are recorded and treated as distinct strategies to be evaluated.<sup>4</sup>

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<sup>2</sup> Progressive Ag and Ag Alert for Ontario are included in the study for the 1996 marketing year, but were not included in 1995. Grain Field Report, North American Ag, and Prosperous Farmer were in the study for the 1995 marketing year, but are not included for 1996 because their recommendations are no longer deemed to be "specific" enough to be evaluated. Allendale futures & options and Ag Line by Doane hedge are new programs that were introduced during the 1996 marketing year for corn only.

<sup>3</sup> Some of the programs that are depicted as "cash-only" did in fact have some futures-related activity, due to the use of hedge-to-arrive contracts, basis contracts, and some use of options.

<sup>4</sup> There are a few instances where a service clearly differentiates strategies based on the availability of on-farm versus off-farm (commercial) storage. In these instances, recorded recommendations reflect the off-farm storage strategy. Otherwise, services do not differentiate strategies according to the availability of on-farm storage.

When a recommendation is made regarding the marketing of corn or soybeans, the recommendation is recorded. In recording recommendations, specific attention is paid to which year's crop is being sold, (e.g., 1996 crop), the amount of the commodity to be sold, which futures or options contract is to be used (where applicable), and any price targets that are mentioned (e.g., sell cash corn when March 1997 futures reach \$3.00). When price targets are given and not immediately filled, such as a stop order in the futures market, the recommendation is noted until either the order is filled or is canceled.

Several procedures are used to check the recorded recommendations for accuracy and completeness. Whenever possible, recorded recommendations are cross-checked against later status reports provided by the relevant advisory service. Also, at the completion of the marketing period, it is confirmed whether cash sales total exactly 100%, all futures positions are offset, and all options positions are offset or expire worthless.

The final set of recommendations attributed to each advisory program represents the best efforts of the AgMAS Project staff to accurately and fairly interpret the information made available by each advisory service via DTN. In cases where a recommendation is considered vague or unclear, some judgment is exercised as to whether or not to include that particular recommendation. This occurs most often when a service suggests "a producer might consider" a position, or when minimal guidance is given as to the quantity to be bought or sold. Given that some recommendations are subject to interpretation, the possibility is acknowledged that the AgMAS track record of recommendations for a given program may differ slightly from that stated by the advisory service, or from that recorded by another subscriber.

### **Calculating the Returns to Marketing Advice**

At the end of the marketing period, all of the (filled) recommendations are aligned in chronological order. The advice for a given marketing year is considered to be complete for each advisory program when cumulative cash sales of the commodity reach 100%, all open futures positions covering the crop are offset, all open option positions covering the crop are either offset or expired, and the advisory program discontinues giving advice for that crop year, such as re-ownership via futures or call options. The returns to each recommendation are then calculated in order to arrive at a weighted average net price that would be received by a producer who precisely follows the marketing advice (as recorded by the AgMAS Project).

In order to produce a consistent and comparable set of results across the different advisory services, certain explicit assumptions are made. These assumptions are intended to accurately depict "real-world" marketing conditions.



## *Marketing Window*

A two-year marketing window, spanning September 1, 1995 through August 31, 1997, is used in the analysis. The beginning date is selected because advisory services in the sample first began to make marketing recommendations for the 1996 crop during September 1995. The ending date is selected to be consistent with the ending date for corn and soybean marketing years as defined by the US Department of Agriculture (USDA). There are a few exceptions to the marketing window definition. Three advisory programs had relatively small amounts (10% or less) of cash corn or soybeans unsold as of August 31, 1997. One marketing program also began pre-harvest hedges prior to September 1, 1995. In these cases, the actual sales recommendations are recorded.

## *Prices*

The cash price assigned to each cash sale recommendation is the Central Illinois closing, or overnight, bid. The Central Illinois price is the mid-point of the range of bids by elevators in a 25-county area in central and east central Illinois. The bids are collected and reported by the Illinois Department of Agriculture.

The Central Illinois market also is used for forward contract transactions. Cash forward bids reported by the Illinois Department of Ag. Market News are recorded only for each Thursday. For the purposes of this study, we assume that the cash-forward basis with respect to the Chicago Board of Trade (CBOT) December 1996 futures settlement price for corn, and the CBOT November 1996 futures settlement price for soybeans remains the same until the next Thursday. Therefore, the price assigned to forward contract recommendations for a particular day prior to October 1 is the CBOT December corn settlement price or November soybean settlement price for that day minus the reported basis for that day or the previous Thursday. It is assumed that all forward-contracted grain is delivered at harvest.

It should be noted that the relative results of the analysis are likely to be similar if another location is used. The calculated returns to all the trading programs (as well as the benchmark prices) would most likely “shift” due to basis differentials. However, the results may differ somewhat for areas outside of Central Illinois.

The fill prices for futures and options transactions generally are the prices reported by the services. In cases where a service did not report a specific fill price, the settlement price for the day is used. This methodology does not account for liquidity costs in executing futures and options transactions.<sup>5</sup>

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<sup>5</sup> Liquidity costs reflect the fact that non-floor traders must buy at the ask price and sell at the bid price. The difference between the bid and ask prices, termed the bid-ask spread, is the return earned by floor traders for “making the market.”

### ***Quantity Sold***

Since most of the advisory program recommendations are given in terms of the proportion of total production (e.g., “sell 5% of 1996 crop today”), some assumption must be made about the amount of production to be marketed. For the purposes of this study, if the per-acre yield is assumed to be 100 bushels, then a recommendation to sell 5% of the corn crop translates into selling 5 bushels. When all of the advice for the marketing year has been carried out, the final per-bushel selling price is the average price for each transaction weighted by the amount marketed in each transaction.

The above procedure implicitly assumes that the “lumpiness” of futures and/or options contracts is not an issue. Lumpiness is caused by the fact that futures contracts are for specific amounts, such as 5,000 bushels per CBOT corn futures contract. For large-scale producers, it is unlikely that this assumption adversely affects the accuracy of the results. This may not be the case for small- or intermediate-scale producers who are less able to sell in 5,000 bushel increments.

### ***Expected Yield***

When making hedging or forward contracting decisions prior to harvest, the actual yield is unknown. Hence, an assumption regarding the amount of expected production per acre is necessary to accurately reflect the returns to marketing advice. Prior to harvest, the best estimate of the current year’s expected yield is a function of yield in previous years. In this study, the assumed yield prior to harvest is the calculated trend yield, while the actual reported yield is used from the harvest period forward.

In Central Illinois, the expected yield for corn is calculated to be 138 bushels per acre (bpa). Therefore, recommendations regarding the marketing quantity made prior to October 1, 1996, are based on yields of 138 bpa. For example, a recommendation to forward contract 20% of expected 1996 production translates into a recommendation to contract 27.6 bpa (20% of 138). The actual reported corn yield in Central Illinois in 1996 is 155 bpa. The same approach is used for soybean evaluations. The calculated trend yield for Central Illinois in 1996 is 46 bpa, while the actual yield in 1996 is 45.5 bpa.

The expected yield is based upon a linear regression trend model of actual yields from 1972 through 1995 for Central Illinois. The calculation of the pre-harvest expected yield in this report differs from the calculation used for the 1995 pricing results (AgMAS Publication 1997-01). In the previous report, a simple average of the yields for the previous 10 years was used. Previous research suggests a regression trend model produces more accurate yield forecasts.<sup>6</sup> In addition to using the trend yield estimates to calculate

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<sup>6</sup> Fackler, P.L., D.L. Young, and G.A. Carlson. "Estimates of Trend and Variability Patterns in U.S. Crop Yields," in *Quantifying Long Run Agricultural Risks and Evaluating Farmers' Responses to Risk*, Proceedings of a seminar sponsored by the Southern Regional Project S-252, Jekyll Island, Georgia, March 1993.

the net advisory prices for the 1996 crop year, the 1995 pricing results also were re-calculated using the regression model trend yield. For 1995, the regression trend yield is calculated to be 140 bpa for corn and 46 bpa for soybeans.

It is assumed that by October 1, 1996, when approximately 10% of the corn in Illinois had been harvested, producers had a reasonable idea of their actual realized yield. For recommendations made after October 1, recommendations are applied on the basis of the actual yield of 155 bpa. The expected soybean yield also is changed on October 1.

The issue of changing yield expectations typically is not dealt with in the recommendations of the advisory programs. For the purpose of this study, the actual harvested yield must exactly equal total cash sales of the crop at the end of the marketing time frame. Hence, an adjustment in yield assumptions from expected to actual levels must be applied to cash transactions at some point in time. In this analysis, an adjustment is made in the amount of the first cash sale made after October 1. For example, if a service advises forward contracting 50% of the corn crop prior to October 1, this translates into sales of 69 bpa. However, when the actual yield is applied to the analysis, sales-to-date of 69 bpa imply that 44.5% of the crop has already been contracted. In order to compensate for this, the amount of the next cash sale is adjusted to align the amount sold. In this example, if the next cash sale recommendation is for a 10% increment of the 1996 crop, making the total recommended sales 60% of the crop, the recommendation is adjusted to 15.5% of the actual yield (24 bushels), so that the total crop sold to date is 60% of 155 bushels per acre ( $69+24=93=0.6*155$ ). After this initial adjustment, subsequent recommendations are taken as percentages of the 155 bpa actual yield, so that sales of 100% of the crop equal sales of 155 bpa.

While the amount of cash sales is adjusted to reflect the change in yield information, a similar adjustment is not necessary for futures or options positions that are already in place. For example, assume that a short futures hedge is placed in the December 1996 contract for 25% of the 1996 crop prior to October 1. Since the amount hedged is based on the trend yield assumption of 138 bpa, the futures position is 34.5 bpa (25% of 138). After the yield assumption is changed on October 1, this amount represents a short hedge of 22.3% ( $34.5/155$ ). The amount of the futures position is not adjusted to move the position to 25% of the new yield figure. However, any futures positions recommended after October 1 are implemented as a percentage of the actual yield.

### ***Brokerage Costs***

Brokerage costs are incurred when producers open or lift positions in futures and options markets. For the purposes of this study, it is assumed that brokerage costs are \$50 per contract for a round-turn for futures transactions, and \$30 per contract to enter or exit an options position. Further, it is assumed that CBOT corn and soybean futures are used, and the contract size for each commodity is 5,000 bushels. Therefore, per-bushel

brokerage costs are 1 cent per bushel for a round-turn futures transaction and 0.6 cents per bushel for each options transaction.

### ***Carrying Charges***

An important element in assessing returns to an advisory program is the economic cost associated with storing grain instead of selling grain immediately at harvest. The cost of storing grain after harvest (carrying costs) consists of two components: physical storage charges and the opportunity cost incurred by foregoing sales when the crop is harvested. Physical storage charges can apply to off-farm (commercial) storage, on-farm storage, or some combination of the two. Opportunity cost is the same regardless of the type of physical storage.

For the purposes of this study, it is assumed that all storage occurs off-farm at commercial sites. This is assumed for several reasons. First, commercial storage costs reflect the full economic costs of physical storage, whereas on-farm storage cost estimates may not, due to differing accounting methods and/or time horizons. Second, commercial storage costs are relatively consistent across producers in a given area, whereas on-farm storage costs likely vary substantially among producers. Third, commercial storage cost data are readily available, whereas this is not the case for on-farm storage.

Carrying charges are assigned beginning October 15, 1996, which is about the midpoint of both corn and soybean harvest in Illinois. Physical storage charges are assumed to be a flat 13 cents per bushel from October 15 through December 31. After January 1, physical storage charges are assumed to be 2 cents per month (per bushel), with this charge pro-rated to the day when the cash sale is made. The storage costs represent the typical storage charges quoted in a telephone survey of Central Illinois elevators.

The interest rate is assumed to be 9.125% per year, and is applied to the average harvest-time price for each crop. This interest rate is the average rate for all commercial agricultural loans for the fourth quarter of 1996 and the first three quarters of 1997 as reported in the *Agricultural Finance Databook* published by the Board of Governors of the Federal Reserve Board. The interest charge for storing grain is the interest rate compounded daily from October 15 to the date of sale.

In addition to the storage and interest costs, another charge is assigned to corn (but not soybeans) that goes into commercial storage. This charge, referred to as a “shrink charge”, is commonly deducted by commercial elevators on “dry” corn that is delivered to the elevator to be stored, and reflects a charge for drying and volume reduction (shrinkage) which occurs in drying the corn from (typically) 15% to 14% moisture. The charge for drying is a flat 2 cents per bushel, while the charge for volume reduction is 1.3% per bushel. Given that the harvest-time cash price in Central Illinois for 1996 is \$2.81 per bushel, the charge for volume reduction is 3.7 cents per bushel ( $\$2.81 * .013$ ). Therefore, the flat shrink charge assigned to all stored corn is 5.7 cents per bushel.

It should be noted that the cost of drying corn down to 15% moisture and the cost of drying soybeans to storable moisture are not included in the calculations. This cost is incurred whether or not the grain is stored or sold at harvest, or whether the grain is stored on-farm or off-farm.

***Example***

The following is a simple example of a complete set of marketing recommendations, and is intended to illustrate many of the parameters previously discussed, and how recommendations are translated into calculated returns to a market advisory program. The recommendations provided below do not represent the actual advice of any particular advisory program.

