

1995 Pricing Performance of Market Advisory Services for Corn and Soybeans

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Abstract

The purpose of this research report is to present an evaluation of advisory service pricing performance in 1995 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 1995. It is important to recognize that the performance results in this report address only the pricing, or return, element of risk management. Another important point to consider is that the pricing results are for one marketing period only, and it is the first period that such results are available.

The total number of “advisory programs” evaluated is twenty-five. 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 and FarmDayta. 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 1995 crops is September 1, 1994 - August 31 1996, 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 25 corn programs is \$3.04 per bushel. The range of net advisory prices for corn is quite large, with a minimum of \$2.34 per bushel and a maximum of \$3.81 per bushel. The average net advisory price across all 25 soybean programs is \$6.61 per bushel. As with corn, the range of net advisory prices for soybeans is substantial, with a minimum of \$5.75 per bushel and a maximum of \$7.92 per bushel.

Of the 25 marketing programs for corn, ten programs achieved a net price that is within (plus or minus) 12 cents of the harvest cash price of \$3.22 per bushel. Two of the advisory programs achieve a net price markedly higher than the harvest price, while 13 programs achieve a net price that is more than 12 cents per bushel below the harvest price. For soybeans, ten of the advisory programs are grouped within (plus or minus) 20 cents per bushel of the harvest cash price of \$6.40 per bushel. However, 11 of the 25 programs achieve a net price that is more than 20 cents per bushel above the harvest price, with only two services more than 20 cents per bushel below the harvest price.

Introduction to the AgMAS Project

US agriculture is entering a period of increased economic uncertainty. The recently passed *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 vast majority of producers will have complete flexibility in their 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 will play 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)¹. In addition, there is an emerging trend of producers employing private advisory services to completely manage the commodity marketing function of the farm business.

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 of the University of Illinois at Urbana-Champaign and Dr. Scott H. Irwin of The Ohio State University. Correspondence with the AgMAS Project should be directed to: Tom Jackson, AgMAS Project Manager, 345 Agricultural Administration Building, 2120 Fyffe Road, The Ohio State University, Columbus, OH 43210-1099; voice: (614)292-4865; fax: (614)292-0078; email: jackson.14@osu.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, US Department of Agriculture; Economic Research Service, US Department of Agriculture; Illinois Agricultural Experiment Station; Ohio Agricultural Research and Development Center; Ohio Soybean Council; Ohio State University Extension; and the Risk Management Agency, US Department of Agriculture.

¹ 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 purpose of this research report is to present an evaluation of advisory service pricing performance in 1995 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 1995. The marketing window for the 1995 crops is September 1, 1994 - August 31, 1996. 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 for one marketing period only, and it is the first period that such results are available. *It is inappropriate to infer too much information from one crop year's 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' worth 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, 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 final section of the report presents 1995 pricing results for corn and soybeans.

Data Collection

The market advisory services currently included in the study are those available on one of the major electronic information services - Data Transmission Network (DTN) or FarmDayta Network. Not all of the available "premium" services offered on the two networks 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 is twenty-five. 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). 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 produced 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 and FarmDayta. 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.² In this situation, both strategies are recorded and treated as distinct strategies to be evaluated.³

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., 1995 crop), the amount of the commodity to be sold, which futures or options contract is to be used (where applicable), and any price targets which are mentioned (e.g., sell cash corn when March 1996 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.

² Some of the programs that are depicted as “cash-only” did in fact have some futures activity, due to the use of hedge-to-arrive contracts and some use of options.

³ There are two instances where a service clearly differentiates strategies based on the availability of on-farm versus off-farm (commercial) storage. In these two instances, recorded recommendations reflect the off-farm storage strategy. Otherwise, services do not differentiate strategies according to the availability of on-farm storage.

The final set of recommendations attributed to each advisory service represents the best efforts of the AgMAS Project staff to accurately and fairly interpret the information made available by each advisory service via DTN or FarmDayta. 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 says that “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 service 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 service 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 they discontinue 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, 1994 through August 31, 1996, is used in the analysis. The beginning date is selected because advisory services in the sample first began to make marketing recommendations for the 1995 crop during September 1994. 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 (25% or less) of cash corn or soybeans unsold as of August 31, 1996. In these cases, actual cash sales dates during Fall 1996 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. The forward contract bid prior to September 1, 1995, was consistently 20 cents under the Chicago Board of Trade (CBOT) December 1995 futures settlement price for corn, and 20 cents under the CBOT November 1995 futures settlement price for soybeans. Therefore, the price assigned to forward contract recommendations for a particular day prior to September 1 is the CBOT December corn settlement price or November soybean settlement price for that day minus 20 cents. It is assumed that all forward-contracted grain is delivered at harvest.

It should be noted that the 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, it is recognized that 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.⁴

Quantity Sold

Since most of the advisory services’ recommendations are given in terms of the proportion of total production (e.g., “sell 5% of 1995 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.

⁴ 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.”

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 historical average yield, while the actual reported yield is used from the harvest period forward.

In Central Illinois, the average yield for corn is calculated to be 135 bushels per acre (bpa), based upon actual yields for the previous ten years. Therefore, recommendations regarding the marketing quantity made prior to October 1, 1995, are based on yields of 135 bpa. For example, a recommendation to forward contract 20% of expected 1995 production translates into a recommendation to contract 27 bpa (20% of 135).

The actual reported corn yield in Central Illinois in 1995 is 119 bpa. It is assumed that by October 1, 1995, when 20% of the corn in Illinois had been harvested, producers have 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 119 bpa.

Given this change in the yield expectation, in some cases it is necessary to make an adjustment 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 67.5 bpa. However, when the actual yield is applied to the analysis, sales-to-date of 67.5 bpa imply that 56.7% 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 1995 crop, making the total recommended sales 60% of the crop, the recommendation is adjusted to 3.3% of the actual yield (3.9 bushels), so that the total crop sold to date is 60% of 119 bushels per acre ($67.5+3.9=71.4=0.6*119$). After this initial adjustment, subsequent recommendations are taken as percentages of the 119 bpa actual yield, so that sales of 100% of the crop equal sales of 119 bpa.

The same approach is used for soybean evaluations. The historical ten-year average yield for Central Illinois in 1995 is 44 bpa, while the actual yield in 1995 is 42 bpa.

