The Pricing Performance of Market Advisory Services in Wheat Over 1995-2004

by

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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 service. 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 marketing assumptions, particularly with respect to the geographic location of production, cash and forward contract prices, fill (execution) prices for futures and options positions, expected and actual yields, storage charges and government programs.

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Abstract

The purpose of this research report is to evaluate the pricing performance of market advisory services for the 1995-2004 wheat crops. Explicit marketing assumptions are applied to the track records in order to produce consistent and comparable results across the different advisory programs. Each of the assumptions are made in order to reflect "real-world" marketing conditions encountered by a representative southwestern Illinois soft red winter wheat producer or a southwest Kansas hard red winter wheat producer. Several key assumptions are: i) with few exceptions, the marketing window for a crop year runs from June 1st before harvest through May 31st following harvest, ii) commercial physical storage costs, as well as interest opportunity costs, are charged to post-harvest sales, iii) brokerage costs are subtracted for futures and options transactions, and iv) Commodity Credit Corporation (CCC) marketing loan recommendations made by advisory programs are followed where possible. Following these and other assumptions, the net price received by a subscriber to a market advisory program is calculated for the 1995-2004 wheat crops.

Market and farmer benchmarks are developed for the performance evaluations. Three market benchmarks are specified in order to test the sensitivity of performance results to changing benchmark assumptions. The 24-month market benchmark averages market prices for the entire 24-month marketing window. The 16-month market benchmark is computed in a similar fashion, except the first eight months of the marketing window are omitted. The average harvest price represents the average price sold if an equal amount of wheat was priced each day of the harvest window. The farmer benchmark using market prices is constructed using actual amounts sold each month throughout the marketing year (as reported by the USDA) as weights and average monthly cash prices from the applicable cash series. The market and farmer benchmarks are computed using the same assumptions applied to advisory program track records.

The results from this study are similar to those obtained by the AgMAS Project in the analysis of market advisory service performance in corn and soybeans. The advisory program prices in corn and soybeans tended to fall in the middle of the price range, over time, similar to the performance in wheat. However, the proportion of programs beating the various benchmarks was lower in wheat than in corn and soybeans. Additionally, in corn and soybeans, advisory program prices, on average, were higher than the benchmarks. In wheat, this is not the case, only average advisory program prices in hard red winter wheat were higher than the 24-month market benchmark. When examining price and risk, none of the benchmarks dominated the "randomly selected program" in corn and soybeans; however, in wheat many of the benchmarks dominated the random program. Predictability tests also yielded better results in corn and soybeans than in wheat, although not by much. Even though the results from the corn and soybean analysis are better than those in wheat for the market advisory programs, in both studies the programs performed rather poorly. From the data presented in both of the studies it appears that market advisory programs have a difficult time outperforming both the market and farmer benchmarks.

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Introduction

A common belief exists that farmers tend to do a poor job pricing their products. It has often been said that farmers market two-thirds of their crops in the bottom one-third of the price range. Many farmers seem to believe this adage, as was evident at a December 2000 University of Illinois extension meeting in which 77% of the attendees agreed with the statement, "On average, corn and soybean producers market 2/3 of their crop in the bottom 1/3 of the price range." Previous studies have found that farmers turn to market advisory services to increase their pricing performance (e.g., Patrick and Ullerich, 1996; Patrick, Musser, and Eckman, 1998; Schroeder et al., 1998; Norvell and Latz, 1999; Pennings et al., 2004).

Market advisory services, for a fee, provide market information and analysis to farmers for a variety of crops and livestock. They provide recommendations on when to sell, how much to sell, and what tools to use to sell a farmer's product. In addition to hedging advice, market advisory services may also provide speculative advice. Information, analysis, and advice can be transmitted by several methods: e-mail, webpages, telephone, mail, etc. Some services provide customized advice for individual clients, while most provide "one-size fits all" advice. Some services may only make cash sales, while others implement futures and options strategies in addition to making cash sales.

Previous studies have shown the importance of market advisory services to agricultural producers. Patrick and Ullerich (1996) found that, out of 17 risk management sources, market advisory services only ranked lower than farm records and computerized information services. Schroeder et al. (1998) found that market advisory services ranked as the number one source of information in determining price expectations for a sample of Kansas farmers. Norvell and Latz (1999) found that market advisory services tied with accountants as potentially the most important consultant for Illinois farmers in the future. Surveys done at Purdue Top Farmer Workshops indicate that market advisory services have increased in importance over time. They found that the use of the services, as well as the amount of money spent on such services, has increased over time.

According to a survey of large-scale farmers in the Midwest, Great Plains, and Southeast conducted by Isengildina et al., 82% of those surveyed used a market advisory service. Subscribers tended to be less risk averse than non-subscribers. Fifty-seven percent of those using market advisory services subscribed to multiple services. While 28% of those surveyed never switched services, the remaining survey respondents switched on average every 3.3 years. Farmers used market advisory services to increase price more than to reduce risk. While only 11% of those surveyed followed market advisory service advice precisely, the remaining subscribers stated that the advice does have a large impact on their pricing strategies. Selection of a market advisory service was found to be based on the familiarity with a service and the marketing style of the service compared to that of the farmer.

Analysis of market advisory service performance advanced substantially through the AgMAS Project at the University of Illinois. Initiated in 1994, the goal of the Project is to

provide farmers with thorough, objective evaluations of market advisory services. AgMAS research to date has mainly focused on evaluating advisory service performance in corn and soybeans. Irwin et al. (2006) and several earlier AgMAS reports examined pricing performance in corn and soybeans over 1995-2004. It was found that the services outperformed the farmer benchmarks, but performed roughly equal to the market benchmarks, especially when risk is taken into consideration. The results suggested that the services may help improve farmer pricing in corn and soybeans, while taking on only slightly more risk. Additionally, the authors found little to no evidence of predictability in performance across time.

While the analysis of market advisory services in corn and soybeans is useful in a general sense to producers of other crops, such generalizations should be treated with a great deal of caution. For example, corn and soybeans tend to be grown together in a rotation on farms, but in the case of other crops, such as wheat, this is less often the case. Yields for some classes of wheat, like hard red winter wheat, also tend to be very low and short crops tend to occur much more often. This could create potential problems when forward contracting before harvest. Other differences include basis levels, storage costs, and the growing season.

Jirik et al. (2000) examined the pricing performance of the market advisory services tracked by the AgMAS Project over 1995-1998 in soft red winter wheat. Results indicated poor performance by the services in comparison to the benchmarks used; only two programs outperformed the benchmarks. Additionally, predictability tests indicated that future performance could not be predicted based on past performance. Martines-Filho, Irwin, and Good (2001) updated this work by adding 1999 soft red winter wheat results. The results were similar to Jirik et al. except that only one program outperformed the benchmarks.[2]

This present study investigates the performance of market advisory services in wheat over 1995 to 2004. A total of 35 programs are included for at least one marketing year. Performance is evaluated for two different locations and types of wheat, soft red winter wheat in west southwest Illinois and hard red winter wheat in southwest Kansas. The study examines whether market advisory services outperform the appropriate benchmarks, on average, and if the services exhibit any persistence in their performance from year-to-year. As AgMAS subscribes to each of the services and collects the recommendations in "real-time", survivorship bias should be minimized. The time period covered includes a wide range of prices as compared to historic ranges. While it is not possible to construct a random sample of advisory services, the services included in this study represent the most widely followed services.

Several key assumptions are: i) with few exceptions, the marketing window for a crop year runs from June 1st before harvest through May 31st following harvest, ii) commercial physical storage costs, as well as interest opportunity costs, are charged to post-harvest sales, iii) brokerage costs are subtracted for futures and options transactions, and iv) Commodity Credit Corporation (CCC) marketing loan recommendations made by advisory programs are followed

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[2] In 2005, Kalous et al. examined performance for one market advisory service over 1970-2002 in hard red winter wheat. The authors found that the average net price received from following the service's advice was two cents lower than the average harvest price.

where possible. Following these and other assumptions, the net price received by a subscriber to a market advisory program is calculated for the 1995-2004 wheat crops.

Five quantitative indicators of performance are applied to advisory program prices and revenues over 1995-2004. The first indicator is the proportion of advisory programs in each of the thirds and quarters of the marketing year price range. The second indicator is the proportion of advisory programs that received higher net prices than the benchmarks. Third is the average price (or revenue) of advisory programs relative to the benchmarks. The fourth indicator is the average price (or revenue) and risk of advisory programs relative to the benchmarks. The final indicator is the predictability of advisory program performance from year-to-year. Market and farmer benchmarks are used for the evaluation and are computed using the same basic assumptions as are applied to advisory service track records.

The next section of the report details the procedures used to collect market advisory service recommendations. These procedures are well-established and very similar to those used in Irwin, et al. (2006). The second section describes the methods and assumptions used to simulate net advisory prices. The third section presents the methods and assumptions used to compute the benchmark prices. The fourth section presents a summary of the combined results for the 1995-2004 crop years. The final section presents a summary and conclusions.

Market Advisory Service Recommendations

The market advisory services followed in this analysis do not represent the entire population, nor is the sample random. It is not possible to include the population or a random sample, as a list of the "population" of services does not exist. Additionally, a standardized definition of an agricultural market advisory service does not exist. To assemble the sample used here, criteria were assembled to define a marketing service.

Five criteria were identified by the AgMAS staff to determine which services to include. First, to ensure that recommendations are available in "real-time" and received at the same time as farmers, they must be received electronically. This means that they may be satellite-delivered pages, Internet webpages, or email messages. This ensures that the recommendations are received prior to the intended date of implementation and that all subscribers receive the advice at the same time.

A second criterion is that a service must provide marketing recommendations to farmers. They may provide additional advice to speculators, but it must be clearly differentiated from the marketing advice. Terminology, such as "speculative" trading of futures and options and "hedging" using futures and options, is used to determine whether a service is focused on speculators or farmers. Only services focused on providing marketing advice to farmers are included. Some programs may provide speculative advice within a hedging program, but only advice specifically termed as hedging is included.

Third, recommendations must specify the percentage of the crop in each transaction (cash, futures, or options) and the price or date at which to implement the transaction. Recommendations relating to the marketing loan program are not required; however, they are

followed when given. Additionally, it is not required that the service make any futures and options recommendations. There are some, "cash only", services included in this study. However, services that use futures and options hedges, but do not clearly indicate when to make cash sales, or the amount to be sold, are not included.

The fourth criterion is that services must make "blanket", or "one-size fits all", marketing recommendations. In other words, services that provide only "customized" recommendations for individual producers are not included. In some cases, individual services may have more than one program tracked.

Fifth, a marketing service must be a viable, commercial entity. The low cost and ease of distributing information over the Internet has become a concern as it makes it possible for anyone to start a "market advisory service", even without experience or paying customers. To prevent such services from being included, but still keep from excluding smaller, newer advisory services; a service must provide two marketing years of recommendations to paying subscribers before it is included in the sample.

At the beginning of the AgMAS project, the sample of market advisory services was drawn from the Premium Services available from two agricultural satellite networks, Data Transmission Network (DTN) and FarmDayta, in the summer of 1994. This was not a comprehensive list of the available services; however, this list consists of the most widely used services by producers and meets a market test, as it is presumed that these services are the most widely demanded by subscribers to the farm networks. This sample was cross-checked with other sources and should be representative of the majority of advisory services available to farmers.

The list of services has changed throughout the study period. Services have been added as alternative methods of electronic delivery (webpages and emails) have become available. Most of the services began to transmit recommendations by webpages and email as the technology became more widely used. A total of 35 services have been included at some point in time for both types of winter wheat. Table 1 presents a list of these services as well as an explanation as to why they were added or removed from the sample (if a service was not included for the entire ten years). The AgMAS Project stopped following five programs because they went out of business between 1995 and 2004: Ag Profit by Hjort, Agri-Edge (cash only), Agri-Edge (hedge), Cash Grain, and Stewart-Peterson Strictly Cash. Zwicker Cycle Letter merged with AgriVisor. All three of the Risk Management Group programs only provided consistent cash recommendations for the 1999 wheat crop. Five other programs were dropped as they stopped giving consistent recommendations, either cash or hedge: Grain Field Report, Harris Weather/Elliott Advisory, North American Ag, Progressive Ag, and Prosperous Farmer. When a program is discontinued during the crop year, the remaining grain is sold using the same methods used to construct the market benchmarks in which an equal amount of the crop is sold each day for the rest of the crop year. Also, any futures or options positions open when a program is discontinued are closed on that day at the futures settlement price or options premium. This is consistent with previous studies of commodity fund and commodity trading adviser performance (e.g., Elton, Gruber, and Rentzler, 1987). Throughout the rest of the report, the term "advisory program" is used, as some advisory services have multiple marketing

programs. AgLine by Doane, Agri-Edge, Agrivisor, Brock, Pro Farmer, Risk Management Group, and Stewart-Peterson all have multiple advisory programs.

Figure 1 presents a distribution of track record lengths for all of the programs included in the analysis. Only 15 programs were included for all 10 crop years. Overall, the average and median length was six years. The majority of programs were followed for either one to four years or all ten crop years.

Survivorship bias may present problems in the assembly of an advisory program database. If survival bias is present, it may bias performance measures significantly upward, as "survivors" should tend to perform better than "non-survivors" (e.g. Brown et al., 1992; Schneeweis, McCarthy, and Spurgin, 1996; Brown, Goetzmann, and Ibbotson, 1999). One form of survivorship bias occurs if only advisory programs that remain in business at the end of the sample period are included. This form of bias should be eliminated in this study as all programs that were tracked are included in the sample. Another form of survivorship bias occurs when a discontinued program is deleted from the sample for the year in which it was discontinued, meaning that only survivors for the full crop year are included in the sample. This bias should be minimized in this study because programs discontinued during a crop year are included in the sample for that crop year using the methods stated earlier. The final form of survivorship bias occurs when data from prior periods are "back-filled" when an advisory program is added. In this analysis, recommendations are not back-filled when an advisory program is added. Services are tracked beginning in the crop year following the decision to be added.

Hindsight bias is another type of bias to consider when assembling a database of advisory program recommendations (Jaffe and Mahoney, 1999). Hindsight bias occurs when, after the fact, profitable recommendations are collected and recorded, while unprofitable recommendations are ignored. The AgMAS Project subscribes to all of the services, and all recommendations are recorded in real-time, therefore, hindsight bias should not be a concern. Information is received electronically, allowing immediate recording. Additionally, as some programs provide multiple daily updates, information from all updates is included.

The amount of the commodity involved in the transaction, which crop year's production is being sold, which futures or options contract is being used (where applicable), and any price targets that are set, are noted for each recommendation. When price targets are given, but not filled immediately, the recommendation is noted until it is filled or cancelled. It should be noted that, recommendations for hedging programs are not screened for "speculative" versus "hedging" use of futures and options, once a hedging program has been defined. This means that all futures and options recommendations given as part of a marketing program are included.

Some advisory services have more than one program. Often, this means one program may offer one set of advice for cash-only marketers (which may include futures positions used as HTAs, basis, and/or options) and another for those willing to use futures and options (although futures and options are not always recommended). Recommendations for both programs are recorded and treated as separate programs. In some instances, programs may provide different advice for on-farm versus off-farm (commercial) storage. For this analysis, only recommendations pertaining to commercial storage are followed.

Advisory program track records are checked for accuracy and completeness. Some programs give status reports that indicate what positions are in place and how much of the crop has been sold. The AgMAS track records are checked against these status reports. Additionally, following completion of the crop year, the track records are checked to confirm that cash sales are exactly 100%, all futures positions have been offset, and all options positions are offset or expire.

It should be noted that the majority of services did not make specific recommendations for hard red winter wheat. Most made general wheat recommendations which were most often for soft red winter wheat. Several marketing services gave specific hard red winter wheat recommendations in addition to their soft red winter wheat recommendations, at least on one occasion (Ag Market Pro, Utterback Marketing Services, Pro Farmer, Progressive Ag, Top Farmer, AgLine by Doane, Ag Resource, Risk Management Group, Stewart-Peterson Advisory Reports, and AgriVisor). The positions for hard red winter wheat track records were determined by following the futures and options recommendations exactly as given, commonly using Chicago Board of Trade wheat contracts. Forward contract and spot cash sale recommendations were implemented on the date recommended and the percentage specified using the Kansas price series. Marketing loan recommendations were followed where possible. As the harvest windows between the two crops differ, sometimes the recommendations may not be followed exactly (recommendations to take marketing loan gains on a date prior to the harvest window or following harvest on bushels in which the marketing loan gains have already been received).

Information about the marketing approach, or "style," of the individual advisory programs can be obtained from the track records. A brief overview of the marketing approaches is presented in order to aid in the interpretation of the performance results presented later in this report. Tables 2 and 3 present the number of transactions for each program and crop year, in soft red and hard red winter wheat, respectively. These totals include all cash, forward contract, futures, options, and marketing loan recommendations. Entry and exit transactions for futures and options are counted separately, as many positions are entered and exited incrementally. These counts do not include daily sales made of the remaining crop for programs after they were discontinued. Significant variation in the number of recommended transactions exists from year to year and across programs. The total number of recommendations over the ten-year study exceeded 3,000 for each type of wheat.

Table 4 presents descriptive statistics on the number of transactions per crop marketing year by advisory program. This table shows the large variation in the number of transactions among programs. The average number of transactions for programs followed for more than one crop year range from 3 to 38 and 3 to 42 for soft red and hard red winter wheat, respectively. The average number of transactions across all programs and crop years is 14 for soft red winter wheat and 15 for hard red winter wheat. The number of transactions for individual programs in individual crop years varied from 1 to 68 for soft red winter wheat and 1 to 80 for hard red winter wheat. The number of transactions is very similar for the two types of winter wheat for most programs because most programs do not or rarely differentiate between the two types of wheat.

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Tables 5 and 6 present the number of cash transactions recommended for each program and crop year, in soft red and hard red winter wheat. This count only includes cash sales (spot, hedge-to-arrive, forward contract, etc.). There is significantly less variation in the number of cash sales as compared to the number of total transactions. A total of over 1,100 cash recommendations were made for each type of wheat over 1995-2004.

Table 7 presents descriptive statistics on the number of cash transactions per crop marketing year by advisory program. The table shows that programs tend to make a similar number of cash sales each year. The average number of cash transactions for programs tracked for more than one crop year ranges from 2 to 15 for soft red winter wheat and 1 to 15 for hard red winter wheat. The average number of cash sales made across all programs and crop years was five for both types of wheat. There is a wide range in the number of cash sales made for individual programs in individual marketing years, from 1 to 20 for both types of wheat. Again these results are similar for both types of wheat as most programs do not differentiate between the types of wheat.

These data indicate substantial differences in the marketing approach of individual programs. These counts, however, do not indicate anything about the timing or magnitude of the transactions. "Marketing profiles" are a useful tool for indicating information about timing and magnitude. Marketing profiles indicate, on a cumulative basis, the net amount priced (sold) each day of the marketing window for each program. The marketing window begins on June 1st of the year prior to harvest and ends May 31st of the year following harvest. The profiles combine futures, options, and cash market positions since price exposure of a portfolio of positions is a weighted-average of the price exposures of each position. The weights for each position are the deltas. Delta is defined as the dollar amount that the value of the position changes for a one dollar change in the price of the underlying commodity. Deltas are equal to one for cash and most futures positions. Deltas must be calculated and are not usually equal to one for options positions and futures cross-hedges. This allows marketing profiles to be comparable across crop years and programs. Marketing profiles conceptually begin at zero at the beginning of the marketing window and end at 100% on the last day of the marketing window.

Figure 2 presents two marketing profile examples in soft red winter wheat for the 2004 crop year. The first panel represents a conservative program that does very little pre-harvest hedging and makes a small number of transactions throughout the marketing year. The second panel shows a more aggressive program that hedges a large portion of the crop before harvest and makes a considerable number of transactions. Additionally, at times this program makes large swings in the percentage of the crop hedged and even hedges over 100% of the crop. This aggressive program shows the large time-series variation in the net percentage priced that often occurs for advisory programs. This variation tends to be much higher than what optimal hedging models typically suggest (e.g. Martines-Filho, 1996). Working (1962) found that commodity firms use "selective hedging" strategies, where hedges are entered and exited based on expected price movements.

A considerable amount of variation exists in marketing profiles across programs for a given crop year. However, seasonal tendencies are present in the average profile for all programs. Figure 3 presents the average marketing profile of all advisory programs tracked for

both types of wheat. On average, a relatively small portion of the crop is priced prior to harvest (roughly 30% is priced by harvest). Sales increase steadily, and almost linearly, until the following harvest when total sales reach nearly 100%. Total sales may not equal 100% at the end of the defined marketing year due to incomplete cash sales and futures and options positions currently held.

Marketing Assumptions

Following the end of the marketing year, the filled recommendations are assembled in chronological order. Each advisory program's advice for an individual crop year is considered complete when cumulative cash sales are 100%, all futures positions are offset, all options positions are either offset or expire, and the service stops giving advice for that crop year. Some explicit marketing assumptions are necessary to produce a consistent, comparable set of results across the different advisory programs. These assumptions are different for Kansas hard red winter wheat than for Illinois soft red winter wheat, and are intended to accurately reflect "real-world" marketing conditions for farmers in each region. A weighted average net price is calculated for the set of recommendations using these assumptions.

This section covering the marketing assumptions centers primarily on the 2004 crop year. However, most of the assumptions have remained the same over the entire 1995-2004 time period. The values used for some of the key variables used in this research are presented in Table 101.

Geographic Location

Two geographic locations were selected in order to compare market advisory performance in two different types of wheat and two different production regions. A location in Illinois where soft red winter wheat is grown and a location in Kansas where hard red winter wheat is grown were selected. The type of wheat grown in each state is due primarily to soil types and typical crop rotations. In Illinois, the soils are more productive and receive more rainfall, so corn and soybeans are typically grown, with wheat being a secondary crop. In Kansas, wheat is the primary crop as the soil types and rainfall are not as well suited for other crops. These particular regions were selected as data are more readily available than for other regions.

Soft red winter wheat data are collected for the West Southwest Crop Reporting District (CRD) in Illinois as defined by the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture (USDA). Figure 4 highlights the thirteen counties (Pike, Cass, Morgan, Scott, Sangamon, Christian, Montgomery, Bond, Madison, Macoupin, Greene, Calhoun, and Jersey) that make up the district. This CRD represents one of the largest wheat production regions in Illinois, with roughly 20% of the state's production. Additionally, a price reporting district that nearly overlaps this CRD is available. The prices in the reporting district are collected from non-terminal elevators. Finally, the price series also provides the most complete set of cash prices for the marketing window.

For hard red winter wheat, data are collected for the Southwest Crop Reporting District in Kansas. The fourteen counties (Hamilton, Kearny, Finney, Hodgeman, Stanton, Grant, Haskell, Gray, Ford, Morton, Stevens, Seward, Meade, and Clark) that make up this district are shown in Figure 5. This CRD produces between 15 and 20% of the state's wheat. Also, the price data that are readily available for this CRD is much more complete than any other region of Kansas.

Marketing Window

The term "marketing window" is used to describe the time period in which farmers normally make pricing decisions for a particular crop. This time period is also referred to as the pricing "decision-horizon" or timeline of a farmer. Since taking no action (e.g. performing no pre-harvest hedging) is a type of marketing decision that can be made, the marketing window may not equal the time period of observed market activity.

Dietz (2004) defined the marketing window as beginning on June 1st of the year prior to harvest and ending on May 31st of the year following harvest. The beginning of the marketing window represents the time at which decisions are made about production for the following year and new crop sales begin. According to Dietz, production decisions for the following year for Illinois producers typically begin between the current wheat harvest and the corn and soybean harvest that begins a few months later. These decisions are typically influenced by the outlook for prices for the upcoming crop year. Dietz indicated that such decisions generally begin even sooner for Kansas producers, and are based on chemical requirements and crop rotations. The ending date of the marketing window coincides with the ending date for the USDA wheat marketing year.

The actual pricing performance of the advisory programs in this analysis provides support for using this marketing window. As noted above, observed market positions cannot directly reveal the intended pricing window of a representative farmer following advisory program recommendations. However, averages over time and advisors should be suggestive as to the typical starting and ending points used to make recommendations for a crop. Figure 3, which shows the average marketing profiles for both crops, indicates that the advisory programs begin making hedging recommendations in June of the year prior to harvest. However, the figure also indicates that farmers following this advice, on average, are not 100% sold by the end of the marketing window. It is important to emphasize that the marketing profiles in Figure 3 represent the average of all advisory programs across 10 crop years (1995-2004). The averages mask substantial variation in marketing profiles across advisory programs for a given crop year and, in some cases, across crop years for the same advisory program

There are two further issues that need some attention. The first being that throughout the study, there were several instances in which marketing programs made recommendations prior to the beginning of the marketing window or following the end of the marketing window. As marketing windows are defined as the "normal" window, flexibility with respect to the marketing window exists, especially with recommendations that do not extend too far beyond the limits of the "normal" marketing window. Some of the recommendations do extend well beyond the marketing window; however, all of these recommendations are included in the advisory service's track record in the interest of completeness and accuracy. It may be that such recommendations

are beyond the flexibility of a representative farmer (e.g., holding cash wheat into the following harvest). However, as there are no rules defined for making such decisions, exceptions are considered on a case-by-case basis. The other issue relates to the definition of business days within the marketing window. This comes about because different entities have different policies with respect to holidays. In order to make pricing transactions, prices must be available for that business day. This study defines "official" business days as those where the Chicago Board of Trade is open and cash prices are reported by the Illinois Department of Ag Market News. Additionally, note that when the term "crop year" is used, it is referring to the two-year marketing window.

Prices

Illinois

The spot cash prices and forward bids used in this analysis are those reported for the West Southwest Illinois Price Reporting District, as shown in Figure 6. The data are collected and reported by the Illinois Department of Ag Market News, and are available electronically at http://www.ams.usda.gov/mnreports/gx_gr113.txt. The price used for each day is the midpoint of the range reported. The prices reported for this 20-county area best represent those for the West Southwest Crop Reporting District.

Pre-harvest prices must be estimated for roughly the first seven months of the marketing window because the Illinois Department of Ag Market News typically does not begin reporting cash forward bids until the January prior to harvest. For this time period when no forward bids are reported, a three step estimation procedure is implemented to estimate the forward bid. First, the average forward basis for the first five days that forward bids are reported is calculated. Findings from several studies indicate that the forward basis for corn, soybeans, and wheat widens systematically the more distant the time before harvest (Harris and Miller, 1981; Elam and Woodworth, 1989; Brorsen, Coombs and Anderson, 1995; Townsend and Brorsen, 2000; Shi et al., 2004). Based on these findings, the second step is to linearly widen the initial forward basis moving back to the beginning of the marketing window. This widening "factor" is computed using the average change in weekly forward bid prices over the 1982-2004 pre-harvest periods (0.18¢ per bushel per week). The average basis for each week that forward bids were reported by the Illinois Department of Ag Market News is calculated. Then the average change in these weekly basis levels is computed. The resulting weekly widening factor is converted to a daily value by dividing by five (0.036¢ per day). The widening factor for each day is computed by multiplying the daily widening factor by the number of days prior to the first reported bid. The third and final step is to add the estimated forward basis from the previous two steps to the Chicago Board of Trade (CBOT) new crop July futures settlement prices for the time period of unreported forward bids.

The widening factor estimation procedure should be a reasonably accurate reflection of actual forward bids for the early period of the marketing window because only the forward basis is estimated. Also, typically most of the hedging recommendations given that early in the marketing window are in futures or options, not in the cash market. The top panels in Figures 7 through 16 present soft red winter wheat cash prices for the 1995-2004 crop years in graphical

form. Three graphs are presented for each year. The first chart shows the daily cash prices, either forward contract for harvest delivery during the pre-harvest period or spot prices from harvest through the end of the marketing window. The second chart adds any LDP/MLG gains. The third chart takes storage costs into consideration for post-harvest cash prices.

Kansas

The cash and forward contract prices used in this analysis are constructed for the Southwest Kansas Crop Reporting District. There is not a regional cash price series, similar to the one used for Illinois, available for the Southwest CRD in Kansas. Cash prices for specific locations in the Southwest CRD were used. From 1995 to 2004, the number of locations available varied from two to three. The prices reported by the Ag Market News may be obtained electronically at http://www.ams.usda.gov/mnreports/dc_gr110.txt. An additional location, not included in the Ag Market News report was also used. This results in a sample of three or four locations for each year. Each day the overall high and low from all of the available locations were determined. The midpoint price was calculated and used as the representative price.

The Kansas Department of Ag Market News does not report forward contract prices. All forward bids had to be collected from the same locations reporting cash prices to the Ag Market News. Between two and four locations were available for each year. The midpoint of the daily range of prices was used for the forward bid.

In Kansas, elevators do not typically report forward bids until the August prior to harvest. Thus for the first two months of the marketing window, a similar forward basis estimation procedure to that used in Illinois is implemented to obtain the forward contract bids. For Kansas, the widening factor is added to the Kansas City Board of Trade (KCBOT) new crop July futures settlement prices. Graphs of the hard red winter wheat cash prices over 1995-2004 are presented in Figures 17 through 26. Just as with Figures 7 through 16, there are three price series presented.

Throughout 1995-2004, there were a few instances in which programs made recommendations for post-harvest forward deliveries (e.g., selling at harvest for January delivery). In some instances, the Illinois Department of Ag Market News reported bids for some of these deliveries; however, the Kansas Department of Ag Market News does not report post-harvest forward contract bids. Alternative sources for the forward contract bids for Kansas could not be located for all dates necessary. In order to keep the track records comparable, it was assumed that hedge-to-arrive contracts were used in place of post-harvest forward cash sales and converted to cash sales on the first day of the delivery month for both types of wheat. This substitution should not affect the results, as the only component of the cash price that was at issue was the basis. Additionally, there were very few of these recommendations, and they typically applied to a very small portion of the crop. Since both crops were treated the same, the results should remain comparable.

Recommendations to enter and exit futures and options positions may take a variety of forms, including market orders, limit-price orders, sell-stop orders, and buy-stop orders. For example, an order to sell July wheat at the market to hedge 25% of expected production would

be a market order. An order to buy July $3.00 puts at 25¢ to hedge 25% of expected production would be a limit order. In most cases, advisory programs report "fill" prices for executed transactions. These fill prices are cross checked against the relevant futures or options price data for that date. If the fill price for any type of order is within the trading range for the day, it is entered as the executed price for the recommendation. If the fill price for a market order is not within the day's trading range, the settlement price for that date is used as the executed price. If the fill price for a limit-price, sell-stop, or buy-stop order is outside of the trading range for the day, the transaction is not included in the track record. Price targets for limit-price, sell-stop, or buy-stop orders are checked against the daily price range on the reported fill date. If the price target and fill price are within the daily price range, then the reported fill price is used. If the price target is not within the range, then the transaction is not included in the track record. Where specific fill prices are not reported, the settlement price for the day is used.

When a position recommended by a service is not included in the track record because of the cross check, "catch-up" transactions may be necessary. The price targets for limit-price, sell-stop, and buy-stop orders are checked on subsequent days and executed if the target is hit. If the target is never hit, the next recommended transaction is adjusted up or down to reflect the excluded bushels. If an excluded transaction was intended to exit a position and no further related positions are recommended, the settlement price at expiration is used. Similar situations may arise with cash transactions when they are dependant upon hitting specific futures targets. When this type of recommendation is given, prices are cross checked with the relevant futures contract. If the target is hit, the cash sale is recorded. If the target is not within the daily price range, then the sale is not made and the next recommended cash sale is adjusted upwards to reflect the excluded bushels. This can also occur when a program gives a cash sale recommendation (spot or forward) based on futures prices hitting a specific target. In this case futures prices are cross-checked to see if the target was hit. If it was, the sale is made. If not, the sale is not made and the next sale is adjusted upwards to include the previously excluded bushels.