*Hypothetical 1996/97 Corn Marketing Recommendations:*

April 3, 1996 – forward contract (F/C) 25% of expected 1996 production

CBOT Dec. 96 futures closed at \$3.2875 -- less 16 cent basis adjustment, transaction price is \$3.1275. Expected yield is 138 bpa, so 34.5 (.25\*138) bpa is sold. No carrying charge is assigned to this transaction, since it will be delivered at harvest.

May 15, 1996 - hedge-to-arrive (HTA) 25% of expected 1996 production in Dec. 96 contract

CBOT Dec. 96 futures closed at \$3.5825. Short hedge placed in Dec. futures at this price for 34.5 bpa. Service (brokerage) cost of 1 cent per bushel assigned to transaction.

August 1, 1996 - hedge 30% of expected 1996 production in Dec. 96 contract at \$3.25

CBOT Dec. 96 futures traded between \$3.235 and \$3.29 on August 1, 1996, so fill price is accepted as given. Short hedge placed in Dec. futures at \$3.25 for 41.4 bpa. Brokerage cost of 1 cent per bushel assigned to transaction.

August 15, 1996 - exit short Dec. hedge on 30% of 1996 production at the market

Since no specific fill price is given, the CBOT Dec. 96 settlement price of \$3.4925 is used. Loss on position is \$0.2425 per bushel. Brokerage cost was assigned when position is taken.

November 15, 1996 - sell 25% of 1996 crop in cash market at this time

Central Illinois cash price for corn on this date was \$2.65. Cash sales commitments now total 75% of 1996 crop (25% F/C + 25% HTA + 25% cash

sale). Expected yield now 155 bushels per acre, so this transaction should take total sales to 116.25 bpa ( $.75*155$ ). Previous sales totaled 69 bpa, so this transaction will be for 47.25 bpa ( $116.25 - 69$ ), instead of 25% of the crop. Interest charge of 2 cents per bushel, storage charge of 13 cents per bushel, and shrink charge of 5.7 cents per bushel assigned to this transaction.

November 27, 1996 - roll HTA to March 1997

Offset short Dec. position on 34.5 bpa and place short position for 33.75 bpa in March 1997 futures. CBOT Dec. futures closed at \$2.72, so this futures position gained \$0.8625 ( $\$3.5825 - \$2.72$ ) per bushel. Short March position placed at close of \$2.735 on 33.75 bpa. Service (brokerage) cost of 1 cent per bushel assigned to this transaction for opening new position.

February 5, 1997 - fix basis on HTA

Offset short March position and sell grain in the cash market. CBOT March futures closed at \$2.725, so this futures position gained \$0.01 ( $\$2.735 - \$2.725$ ) per bushel. The Central Illinois cash price on Feb. 5 was \$2.64. Interest charge of 8 cents per bushel, storage charge of 15 cents per bushel, and shrink charge of 5.7 cents per bushel assigned to this transaction.

February 10, 1997 - protect 25% of 1996 crop with May \$2.70 puts

CBOT May \$2.70 puts closed at \$0.0675 per bushel. Purchased puts for 38.75 bpa ( $.25*155$ ). Brokerage cost of 0.6 cents per bushel assigned to this transaction.

April 10, 1997 - sell final 25% of 1996 crop

Central Illinois cash price was \$2.90 per bushel. Sale was for 38.75 bpa ( $.25*155$ ). Cash sales now total 100%, or 155 bpa ( $34.5+34.5+47.25+38.75$ ). Interest charge of 12 cents per bushel, storage charge of 20 cents per bushel, and shrink charge of 5.7 cents per bushel assigned to this transaction.

April 15, 1997 - re-own 20% of 1996 crop in July futures at \$3.02

CBOT July futures traded between \$3.00 and \$3.045, so fill price is accepted. Quantity assigned is 31 bpa ( $155*0.2$ ). Brokerage cost of 1 cent per bushel applied.

April 18, 1997 - May \$2.70 puts covering 25% of 1996 crop expired worthless

Loss on this position was the purchase price of the puts, \$0.0675 per bushel. No brokerage cost assigned, since no transaction was made.

May 15, 1997 - Liquidate long July futures for 20% re-ownership on the open

CBOT July futures opened at \$2.83, for a loss of \$0.19 ( $\$2.83 - \$3.02$ ) per bushel.

*End of 1996 crop recommendations.*

*Special note on HTA's:* The net price of the HTA can be viewed two different ways: In our calculations, the net price is the cash price when the basis is fixed (\$2.64) plus the futures gains (\$0.8625 and 0.01), or \$3.5125 per bushel. The net price also equals the futures price when the HTA is placed (\$3.5825) plus the futures gain when the position is rolled ( $\$2.735 - \$2.72 = \$0.015$ ), less the cash basis when the basis is fixed ( $\$2.64 - \$2.725 = -\$0.085$ ), which also works out to \$3.5125 per bushel.

### ***Translating Recommendations into a Net Advisory Price Per Bushel***

After using the assumptions listed above to assign prices, amounts, and transaction costs to each recommendation, the task remains to determine a single, per-bushel net price for all of the marketing advice given for a particular crop year. A per-bushel price (or transaction cost) is calculated by summing the gross dollar amount of each transaction and dividing by the actual yield for each crop.

Using the set of recommendations given in the above example, Table 1 illustrates how a series of advisory program recommendations is converted to a per-bushel net price received. For the cash sale recommendations, the cash market price on the day of the sale (transaction price) is multiplied by the amount sold to arrive at the gross revenue for the sale. When the total cash sales for the marketing year equal 100% of the crop, the cash sales revenues are summed and divided by 155 bpa to arrive at a weighted average cash price, which in this example is \$2.82 per bushel. A similar approach is taken with the carrying charges. The carrying charge associated with each post-harvest sale is multiplied by the amount of crop sold to arrive at an average per-bushel carrying charge for the entire crop. In this case, the average carrying charge is 22 cents per bushel.

Futures transactions are treated in a manner similar to cash transactions, with the transaction price multiplied by the amount sold to produce a gross revenue for each transaction. Sales of futures or options contracts are treated as positive revenue, while purchases of futures and options contracts are treated as negative revenue.<sup>7</sup> This approach allows calculation of a weighted average, per-bushel gain for futures transactions. In this example, futures/options transactions that gained money outweighed transactions that lost money, resulting in an average per-bushel futures/options gain of 8 cents per bushel. Brokerage costs also are weighted by the amount sold or purchased. In this example, the average per-bushel brokerage cost is 1 cent per bushel.

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<sup>7</sup> This procedure does not account for the interest earnings or costs associated with a futures margin account.

The net average price received is the average cash price (\$2.82) less the carrying charge (\$0.22) plus the futures gain (\$0.08) less the brokerage cost (\$0.01), which produces a net price of \$2.67 per bushel.

### ***Benchmark Prices***

In addition to comparing the net price received across advisory programs, it is useful to compare the results to simple market benchmark prices. These prices are intended to provide information about how a producer fares using some basic marketing strategies that do not require professional marketing advice.

*Average Harvest-Period Price:* The most obvious example of a simple marketing strategy a farmer could implement without purchasing marketing advice is to sell the crop immediately at harvest. The average harvest-period cash price is calculated as the simple average of the Central Illinois cash price between October 1 and October 31 for corn and soybeans. The average harvest-period cash price in the 1996/97 marketing year for corn is \$2.81 per bushel, and for soybeans is \$6.95 per bushel.

Note that the method for calculating the harvest-period cash price for corn has been changed for this report when compared with the report of the 1995 crop year pricing results. In the previous report, the period between October 15 and November 15 had been used for the corn harvest price. Upon reviewing corn harvest progress data for Central Illinois, using the month of October was deemed to more accurately depict the harvest time frame.

*Average Price Received:* Another useful benchmark is the average price received by farmers. In this study, the approach taken to calculating this price is similar to that used by the USDA in estimating the average price received by US farmers. The benchmark price is calculated as a weighted average of the price received by farmers in the state of Illinois between September 1996 and August 1997, as reported by USDA in its *Agricultural Prices* publication. It is worth noting that this price series represents an average price for the entire state of Illinois, while the harvest cash price and the net advisory price are based on Central Illinois cash grain bids. No comparable series of average price received is available for the Central Illinois region only. However, analysis of daily prices reported by the Illinois Grain and Livestock Market News indicates that the Central Illinois cash price is very close to the state average price.

In order to make this benchmark price consistent with the methodology for calculating the average returns to marketing advice, the monthly average cash market prices from November 1996 through August 1997 are adjusted back to a harvest-period equivalent by deducting storage and interest costs at mid-month. Based upon conversations with the Illinois Agricultural Statistics Service, it was determined that shrink charges already are deducted from the reported average corn price received, so the shrink charge is not deducted again. The September and October 1996 monthly average prices do not need to



be adjusted for storage and interest charges. These monthly prices are then weighted by the average percentage of the crop marketed in each month by Illinois farmers, also reported in USDA's *Agricultural Prices*. The average price received by Illinois farmers in the 1996/97 marketing year (after adjusting for carrying charges) is \$2.55 per bushel for corn, and is \$7.18 per bushel for soybeans.

### **1996 Pricing Performance Results for the Advisory Services**

Evaluation results for the advisory programs for the 1996 corn and soybean crops are presented in Tables 2 through 4 and Figures 1 through 4.

The program-by-program results of the evaluation of corn marketing programs are contained in Table 2. This table shows the breakout of the components of the net advisory price as well as the net advisory price itself. The average net advisory price for all 26 programs is \$2.63 per bushel, 18 cents below the harvest cash price and six cents above the average price received. The range of net advisory prices for corn is quite large, with a minimum of \$2.08 per bushel and a maximum of \$3.12 per bushel

Table 3 lists the program-by-program results of the soybean evaluations. The average net advisory price for all 24 programs is \$7.27 per bushel, 32 cents per bushel above the harvest cash price and nine cents per bushel above the average price received. As with corn, the range of net advisory prices for soybeans is substantial, with a minimum of \$6.80 per bushel and a maximum of \$7.80 per bushel.

A point to consider when examining Tables 2 and 3 is the impact of the assumption that all storage occurs off-farm. It is possible to argue that, in the short run, marginal cost of on-farm storage of grain is zero if the facilities already exist and variable costs associated with handling grain and maintaining grain quality are not included. Applying this logic, the results change somewhat. Excluding the costs of commercial storage entirely (but continuing to subtract interest costs), the average net advisory price for corn increases to \$2.76 per bushel, five cents below the harvest cash price of \$2.81 per bushel. The net advisory price for soybeans increases to \$7.38 per bushel, well above the harvest cash price of \$6.95 per bushel. The calculation of the average price received by farmers also would be impacted by the change in the storage cost assumption. If only interest costs are subtracted from the monthly average prices received, the season-average price received for corn (soybeans) becomes \$2.70 (\$7.33) per bushel. Therefore, if storage charges are assumed to be zero, the net advisory price for corn is six cents above the average price received, and for soybeans the net advisory price is five cents above the average price received.

Since many Corn Belt producers grow both corn and soybeans, it also is useful to examine a combination of the results for the corn and soybean marketing programs. In order to do this, gross revenues are calculated for a Central Illinois producer who follows both the corn and soybean marketing advice of a given service. It is assumed that the

producer has 1,000 acres total, planted half to corn and half to soybeans, and achieved corn and soybean yields equal to the actual yield for the area in 1996. These revenues are compared with the revenue a Central Illinois producer could have received by selling all corn and soybeans at harvest in the local cash market or selling corn and soybeans at the average price received by Illinois producers. Both benchmark revenues are on a harvest-period equivalent basis. Total advisory revenue is calculated only for those programs which offer both corn and soybean marketing advice.

Table 4 lists the program-by-program results of the total revenue analysis. The average revenue achieved by following both the corn and soybean advisory programs for the hypothetical 1,000 acre farm is \$368,553, which is \$7,335 lower than the revenue that could have been achieved if the producer sold all grain in the cash market at harvest. The average revenue is \$7,583 above the revenue that would have been received if the producer received the average price received by all Illinois producers for the 1996 marketing period. The spread in total revenue for a 1,000 acre farm also is noteworthy, with the difference between the bottom- and top-performing advisory programs exceeding \$80,000.

For comparison purposes, the annual subscription cost of each advisory program also is listed in Table 4. Subscription costs, which average \$287 per program, are small relative to total revenue, on average less than one-tenth of one percent of total revenue for a 1,000 acre farm. Note that subscription costs are not subtracted from any of the revenue figures presented in the Table 4.

The distribution of the net advisory prices is illustrated in Figure 1. Of the 26 marketing programs for corn, five programs achieved a net price that is within (plus or minus) 10 cents of the harvest cash price of \$2.81 per bushel. Two of the advisory programs achieve a net price more than \$2.92 per bushel (11 cents higher than the harvest price). Almost half of the programs are grouped in a range between 11 and 31 cents below the harvest cash price, with five programs between 32 and 52 cents below the harvest cash price. Two programs achieve a net price that is more than 53 cents per bushel below the harvest price. For soybeans, only one of the advisory programs is within (plus or minus) 10 cents per bushel of the harvest cash price of \$6.40 per bushel, and only two other services fall below this range. On the other hand, 11 of the 24 programs achieve a net price that is between 42 and 62 cents per bushel above the harvest price, with three additional services above this range (\$7.48 per bushel or more). In terms of revenue, 15 of the 24 programs achieve total revenues within (plus or minus) \$10,000 of the harvest cash revenue. Two programs achieve a total revenue that is \$11,000 or more above the harvest cash revenue, with four programs between \$11,000 and 31,000 below the harvest cash revenue, and three other programs below the harvest cash revenue by \$32,000 or more.