While the amount of cash sales is adjusted to reflect the change in yield information, a similar adjustment is not made for hedges that are already in place. For example, assume that a short futures hedge is placed in the December 1995 contract for 25% of the 1995 crop prior to October 1. Since the amount hedged is based on the trend yield assumption of 135 bpa, the futures position is 33.75 bpa (35% of 135). After the yield assumption is changed on October 1, this amount represents a short hedge of 28.4% ($33.75/119$). The amount of the futures position is not adjusted to move the position back to 25% of the new yield figure due to the fact that this transaction would incur additional

brokerage fees. 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 “leg” in or out of 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 leg of an 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 across 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, 1995, which is about the mid-point of 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 average of storage charges quoted in a telephone survey of Central Illinois elevators.

The interest rate is assumed to be 8.6% 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 1995 and the first three quarters of 1996 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 1995 is \$3.22 per bushel, the charge for volume reduction is 4 cents per bushel ($\$3.22 * .013$). Therefore, the flat shrink charge assigned to all stored corn is 6 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 1995/96 Corn Marketing Recommendations:

April 3, 1995 – forward contract 25% of expected 1995 production

CBOT Dec. 95 futures closed at \$2.6475 -- less 20 cent basis adjustment, transaction price is \$2.4475. Expected yield is 135 bpa, so 33.75 ($.25*135$) bpa is sold. No carrying charge is assigned to this transaction, since it will be delivered at harvest.

May 15, 1995 - hedge-to-arrive (HTA) 25% of expected 1995 production in Dec. 95 contract

CBOT Dec. 95 futures closed at \$2.625. Short hedge placed in Dec. futures at this price for 33.75 bpa. Service (brokerage) cost of 1 cent per bushel assigned to transaction.

July 20, 1995 - hedge 30% of expected 1995 production in Dec. 95 contract at \$2.90

CBOT Dec. 95 futures traded between \$2.895 and \$2.95 on July 20, 1995, so fill price is accepted as given. Short hedge placed in Dec. futures at \$2.90 for 40.5 bpa. Brokerage cost of 1 cent per bushel assigned to transaction.

August 15, 1995 - exit short Dec. hedge on 30% of 1995 production at the market

Since no specific fill price is given, the CBOT Dec. 95 settlement price of \$3.1075 is used. Loss on position is \$0.2075 per bushel. Brokerage cost is assigned when position is taken.

November 15, 1995 - sell 25% of 1995 crop in cash market at this time

Central Illinois cash price for corn on this date was \$3.135. Cash sales commitments now total 75% of 1995 crop (25% F.C. + 25% HTA + 25% cash sale). Expected yield now 119 bushels per acre, so this transaction should take total sales to 89.25 bpa (.75*119). Previous sales totaled 67.5 bpa, so this transaction will be for 21.75 bpa (89.25 - 67.5), instead of 25% of the crop. Interest charge of 2 cents per bushel, storage charge of 13 cents per bushel, and shrink charge of 6 cents per bushel assigned to this transaction.

November 30, 1995 - roll HTA to March 1996

Offset short Dec. position on 33.75 bpa and place short position for 33.75 bpa in March 1996 futures. CBOT Dec. futures closed at \$3.3075, so this futures position lost \$0.6825 (\$2.625 - \$3.3075) per bushel. Short March position placed at close of \$3.3775 on 33.75 bpa. Service (brokerage) cost of 1 cent per bushel assigned to this transaction for opening new position.

February 5, 1996 - fix basis on HTA

Offset short March position and sell grain in the cash market. CBOT March futures closed at \$3.615, so this futures position lost \$0.2375 (\$3.3775 - \$3.615) per bushel. The Central Illinois cash price on Feb. 5 was \$3.55. Interest charge of 9 cents per bushel, storage charge of 15 cents per bushel, and shrink charge of 6 cents per bushel assigned to this transaction.

February 9, 1996 - protect 25% of 1995 crop with May \$3.70 puts

CBOT May \$3.70 puts closed at \$0.1325 per bushel. Purchased puts for 29.75 bpa (.25*119). Brokerage cost of 0.6 cents per bushel assigned to this transaction.

April 10, 1996 - sell final 25% of 1995 crop

Central Illinois cash price was \$4.405 per bushel. Sale was for 29.75 bpa (.25*119). Cash sales now total 100%, or 119 bpa (33.75+33.75+21.75+29.75). Interest charge of 14 cents per bushel, storage charge of 20 cents per bushel, and shrink charge of 6 cents per bushel assigned to this transaction.

April 15, 1996 - re-own 20% of 1995 crop in July futures at \$4.42

CBOT July futures traded between \$4.34 and \$4.445, so fill price is accepted. Quantity assigned is 23.8 bpa (119*0.2). Brokerage cost of 1 cent per bushel applied.

April 19, 1996 - May \$3.70 puts covering 25% of 1995 crop expired worthless

Loss on this position was the purchase price of the puts, \$0.1325 per bushel. No brokerage cost assigned, since no transaction was made.

May 15, 1996 - Liquidate long July futures for 20% re-ownership on the open

CBOT July futures opened at \$4.88, for a gain of \$0.46 ($\$4.88 - \4.42) per bushel.

End of 1995 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 (\$3.55) less the futures losses (\$0.6825 and 0.2375), or \$2.63 per bushel. The net price also equals the futures price when the HTA is placed (\$2.625) plus the futures gain when the position is rolled ($\$3.3775 - \$3.3075 = \$0.07$), less the cash basis when the basis is fixed ($\$3.55 - \$3.615 = -\$0.065$), which also works out to \$2.63 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 the series of advisory service 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 119 bpa to arrive at a weighted average cash price, which in this example is \$3.38 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.⁵ This approach allows calculation of a weighted average, per-bushel gain for futures transactions. In this example, futures transactions that lost money outweighed transactions that gained money, resulting in an average per-bushel futures loss of 27 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.

The net average price received is the average cash price (\$3.38) less the carrying charge (\$0.22) plus the futures gain (\$-0.27) less the brokerage cost (\$0.01), which produces a net price of \$2.87 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. For corn, the average harvest-period cash price is calculated as the simple average of the Central Illinois cash price between October 15 and November 15 for corn, and between October 1 and October 31 for soybeans. The average harvest-period cash price in the 1995/96 marketing year for corn is \$3.22 per bushel, and for soybeans is \$6.40 per bushel.