Quantity Sold

Since the majority of the recommendations are stated in terms of the proportion of total production (e.g. "sell 10% of 2004 crop today"), some assumption must be made about the amount of production to be marketed. If the per acre yield is 50 bushels, then for this analysis, an order to sell 10% of the crop translates to selling 5 bushels. At the end of the marketing year, when all of the advice has been executed, the final per-bushel selling price is the average price for each transaction weighted by the amount marketed in each transaction. This assumes that the "lumpiness" of futures and/or options contracts is not an issue. Lumpiness is due to the set 5,000-bushel size of each futures contract. This is less of an issue for large farmers than for small farmers. This may also have a smaller impact today, at least with soft red winter wheat, as the Chicago Board of Trade now has mini-contracts of 1,000 bushels.

Yields and Harvest Definition

In order to accurately reflect the returns to marketing decisions, an assumption must be made regarding the amount of expected production per acre since the actual yield is unknown

prior to harvest. For this study, the assumed yield prior to harvest is the calculated trend yield based upon a log-linear regression trend model of actual yields obtained from the USDA's Annual Crop Production Summary released in January following harvest for the respective crop reporting district beginning in 1972 and continuing until the latest crop year. For example, the 2004 forecast yield would be based on the actual yield data from 1972 to 2003. This is the same method used in other AgMAS reports. The actual reported yield is used in each location starting at the beginning of harvest. Table 101: Panel A presents the expected and actual yields for both types of wheat over 1995-2004.

Expected yields for 2004, for example, were 59.2 bushels per acre for southwest Illinois soft red winter wheat and 39.1 bushels per acre for southwest Kansas hard red winter wheat. Recommendations made prior to the beginning of harvest are based on these expected yields.

Once harvest begins, it is assumed that farmers can reasonably determine actual yields. Following this assumption, once harvest has begun, recommendations are based on actual yields instead of expected yields. Data on harvest progress are needed to determine the harvest window each year, especially the beginning date of harvest. The National Agricultural Statistics Service (NASS) collects and reports harvest progress data for each crop reporting district. These reports are usually not released soon enough to identify the beginning of harvest. This means that the exact harvest window cannot be determined from the available data. The following procedure is used to estimate the harvest window. The first business day nearest to 50% completion of harvest is used as the mid-point of harvest. The harvest window is assumed to begin seven business days prior to the mid-point of harvest and to end seven business days following the mid-point of harvest, for a total of fifteen business days, which typically covers at least 80% of the actual harvest.

NASS harvest progress reports are released weekly, meaning that the exact business day for the harvest mid-point is not known. The date is estimated using the weekly progress reports prior to and following 50% completion. The difference between the percentages harvested for the two weeks is divided by seven, to get the amount harvested each day. Counting forward from the amount harvested the previous week, using the daily percentage harvested, the business day closest to 50% is the harvest mid-point. This is the mid-point used in constructing the fifteen business day harvest window for southwestern Illinois soft red winter wheat. The same procedure is used for southwestern Kansas hard red winter wheat. Table 101: Panel B shows the harvest window and harvest mid-point for both locations over 1995-2004.

Typically, advisory programs do not make adjustments in their recommendations for changing yield expectations. In this analysis, the actual harvest yield must be equal to the total cash sales for the crop at the conclusion of the marketing time frame. To achieve this, the first cash sale made following the beginning of harvest is adjusted if needed. If the actual yield is below the expected yield, the amount in the first sale following the beginning of harvest is adjusted downward so that the recommended amount of the crop sold is based on actual yields. Similarly, if the actual yield is above expectations, the amount in the first sale after harvest begins is adjusted upwards. For example, in 2004 suppose that a program recommended forward contracting 50% of the wheat crop prior to harvest, this would be 29.61 bushels per acre (50% of 59.23) for a west-southwestern Illinois producer. The actual harvest yield was only 58 bushels

per acre, which means that 51.06% of the actual crop is contracted. In this example, the amount of the next cash sale would be adjusted downward to adjust for the excess crop sold prior to harvest. Futures and options positions that are already entered before the beginning of harvest are not adjusted for the change in yield.

During "short crop" years where yields will likely be substantially below trend, an additional adjustment to expected yields prior to harvest is made. The trend yield is used until the May USDA Crop Production Report is released, sometime around May 10th. If the yield forecast in this report is 20% or more below the trend yield, it is expected that a "reasonable" farmer would lower yield expectations to the lower USDA estimate, so that estimate is used as the expected yield. The 20% level was chosen for several reasons. First, the number of years in which yield adjustments are necessary is minimal. A smaller level could cause a greater number of years in which yield adjustments would be made, as wheat yields have a high level of variability. Second, actual yields often differ substantially from forecast yields. Third, yield shortfalls of less than 20% should cause minimal delivery problems for producers. Then, as in normal crop years, when harvest begins the actual yield is used. This situation arose several times during the 1995-2004 crop years. It occurred once in the case of Illinois soft red winter wheat during the 1996 crop year. It occurred five times in the case of Kansas hard red winter wheat during the 1995, 1996, 1997, 2001, and 2002 crop years. Table 101: Panel A presents the May USDA forecast yields.

Hedging Costs

Hedging positions in futures and options carry several different costs. For this study, hedging costs are based on a per bushel basis so that farm size will not have an impact. The first of these are brokerage commissions, and are incurred when futures and options positions are entered and exited. Brokerage costs used for this analysis are: $50 per contract for round-turn futures transactions and $30 per contract to enter or exit an options position. It is assumed that Chicago Board of Trade wheat futures and options contracts are used for Illinois soft red winter wheat positions. For Kansas hard red winter wheat, Kansas City Board of Trade futures and options positions are used. In a few cases, cross hedges were recommended and followed (e.g., selling Kansas City futures to hedge soft red winter wheat). Contract size on both exchanges is 5,000 bushels. Based on this assumption, per-bushel brokerage costs are 1.0¢ for a round-turn futures transaction and 0.6¢ for each options transaction.

Liquidity costs are an additional type of cost faced when opening or closing a position. These are costs incurred because non-floor traders generally must buy at the ask price and sell at the bid price (e.g., Working, 1967; Roll, 1984). The bid-ask spread, which is the difference between the bid and ask prices, is what is earned by the floor traders for "making the market". This spread can be viewed as the cost to execute a trade at current market prices. Due to the fact that fill prices are often provided by the advisory programs for futures and options transaction, this research does not explicitly account for liquidity costs, as they should already be accounted for in fill prices. Settlement prices are used where advisory programs do not report fill prices. Since liquidity costs represent such a small portion of futures and options transactions, they are not incorporated for settlement transactions. Combined with the fact that liquidity costs should

be at a minimum during the settlement period (e.g., Thompson, Eales and Seibold, 1993), this should not be a significant omission.

A third type of hedging cost that farmers may incur when hedging with futures and options are mark-to-market costs. These costs are caused by the margining system of futures and options, which requires a "good faith" deposit when a futures position is opened, usually about 5% of the value of the contract. Margin can be deposited in the form of cash, borrowed funds, or an interest bearing instrument such as U.S. treasury bills. This means that a farmer may face interest opportunity costs, actual interest costs, or interest on the initial margin, depending on the form of the deposit. Additionally, if the futures position accrues losses beyond a certain point (e.g., futures price increases while holding a short position) further margin deposits may be required. This would lead to additional costs as the futures position loses money. If the futures position accrues gains, additional margin is not required, but interest may be earned on the profits. Marking-to-market is done daily and is based on the settlement prices. In individual marketing years, these costs have the potential to become very significant with very volatile markets such as those encountered in 2008. However, previous studies have found these costs to be quite small (Nelson, 1985; Alexander, Musser, and Mason, 1986; Matthews and Holthausen, 1991). This result seems reasonable in efficient markets, hedging profits should roughly offset hedging losses, over time. However, it is likely that the interest cost on the borrowed funds would be higher than the interest earned on the profits. This would indicate that mark-to-market costs may have a negative impact on hedging results to the extent that the interest rate on borrowed funds is higher than that earned on funds held in the margin account, over time. Mark-to-market costs are not incorporated in this study.

While interest costs and earnings for a margin account will likely offset each other over time, mark-to-market costs may have a negative impact on cash flows. Zulauf et al. (2001) examined routine pre-harvest marketing strategies for a representative Ohio corn and soybean producer over 1986-1999 and found that cash outflow during short crop years can be substantial. As discussed previously, several short wheat crops have occurred during this study, especially for hard red winter wheat. This could have a substantial impact on the cash flow of the representative producer.

LDP and Marketing Assistance Payments

The 1996 Farm Bill, known as the "Freedom to Farm Act", removed government set-aside and target price programs, but left in place some price protection programs. The Commodity Credit Corporation (CCC) establishes a loan rate, which serves as a minimum price. If market prices fall below the loan rate, the U.S. government makes a payment to producers equal to the difference between the loan rate and the market price. Further details may be found at the USDA Farm Service Agency website at http://www.fsa.usda.gov. Implementation of the loan program is very flexible, giving advisory programs the ability to make recommendations for the use of the loan program. The price of soft red winter wheat was below the loan rate for much of the 1998/99-2001/02 marketing years. Hard red winter wheat prices were below the loan rate during the 1998/99-2001/02 and 2003/04 marketing years. This made loan program recommendations an important component of marketing strategies. Net advisory program prices may vary significantly depending upon how the loan program was implemented.

In the following section, an overview of loan program mechanics is presented. A section covering the rules used when a complete set of specific loan recommendations are given is presented, followed by one covering the rules when an incomplete set of specific loan recommendations is given.

Program Mechanics

Two tools are used to implement the price protection of the loan program. The first, the loan deficiency payment (LDP) program, is where a payment is made equal to the difference between the loan rate for a given county and the posted county price (PCP) for a specific day. PCPs, computed by the USDA, are the average market price for a given county and change daily. For example, if the PCP is $2.50 per bushel and the loan rate for that county is $3.00 per bushel, then the LDP is $0.50 per bushel. If the PCP increased to $2.60 per bushel, then the LDP would decrease to $0.40 per bushel. On the other hand if the PCP fell to $2.40 per bushel, then the LDP would increase to $0.60 per bushel. Technically the LDP for the current day is calculated using the PCP for the previous day.

LDP availability begins at harvest and continues until March 31st of the following year. Flexibility in taking the LDP exists because farmers may take the LDP when the crop is sold in the spot market or they may take it before the crop is delivered and sold. LDPs may not be taken after a crop is delivered and title has changed hands.

The second price support tool is the non-recourse marketing assistance loan program. Only bushels for which no LDP has been taken may be placed under loan. This program allows producers to receive a loan from the CCC using the crop as collateral while storing the crop and maintaining ownership. The loan rate is the loan rate in the county where the crop is stored. The interest rate is determined at the time the loan is initiated. Wheat can be placed under loan any time after it is harvested until March 31st of the following year. Loan maturation occurs on the last day of the ninth month following the month when the crop was placed under loan.

Loans may be settled by: i) repaying the loan at some time during the 9-month loan period, or ii) forfeiting the crop to the CCC upon loan maturity. The repayment rate is the lower of the county loan rate plus accrued interest or the marketing loan repayment rate, which is the PCP. Farmers would want to repay the loan at the PCP, if the PCP is below the county loan rate. The difference between the two is the marketing loan gain (MLG). If the PCP is between the loan rate and the loan rate plus accrued interest, it would be beneficial to repay the loan at the PCP. Under these circumstances, interest is only charged on the difference between the PCP and the loan rate. Producers would want to repay the loan at the loan rate plus interest, if the PCP is higher than the loan rate plus interest. In this case, interest is charged on the loan rate. When a farmer forfeits the crop to the CCC, the crop is transferred to the CCC in exchange for the proceeds from the initial loan.

Both the LDP program and the non-recourse loan program establish the county loan rate as the minimum price. Total LDP and MLG payments were limited to $150,000 per person for

2004. Through the use of commodity certificates or by forfeiting on loans, farmers could still receive a minimum of the loan rate on bushels in excess of the payment cap.

The average loan rate for soft red winter wheat in the thirteen counties in the west-southwest Illinois Crop Reporting District was $2.56 per bushel in 2004, $2.59 per bushel in 2003, $2.61 per bushel in 1999 through 2002, and $2.57 per bushel in 1998. The average loan rate for hard red winter wheat in the fourteen counties in the southwest Kansas Crop Reporting District was $2.71 per bushel in 2003 and 2004, $2.69 per bushel in 2002, and $2.45 per bushel in 1998 through 2001. Spot cash prices in both locations remained well above the loan rates during the entire post-harvest period during 2002 and 2004, therefore no LDPs or MLGs were available for either location. Additionally, spot cash prices remained above the loan rate in 2003 for soft red winter wheat. LDP and MLG data were obtained from the Center for Agricultural and Rural Development (CARD) website at the Iowa State University (http://www.card.iastate.edu/). Panel D of Table 101 presents the loan rate for 1998-2004 and the harvest price for 1995-2004.

Decision Rules for Programs with a Complete Set of Loan Recommendations

Whenever possible, if a marketing service provides a full set of loan recommendations, it is followed. At the same time, a set of rules is needed for pre-harvest forward contracts. This is due to the fact that a service may recommend taking the LDP on that grain before it is harvested under the harvest assumptions used in this study. For this research, it is assumed that pre-harvest forward contracts are filled first at harvest. It follows that since LDPs must be taken when title to the grain changes hand, LDPs are collected on these forward contract bushels as they are delivered at harvest. Assumptions must be made as to the amount harvested each day during the harvest window. The harvest window was defined earlier. It is assumed that harvest progress is a linear function of time, so an equal amount is harvested each day during the harvest window.

Tables 8 through 16 present the information used for assigning LDPs to pre-harvest forward contracts. Presented in the second column of each table is the percent harvested on each date, while the last column presents the average LDP through that date. For bushels contracted prior to harvest, the date is found in which the amount harvested exceeds the proportion priced. The average LDP for this date is assigned to those bushels. Figures 27 through 31 also present LDP graphs for each crop year in which one was available. Each graph begins on the first day of harvest and ends on May 31 of the following year. As an example, in 2001 assume that an advisory program recommended forward contracting 50% of soft red winter wheat production prior to harvest, this would be 28.45 bushels per acre for a west-southwestern Illinois producer (based on a forecasted yield of 56.9 bushels per acre). As a percentage of actual production (59 bushels per acre) this would be 48.25%. To determine the LDP on this 48.25%, look down the second column in Table 11 for 48.25% harvest progress, which was on June 25. Column 4 indicates that the average LDP through that date would have been $0.33 per bushel. This is the LDP amount applied to these forward contracted bushels.

LDPs for any type of sales transaction recommended during harvest are only taken after LDPs have been collected on the pre-harvest forward contracts. There may be more flexibility in

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actual practices than what this study assumes. Additionally, grain placed under loan does not accumulate interest opportunity costs as long as cash prices remain below the loan rate.

Decision Rules for Programs with a Partial Set or No Loan Recommendations

Whenever programs provide a partial set of loan recommendations the given advice is followed. For the remaining crop, any bushels priced between harvest and March 31st are not placed under loan. Any remaining crop that is not priced before March 31st is placed under loan until it is priced, if the price is at or below the loan rate on March 31st.

If specific loan recommendations are not given, it is assumed that loan benefits are taken when the crop is priced or as soon after pricing as possible. As the purpose of the loan program is to set a minimum price when pricing decisions are made, locking in loan benefits at or near the time of sale is consistent with this purpose. There are two rules necessary to follow this principle. LDPs are collected as the crop is harvested and delivered on bushels sold using pre-harvest forward contracts. Also, LDPs and MLGs are taken on the first date when a positive value is available following the pricing date, assuming a beneficial interest in those bushels still exists. Specific rules follow:

1) *Pre-harvest forward contracts*. The same rules as discussed earlier are followed. It is assumed that bushels forward contracted for harvest are delivered first at harvest and LDPs are claimed then, even though this may not be required by the buyer. Positive LDPs are assigned as these contracted bushels are harvested and delivered. Information about the speed of harvest is needed and is presented in Tables 8 through 16. LDPs for other sales (spot, futures, or options) recommended during harvest are taken only after all pre-harvest forward contract LDPs are collected.

2) *Pre-harvest short futures*. The same rules are used for pre-harvest short futures as pre-harvest forward contracts. LDPs are taken on open short futures as the bushels are harvested, or the first date a positive LDP is available. These LDPs are claimed after the pre-harvest forward contract LDPs are taken. If the underlying crop is sold prior to a positive LDP, then the LDP on that portion of the crop is zero. If the short futures are exited before a positive LDP is available, the LDP is taken on a later sales recommendation.

3) *Pre-harvest put option purchase*. Long put options purchased pre-harvest are treated the same as pre-harvest short futures.

4) *Post-harvest forward contracts*. LDPs and MLGs can be taken on post-harvest forward contracts when the contract is initiated, on the date of delivery, or any date in between. For this analysis, loan benefits are collected at the time the forward contract is entered or on the first day with positive benefits between initiation and delivery.

5) *Post-harvest short futures*. Loan benefits are collected following rules similar to those for post-harvest forward contracts, assuming that portion of the crop is not sold in the cash market. This means that LDPs are assigned when the short futures position is initiated or as soon as a positive LDP is available, assuming the futures positions is still in place and the underlying

cash wheat has not been sold. If the bushels are sold in the cash market before a positive LDP is available, the LDP is zero. If the futures position is exited before an LDP is available, the LDP will be claimed on a later sales recommendation.

6) *Post-harvest long put positions*. Post-harvest long put positions follow the same rules as post-harvest short futures positions.

7) *Spot sales before March 31st*. Loan benefits on spot sales made between harvest and March 31st are claimed on the date of the cash sale, if available.

8) *Loan program after March 31st*. As LDPs are not available after March 31st, it is assumed that any wheat in storage on this date, and which no loan benefits have been taken, is placed in the loan program on that date if spot prices are at or below the loan rate. When the grain is priced, the MLG, if available, is collected. If, after nine months under loan, no sales are made, the gain is forfeited and the loan benefits retained. As this study is only looking at the impact of the marketing programs' advice on one acre, the $150,000 payment limit is not considered.

Storage Costs

Storage costs are another major element impacting marketing decisions, as they can have a significant impact on marketing performance. This study uses commercial storage costs collected from elevators within each of the two Crop Reporting Districts. The total storage cost incorporates this physical commercial storage cost and the opportunity cost of foregone sales. Two different time horizons are relevant: long-run and short-run. Short-run is defined as one storage season, usually ten months following harvest. Long-run is any decision-horizon longer than one storage season. The physical storage charge is the relevant marginal cost of physical storage (Williams and Wright, 1991). Interest opportunity costs will be the same for both decision-horizons. Storage costs in both locations were collected using informal telephone surveys.

Seven elevators in the West Southwest CRD in Illinois were used to obtain storage costs. A simple average of the storage costs collected from these seven locations is used in this study. A fixed cost of 4¢ per bushel, called an in-charge, is applied on the first day to all bushels placed in storage. Variable costs were determined to be 2.5¢ per month until 1999, then increased to 3¢ for the remaining time period. In Kansas, four elevators in the southwest CRD were contacted to obtain information about storage costs. There is no in-charge applied in Kansas, and variable costs were 2.55¢ per month until 1998 then increased to 2.85¢ throughout the rest of the analysis. Storage begins on the day after the end of the harvest window. Any potential drying costs are not considered as they would be incurred whether the producer was storing or not. These storage costs are the same for both decision-horizons as in the long-run these costs reflect total variable and fixed costs of storage at commercial facilities.

Opportunity costs are determined by: the interest rate, average harvest price, and storage length. Conventionally, the interest rates used in farm marketing studies is a measure of borrowing rates for farm operating loans (e.g., Hieronymus, 1966; Good, Hieronymus, and

Hinton, 1980; Chafin and Hoepner, 2002). It is usually assumed that by storing grain, famers forgo the opportunity to pay down operating loans or borrow additional funds against their operating line. Interest rates are obtained from the Agricultural Finance Databook. The rate used was the average rate in the third quarter for all other farm operating loans for the Seventh (Chicago) and Tenth (Kansas City) Federal Reserve District agricultural banks, for Illinois and Kansas, respectively. It is assumed that third quarter interest rates best reflect actual rates at the end of harvest. The interest charge is calculated as the daily interest rate, (assuming daily compounding), multiplied by the number of days between the end of harvest until delivery of the grain, multiplied by the average harvest cash price.

Estimated storage costs for soft red and hard red winter wheat are presented in Tables 17 through 26. Additionally, Figure 32 presents a graph of average storage costs each month following harvest for both types of wheat. It should be noted that all grain is assumed to be delivered at standard grade, meaning that no dockage or drying fees are incurred. Also note that interest costs may vary depending upon an advisory service's loan recommendations, in years where prices are below the loan rate.

An advisory program's loan recommendations and/or the decision rules used in this study for the marketing loan program may impact the storage charges. This would occur as the interest costs on wheat placed under loan would be offset by the proceeds from the loan. Most commonly this would occur after March 31st following harvest, when un-priced grain would be placed under loan (assuming that the PCP was under the loan rate). If wheat is priced (forward contracts, futures, or options) while under loan, but stored beyond the time of pricing, then interest opportunity costs are accumulated from the day of pricing until storage ends (as it is assumed that the loan is repaid when the wheat is priced).

An argument could be made that interest opportunity costs should be charged on any LDP that was available at harvest that was not taken by an advisory program. No adjustment is made as the interest opportunity costs would be small and would not substantially impact the results.

Summary

At the conclusion of the marketing year, when a program has exited all positions and all cash grain is sold, a net price is calculated. Following all of the assumptions in this section, weighted-average net prices are calculated for each of the advisory programs for each location and each year that it is included. This price represents the harvest-equivalent net price received by a farmer who follows the service's marketing advice exactly (as recorded by the AgMAS Project). Post-harvest sales are adjusted for interest and storage costs. An example of the calculation of net advisory prices is presented in Figure 33. In this example, the net price was $3.16 per bushel, computed as the unadjusted cash sales price ($3.30) minus commercial storage costs ($0.17) plus futures and options gains ($0.10) minus brokerage costs ($0.06) plus marketing loan benefits ($0.00).

The track records used for each advisory service represent the best efforts of the AgMAS Project staff to accurately and fairly interpret the information from the programs. In some cases,

judgment was used as to whether to include or how to implement particular recommendations. For these reasons, the track records may differ from those stated by a service. Also, net prices in this analysis my differ significantly from those reported by a service or computed by another subscriber due to differences in location of production, cash and forward contract prices, fill prices for futures and options transactions, yields, storage costs, and government programs.

Benchmarks

Comparison of the net prices received by advisory programs with prices that could have been obtained by a farmer using one or more alternative strategies is the basic concept behind performance evaluations of market advisory programs (Sharpe, Alexander, and Bailey, 1999, p. 829). The strategies used to compare to the market advisory programs are often termed benchmarks because they represent objective standards of performance. There are two basic types of performance evaluation applied to the market advisory programs. The first type of evaluation compares net advisory prices to each other and to the average price across all programs. The second type uses "external" benchmarks created from strategies independent of advisory programs. The second approach is similar to what occurs in financial markets, when performance is compared to benchmarks such as the Dow-Jones Industrial Average or the S&P 500.

Performance evaluations are focused on using external benchmarks in this study. Comparisons of advisory program prices to other programs or to the average of the programs provide useful information about the rank of advisory programs. However, these comparisons do not yield any information about whether performance of an advisory program or of all of the programs is "superior" or "inferior" in an absolute economic sense. To obtain information about this, external benchmarks based on theories of market pricing must be specified.

The first group of external benchmarks is based on the theory of efficient markets. The efficient market theory assumes that participants are rational and that no profitable arbitrage opportunities exist. Efficient market theory, in its strongest form, indicates that all of the available information, public or private, is reflected in the market price (Fama, 1970). This theory suggests that trading strategies cannot consistently beat the return offered by the market (e.g., Brorsen and Anderson, 1994; Brorsen and Irwin, 1996; Zulauf and Irwin, 1998; Tomek and Peterson, 2005). It follows that the relevant benchmark would be the return offered by the market. For this report, the market benchmark is the average market price over the marketing window. The average price is computed to show the return to a naïve, "no-information" strategy in which an equal amount of grain is sold each day throughout the marketing window. The value of market advisory program information is represented by the difference between an advisory program's returns and the market benchmark. According to the efficient market theory, this difference, on average, should equal zero. Weaker versions of efficient market theory predict that advisory programs may profit to the extent to which they have superior access to information and/or superior analytical ability (e.g., Zulauf and Irwin, 1998). It would be difficult, if not impossible, to specify market benchmarks based on the weaker versions of efficient market theory as it would require knowledge of the average access to information and analytical ability of market participants.

Efficient market theory would suggest that these market benchmarks are the only relevant benchmarks. However, some evidence seems to indicate that not all market participants are fully rational, as in an efficient market. Hirshleifer (2001) reviews the judgment and decision biases that seem to affect securities market investors (e.g., framing effects, mental accounting, anchoring, and overconfidence). He also presents a review of empirical studies that attempt to measure the impact of these biases on securities prices and investment returns. Brorsen and Anderson (2001) discuss how decision and judgment biases may impact farm marketing. Based on the assumption that such bias exists, new "behavioral" theories of market pricing have been developed (e.g., Daniel, Hirshleifer, and Subrahmanyam, 1998).

This new behavioral market theory indicates that market participants' average return may be less than that predicted by efficient market theory, due to the judgment and decision biases. Based on behavioral market theory, the average return received by market participants is an appropriate benchmark. For this study, a behavioral benchmark should be the average price actually received by farmers. The difference between net advisory prices and a farmer benchmark represents the value of market advisory program information relative to the information used by farmers. Behavioral market theory does not indicate whether this value will be positive, negative, or zero. The value depends on the impact of the biases on advisory programs versus farmers. The farmer benchmark should be based on the pricing performance of farmers who do not follow the advisory programs tracked by the AgMAS project. This allows the value of market advisory program information relative to the information used by farmers to be determined.

While market and farmer benchmarks are both forms of external benchmarks, they yield very different information about the performance of market advisory programs. This should be noted when examining performance based on the two types of benchmarks. Both types of benchmarks should: i) be relatively easy to calculate and understand, ii) represent the returns to a marketing strategy that can be implemented by farmers, and iii) be directly comparable to net advisory prices (Good, Irwin, and Jackson, 1998).

Market Benchmarks

A market benchmark is intended to measure the average market price available to farmers. For this study, the time period used to compute the average price is the marketing window of a farmer who follows the advisory program recommendations. This window was defined earlier, in the "Marketing Window" section, as the 24-month period beginning June 1st of the year prior to harvest and ending May 31st of the year following harvest. The 24-month market benchmark is calculated as the average price over this two-year window. Three market benchmarks were chosen to evaluate advisory program performance: the 24-month market benchmark, the 16-month market benchmark, and the average harvest price. The 24-month market benchmark was chosen as it covers the entire marketing year for the crop. The 16-month market benchmark was chosen due to the fact that there tends to be a small portion of wheat priced early in the marketing year. The average harvest price was chosen as much of the wheat crop, especially in the case of soft red winter wheat, is sold during harvest (nearly 60% of the crop is sold in June and July).

Presented in Figure 34 are the average marketing profiles for the advisory programs for soft red and hard red winter wheat over the 1995-2004 crop years. As noted earlier, marketing profiles are constructed by plotting the cumulative net amount priced under each program's set of recommendations throughout the crop year. The average profiles presented in Figure 9 are simply the average amounts sold by all of the programs for all years followed. These averages indicate the typical pricing pattern of the advisory programs. Included are the 24- and 16-month market benchmark marketing profiles. The marketing window for the 16-month market benchmark begins eight months later than the 24-month marketing window. This means that the 16-month market benchmark is the average price over the window beginning February 1st of the year of harvest and ending May 31st of the year following harvest. The average marketing profiles for both types of wheat for the advisory programs follow a similar linear pattern. However, they both fall well below the pace of sales for both the 16- and 24-month market benchmarks. The marketing profile results seem to indicate that there is some uncertainty about the specification of the appropriate market benchmark for wheat so both benchmarks will be used.

For soft red winter wheat, west-southwest Illinois forward cash prices are used during the pre-harvest period and spot cash prices for the same area are used for the post-harvest period. For hard red winter wheat, the respective prices are from southwest Kansas. The same forward and spot cash prices used for the market benchmarks are used for the advisory program track records. Details on the forward cash price series for both locations can be found in the "Prices" section, earlier in this report.

To make the 24-month and 16-month market benchmarks consistent with net advisory prices for the marketing programs, some adjustments must be made to the daily cash prices. Due to changing yield expectations, a weighted-average price is calculated, rather than using a simple average of the daily prices. This is consistent with the procedure described in the "Yields and Harvest Definition" section. Prior to harvest the weighting factors are based on either the calculated trend yield or the May USDA forecast yield (if the May forecast is 20% lower than the trend yield for the respective areas). Beginning on the first day of harvest the weighting factors are based on the actual yield. The second adjustment is to subtract commercial storage costs from the post-harvest spot cash prices. The storage costs include: physical storage, shrinkage, and interest and are the same as those used to calculate net advisory prices. The third adjustment pertains to the USDA loan program. With respect to evaluating advisory program recommendations, it was argued that a "prudent" or "rational" farmer would take advantage of the price protection of the loan program, even when an advisory program does not give specific advice. The same logic suggests that, when following the benchmark average price strategy, a "prudent" or "rational" farmer would make use of the protection of the loan program. Both of the market benchmarks are adjusted by addition of LDPs and MLGs. For bushels marketed prior to harvest, LDPs are assigned at harvest. Bushels marketed during the post-harvest period are assigned the LDP or MLG for that specific day. As with advisory program recommendations, it is assumed that, if prices are below the loan rate, all unpriced wheat is placed under loan at the end of March. If cash prices on the date of redemption are below the CCC loan rate, no interest opportunity costs are charged.

For a given crop year, 24-month and 16-month market benchmark prices can differ; however, averages of the two benchmarks across crop years should not differ substantially. With a large enough sample of crop years and efficient wheat markets (cash, futures, and options), the law of one price states that annual averages of different average price benchmarks should be equal when stated on a harvest equivalent basis (Brorsen and Anderson, 1994). However, if wheat markets are not efficient, this may not be the case. An example of this would be if pre-harvest prices contain a "drought premium", as some have argued (e.g., Wisner, Baldwin, and Blue, 1998). This would cause the 24-month market benchmark to consistently be higher or lower than the 16-month market benchmark, depending on the evolution of the drought premium. Typically the drought premium is highest during the spring months prior to harvest. In this case the 16-month benchmark should be higher, on average, than the 24-month benchmark price.

Unlike the averages, there are expected to be differences in the variation of these two market benchmarks. Part of this is due to the fact that the sampling variation of the mean (average) is inversely related to the sample size used to compute the mean (e.g., Griffiths, Hill, and Judge, 1993, p.82). The sample size of prices used to compute the 24-month market benchmark is larger than for the 16-month benchmark, therefore, the variation in the 24-month benchmark should be smaller. Additionally, the volatility of spot prices for storable commodities tends to increase later in the marketing year (Williams and Wright, 1991; Peterson and Tomek, 2005). The increasing volatility is caused by shrinking stocks throughout the year. This means that supply is the largest at harvest and shrinks continuously until the next harvest and that any demand shock will have a larger impact later in the marketing year. With respect to the market benchmarks, this means that the 16-month benchmark should have a higher variance, as a larger portion of the crop is sold later in the marketing year.