A different view of the pricing performance of the advisory programs is shown in Figures 2 through 4. Here, net advisory prices or revenues are ranked from highest to lowest and plotted versus the benchmarks. As shown in Figure 2, four marketing programs achieve a net price for corn that is equal to or higher than the cash price at harvest, while 18 programs achieve a net price equal to or higher than the average price received by

Illinois farmers for the 1996 marketing period. This illustrates the high frequency of observations right around the benchmark prices. As reported in Figure 3, 22 of the 24 soybean programs achieve a net advisory price equal to or higher than the harvest cash price, while 16 soybean programs equal or top the average price received. Figure 4 shows the comparison between the total advisory revenue and the total revenue implied by each of the benchmark prices. Total advisory revenue was greater than the total revenue that would have been realized by a producer who sold at harvest for six of the marketing programs. Total advisory revenue for 17 of the marketing programs was greater than the revenue that would have been realized if the producer had sold corn and soybeans for the average price received by Illinois farmers.

Figure 5 illustrates how the 1996/97 marketing year compares with previous years from a price perspective.<sup>8</sup> For the ten marketing years prior to 1996/97, the mean of the season-average prices received by Illinois farmers is \$2.37 per bushel for corn and \$6.04 per bushel for soybeans. The maximum price received for this time frame is \$3.45 per bushel for corn (observed in 1995/96) and \$7.45 per bushel for soybeans, (observed in 1988/89). The season-average price for 1996/97 is estimated to be \$2.79 per bushel for corn and \$7.55 per bushel for soybeans.

Figure 6 shows the pattern of prices available for the 1996/97 corn and soybean crops. From January through March 1996, forward cash bids for the 1996 corn crop gradually increased from \$2.65 to \$3.00. After that, prices stayed above \$3.00 through late September, peaking at \$3.65 per bushel in mid-July 1996. At that time, prices were at historically high levels, due to record-low old-crop (1995 crop) supplies. However, prices declined rapidly once harvest commenced and new supplies became available. By early November 1996 prices had dropped to around \$2.50 per bushel. Prices rose to near \$3.00 during March 1997, but then declined again, reaching a low of around \$2.30 in early July 1997.

For soybeans, forward cash bids began 1996 in a range between \$6.70 and \$7.20 from January through March 1996, then ranged between \$7.10 and \$7.70 from April through June 1996. Cash-forward prices became highly variable from July 1996 through the beginning of harvest, ranging from \$7.00 to around \$7.90. As with corn, prices declined rapidly as harvest commenced, reaching a low of \$6.61 at the end of October 1996. Prices then rose gradually for about three months, until projections of record-low soybean stocks caused prices to move up rapidly to a high of almost \$9.00 in early May 1997. Prices then backed off gradually through the end of the marketing year as it became clear that soybean plantings for the next (1997) crop had reached very high levels, which reduced supply concerns.

Figure 7 offers a slightly different perspective on prices for the 1996/97 corn and soybean crops. Storage, interest, and (in the case of corn) shrink charges are subtracted from the post-harvest cash prices to show the pattern of harvest-equivalent prices available

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<sup>8</sup> Note that the season average prices presented in Figure 5 are not adjusted for carrying costs.

through the marketing year. The corn price chart shows that the cash market did not offer much of a return above storage costs at any time after the 1996 harvest; in fact, by late June of 1997 the harvest-equivalent corn price was below \$2.00 per bushel. In contrast, the cash soybean market offered positive returns to storage relative to the price at harvest for much of the post-harvest period.

The fact that cash corn bids for the 1996 crop were the highest in the pre-harvest period, and declined rapidly after harvest, meant that a traditional marketing program which sold some or all of a producer's corn prior to harvest achieved a relatively high price for the crop when compared with programs which held the crop in storage. Also, programs that utilized the traditional strategy of short futures hedges prior to harvest tended to show substantial gains in futures trading. Marketing programs that recommended producers assume more downward price risk through storing cash grain not only obtained a lower cash price but also incurred storage and interest costs. For soybeans, some substantial returns to storage were available for sales during much of 1997.

Again, it is important to recognize that the performance results are based on pricing, or return, performance only. While certainly useful, these results do not address the issue of risk. Two programs with the same net advisory price may expose producers to quite different risks through the marketing period. Research is currently underway at the AgMAS project to quantify the risk profiles of the different programs. A comparison of return and risk will allow a more complete picture of the performance of agricultural market advisory services.

### **Two-year Average Pricing Performance Results**

A summary of the results of the pricing performance evaluations for both the 1995 and 1996 corn and soybean marketing years is contained in Tables 5 through 7 and Figures 8 through 11. Some of the marketing programs included in the table were only evaluated for either 1995 or 1996. The two-year averages are calculated only for the 22 marketing programs that were evaluated for both years.

The 1995 pricing results are similar to results that were previously reported in AgMAS Research Report 1997-01, published in March 1997. However, the numbers have been changed to reflect the change in the calculation of the trend yield for both corn and soybeans. In the previous report, the historical yield for the 1995 crop was calculated as 135 bpa for corn and 44 bpa for soybeans. The 1995 pricing results that are reported in Tables 5 and 6 of this report reflect the use of a historical trend yield of 140 bpa for corn and 46 bpa for soybeans.

The benchmark prices also differ somewhat from the previous report. The harvest cash price for 1995 now is calculated at \$3.11 for corn, versus \$3.22 in the previous report. This reflects the change in the time period during which most of the harvest is assumed to have occurred. The harvest cash price for soybeans in 1995 remains

unchanged at \$6.40. Also, the average price received by farmers in 1995 was changed to reflect the actual marketing percentages reported by USDA, as opposed to the use of historical averages that had been used in the previous report. The 1995 average price received for corn in the previous report also included a deduction for shrink, which later was determined to cause "double-counting" of this charge. The average price received by farmers for corn in 1995 now is calculated at \$3.11 for corn, versus \$3.17 in the previous report. For soybeans, the average price received now is calculated at \$6.60, versus \$6.64 in the previous report.

As shown in Table 5, the average net advisory corn price over the two years for the 22 programs is \$2.83 per bushel, which is 13 cents below the two-year average harvest cash price and equal to the two-year average price received. The results range from a low of \$2.27 to a high of \$3.51.

The two-year results for soybeans are listed in Table 6. The two-year average net advisory soybean price is \$6.92 per bushel, which is 24 cents above the two-year average harvest cash price and three cents above the two-year average price received. The results range from a low of \$6.35 to a high of \$7.56.

The two-year results for the total advisory revenue are presented in Table 7. The average total advisory revenue for the two years is \$343,602. This is \$4,064 lower than the two-year average harvest cash revenue, and \$1,294 higher than the average revenue implied by the average price received by Illinois farmers for the two years.

The distributions of the two-year average prices and revenues are illustrated in Figure 8. Only the 22 programs that were evaluated in both 1995 and 1996 are included in the graphs. For corn, seven of the 22 programs achieve a two-year average price within 11 cents of the two-year average harvest cash price of \$2.96. Two of the 22 programs achieve a two-year average corn price between 12 and 34 cents greater than the harvest cash price, with one program more than 35 cents above the harvest benchmark. Ten of the programs have a two-year average between 12 cents and 34 cents below the harvest price, with two services more than 58 cents below the harvest price for the two years.

For soybeans, the picture is quite different. Similar to corn, six of the 22 programs are within 11 cents of the two-year average harvest cash price of \$6.68. However, 14 of the programs achieve a two-year average soybean price that is 12 cents or more above the average harvest price. Eight of the programs are between 12 and 34 cents above the harvest cash price, with four programs between 35 and 57 cents above, one program between 58 and 80 above, and one program more than 81 cents above the harvest cash price. Only two services are more than 12 cents below the harvest price.

In terms of total advisory revenue, half of the 22 marketing programs are within \$10,000 of the two-year average harvest cash revenue of (approximately) \$348,000. One of the programs achieves a total between \$11,000 and \$31,000 above the benchmark, with one more program between \$32,000 and \$52,000 above the two-year benchmark. Six of

the programs are between \$11,000 and \$31,000 below the benchmark, with two programs between \$32,000 and \$52,000 below the benchmark.

As shown in Figure 9, only four of the 22 corn marketing programs achieved a two-year average net advisory price that was above the two-year average harvest cash price of \$2.96, while 11 of the 22 programs were equal to or above the two-year average price received of \$2.83. For soybeans (Figure 10), 20 of the 22 programs achieved a two-year average price that was above the two-year average harvest cash price of \$6.68, while 12 of the 22 programs were above the two-year average price received of \$6.89.

Figure 11 shows the comparison of the two-year average net advisory revenues versus the two-year average revenues implied by the harvest cash price and the average price received by farmers. Nine of the 22 advisory programs achieved a two-year average revenue that was above the two-year harvest cash revenue of \$347,666, while 12 of the 22 programs achieved an average revenue greater than the average revenue received by farmers of \$342,308.

**Table 1. A Hypothetical Example of Calculating the Net Advisory Price Per Bushel**

<b>Cash transactions:</b>							
	(1)	(2)	=(1)*(2)	(3)	(4)	(5)	=(2)*[(3)+(4)+(5)]
	Transaction	Amount	Gross	Interest	Storage	Shrink	Total
Date	Price	Sold	Transaction	Cost	Cost	Cost	Carrying
	(\$/bushel)	(bpa)	Revenue	(\$/bushel)	(\$/bushel)	(\$/bushel)	Charges
			(\$/acre)				(\$/acre)
4/3/96	3.1275	34.5	107.90	0	0	0	0
11/15/96	2.65	47.25	125.21	0.02	0.13	0.057	9.88
2/5/97	2.64	34.5	91.08	0.08	0.15	0.057	9.90
4/10/97	2.90	38.75	112.38	0.12	0.20	0.057	14.57
Total			436.57				34.35
		Avg. cash price (\$/bu.)	2.82			Avg. carrying charge (\$/bu.)	0.22
						Net cash price (\$/bu)	2.59
<b>Futures transactions:</b>							
	(4)	(5)	=(4)*(5)	(6)			=(5)*(6)
	Transaction	Amount	Gross	Brokerage			Total
Date	Price	Sold	Transaction	Cost			Brokerage
	(\$/bushel)	(bpa)	Revenue	(\$/bushel)			Cost
			(\$/acre)				(\$/acre)
5/15/96	3.5825	34.5	123.60	0.01			0.35
8/1/96	3.25	41.4	134.55	0.01			0.41
8/15/96	3.4925	-41.4	-144.59	0			0.00
11/27/96	2.72	-34.5	-93.84	0			0.00
11/27/96	2.735	34.5	94.36	0.01			0.35
2/5/97	2.725	-34.5	-94.01	0			0.00
2/10/97	0.0675	-38.75	-2.62	0.006			0.23
4/15/97	3.02	-23.8	-71.88	0.01			0.24
4/18/97	0	38.75	0.00	0			0.00
5/15/97	2.83	23.8	67.35	0			0.00
Total			12.92				1.57
		Avg. futures gain (\$/bu.)	0.08			Avg. brokerage cost (\$/bu.)	0.01
						Average net price per bushel	2.67