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 1995 and August 1996, as reported by USDA in its *Agricultural Prices* publication. In order to make this benchmark price consistent with the

⁵ This procedure does not account for the interest earnings or costs associated with a futures margin account.

methodology for calculating the average returns to marketing advice, the monthly average cash market prices from November 1995 through August 1996 are adjusted back to a harvest-period equivalent by deducting carrying costs at mid-month. These monthly prices are then weighted by the average amount 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 1995/96 marketing year (after adjusting for carrying charges) is \$3.17 per bushel for corn, and is \$6.64 per bushel for soybeans.

1995 Pricing Performance Results for the Advisory Services

Evaluation results for the 25 advisory programs for the 1995 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 25 programs is \$3.04 per bushel, 18 cents below the harvest cash price and 13 cents below the average price received. The range of net advisory prices for corn is quite large, with a minimum of \$2.34 per bushel and a maximum of \$3.81 per bushel

Table 3 lists the program-by-program results of the soybean evaluations. The average net advisory price for all 25 programs is \$6.61 per bushel, 21 cents per bushel above the harvest cash price and three cents per bushel below the average price received. As with corn, the range of net advisory prices for soybeans is substantial, with a minimum of \$5.75 per bushel and a maximum of \$7.92 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, are already paid for, etc. Applying this logic, the results change only somewhat. Excluding the costs of commercial storage entirely (but continuing to subtract interest costs), the average net advisory price for corn increases to \$3.17 per bushel, still less than the harvest cash price of \$3.22 per bushel but equal to the average price received. The net advisory price for soybeans increases to \$6.73 per bushel, above both benchmark soybean prices.

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 1995. 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 adjusted for carrying costs.

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 \$319,908, about \$6,000 less than the revenue that could have been achieved if the producer sold all grain in the cash market at harvest. The average revenue is about \$8,000 below the revenue that would have been received if the producer received the average price received by all Illinois producers for the 1995 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 \$120,000.

For comparison purposes, the annual subscription cost of each advisory program also is listed in Table 4. Subscription costs, which average \$271 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 25 marketing programs for corn, ten programs achieved a net price that is within (plus or minus) 12 cents of the harvest cash price of \$3.22 per bushel. Two of the advisory programs achieve a net price markedly higher than the harvest price, while 13 programs achieve a net price that is more than 12 cents per bushel below the harvest price. For soybeans, ten of the advisory programs are grouped within (plus or minus) 20 cents per bushel of the harvest cash price of \$6.40 per bushel. However, 11 of the 25 programs achieve a net price that is more than 20 cents per bushel above the harvest price, with only two services more than 20 cents per bushel below the harvest price. In terms of revenue, 14 of the 25 programs achieved total revenues within (plus or minus) \$14,000 of the harvest cash revenue. Two programs achieved a total revenue well above the harvest cash revenue. In total, nine of the 25 services achieved total revenues that are below the harvest cash revenue by more than \$14,000.

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 rank ordered from 1 to 25 and plotted versus benchmark prices. As shown in Figure 2, only four marketing programs achieve a net price for corn that is equal to or higher than the cash price at harvest. Seven programs achieve a net price equal to or higher than the average price received by Illinois farmers for the 1995 marketing period. As reported in Figure 4, nineteen of the twenty-five soybean programs achieve a net advisory price equal to or higher than the harvest cash price, while eleven soybean programs equal or top the average price received.

In looking at the results, it is worth noting that the 1995 marketing period was quite unusual, particularly for corn. A combination of weather-induced production

problems in the U.S., low world stocks of feed grains, and strong world demand for grains caused prices to rise steadily prior to the 1995 harvest. Prices then skyrocketed after harvest as it became clear that domestic and export demand were more than could be met with existing supplies.

Figure 5 illustrates how unusual the 1995/96 marketing year is from a price perspective.⁶ For the ten marketing years prior to 1995/96, the mean of the season-average prices received by Illinois farmers is \$2.25 per bushel for corn and \$5.86 per bushel for soybeans. The maximum price received for this time frame is \$2.59 per bushel for corn and \$7.45 per bushel for soybeans, both observed in 1988/89. The season-average price for 1995/96 is estimated to be \$3.45 per bushel for corn and \$6.95 per bushel for soybeans.

Figure 6 shows the pattern of prices available for the 1995/96 corn and soybean crops. In January 1995, forward cash bids for the 1995 corn crop were around the ten-year average price of \$2.25. By May 1995, prices moved up to the vicinity of the 1988 season average price of \$2.59. At that time, prices looked fairly attractive for forward contracting. For soybeans, forward cash bids began 1995 at 20 cents below the 10-year historical marketing year average price, and did not reach the 1988 high of \$7.45 until January 1996, when that level was touched for one day, and did not break out above the \$7.45 level until April 1996.

The fact that prices tended to steadily rise through the marketing year meant that a traditional marketing program which sold some or all of a producer's corn prior to harvest did not capture the rise in prices witnessed after harvest. Also, programs that utilized the traditional strategy of short futures hedges prior to harvest tended to show substantial losses in futures trading. Marketing programs that recommended producers assume more downward price risk through storing cash grain and/or holding long futures positions, or managed the downside risk through the purchase of put options, were better positioned to take advantage of the price increases later in the marketing year.

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.

⁶ Note that the season average prices presented in Figure 5 are not adjusted for carrying costs.

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

Cash transactions:							
	(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)
4/3/95	2.4475	33.75	82.60	0	0	0	0
11/15/95	3.135	21.75	68.19	0.02	0.13	0.06	4.65
2/5/96	3.55	33.75	119.81	0.09	0.15	0.06	10.16
4/10/96	4.405	29.75	131.05	0.14	0.20	0.06	11.78
Total			401.65				26.59
		Avg. cash price (\$/bu.)	3.38			Avg. carrying charge (\$/bu.)	0.22
						Net cash price (\$/bu)	3.15
Futures transactions:							
	(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)
5/15/95	2.625	33.75	88.59	0.01			0.34
7/20/95	2.9	40.5	117.45	0.01			0.41
8/15/95	3.1075	-40.5	-125.85	0			0.00
11/30/95	3.3075	-33.75	-111.63	0			0.00
11/30/95	3.3775	33.75	113.99	0.01			0.34
2/5/96	3.615	-33.75	-122.01	0			0.00
2/9/96	0.1325	-29.75	-3.94	0.006			0.18
4/15/96	4.42	-23.8	-105.20	0.01			0.24
4/19/96	0	29.75	0.00	0			0.00
5/15/96	4.88	23.8	116.14	0			0.00
Total			-32.45				1.50
		Avg. futures gain (\$/bu.)	-0.27			Avg. brokerage cost (\$/bu.)	0.01
						Average net price per bushel	2.87