The third market benchmark is simply the average harvest price plus the average harvest LDP. The average price and LDP are calculated for the three-week harvest window. There are no storage costs as the entire crop is sold at harvest.

Due to the fact that the market benchmarks (with the exception of the average harvest price) are based on selling a very small portion of the crop each day, concern arises that a farmer may not be able to use such a strategy. This should not be of concern for two reasons. First, companies have begun offering grain "index" contracts that give farmers the ability to receive the average market price over a specific period of time. A discussion of these contracts is presented in an AgMAS report by Hagedorn et al. (2003). Second, the market benchmarks can be closely approximated by selling routinely over the same time period, at less frequent intervals (e.g. selling equal portions of the crop once a month over the marketing year). Table 27 presents the average price received by selling an equal portion of the crop each month of the 24-month marketing window and comparisons to each of the benchmarks. The 24-month market benchmark averages 1¢ higher than the average price received by selling an equal amount once each month over the ten year study period for both types of wheat ($3.04 in soft red winter wheat and $3.02 in hard red winter wheat). Variation between making monthly cash sales and the 24-month benchmark never exceeds 3¢ in either direction. The table also shows that, on average, the monthly sale price is similar to the other benchmark prices. However, in individual crop years, the monthly sale price can vary substantially from the other benchmarks.

Farmer Benchmark

The purpose of a farmer benchmark is to measure the average price received by farmers for a crop. A farmer benchmark should be representative of actual farmer behavior with respect to grain marketing. It should include all transactions (e.g. cash, forward, futures, and options) used by farmers. The farmer benchmark should reflect the pricing performance of farmers who do not follow the advisory programs tracked by the AgMAS Project. Theoretically, this benchmark should be easy to calculate. The average price received by a randomly selected sample of producers in the relevant area who do not follow the advisory programs tracked by the AgMAS Project, for example, could be computed. The weighted-average price received would be calculated using weights equal to the sample proportion of the crop produced by each farmer. This weighted-average price would be the farmer benchmark.

Since detailed data on farm-level marketing transactions are not available, approximations must be used. In this study, the farmer benchmark is constructed using monthly marketing weights (reported by each state's Agricultural Statistics Service office) and average monthly market prices (adjusted for storage costs and marketing loan gains). Prices and storage costs are the monthly averages of those used to compute the net advisory prices. Marketing loan benefits are calculated using actual benefits collected, as reported by the Farm Service Agency. The FSA reports the actual dollar amount paid out in marketing loans, as well as the number of bushels receiving payments. The average LDP/MLG is then calculated by dividing the amount paid by the number of bushels. Then it must be determined what percentage of the crop received benefits. To do so, the number of bushels receiving marketing loan benefits is divided by the total number of bushels produced. All of this information is collected for the relevant crop reporting district. This data was obtained for the Farm Service Agency. Finally, the effective LDP/MLG is calculated by multiplying the percentage of the crop receiving benefits by the LDP/MLG payment. This effective LDP/MLG is then added to the weighted-average price.

Market prices were chosen over the NASS average price received series for the farmer benchmark for several reasons. The NASS series is based on a state average of prices actually received by farmers. The series does not differentiate sales by grade or protein content. This can be a problem for wheat as a large portion of the crop, especially hard red winter wheat, is not sold at the standard grade. For example, only 24% of the wheat harvested in southwestern Kansas received the standard grade number 1 (Kansas Department of Agriculture, 2004). Additionally, the series does not separate old crop and new crop sales. These factors, as well as basis levels, tend to vary between regions across the state, making the NASS price series less representative than using actual bid prices from within the region examined. Over the study period, the farmer benchmark using market prices averaged 8¢ higher than if NASS prices were used for soft red winter wheat ($2.94). For hard red winter wheat, the farmer benchmark using market prices averaged 8¢ lower than if NASS prices were used ($3.01). Benchmarks using market prices were all higher than the benchmarks using NASS prices in soft red winter wheat and lower in hard red winter wheat.

Any bias that may arise from omission of futures and options profits/losses should be minimal. A farmer using futures and options as a "pure" hedging tool will tend to take short positions at similar time periods during the year. Assuming that futures prices are not biased

upwards or downwards, the profits/losses from such position should offset over time. Producers using futures and options to "selective" hedge may incur profits/losses due to the timing of the trades. Direct evidence on the profits and losses incurred by farmers in such a context is unavailable. Indirect evidence tends to indicate that farmers, who are selective hedgers, lose money in futures markets. The combined impact of the two types of hedging with futures and options would tend to bias prices downward in order to reflect the losses. However, previous studies have indicated that relatively few farmers directly use futures and options on a regular basis (e.g., Patrick, Musser, and Eckman, 1998). This would indicate that the potential magnitude of omission of futures and options profits/losses would be minimal.

It is interesting to examine the difference in averages and annual variation among the farmer benchmarks and the market benchmarks. If the wheat markets are efficient and farmers are rational, average prices across crop years for the benchmarks should be similar. If this is true, the variation in farmer benchmark prices across crop years could be smaller or larger than the variation in market benchmark prices. This difference depends on the length of the marketing window used by farmers and the exact nature of the marketing strategies used by farmers.

It is not possible to determine the average marketing window or the pricing pattern of farmers using USDA monthly marketing weights. Figure 35 presents the average monthly USDA marketing weights for soft red and hard red winter wheat over 1995-2004. The weights indicate the pattern of grain purchase by commercial facilities from farmers over the 12-month marketing year. Grain purchases in this case, as defined by the USDA, do not necessarily reflect the pricing pattern of farmers due to the use of forward pricing tools. Grain contracted prior to harvest, for example, is identified as purchased during harvest.

Evidence relating to the magnitude of forward contracting is available from two studies. Katchova and Miranda (2004) used data reported in the 1999 ARMS survey by the USDA, which asked about farmers use of marketing contracts for the 1999 crop. Marketing contracts include forward contracts, futures and options contracts, formula pricing contracts, delayed price contracts, minimum price contracts, fixed basis contracts, and other contracts. Using the information reported by Katchova and Miranda, an estimated 3.5% of the 1999 wheat production was priced using marketing contracts. The second source of evidence also uses ARMS data (USDA/NASS, 2003). The data is based on information collected from farmers about their use of marketing contracts for the 2001 crop. The study indicates that 3.8% of the wheat produced in the Corn Belt region (which includes Illinois) and 2.4% of the wheat production in the Northern Plains region (which includes Kansas) was priced using marketing contracts. These results indicate that the magnitude of forward pricing is rather small. However, even this minimal amount can make the USDA monthly marketing weights somewhat misleading. It is important to note that these results are only based on two crop years, and that forward pricing may be more or less prevalent in other crop years.

Another issue arises relating to the length of the typical marketing window for farmers. No evidence exists to define the exact marketing window. The lack of such evidence makes it reasonable to assume that farmers may use a window such as the 24-month and 16-month window used for the market benchmarks. However, pre-harvest pricing is typically not done on

as large a portion of the crop as assumed with the market benchmarks. This would indicate that the variation in farmer benchmark prices would tend to be higher than the variation in market benchmark prices.

Net Advisory Prices, Revenues, and Benchmarks, 1995-2004

Net advisory and benchmark prices for 1995-2004 are presented in Tables 28 through 47. Net advisory and benchmark revenues for the 1995-2004 crop years are presented in Tables 48 through 67. Also presented in Tables 48 through 67 are the subscription costs of the advisory programs, which ranged from $99 to $1500 a year over the study. Costs averaged $385 in 2004. It should be noted that these subscription costs generally cover other crops and livestock marketing recommendations, which may also be used by the producer. Additionally, the scatter plots of advisory prices and revenues are presented in Figure 36. Figures 37 through 40 present graphs for the average net advisory prices and revenues compared to the four alternative benchmarks over 1995-2004.

As shown in Table 68, the average advisory prices for soft red winter wheat ranged from a low of $2.35 per bushel in 1998 to a high of $3.87 per bushel in 1996. It also shows that advisory prices varied substantially within individual crop years. In 1997, the minimum net advisory price was $1.41 per bushel, while the highest was $3.90 per bushel. In six of the ten crop years, the variation in net advisory prices exceeded $1.00 per bushel, with two years exceeding $2.00 per bushel. The four benchmarks are presented at the bottom of the table. The variation in these benchmark prices over time is similar to the variation in net advisory prices. Similar to the results for net advisory prices, significant variation among the benchmarks exists within individual crop years. In 1996, the range in benchmarks was $0.67 per bushel, the highest being $4.61 per bushel and the lowest $3.94 per bushel.

Table 69 indicates that the average advisory price for hard red winter wheat ranged from $2.32 per bushel in 2001 to $4.02 per bushel in 1996. It is also shown that advisory prices vary substantially within an individual crop year. In 1995, advisory prices ranged from $2.29 per bushel to $5.05 per bushel. In seven of the ten years, the variation in advisory prices exceeded $1.00 per bushel. Also presented in Table 69 are the four benchmark prices for hard red winter wheat. As was the case with soft red winter wheat, the variation in the benchmark prices from year-to-year follows a similar pattern to that of the average advisory prices. Again, there is substantial variation in benchmark prices within individual crop years. In 1995, benchmark prices ranged from $3.25 to $4.42 per bushel, a difference of $1.17.

Table 70 presents the revenue per acre for the advisory programs and benchmarks for soft red winter wheat over 1995-2004. The revenues presented here are the gross revenues received, and are calculated by multiplying the net advisory price by the actual yield. For example, Freese-Notis had a net advisory price of $3.36 per bushel for soft red winter wheat in 2004, multiply that by the yield of 58 bushels per acre and the revenue is $195 per acre. Average advisory revenues ranged from $141 per acre in 2000 to $215 per acre in 2003. The large variation in advisory program prices can be seen in revenues as well. Advisory revenues varied by as much as $162 per acre in 1997, while in 2003, they only varied by $24 per acre. Benchmark revenues varied from $9 per acre in 2002 to $25 per acre in 1996.

Presented in Table 71 is the revenue per acre for the advisory programs and benchmarks for hard red winter wheat over 1995-2004. Again, the average advisory revenues vary substantially from year-to-year (from $84 per acre in 1995 to $141 per acre in 1999). Since revenues are much lower than for soft red winter wheat, the variation within individual crop years is lower; however, it is still substantial. The variation in advisory revenues ranges from $15 per acre in 2003 to $64 per acre in 1999. Variation in benchmark revenues ranges from $5 per acre in 2000 to $26 per acre in 1996.

The revenue results show that advisory program performance can have a significant economic impact in a given crop year. In six of the ten years, the range in advisory revenues exceeded $60 per acre for soft red winter wheat. While in five of the ten years, the range in advisory revenues for hard red winter wheat exceeded $50 per acre.

Tables 72 through 75 report the most recent two-year averages (2003-2004), three-year averages (2002-2004), four-year averages (2001-2004), five-year averages (2000-2004), six-year averages (1999-2004), seven-year averages (1998-2004), eight-year averages (1997-2004), nine-year averages (1996-2004) and ten-year averages (1995-2004) of net advisory prices, revenues and benchmarks. The averages are computed in these tables only for the advisory programs active in each of the indicated crop years. Note that the average, minimum and maximum reported for each column in Tables 72 through 75 are computed across the advisory program averages in each column.

Information on the sources of the differences between net advisory prices and benchmarks in soft red and hard red winter wheat is found in Table 76. Panel A shows the average of each of the pricing components for the net advisory prices and the benchmarks. Panel B presents the average difference in the components between the advisory programs and the benchmarks. For soft red winter wheat, the advisory programs underperform the benchmarks. It appears that higher average storage costs and brokerage costs account for the majority of this underperformance. In the case of hard red winter wheat, the advisory programs only perform as well as the 24-month market benchmark. The remaining benchmarks outperformed the advisory programs. In this case, it also appears that the underperformance is due to higher storage costs and higher brokerage costs (compared to most benchmarks). The average futures and options gains for both types of wheat were zero, while brokerage costs amount to an average of two cents per bushel.

A discussion of the potential for survivorship bias in performance results was presented earlier. The most direct form of this type of bias occurs when only advisory programs that remain in business at the end of a given sample period are included in the sample. The performance evaluations presented in the following section will not be subject to this form of survivorship bias because all programs that have been tracked over 1995-2004 are incorporated in the indicators. However, it is interesting to examine the potential magnitude of survivorship bias when evaluating advisory program performance. An indication of the amount of survivorship bias can be computed based on the information found in Tables 72 through 75. The first step is to compute multiple-year averages across programs for each of the averaging periods found in Tables 72 through 75. These are reported as "survivor averages" in Table 77. They are

referred to as "survivor averages" because advisory programs must "survive" for the complete averaging period to be included in the computation. The second step is to compute multiple-year averages across all programs, reported in Tables 72 through 75, presented in Table 77 as "grand averages" because all advisory programs active in the averaging period are included in the computation, whether they "survived" the entire period or not. The difference between these averages represents the amount of survivorship bias. With a positive (negative) difference indicating that the survivor average is higher (lower) than the grand average and vice versa. Roughly as many differences were positive as were negative, indicating little or no bias in performance when results are based only on surviving programs. Additionally, it is interesting to note that the magnitude of most of these differences is very small. The differences vary from – 8¢ to 2¢ per bushel for soft red winter wheat prices and -8¢ to 0¢ per bushel for hard red winter wheat. The differences in revenue vary from –$37 to $1 per acre for soft red winter wheat and from -$5 to $0 per acre for hard red winter wheat. It is especially interesting to take note of the differences for the 1995-2004 ten-year averages, which are only -1¢ per bushel for soft red winter wheat, -3¢ per bushel for hard red winter wheat, $1 per acre for soft red winter wheat revenue, and $0 per acre for hard red winter wheat revenue. This analysis suggests that survivorship bias is small or non-existent for the set of advisory programs considered in this study. The reason is found in Table 1, which presents the complete list of all programs included in the sample at some point over the 1995-2004 crop years. The last column in the table presents reasons for removing programs from the sample, including but not limited to poor performance. Most programs either went out of business (not necessarily due to poor performance) or stopped providing consistent recommendations. This should decrease the impact of survivorship bias due to programs that were discontinued due to poor performance.

Performance Evaluation Results for 1995-2004

Several quantitative indicators of performance are applied to advisory program prices and revenues over 1995-2004. One indicator measures the performance of the advisory programs relative to the range of pricing opportunities available during the marketing year by indicating the proportion of programs in the top-, middle-, and bottom third of the price range. Another indicator is the proportion of programs in the top-, second-, third-, and bottom quarter of the price range. The third indicator is the proportion of advisory programs that beat the benchmarks. This measures whether performance is above or below a benchmark price or revenue (directional performance). This indicator is not overly influenced by extremely high or low advisory prices. Another indicator is the average price (or revenue) of advisory programs relative to the benchmarks. While this indicator measures performance relative to benchmarks, it also takes in to account both the direction and magnitude of differences from benchmark prices (or revenues). The fifth indicator is the average price (or revenue) and risk of advisory programs relative to the benchmarks. This takes into account the tradeoff between risk and return in performance comparisons. The final indicator is the predictability of advisory program performance from year-to-year. This final indicator yields information about the value of past pricing performance in predicting future performance.

Before examining the results presented in this section, two issues need to be discussed. The first issue is that these results address the performance of market advisory programs *as a group*. This means that average pricing performance across all programs is considered. This can

be much different than the pricing performance of individual advisory programs. For example, the possibility exists that advisory programs as a group underperform compared to the benchmarks, but yet some programs outperform compared to the benchmarks. For this reason, making performance inferences for individual advisory programs based on these aggregate results would be inappropriate. The other issue is that farmers subscribe to advisory programs for a variety of reasons. Pennings et al. (2004) found that farmers rate marketing information and market analysis as two of the most important uses of market advisory programs. It is likely that a positive correlation exists with the quality of marketing information and market analysis to the returns to marketing recommendations; however, this may not be the case. It is possible that a program may provide valuable information and analysis, but fail to exhibit superior pricing performance.

Price Range Performance

The proportion of advisory programs in the top-, middle-, and bottom third of the price range is the first indicator of pricing performance. Performance is measured relative to the range of pricing opportunities available throughout the marketing year. It is commonly believed that farmers tend to sell the majority of their crop in the bottom third of the price range. As a significant amount of attention is given to this measure of performance, it is a useful place to begin the examination of the pricing performance of market advisory programs.

Figure 41 presents an illustration of the typical approach used to define the top-, middle-, and bottom third of the price range. This approach, labeled "Conventional", divides the range between the high and low prices for the 12-month marketing window (June-May) into thirds. The example shows the high price for the 2003 crop year was $4.06 per bushel, while the low was $2.84 per bushel. The thirds are then computed by dividing the price range ($4.06 - $2.84 = $1.22) into three equal parts. There are several drawbacks to using this approach. First, as spot prices for the 12-month marketing window are used, forward contract opportunities are ignored. Additionally, post-harvest spot prices are not adjusted for physical storage and interest opportunity costs. This implies that all spot prices in the 12-month marketing window are equivalent regardless of timing. Third, the individual thirds of the price range are assumed to contain an equal range of the prices available during the marketing window. However, it has been shown that commodity price distributions tend to be skewed to the right (e.g. Williams and Wright, 1991). This means that price movements tend to be "spiky". In other words, large price moves can occur, but typically only last a short period of time. This can cause the conventional approach to misrepresent the amount of time that the market spends at different price levels and the chance that a producer could take advantage of pricing at these levels.

An alternative approach is shown in Figure 41, labeled "Alternative". This approach uses prices for the entire 24-month marketing window. Also, the post-harvest prices are adjusted for commercial storage costs (physical storage and interest) in order to make them on a harvest delivery basis. Finally, price ranges are time-weighted. The first step in calculating the price ranges is to sort all of the daily pre-harvest, harvest, and post-harvest prices for the 24-month marketing window (June 2002-May 2004) from high to low. The prices and storage costs are the same as those used for the 24-month market benchmark for 2003. The next step is to compute the percentiles of the daily price distribution. Finally, the top-, middle-, and bottom third of the

price range are determined based on the 0, 33rd, 66th, and 100th percentiles of the daily price distribution. Figure 16 shows that this alternative method can produce much different price ranges than the typical approach. In the example, the top third when using the conventional approach was $3.65 to $4.06 per bushel; while the range was $3.19 to $3.80 per bushel when using the alternative approach. The price ranges under the alternative approach contain an equal number of days over the 24-month marketing window. This means that the market spent one-third of the time in each of the thirds during the 2003 marketing year. Figure 42 contains similar calculations for the top-, second-, third-, and bottom-quarters of the price range.

In order to compute the price ranges, the alternative approach was used for each crop year over 1995-2004 for both soft red and hard red winter wheat. Price ranges were computed for both the 24- and the 16-month marketing window to test the sensitivity of performance results to the marketing window definition. The windows, prices, and storage costs are the same as those used to construct the respective benchmarks. Marketing loan benefits were not added to the prices in any of the crop years, as the payments could have an impact on the distribution of prices.

Figure 43 presents the net advisory prices (minus marketing loan benefits), along with boxes that represent the thirds of the 24-month price ranges for each crop year over 1995-2004. The top panel shows the soft red winter wheat results, while the bottom panel illustrates the results for hard red winter wheat. The variation in the relative size of the price ranges indicates the variation in price movements through time. In years with large price increases, such as 1995 and 1996, the top third of the price range is much larger than the bottom third. It can also be seen that net advisory prices can be above the highest single day price or below the lowest single day price. This is caused by the gains and losses on futures and options positions.

Panel A of Table 78 presents the frequency of net advisory prices (minus marketing loan benefits) falling in the top-, middle-, or bottom third of the price range over 1995-2004 for soft red winter wheat. The frequencies vary substantially across marketing years for both the 24- and 16-month marketing windows. For example, the frequency in the top-third of the price range for the 24-month marketing window varies between 0 and 70%, while the frequency in the bottom-third ranges from 0 to 80%. There does not appear to be any trend in the frequencies for either of the marketing windows. It does appear that the marketing window examined has some effect on the results. For example, in 2003 the frequency in the top-third with the 24-month marketing window was 50% compared to 20% with the 16-month marketing window. On average, the results show that the chances are similar for an advisory program to price within any particular third of the price range with the 24-month marketing window. The averages presented in Table 77 are computed over the full set of advisory programs, and may not be equal to the averages of the individual crop years. The results with the 16-month marketing window indicate a higher chance of programs pricing in the middle-third of the price range.

Similar results for hard red winter wheat are presented in Panel B of Table 78. The frequencies vary substantially across time with no apparent trend. The marketing window examined can have an effect on the results. The frequency in the top-third of the price range for the 24-month marketing window varies from 0 to 70%, while the frequency in the bottom-third ranges from 0 to 79%. In 1999, for example, the proportion in the bottom-third is nearly 48%

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with the 24-month marketing window, but only slightly over 17% with the 16-month marketing window. The averages over 1995-2004 appear to be much closer for the two marketing windows than results for soft red winter wheat. The average results seem to indicate slightly higher frequencies in the lower two thirds of the price range. On average, the chance of an advisory program pricing in the top-third of the price range varies between 24 and 27%. The average frequency of pricing in the middle third of the price range (40-41%) is slightly higher than pricing in the bottom-third (32-36%).

The second indicator of pricing performance examined is the proportion of advisory programs pricing in the top-, second-, third-, and bottom-quarter of the price range. The price ranges were computed using the same process outlined for the alternative method of the thirds analysis with the price range based on the 0, 25th, 50th, 75th, and 100th percentiles. Again, both the 24- and 16-month marketing windows are examined. Figure 44 presents net advisory prices (minus marketing loan benefits), and boxes that represent the quarters of the 24-month price ranges, for each crop year over 1995-2004.

Results for the frequency of pricing soft red winter wheat within each quarter of the price range over 1995-2004 are presented in Panel A of Table 79. As was the case with the thirds analysis, there is substantial variation in the frequencies over the years with no apparent trend in the frequencies. The frequency in the top-quarter of the price range with the 24-month marketing window varies from 0 to 50%, while the frequency in the fourth-quarter ranges between 0 and 75%. Again, there appears to be some sensitivity to the marketing window used. The 1995-2004 averages indicate a very low chance of pricing in the top-quarter of the price range (14 to 15%). The largest average frequency is for pricing in the second-quarter of the price range (33 to 34%), while chances of pricing in the bottom two quarters are similar (21 to 31%).

Panel B of Table 79 presents the results for hard red winter wheat. The results are similar to those for soft red winter wheat and the thirds analysis. Substantial variation exists in the frequencies over the years and there does not appear to be a trend in the frequencies. Frequencies in the top-quarter of the price range with the 24-month marketing window range from 0 to 65%, while they range from 0 to 68% for the bottom-quarter. Additionally, there appears to be sensitivity in the results to the marketing window chosen. Results for the 1995-2004 averages are also similar to the soft red winter wheat results. The average chance of pricing in the top-quarter of the price range is between 13 and 15%, while the chance of pricing in the bottom-quarter is 24%. There is also a slightly higher chance of pricing in the second-quarter (30 to 35%) than the third-quarter (27 to 31%).

These price range performance results can be difficult to interpret as no external benchmark exists to indicate whether the chance of falling within a particular price range is high or low. The alternative is to compare the advisory program performance to another group, in this case farmers (the farmer benchmark). Results for the frequency of farmer benchmark prices (minus marketing loan benefits) are presented in Table 80. The average frequency of farmer benchmark prices for soft red winter wheat falling in the top-third of the price range (Panel A) is 20% with the 24-month marketing window and 10% with the 16-month marketing window (averaging 15%). The results for hard red winter wheat yield a frequency of 20% with the 24-month marketing window and 0% for the 16-month marketing window (averaging 10%). These

results indicate that advisory programs tend to price both soft and hard red winter wheat in the top-third of the price range more frequently than the farmer benchmark. On the other hand, the chance of advisory programs pricing in the bottom-third of the price range are also higher than for the benchmark. Similar results can be seen in Panel B for the quarters analysis of the benchmark prices. The chance of advisory programs pricing in the first- and fourth-quarters are higher than the frequencies for the farmer benchmark. However, the farmer benchmark represents the average price received by farmers; therefore it is possible that farmers could receive net prices well above or below the average. Thus the results for individual farmers could be much different. Farmers who receive prices much below average could find benefits in following a market advisory service.

Table 81 presents a comparison of the average cash price available during the 24-month and 16-month marketing windows to the 24-month and 16-month market benchmarks. It can be seen that, on average, the prices are very similar. Within individual years, there can be considerable variation; however, in most years the average price available over the 24-month marketing window is similar to the 24-month market benchmark. There is more variability between the average price available over the 16-month marketing window and the 16-month market benchmark over the years.

Directional Performance

The third indicator of pricing performance, referred to as directional performance, is the proportion of advisory programs that outperform the benchmarks. If the proportion of advisory programs beating a benchmark exceeds 50%, then positive performance is indicated. Fifty percent would be the proportion expected if advisory program performance is random. One benefit to this indicator is that it is not overly influenced by extremely high or low advisory prices.

Table 82 presents the proportion of advisory program net prices and revenues above the benchmarks for soft red and hard red winter wheat over 1995-2004. Panel A presents the results for net prices in soft red winter wheat. There is a substantial amount of variation in the proportion of net advisory prices above the benchmarks for individual crop years. For example, the proportion of programs with net advisory prices above the 24-month benchmark ranges from 5% in 1998 to 90% in 2004. Similar ranges are found for the other benchmarks. No trend in the proportions for any of the benchmarks is apparent over 1995-2004. The average proportion of programs receiving net prices above the benchmarks is: 49% compared to the 24-month market benchmark, 55% compared to the 16-month market benchmark, 35% compared to the average harvest price, and 44% compared to the farmer benchmark. The results indicate that the programs tend to perform roughly as well as the benchmarks, except for the average harvest price. The proportions vary widely for each of the benchmarks over time.

Panel B presents similar results for hard red winter wheat. The advisory programs underperform compared to all of the benchmarks, most notably the average harvest price. Again, the proportions vary widely for each benchmark over time, with no apparent trend in the proportions. For example, the proportion of programs with net advisory prices above the 24-month benchmark ranges from 5% in 2001 to 80% in 2002. Similar ranges are found for the

other benchmarks. The average proportion of advisory programs outperforming the benchmarks over 1995-2004 are: 43% versus the 24-month market benchmark, 48% versus the 16-month market benchmark, 34% versus the average harvest price, and 47% versus the farmer benchmark. As revenues are based on the net advisory and benchmark prices multiplied by the actual yield, the results presented in Panel C and D indicate the same results.

The results from the directional performance analysis yield several conclusions. Advisory programs tend to perform equally as well as the benchmarks, except the average harvest price. The results indicate that the average harvest price performs better than the advisory programs, even when including the 2003 crop year in which all of the advisory programs outperformed the harvest price benchmark for both types of wheat. In only one other year (2002) was the majority of net advisory prices above the average harvest price for soft red winter wheat. The majority of net advisory prices in hard red winter wheat were only higher than the average harvest price during two other crop years (2000 and 2002).

Some interesting results can be obtained when comparing the directional performance results with the price range results from the previous section. The price range results showed that advisory program prices were somewhat evenly distributed and tended to fall in the middle-third slightly more often. The directional results show that advisory programs perform roughly as well as the benchmarks, with the exception of the average harvest price. Combine this with the results from the fourths analysis, and it appears that both the benchmarks (with the exception of the average harvest price) and the net advisory prices tend to fall within the middle of the price range over the 1995-2004 crop years. Comparison of these results with results of other investment professionals can also produce some interesting information. Malkiel (1999) shows that only one-third of active mutual fund managers outperform the S&P 500 stock index over 1974-1998. Based on the results in this section, the market advisory programs perform better. The programs perform roughly as well as the market (50% outperforming and 50% underperforming). This can be a result of the time period examined, relatively less efficient commodity markets, the skill of the advisors, or a combination of these factors.

Average Price Performance

The fourth indicator of pricing performance presented is the average price (or revenue) of advisory programs compared to the benchmarks. This takes in to account the direction, as well as the magnitude, of differences from benchmark prices (or revenues). This indicator does not take risk into consideration, so the results only present limited evidence for risk-averse producers. Table 83 presents the average prices for the advisory programs and the benchmarks. Also presented are the average differences between the advisory programs and the benchmarks. Differences are calculated as the advisory price minus the benchmarks price, so a positive difference would indicate an advisory price above the benchmark price. Panel A presents the results for soft red winter wheat, which show that between 1995 and 2004 the advisory programs under-performed compared to the benchmarks. The net advisory prices under-performed the 24-month market benchmark by an average of 7¢ per bushel, the 16-month market benchmark by an average of 4¢ per bushel, the average harvest price by an average of 17¢ per bushel, and the farmer benchmark by an average of nearly 10¢ per bushel. Similar to the proportion tests, the average harvest price was much higher than the other benchmarks and the average advisory

price. The results for hard red winter wheat are presented in Panel B. These results are similar to those for soft red winter wheat, except that the advisory programs slightly outperform the 24-month market benchmark, on average. The net advisory prices under-performed the 16-month market benchmark by an average of 6¢ per bushel, the average harvest price by an average of 20¢ per bushel, and the farmer benchmark by an average of nearly 11¢ per bushel. Table 84 presents the results based on revenue per acre. Results in Panel A for soft red winter wheat show that over 1995-2004, the benchmarks outperform the advisory programs by anywhere from $2 to $8 per acre. Panel B shows that the benchmarks outperform the advisory programs by $1 to $6 per acre for hard red winter wheat, over 1995-2004. The average differences hide the considerable variability that exists across the benchmarks within a crop year and across crop years. For example in soft red winter wheat, as shown in Panel A of Table 83, in 1995 the advisory programs outperform the 24-month market benchmark by 19¢ per bushel, while the farmer benchmark outperform the advisory programs by 33¢ per bushel.

From an economic standpoint, the information presented here indicates that the advisory programs do not increase the returns to wheat producers. However, it does appear that the advisory programs have had better returns relative to the benchmarks later in the 1995-2004 time period. While average subscription costs are relatively small (20¢ per acre for a 2,000 acre farm), this brings the overall returns to following these programs even lower. Actual subscription costs for each service are presented in the Appendix in Tables 48 through 67. An additional issue to consider is the cost of implementing, monitoring, and managing the marketing strategies recommended by advisory programs. These costs are difficult to measure, but may be substantial (Tomek and Peterson, 2001).

To this point, the results have only been suggestive. Statistical significance has not been examined to indicate whether the results are random chance or the benchmarks truly beat the advisory programs. Several statistical tests can be used to determine the significance of the observed differences. For this analysis, it must be recognized that a "natural" pairing in the sample data can be used to increase the power of statistical tests (Snedecor and Cochran, 1989). This means that net advisory prices and benchmark prices are paired for the same crop year. The same crop year receives different "treatment" from advisory programs and benchmarks, corresponding to the differing marketing strategies used. Since the sample data are paired, the appropriate test of the null hypothesis of zero difference between the mean of net advisory price or revenue and the benchmarks is the paired t-test.

As net prices across programs are positively related, application of the paired t-test to average return performance can be complicated. This statistical test assumes that sample differences are generated independently (Snedecor and Cochran, 1989, pp.101). This assumption is violated for market advisory programs, as many programs appear to use similar methods of analysis and similar supply and demand information (primarily the USDA). Additionally, alternative programs from the same advisory service tend to produce similar pricing results. This is referred to as an "implicit factor" problem.