**Table 2. Pricing Performance Results for 26 Market Advisory Service Programs, Corn, 1996 Marketing Period**

Advisory Service Program	(1)	(2)	(3) Carrying Charges		(4)	(5)	(6)	(7)	(8)
	Unadjusted Cash Sales Price	Interest Costs	Storage Costs	Shrink Costs	Net Cash Sales Price	Futures Gain	Brokerage Costs	Net Advisory Price	
					-----\$/bushel-----				
Ag Alert for Ontario	2.72	0.09	0.12	0.04	2.47	0.02	0.02	2.47	
Ag Line by Doane (cash-only)	2.85	0.06	0.11	0.03	2.65	0.00	0.00	2.65	
Ag Line by Doane (hedge)	2.74	0.08	0.12	0.03	2.51	0.10	0.00	2.61	
Ag Profit by Hjort Associates	2.79	0.11	0.15	0.04	2.49	0.00	0.00	2.49	
Ag Resource	2.96	0.03	0.07	0.03	2.84	0.30	0.01	3.12	
Ag Review	3.03	0.02	0.06	0.02	2.93	-0.15	0.03	2.76	
Agri-Edge (cash-only)	2.91	0.10	0.15	0.04	2.62	0.00	0.00	2.62	
Agri-Edge (hedge)	3.05	0.06	0.09	0.03	2.87	0.24	0.01	3.10	
Agri-Mark	2.81	0.02	0.10	0.04	2.66	0.08	0.01	2.73	
Agri-Visor Aggressive Cash	2.88	0.00	0.00	0.00	2.88	-0.04	0.01	2.83	
Agri-Visor Aggressive Hedge	2.94	0.03	0.05	0.01	2.84	-0.24	0.01	2.58	
Agri-Visor Basic Cash	2.85	0.07	0.10	0.03	2.65	0.00	0.00	2.65	
Agri-Visor Basic Hedge	2.91	0.04	0.06	0.01	2.80	-0.16	0.01	2.63	
Allendale (futures & options)	2.72	0.02	0.04	0.01	2.64	0.14	0.03	2.75	
Allendale (futures only)	2.73	0.01	0.02	0.01	2.70	-0.59	0.04	2.08	
Brock (cash-only)	2.85	0.04	0.08	0.03	2.70	0.00	0.00	2.70	
Brock (hedge)	2.83	0.01	0.04	0.02	2.77	-0.35	0.03	2.39	
Freese-Notis	2.99	0.03	0.06	0.03	2.87	0.00	0.00	2.87	
Harris Weather/Elliott Advisory	2.86	0.12	0.18	0.06	2.50	-0.21	0.02	2.28	
Pro Farmer (cash-only)	2.87	0.08	0.12	0.03	2.64	0.00	0.00	2.64	
Pro Farmer (hedge)	2.93	0.07	0.11	0.03	2.72	-0.05	0.01	2.67	
Progressive Ag.	2.67	0.10	0.19	0.06	2.32	0.23	0.01	2.53	
Stewart-Peterson Advisory Reports	2.83	0.08	0.14	0.04	2.56	-0.08	0.03	2.46	
Stewart-Peterson Strictly Cash	2.82	0.04	0.08	0.03	2.68	0.00	0.00	2.68	
Top Farmer	2.76	0.10	0.15	0.04	2.47	-0.01	0.02	2.44	
Zwicker	2.92	0.09	0.14	0.04	2.64	-0.06	0.02	2.56	
<b>Descriptive Statistics:</b>									
<i>Average</i>	2.85	0.06	0.10	0.03	2.67	-0.03	0.01	2.63	
<i>Median</i>	2.85	0.06	0.10	0.03	2.65	0.00	0.01	2.64	
<i>Minimum</i>	2.67	0.00	0.00	0.00	2.32	-0.59	0.00	2.08	
<i>Maximum</i>	3.05	0.12	0.19	0.06	2.93	0.30	0.04	3.12	
<i>Range</i>	0.38	0.12	0.19	0.06	0.61	0.88	0.04	1.04	
<i>Standard Deviation</i>	0.10	0.04	0.05	0.01	0.15	0.18	0.01	0.22	
<b>Benchmark Prices:</b>									
<i>Harvest Cash Price</i>								2.81	
<i>Average Price Received</i>								2.55	

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7), and therefore, is stated on a harvest equivalent basis. The average price received benchmark also is stated on a harvest equivalent basis.



**Table 3. Pricing Performance Results for 24 Market Advisory Service Programs, Soybeans, 1996 Marketing Period**

Advisory Service Program	(1)	(2)	(3)		(4)	(5)	(6)	(7)
	Unadjusted Cash Sales Price	Interest Costs	Carrying Charges		Net Cash Sales Price	Futures Gain	Brokerage Costs	Net Advisory Price
					-----\$/bushel-----			
Ag Alert for Ontario	7.93	0.30	0.18		7.45	-0.07	0.00	<b>7.37</b>
Ag Line by Doane (cash-only)	7.62	0.13	0.09		7.40	0.00	0.00	<b>7.40</b>
Ag Profit by Hjort Associates	7.59	0.29	0.17		7.13	0.00	0.00	<b>7.13</b>
Ag Resource	7.37	0.03	0.05		7.29	0.00	0.00	<b>7.29</b>
Ag Review	7.92	0.22	0.14		7.56	-0.16	0.03	<b>7.37</b>
Agri-Edge (cash-only)	7.65	0.23	0.15		7.28	0.00	0.00	<b>7.28</b>
Agri-Edge (hedge)	7.38	0.14	0.09		7.15	0.05	0.03	<b>7.18</b>
Agri-Mark	7.63	0.25	0.16		7.22	-0.04	0.00	<b>7.18</b>
Agri-Visor Aggressive Cash	7.54	0.15	0.10		7.29	0.01	0.01	<b>7.28</b>
Agri-Visor Aggressive Hedge	7.68	0.16	0.11		7.41	0.00	0.00	<b>7.40</b>
Agri-Visor Basic Cash	7.34	0.17	0.11		7.06	0.00	0.00	<b>7.06</b>
Agri-Visor Basic Hedge	7.68	0.16	0.11		7.41	0.06	0.01	<b>7.46</b>
Allendale (futures only)	7.07	0.09	0.07		6.91	0.41	0.01	<b>7.30</b>
Brock (cash-only)	7.38	0.10	0.08		7.20	0.00	0.00	<b>7.20</b>
Brock (hedge)	7.22	0.03	0.04		7.16	-0.14	0.02	<b>6.99</b>
Freese-Notis	7.26	0.07	0.07		7.13	0.00	0.00	<b>7.13</b>
Harris Weather/Elliott Advisory	7.98	0.28	0.18		7.51	-0.68	0.03	<b>6.80</b>
Pro Farmer (cash-only)	7.65	0.21	0.13		7.32	0.00	0.00	<b>7.31</b>
Pro Farmer (hedge)	7.70	0.16	0.10		7.44	0.06	0.01	<b>7.49</b>
Progressive Ag.	7.92	0.21	0.13		7.58	0.23	0.01	<b>7.80</b>
Stewart-Peterson Advisory Reports	7.31	0.14	0.11		7.06	0.34	0.03	<b>7.37</b>
Stewart-Peterson Strictly Cash	7.33	0.12	0.08		7.13	0.00	0.00	<b>7.13</b>
Top Farmer	7.40	0.26	0.16		6.98	-0.13	0.01	<b>6.84</b>
Zwicker	7.74	0.12	0.08		7.53	0.15	0.01	<b>7.67</b>
<b>Descriptive Statistics:</b>								
<i>Average</i>	7.55	0.17	0.11		7.27	0.00	0.01	<b>7.27</b>
<i>Median</i>	7.61	0.16	0.11		7.28	0.00	0.01	<b>7.28</b>
<i>Minimum</i>	7.07	0.03	0.04		6.91	-0.68	0.00	<b>6.80</b>
<i>Maximum</i>	7.98	0.30	0.18		7.58	0.41	0.03	<b>7.80</b>
<i>Range</i>	0.90	0.27	0.15		0.67	1.09	0.03	<b>1.00</b>
<i>Standard Deviation</i>	0.25	0.08	0.04		0.19	0.20	0.01	<b>0.23</b>
<b>Benchmark Prices:</b>								
<i>Harvest Cash Price</i>								<b>6.95</b>
<i>Average Price Received</i>								<b>7.18</b>

Notes: Net cash sales price is calculated as (1) - (2) - (3). Net advisory price is calculated as (4) + (5) - (6), and therefore, is stated on a harvest equivalent basis. The average price received benchmark also is stated on a harvest equivalent basis.

**Table 4. Pricing Performance Results for 24 Market Advisory Service Programs, 1,000 Acre Corn and Soybean Farm, 50/50 Rotation, 1996 Marketing Period**

Advisory Service Program	(1)	(2)	(3)	(4)
	Advisory Revenue		Total Advisory Revenue	Cost of Service
	Corn	Soybeans		
	-----\$/acre-----		--\$/1,000 acres--	--\$/year--
Ag Alert for Ontario	382	336	<b>358,796</b>	300
Ag Line by Doane (cash-only)	411	336	<b>373,534</b>	300
Ag Profit by Hjort Associates	386	325	<b>355,429</b>	240
Ag Resource	483	331	<b>407,146</b>	550
Ag Review	428	335	<b>381,691</b>	510
Agri-Edge (cash-only)	407	331	<b>368,857</b>	330
Agri-Edge (hedge)	480	327	<b>403,363</b>	330
Agri-Mark	423	327	<b>374,843</b>	300
Agri-Visor Aggressive Cash	439	331	<b>385,269</b>	324
Agri-Visor Aggressive Hedge	400	337	<b>368,546</b>	324
Agri-Visor Basic Cash	410	321	<b>365,758</b>	324
Agri-Visor Basic Hedge	408	340	<b>373,918</b>	324
Allendale (futures only)	322	332	<b>327,111</b>	240
Brock (cash-only)	418	328	<b>373,041</b>	240
Brock (hedge)	371	318	<b>344,380</b>	240
Freese-Notis	445	324	<b>384,920</b>	342
Harris Weather/Elliott Advisory	353	309	<b>330,944</b>	168
Pro Farmer (cash-only)	409	333	<b>370,994</b>	300
Pro Farmer (hedge)	414	341	<b>377,300</b>	300
Progressive Ag.	392	355	<b>373,589</b>	171
Stewart-Peterson Advisory Reports	381	335	<b>357,953</b>	180
Stewart-Peterson Strictly Cash	415	325	<b>369,976</b>	120
Top Farmer	378	311	<b>344,788</b>	180
Zwicker	397	349	<b>373,134</b>	239
<i>Descriptive Statistics:</i>				
<i>Average</i>	406	331	<b>368,553</b>	287
<i>Median</i>	409	331	<b>372,017</b>	300
<i>Minimum</i>	322	309	<b>327,111</b>	120
<i>Maximum</i>	483	355	<b>407,146</b>	550
<i>Range</i>	161	45	<b>80,036</b>	430
<i>Standard Deviation</i>	36	10	<b>19,035</b>	98
<i>Benchmark Revenue:</i>				
<i>Harvest Cash Revenue</i>	436	316	<b>375,888</b>	
<i>Average Revenue Received</i>	395	327	<b>360,970</b>	

Notes: Advisory revenue per acre for corn (soybeans) is calculated as net advisory price times 155 (45.5) bushels. Total advisory revenue is calculated as (1) x 500 + (2) x 500. Advisory revenue per acre, total advisory revenue and average revenue received are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre or total advisory revenue.

**Table 5. Pricing Performance Results for Market Advisory Service Programs, Corn, Two-Year Average**

<b>Advisory Service Program</b>	<b>1995 Net Advisory Price</b>	<b>1996 Net Advisory Price</b>	<b>Two-year average</b>
Ag Alert for Ontario	N/A	2.47	N/A
Ag Line by Doane (cash-only)	3.15	2.65	<b>2.90</b>
Ag Line by Doane (hedge)	N/A	2.61	N/A
Ag Profit by Hjort Associates	3.08	2.49	<b>2.79</b>
Ag Resource	3.90	3.12	<b>3.51</b>
Ag Review	2.59	2.76	<b>2.67</b>
Agri-Edge (cash-only)	3.07	2.62	<b>2.85</b>
Agri-Edge (hedge)	3.15	3.10	<b>3.13</b>
Agri-Mark	3.63	2.73	<b>3.18</b>
Agri-Visor Aggressive Cash	3.30	2.83	<b>3.07</b>
Agri-Visor Aggressive Hedge	3.10	2.58	<b>2.84</b>
Agri-Visor Basic Cash	2.72	2.65	<b>2.68</b>
Agri-Visor Basic Hedge	2.90	2.63	<b>2.77</b>
Allendale (futures & options)	N/A	2.75	N/A
Allendale (futures only)	2.46	2.08	<b>2.27</b>
Brock (cash-only)	2.75	2.70	<b>2.72</b>
Brock (hedge)	2.29	2.39	<b>2.34</b>
Freese-Notis	2.95	2.87	<b>2.91</b>
Grain Field Report	3.19	N/A	N/A
Harris Weather/Elliott Advisory	3.16	2.28	<b>2.72</b>
North American Ag.	3.22	N/A	N/A
Pro Farmer (cash-only)	3.16	2.64	<b>2.90</b>
Pro Farmer (hedge)	3.06	2.67	<b>2.86</b>
Progressive Ag.	N/A	2.53	N/A
Prosperous Farmer	2.91	N/A	N/A
Stewart-Peterson Advisory Reports	2.90	2.46	<b>2.68</b>
Stewart-Peterson Strictly Cash	2.92	2.68	<b>2.80</b>
Top Farmer	3.17	2.44	<b>2.81</b>
Zwicker	3.15	2.56	<b>2.86</b>
<b>Descriptive Statistics:</b>			
<i>Average</i>	3.03	2.63	<b>2.83</b>
<i>Median</i>	3.08	2.64	<b>2.82</b>
<i>Minimum</i>	2.29	2.08	<b>2.27</b>
<i>Maximum</i>	3.90	3.12	<b>3.51</b>
<i>Range</i>	1.61	1.04	<b>1.24</b>
<i>Standard Deviation</i>	0.33	0.22	<b>0.26</b>
<b>Benchmark Prices:</b>			
<i>Harvest Cash Price</i>	3.11	2.81	<b>2.96</b>
<i>Average Price Received</i>	3.11	2.55	<b>2.83</b>

N/A denotes "not applicable" -- program did not exist or was not evaluated for that marketing year.