Table 2. Pricing Performance Results for 25 Market Advisory Service Programs, Corn, 1995 Marketing Period

Advisory Service Program	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Unadjusted Cash Sales Price	Carrying Charges			Net Cash Sales Price	Futures Gain	Brokerage Costs	Net Advisory Price
		Interest Costs	Storage Costs	Shrink Costs				
					-----\$/bushel-----			
Ag Line by Doane	3.35	0.06	0.09	0.03	3.18	-0.02	0.00	3.16
Ag Profit by Hjort Associates	3.26	0.05	0.08	0.03	3.10	-0.01	0.00	3.09
Ag Resource	3.53	0.08	0.12	0.04	3.29	0.55	0.03	3.81
Ag Review	3.37	0.06	0.10	0.04	3.18	-0.56	0.02	2.60
Agri-Edge (hedge)	3.55	0.08	0.10	0.03	3.35	-0.17	0.01	3.16
Agri-Edge (cash-only)	3.36	0.06	0.08	0.03	3.19	-0.11	0.00	3.08
Agri-Mark	3.75	0.09	0.16	0.06	3.45	0.19	0.02	3.62
Agri-Visor Aggressive Cash	4.12	0.07	0.15	0.06	3.84	-0.52	0.01	3.30
Agri-Visor Aggressive Hedge	3.45	0.05	0.14	0.06	3.19	-0.06	0.03	3.10
Agri-Visor Basic Cash	3.73	0.08	0.15	0.06	3.43	-0.69	0.01	2.74
Agri-Visor Basic Hedge	3.36	0.06	0.11	0.04	3.15	-0.21	0.02	2.92
Allendale	3.22	0.00	0.00	0.00	3.22	-0.72	0.01	2.49
Brock (hedge)	2.76	0.00	0.00	0.00	2.76	-0.39	0.03	2.34
Brock (cash-only)	2.85	0.02	0.05	0.02	2.75	0.00	0.00	2.75
Freese-Notis	3.10	0.04	0.08	0.03	2.96	0.00	0.00	2.96
Grain Field Report	3.22	0.06	0.09	0.03	3.04	0.19	0.03	3.20
Harris Weather/Elliott Advisory	3.54	0.07	0.15	0.06	3.26	-0.09	0.01	3.16
North American Ag.	3.54	0.05	0.12	0.05	3.33	-0.10	0.01	3.22
Pro Farmer (hedge)	3.38	0.06	0.11	0.04	3.16	-0.10	0.01	3.06
Pro Farmer (cash-only)	3.38	0.06	0.11	0.04	3.16	0.00	0.00	3.16
Prosperous Farmer	3.24	0.04	0.06	0.03	3.11	-0.10	0.08	2.93
Stewart-Peterson Advisory Reports	3.30	0.06	0.08	0.02	3.15	-0.20	0.02	2.93
Stewart-Peterson Strictly Cash	3.07	0.05	0.07	0.02	2.94	0.00	0.00	2.94
Top Farmer	3.45	0.08	0.11	0.03	3.23	-0.04	0.01	3.18
Zwicker	3.33	0.04	0.08	0.03	3.17	0.04	0.03	3.19
Descriptive Statistics:								
<i>Average</i>	3.37	0.05	0.10	0.03	3.18	-0.12	0.02	3.04
<i>Median</i>	3.36	0.06	0.10	0.03	3.18	-0.09	0.01	3.09
<i>Minimum</i>	2.76	0.00	0.00	0.00	2.75	-0.72	0.00	2.34
<i>Maximum</i>	4.12	0.09	0.16	0.06	3.84	0.55	0.08	3.81
<i>Range</i>	1.36	0.09	0.16	0.06	1.09	1.27	0.08	1.47
<i>Standard Deviation</i>	0.28	0.02	0.04	0.02	0.22	0.28	0.02	0.32
Benchmark Prices:								
<i>Harvest Cash Price</i>								3.22
<i>Average Price Received</i>								3.17

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 25 Market Advisory Service Programs, Soybeans, 1995 Marketing Period

Advisory Service Program	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Unadjusted Cash Sales Price	Interest Costs	Storage Costs	Net Cash Sales Price	Futures Gain	Brokerage Costs	Net Advisory Price
				-----\$/bushel-----			
Ag Line by Doane	6.80	0.10	0.09	6.60	0.00	0.00	6.60
Ag Profit by Hjort Associates	7.17	0.21	0.15	6.81	-0.02	0.01	6.79
Ag Resource	7.33	0.24	0.17	6.92	0.00	0.00	6.92
Ag Review	6.85	0.11	0.07	6.67	-0.05	0.03	6.59
Agri-Edge (hedge)	7.00	0.17	0.13	6.70	-0.07	0.01	6.63
Agri-Edge (cash-only)	7.13	0.19	0.14	6.80	-0.09	0.00	6.71
Agri-Mark	7.50	0.24	0.19	7.07	0.89	0.05	7.92
Agri-Visor Aggressive Cash	6.88	0.14	0.10	6.64	-0.10	0.01	6.53
Agri-Visor Aggressive Hedge	6.84	0.09	0.08	6.68	0.33	0.03	6.97
Agri-Visor Basic Cash	6.58	0.07	0.08	6.43	0.00	0.00	6.43
Agri-Visor Basic Hedge	6.72	0.09	0.08	6.55	0.25	0.02	6.78
Allendale	6.79	0.07	0.13	6.59	-0.35	0.01	6.23
Brock (hedge)	6.21	0.00	0.00	6.21	-0.43	0.03	5.75
Brock (cash-only)	6.47	0.10	0.09	6.29	0.00	0.00	6.29
Freese-Notis	6.57	0.08	0.08	6.41	0.00	0.00	6.41
Grain Field Report	7.12	0.20	0.14	6.78	0.08	0.02	6.84
Harris Weather/Elliott Advisory	7.27	0.21	0.17	6.89	-0.04	0.00	6.85
North American Ag.	6.98	0.15	0.17	6.66	-0.20	0.02	6.45
Pro Farmer (hedge)	7.20	0.20	0.17	6.82	-0.04	0.00	6.78
Pro Farmer (cash-only)	7.07	0.21	0.16	6.70	0.00	0.00	6.70
Prosperous Farmer	7.18	0.17	0.15	6.86	-0.31	0.02	6.53
Stewart-Peterson Advisory Reports	6.49	0.11	0.07	6.30	-0.14	0.04	6.13
Stewart-Peterson Strictly Cash	6.49	0.11	0.07	6.31	0.00	0.00	6.31
Top Farmer	6.89	0.23	0.14	6.52	-0.28	0.02	6.22
Zwicker	7.32	0.21	0.15	6.96	-0.04	0.02	6.90
Descriptive Statistics:							
<i>Average</i>	6.91	0.15	0.12	6.65	-0.02	0.01	6.61
<i>Median</i>	6.89	0.15	0.13	6.67	-0.04	0.01	6.60
<i>Minimum</i>	6.21	0.00	0.00	6.21	-0.43	0.00	5.75
<i>Maximum</i>	7.50	0.24	0.19	7.07	0.89	0.05	7.92
<i>Range</i>	1.28	0.24	0.19	0.86	1.32	0.05	2.16
<i>Standard Deviation</i>	0.32	0.07	0.05	0.23	0.25	0.01	0.40
Benchmark Prices:							
<i>Harvest Cash Price</i>							6.40
<i>Average Price Received</i>							6.64