The best method to obtain direct evidence about the magnitude of dependence between advisory program prices and revenues would be to compute correlation coefficients across prices or revenues. In this case, the sample is too small (not enough degrees of freedom) to

independently estimate the correlations. Due to the high level of dependence across advisory prices and revenue, it becomes important to determine how much independent information can be obtained from the sample.

A "conservative" approach is used to obtain reliable information from the highly dependent sample. Statistical tests used assume that a minimum of 10 independent observations exist, one per crop year. This is considered conservative as results are based on the minimum assumption about the information in the sample. This allows for a high level of confidence in the results, if they are found to be statistically significant. In this case, however, positive pricing performance has a higher probability of being attributed to chance.

Performing this statistical test is relatively simple. Initially, the average net advisory price or revenue for all programs in a crop year is computed. This is termed the return for an "average" advisory program. This step is repeated for all crop years, forming a sample of 10 observations. Tables 68 through 71 present these averages under the "Descriptive Statistics" section. The next step is to subtract the benchmark prices or revenues from the average advisory prices or revenues. Finally, a paired t-test is applied to determine if average advisory performance is statistically significant.

The differences and results from the statistical test are presented in Table 85. The differences are very similar to those in Tables 83 and 84. This is not unexpected. The average differences in Tables 83 and 84 are based on equal weighting of each advisory program price or revenue. The average differences in Table 85 are based on equal weighting of the crop years. The differences between the tables vary only because the number of programs changes across crop years.

Standard error estimates reveal some interesting information about the conservative approach to significance testing of the average differences. The standard error represents the "typical" error, without regard to sign, of the estimated average differences (Mirer, 1995, p. 238). "Typical" means that one can be 95% confident that the true value of the difference will be contained in an interval about two standard errors above and below the average difference estimate. For example, the standard error estimates for the average difference in soft red winter wheat versus the 24-month market benchmark is 8¢ per bushel, without regard to sign. As the sample will not exactly represent the characteristics of the population, a reliability measure is necessary to obtain information from the sample about the population. This is due to random chance in estimation. Standard error estimates vary inversely with sample size. A larger number of independent observations would yield a smaller standard error estimate. The standard error of the average difference is estimated as $\sigma/\sqrt{T}$, where σ is the standard deviation of differences across crop years and T is the sample size (in this case 10 years).

The t-statistic, which is the ratio of the average difference estimate to the standard error estimate, is presented in Table 85. The two-tail p-value presents the probability that a value of the t-statistic, or higher, (in absolute value) will occur across random samples. A p-value of 0.05 or smaller is necessary to confidently indicate that average differences do not equal zero (Griffiths, Hill, and Judge, 1993, p. 134). In all cases for both types of wheat prices and revenues, the p-values indicate that average differences between net advisory prices and

revenues and the benchmarks are not significantly different from zero. The lowest p-values are found for comparisons to the average harvest price, which was higher than the net advisory prices and revenues in most cases.

Table 86 gives another perspective of the average difference between advisory prices or revenues and benchmark prices or revenues. Here the differences are in percentages. Again, none of the average differences are statistically significant. Results indicate that advisory program performance is not overly sensitive to whether average differences are measured in dollars per bushel or percentage terms. As was the case in Table 85, the lowest p-values by far are for the comparisons to the average harvest price.

As most of the tests are performed as a group, it is possible that individual services may have superior performance. However, Table 87 presents statistical tests on the performance results for each of the 15 programs tracked over the entire study compared to each of the benchmarks. This table shows that in the eleven instances in which the difference between the net advisory price or revenue and the benchmark price or revenue were significant, the programs underperformed the benchmark.

Average Price and Risk Performance

Comparison of average advisory prices (or revenues) to the benchmarks is an important performance indicator; however, these comparisons may not provide a complete picture. It is possible that two advisory programs could have the same net price, but represent different levels of risk. This risk can come from different sources: the use of different pricing tools, differences in sales timing, and the variation in implementing the various strategies.

Several theoretical frameworks exist to analyze decision-making under risk. The mean-variance (EV) model is one such framework. In this case variance is the measure of risk. For this study, the variance does not measure the possibility of loss; instead it measures the chance of failing to receive the expected net price from following an advisory program. This is a measure of uncertainty, and includes the chance that the outcome will be worse, as well as the chance that the outcome will be better. For example, a net price of $2.50 or $3.50 per bushel counts in determining the risk of an advisory program when the expected price is $3.00 per bushel. An advisory program with small variance carries little risk. And a program in which the net price exhibits a lot of volatility from year-to-year (high variance) is considered very risky.

Application of the EV model requires that either the distributions of outcomes must be normal or decision-makers must have quadratic utility functions (Hardaker, Huirne, and Anderson, 1997, p. 141). Existence of one or both of these conditions allows that risky choices can be separated into efficient and inefficient sets based on the EV efficiency rule. This rule states that if the mean of choice A is greater than or equal to the mean of choice B and the variance of A is less than or equal to the variance of B, with at least one strict inequality holding, then A is preferred over B by all risk-averse decision-makers. Ability to apply the EV model usually depends upon the assumption of normally distributed outcomes as quadratic utility indicates that absolute risk-aversion increases with the level of the outcome. The possibility of the use of options presents a potential problem. Use of options is intended to create non-normal

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price distributions by truncating undesirable prices (to the upside, downside, or both). However, simulation analysis has shown that the EV model produces reasonably accurate results even in cases where options are used (Hanson and Ladd, 1991; Ladd and Hanson, 1991; Garcia, Adam, and Hauser, 1994).

Table 88 presents, for the 15 advisory programs tracked in all 10 crop years, the ten-year average and standard deviation of net advisory price or revenue. The averages and standard deviations for the benchmarks are also presented. This is the data used to perform the EV analysis. Standard deviation is substituted for variance as it is easier to understand. Performance results will be the same no matter which measure of risk is used (Hardaker, Huirne, and Anderson, 1997, p. 143). Standard deviations can be viewed as the "typical" variation in net advisory prices from year-to-year. A higher standard deviation means a higher chance that a farmer will receive a different price (higher or lower) than expected.

The sample used to perform the EV analysis is limited to the 15 programs tracked for all 10 years in order to maximize the number of observations available to estimate individual program risk (standard deviation). This inclusion of only those programs active all 10 crop years may cause survivorship bias in the average price and risk comparisons to the benchmarks. Ten observations is a relatively small sample for estimating advisory program risk, meaning that the standard deviations shown may be somewhat inaccurate estimators of actual risk. The results indicate a large variation in the risk of advisory programs. Standard deviations for average soft red winter wheat prices range from $0.30 to $1.03 per bushel. Results for hard red winter wheat range from $0.29 to $0.65 per bushel. Soft red winter wheat revenue standard deviations range from a low of $26 to a high of $41 per acre. The range for hard red winter wheat revenues is from a low of $12 to a high of $36 per acre.

Again, the level of aggregation for the EV analysis should be considered. One way would be to examine the mean and standard deviation of the average advisory program constructed for the average price tests; however, diversification effects would prevent this from being useful. With diversification, the risk for the average program will be smaller than the risk for an individual program. A better procedure is to examine a randomly selected advisory program (e.g. Elton, Gruber, and Rentzler, 1987). The estimates for the average price and risk are obtained by taking the average across the average price and standard deviation estimates, respectively, for the 15 programs tracked for all 10 years. The resulting averages are presented in the row labeled "Randomly Selected Program". The averages represent the average price and risk of randomly selecting one of the 15 programs over 1995-2004.

Figure 45 presents the average price (and risk) for the randomly selected program, individual programs, and the benchmarks in graphical form. The figures are each divided into quadrants based on the average price (or revenue) and standard deviation of the randomly selected program ("average program"). Programs in the upper left quadrant have higher returns and less risk than the randomly selected program. The EV efficiency rule states that these programs "dominate" the randomly selected program. This means that risk-averse farmers will prefer an individual program or benchmark in this case. Programs within the lower right quadrant are more risky with lower returns than the randomly selected program. The EV efficiency rule states that the randomly selected program dominates the individual programs or

benchmarks in this quadrant. Risk-averse farmers will prefer the randomly selected program in this case. The lower left quadrant represents programs with lower risk and lower returns than the randomly selected program. The upper right quadrant represents programs with higher returns and higher risk than the randomly selected program. The randomly selected program neither dominates nor is dominated by programs and benchmarks in these two quadrants. The choice made by farmers depends on personal preference for risk relative to average price in these cases. Similar dominance comparisons may be made between individual advisory programs. Quadrants would be based on the positions of the "base" advisory program.

Panel A of Figure 45 indicates that a randomly selected program in soft red winter wheat is dominated by two of the benchmarks (the 24- and the 16-month market benchmarks). The other two benchmarks have a higher average price and higher average risk than the randomly selected program. Panel B indicates that all of the benchmarks except the 24-month market benchmark dominate the randomly selected program in hard red winter wheat. The 24-month market benchmark has a lower average price and lower average risk than the randomly selected program. Panel C presents the results for soft red winter wheat revenue. In this case, all four of the benchmarks dominate the randomly selected program. In the case of hard red winter wheat revenue (presented in Panel D), only the average harvest price dominates the randomly selected program. The 24-month market benchmark has higher average revenue and higher average risk, while the 16-month market benchmark and the farmer benchmark have lower average revenue and lower average risk than the randomly selected program. The 24- and the 16-month market benchmarks dominate the randomly selected program for soft red winter wheat price and revenue. Only the average harvest price is dominant over the randomly selected program for hard red winter wheat price and revenue.

The mean-variance evaluation could be applied to portfolios of advisory programs. For example, a portfolio might consist of marketing 50% of wheat production by following advisory program #1 and the other 50% by following advisory program #2. The potential improvement in performance by using a portfolio of advisory programs depends on the degree that the net advisory prices or revenues are uncorrelated. Stark et al. (2003) analyzed the potential risk reduction from using a portfolio of programs in corn and soybeans. Under the assumption of naïve diversification in which programs are randomly-selected and equally-weighted, results show that increasing the number of programs decreases expected risk. However, results also showed that the marginal decrease in risk from adding another program decrease rapidly with portfolio size. Risk reduction benefits from this type of diversification are relatively small as advisory prices tend to be highly correlated. Results showed that most risk reduction benefits are achieved with small portfolios. These results indicate that there is little reason for farmers to use portfolios containing a large number of advisory programs.

In order to obtain a more thorough analysis of the possible benefits from diversification among advisory programs, evaluation of portfolios constructed using modern portfolio theory (MPT) is necessary. In modern portfolio theory, an efficient set of optimal portfolios of market advisory programs is constructed by minimizing portfolio variance for each level of expected price or revenue. These portfolios will generally not be equally-weighted across programs. It is possible for an optimal portfolio of advisory programs to generate higher prices and less risk than a benchmark, even if individual advisory programs that make up the portfolio do not.

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Cabrini et al. (2004) examined mean-variance efficient portfolios of market advisory programs. They found that the number of programs included in optimal portfolios usually is small, in the range of two to four programs, in most cases estimate mean-variance efficient portfolios of market advisory programs. However, in some cases up to six advisory programs are included. Results provide some evidence that an efficient portfolio provides greater risk/return benefits compared to benchmarks. Results also show that efficient portfolios have superior out-of-sample performance in terms of average price. However, they fail to dominate the benchmarks out-of-sample in both average price and risk. The most difficult step in generating optimal portfolios is determining accurate estimates of the means, variance and correlations for individual programs from the available data.

The results from the EV analysis provide additional evidence about the pricing performance of advisory programs. The majority of the results so far indicate the advisory programs do not beat the benchmarks and tend to be at least as risky.

Predictability of Performance

Results thus far have indicated that, as a group, advisory programs do not tend to generate positive marketing returns. However, performance across programs in a given year can vary substantially. This makes it important to examine the predictability of advisory program performance from year-to-year. The following tests determine whether past performance gives any indication of future performance. Three types of tests are conducted: i) the predictability of "winner" and "loser" categories across crop years, ii) the correlation of advisory program ranks across crop years, and iii) the differences between prices for "top" and "bottom" performing advisory programs across crop years. Similar testing has been applied to financial investment performance (e.g., Elton, Gruber, and Rentzler, 1987; Irwin, Zulauf, and Ward, 1994; Lakonishok, Sheleifer, and Vishny, 1992; Malkiel, 1995). The sample period is not sufficient enough to consider predictability of risk-adjusted performance measures.

First, a test is performed in which advisory programs are placed into "winner" and "loser" categories across crop years. This type of test is not affected by outliers, which is important to analyzing predictability. The first step in this test is to compile a sample of all advisory programs active in the adjacent crop years. Next, the advisory programs are ranked based on the net advisory price for the first year of the pair. The program with the highest net price will have a rank of one, while the program with the lowest net price will have a rank equal to the number of programs in the sample. Programs are then sorted in descending order. Two groups of programs are then created for the first year of the pair; winners are the programs in the top half of the rankings and losers are programs in the bottom half of the rankings. The next step is to rank advisory programs based on the net price in the second year of the pair. Again, programs are grouped as winners and losers based on whether they fall in the top or bottom half of the rankings. Next, the following counts are performed: winner t-winner t+1, winner t-loser t+1, loser t-winner t+1, and loser t-loser t+1. Similar counts will be found for each of the combinations, if advisory program performance is unpredictable. The Fisher's Exact Test is then applied (Conover, 1999, pp. 188-189). Fisher's Exact Test is selected as both row and column totals are pre-determined in the 2 x 2 contingency table on the basis of winner and loser counts. This test examines the significance of the relationship between the two variables of the

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contingency tables. The resulting p-value indicates the probability of obtaining the observed outcome.

The results for this predictability test are presented in Table 89. With the exception of the 1997/1998 pair of crop years, predictability appears to be relatively low. Of the ten winners in 1997 for soft red winter wheat, nine were winners in 1998. Of the ten losers in 1997, nine were losers in 1998. Conditional probabilities for the predictability tests are presented in Table 90. The probabilities of a winner from 1997 being a winner in 1998 and of a loser from 1997 being a loser in 1998 are both 90% (9/10). Conditional probabilities from the pooled data show that the probability of a winner (loser) repeating is 55% (53%) for soft red winter wheat and 58% (56%) for hard red winter wheat. Predictability results are the same for net advisory prices and revenue. These probabilities vary only marginally from randomness. For both soft red and hard red winter wheat there is only one case (1997 vs. 1998), in which counts vary significantly from the equal distribution expected under the assumption of unpredictability. P-values may be overstated due to observed dependence across advisory programs. Fisher's Exact Test assumes that observations are independent, which has been shown is not the case and may overstate the p-values. At the very best, these results indicate a minimal level of predictability through time.

Results from the first predictability test indicated a very limited level of predictability; however, it is possible that sub-groups of advisory programs might exhibit predictability, specifically at the extremes of performance. The second predictability test examines whether only top-performing programs continue to perform well, only poor-performing groups perform poorly, or both. This test is based on the correlation between ranks of all advisory programs active in adjacent crop years. The initial step in this test is to assemble the sample of advisory programs active in both crop years. Next, advisory programs are ranked based on net advisory price in the first year of the pair. Then the programs are sorted into descending rank order. The next step is to sort and rank the programs based on net advisory price in the second year of the pair. Finally, the correlation between the ranks for the two adjacent crop years is calculated. Unpredictable advisory performance would yield a correlation coefficient close to zero. Assuming the standard error of the correlation coefficient is approximately equal to $1/\sqrt{T}$, the appropriate statistical test is the Z-test. The Z-test is used to determine if the difference between the advisory prices in the adjacent years is significant.

Rank correlation results are presented in Table 91. Rank correlation coefficients range from -0.61 to 0.86 for soft red winter wheat and from -0.25 to 0.84 for hard red winter wheat. Statistically significant correlations are found for three comparisons for soft red winter wheat (1997/1998, 2001/2002, and 2002/2003) and two comparisons for hard red winter wheat (1995/1996 and 1997/1998). P-values, again, likely overstate the significance of the rank correlation estimates due to the dependence across advisory programs. Rank correlation coefficients vary substantially across the types of wheat for a given year. Average correlation coefficients of 0.13 and 0.12 for soft red and hard red winter wheat, respectively, indicate minimal predictability in the pricing performance of advisory programs. Rank correlations are identical for advisory prices and revenue.

Results from the rank correlation tests indicate that it may be useful to determine the magnitude of predictability in top- and bottom-performing advisory programs. The third

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predictability test is based upon the difference between net advisory prices for top- and bottom-performing advisory programs across adjacent crop years. The first step is to sort the programs by net advisory price in the first year of the pair and produce groups of programs. There are three groupings analyzed: the top-, middle-, and bottom third of programs; the top-, second-, third-, and bottom quarter of programs; and the top two and bottom two programs. The groupings gradually go from a relatively large number of programs to only two programs. It follows that these groupings should reveal any persistence in advisory program performance at the extremes from year-to-year.

The next step is to compute average net advisory prices for the groups in the second year of the pair. The same programs make up the groups in both years. For example, the average price of the top-third group formed in 1995 is computed for 1996. The next step is to calculate the difference between the average price for the top-performing group and the bottom-performing group. The difference will equal zero, if performance for the two groups is the same. The paired t-test of the difference in the means of the top- and bottom-performing groups is the chosen statistical test. There are eight degrees of freedom for the t-test as there are nine comparisons (1995 vs. 1996, 1996 vs. 1997, 1997 vs. 1998, 1998 vs. 1999, 1999 vs. 2000, 2000 vs. 2001, 2001 vs. 2002, 2002 vs. 2003 and 2003 vs. 2004). Differences are computed for "average" advisory programs in the group, so dependence across individual advisory programs is not an issue as with the previous predictability tests, meaning that p-values are unbiased. Research done by Carpenter and Lynch (1999) indicates that this test is well specified and one of the more powerful in comparing several predictability tests for mutual funds.

Table 92 presents results for net advisory prices for the t-test of predictability for the three groups based on net advisory prices. The average price for the different groups in the first year of the paired comparisons is presented in the first column under each commodity. The average price for the first year is "in-sample" because this is the year in which the groups are formed. The second column presents the average price for the same groups in the second year. This second year average price is "out-of-sample" as it is the year following group formations. In every case, the price of the top group declines from the first year to the second; also the price of the bottom group increases from the first to the second year. However, in all cases the differences between the top and bottom group remains positive in the second year. Additionally, these differences increase as the grouping size decreases. In the second year programs in the top-third in the prior year beat programs in the bottom-third by an average of 6¢ per bushel in soft red winter wheat and by 8¢ per bushel in hard red winter wheat. At the same time the top two programs beat the bottom two programs by an average of 15¢ and 17¢ per bushel for soft red and hard red winter wheat, respectively. Table 93 presents similar results for wheat revenues. In year t+1, programs in the top-third beat programs in the bottom third by $2.39 per acre and $3.16 per acre for soft red and hard red winter wheat, respectively. The top two programs outperform the bottom two programs by $6.79 per acre and $7.69 per acre for soft red and hard red winter wheat, respectively. These results seem to indicate that predictability is more pronounced at the extremes of advisory program performance rankings, more so for hard red winter wheat. In none of the cases for prices or revenues for either type of wheat are any of the differences in performance statistically significant. It is interesting to note that for soft red winter wheat, the average prices for the top group in the second year outperformed the average 16-month benchmark over the same period (1996-2004). The average price in the second year for the top-

fourth was also higher than the average farmer benchmark over the same period. Hard red winter wheat results indicate that the average price in the second year for the top-fourth and the top-two was higher than the 16-month market benchmark and the farmer benchmark. As previous sections have shown, the advisory programs did not perform better than the average harvest price. Results for advisory service revenue are very similar with the exception that for hard red winter wheat, the top two programs also had higher average revenues than the average harvest price.

There is some evidence that performance of top- and bottom-performing advisory programs may be predictable across adjacent crop years, especially in the case of hard red winter wheat. There is not enough evidence so far to indicate that the potential predictability is useful from an economic standpoint, as the marketing windows for adjacent crop years overlap each other. The amount of correlation between old and new crop prices and the fact that advisory programs use similar pricing strategies across crop years may cause "artificial" predictability in performance for overlapping crop years. Additionally, since the crop years overlap it is not possible to take advantage of any possible predictability. If a farmer were to use performance results from year t to select a top-performing program, it would not be possible to make a selection based on predictability results until year t+2. This is because the crop year t ends halfway through crop year t+1 and the day before crop year t+2 begins. This means that performance of the program must continue into the third year in order for predictability to be useful.

Predictability results for net advisory prices for the same groupings, but for non-overlapping years are presented in Table 94. The same procedure is followed as that for overlapping years except that there are only eight comparisons (1995 vs. 1997, 1996 vs. 1998, 1997 vs. 1999, 1998 vs. 2000, 1999 vs. 2001, 2000 vs. 2002, 2001 vs. 2003, and 2002 vs. 2004) and only seven degrees of freedom for the paired t-test. The results are much different than those for the overlapping years. In all cases for both types of winter wheat prices, the average differences between the top- and bottom-performing groups in the second year are negative. Revenue results are very similar for both types of wheat and are presented in Table 95, again all average differences are negative. This indicates that performance predictability does not last long enough to be taken advantage of by farmers.

Table 96 presents the counts for non-overlapping years for: winner t-winner t+2, winner t-loser t+2, loser t-winner t+2, and loser t-loser t+2. Similar to the results in Table 32 for overlapping years, the level of predictability appears to be limited. In only one case is the result significant, and that is for predictability in soft red winter wheat for 2001 vs. 2003. In this case, and many others in the table, winners in the first year become losers two years later. Table 97 presents the results in percentage form.

To this point, predictability has only been examined based on individual crop year comparisons; however, the possibility exists that performance may be predictable over longer time horizons. The lack of predictability over shorter time horizons could be due to "noise" in performance over the shorter time horizons (e.g., Summers, 1986). In order to examine longer-term predictability, the sample is limited to the 15 programs active in all 10 crop years. Two different sample splits are created: the first four crop years (1995-1998) versus the last five crop

years (2000-2004) and the first five crop years (1995-1999) versus the last four crop years (2001-2004). The excluded crop year (1999 for the first and 2000 for the second sample split) is excluded so that the two periods do not overlap. Three predictability tests are then applied to the two sets of averages for each sample split.

Winner-loser counts for both sample splits for hard red winter wheat price and revenue are very close to what would be expected if performance were random (results not shown). The same counts for soft red winter wheat price and revenue indicate a slight tendency for winners to become losers and losers to become winners in the second time period of the sample split. Rank correlations for the first sample split (1995-1998 vs. 2000-2004) are -0.23 and -0.23 for soft red winter wheat price and revenue respectively, and -0.31 and -0.22 for hard red winter wheat price and revenue respectively. Rank correlations for the second split (1995-1999 vs. 2001-2004) are similar: -0.27, -0.38, -0.34, and -0.37 for soft red winter wheat price, soft red winter wheat revenue, hard red winter wheat price, and hard red winter wheat revenue respectively. The rank correlations are quite different from the year-to-year correlations presented in Table 92. Tables 98 and 99 present more discouraging results about the predictability of performance. While differences between the top- and bottom-performing programs is substantially positive in all cases for both of the first sample splits, only four cases exist where the differences remain positive for the second sample split. Three of these cases are for the difference between the top two and bottom two programs for the 1995-1998 versus 2000-2004 sample split. The top two programs outperformed the bottom two by 5¢ per bushel in soft red winter wheat, $2.80 per acre for soft red winter wheat revenue, and -1¢ per bushel in hard red winter wheat and $1.15 per acre for hard red winter wheat revenue. Also for the 1995-1999 versus 2001-2004 sample split, performance by the top two programs was 2¢ per bushel better than for the bottom two programs in soft red winter wheat and 4¢ per bushel worse in hard red winter wheat. None of the four cases appear to be economically substantial. It is not possible to test the statistical significance of these results.

This test also seems to indicate unpredictability in pricing performance of advisory programs. This means that choosing the latest "hot advisory program" is not likely to be successful, which evidence suggests is what many farmers tend to do when selecting an advisory program. A study by Isengelidina et al. (2004) indicates that farmers change advisory programs every 3.3 years, while only 28% of subscribers have never switched advisory programs. Similar mutual fund investor behavior has been shown to have a negative impact on performance (e.g., McDonald, 2003).

Test results based on past performance alone have not been positive; however, it is possible that other variables may be useful for predicting future performance. One example would be to examine the performance of "futures and options" programs compared to "cash only" programs. Several of the advisory services offer both types of programs. Table 100 presents the average returns for the two groups over 1995-2004. Average differences are small, with both price and revenue being lower for futures and options programs in soft red winter wheat. The average differences are -2¢ and 3¢ per bushel for soft red and hard red winter wheat prices and -$1 and $1 per acre for soft red and hard red winter wheat revenues, respectively. None of these average differences are statistically significant. The results indicate that the use of futures and options by advisory programs does not increase or decrease performance, on average.

It is possible that advisory programs with longer track records may outperform those with shorter track records. Figure 1 presented the distribution of track record lengths. As the distribution is skewed to the extremes, sorting programs by track record length can be complicated because of large differences in sample sizes. For example, the total sample size for programs tracked for all 10 years is 150, while the sample size for programs tracked for only 1 crop year is 7. It also appears that average prices for groups with small track record length may be highly influenced by the level of market prices when the programs were active. Based on the number of crop years followed, programs are sorted into two groups: programs with average or below average track record lengths (1 to 6 crop years) and programs with above average track record lengths (7 to 10 crop years). Results are somewhat mixed and not economically significant. Programs with above average track record lengths averaged 6¢ per bushel above and 3¢ per bushel below the programs with average or below average track record lengths for soft red and hard red winter wheat over 1995-2004, respectively. Revenue results were similar. Programs with above average track record lengths averaged $2.64 per acre above and $0.86 per acre below the programs with average or below average track record length over 1995-2004 for soft red and hard red winter wheat, respectively. These results indicate that if track record length can be used as a measure of marketing experience, then experience of an advisor is not useful in predicting performance. It is possible that the length of the track record is a poor measure of advisor experience, especially when the sample only consists of 10 crop years.

Predictability tests presented in this section show that market advisory performance is unpredictable when based on past performance, type of program, and track record length. It is possible that other variables may be used to predict performance. Chevalier and Ellison (1999) examine mutual fund performance based on characteristics of fund managers ability, knowledge, or effort. They found that managers who attend higher-SAT undergraduate universities tend to perform better. Barber and Odean (2000) found that frequent trading by individual stock investors had a negative impact on returns. Predictability of market advisory programs may be affected by education levels of advisors, futures and options trading intensity, or more general "marketing style" measures. Cabrini, Irwin, and Good (2005) have shown evidence that highly active advisory programs perform better than less active programs, in corn and soybeans.

Reliability of Performance Results

The reliability of the results is an important issue when it comes to using them for decision-making. To be useful, the market advisory program performance results must be reliable for future crop years. Some have argued that 10 crop years is too "small" or "sparse" of a sample to draw conclusions about future performance. There are several reasons that this is likely not true. Anderson (1974) found that as few as three or four observations can be useful when making decisions using agricultural risk-return estimates based on sparse data sets. Actual farmer practices in other decision-making areas also support this. An example of such practices is the use of university yield trials, which typically include only the current crop year and two or three prior years of data, if available. Farmers use this data extensively to make variety selections for the following crop year. Second, while the number of crop years is limited, a minimum of 18 advisory programs is tracked for each year. Pooled results across advisory programs and crop years increase information on pricing performance of the programs as a

group. Even though observed dependence of returns across programs decreases the benefit of pooling data, it does not eliminate it. Third, as can be seen in the graph of average monthly spot wheat prices presented in Figure 46, the 1995-2004 crop year sample period contains a wide range of price levels. The figure presents the average monthly spot prices over June 1982-May 2005. Panel A presents prices for west southwest Illinois, while Panel B presents prices for southwest Kansas. With the exception of the high prices during 1995 and 1996, it can be seen that the price movement of both crops during the AgMAS sample is representative of the movement over the entire time period. Prices have become even more volatile during the AgMAS sample period. The standard deviation of monthly soft red winter wheat prices is $0.79 per bushel over June 1995-May 2005 compared to $0.63 per bushel over June 1982-May 2005. The standard deviation of hard red winter wheat prices averaged $0.70 per bushel over June 1982-May 2005, but was $0.88 per bushel over June 1995-2005. This indicates that prices contained sufficient variability over 1995-2004 to provide reasonable confidence in the estimated pricing performance of market advisory programs.

Figure 47 presents another perspective on the price movements during the AgMAS sample period. Average wheat prices over the 24-month marketing window are presented for the 1995-2004 and 1982-2004 crop years. Pre-harvest prices are forward contracts for harvest delivery, while post-harvest prices are spot prices adjusted for commercial storage costs (LDP/MLGs are not included). Similar marketing assumptions to the AgMAS sample period are applied to the pre-AgMAS sample period. The average monthly prices presented are shown as a percentage of the average harvest price to adjust for differences in the average price levels for the two time periods. This yields a picture of the average pattern of harvest equivalent prices for the two sample periods. Figure 48 also presents the average monthly price pattern over 1995-2004 in dollars per bushel.

Figure 47 presents some interesting results in the differences between the price patterns of the two sample periods. For soft red winter wheat, average pre-harvest prices during 1995-2004 were higher than the average prices over 1982-2004. However; starting a few months after harvest, the average prices for 1995-2004 were lower than the average prices for 1982-2004. Hard red winter wheat prices seemed to follow a similar pattern over the entire 24-month window for both sample periods. These results indicate that soft red winter wheat prices during 1995-2004 have followed a slightly different pattern than over 1982-2004. This should not significantly affect the comparisons between advisory programs and the 24- and 16-month market benchmarks, as their marketing profiles are similar. Additionally, comparisons to the average harvest price should not be affected, as average prices are similar during harvest for both time periods. However, comparisons between advisory programs and the farmer benchmark could be affected. Farmers do not market as much of the crop during the pre-harvest period as advisory programs do. Since the farmer benchmark tends to outperform the advisory programs, the higher pre-harvest prices do not appear to have been very beneficial to advisory program performance. Also, the longer term price patterns indicate that these price differences are likely to diminish.

Evidence presented in this section indicates that the performance results for market advisory programs, as a group, provide a reasonable guide to future performance. Differences in seasonal price patterns over 1995-2004 compared to 1982-2004 should have benefited the

advisory programs; however, their performance was still not positive. It is still possible that some of the results may be due to random chance, not true differences in the performance of advisory programs compared to the benchmarks.

Summary and Conclusions

The purpose of this report is to evaluate the pricing performance of market advisory services for the 1995-2004 wheat crops. This study addresses two key questions: 1) Do market advisory services, on average, outperform appropriate benchmarks? and 2) Do market advisory services exhibit persistence in their performance from year-to-year? A minimum of 18 services were tracked for any given crop year. Even though the sample of advisory services is non-random, it is generally representative of the majority of advisory services offered to farmers. Additionally, survivorship bias should be eliminated from the pricing performance results as all programs tracked by the AgMAS Project are included in the sample. The AgMAS Project subscribes to all of the services that are followed and recommendations are recorded on a real-time basis, limiting the effects of hindsight bias on pricing performance results.