**Table 6. Pricing Performance Results for Market Advisory Service Programs, Soybeans, Two-Year Average**

<b>Advisory Service Program</b>	<b>1995 Net Advisory Price</b>	<b>1996 Net Advisory Price</b>	<b>Two-year average</b>
Ag Alert for Ontario	N/A	7.37	N/A
Ag Line by Doane (cash-only)	6.59	7.40	<b>6.99</b>
Ag Profit by Hjort Associates	6.78	7.13	<b>6.95</b>
Ag Resource	6.92	7.29	<b>7.10</b>
Ag Review	6.59	7.37	<b>6.98</b>
Agri-Edge (cash-only)	6.70	7.28	<b>6.99</b>
Agri-Edge (hedge)	6.62	7.18	<b>6.90</b>
Agri-Mark	7.94	7.18	<b>7.56</b>
Agri-Visor Aggressive Cash	6.38	7.28	<b>6.83</b>
Agri-Visor Aggressive Hedge	6.97	7.40	<b>7.19</b>
Agri-Visor Basic Cash	6.42	7.06	<b>6.74</b>
Agri-Visor Basic Hedge	6.78	7.46	<b>7.12</b>
Allendale (futures only)	6.21	7.30	<b>6.76</b>
Brock (cash-only)	6.27	7.20	<b>6.74</b>
Brock (hedge)	5.71	6.99	<b>6.35</b>
Freese-Notis	6.41	7.13	<b>6.77</b>
Grain Field Report	6.84	N/A	N/A
Harris Weather/Elliott Advisory	6.85	6.80	<b>6.82</b>
North American Ag.	6.44	N/A	N/A
Pro Farmer (cash-only)	6.69	7.31	<b>7.00</b>
Pro Farmer (hedge)	6.78	7.49	<b>7.14</b>
Progressive Ag.	N/A	7.80	N/A
Prosperous Farmer	6.52	N/A	N/A
Stewart-Peterson Advisory Reports	6.09	7.37	<b>6.73</b>
Stewart-Peterson Strictly Cash	6.28	7.13	<b>6.71</b>
Top Farmer	6.20	6.84	<b>6.52</b>
Zwicker	6.89	7.67	<b>7.28</b>
<b>Descriptive Statistics:</b>			
<i>Average</i>	6.59	7.27	<b>6.92</b>
<i>Median</i>	6.59	7.28	<b>6.93</b>
<i>Minimum</i>	5.71	6.80	<b>6.35</b>
<i>Maximum</i>	7.94	7.80	<b>7.56</b>
<i>Range</i>	2.23	1.00	<b>1.21</b>
<i>Standard Deviation</i>	0.41	0.23	<b>0.26</b>
<b>Benchmark Prices:</b>			
<i>Harvest Cash Price</i>	6.40	6.95	<b>6.68</b>
<i>Average Price Received</i>	6.60	7.18	<b>6.89</b>

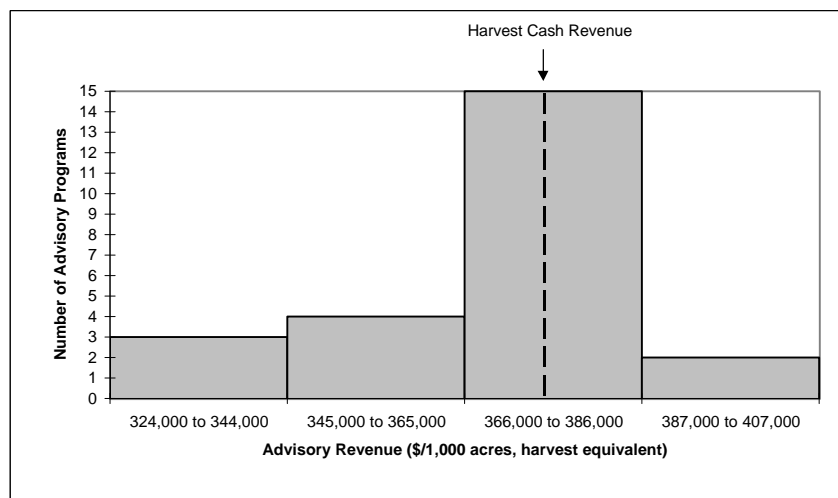
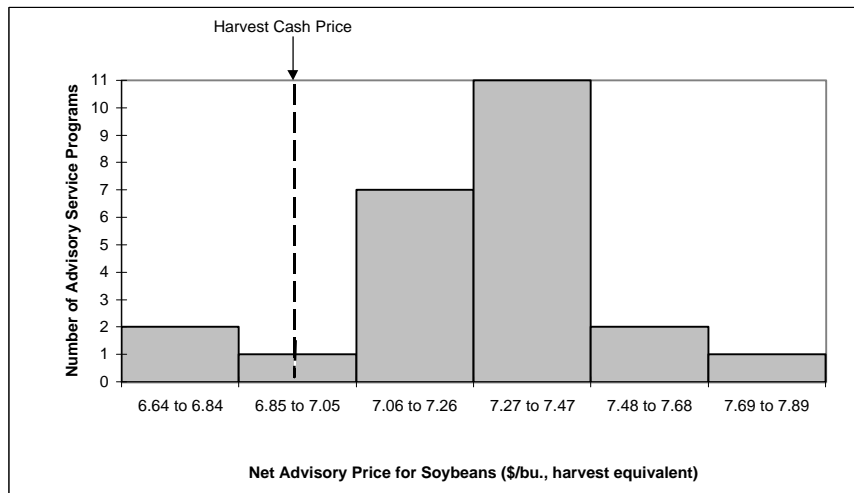
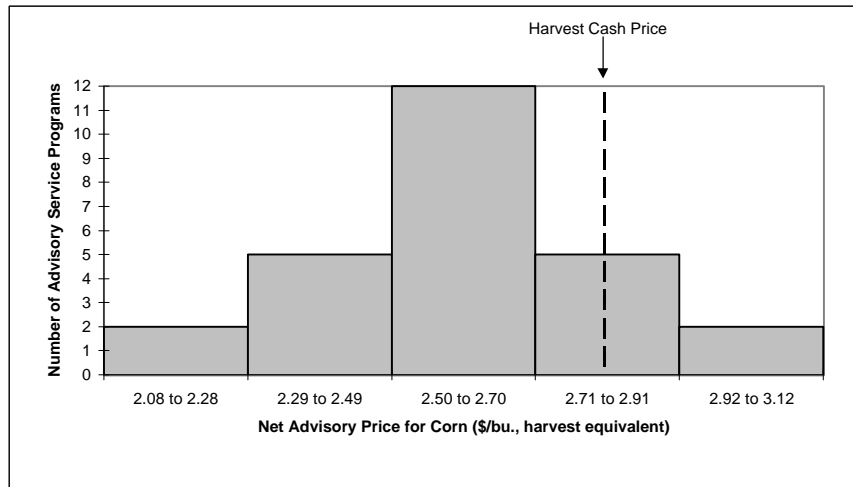
N/A denotes "not applicable" -- program did not exist or was not evaluated for that marketing year.

**Table 7. Pricing Performance Results for Market Advisory Service Programs,  
Two-Year Average Revenue for 1,000 Acre Farm**

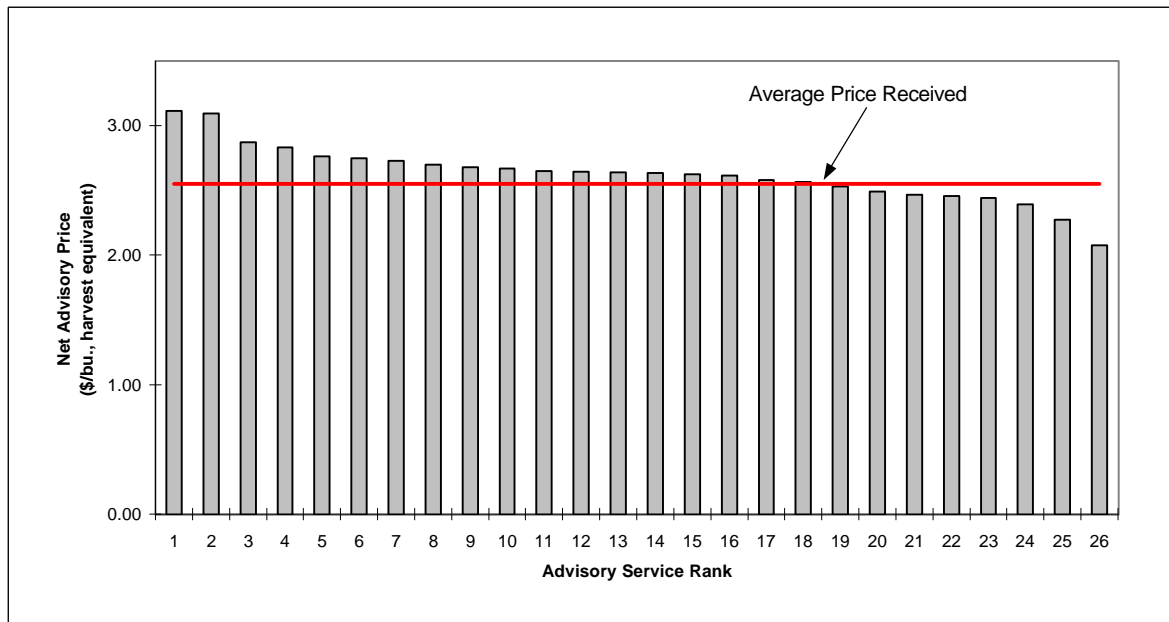
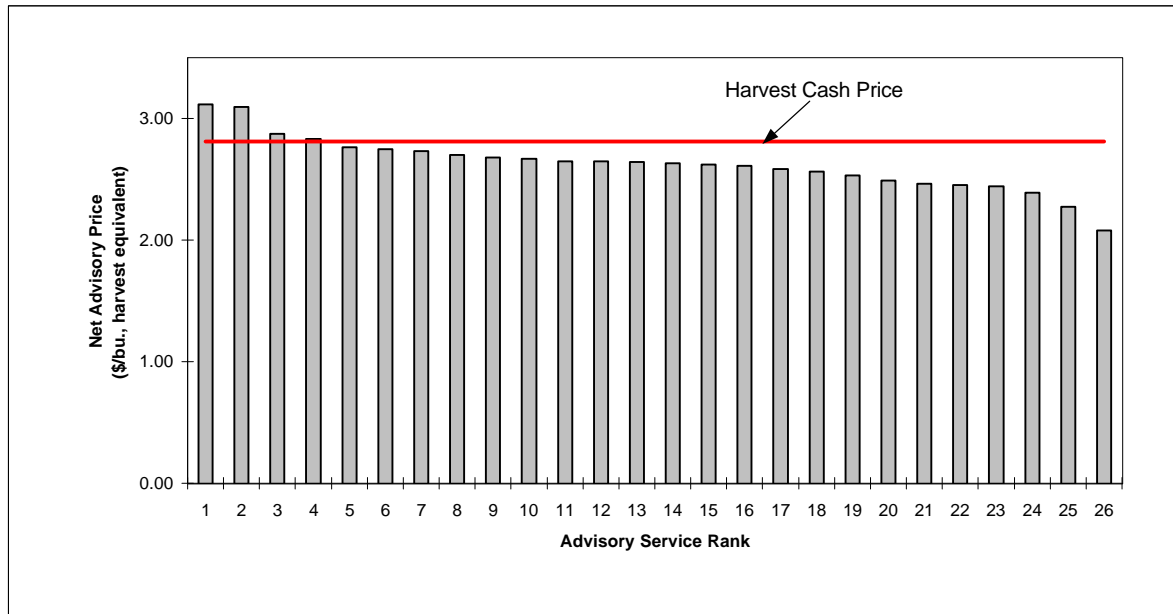
<b>Advisory Service Program</b>	<b>1995 Net Advisory Revenue</b>	<b>1996 Net Advisory Revenue</b>	<b>Two-year average</b>
Ag Alert for Ontario	N/A	358,796	N/A
Ag Line by Doane (cash-only)	325,952	373,534	<b>349,743</b>
Ag Profit by Hjort Associates	325,654	355,429	<b>340,541</b>
Ag Resource	377,251	407,146	<b>392,199</b>
Ag Review	292,114	381,691	<b>336,902</b>
Agri-Edge (cash-only)	323,463	368,857	<b>346,160</b>
Agri-Edge (hedge)	326,687	403,363	<b>365,025</b>
Agri-Mark	382,449	374,843	<b>378,646</b>
Agri-Visor Aggressive Cash	330,432	385,269	<b>357,850</b>
Agri-Visor Aggressive Hedge	330,859	368,546	<b>349,702</b>
Agri-Visor Basic Cash	296,695	365,758	<b>331,226</b>
Agri-Visor Basic Hedge	314,650	373,918	<b>344,284</b>
Allendale (futures only)	276,717	327,111	<b>301,914</b>
Brock (cash-only)	294,956	373,041	<b>333,998</b>
Brock (hedge)	255,868	344,380	<b>300,124</b>
Freese-Notis	309,852	384,920	<b>347,386</b>
Grain Field Report	333,442	N/A	N/A
Harris Weather/Elliott Advisory	331,727	330,944	<b>331,335</b>
North American Ag.	326,746	N/A	N/A
Pro Farmer (cash-only)	328,594	370,994	<b>349,794</b>
Pro Farmer (hedge)	324,195	377,300	<b>350,747</b>
Progressive Ag.	N/A	373,589	N/A
Prosperous Farmer	310,139	N/A	N/A
Stewart-Peterson Advisory Reports	300,521	357,953	<b>329,237</b>
Stewart-Peterson Strictly Cash	305,697	369,976	<b>337,836</b>
Top Farmer	319,018	344,788	<b>331,903</b>
Zwicker	332,238	373,134	<b>352,686</b>
<b>Descriptive Statistics:</b>			
<i>Average</i>	319,036	368,553	<b>343,602</b>
<i>Median</i>	324,195	372,017	<b>345,222</b>
<i>Minimum</i>	255,868	327,111	<b>300,124</b>
<i>Maximum</i>	382,449	407,146	<b>392,199</b>
<i>Range</i>	126,581	80,036	<b>92,075</b>
<i>Standard Deviation</i>	26,503	19,035	<b>20,673</b>
<b>Benchmark Prices:</b>			
<i>Harvest Cash Revenue</i>	319,445	375,888	<b>347,666</b>
<i>Average Revenue Received</i>	323,645	360,970	<b>342,308</b>

N/A denotes "not applicable" -- program did not exist or was not evaluated for that marketing year.