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 25 Market Advisory Service Programs, 1,000 Acre Corn and Soybean Farm, 50/50 Rotation, 1995 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 Line by Doane	376	277	326,571	300
Ag Profit by Hjort Associates	368	285	326,381	240
Ag Resource	453	291	371,938	600
Ag Review	309	277	293,048	360
Agri-Edge (hedge)	377	279	327,572	330
Agri-Edge (cash-only)	367	282	324,379	330
Agri-Mark	431	332	381,744	240
Agri-Visor Aggressive Cash	393	274	333,751	299
Agri-Visor Aggressive Hedge	369	293	330,733	299
Agri-Visor Basic Cash	326	270	297,789	299
Agri-Visor Basic Hedge	347	285	315,892	299
Allendale	296	262	278,888	150
Brock (hedge)	279	242	260,127	240
Brock (cash-only)	328	264	295,864	240
Freese-Notis	352	269	310,500	360
Grain Field Report	380	287	333,831	144
Harris Weather/Elliott Advisory	376	288	331,856	168
North American Ag.	383	271	327,062	360
Pro Farmer (hedge)	364	285	324,565	225
Pro Farmer (cash-only)	376	281	328,890	225
Prosperous Farmer	348	274	311,367	395
Stewart-Peterson Advisory Reports	349	257	303,123	156
Stewart-Peterson Strictly Cash	350	265	307,457	99
Top Farmer	379	261	319,992	180
Zwicker	379	290	334,376	239
Descriptive Statistics:				
<i>Average</i>	362	278	319,908	271
<i>Median</i>	368	277	324,565	240
<i>Minimum</i>	279	242	260,127	99
<i>Maximum</i>	453	332	381,744	600
<i>Range</i>	174	91	121,617	501
<i>Standard Deviation</i>	38	17	25,301	104
Benchmark Revenue:				
<i>Harvest Cash Revenue</i>	383	269	325,990	
<i>Average Revenue Received</i>	377	279	328,055	

Notes: Advisory revenue per acre for corn (soybeans) is calculated as net advisory price times 119 (42) 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.

Figure 1. Distribution of Market Advisory Service Pricing Performance, 1995 Marketing Period

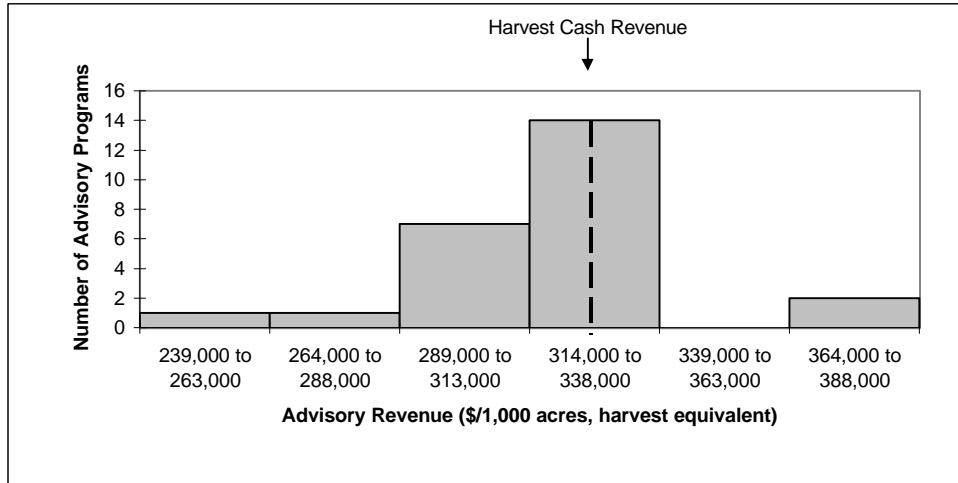
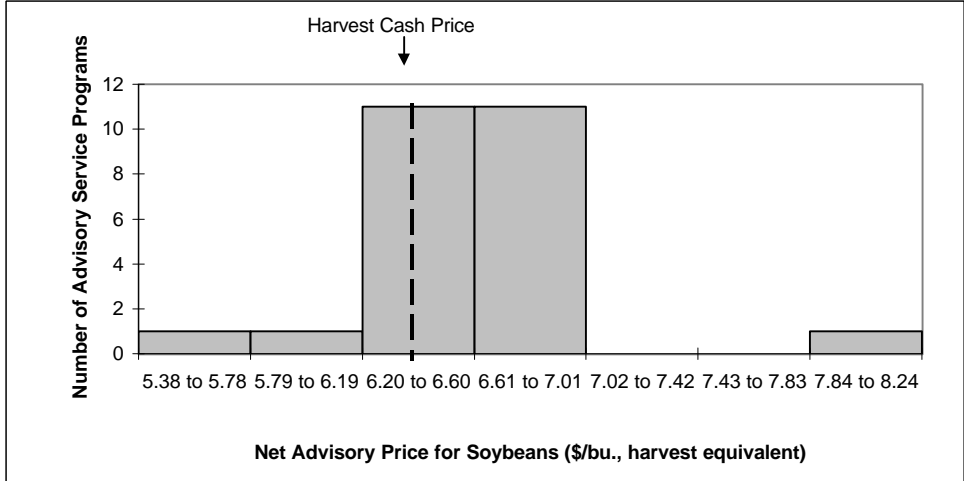
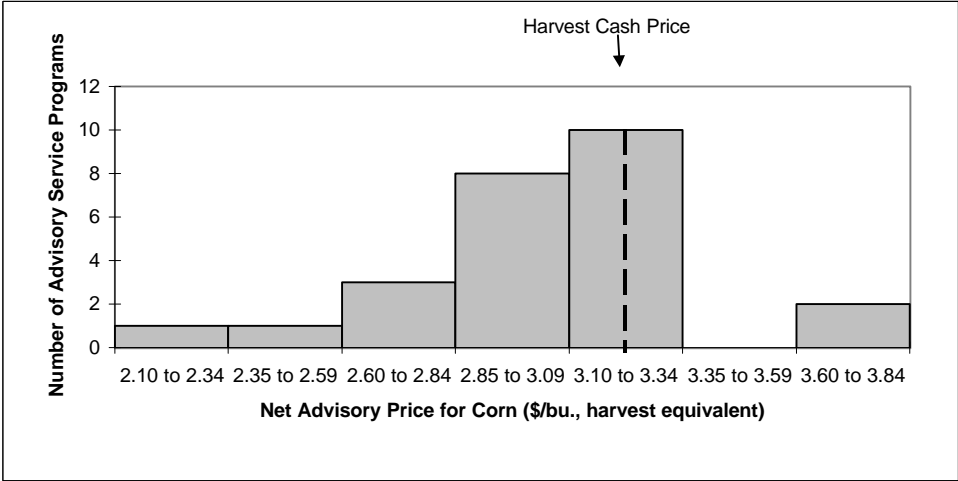