Explicit marketing assumptions are applied to the track records in order to produce consistent and comparable results across the different advisory programs. Each of the assumptions are made in order to reflect "real-world" marketing conditions encountered by a representative southwestern Illinois soft red winter wheat producer or a southwest Kansas hard red winter wheat producer. Several key assumptions are: i) with few exceptions, the marketing window for a crop year runs from June 1st before harvest through May 31st following harvest, ii) commercial physical storage costs, as well as interest opportunity costs, are charged to post-harvest sales, iii) brokerage costs are subtracted for futures and options transactions, and iv) Commodity Credit Corporation (CCC) marketing loan recommendations made by advisory programs are followed where possible. Following these and other assumptions, the net price received by a subscriber to a market advisory program is calculated for the 1995-2004 wheat crops.

Benchmarks are used to provide something to compare market advisory service performance to. There are two types of benchmarks: farmer and market benchmarks. The farmer benchmark represents the price received by farmers through actual sales of wheat. Market benchmarks represent prices offered by the market over a given time frame. This study uses a farmer benchmark with market prices, a 24-month market benchmark, a 16-month market benchmark, and an average harvest price market benchmark. The farmer benchmark using market prices is constructed using actual amounts sold each month throughout the marketing year (as reported by the USDA) as weights and average monthly cash prices from the applicable cash series. A weighted average price is calculated for the marketing year. The market benchmarks are a weighted average cash price over the time period chosen for the benchmark in which an equal portion of the crop is sold each day over that time period. The 24-month benchmark represents the average price received by selling an equal amount of wheat over the entire marketing window. The 16-month benchmark is similar to the 24-month benchmark except that the marketing year begins February 1st prior to harvest. This was chosen as a very minimal amount of wheat is sold prior to harvest. The average harvest price represents the average price sold if an equal amount of wheat was priced each day of the harvest window. This

was chosen due to the fact that the bulk of soft red winter wheat in Illinois and hard red winter wheat in Kansas tends to be sold at harvest. The average over the ten crop years examined indicate very little difference between the 24- and 16-month benchmarks, for both crops. The farmer benchmark, on average, was higher than those two market benchmarks. However, for both crops, the average harvest price was much higher than any of the three other benchmarks.

Several different aspects of market advisory service performance are analyzed, including average pricing performance, price range performance, directional performance, average price performance, average price and risk performance, and predictability of performance. The average price received by market advisory services in soft red winter wheat was $2.98 per bushel, compared to benchmark averages of $3.02 to $3.14 per bushel. Average price received by market advisory services in hard red winter wheat averaged $3.02 per bushel, compared to benchmark averages of $3.02 to $3.20 per bushel. In both cases the average harvest price had the highest average price over 1995-2004. Market advisory service and benchmark prices varied considerably within a crop year and from year-to-year.

Price range performance tests were performed by dividing the price range offered each crop year into thirds and quarters. The results for both types of wheat are very similar. The proportion of time that advisory service prices fall within the top-third (20-21% for both types of wheat vs. the 24-month window) or top-quarter (7% for both types of wheat vs. the 24-month window) tend to be lower than any other proportion. Price range performance results indicated substantial variability in net advisory prices within a given year and across years for both types of wheat. When combining the thirds and quarters results, it seems to indicate that the advisory service prices tend to fall in the middle of the price range. For example, 68% of the advisory service prices fall within the middle-third of the price range for soft red winter wheat when using the 24-month window, while 87% fall within the middle two quarters of the price range using the same window. For hard red winter wheat, 71% of the advisory prices fall within the middle-third of the price range using the 24-month window and 88% fall within the middle two quarters. Results are similar using the 16-month market window.

Directional performance examines the performance of the market advisory services compared to the benchmarks by determining how often market advisory service prices are higher than the benchmarks. The only case in which the majority of services beat a benchmark on average was the 16-month benchmark in soft red winter wheat. However, market advisory services only beat the average harvest price 35% and 34% of the time in soft red and hard red winter wheat respectively. The services beat the other benchmarks, including the farmer benchmark, roughly 40% of the time. This indicates a poor ability to beat the market, or even perform better than farmers. Directional performance results indicate that the proportion of programs above the 24-month market benchmark, 16-month market benchmark, average harvest price, and the farmer benchmark were: 49%, 55%, 35%, and 44%, respectively, for soft red winter wheat. Similar results for hard red winter wheat yielded proportions of: 43%, 48%, 34%, and 47%, respectively. These results seem to indicate that the advisory programs perform about as well as the benchmarks, with the exception of the average harvest price, which tends to be higher than the net advisory prices.

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Average price performance compares market advisory service prices to the benchmarks. Results indicate that, on average, market advisory services receive a lower price than the benchmarks. Advisory prices for soft red winter wheat averaged 8¢ lower than the 24-month benchmark, 4¢ lower than the 16-month benchmark, 17¢ lower than the average harvest price, and 9¢ lower than the farmer benchmark. For hard red winter wheat, advisory prices averaged 1¢ lower than the 24-month market benchmark, 6¢ lower than the 16-month market benchmark, 18¢ lower than the average harvest price, and 10¢ lower than the farmer benchmark. However, none of the differences between the market advisory service prices and the benchmarks are statistically significant. Revenue results are similar and also yield no statistically significant differences. Average price performance results indicate that the advisory programs do not outperform the benchmarks, especially the average harvest price.

Next, average price and risk performance are analyzed. EV analysis indicates that when examining prices and revenues for both types of wheat, the programs do not outperform the benchmarks and are at least as risky. Average price and risk performance results indicate that on average the advisory prices did not outperform the benchmarks. In soft red winter wheat, the 24-month and 16-month market benchmarks both dominated the average advisory price and revenue. In hard red winter wheat the average harvest price dominated the advisory programs. The advisory programs did not dominate any of the benchmarks in price or revenue.

Predictability tests examine whether market advisory service performance in one year is indicative of performance in the following year. When examining overlapping crop years, predictability is minimal. Only for the 1997/1998 crop years does a significant level of predictability exist. Conditional probabilities from the pooled data indicate a 55% (53%) probability for a winner (loser) to repeat performance the following year in soft red winter wheat. The conditional probabilities are 58% and 56% for hard red winter wheat. This indicates only a marginal level of predictability. It is possible that top-performing services may continue to perform well or that poor-performing services may continue to perform poorly. However, rank correlation results show a very minimal level of predictability. Another test of continuing performance examined the average price of services broken into groups, based on performance in the first year of the pair, for overlapping years. In all cases, the top-performing group continued to outperform the bottom-performing group the following year, but by less than in the first year. However, predictability across overlapping crop years is not useful as the first marketing year has not ended by the time the second crop year starts. Predictability across non-overlapping crop years is non-existent. Additionally, predictability tests were performed to determine whether longer-term predictability existed. Again, the results were negative. Predictability results indicate that advisory program performance is unpredictable based on past performance, type of program, and track record length. Predictability appears to be minimal across crop years, with average results showing nearly random performance. Average rank correlations also indicate a minimal amount of predictability. Some level of predictability based on top- and bottom-performing groups across overlapping years was found; however, not enough evidence can be found to determine if this predictability may be useful from an economic standpoint. In all cases, the top-performing group's average price declined in the second year, and in the second year the price was always below the average harvest price. The same tests were performed on the top- and bottom-performing groups across non-overlapping years; any predictability found in the overlapping years disappears. Predictability was also examined by splitting the sample period

into two parts to see if top-performing groups in the first part of the sample remained top-performing groups in the second part of the sample (1995-1998 vs. 2000-2004 and 1995-1999 vs. 2001-2004). The results indicated that any potential predictability was not economically substantial. It was also found that programs that used futures and options did not outperform those that did not. Additionally, programs with longer track records were not found to perform any better than those with shorter track records.

The results from this study are similar to those obtained by the AgMAS Project in the analysis of market advisory service performance in corn and soybeans. The advisory program prices in corn and soybeans tended to fall in the middle of the price range, over time, similar to the performance in wheat. However, the proportion of programs beating the various benchmarks was lower in wheat than in corn and soybeans. Additionally, in corn and soybeans, advisory program prices, on average, were higher than the benchmarks. In wheat, this is not the case, only advisory program prices in hard red winter wheat were higher than the 24-month market benchmark. When examining price and risk, none of the benchmarks dominated the "randomly selected program" in corn and soybeans; however, in wheat many of the benchmarks dominated the random program. Predictability tests even yielded better results in corn and soybeans than in wheat, although not by much. Even though the results from the corn and soybean analysis are better than those in wheat for the market advisory programs, in both studies the programs performed rather poorly. From the data presented in both of the studies it would appear that market advisory programs have a difficult time beating the market and farmer performance.

This research provides wheat producers with information to aid in managing price risk. Results indicate that market advisory services as a group do not outperform the markets, or even farmers. In fact, the average harvest price has tended to be much higher than the average advisory service prices and other benchmarks, including the farmer benchmark.

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Table 1. Market Advisory Programs Tracked by the AgMAS Project, Wheat, 1995-2004 Crop Years

Market Advisory Program	Crop Year										Comments
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Ag Financial Strategies							✓	✓	✓	✓	Established program first tracked for the 2001 crop year.
Ag Market Pro										✓	Established program first tracked for the 2004 crop year.
Ag Profit by Hjort	✓	✓	✓	✓	✓						Went out of business at the end of August 2000.
Ag Review	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
AgLine by Doane (cash only)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
AgLine by Doane (hedge)				✓	✓	✓	✓	✓	✓	✓	New program for wheat in 1998.
AgResource	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Agri-Edge (cash only)	✓	✓									Went out of business at the end of January 1998.
Agri-Edge (hedge)	✓	✓									Went out of business at the end of January 1998.
AgriVisor (aggressive cash)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
AgriVisor (aggressive hedge)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
AgriVisor (basic cash)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
AgriVisor (basic hedge)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Allendale	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Brock (cash only)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Brock (hedge)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Cash Grain					✓						Went out of business at the end of September 2000.
Freese-Notis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Grain Field Marketing							✓	✓		✓	Established program first tracked for the 2001 crop year.
Grain Field Report	✓	✓									Stopped providing specific recommendations regarding cash sales. Dropped after 1996 crop year.
Harris Weather/Elliott Advisory	✓	✓									Stopped providing specific recommendations regarding cash sales. Dropped after 1996 crop year.
North American Ag	✓										Stopped providing specific recommendations regarding cash sales. Dropped after 1995 crop year.
Northstar Commodity							✓	✓	✓	✓	Established program first tracked for the 2001 crop year.
Pro Farmer (cash only)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Pro Farmer (hedge)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Progressive Ag		✓	✓	✓							Discontinued providing consistent recommendations following the 1998 crop year.
Prosperous Farmer	✓										Stopped providing specific recommendations regarding cash sales. Dropped after 1995 crop year.
Risk Management Group (cash only)					✓						Only made consistent cash recommendations for the 1999 crop.
Risk Management Group (futures & options)					✓						Only made consistent cash recommendations for the 1999 crop.
Risk Management Group (options only)					✓						Only made consistent cash recommendations for the 1999 crop.
Stewart-Peterson Advisory Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Stewart-Peterson Strictly Cash	✓	✓	✓	✓	✓	✓					Program discontinued at the end of October 2000.
Top Farmer Intelligence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Included for all wheat crop years to date.
Utterback Marketing Services			✓	✓	✓	✓	✓	✓	✓	✓	Previous to 1997, did not make clear enough recommendations to be tracked.
Zwicker Cycle Letter	✓	✓	✓	✓							Merged with AgriVisor for the 1999 crop year and no longer included.

Note: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest.

Table 2. Number of Recommended Transactions for 35 Market Advisory Programs, Soft Red Winter Wheat, 1995-2004 Crop Years

Market Advisory Program	Number of Transactions									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	31	26	22	12
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	68
Ag Profit by Hjort	3	3	4	3	2	N/A	N/A	N/A	N/A	N/A
Ag Review	16	18	17	10	6	7	16	9	13	8
AgLine by Doane (cash only)	4	7	5	5	7	17	8	7	7	6
AgLine by Doane (hedge)	N/A	N/A	N/A	6	7	17	10	7	7	11
AgResource	23	9	36	17	14	39	25	9	42	26
Agri-Edge (cash only)	6	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	12	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	15	12	1	5	3	4	4	4	3	4
AgriVisor (aggressive hedge)	22	21	1	14	7	7	4	3	5	6
AgriVisor (basic cash)	12	10	1	6	3	4	4	4	3	4
AgriVisor (basic hedge)	18	10	1	14	9	7	4	4	5	4
Allendale	12	10	37	44	22	10	7	31	19	24
Brock (cash only)	4	7	7	6	3	5	4	4	4	7
Brock (hedge)	17	23	17	30	21	4	6	6	19	21
Cash Grain	N/A	N/A	N/A	N/A	7	N/A	N/A	N/A	N/A	N/A
Freese-Notis	18	10	13	7	6	7	11	7	10	5
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	9	10
Grain Field Report	18	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	7	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	16	9	6	4
Pro Farmer (cash only)	5	6	5	6	8	10	8	5	9	8
Pro Farmer (hedge)	11	17	9	16	14	16	7	11	11	7
Progressive Ag	N/A	21	13	11	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	26	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	34	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	22	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	30	41	30	40	46	35	19	22	22	16
Stewart-Peterson Strictly Cash	16	20	17	15	25	9	N/A	N/A	N/A	N/A
Top Farmer Intelligence	29	14	39	42	27	45	42	34	27	34
Utterback Marketing Services	N/A	N/A	17	41	61	34	30	30	68	25
Zwicker Cycle Letter	4	1	1	14	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	13	13	14	17	17	15	13	12	16	15
Median	12	12	11	14	9	10	8	8	10	8
Minimum	3	1	1	3	2	4	4	3	3	4
Maximum	30	41	39	44	61	45	42	34	68	68
Total for All Programs	316	307	271	352	380	277	256	240	311	310
Total for All Programs All Crop Years										3,020

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. The transaction count for an advisory program includes all cash, forward, futures, options and marketing loan recommendations for a given crop year. Entry and exit transactions for futures and options positions are counted separately since positions may be entered and exited in an incremental manner. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 3. Number of Recommended Transactions for 35 Market Advisory Programs, Hard Red Winter Wheat, 1995-2004 Crop Years

Market Advisory Program	Number of Transactions									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	31	26	22	12
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80
Ag Profit by Hjort	3	3	4	3	2	N/A	N/A	N/A	N/A	N/A
Ag Review	16	18	16	8	6	7	16	9	14	8
AgLine by Doane (cash only)	5	7	6	6	7	10	8	7	7	6
AgLine by Doane (hedge)	N/A	N/A	N/A	8	7	10	10	7	7	11
AgResource	23	9	36	17	14	38	25	9	43	26
Agri-Edge (cash only)	6	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	12	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	15	12	1	6	3	4	4	4	3	4
AgriVisor (aggressive hedge)	22	21	1	14	7	5	4	3	5	6
AgriVisor (basic cash)	12	10	1	6	3	4	4	4	3	4
AgriVisor (basic hedge)	18	10	1	14	9	5	4	4	5	4
Allendale	13	10	37	42	22	10	7	32	19	24
Brock (cash only)	4	7	7	6	3	5	4	4	4	7
Brock (hedge)	17	24	18	30	21	4	6	6	19	21
Cash Grain	N/A	N/A	N/A	N/A	7	N/A	N/A	N/A	N/A	N/A
Freese-Notis	18	11	13	7	6	7	12	7	10	5
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	9	9
Grain Field Report	18	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	7	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	16	9	6	4
Pro Farmer (cash only)	5	6	5	6	8	10	14	5	11	8
Pro Farmer (hedge)	11	17	9	16	14	16	10	11	13	7
Progressive Ag	N/A	21	13	11	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	28	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	32	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	32	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	46	41	42	44	46	35	19	20	23	16
Stewart-Peterson Strictly Cash	16	20	17	16	25	9	N/A	N/A	N/A	N/A
Top Farmer Intelligence	28	14	39	40	27	43	40	32	27	32
Utterback Marketing Services	N/A	N/A	21	46	62	33	28	32	55	58
Zwicker Cycle Letter	4	1	1	14	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	14	13	14	17	17	14	14	12	15	17
Median	13	12	11	14	9	10	10	8	11	8
Minimum	3	1	1	3	2	4	4	3	3	4
Maximum	46	41	42	46	62	43	40	32	55	80
Total for All Programs	334	309	288	360	391	255	262	239	305	352
Total for All Programs All Crop Years										3,095

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. The transaction count for an advisory program includes all cash, forward, futures, options and marketing loan recommendations for a given crop year. Entry and exit transactions for futures and options positions are counted separately since positions may be entered and exited in an incremental manner. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 4. Descriptive Statistics on the Number of Recommended Transactions for Individual Market Advisory Programs, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years

Market Advisory Program	Crop Years	Number of SRW Transactions			Number of HRW Transactions		
		Average	Minimum	Maximum	Average	Minimum	Maximum
Ag Financial Strategies	2001-2004	23	12	31	23	12	31
Ag Market Pro	2004	68	68	68	80	80	80
Ag Profit by Hjort	1995-1999	3	2	4	3	2	4
Ag Review	1995-2004	12	6	18	12	6	18
AgLine by Doane (cash only)	1995-2004	7	4	17	7	5	10
AgLine by Doane (hedge)	1998-2004	9	6	17	9	7	11
AgResource	1995-2004	24	9	42	24	9	43
Agri-Edge (cash only)	1995-1996	6	5	6	6	5	6
Agri-Edge (hedge)	1995-1996	15	12	18	15	12	18
AgriVisor (aggressive cash)	1995-2004	6	1	15	6	1	15
AgriVisor (aggressive hedge)	1995-2004	9	1	22	9	1	22
AgriVisor (basic cash)	1995-2004	5	1	12	5	1	12
AgriVisor (basic hedge)	1995-2004	8	1	18	7	1	18
Allendale	1995-2004	22	7	44	22	7	42
Brock (cash only)	1995-2004	5	3	7	5	3	7
Brock (hedge)	1995-2004	16	4	30	17	4	30
Cash Grain	1999	7	7	7	7	7	7
Freese-Notis	1995-2004	9	5	18	10	5	18
Grain Field Marketing	2002-2004	9	8	10	9	8	9
Grain Field Report	1995-1996	15	12	18	15	12	18
Harris Weather/Elliott Advisory	1995-1996	10	7	12	10	7	12
North American Ag	1995	5	5	5	5	5	5
Northstar Commodity	2001-2004	9	4	16	9	4	16
Pro Farmer (cash only)	1995-2004	7	5	10	8	5	14
Pro Farmer (hedge)	1995-2004	12	7	17	12	7	17
Progressive Ag	1996-1998	15	11	21	15	11	21
Prosperous Farmer	1995	9	9	9	10	10	10
Risk Management Group (cash only)	1999	26	26	26	28	28	28
Risk Management Group (futures & options)	1999	34	34	34	32	32	32
Risk Management Group (options only)	1999	22	22	22	32	32	32
Stewart-Peterson Advisory Reports	1995-2004	30	16	46	33	16	46
Stewart-Peterson Strictly Cash	1995-2000	17	9	25	17	9	25
Top Farmer Intelligence	1995-2004	33	14	45	32	14	43
Utterback Marketing Services	1997-2004	38	17	68	42	21	62
Zwicker Cycle Letter	1995-1998	5	1	14	5	1	14
All Programs	1995-2004	14	1	68	15	1	80

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. The transaction count for an advisory program includes all cash, forward, futures, options and marketing loan recommendations for a given crop year. Entry and exit transactions for futures and options positions are counted separately since positions may be entered and exited in an incremental manner. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 5. Number of Recommended Cash Transactions for 35 Market Advisory Programs, Soft Red Winter Wheat, 1995-2004 Crop Years

Market Advisory Program	Number of Transactions									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	6	3	4	2
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7
Ag Profit by Hjort	3	3	1	1	1	N/A	N/A	N/A	N/A	N/A
Ag Review	4	2	3	2	2	2	4	3	3	4
AgLine by Doane (cash only)	5	7	5	3	4	5	4	7	7	6
AgLine by Doane (hedge)	N/A	N/A	N/A	2	4	5	4	7	7	5
AgResource	4	9	2	3	1	1	1	2	4	5
Agri-Edge (cash only)	6	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	4	6	1	4	2	3	3	4	3	4
AgriVisor (aggressive hedge)	4	6	1	4	2	2	2	3	5	4
AgriVisor (basic cash)	6	6	1	4	2	3	3	4	3	4
AgriVisor (basic hedge)	4	6	1	4	2	2	2	4	5	4
Allendale	1	1	1	1	1	1	1	12	2	1
Brock (cash only)	4	7	7	4	2	3	2	4	4	7
Brock (hedge)	4	5	6	3	2	2	2	4	4	5
Cash Grain	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A
Freese-Notis	12	10	13	6	5	4	6	7	8	5
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	9	10
Grain Field Report	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	1	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	5	7	4	4
Pro Farmer (cash only)	5	6	5	4	6	7	7	5	9	8
Pro Farmer (hedge)	4	5	5	4	5	4	4	9	7	7
Progressive Ag	N/A	2	3	2	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	11	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	11	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	11	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	16	17	12	14	10	9	6	10	12	8
Stewart-Peterson Strictly Cash	16	20	17	15	16	4	N/A	N/A	N/A	N/A
Top Farmer Intelligence	11	10	12	11	12	14	11	8	11	14
Utterback Marketing Services	N/A	N/A	3	8	4	4	6	6	12	4
Zwicker Cycle Letter	4	1	1	4	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	6	7	5	5	5	4	4	6	6	6
Median	4	6	3	4	4	4	4	6	5	5
Minimum	1	1	1	1	1	1	1	2	2	1
Maximum	16	20	17	15	16	14	11	12	12	14
Total for All Programs	136	156	100	103	120	75	79	117	123	118
Total for All Programs All Crop Years										1,127

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. The cash transaction count for an advisory program includes all cash, forward, and hedge-to-arrive recommendations for a given crop year. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 6. Number of Recommended Cash Transactions for 35 Market Advisory Programs, Hard Red Winter Wheat, 1995-2004 Crop Years

Market Advisory Program	Number of Transactions									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	4	3	4	2
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8
Ag Profit by Hjort	3	3	1	1	1	N/A	N/A	N/A	N/A	N/A
Ag Review	4	2	3	2	2	2	4	3	3	4
AgLine by Doane (cash only)	5	7	6	4	4	5	4	7	7	6
AgLine by Doane (hedge)	N/A	N/A	N/A	4	4	5	4	7	7	5
AgResource	4	9	2	3	1	1	1	2	4	5
Agri-Edge (cash only)	6	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	4	6	1	4	2	3	3	4	3	4
AgriVisor (aggressive hedge)	4	6	1	4	2	2	2	3	5	4
AgriVisor (basic cash)	6	6	1	4	2	3	3	4	3	4
AgriVisor (basic hedge)	4	6	1	4	2	2	2	4	5	4
Allendale	1	1	1	1	1	1	1	4	2	1
Brock (cash only)	4	7	7	4	2	3	2	4	4	7
Brock (hedge)	4	6	6	3	2	2	2	4	4	5
Cash Grain	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A
Freese-Notis	12	11	13	6	5	4	6	7	8	5
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	9	9
Grain Field Report	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	1	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	5	5	4	4
Pro Farmer (cash only)	5	6	5	4	6	7	7	5	9	8
Pro Farmer (hedge)	4	5	5	4	5	4	4	9	7	7
Progressive Ag	N/A	2	3	2	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	12	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	11	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	12	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	16	17	12	14	10	4	6	8	10	8
Stewart-Peterson Strictly Cash	16	20	17	15	16	4	N/A	N/A	N/A	N/A
Top Farmer Intelligence	10	10	12	11	12	14	11	6	11	12
Utterback Marketing Services	N/A	N/A	7	15	7	4	6	4	7	6
Zwicker Cycle Letter	4	1	1	4	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	6	7	5	5	5	4	4	5	6	6
Median	4	6	4	4	4	4	4	4	5	5
Minimum	1	1	1	1	1	1	1	2	2	1
Maximum	16	20	17	15	16	14	11	9	11	12
Total for All Programs	136	158	105	113	125	70	77	101	116	118
Total for All Programs All Crop Years										1,119

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. The cash transaction count for an advisory program includes all cash, forward, and hedge-to-arrive recommendations for a given crop year. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 7. Descriptive Statistics on the Number of Recommended Cash Transactions for Individual Market Advisory Programs, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years

Market Advisory Program	Crop Years	Number of SRW Transactions			Number of HRW Transactions		
		Average	Minimum	Maximum	Average	Minimum	Maximum
Ag Financial Strategies	2001-2004	4	2	6	3	2	4
Ag Market Pro	2004	7	7	7	8	8	8
Ag Profit by Hjort	1995-1999	2	1	3	2	1	3
Ag Review	1995-2004	3	2	4	3	2	4
AgLine by Doane (cash only)	1995-2004	5	3	7	6	4	7
AgLine by Doane (hedge)	1998-2004	5	2	7	5	4	7
AgResource	1995-2004	3	1	9	3	1	9
Agri-Edge (cash only)	1995-1996	6	5	6	6	5	6
Agri-Edge (hedge)	1995-1996	8	6	10	8	6	10
AgriVisor (aggressive cash)	1995-2004	3	1	6	3	1	6
AgriVisor (aggressive hedge)	1995-2004	3	1	6	3	1	6
AgriVisor (basic cash)	1995-2004	4	1	6	4	1	6
AgriVisor (basic hedge)	1995-2004	3	1	6	3	1	6
Allendale	1995-2004	2	1	12	1	1	4
Brock (cash only)	1995-2004	4	2	7	4	2	7
Brock (hedge)	1995-2004	4	2	6	4	2	6
Cash Grain	1999	4	4	4	4	4	4
Freese-Notis	1995-2004	8	4	13	8	4	13
Grain Field Marketing	2002-2004	9	8	10	9	8	9
Grain Field Report	1995-1996	10	10	10	10	10	10
Harris Weather/Elliott Advisory	1995-1996	2	1	2	2	1	2
North American Ag	1995	1	1	1	1	1	1
Northstar Commodity	2001-2004	5	4	7	5	4	5
Pro Farmer (cash only)	1995-2004	6	4	9	6	4	9
Pro Farmer (hedge)	1995-2004	5	4	9	5	4	9
Progressive Ag	1996-1998	2	2	3	2	2	3
Prosperous Farmer	1995	1	1	1	2	2	2
Risk Management Group (cash only)	1999	11	11	11	12	12	12
Risk Management Group (futures & options)	1999	11	11	11	11	11	11
Risk Management Group (options only)	1999	11	11	11	12	12	12
Stewart-Peterson Advisory Reports	1995-2004	11	6	17	11	4	17
Stewart-Peterson Strictly Cash	1995-2000	15	4	20	15	4	20
Top Farmer Intelligence	1995-2004	11	8	14	11	6	14
Utterback Marketing Services	1997-2004	6	3	12	7	4	15
Zwicker Cycle Letter	1995-1998	3	1	4	3	1	4
All Programs	1995-2004	5	1	20	5	1	20

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. The cash transaction count for an advisory program includes all cash, forward, and hedge-to-arrive recommendations for a given crop year. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 8. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP) Soft Red Winter Wheat, West Southwest Illinois, 1998 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 17, 1998	6.7	0.15	0.15
June 18, 1998	13.3	0.06	0.11
June 19, 1998	20.0	0.05	0.09
June 22, 1998	26.7	0.00	0.06
June 23, 1998	33.3	0.00	0.05
June 24, 1998	40.0	0.00	0.04
June 25, 1998	46.7	0.00	0.04
June 26, 1998	53.3	0.00	0.03
June 29, 1998	60.0	0.08	0.04
June 30, 1998	66.7	0.19	0.05
July 1, 1998	73.3	0.13	0.06
July 2, 1998	80.0	0.19	0.07
July 6, 1998	86.7	0.24	0.08
July 7, 1998	93.3	0.20	0.09
July 8, 1998	100.0	0.15	0.10

Table 9. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Soft Red Winter Wheat, West Southwest Illinois, 1999 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 17, 1999	6.7	0.41	0.41
June 18, 1999	13.3	0.39	0.40
June 21, 1999	20.0	0.39	0.40
June 22, 1999	26.7	0.40	0.40
June 23, 1999	33.3	0.46	0.41
June 24, 1999	40.0	0.44	0.42
June 25, 1999	46.7	0.49	0.43
June 28, 1999	53.3	0.48	0.43
June 29, 1999	60.0	0.45	0.43
June 30, 1999	66.7	0.44	0.44
July 1, 1999	73.3	0.42	0.43
July 2, 1999	80.0	0.48	0.44
July 6, 1999	86.7	0.64	0.45
July 7, 1999	93.3	0.64	0.47
July 8, 1999	100.0	0.64	0.48

Table 10. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Soft Red Winter Wheat, West Southwest Illinois, 2000 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 19, 2000	6.7	0.34	0.34
June 20, 2000	13.3	0.28	0.31
June 21, 2000	20.0	0.23	0.28
June 22, 2000	26.7	0.19	0.26
June 23, 2000	33.3	0.17	0.24
June 26, 2000	40.0	0.23	0.24
June 27, 2000	46.7	0.21	0.24
June 28, 2000	53.3	0.20	0.23
June 29, 2000	60.0	0.21	0.23
June 30, 2000	66.7	0.22	0.23
July 3, 2000	73.3	0.36	0.24
July 5, 2000	80.0	0.49	0.26
July 6, 2000	86.7	0.48	0.28
July 7, 2000	93.3	0.52	0.30
July 10, 2000	100.0	0.52	0.31

Table 11. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Soft Red Winter Wheat, West Southwest Illinois, 2001 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 14, 2001	6.7	0.38	0.38
June 15, 2001	13.3	0.32	0.35
June 18, 2001	20.0	0.30	0.33
June 19, 2001	26.7	0.29	0.32
June 20, 2001	33.3	0.28	0.31
June 21, 2001	40.0	0.34	0.32
June 22, 2001	46.7	0.35	0.32
June 25, 2001	53.3	0.41	0.33
June 26, 2001	60.0	0.45	0.35
June 27, 2001	66.7	0.43	0.36
June 28, 2001	73.3	0.41	0.36
June 29, 2001	80.0	0.43	0.37
July 2, 2001	86.7	0.40	0.37
July 3, 2001	93.3	0.37	0.37
July 5, 2001	100.0	0.31	0.37

Table 12. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Hard Red Winter Wheat, Southwest Kansas, 1998 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 15, 1998	6.7	0.02	0.02
June 16, 1998	13.3	0.02	0.02
June 17, 1998	20.0	0.02	0.02
June 18, 1998	26.7	0.02	0.02
June 19, 1998	33.3	0.02	0.02
June 22, 1998	40.0	0.02	0.02
June 23, 1998	46.7	0.02	0.02
June 24, 1998	53.3	0.02	0.02
June 25, 1998	60.0	0.02	0.02
June 26, 1998	66.7	0.02	0.02
June 29, 1998	73.3	0.00	0.01
June 30, 1998	80.0	0.03	0.02
July 1, 1998	86.7	0.00	0.01
July 2, 1998	93.3	0.00	0.01
July 6, 1998	100.0	0.05	0.02

Table 13. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Hard Red Winter Wheat, Southwest Kansas, 1999 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 24, 1999	6.7	0.29	0.29
June 25, 1999	13.3	0.29	0.29
June 28, 1999	20.0	0.28	0.29
June 29, 1999	26.7	0.27	0.29
June 30, 1999	33.3	0.30	0.29
July 1, 1999	40.0	0.35	0.30
July 2, 1999	46.7	0.38	0.31
July 6, 1999	53.3	0.44	0.33
July 7, 1999	60.0	0.51	0.35
July 8, 1999	66.7	0.48	0.36
July 9, 1999	73.3	0.51	0.38
July 12, 1999	80.0	0.54	0.39
July 13, 1999	86.7	0.55	0.40
July 14, 1999	93.3	0.59	0.42
July 15, 1999	100.0	0.59	0.43