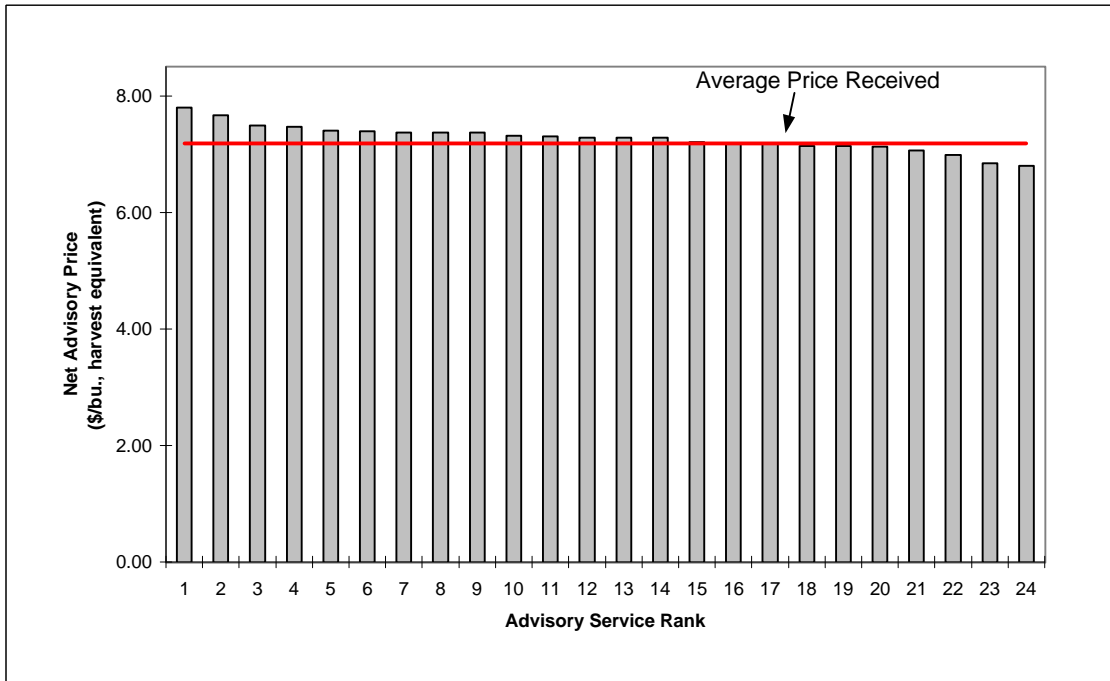
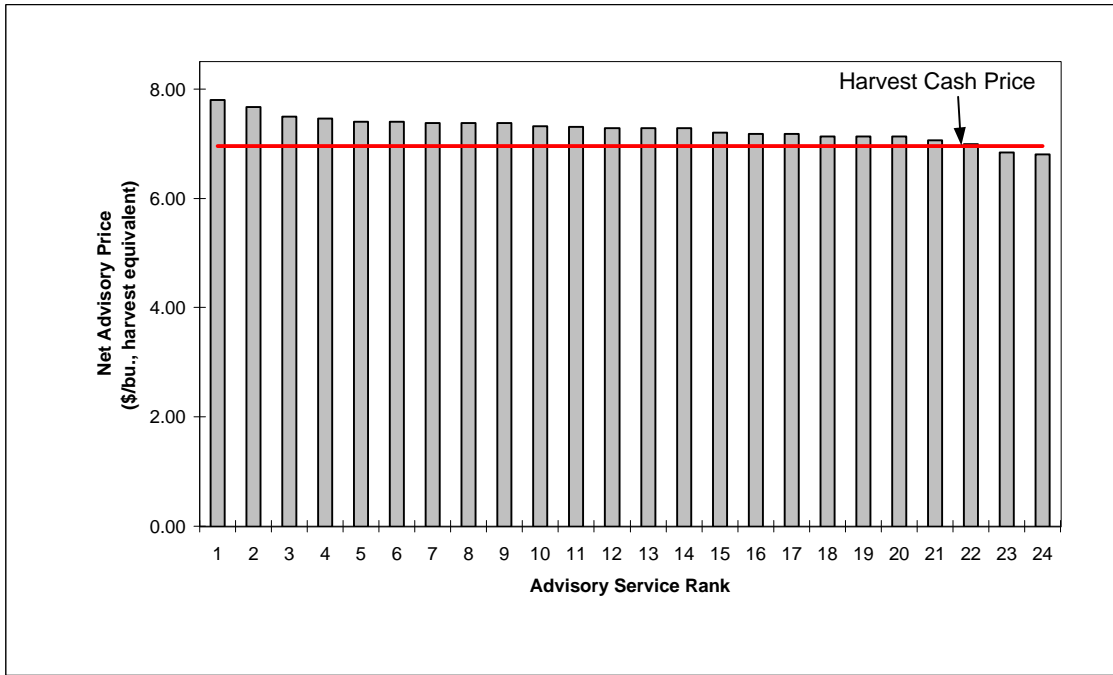
**Figure 1. Distribution of Market Advisory Service Pricing Performance, 1996 Marketing Period**



**Figure 2. Comparison of Advisory Service Pricing Performance to Benchmark Prices, Corn, 1996 Marketing Period**

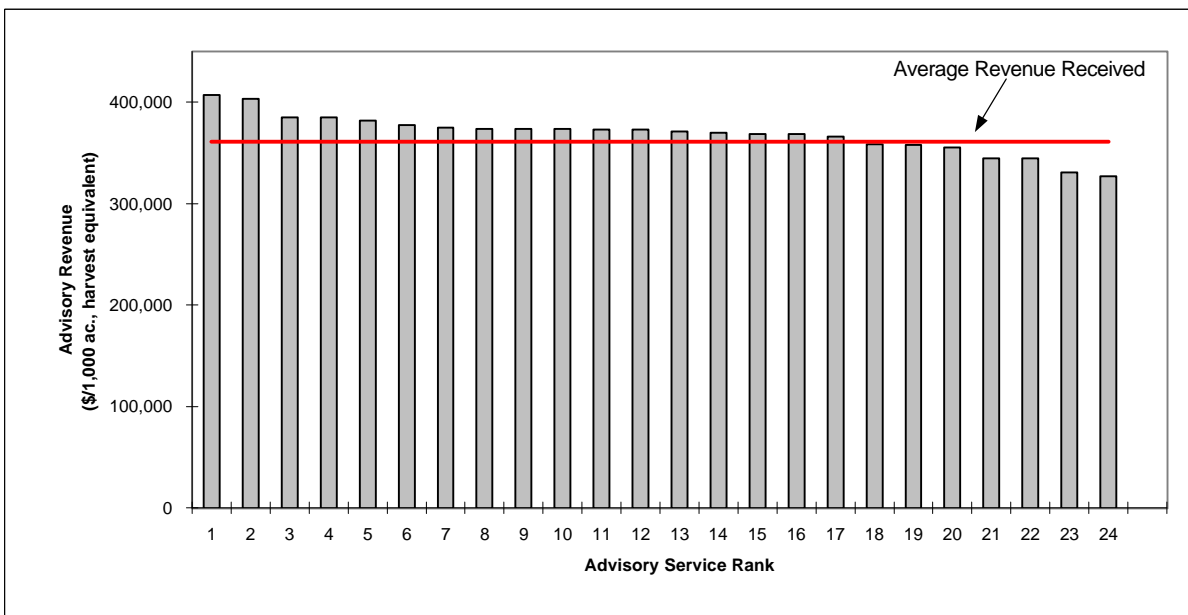
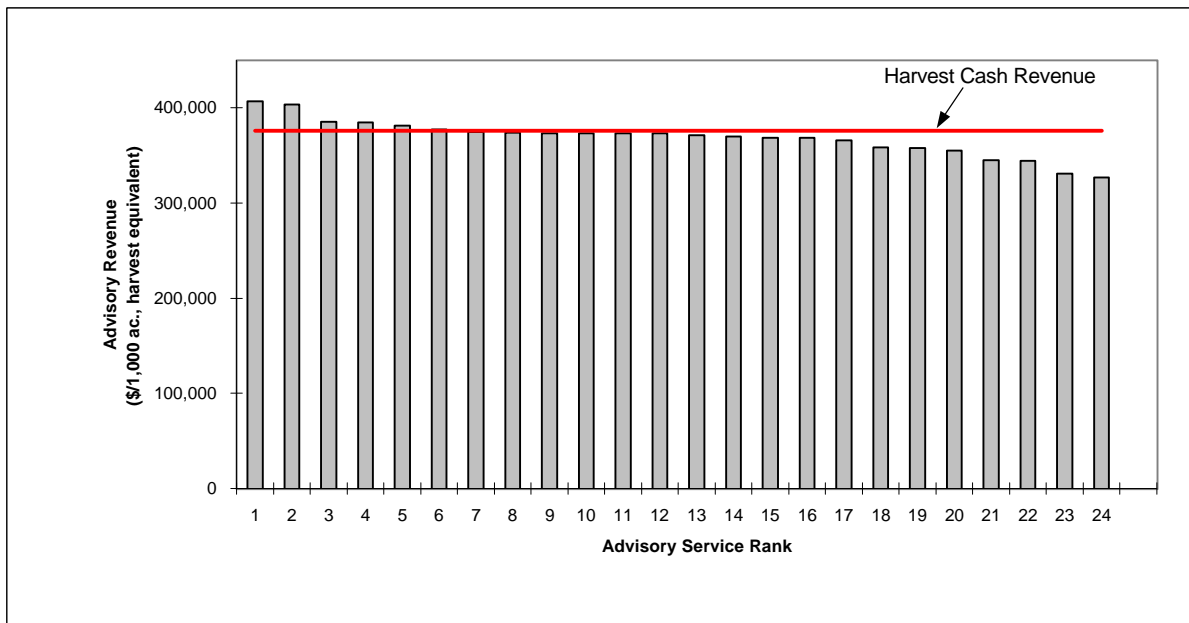


**Figure 3. Comparison of Advisory Service Pricing Performance to Benchmark Prices, Soybeans, 1996 Marketing Period**

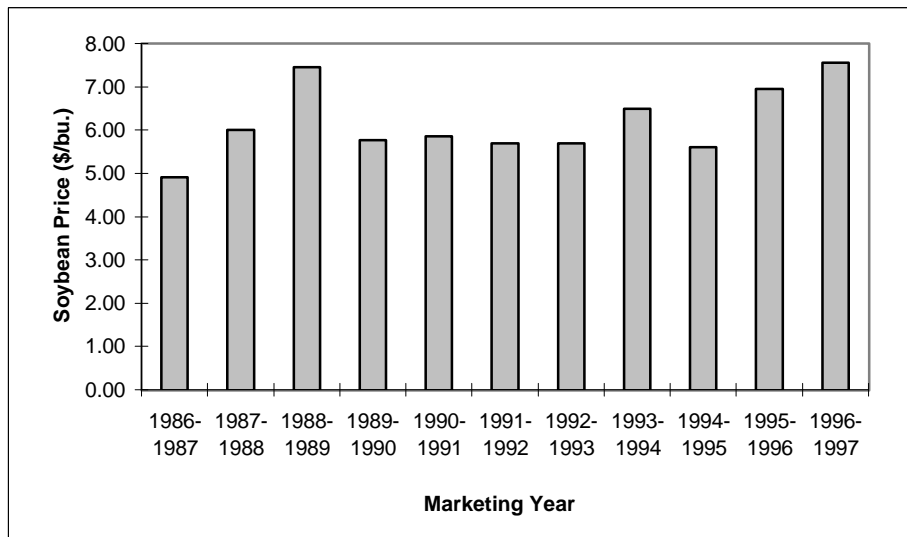
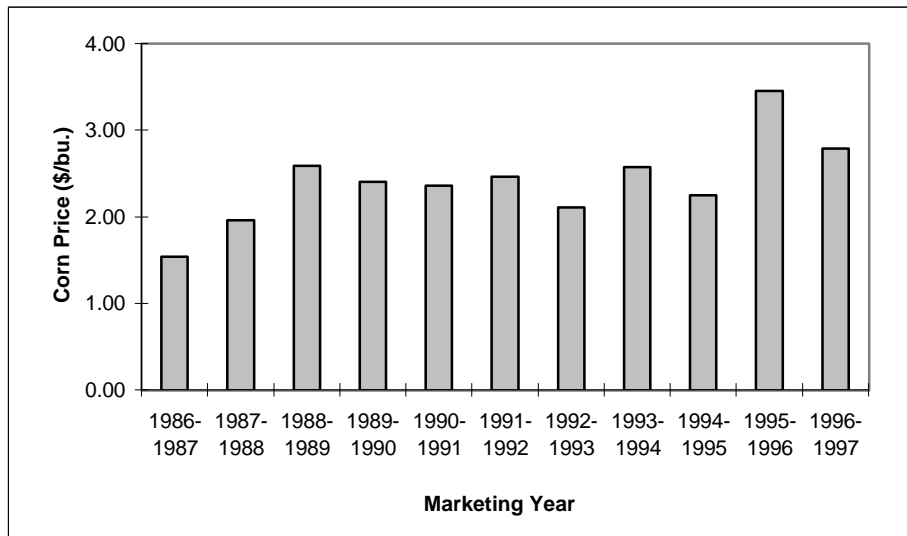