Figure 2. Comparison of Advisory Service Pricing Performance to Benchmark Prices, Corn, 1995 Marketing Period

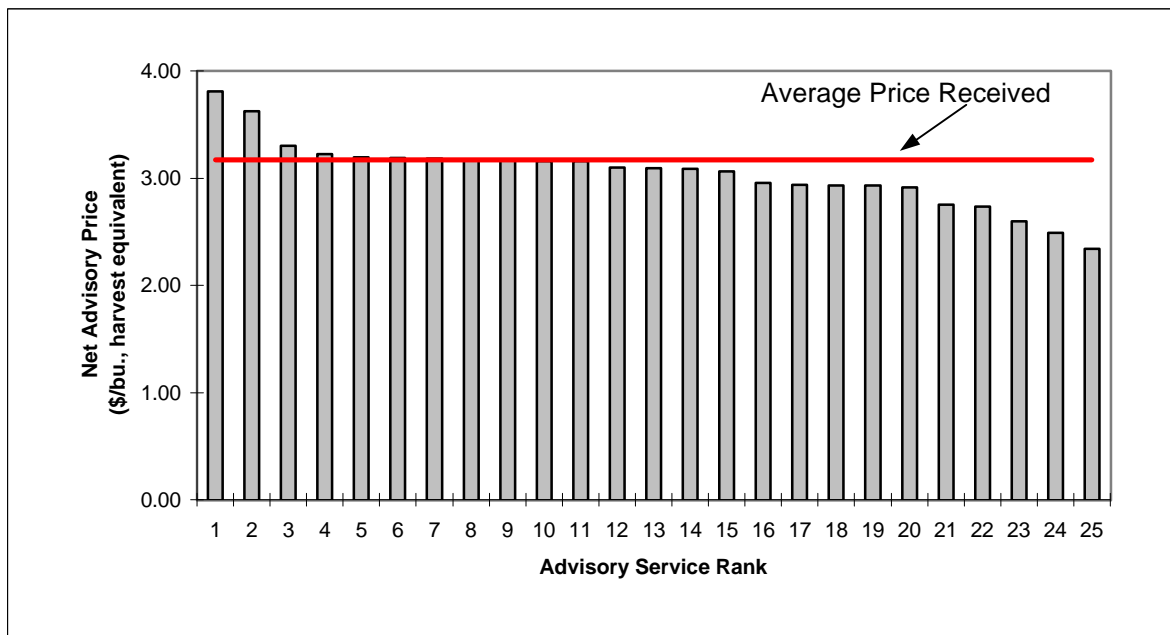
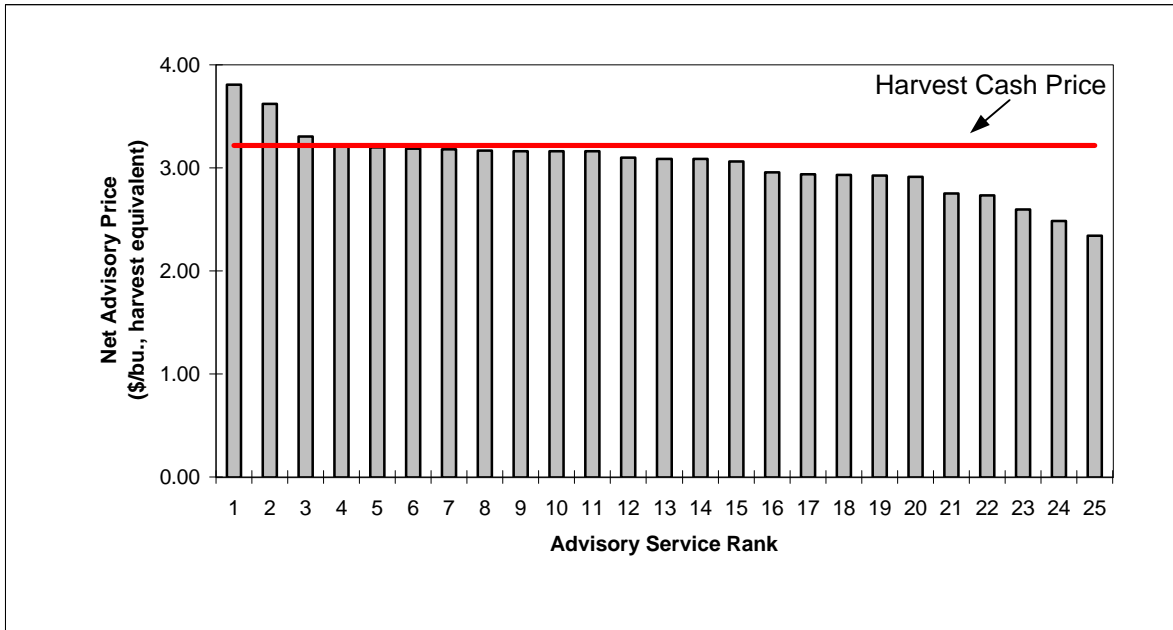