Table 14. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Hard Red Winter Wheat, Southwest Kansas, 2000 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 8, 2000	6.7	0.24	0.24
June 9, 2000	13.3	0.24	0.24
June 12, 2000	20.0	0.24	0.24
June 13, 2000	26.7	0.24	0.24
June 14, 2000	33.3	0.24	0.24
June 15, 2000	40.0	0.24	0.24
June 16, 2000	46.7	0.24	0.24
June 19, 2000	53.3	0.19	0.23
June 20, 2000	60.0	0.14	0.22
June 21, 2000	66.7	0.08	0.21
June 22, 2000	73.3	0.03	0.19
June 23, 2000	80.0	0.02	0.17
June 26, 2000	86.7	0.05	0.16
June 27, 2000	93.3	0.00	0.15
June 28, 2000	100.0	0.00	0.14

Table 15. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Hard Red Winter Wheat, Southwest Kansas, 2001 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 15, 2001	6.7	0.00	0.00
June 18, 2001	13.3	0.00	0.00
June 19, 2001	20.0	0.00	0.00
June 20, 2001	26.7	0.00	0.00
June 21, 2001	33.3	0.00	0.00
June 22, 2001	40.0	0.00	0.00
June 25, 2001	46.7	0.00	0.00
June 26, 2001	53.3	0.00	0.00
June 27, 2001	60.0	0.00	0.00
June 28, 2001	66.7	0.00	0.00
June 29, 2001	73.3	0.02	0.00
July 2, 2001	80.0	0.00	0.00
July 3, 2001	86.7	0.00	0.00
July 5, 2001	93.3	0.01	0.00
July 6, 2001	100.0	0.00	0.00

Table 16. Linear Model of Harvest Progress and Associated Loan Deficiency Payment (LDP), Hard Red Winter Wheat, Southwest Kansas, 2003 Crop Year

Date	Harvest Progress Through Date	LDP on Date	Average LDP Through Date
	---%---	---$ per bushel---	---$ per bushel---
June 18, 2003	6.7	0.02	0.02
June 19, 2003	13.3	0.03	0.03
June 20, 2003	20.0	0.05	0.03
June 23, 2003	26.7	0.10	0.05
June 24, 2003	33.3	0.13	0.07
June 25, 2003	40.0	0.16	0.08
June 26, 2003	46.7	0.14	0.09
June 27, 2003	53.3	0.14	0.10
June 30, 2003	60.0	0.16	0.10
July 1, 2003	66.7	0.19	0.11
July 2, 2003	73.3	0.18	0.12
July 3, 2003	80.0	0.15	0.12
July 7, 2003	86.7	0.17	0.12
July 8, 2003	93.3	0.22	0.13
July 9, 2003	100.0	0.23	0.14

Table 17. Estimated Commercial Storage Costs, 1995 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 1995	6.5	3.3	9.8	2.6	3.5	6.2
August 31, 1995	9.0	6.5	15.5	5.3	7.1	12.4
September 30, 1995	11.5	9.8	21.3	7.9	10.6	18.5
October 31, 1995	14.0	13.0	27.0	10.5	14.2	24.7
November 30, 1995	16.5	16.3	32.8	13.2	17.7	30.9
December 31, 1995	19.0	19.6	38.6	15.8	21.3	37.1
January 31, 1996	21.5	22.8	44.3	18.4	24.8	43.2
February 28, 1996	24.0	26.1	50.1	21.1	28.3	49.4
March 31, 1996	26.5	29.3	55.8	23.7	31.9	55.6
April 30, 1996	29.0	32.6	61.6	26.4	35.4	61.8
May 31, 1996	31.5	35.8	67.3	29.0	39.0	68.0

Table 18. Estimated Commercial Storage Costs, 1996 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 1996	6.5	3.6	10.1	2.6	4.0	6.7
August 31, 1996	9.0	7.1	16.1	5.3	8.1	13.3
September 30, 1996	11.5	10.7	22.2	7.9	12.1	20.0
October 31, 1996	14.0	14.3	28.3	10.5	16.1	26.7
November 30, 1996	16.5	17.9	34.4	13.2	20.2	33.3
December 31, 1996	19.0	21.4	40.4	15.8	24.2	40.0
January 31, 1997	21.5	25.0	46.5	18.4	28.2	46.7
February 28, 1997	24.0	28.6	52.6	21.1	32.3	53.4
March 31, 1997	26.5	32.1	58.6	23.7	36.3	60.0
April 30, 1997	29.0	35.7	64.7	26.4	40.3	66.7
May 31, 1997	31.5	39.3	70.8	29.0	44.4	73.4

Table 19. Estimated Commercial Storage Costs, 1997 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 1997	6.5	2.3	8.8	2.6	2.4	5.0
August 31, 1997	9.0	4.7	13.7	5.3	4.7	10.0
September 30, 1997	11.5	7.0	18.5	7.9	7.1	15.0
October 31, 1997	14.0	9.4	23.4	10.5	9.4	19.9
November 30, 1997	16.5	11.7	28.2	13.2	11.8	24.9
December 31, 1997	19.0	14.1	33.1	15.8	14.1	29.9
January 31, 1998	21.5	16.4	37.9	18.4	16.5	34.9
February 28, 1998	24.0	18.8	42.8	21.1	18.8	39.9
March 31, 1998	26.5	21.1	47.6	23.7	21.2	44.9
April 30, 1998	29.0	23.5	52.5	26.4	23.5	49.9
May 31, 1998	31.5	25.8	57.3	29.0	25.9	54.8

Table 20. Estimated Commercial Storage Costs, 1998 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 1998	6.5	1.9	8.4	2.6	2.0	4.7
August 31, 1998	9.0	3.9	12.9	5.3	4.1	9.3
September 30, 1998	11.5	5.8	17.3	7.9	6.1	14.0
October 31, 1998	14.0	7.8	21.8	10.5	8.1	18.7
November 30, 1998	16.5	9.7	26.2	13.2	10.2	23.3
December 31, 1998	19.0	11.6	30.6	15.8	12.2	28.0
January 31, 1999	21.5	13.6	35.1	18.4	14.2	32.7
February 28, 1999	24.0	15.5	39.5	21.1	16.3	37.3
March 31, 1999	26.5	17.4	43.9	23.7	18.3	42.0
April 30, 1999	29.0	19.4	48.4	26.4	20.3	46.7
May 31, 1999	31.5	21.3	52.8	29.0	22.4	51.4

Table 21. Estimated Commercial Storage Costs, 1999 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 1999	6.5	1.6	8.1	2.9	1.7	4.6
August 31, 1999	9.0	3.2	12.2	5.9	3.3	9.2
September 30, 1999	11.5	4.8	16.3	8.8	5.0	13.9
October 31, 1999	14.0	6.3	20.3	11.8	6.7	18.5
November 30, 1999	16.5	7.9	24.4	14.7	8.4	23.1
December 31, 1999	19.0	9.5	28.5	17.7	10.0	27.7
January 31, 2000	21.5	11.1	32.6	20.6	11.7	32.3
February 28, 2000	24.0	12.7	36.7	23.6	13.4	37.0
March 31, 2000	26.5	14.3	40.8	26.5	15.1	41.6
April 30, 2000	29.0	15.8	44.8	29.5	16.7	46.2
May 31, 2000	31.5	17.4	48.9	32.4	18.4	50.8

Table 22. Estimated Commercial Storage Costs, 2000 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 2000	7.0	1.9	8.9	2.9	2.1	5.1
August 31, 2000	10.0	3.8	13.8	5.9	4.2	10.1
September 30, 2000	13.0	5.7	18.7	8.8	6.3	15.2
October 31, 2000	16.0	7.6	23.6	11.8	8.5	20.2
November 30, 2000	19.0	9.5	28.5	14.7	10.6	25.3
December 31, 2000	22.0	11.5	33.5	17.7	12.7	30.4
January 31, 2001	25.0	13.4	38.4	20.6	14.8	35.4
February 28, 2001	28.0	15.3	43.3	23.6	16.9	40.5
March 31, 2001	31.0	17.2	48.2	26.5	19.0	45.5
April 30, 2001	34.0	19.1	53.1	29.5	21.1	50.6
May 31, 2001	37.0	21.0	58.0	32.4	23.3	55.6

Table 23. Estimated Commercial Storage Costs, 2001 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 2001	7.0	1.5	8.5	2.9	1.8	4.8
August 31, 2001	10.0	2.9	12.9	5.9	3.7	9.6
September 30, 2001	13.0	4.4	17.4	8.8	5.5	14.3
October 31, 2001	16.0	5.9	21.9	11.8	7.3	19.1
November 30, 2001	19.0	7.4	26.4	14.7	9.2	23.9
December 31, 2001	22.0	8.8	30.8	17.7	11.0	28.7
January 31, 2002	25.0	10.3	35.3	20.6	12.8	33.5
February 28, 2002	28.0	11.8	39.8	23.6	14.7	38.2
March 31, 2002	31.0	13.3	44.3	26.5	16.5	43.0
April 30, 2002	34.0	14.7	48.7	29.5	18.4	47.8
May 31, 2002	37.0	16.2	53.2	32.4	20.2	52.6

Table 24. Estimated Commercial Storage Costs, 2002 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 2002	7.0	1.7	8.7	2.9	1.9	4.8
August 31, 2002	10.0	3.4	13.4	5.9	3.8	9.7
September 30, 2002	13.0	5.2	18.2	8.8	5.7	14.5
October 31, 2002	16.0	6.9	22.9	11.8	7.6	19.4
November 30, 2002	19.0	8.6	27.6	14.7	9.5	24.2
December 31, 2002	22.0	10.3	32.3	17.7	11.4	29.1
January 31, 2003	25.0	12.0	37.0	20.6	13.3	33.9
February 28, 2003	28.0	13.8	41.8	23.6	15.2	38.8
March 31, 2003	31.0	15.5	46.5	26.5	17.1	43.6
April 30, 2003	34.0	17.2	51.2	29.5	19.0	48.5
May 31, 2003	37.0	18.9	55.9	32.4	20.9	53.3

Table 25. Estimated Commercial Storage Costs, 2003 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 2003	7.0	1.5	8.5	2.9	1.6	4.5
August 31, 2003	10.0	3.0	13.0	5.9	3.1	9.0
September 30, 2003	13.0	4.6	17.6	8.8	4.7	13.5
October 31, 2003	16.0	6.1	22.1	11.8	6.2	18.0
November 30, 2003	19.0	7.6	26.6	14.7	7.8	22.5
December 31, 2003	22.0	9.1	31.1	17.7	9.3	27.0
January 31, 2004	25.0	10.7	35.7	20.6	10.9	31.5
February 28, 2004	28.0	12.2	40.2	23.6	12.4	36.0
March 31, 2004	31.0	13.7	44.7	26.5	14.0	40.5
April 30, 2004	34.0	15.2	49.2	29.5	15.5	45.0
May 31, 2004	37.0	16.8	53.8	32.4	17.1	49.5

Table 26. Estimated Commercial Storage Costs, 2004 Crop Year

Ending Date for Storage	Soft Red Winter Wheat			Hard Red Winter Wheat		
	Physical Storage and Shrinkage	Interest	Total	Physical Storage	Interest	Total
July 31, 2004	7.0	1.7	8.7	2.9	3.0	5.9
August 31, 2004	10.0	3.5	13.5	5.9	5.9	11.8
September 30, 2004	13.0	5.2	18.2	8.8	8.9	17.7
October 31, 2004	16.0	6.9	22.9	11.8	11.8	23.6
November 30, 2004	19.0	8.7	27.7	14.7	14.8	29.5
December 31, 2004	22.0	10.4	32.4	17.7	17.7	35.4
January 31, 2005	25.0	12.1	37.1	20.6	20.7	41.3
February 28, 2005	28.0	13.9	41.9	23.6	23.6	47.2
March 31, 2005	31.0	15.6	46.6	26.5	26.6	53.1
April 30, 2005	34.0	17.4	51.4	29.5	29.6	59.0
May 31, 2005	37.0	19.1	56.1	32.4	32.5	64.9

Table 27. Weighted-Average Monthly Cash Price vs. Benchmark Prices, 1995-2004 Crop Years, Commercial Storage Costs

Crop Year	Weighted Average Monthly Cash Price	Farmer Benchmark	Market Benchmark 24-month Average	Market Benchmark 16-month Average	Difference Between Monthly Cash Price and Benchmarks Farmer Benchmark	Difference Between Monthly Cash Price and Benchmarks 24-Month Average	Difference Between Monthly Cash Price and Benchmarks 16-Month Average
	---$ per acre (harvest equivalent)---				---$ per acre (harvest equivalent)---		
Panel A: SRW Prices							
1995	3.59	4.12	3.60	3.96	-0.53	-0.01	-0.37
1996	3.93	4.22	3.94	4.06	-0.29	-0.01	-0.12
1997	3.22	3.05	3.21	3.09	0.17	0.00	0.13
1998	2.86	2.50	2.88	2.50	0.37	-0.01	0.36
1999	2.66	2.39	2.67	2.44	0.27	-0.01	0.21
2000	2.51	2.46	2.51	2.38	0.05	0.00	0.13
2001	2.62	2.69	2.63	2.51	-0.07	0.00	0.11
2002	2.85	3.02	2.85	2.93	-0.17	0.00	-0.08
2003	3.09	3.16	3.11	3.17	-0.07	-0.01	-0.07
2004	3.11	3.07	3.13	3.12	0.04	-0.01	0.00
1995-2004 Average	3.04	3.07	3.05	3.02	-0.02	-0.01	0.03
Panel B: HRW Prices							
1995	3.28	4.42	3.25	4.04	-1.14	0.03	-0.76
1996	4.05	4.31	4.09	4.36	-0.25	-0.03	-0.31
1997	3.16	2.91	3.16	3.02	0.24	-0.01	0.14
1998	2.69	2.35	2.70	2.50	0.34	-0.01	0.19
1999	2.62	2.57	2.63	2.46	0.05	-0.01	0.16
2000	2.72	2.61	2.71	2.59	0.11	0.01	0.14
2001	2.59	2.58	2.59	2.48	0.01	-0.01	0.11
2002	2.80	3.25	2.81	3.04	-0.45	0.00	-0.23
2003	3.15	3.13	3.15	3.11	0.01	0.00	0.04
2004	3.12	2.99	3.14	3.14	0.12	-0.03	-0.03
1995-2004 Average	3.02	3.11	3.02	3.07	-0.10	-0.01	-0.06

Table 28. Pricing Performance Results for 24 Market Advisory Programs, Soft Red Winter Wheat, 1995 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	LDP / MLG	(8) Net Advisory Price
					----------$/bushel----------				
Ag Profit by Hjort	4.84	0.15	0.00	0.14	4.54	0.00	0.00	0.00	**4.54**
AgLine by Doane (cash only)	4.21	0.06	0.00	0.04	4.11	0.00	0.00	0.00	**4.11**
Ag Resource	4.14	0.12	0.00	0.13	3.88	0.36	0.03	0.00	**4.21**
Ag Review	4.29	0.09	0.00	0.07	4.13	0.61	0.03	0.00	**4.71**
Agri-Edge (cash-only)	4.20	0.10	0.00	0.09	4.01	0.00	0.00	0.00	**4.01**
Agri-Edge (hedge)	4.10	0.10	0.00	0.09	3.92	0.06	0.01	0.00	**3.98**
AgriVisor (aggressive cash)	3.66	0.09	0.00	0.09	3.48	-0.25	0.02	0.00	**3.21**
AgriVisor (aggressive hedge)	4.84	0.16	0.00	0.15	4.54	-0.50	0.03	0.00	**4.00**
AgriVisor (basic cash)	3.86	0.09	0.00	0.09	3.68	-0.65	0.01	0.00	**3.03**
AgriVisor (basic hedge)	4.84	0.16	0.00	0.15	4.54	-0.60	0.03	0.00	**3.91**
Allendale (futures only)	4.86	0.17	0.00	0.16	4.54	-1.22	0.00	0.00	**3.32**
Brock (cash only)	3.44	0.00	0.00	0.00	3.44	0.00	0.00	0.00	**3.44**
Brock (hedge)	3.44	0.00	0.00	0.00	3.44	-0.08	0.03	0.00	**3.32**
Freese-Notis	3.80	0.05	0.00	0.04	3.71	-0.06	0.00	0.00	**3.65**
Grain Field Report	3.65	0.02	0.00	0.01	3.62	0.18	0.01	0.00	**3.79**
Harris Weather/Elliott Advisory	4.38	0.10	0.00	0.07	4.21	-0.08	0.01	0.00	**4.11**
North American Ag.	5.36	0.28	0.00	0.30	4.77	-0.58	0.01	0.00	**4.19**
Pro Farmer (cash only)	4.18	0.13	0.00	0.12	3.94	0.00	0.00	0.00	**3.94**
Pro Farmer (hedge)	4.21	0.11	0.00	0.10	4.01	0.39	0.01	0.00	**4.38**
Prosperous Farmer	3.57	0.00	0.00	0.00	3.57	-0.24	0.03	0.00	**3.30**
Stewart-Peterson Advisory Reports	3.70	0.07	0.00	0.06	3.57	-0.17	0.04	0.00	**3.36**
Stewart-Peterson Strictly Cash	3.77	0.07	0.00	0.07	3.63	0.00	0.00	0.00	**3.63**
Top Farmer Intelligence	3.27	0.03	0.00	0.04	3.20	-0.16	0.03	0.00	**3.00**
Zwicker Cycle Letter	4.03	0.07	0.00	0.07	3.89	0.00	0.00	0.00	**3.89**
Descriptive Statistics:									
Average	4.11	0.09	0.00	0.09	3.93	-0.12	0.01	0.00	**3.79**
Median	4.12	0.09	0.00	0.08	3.90	-0.03	0.01	0.00	**3.90**
Minimum	3.27	0.00	0.00	0.00	3.20	-1.22	0.00	0.00	**3.00**
Maximum	5.36	0.28	0.00	0.30	4.77	0.61	0.04	0.00	**4.71**
Range	2.09	0.28	0.00	0.30	1.57	1.82	0.04	0.00	**1.70**
Standard Deviation	0.54	0.06	0.00	0.07	0.42	0.38	0.01	0.00	**0.47**
Market Benchmarks									
24-month average	3.71	0.06	0.00	0.06	3.60	0.00	0.00	0.00	**3.60**
16-month average	4.16	0.10	0.00	0.10	3.96	0.00	0.00	0.00	**3.96**
Harvest Price	4.01	0.00	0.00	0.00	4.01	0.00	0.00	0.00	**4.01**
Farmer Benchmark	4.20	0.04	0.00	0.03	4.12	0.00	0.00	0.00	**4.12**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1995 crop year is a two-year marketing window from June 1994 through May 1996.

Table 29. Pricing Performance Results for 23 Market Advisory Programs, Soft Red Winter Wheat, 1996 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Commercial Storage Costs Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	LDP / MLG	(8) Net Advisory Price
			----------$/bushel----------						
Ag Profit by Hjort	4.31	0.11	0.00	0.12	4.08	0.00	0.00	0.00	**4.08**
AgLine by Doane (cash only)	4.58	0.05	0.00	0.05	4.47	0.00	0.00	0.00	**4.47**
Ag Resource	5.04	0.05	0.00	0.05	4.94	0.00	0.00	0.00	**4.94**
Ag Review	4.14	0.16	0.00	0.18	3.79	0.40	0.03	0.00	**4.17**
Agri-Edge (cash only)	3.60	0.30	0.00	0.32	2.98	0.00	0.00	0.00	**2.98**
Agri-Edge (hedge)	3.75	0.22	0.00	0.22	3.31	-0.18	0.03	0.00	**3.11**
AgriVisor (aggressive cash)	4.32	0.08	0.00	0.08	4.16	-0.12	0.02	0.00	**4.03**
AgriVisor (aggressive hedge)	4.33	0.08	0.00	0.08	4.17	0.04	0.03	0.00	**4.18**
AgriVisor (basic cash)	4.13	0.12	0.00	0.12	3.89	0.03	0.01	0.00	**3.91**
AgriVisor (basic hedge)	4.39	0.08	0.00	0.08	4.24	-0.38	0.01	0.00	**3.84**
Allendale (futures only)	4.44	0.00	0.00	0.00	4.44	-0.80	0.02	0.00	**3.62**
Brock (cash only)	4.07	0.04	0.00	0.04	3.99	0.00	0.00	0.00	**3.99**
Brock (hedge)	4.35	0.00	0.00	0.00	4.35	-0.58	0.04	0.00	**3.73**
Freese-Notis	4.43	0.00	0.00	0.00	4.43	0.00	0.00	0.00	**4.43**
Grain Field Report	3.88	0.13	0.00	0.13	3.61	-0.01	0.00	0.00	**3.60**
Harris Weather/Elliott Advisory	3.85	0.20	0.00	0.21	3.45	0.22	0.02	0.00	**3.65**
Pro Farmer (cash only)	4.27	0.08	0.00	0.10	4.09	0.00	0.00	0.00	**4.09**
Pro Farmer (hedge)	4.48	0.16	0.00	0.19	4.13	-0.34	0.02	0.00	**3.76**
Progressive Ag	4.18	0.09	0.00	0.08	4.01	0.30	0.03	0.00	**4.29**
Stewart-Peterson Advisory Reports	4.11	0.11	0.00	0.11	3.89	-0.01	0.04	0.00	**3.85**
Stewart-Peterson Strictly Cash	4.07	0.09	0.00	0.09	3.90	0.00	0.00	0.00	**3.90**
Top Farmer Intelligence	3.88	0.17	0.00	0.17	3.55	0.05	0.01	0.00	**3.60**
Zwicker Cycle Letter	3.41	0.31	0.00	0.36	2.74	0.00	0.00	0.00	**2.74**
Descriptive Statistics:									
Average	4.17	0.11	0.00	0.12	3.94	-0.06	0.01	0.00	**3.87**
Median	4.18	0.09	0.00	0.10	4.01	0.00	0.01	0.00	**3.90**
Minimum	3.41	0.00	0.00	0.00	2.74	-0.80	0.00	0.00	**2.74**
Maximum	5.04	0.31	0.00	0.36	4.94	0.40	0.04	0.00	**4.94**
Range	1.63	0.31	0.00	0.36	2.20	1.21	0.04	0.00	**2.20**
Standard Deviation	0.35	0.08	0.00	0.09	0.50	0.26	0.01	0.00	**0.49**
Market Benchmarks									
24-month average	4.04	0.04	0.00	0.05	3.94	0.00	0.00	0.00	**3.94**
16-month average	4.26	0.10	0.00	0.11	4.06	0.00	0.00	0.00	**4.06**
Harvest Price	4.61	0.00	0.00	0.00	4.61	0.00	0.00	0.00	**4.61**
Farmer Benchmark	4.34	0.06	0.00	0.06	4.22	0.00	0.00	0.00	**4.22**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1996 crop year is a two-year marketing window from June 1995 through May 1997.

Table 30. Pricing Performance Results for 20 Market Advisory Programs, Soft Red Winter Wheat, 1997 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	LDP / MLG	(8) Net Advisory Price
				----------$/bushel----------					
Ag Profit by Hjort	2.35	0.55	0.00	0.26	1.54	0.00	0.00	0.21	**1.75**
AgLine by Doane (cash only)	3.14	0.17	0.00	0.12	2.85	0.00	0.00	0.00	**2.85**
Ag Resource	3.08	0.23	0.00	0.18	2.66	-1.18	0.07	0.00	**1.41**
Ag Review	2.51	0.48	0.00	0.36	1.67	0.32	0.02	0.00	**1.97**
AgriVisor (aggressive cash)	2.73	0.29	0.00	0.24	2.20	0.00	0.00	0.00	**2.20**
AgriVisor (aggressive hedge)	2.73	0.29	0.00	0.24	2.20	0.00	0.00	0.00	**2.20**
AgriVisor (basic cash)	2.73	0.29	0.00	0.24	2.20	0.00	0.00	0.00	**2.20**
AgriVisor (basic hedge)	2.73	0.29	0.00	0.24	2.20	0.00	0.00	0.00	**2.20**
Allendale (futures only)	2.32	1.10	0.00	0.87	0.34	2.81	0.15	0.00	**3.01**
Brock (cash only)	3.45	0.08	0.00	0.05	3.32	0.00	0.00	0.00	**3.32**
Brock (hedge)	3.44	0.08	0.00	0.04	3.31	0.19	0.01	0.00	**3.49**
Freese-Notis	3.40	0.10	0.00	0.07	3.23	0.00	0.00	0.00	**3.23**
Pro Farmer (cash only)	3.18	0.18	0.00	0.13	2.87	0.00	0.00	0.00	**2.87**
Pro Farmer (hedge)	3.22	0.17	0.00	0.12	2.93	-0.09	0.01	0.00	**2.83**
Progressive Ag	3.34	0.15	0.00	0.11	3.09	-0.63	0.04	0.00	**2.42**
Stewart-Peterson Advisory Reports	3.41	0.13	0.00	0.09	3.18	-0.13	0.03	0.00	**3.02**
Stewart-Peterson Strictly Cash	3.32	0.10	0.00	0.07	3.15	0.00	0.00	0.00	**3.15**
Top Farmer Intelligence	3.00	0.28	0.00	0.20	2.52	0.08	0.05	0.00	**2.55**
Utterback	3.86	0.00	0.00	0.00	3.86	0.09	0.05	0.00	**3.90**
Zwicker Cycle Letter	2.73	0.29	0.00	0.24	2.20	0.00	0.00	0.00	**2.20**
Descriptive Statistics:									
Average	3.03	0.26	0.00	0.19	2.58	0.07	0.02	0.01	**2.64**
Median	3.11	0.21	0.00	0.16	2.76	0.00	0.00	0.00	**2.69**
Minimum	2.32	0.00	0.00	0.00	0.34	-1.18	0.00	0.00	**1.41**
Maximum	3.86	1.10	0.00	0.87	3.86	2.81	0.15	0.21	**3.90**
Range	1.54	1.10	0.00	0.87	3.52	3.99	0.15	0.21	**2.49**
Standard Deviation	0.42	0.24	0.00	0.18	0.80	0.72	0.04	0.05	**0.63**
Market Benchmarks									
24-month average	3.37	0.09	0.00	0.07	3.21	0.00	0.00	0.00	**3.21**
16-month average	3.29	0.12	0.00	0.09	3.09	0.00	0.00	0.00	**3.09**
Harvest Price	3.03	0.00	0.00	0.00	3.03	0.00	0.00	0.00	**3.03**
Farmer Benchmark	3.18	0.08	0.00	0.05	3.05	0.00	0.00	0.00	**3.05**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1997 crop year is a two-year marketing window from June 1996 through May 1998.

Table 31. Pricing Performance Results for 21 Market Advisory Programs, Soft Red Winter Wheat, 1998 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
				---------$/bushel----------					
Ag Profit by Hjort	2.02	0.79	0.00	0.34	0.88	0.00	0.00	0.27	**1.15**
AgLine by Doane (cash only)	2.42	0.23	0.00	0.14	2.04	0.00	0.00	0.02	**2.07**
AgLine by Doane (hedge)	2.31	0.25	0.00	0.16	1.89	0.17	0.00	0.02	**2.08**
Ag Resource	2.21	0.11	0.00	0.05	2.05	-0.37	0.03	0.46	**2.10**
Ag Review	2.31	0.21	0.00	0.12	1.98	0.20	0.01	0.08	**2.25**
AgriVisor (aggressive cash)	2.41	0.19	0.00	0.12	2.10	0.00	0.00	0.17	**2.27**
AgriVisor (aggressive hedge)	2.41	0.19	0.00	0.12	2.10	-0.08	0.02	0.09	**2.09**
AgriVisor (basic cash)	2.39	0.20	0.00	0.13	2.06	0.00	0.00	0.09	**2.15**
AgriVisor (basic hedge)	2.39	0.20	0.00	0.13	2.06	-0.08	0.02	0.09	**2.05**
Allendale (futures only)	2.54	0.95	0.00	0.68	0.91	1.84	0.13	0.09	**2.71**
Brock (cash only)	2.52	0.13	0.00	0.07	2.32	0.00	0.00	0.46	**2.77**
Brock (hedge)	2.42	0.06	0.00	0.02	2.34	0.33	0.05	0.46	**3.08**
Freese-Notis	2.65	0.16	0.00	0.09	2.40	0.00	0.00	0.18	**2.58**
Pro Farmer (cash only)	2.35	0.23	0.00	0.14	1.98	0.00	0.00	0.42	**2.40**
Pro Farmer (hedge)	2.35	0.23	0.00	0.14	1.98	0.09	0.02	0.42	**2.47**
Progressive Ag	2.43	0.04	0.00	0.01	2.38	-0.22	0.02	0.39	**2.54**
Stewart-Peterson Advisory Reports	2.63	0.11	0.00	0.06	2.46	0.15	0.03	0.11	**2.69**
Stewart-Peterson Strictly Cash	2.73	0.13	0.00	0.07	2.52	0.00	0.00	0.17	**2.70**
Top Farmer Intelligence	2.28	0.51	0.00	0.32	1.44	0.71	0.09	0.17	**2.23**
Utterback	2.99	0.00	0.00	0.00	2.99	-0.25	0.06	0.10	**2.78**
Zwicker Cycle Letter	2.41	0.19	0.00	0.12	2.10	-0.04	0.02	0.17	**2.21**
Descriptive Statistics:									
Average	2.44	0.24	0.00	0.15	2.05	0.12	0.02	0.21	**2.35**
Median	2.41	0.19	0.00	0.12	2.06	0.00	0.02	0.17	**2.27**
Minimum	2.02	0.00	0.00	0.00	0.88	-0.37	0.00	0.02	**1.15**
Maximum	2.99	0.95	0.00	0.68	2.99	1.84	0.13	0.46	**3.08**
Range	0.97	0.95	0.00	0.68	2.11	2.21	0.13	0.43	**1.92**
Standard Deviation	0.20	0.23	0.00	0.15	0.49	0.45	0.03	0.15	**0.40**
Market Benchmarks									
24-month average	2.86	0.07	0.00	0.04	2.74	0.00	0.00	0.14	**2.88**
16-month average	2.48	0.12	0.00	0.08	2.28	0.00	0.00	0.22	**2.50**
Harvest Price	2.58	0.00	0.00	0.00	2.58	0.00	0.00	0.08	**2.66**
Farmer Benchmark	2.40	0.07	0.00	0.04	2.29	0.00	0.00	0.20	**2.50**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1998 crop year is a two-year marketing window from June 1997 through May 1999.