**Figure 4. Comparison of Advisory Service Performance to Benchmark Revenue, Corn and Soybeans, 1,000 acres, 50/50 Rotation, 1996 Marketing Period**

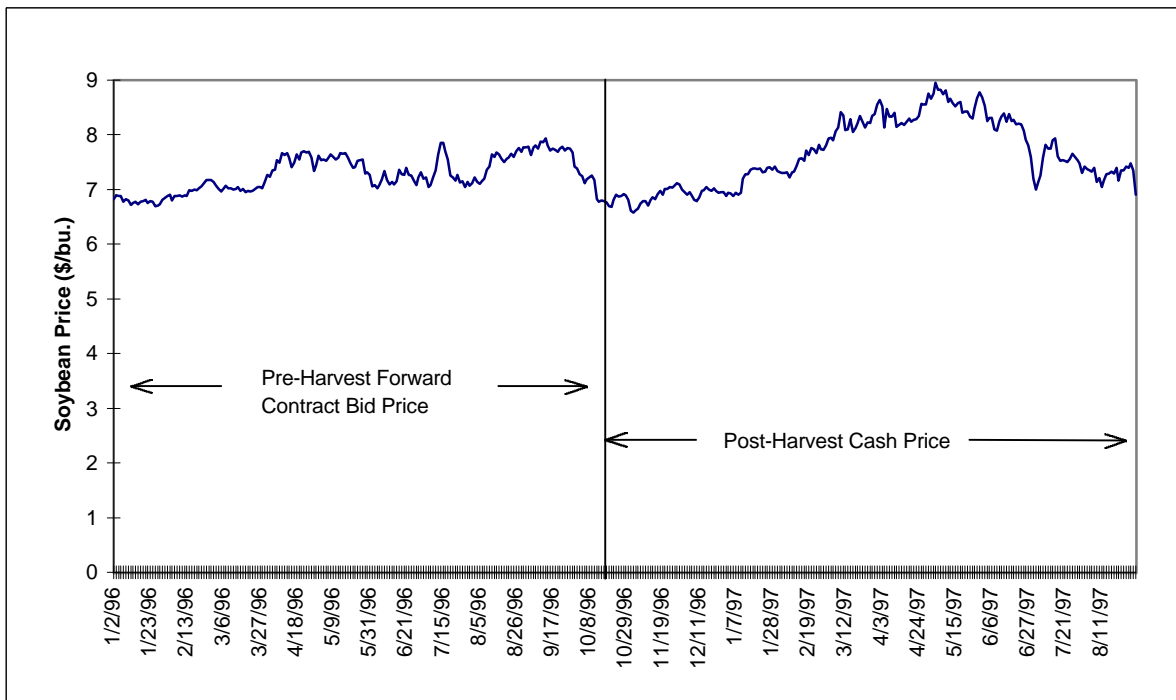
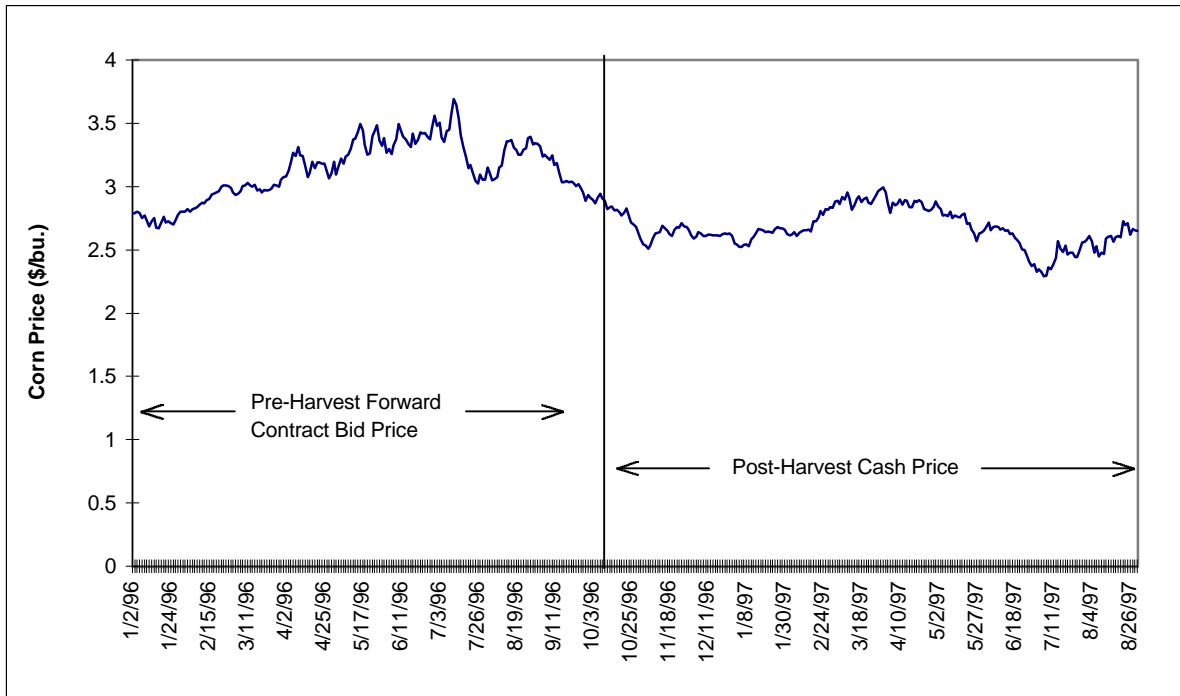


**Figure 5. Average Corn and Soybean Price Received by Farmers, State of Illinois, 1986-1987 Through 1996-1997 Marketing Years**

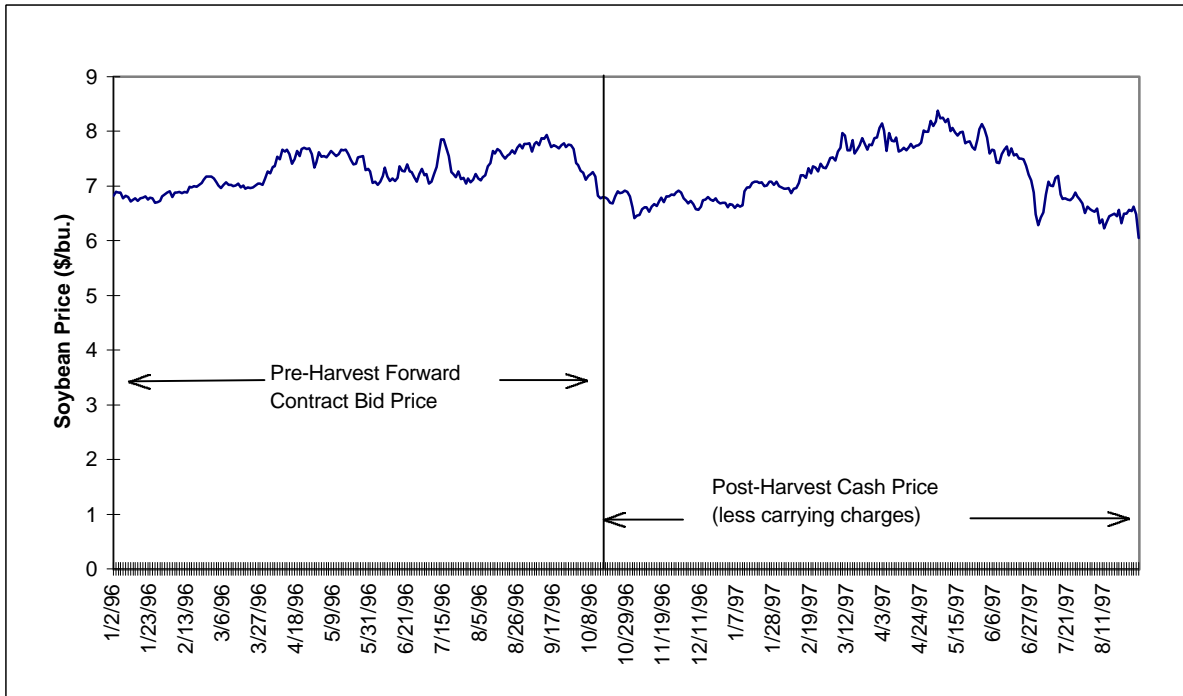
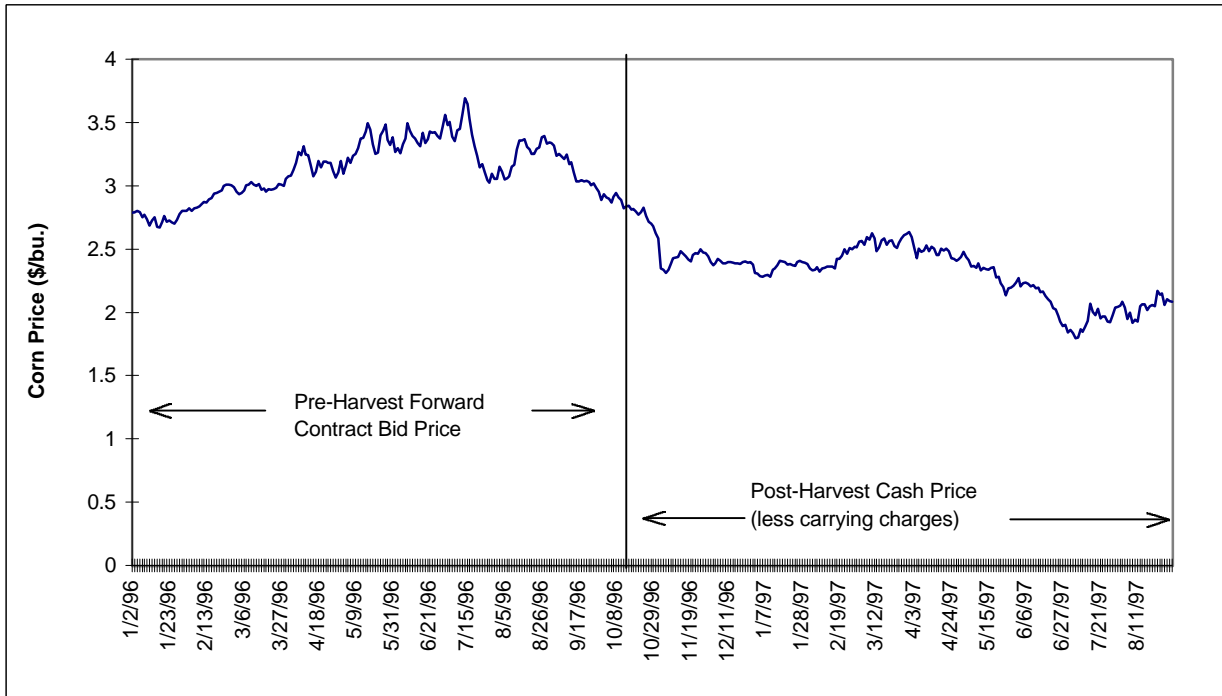


Note: Average price received is *not* adjusted for carrying charges, and hence, is not stated on a harvest equivalent basis.