Figure 3. Comparison of Advisory Service Pricing Performance to Benchmark Prices, Soybeans, 1995 Marketing Period

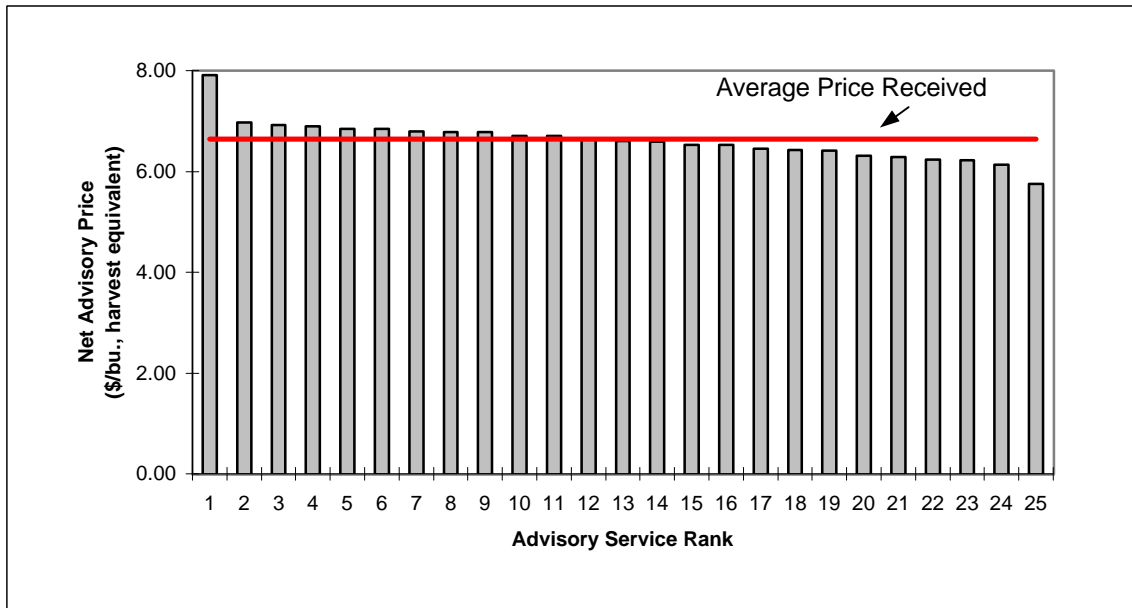
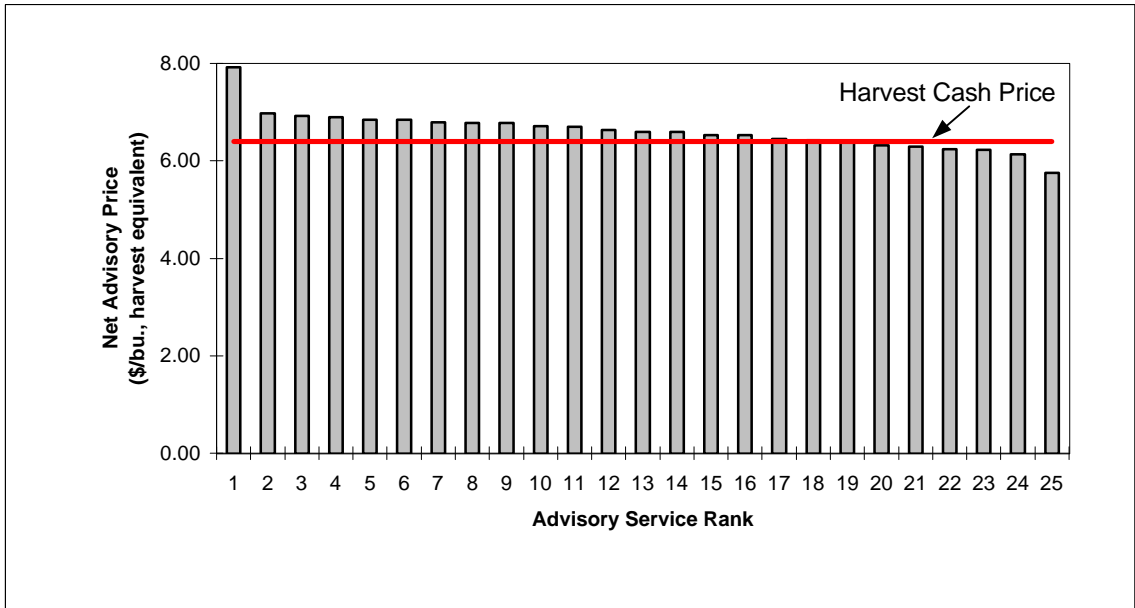


Figure 4. Comparison of Advisory Service Performance to Benchmark Revenue, Corn and Soybeans, 1,000 acres, 50/50 Rotation, 1995 Marketing Period