Table 32. Pricing Performance Results for 23 Market Advisory Programs, Soft Red Winter Wheat, 1999 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		---------$/bushel----------							
Ag Profit by Hjort	2.14	0.05	0.00	0.00	2.08	0.00	0.00	0.61	**2.69**
Ag Review	2.37	0.34	0.00	0.12	1.90	0.01	0.00	0.27	**2.18**
AgLine by Doane (cash only)	2.16	0.13	0.00	0.05	1.98	0.00	0.00	0.62	**2.60**
AgLine by Doane (hedge)	2.16	0.13	0.00	0.05	1.98	0.00	0.00	0.62	**2.60**
AgResource	2.35	0.06	0.00	0.01	2.28	0.65	0.02	0.47	**3.38**
AgriVisor (aggressive cash)	2.19	0.10	0.00	0.04	2.06	0.00	0.00	0.61	**2.67**
AgriVisor (aggressive hedge)	2.19	0.10	0.00	0.04	2.06	-0.03	0.01	0.61	**2.63**
AgriVisor (basic cash)	2.19	0.10	0.00	0.04	2.06	0.00	0.00	0.61	**2.67**
AgriVisor (basic hedge)	2.19	0.10	0.00	0.04	2.06	-0.08	0.01	0.61	**2.58**
Allendale (futures only)	2.54	0.58	0.00	0.32	1.64	1.18	0.10	0.49	**3.22**
Brock (cash only)	2.26	0.24	0.00	0.12	1.89	0.00	0.00	0.70	**2.59**
Brock (hedge)	2.26	0.24	0.00	0.12	1.89	0.05	0.02	0.70	**2.62**
Cash Grain	2.47	0.24	0.00	0.07	2.16	0.00	0.00	0.30	**2.46**
Freese-Notis	2.37	0.22	0.00	0.11	2.05	0.00	0.00	0.28	**2.33**
Pro Farmer (cash only)	2.18	0.27	0.00	0.13	1.77	0.00	0.00	0.57	**2.34**
Pro Farmer (hedge)	2.16	0.26	0.00	0.12	1.77	-0.01	0.01	0.67	**2.42**
Risk Management Group (cash only)	2.36	0.00	0.00	0.00	2.36	0.00	0.00	0.49	**2.85**
Risk Management Group (futures & opt	2.23	0.00	0.00	0.00	2.23	0.10	0.01	0.49	**2.81**
Risk Management Group (options only)	2.23	0.00	0.00	0.00	2.23	0.00	0.00	0.49	**2.73**
Stewart-Peterson Advisory Reports	2.44	0.18	0.00	0.09	2.18	-0.10	0.04	0.40	**2.43**
Stewart-Peterson Strictly Cash	2.41	0.14	0.00	0.07	2.21	0.00	0.00	0.41	**2.62**
Top Farmer Intelligence	2.27	0.33	0.00	0.17	1.77	0.41	0.03	0.49	**2.64**
Utterback Marketing Services	2.35	0.00	0.00	0.00	2.35	-0.22	0.09	0.49	**2.52**
Descriptive Statistics:									
Average	2.28	0.16	0.00	0.07	2.04	0.09	0.02	0.52	**2.63**
Median	2.26	0.13	0.00	0.05	2.06	0.00	0.00	0.49	**2.62**
Minimum	2.14	0.00	0.00	0.00	1.64	-0.22	0.00	0.27	**2.18**
Maximum	2.54	0.58	0.00	0.32	2.36	1.18	0.10	0.70	**3.38**
Range	0.41	0.58	0.00	0.32	0.71	1.41	0.10	0.43	**1.20**
Standard Deviation	0.12	0.14	0.00	0.07	0.19	0.29	0.03	0.13	**0.26**
Market Benchmarks									
24-month average	2.40	0.09	0.00	0.04	2.27	0.00	0.00	0.40	**2.67**
16-month average	2.26	0.12	0.00	0.06	2.08	0.00	0.00	0.38	**2.45**
Harvest Price	2.13	0.00	0.00	0.00	2.13	0.00	0.00	0.51	**2.64**
Farmer Benchmark	2.19	0.11	0.00	0.05	2.03	0.00	0.00	0.36	**2.39**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1999 crop year is a two-year marketing window from June 1998 through May 2000.

Table 33. Pricing Performance Results for 18 Market Advisory Programs, Soft Red Winter Wheat, 2000 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
					----------$/bushel----------				
Ag Review	2.40	0.27	0.00	0.14	1.99	0.09	0.01	0.52	**2.60**
AgLine by Doane (cash only)	2.38	0.24	0.00	0.12	2.02	0.00	0.00	0.32	**2.34**
AgLine by Doane (hedge)	2.38	0.24	0.00	0.12	2.02	0.00	0.00	0.32	**2.34**
AgResource	2.63	0.54	0.00	0.29	1.80	0.09	0.14	0.39	**2.15**
AgriVisor (aggressive cash)	2.23	0.13	0.00	0.06	2.04	0.00	0.00	0.31	**2.35**
AgriVisor (aggressive hedge)	2.32	0.25	0.00	0.13	1.94	-0.04	0.00	0.49	**2.38**
AgriVisor (basic cash)	2.23	0.13	0.00	0.06	2.04	0.00	0.00	0.31	**2.35**
AgriVisor (basic hedge)	2.32	0.25	0.00	0.13	1.94	-0.04	0.00	0.49	**2.38**
Allendale	2.54	0.27	0.00	0.15	2.12	0.18	0.01	0.66	**2.96**
Brock (cash only)	2.34	0.16	0.00	0.08	2.11	0.00	0.00	0.52	**2.63**
Brock (hedge)	2.27	0.14	0.00	0.06	2.07	0.00	0.00	0.52	**2.60**
Freese-Notis	2.49	0.27	0.00	0.14	2.08	0.00	0.00	0.36	**2.45**
Pro Farmer (cash only)	2.53	0.28	0.00	0.15	2.10	0.00	0.00	0.41	**2.51**
Pro Farmer (hedge)	2.47	0.23	0.00	0.12	2.12	-0.07	0.01	0.46	**2.50**
Stewart-Peterson Advisory Reports	2.51	0.29	0.00	0.15	2.07	-0.23	0.03	0.45	**2.27**
Stewart-Peterson Strictly Cash	2.42	0.02	0.00	0.01	2.39	0.00	0.00	0.14	**2.52**
Top Farmer Intelligence	2.41	0.21	0.00	0.11	2.10	-0.05	0.03	0.39	**2.41**
Utterback Marketing Services	2.26	0.00	0.00	0.00	2.26	-0.51	0.08	0.32	**1.99**
Descriptive Statistics:									
Average	2.40	0.22	0.00	0.11	2.07	-0.03	0.02	0.41	**2.43**
Median	2.39	0.24	0.00	0.12	2.07	0.00	0.00	0.40	**2.40**
Minimum	2.23	0.00	0.00	0.00	1.80	-0.51	0.00	0.14	**1.99**
Maximum	2.63	0.54	0.00	0.29	2.39	0.18	0.14	0.66	**2.96**
Range	0.40	0.54	0.00	0.29	0.58	0.69	0.14	0.53	**0.96**
Standard Deviation	0.11	0.12	0.00	0.06	0.12	0.14	0.04	0.12	**0.21**
Market Benchmarks									
24-month average	2.38	0.09	0.00	0.05	2.24	0.00	0.00	0.27	**2.51**
16-month average	2.29	0.14	0.00	0.07	2.09	0.00	0.00	0.29	**2.38**
Harvest Price	2.35	0.00	0.00	0.00	2.35	0.00	0.00	0.29	**2.64**
Farmer Benchmark	2.24	0.06	0.00	0.03	2.15	0.00	0.00	0.31	**2.46**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2000 crop year is a two-year marketing window from June 1999 through May 2001.

Table 34. Pricing Performance Results for 19 Market Advisory Programs, Soft Red Winter Wheat, 2001 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		----------$/bushel----------							
Ag Financial Strategies	2.54	0.08	0.00	0.03	2.42	0.46	0.03	0.16	**3.01**
Ag Review	2.58	0.12	0.00	0.05	2.41	0.00	0.02	0.11	**2.50**
AgLine by Doane (cash only)	2.73	0.28	0.00	0.12	2.34	0.00	0.00	0.29	**2.63**
AgLine by Doane (hedge)	2.73	0.28	0.00	0.12	2.34	-0.04	0.00	0.29	**2.58**
AgResource	2.70	0.14	0.00	0.05	2.50	0.02	0.05	0.34	**2.82**
AgriVisor (aggressive cash)	2.72	0.30	0.00	0.13	2.29	0.00	0.00	0.25	**2.54**
AgriVisor (aggressive hedge)	2.76	0.26	0.00	0.11	2.38	0.00	0.00	0.00	**2.38**
AgriVisor (basic cash)	2.72	0.30	0.00	0.13	2.29	0.00	0.00	0.25	**2.54**
AgriVisor (basic hedge)	2.76	0.26	0.00	0.11	2.38	0.00	0.00	0.00	**2.38**
Allendale	2.78	0.20	0.00	0.08	2.51	0.20	0.01	0.37	**3.06**
Brock (cash only)	2.67	0.28	0.00	0.12	2.27	0.00	0.00	0.36	**2.62**
Brock (hedge)	2.67	0.28	0.00	0.12	2.27	0.01	0.01	0.36	**2.63**
Freese-Notis	2.74	0.26	0.00	0.11	2.38	0.00	0.00	0.09	**2.47**
Northstar Commodity	2.23	0.21	0.00	0.08	1.94	0.00	0.01	0.06	**2.00**
Pro Farmer (cash only)	2.87	0.26	0.00	0.10	2.50	0.00	0.00	0.15	**2.65**
Pro Farmer (hedge)	2.92	0.21	0.00	0.08	2.63	-0.06	0.00	0.15	**2.72**
Stewart-Peterson Advisory Reports	2.71	0.15	0.00	0.05	2.51	-0.17	0.02	0.15	**2.47**
Top Farmer Intelligence	2.70	0.17	0.00	0.07	2.47	0.04	0.03	0.07	**2.56**
Utterback Marketing Services	3.05	0.28	0.00	0.12	2.66	-0.62	0.05	0.39	**2.38**
Descriptive Statistics:									
Average	2.71	0.23	0.00	0.09	2.39	-0.01	0.01	0.20	**2.58**
Median	2.72	0.26	0.00	0.11	2.38	0.00	0.00	0.16	**2.56**
Minimum	2.23	0.08	0.00	0.03	1.94	-0.62	0.00	0.00	**2.00**
Maximum	3.05	0.30	0.00	0.13	2.66	0.46	0.05	0.39	**3.06**
Range	0.82	0.21	0.00	0.10	0.72	1.08	0.05	0.39	**1.07**
Standard Deviation	0.16	0.07	0.00	0.03	0.16	0.19	0.02	0.13	**0.24**
Market Benchmarks									
24-month average	2.56	0.09	0.00	0.04	2.43	0.00	0.00	0.20	**2.63**
16-month average	2.58	0.14	0.00	0.06	2.38	0.00	0.00	0.13	**2.51**
Harvest Price	2.29	0.00	0.00	0.00	2.29	0.00	0.00	0.41	**2.70**
Farmer Benchmark	2.61	0.14	0.00	0.05	2.42	0.00	0.00	0.27	**2.69**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2001 crop year is a two-year marketing window from June 2000 through May 2002.

Table 35. Pricing Performance Results for 20 Market Advisory Programs, Soft Red Winter Wheat, 2002 Crop Year, Commercial Storage Costs

	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
Market Advisory Program		Commercial Storage Costs							
				----------$/bushel----------					
Ag Financial Strategies	3.07	0.06	0.00	0.01	3.00	-0.10	0.04	0.00	**2.86**
Ag Review	3.23	0.07	0.00	0.02	3.15	-0.03	0.01	0.00	**3.10**
AgLine by Doane (cash only)	3.22	0.10	0.00	0.04	3.09	0.00	0.00	0.00	**3.09**
AgLine by Doane (hedge)	3.22	0.10	0.00	0.04	3.09	0.00	0.00	0.00	**3.09**
AgResource	3.01	0.02	0.00	0.00	2.99	0.29	0.02	0.00	**3.26**
AgriVisor (aggressive cash)	3.57	0.10	0.00	0.03	3.44	0.00	0.00	0.00	**3.44**
AgriVisor (aggressive hedge)	3.39	0.08	0.00	0.02	3.29	0.00	0.00	0.00	**3.29**
AgriVisor (basic cash)	3.57	0.10	0.00	0.03	3.44	0.00	0.00	0.00	**3.44**
AgriVisor (basic hedge)	3.41	0.08	0.00	0.02	3.31	0.00	0.00	0.00	**3.31**
Allendale	3.94	0.23	0.00	0.11	3.59	-0.93	0.06	0.00	**2.60**
Brock (cash only)	2.98	0.04	0.00	0.01	2.93	0.00	0.00	0.00	**2.93**
Brock (hedge)	2.98	0.04	0.00	0.01	2.93	0.01	0.00	0.00	**2.93**
Freese-Notis	3.36	0.07	0.00	0.02	3.27	0.00	0.00	0.00	**3.27**
Grain Field Marketing	3.18	0.31	0.00	0.15	2.71	0.00	0.00	0.00	**2.71**
Northstar Commodity	3.57	0.12	0.00	0.03	3.42	0.01	0.00	0.00	**3.42**
Pro Farmer (cash only)	3.15	0.25	0.00	0.12	2.78	0.00	0.00	0.00	**2.78**
Pro Farmer (hedge)	2.86	0.17	0.00	0.09	2.61	0.04	0.00	0.00	**2.64**
Stewart-Peterson Advisory Reports	3.03	0.07	0.00	0.03	2.93	-0.01	0.01	0.00	**2.91**
Top Farmer Intelligence	3.04	0.07	0.00	0.03	2.93	-0.15	0.04	0.00	**2.75**
Utterback Marketing Services	2.91	0.00	0.00	0.00	2.91	0.19	0.10	0.00	**3.00**
Descriptive Statistics:									
Average	3.23	0.10	0.00	0.04	3.09	-0.03	0.01	0.00	**3.04**
Median	3.20	0.08	0.00	0.03	3.04	0.00	0.00	0.00	**3.04**
Minimum	2.86	0.00	0.00	0.00	2.61	-0.93	0.00	0.00	**2.60**
Maximum	3.94	0.31	0.00	0.15	3.59	0.29	0.10	0.00	**3.44**
Range	1.07	0.31	0.00	0.15	0.99	1.22	0.10	0.00	**0.83**
Standard Deviation	0.27	0.08	0.00	0.04	0.27	0.23	0.03	0.00	**0.27**
Market Benchmarks									
24-month average	2.96	0.08	0.00	0.04	2.85	0.00	0.00	0.00	**2.85**
16-month average	3.12	0.13	0.00	0.06	2.93	0.00	0.00	0.00	**2.93**
Harvest Price	2.96	0.00	0.00	0.00	2.96	0.00	0.00	0.00	**2.96**
Farmer Benchmark	3.09	0.06	0.00	0.02	3.02	0.00	0.00	0.00	**3.02**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2002 crop year is a two-year marketing window from June 2000 through May 2002.

Table 36. Pricing Performance Results for 21 Market Advisory Programs, Soft Red Winter Wheat, 2003 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		---------$/bushel---------							
Ag Financial Strategies	3.25	0.03	0.00	0.01	3.21	0.22	0.02	0.00	**3.40**
Ag Review	3.45	0.06	0.00	0.01	3.38	-0.12	0.02	0.00	**3.24**
AgLine by Doane (cash only)	3.27	0.09	0.00	0.03	3.15	0.00	0.00	0.00	**3.15**
AgLine by Doane (hedge)	3.27	0.09	0.00	0.03	3.15	0.00	0.00	0.00	**3.15**
AgResource	2.95	0.06	0.00	0.01	2.87	0.27	0.08	0.00	**3.06**
AgriVisor (aggressive cash)	3.37	0.09	0.00	0.03	3.25	0.00	0.00	0.00	**3.25**
AgriVisor (aggressive hedge)	3.47	0.06	0.00	0.02	3.39	0.00	0.00	0.00	**3.39**
AgriVisor (basic cash)	3.37	0.09	0.00	0.03	3.25	0.00	0.00	0.00	**3.25**
AgriVisor (basic hedge)	3.47	0.06	0.00	0.02	3.39	0.00	0.00	0.00	**3.39**
Allendale	3.34	0.13	0.00	0.05	3.16	-0.09	0.03	0.00	**3.04**
Brock (cash only)	3.18	0.04	0.00	0.01	3.13	0.00	0.00	0.00	**3.13**
Brock (hedge)	3.11	0.04	0.00	0.01	3.06	0.28	0.02	0.00	**3.31**
Freese-Notis	3.25	0.05	0.00	0.02	3.19	0.01	0.00	0.00	**3.19**
Grain Field Marketing	3.39	0.12	0.00	0.04	3.23	0.00	0.00	0.00	**3.23**
Northstar Commodity	3.42	0.13	0.00	0.05	3.24	0.00	0.00	0.00	**3.24**
Pro Farmer (cash only)	3.29	0.15	0.00	0.05	3.09	0.00	0.00	0.00	**3.09**
Pro Farmer (hedge)	3.21	0.07	0.00	0.02	3.13	0.02	0.01	0.00	**3.15**
Stewart-Peterson Advisory Reports	3.26	0.07	0.00	0.03	3.16	0.14	0.01	0.00	**3.29**
Top Farmer Intelligence	3.23	0.05	0.00	0.01	3.17	-0.02	0.02	0.00	**3.14**
Utterback Marketing Services	3.06	0.00	0.00	0.00	3.06	0.16	0.07	0.00	**3.16**
Descriptive Statistics:									
Average	3.28	0.07	0.00	0.02	3.18	0.04	0.01	0.00	**3.21**
Median	3.27	0.06	0.00	0.02	3.17	0.00	0.00	0.00	**3.21**
Minimum	2.95	0.00	0.00	0.00	2.87	-0.12	0.00	0.00	**3.04**
Maximum	3.47	0.15	0.00	0.05	3.39	0.28	0.08	0.00	**3.40**
Range	0.52	0.15	0.00	0.05	0.51	0.40	0.08	0.00	**0.36**
Standard Deviation	0.14	0.04	0.00	0.01	0.12	0.11	0.02	0.00	**0.11**
Market Benchmarks									
24-month average	3.25	0.10	0.00	0.04	3.11	0.00	0.00	0.00	**3.11**
16-month average	3.37	0.14	0.00	0.06	3.17	0.00	0.00	0.00	**3.17**
Harvest Price	2.94	0.00	0.00	0.00	2.94	0.00	0.00	0.00	**2.94**
Farmer Benchmark	3.25	0.07	0.00	0.02	3.16	0.00	0.00	0.00	**3.16**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2003 crop year is a two-year marketing window from June 2002 through May 2004.

Table 37. Pricing Performance Results for 21 Market Advisory Programs, Soft Red Winter Wheat, 2004 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		----------$/bushel----------							
Ag Financial Strategies	3.40	0.02	0.00	0.01	3.37	0.18	0.01	0.00	**3.55**
Ag Market Pro	3.42	0.19	0.00	0.09	3.14	0.15	0.10	0.00	**3.20**
Ag Review	3.24	0.07	0.00	0.03	3.14	0.20	0.01	0.00	**3.33**
AgLine by Doane (cash only)	3.33	0.12	0.00	0.05	3.16	0.00	0.00	0.00	**3.16**
AgLine by Doane (hedge)	3.30	0.13	0.00	0.06	3.12	-0.10	0.01	0.00	**3.00**
AgResource	3.21	0.14	0.00	0.06	3.01	0.16	0.03	0.00	**3.14**
AgriVisor (aggressive cash)	3.51	0.14	0.00	0.07	3.30	0.00	0.00	0.00	**3.30**
AgriVisor (aggressive hedge)	3.47	0.14	0.00	0.07	3.26	-0.02	0.00	0.00	**3.24**
AgriVisor (basic cash)	3.51	0.14	0.00	0.07	3.30	0.00	0.00	0.00	**3.30**
AgriVisor (basic hedge)	3.47	0.14	0.00	0.07	3.26	0.00	0.00	0.00	**3.26**
Allendale	3.58	0.22	0.00	0.11	3.25	0.06	0.06	0.00	**3.26**
Brock (cash only)	3.27	0.08	0.00	0.03	3.16	0.00	0.00	0.00	**3.16**
Brock (hedge)	3.25	0.03	0.00	0.01	3.21	-0.02	0.02	0.00	**3.17**
Freese-Notis	3.46	0.08	0.00	0.03	3.36	0.00	0.00	0.00	**3.36**
Grain Field Marketing	3.50	0.14	0.00	0.07	3.29	0.00	0.00	0.00	**3.29**
Northstar Commodity	3.40	0.17	0.00	0.08	3.15	0.00	0.00	0.00	**3.15**
Pro Farmer (cash only)	3.41	0.17	0.00	0.08	3.16	0.00	0.00	0.00	**3.16**
Pro Farmer (hedge)	3.43	0.16	0.00	0.07	3.20	0.00	0.00	0.00	**3.20**
Stewart-Peterson Advisory Reports	3.28	0.05	0.00	0.02	3.21	-0.05	0.01	0.00	**3.16**
Top Farmer Intelligence	3.35	0.04	0.00	0.02	3.30	-0.11	0.02	0.00	**3.16**
Utterback Marketing Services	3.13	0.00	0.00	0.00	3.13	-0.18	0.08	0.00	**2.87**
Descriptive Statistics:									
Average	3.38	0.11	0.00	0.05	3.22	-0.03	0.02	0.00	**3.17**
Median	3.40	0.14	0.00	0.06	3.21	0.00	0.00	0.00	**3.19**
Minimum	3.13	0.00	0.00	0.00	3.01	-0.67	0.00	0.00	**2.69**
Maximum	3.58	0.22	0.00	0.11	3.37	0.20	0.10	0.00	**3.36**
Range	0.45	0.22	0.00	0.11	0.36	0.87	0.10	0.00	**0.66**
Standard Deviation	0.12	0.06	0.00	0.03	0.09	0.17	0.03	0.00	**0.15**
Market Benchmarks									
24-month average	3.27	0.10	0.00	0.05	3.13	0.00	0.00	0.00	**3.13**
16-month average	3.32	0.14	0.00	0.07	3.12	0.00	0.00	0.00	**3.12**
Harvest Price	3.25	0.00	0.00	0.00	3.25	0.00	0.00	0.00	**3.25**
Farmer Benchmark	3.20	0.09	0.00	0.04	3.07	0.00	0.00	0.00	**3.07**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2004 crop year is a two-year marketing window from June 2003 through May 2005.

Table 38. Pricing Performance Results for 24 Market Advisory Programs, Hard Red Winter Wheat, 1995 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	LDP / MLG	(8) Net Advisory Price
		Commercial Storage Costs							
					---------$/bushel----------				
Ag Profit by Hjort	5.18	0.11	0.00	0.16	4.91	0.00	0.00	0.00	**4.91**
AgLine by Doane (cash only)	4.17	0.04	0.00	0.05	4.08	0.00	0.00	0.00	**4.08**
Ag Resource	4.56	0.11	0.00	0.16	4.28	0.51	0.04	0.00	**4.76**
Ag Review	4.10	0.00	0.00	0.00	4.10	0.63	0.03	0.00	**4.70**
Agri-Edge (cash-only)	4.18	0.07	0.00	0.10	4.01	0.00	0.00	0.00	**4.01**
Agri-Edge (hedge)	4.08	0.07	0.00	0.09	3.92	0.04	0.01	0.00	**3.95**
AgriVisor (aggressive cash)	4.14	0.07	0.00	0.09	3.98	-0.85	0.03	0.00	**3.10**
AgriVisor (aggressive hedge)	4.85	0.12	0.00	0.16	4.57	-0.57	0.04	0.00	**3.96**
AgriVisor (basic cash)	4.08	0.06	0.00	0.09	3.93	-0.70	0.00	0.00	**3.23**
AgriVisor (basic hedge)	4.85	0.12	0.00	0.16	4.57	-0.70	0.04	0.00	**3.83**
Allendale (futures only)	4.94	0.12	0.00	0.17	4.64	-1.18	0.02	0.00	**3.44**
Brock (cash only)	3.29	0.00	0.00	0.00	3.29	0.00	0.00	0.00	**3.29**
Brock (hedge)	3.29	0.00	0.00	0.00	3.29	-0.09	0.05	0.00	**3.15**
Freese-Notis	3.94	0.03	0.00	0.04	3.87	-0.08	0.00	0.00	**3.78**
Grain Field Report	3.74	0.01	0.00	0.01	3.71	0.20	0.01	0.00	**3.90**
Harris Weather/Elliott Advisory	4.56	0.05	0.00	0.07	4.43	-0.10	0.02	0.00	**4.31**
North American Ag.	6.34	0.24	0.00	0.35	5.75	-0.69	0.01	0.00	**5.05**
Pro Farmer (cash only)	4.35	0.10	0.00	0.14	4.12	0.00	0.00	0.00	**4.12**
Pro Farmer (hedge)	4.42	0.08	0.00	0.11	4.23	0.46	0.02	0.00	**4.66**
Prosperous Farmer	3.76	0.00	0.00	0.00	3.76	-0.31	0.04	0.00	**3.41**
Stewart-Peterson Advisory Reports	3.54	0.05	0.00	0.07	3.43	-0.18	0.05	0.00	**3.20**
Stewart-Peterson Strictly Cash	3.62	0.05	0.00	0.07	3.51	0.00	0.00	0.00	**3.51**
Top Farmer Intelligence	2.53	0.00	0.00	0.00	2.53	-0.19	0.05	0.00	**2.29**
Zwicker Cycle Letter	3.48	0.02	0.00	0.02	3.44	0.00	0.00	0.00	**3.44**
Descriptive Statistics:									
Average	4.17	0.06	0.00	0.09	4.01	-0.16	0.02	0.00	**3.84**
Median	4.12	0.06	0.00	0.08	4.00	-0.04	0.02	0.00	**3.87**
Minimum	2.53	0.00	0.00	0.00	2.53	-1.18	0.00	0.00	**2.29**
Maximum	6.34	0.24	0.00	0.35	5.75	0.63	0.05	0.00	**5.05**
Range	3.81	0.24	0.00	0.35	3.22	1.81	0.05	0.00	**2.76**
Standard Deviation	0.77	0.06	0.00	0.08	0.64	0.44	0.02	0.00	**0.67**
Market Benchmarks									
24-month average	3.28	0.01	0.00	0.02	3.25	0.00	0.00	0.00	**3.25**
16-month average	4.20	0.07	0.00	0.10	4.04	0.00	0.00	0.00	**4.04**
Harvest Price	4.28	0.00	0.00	0.00	4.28	0.00	0.00	0.00	**4.28**
Farmer Benchmark	4.55	0.06	0.00	0.08	4.42	0.00	0.00	0.00	**4.42**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1995 crop year is a two-year marketing window from June 1994 through May 1996.

Table 39. Pricing Performance Results for 23 Market Advisory Programs, Hard Red Winter Wheat, 1996 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	LDP / MLG	(8) Net Advisory Price
		Commercial Storage Costs							
		----------$/bushel----------							
Ag Profit by Hjort	4.60	0.09	0.00	0.15	4.36	0.00	0.00	0.00	**4.36**
AgLine by Doane (cash only)	4.70	0.05	0.00	0.09	4.56	0.00	0.00	0.00	**4.56**
Ag Resource	5.36	0.04	0.00	0.06	5.27	0.00	0.00	0.00	**5.27**
Ag Review	4.52	0.14	0.00	0.23	4.15	0.41	0.03	0.00	**4.52**
Agri-Edge (cash only)	3.72	0.25	0.00	0.41	3.05	0.00	0.00	0.00	**3.05**
Agri-Edge (hedge)	4.02	0.18	0.00	0.29	3.55	-0.18	0.03	0.00	**3.35**
AgriVisor (aggressive cash)	3.70	0.10	0.00	0.16	3.44	0.19	0.01	0.00	**3.62**
AgriVisor (aggressive hedge)	4.34	0.07	0.00	0.11	4.16	-0.06	0.03	0.00	**4.07**
AgriVisor (basic cash)	3.61	0.10	0.00	0.16	3.35	0.34	0.01	0.00	**3.68**
AgriVisor (basic hedge)	4.44	0.07	0.00	0.11	4.25	-0.38	0.01	0.00	**3.86**
Allendale (futures only)	4.89	0.00	0.00	0.00	4.89	-0.81	0.02	0.00	**4.06**
Brock (cash only)	4.05	0.07	0.00	0.11	3.88	0.00	0.00	0.00	**3.88**
Brock (hedge)	4.81	0.00	0.00	0.00	4.81	-0.70	0.04	0.00	**4.07**
Freese-Notis	4.67	0.00	0.00	0.00	4.67	0.00	0.00	0.00	**4.67**
Grain Field Report	4.09	0.11	0.00	0.17	3.81	-0.01	0.00	0.00	**3.80**
Harris Weather/Elliott Advisory	4.32	0.17	0.00	0.27	3.88	0.26	0.02	0.00	**4.12**
Pro Farmer (cash only)	4.29	0.14	0.00	0.22	3.94	0.00	0.00	0.00	**3.94**
Pro Farmer (hedge)	4.80	0.15	0.00	0.24	4.42	-0.28	0.02	0.00	**4.12**
Progressive Ag	4.47	0.08	0.00	0.12	4.27	0.30	0.03	0.00	**4.55**
Stewart-Peterson Advisory Reports	4.28	0.09	0.00	0.15	4.04	-0.02	0.03	0.00	**3.98**
Stewart-Peterson Strictly Cash	4.17	0.08	0.00	0.13	3.97	0.00	0.00	0.00	**3.97**
Top Farmer Intelligence	4.29	0.14	0.00	0.22	3.93	0.05	0.01	0.00	**3.98**
Zwicker Cycle Letter	3.76	0.28	0.00	0.46	3.01	0.00	0.00	0.00	**3.01**
Descriptive Statistics:									
Average	4.34	0.10	0.00	0.17	4.07	-0.04	0.01	0.00	**4.02**
Median	4.32	0.09	0.00	0.15	4.04	0.00	0.01	0.00	**3.98**
Minimum	3.61	0.00	0.00	0.00	3.01	-0.81	0.00	0.00	**3.01**
Maximum	5.36	0.28	0.00	0.46	5.27	0.41	0.04	0.00	**5.27**
Range	1.75	0.28	0.00	0.46	2.25	1.22	0.04	0.00	**2.25**
Standard Deviation	0.43	0.07	0.00	0.12	0.57	0.29	0.01	0.00	**0.51**
Market Benchmarks									
24-month average	4.19	0.04	0.00	0.06	4.09	0.00	0.00	0.00	**4.09**
16-month average	4.58	0.08	0.00	0.13	4.36	0.00	0.00	0.00	**4.36**
Harvest Price	5.06	0.00	0.00	0.00	5.06	0.00	0.00	0.00	**5.06**
Farmer Benchmark	4.51	0.08	0.00	0.13	4.31	0.00	0.00	0.00	**4.31**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1996 crop year is a two-year marketing window from June 1995 through May 1997.