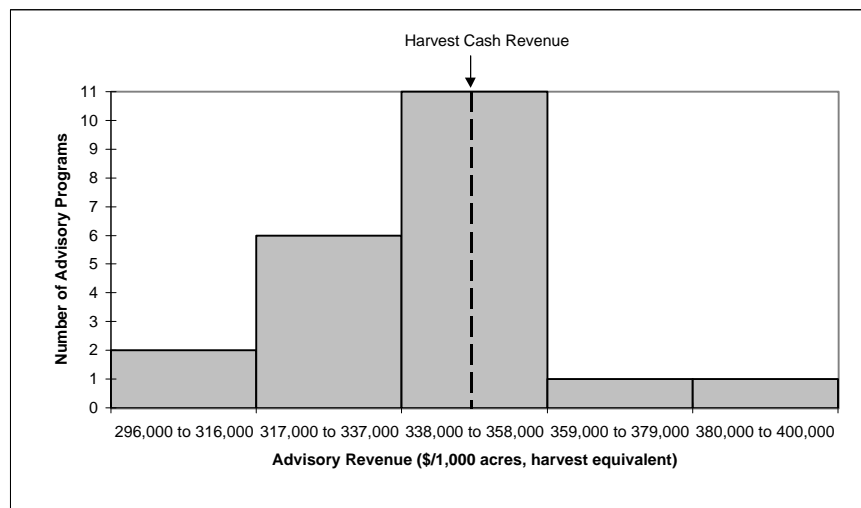
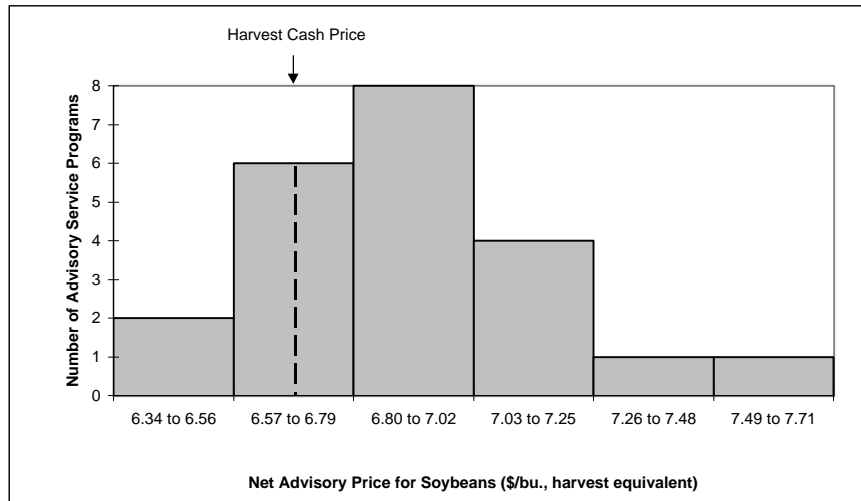
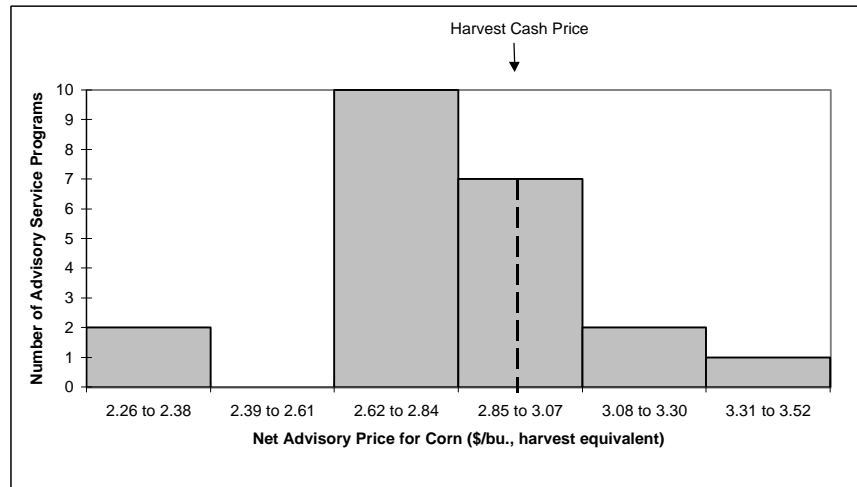
**Figure 6. Daily Corn and Soybean Prices, Central Illinois, 1996 Marketing Period**



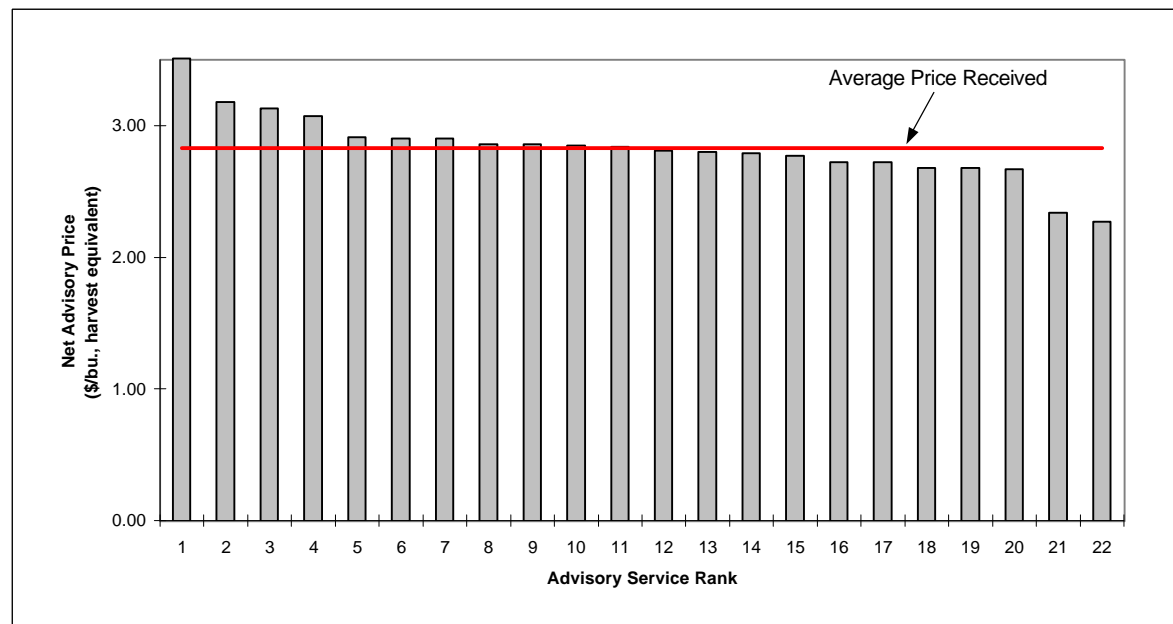
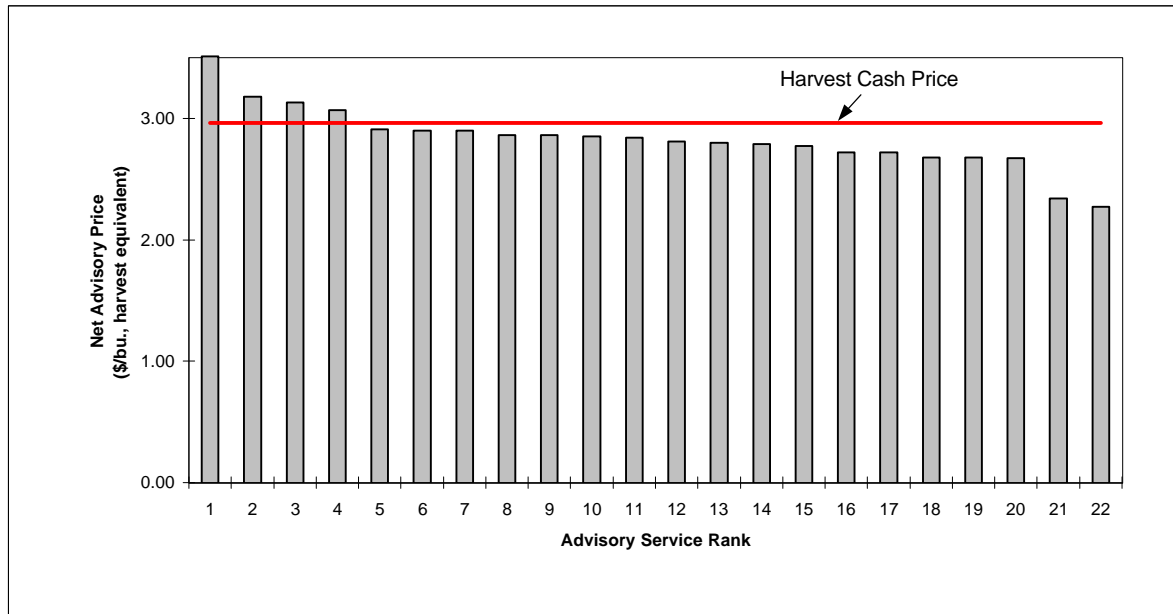
**Figure 7. Daily Corn and Soybean Prices, Central Illinois, 1996 Marketing Period (adjusted for full carrying charges)**



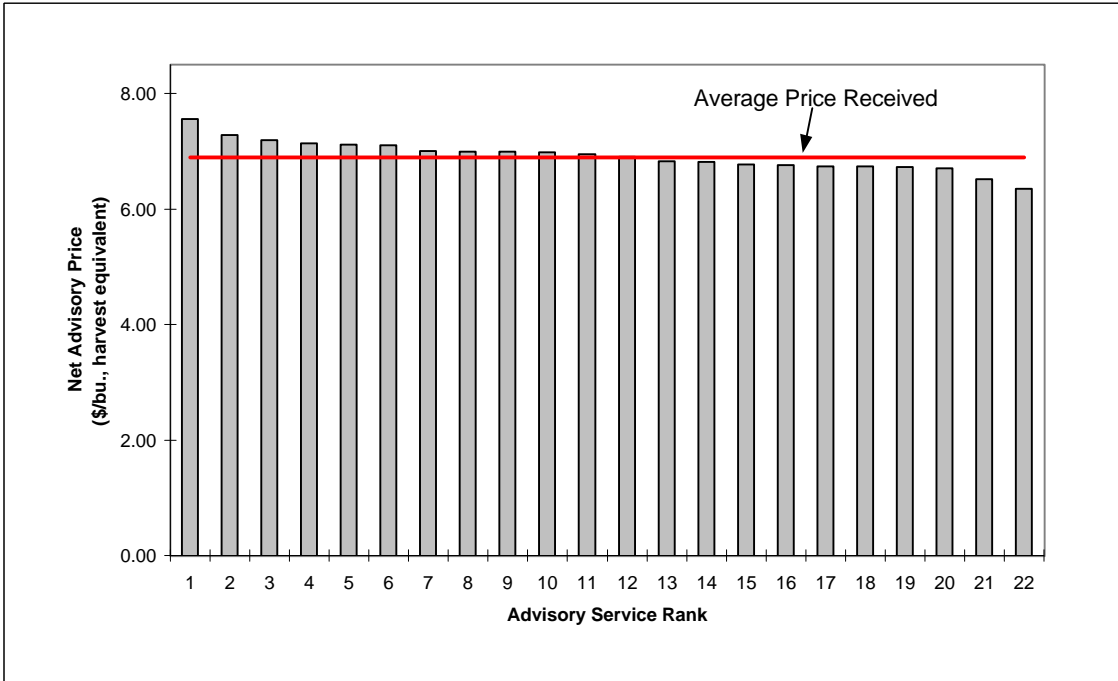
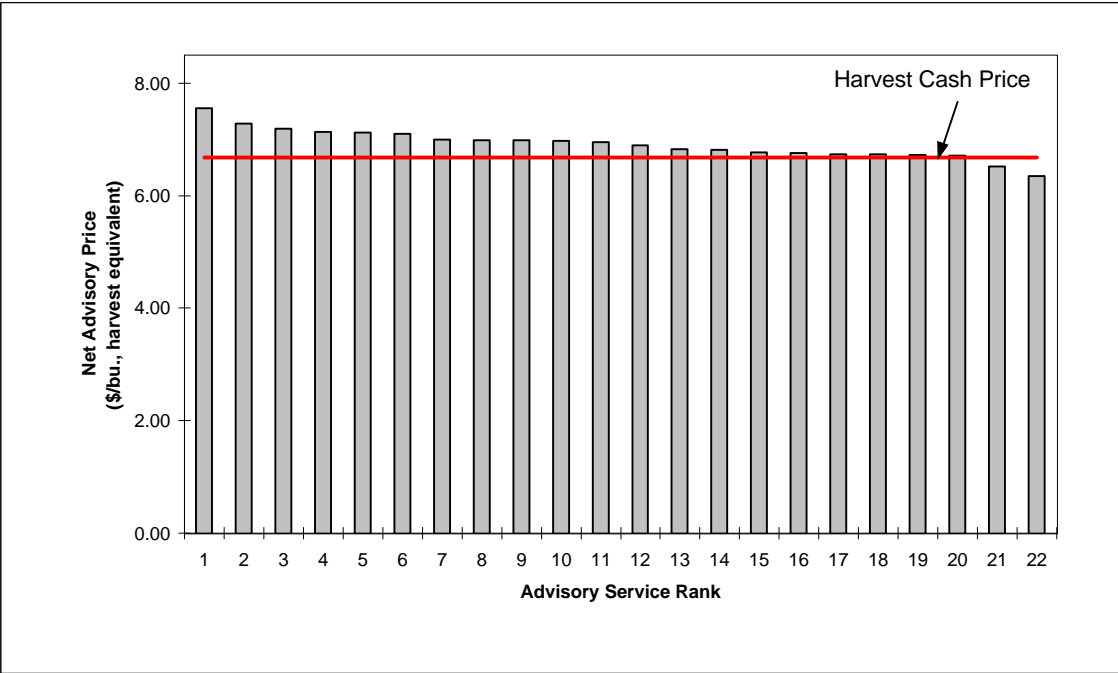
**Figure 8. Distribution of Market Advisory Service Pricing Performance, Two-year Average**



**Figure 9. Comparison of Advisory Service Pricing Performance to Benchmark Prices, Corn, Two-year Average**



**Figure 10. Comparison of Advisory Service Pricing Performance to Benchmark Prices, Soybeans, Two-year Average**



**Figure 11. Comparison of Advisory Service Performance to Benchmark Revenue, Corn and Soybeans, 1,000 acres, 50/50 Rotation, Two-year Average**