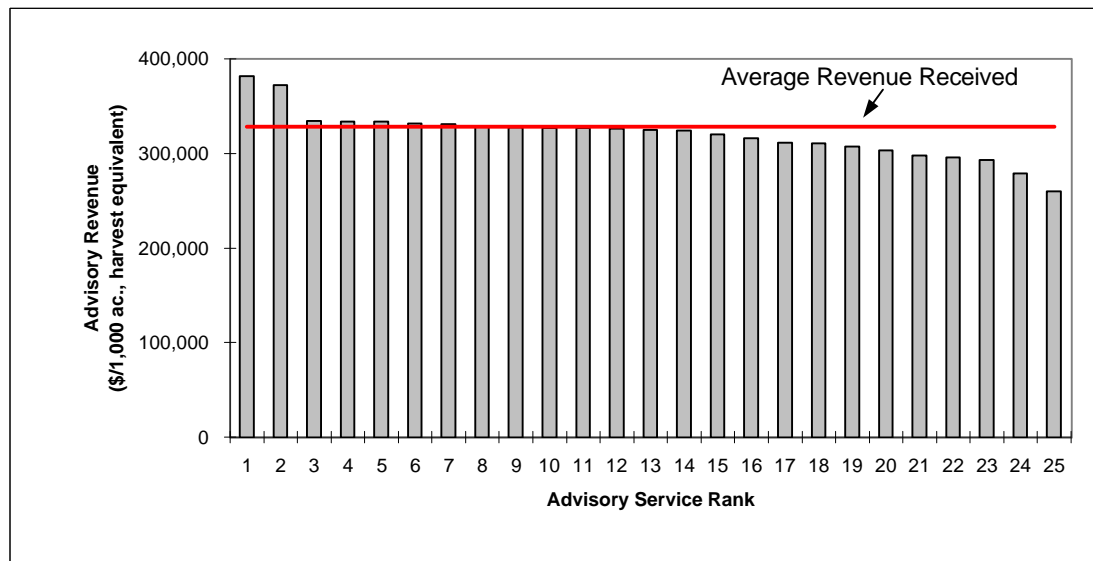
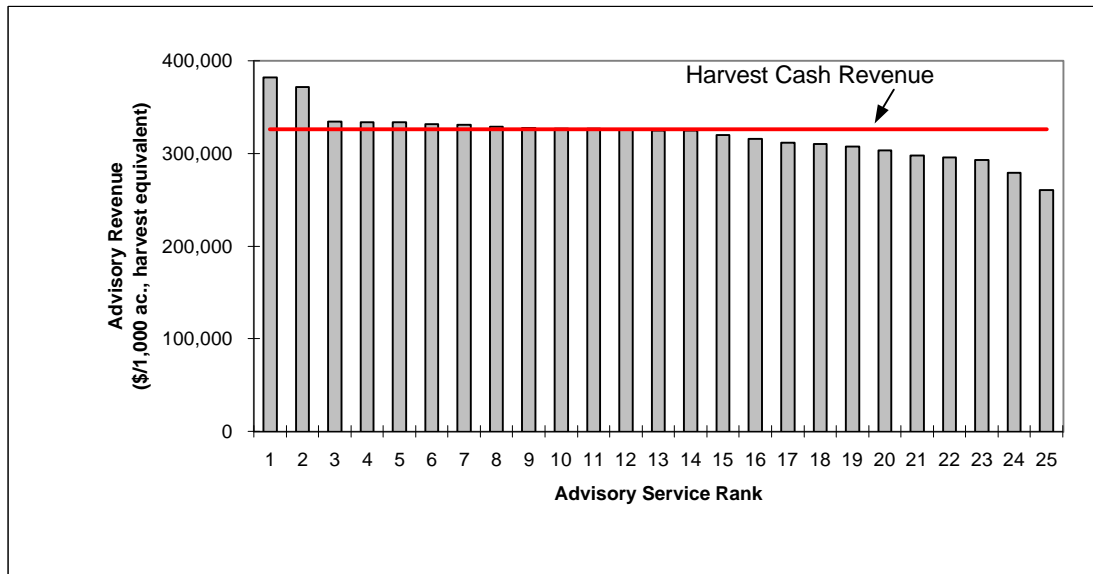
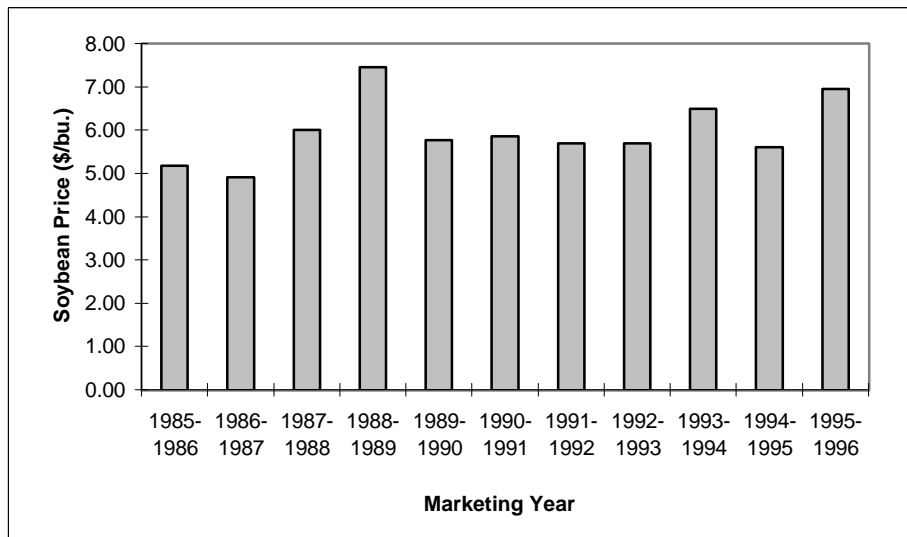
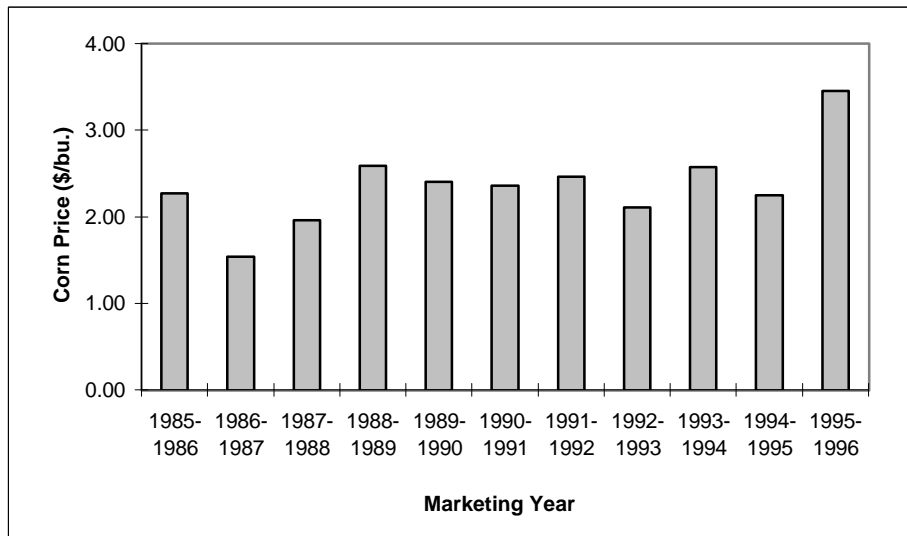


Figure 5. Average Corn and Soybean Price Received by Farmers, State of Illinois, 1985-1986 Through 1995-1996 Marketing Years



Note: 1995-1996 average price received is estimated for corn and soybeans. 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, 1995 Marketing Period