Table 40. Pricing Performance Results for 20 Market Advisory Programs, Hard Red Winter Wheat, 1997 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	LDP / MLG	(8) Net Advisory Price
		Commercial Storage Costs							
					---------$/bushel----------				
Ag Profit by Hjort	2.72	0.45	0.00	0.35	1.91	0.00	0.00	0.00	**1.91**
AgLine by Doane (cash only)	3.21	0.13	0.00	0.12	2.95	0.00	0.00	0.00	**2.95**
Ag Resource	2.96	0.20	0.00	0.19	2.58	-1.14	0.07	0.00	**1.37**
Ag Review	2.73	0.38	0.00	0.38	1.97	0.34	0.02	0.00	**2.30**
AgriVisor (aggressive cash)	2.84	0.26	0.00	0.25	2.33	0.00	0.00	0.00	**2.33**
AgriVisor (aggressive hedge)	2.84	0.26	0.00	0.25	2.33	0.00	0.00	0.00	**2.33**
AgriVisor (basic cash)	2.84	0.26	0.00	0.25	2.33	0.00	0.00	0.00	**2.33**
AgriVisor (basic hedge)	2.84	0.26	0.00	0.25	2.33	0.00	0.00	0.00	**2.33**
Allendale (futures only)	2.44	0.91	0.00	0.95	0.58	2.87	0.15	0.00	**3.30**
Brock (cash only)	3.29	0.06	0.00	0.05	3.18	0.00	0.00	0.00	**3.18**
Brock (hedge)	3.30	0.05	0.00	0.05	3.20	0.22	0.01	0.00	**3.41**
Freese-Notis	3.37	0.08	0.00	0.07	3.22	0.00	0.00	0.00	**3.22**
Pro Farmer (cash only)	3.07	0.15	0.00	0.14	2.78	0.00	0.00	0.00	**2.78**
Pro Farmer (hedge)	3.09	0.14	0.00	0.13	2.81	-0.09	0.01	0.00	**2.72**
Progressive Ag	3.27	0.11	0.00	0.11	3.05	-0.63	0.04	0.00	**2.38**
Stewart-Peterson Advisory Reports	3.30	0.11	0.00	0.10	3.10	-0.12	0.03	0.00	**2.95**
Stewart-Peterson Strictly Cash	3.17	0.08	0.00	0.07	3.02	0.00	0.00	0.00	**3.02**
Top Farmer Intelligence	2.96	0.22	0.00	0.22	2.53	0.08	0.05	0.00	**2.56**
Utterback	3.86	0.00	0.00	0.00	3.86	0.10	0.05	0.00	**3.90**
Zwicker Cycle Letter	2.84	0.26	0.00	0.25	2.33	0.00	0.00	0.00	**2.33**
Descriptive Statistics:									
Average	3.05	0.22	0.00	0.21	2.62	0.08	0.02	0.00	**2.68**
Median	3.02	0.18	0.00	0.16	2.68	0.00	0.00	0.00	**2.64**
Minimum	2.44	0.00	0.00	0.00	0.58	-1.14	0.00	0.00	**1.37**
Maximum	3.86	0.91	0.00	0.95	3.86	2.87	0.15	0.00	**3.90**
Range	1.43	0.91	0.00	0.95	3.28	4.01	0.15	0.00	**2.54**
Standard Deviation	0.31	0.20	0.00	0.20	0.68	0.72	0.04	0.00	**0.58**
Market Benchmarks									
24-month average	3.29	0.06	0.00	0.06	3.16	0.00	0.00	0.00	**3.16**
16-month average	3.20	0.09	0.00	0.09	3.02	0.00	0.00	0.00	**3.02**
Harvest Price	2.92	0.00	0.00	0.00	2.92	0.00	0.00	0.00	**2.92**
Farmer Benchmark	3.07	0.08	0.00	0.08	2.91	0.00	0.00	0.00	**2.91**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1997 crop year is a two-year marketing window from June 1996 through May 1998.

Table 41. Pricing Performance Results for 21 Market Advisory Programs, Hard Red Winter Wheat, 1998 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		---------$/bushel----------							
Ag Profit by Hjort	2.43	0.66	0.00	0.35	1.42	0.00	0.00	0.20	**1.62**
AgLine by Doane (cash only)	2.67	0.16	0.00	0.13	2.38	0.00	0.00	0.02	**2.40**
AgLine by Doane (hedge)	2.67	0.16	0.00	0.13	2.38	0.14	0.00	0.02	**2.53**
Ag Resource	2.50	0.07	0.00	0.06	2.37	-0.34	0.02	0.20	**2.21**
Ag Review	2.46	0.18	0.00	0.14	2.14	0.17	0.01	0.03	**2.34**
AgriVisor (aggressive cash)	2.50	0.18	0.00	0.15	2.16	0.00	0.00	0.14	**2.30**
AgriVisor (aggressive hedge)	2.50	0.18	0.00	0.15	2.16	-0.08	0.02	0.00	**2.06**
AgriVisor (basic cash)	2.49	0.19	0.00	0.15	2.14	0.00	0.00	0.00	**2.14**
AgriVisor (basic hedge)	2.49	0.19	0.00	0.15	2.14	-0.08	0.02	0.00	**2.04**
Allendale (futures only)	2.87	0.82	0.00	0.73	1.31	1.65	0.12	0.00	**2.84**
Brock (cash only)	2.54	0.11	0.00	0.08	2.35	0.00	0.00	0.27	**2.62**
Brock (hedge)	2.40	0.03	0.00	0.03	2.34	0.27	0.04	0.27	**2.84**
Freese-Notis	2.62	0.15	0.00	0.12	2.36	0.00	0.00	0.09	**2.45**
Pro Farmer (cash only)	2.53	0.20	0.00	0.16	2.17	0.00	0.00	0.32	**2.49**
Pro Farmer (hedge)	2.53	0.20	0.00	0.16	2.17	0.07	0.02	0.32	**2.54**
Progressive Ag	2.57	0.01	0.00	0.01	2.55	-0.21	0.02	0.15	**2.48**
Stewart-Peterson Advisory Reports	2.68	0.10	0.00	0.08	2.51	0.13	0.03	0.07	**2.68**
Stewart-Peterson Strictly Cash	2.65	0.12	0.00	0.10	2.44	0.00	0.00	0.12	**2.55**
Top Farmer Intelligence	2.29	0.42	0.00	0.36	1.51	0.67	0.08	0.01	**2.11**
Utterback	2.79	0.00	0.00	0.00	2.79	-0.12	0.05	0.02	**2.64**
Zwicker Cycle Letter	2.50	0.18	0.00	0.15	2.16	-0.04	0.02	0.14	**2.24**
Descriptive Statistics:									
Average	2.55	0.21	0.00	0.16	2.19	0.11	0.02	0.11	**2.39**
Median	2.53	0.18	0.00	0.14	2.17	0.00	0.02	0.09	**2.45**
Minimum	2.29	0.00	0.00	0.00	1.31	-0.34	0.00	0.00	**1.62**
Maximum	2.87	0.82	0.00	0.73	2.79	1.65	0.12	0.32	**2.84**
Range	0.57	0.82	0.00	0.73	1.48	1.99	0.12	0.31	**1.23**
Standard Deviation	0.13	0.20	0.00	0.16	0.37	0.40	0.03	0.11	**0.29**
Market Benchmarks									
24-month average	2.76	0.07	0.00	0.08	2.61	0.00	0.00	0.09	**2.70**
16-month average	2.58	0.10	0.00	0.08	2.39	0.00	0.00	0.11	**2.50**
Harvest Price	2.60	0.00	0.00	0.00	2.60	0.00	0.00	0.02	**2.62**
Farmer Benchmark	2.49	0.09	0.00	0.07	2.33	0.00	0.00	0.02	**2.35**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1998 crop year is a two-year marketing window from June 1997 through May 1999.

Table 42. Pricing Performance Results for 23 Market Advisory Programs, Hard Red Winter Wheat, 1999 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		---------$/bushel----------							
Ag Profit by Hjort	2.23	0.01	0.00	0.00	2.22	0.00	0.00	0.49	**2.71**
Ag Review	2.54	0.34	0.00	0.20	2.00	0.00	0.00	0.23	**2.23**
AgLine by Doane (cash only)	2.19	0.10	0.00	0.06	2.04	0.00	0.00	0.52	**2.56**
AgLine by Doane (hedge)	2.19	0.10	0.00	0.06	2.04	0.00	0.00	0.52	**2.56**
AgResource	2.43	0.02	0.00	0.01	2.40	0.51	0.01	0.40	**3.30**
AgriVisor (aggressive cash)	2.18	0.06	0.00	0.03	2.09	0.00	0.00	0.49	**2.58**
AgriVisor (aggressive hedge)	2.18	0.06	0.00	0.03	2.09	-0.03	0.01	0.49	**2.54**
AgriVisor (basic cash)	2.18	0.06	0.00	0.03	2.09	0.00	0.00	0.49	**2.58**
AgriVisor (basic hedge)	2.18	0.06	0.00	0.03	2.09	-0.07	0.01	0.49	**2.50**
Allendale (futures only)	2.87	0.57	0.00	0.33	1.97	1.11	0.09	0.43	**3.42**
Brock (cash only)	2.23	0.22	0.00	0.13	1.87	0.00	0.00	0.59	**2.46**
Brock (hedge)	2.23	0.22	0.00	0.13	1.87	0.04	0.02	0.59	**2.48**
Cash Grain	2.40	0.24	0.00	0.08	2.08	0.00	0.00	0.48	**2.57**
Freese-Notis	2.36	0.20	0.00	0.11	2.04	0.00	0.00	0.34	**2.38**
Pro Farmer (cash only)	2.25	0.24	0.00	0.14	1.86	0.00	0.00	0.48	**2.34**
Pro Farmer (hedge)	2.21	0.23	0.00	0.13	1.85	-0.01	0.01	0.56	**2.39**
Risk Management Group (cash only)	2.25	0.00	0.00	0.00	2.25	0.00	0.00	0.45	**2.70**
Risk Management Group (futures & opt	2.23	0.00	0.00	0.00	2.23	0.10	0.01	0.43	**2.75**
Risk Management Group (options only)	2.13	0.00	0.00	0.00	2.13	0.17	0.01	0.45	**2.74**
Stewart-Peterson Advisory Reports	2.41	0.17	0.00	0.10	2.14	-0.11	0.04	0.42	**2.41**
Stewart-Peterson Strictly Cash	2.44	0.13	0.00	0.07	2.24	0.00	0.00	0.36	**2.61**
Top Farmer Intelligence	2.43	0.31	0.00	0.18	1.94	0.33	0.03	0.43	**2.67**
Utterback Marketing Services	2.42	0.00	0.00	0.00	2.42	-0.19	0.08	0.43	**2.58**
Descriptive Statistics:									
Average	2.31	0.15	0.00	0.08	2.08	0.08	0.01	0.46	**2.61**
Median	2.23	0.10	0.00	0.06	2.09	0.00	0.00	0.48	**2.57**
Minimum	2.13	0.00	0.00	0.00	1.85	-0.19	0.00	0.23	**2.23**
Maximum	2.87	0.57	0.00	0.33	2.42	1.11	0.09	0.59	**3.42**
Range	0.73	0.57	0.00	0.33	0.57	1.31	0.09	0.35	**1.19**
Standard Deviation	0.17	0.14	0.00	0.08	0.16	0.27	0.02	0.08	**0.27**
Market Benchmarks									
24-month average	2.42	0.09	0.00	0.05	2.28	0.00	0.00	0.35	**2.63**
16-month average	2.28	0.11	0.00	0.06	2.10	0.00	0.00	0.36	**2.46**
Harvest Price	2.14	0.00	0.00	0.00	2.14	0.00	0.00	0.45	**2.59**
Farmer Benchmark	2.21	0.08	0.00	0.05	2.08	0.00	0.00	0.50	**2.57**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 1999 crop year is a two-year marketing window from June 1998 through May 2000.

Table 43. Pricing Performance Results for 18 Market Advisory Programs, Hard Red Winter Wheat, 2000 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		\------Commercial Storage Costs------							
		----------$/bushel----------							
Ag Review	2.82	0.23	0.00	0.17	2.42	0.01	0.01	0.21	**2.62**
AgLine by Doane (cash only)	2.89	0.21	0.00	0.15	2.53	0.00	0.00	0.10	**2.64**
AgLine by Doane (hedge)	2.89	0.21	0.00	0.15	2.53	0.00	0.00	0.10	**2.64**
AgResource	2.57	0.45	0.00	0.33	1.78	0.20	0.14	0.14	**1.98**
AgriVisor (aggressive cash)	2.69	0.10	0.00	0.07	2.52	0.00	0.00	0.14	**2.66**
AgriVisor (aggressive hedge)	2.79	0.21	0.00	0.15	2.43	0.03	0.01	0.10	**2.54**
AgriVisor (basic cash)	2.69	0.10	0.00	0.07	2.52	0.00	0.00	0.14	**2.66**
AgriVisor (basic hedge)	2.79	0.21	0.00	0.15	2.43	0.03	0.01	0.10	**2.54**
Allendale	2.87	0.23	0.00	0.17	2.46	0.19	0.01	0.39	**3.02**
Brock (cash only)	2.84	0.13	0.00	0.09	2.62	0.00	0.00	0.19	**2.81**
Brock (hedge)	2.81	0.10	0.00	0.08	2.63	0.00	0.00	0.19	**2.81**
Freese-Notis	2.86	0.22	0.00	0.16	2.48	0.00	0.00	0.12	**2.60**
Pro Farmer (cash only)	2.87	0.23	0.00	0.17	2.46	0.00	0.00	0.14	**2.60**
Pro Farmer (hedge)	2.90	0.20	0.00	0.14	2.56	-0.07	0.01	0.19	**2.67**
Stewart-Peterson Advisory Reports	2.80	0.20	0.00	0.15	2.44	-0.24	0.03	0.16	**2.34**
Stewart-Peterson Strictly Cash	2.82	0.01	0.00	0.01	2.80	0.00	0.00	0.13	**2.93**
Top Farmer Intelligence	2.78	0.17	0.00	0.12	2.49	-0.05	0.03	0.16	**2.57**
Utterback Marketing Services	2.51	0.00	0.00	0.00	2.51	-0.51	0.08	0.14	**2.06**
Descriptive Statistics:									
Average	2.79	0.18	0.00	0.13	2.48	-0.02	0.02	0.16	**2.59**
Median	2.81	0.20	0.00	0.15	2.50	0.00	0.00	0.14	**2.63**
Minimum	2.51	0.00	0.00	0.00	1.78	-0.51	0.00	0.10	**1.98**
Maximum	2.90	0.45	0.00	0.33	2.80	0.20	0.14	0.39	**3.02**
Range	0.39	0.45	0.00	0.33	1.02	0.71	0.14	0.29	**1.05**
Standard Deviation	0.11	0.10	0.00	0.07	0.20	0.15	0.04	0.07	**0.26**
Market Benchmarks									
24-month average	2.67	0.06	0.00	0.05	2.56	0.00	0.00	0.15	**2.71**
16-month average	2.65	0.11	0.00	0.08	2.47	0.00	0.00	0.11	**2.59**
Harvest Price	2.53	0.00	0.00	0.00	2.53	0.00	0.00	0.09	**2.63**
Farmer Benchmark	2.62	0.10	0.00	0.07	2.45	0.00	0.00	0.16	**2.61**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2000 crop year is a two-year marketing window from June 1999 through May 2001.

Table 44. Pricing Performance Results for 19 Market Advisory Programs, Hard Red Winter Wheat, 2001 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Commercial Storage Costs Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
			----------$/bushel----------						
Ag Financial Strategies	2.59	0.05	0.00	0.03	2.51	0.43	0.03	0.00	**2.92**
Ag Review	2.62	0.09	0.00	0.06	2.47	0.00	0.02	0.00	**2.44**
AgLine by Doane (cash only)	2.54	0.23	0.00	0.15	2.17	0.00	0.00	0.02	**2.19**
AgLine by Doane (hedge)	2.54	0.23	0.00	0.15	2.17	-0.01	0.00	0.02	**2.18**
AgResource	2.57	0.10	0.00	0.06	2.40	0.05	0.05	0.00	**2.41**
AgriVisor (aggressive cash)	2.63	0.25	0.00	0.16	2.22	0.00	0.00	0.06	**2.28**
AgriVisor (aggressive hedge)	2.60	0.22	0.00	0.14	2.25	0.00	0.00	0.00	**2.25**
AgriVisor (basic cash)	2.63	0.25	0.00	0.16	2.22	0.00	0.00	0.06	**2.28**
AgriVisor (basic hedge)	2.60	0.22	0.00	0.14	2.25	0.00	0.00	0.00	**2.25**
Allendale	2.56	0.15	0.00	0.10	2.31	0.20	0.01	0.00	**2.51**
Brock (cash only)	2.59	0.23	0.00	0.15	2.21	0.00	0.00	0.00	**2.21**
Brock (hedge)	2.59	0.23	0.00	0.15	2.21	0.01	0.01	0.00	**2.22**
Freese-Notis	2.61	0.21	0.00	0.13	2.27	0.00	0.00	0.00	**2.27**
Northstar Commodity	2.27	0.17	0.00	0.11	1.99	0.00	0.01	0.00	**1.98**
Pro Farmer (cash only)	2.73	0.21	0.00	0.13	2.40	0.00	0.00	0.00	**2.40**
Pro Farmer (hedge)	2.64	0.16	0.00	0.10	2.38	-0.06	0.00	0.00	**2.32**
Stewart-Peterson Advisory Reports	2.61	0.10	0.00	0.06	2.44	-0.17	0.02	0.01	**2.26**
Top Farmer Intelligence	2.69	0.13	0.00	0.08	2.48	0.04	0.02	0.01	**2.50**
Utterback Marketing Services	3.27	0.23	0.00	0.14	2.90	-0.61	0.05	0.01	**2.25**
Descriptive Statistics:									
Average	2.63	0.18	0.00	0.11	2.33	-0.01	0.01	0.01	**2.32**
Median	2.60	0.21	0.00	0.13	2.27	0.00	0.00	0.00	**2.27**
Minimum	2.27	0.05	0.00	0.03	1.99	-0.61	0.00	0.00	**1.98**
Maximum	3.27	0.25	0.00	0.16	2.90	0.43	0.05	0.06	**2.92**
Range	1.00	0.20	0.00	0.13	0.92	1.05	0.05	0.06	**0.94**
Standard Deviation	0.18	0.06	0.00	0.04	0.19	0.19	0.02	0.02	**0.19**
Market Benchmarks									
24-Month Average	2.71	0.07	0.00	0.05	2.59	0.00	0.00	0.00	**2.59**
16-Month Average	2.65	0.11	0.00	0.07	2.47	0.00	0.00	0.00	**2.48**
Harvest Price	2.66	0.00	0.00	0.00	2.66	0.00	0.00	0.00	**2.66**
Farmer Benchmark	2.66	0.06	0.00	0.04	2.56	0.00	0.00	0.01	**2.58**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2001 crop year is a two-year marketing window from June 2000 through May 2002.

Table 45. Pricing Performance Results for 20 Market Advisory Programs, Hard Red Winter Wheat, 2002 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Commercial Storage Costs Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		---------$/bushel----------							
Ag Financial Strategies	3.44	0.02	0.00	0.01	3.41	-0.06	0.04	0.00	**3.31**
Ag Review	3.60	0.02	0.00	0.02	3.57	-0.03	0.01	0.00	**3.52**
AgLine by Doane (cash only)	3.52	0.06	0.00	0.04	3.42	0.00	0.00	0.00	**3.42**
AgLine by Doane (hedge)	3.52	0.06	0.00	0.04	3.42	0.00	0.00	0.00	**3.42**
AgResource	3.16	0.00	0.00	0.00	3.16	0.29	0.02	0.00	**3.42**
AgriVisor (aggressive cash)	4.00	0.05	0.00	0.03	3.92	0.00	0.00	0.00	**3.92**
AgriVisor (aggressive hedge)	3.82	0.03	0.00	0.02	3.76	0.00	0.00	0.00	**3.76**
AgriVisor (basic cash)	4.00	0.05	0.00	0.03	3.92	0.00	0.00	0.00	**3.92**
AgriVisor (basic hedge)	3.85	0.04	0.00	0.02	3.79	0.00	0.00	0.00	**3.79**
Allendale	4.10	0.18	0.00	0.12	3.79	-0.93	0.07	0.00	**2.80**
Brock (cash only)	3.27	0.01	0.00	0.01	3.25	0.00	0.00	0.00	**3.25**
Brock (hedge)	3.27	0.01	0.00	0.01	3.25	0.01	0.00	0.00	**3.26**
Freese-Notis	3.61	0.04	0.00	0.03	3.55	0.00	0.00	0.00	**3.55**
Grain Field Marketing	3.31	0.26	0.00	0.17	2.88	0.00	0.00	0.00	**2.88**
Northstar Commodity	3.96	0.07	0.00	0.04	3.85	0.01	0.00	0.00	**3.85**
Pro Farmer (cash only)	3.29	0.20	0.00	0.13	2.96	0.00	0.00	0.00	**2.96**
Pro Farmer (hedge)	2.77	0.11	0.00	0.07	2.59	0.04	0.00	0.00	**2.62**
Stewart-Peterson Advisory Reports	3.12	0.05	0.00	0.03	3.03	-0.02	0.01	0.00	**3.00**
Top Farmer Intelligence	2.99	0.05	0.00	0.04	2.90	-0.18	0.04	0.00	**2.68**
Utterback Marketing Services	2.64	0.00	0.00	0.00	2.64	0.18	0.10	0.00	**2.72**
Descriptive Statistics:									
Average	3.46	0.07	0.00	0.04	3.35	-0.03	0.02	0.00	**3.30**
Median	3.48	0.05	0.00	0.03	3.42	0.00	0.00	0.00	**3.37**
Minimum	2.64	0.00	0.00	0.00	2.59	-0.93	0.00	0.00	**2.62**
Maximum	4.10	0.26	0.00	0.17	3.92	0.29	0.10	0.00	**3.92**
Range	1.46	0.26	0.00	0.17	1.33	1.22	0.10	0.00	**1.29**
Standard Deviation	0.41	0.07	0.00	0.05	0.42	0.23	0.03	0.00	**0.43**
Market Benchmarks									
24-Month Average	2.87	0.04	0.00	0.02	2.81	0.00	0.00	0.00	**2.81**
16-Month Average	3.18	0.09	0.00	0.06	3.04	0.00	0.00	0.00	**3.04**
Harvest Price	2.99	0.00	0.00	0.00	2.99	0.00	0.00	0.00	**2.99**
Farmer Benchmark	3.35	0.06	0.00	0.04	3.25	0.00	0.00	0.00	**3.25**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2002 crop year is a two-year marketing window from June 2000 through May 2002.

Table 46. Pricing Performance Results for 21 Market Advisory Programs, Hard Red Winter Wheat, 2003 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		----------$/bushel----------							
Ag Financial Strategies	3.01	0.01	0.00	0.01	2.99	0.24	0.03	0.06	**3.26**
Ag Review	3.28	0.02	0.00	0.01	3.24	-0.12	0.02	0.03	**3.12**
AgLine by Doane (cash only)	3.20	0.06	0.00	0.03	3.11	0.00	0.00	0.06	**3.17**
AgLine by Doane (hedge)	3.20	0.06	0.00	0.03	3.11	0.00	0.00	0.06	**3.17**
AgResource	2.91	0.03	0.00	0.02	2.86	0.34	0.09	0.14	**3.24**
AgriVisor (aggressive cash)	3.18	0.05	0.00	0.03	3.10	0.00	0.00	0.00	**3.10**
AgriVisor (aggressive hedge)	3.29	0.03	0.00	0.02	3.23	0.00	0.00	0.06	**3.30**
AgriVisor (basic cash)	3.18	0.05	0.00	0.03	3.10	0.00	0.00	0.00	**3.10**
AgriVisor (basic hedge)	3.29	0.03	0.00	0.02	3.23	0.00	0.00	0.06	**3.30**
Allendale	3.26	0.09	0.00	0.05	3.12	-0.08	0.03	0.07	**3.08**
Brock (cash only)	3.10	0.02	0.00	0.01	3.08	0.00	0.00	0.06	**3.13**
Brock (hedge)	2.99	0.02	0.00	0.01	2.96	0.34	0.03	0.06	**3.33**
Freese-Notis	3.28	0.03	0.00	0.02	3.23	0.01	0.00	0.07	**3.31**
Grain Field Marketing	3.19	0.08	0.00	0.04	3.06	0.00	0.00	0.05	**3.11**
Northstar Commodity	3.43	0.09	0.00	0.05	3.29	0.00	0.00	0.07	**3.35**
Pro Farmer (cash only)	3.18	0.10	0.00	0.05	3.02	0.00	0.00	0.19	**3.21**
Pro Farmer (hedge)	3.05	0.03	0.00	0.02	3.00	0.02	0.01	0.19	**3.20**
Stewart-Peterson Advisory Reports	3.31	0.05	0.00	0.03	3.24	0.18	0.01	0.07	**3.48**
Top Farmer Intelligence	3.21	0.02	0.00	0.01	3.18	-0.01	0.02	0.07	**3.22**
Utterback Marketing Services	2.94	0.00	0.00	0.00	2.94	0.10	0.08	0.14	**3.09**
Descriptive Statistics:									
Average	3.17	0.04	0.00	0.02	3.10	0.05	0.02	0.07	**3.21**
Median	3.19	0.03	0.00	0.02	3.11	0.00	0.00	0.06	**3.20**
Minimum	2.91	0.00	0.00	0.00	2.86	-0.12	0.00	0.00	**3.08**
Maximum	3.43	0.10	0.00	0.05	3.29	0.34	0.09	0.19	**3.48**
Range	0.52	0.10	0.00	0.05	0.43	0.46	0.09	0.19	**0.40**
Standard Deviation	0.14	0.03	0.00	0.02	0.12	0.13	0.03	0.05	**0.11**
Market Benchmarks									
24-Month Average	3.18	0.06	0.00	0.03	3.08	0.00	0.00	0.06	**3.15**
16-Month Average	3.24	0.10	0.00	0.05	3.08	0.00	0.00	0.03	**3.11**
Harvest Price	2.67	0.00	0.00	0.00	2.67	0.00	0.00	0.16	**2.83**
Farmer Benchmark	3.12	0.07	0.00	0.04	3.01	0.00	0.00	0.12	**3.13**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2003 crop year is a two-year marketing window from June 2002 through May 2004.

Table 47. Pricing Performance Results for 21 Market Advisory Programs, Hard Red Winter Wheat, 2004 Crop Year, Commercial Storage Costs

Market Advisory Program	(1) Unadjusted Cash Sales Price	(2) Physical Storage	(3) Shrinkage	(4) Interest	(5) Net Cash Sales Price	(6) Futures & Options Gain	(7) Brokerage Costs	(8) LDP / MLG	(9) Net Advisory Price
		Commercial Storage Costs							
		---------$/bushel----------							
Ag Financial Strategies	3.37	0.00	0.00	0.00	3.36	0.23	0.02	0.00	**3.57**
Ag Market Pro	3.43	0.10	0.00	0.07	3.26	0.09	0.13	0.00	**3.22**
Ag Review	3.18	0.06	0.00	0.04	3.09	0.23	0.01	0.00	**3.31**
AgLine by Doane (cash only)	3.28	0.09	0.00	0.06	3.13	0.00	0.00	0.00	**3.13**
AgLine by Doane (hedge)	3.30	0.09	0.00	0.06	3.14	-0.13	0.01	0.00	**3.00**
AgResource	3.16	0.10	0.00	0.07	3.00	0.21	0.04	0.00	**3.17**
AgriVisor (aggressive cash)	3.48	0.09	0.00	0.06	3.33	0.00	0.00	0.00	**3.33**
AgriVisor (aggressive hedge)	3.43	0.09	0.00	0.06	3.29	-0.02	0.00	0.00	**3.26**
AgriVisor (basic cash)	3.48	0.09	0.00	0.06	3.33	0.00	0.00	0.00	**3.33**
AgriVisor (basic hedge)	3.43	0.09	0.00	0.06	3.29	0.00	0.00	0.00	**3.29**
Allendale	3.30	0.10	0.00	0.07	3.13	0.10	0.06	0.00	**3.16**
Brock (cash only)	3.23	0.05	0.00	0.04	3.14	0.00	0.00	0.00	**3.14**
Brock (hedge)	3.32	0.01	0.00	0.00	3.31	-0.03	0.02	0.00	**3.26**
Freese-Notis	3.38	0.05	0.00	0.03	3.31	0.00	0.00	0.00	**3.31**
Grain Field Marketing	3.51	0.11	0.00	0.07	3.32	0.00	0.00	0.00	**3.32**
Northstar Commodity	3.26	0.13	0.00	0.09	3.04	0.00	0.00	0.00	**3.04**
Pro Farmer (cash only)	3.27	0.13	0.00	0.09	3.05	0.00	0.00	0.00	**3.05**
Pro Farmer (hedge)	3.27	0.12	0.00	0.08	3.07	0.00	0.00	0.00	**3.07**
Stewart-Peterson Advisory Reports	3.26	0.02	0.00	0.01	3.22	-0.07	0.01	0.00	**3.15**
Top Farmer Intelligence	3.30	0.02	0.00	0.01	3.26	-0.13	0.03	0.00	**3.10**
Utterback Marketing Services	2.98	0.00	0.00	0.00	2.98	-0.25	0.12	0.00	**2.61**
Descriptive Statistics:									
Average	3.32	0.07	0.00	0.05	3.20	0.01	0.02	0.00	**3.19**
Median	3.30	0.09	0.00	0.06	3.22	0.00	0.00	0.00	**3.17**
Minimum	2.98	0.00	0.00	0.00	2.98	-0.25	0.00	0.00	**2.61**
Maximum	3.54	0.13	0.00	0.09	3.39	0.23	0.13	0.00	**3.57**
Range	0.56	0.13	0.00	0.09	0.41	0.48	0.13	0.00	**0.96**
Standard Deviation	0.13	0.04	0.00	0.03	0.13	0.11	0.04	0.00	**0.19**
Market Benchmarks									
24-Month Average	3.23	0.05	0.00	0.04	3.14	0.00	0.00	0.00	**3.14**
16-Month Average	3.31	0.10	0.00	0.07	3.14	0.00	0.00	0.00	**3.14**
Harvest Price	3.38	0.00	0.00	0.00	3.38	0.00	0.00	0.00	**3.38**
Farmer Benchmark	3.19	0.12	0.00	0.08	2.99	0.00	0.00	0.00	**2.99**

Notes: Net cash sales price is calculated as (1) - (2) - (3) - (4). Net advisory price is calculated as (5) + (6) - (7) + (8), and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. The 2004 crop year is a two-year marketing window from June 2003 through May 2005.

Table 48. Revenue Performance Results for 24 Market Advisory Programs, Soft Red Winter Wheat, 1995 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	**205**	240
AgLine by Doane (cash only)	**185**	300
Ag Resource	**190**	600
Ag Review	**212**	360
Agri-Edge (cash-only)	**181**	330
Agri-Edge (hedge)	**179**	330
AgriVisor (aggressive cash)	**144**	299
AgriVisor (aggressive hedge)	**180**	299
AgriVisor (basic cash)	**136**	299
AgriVisor (basic hedge)	**176**	299
Allendale (futures only)	**150**	150
Brock (cash only)	**155**	240
Brock (hedge)	**149**	240
Freese-Notis	**164**	360
Grain Field Report	**171**	144
Harris Weather/Elliott Advisory	**185**	168
North American Ag.	**188**	360
Pro Farmer (cash only)	**177**	225
Pro Farmer (hedge)	**197**	225
Prosperous Farmer	**148**	395
Stewart-Peterson Advisory Reports	**151**	156
Stewart-Peterson Strictly Cash	**163**	99
Top Farmer Intelligence	**135**	180
Zwicker Cycle Letter	**175**	239
Descriptive Statistics:		
Average	**171**	272
Median	**175**	270
Minimum	**135**	99
Maximum	**212**	600
Range	**77**	501
Standard Deviation	**21**	106
Market Benchmarks		
24-month average	**162**	
16-month average	**178**	
Harvest Price	**180**	
Farmer Benchmark	**185**	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 45 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 45 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1995 crop year is a two-year marketing window from June 1994 through May 1996.

Table 49. Revenue Performance Results for 23 Market Advisory Programs, Soft Red Winter Wheat, 1996 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	155	240
AgLine by Doane (cash only)	170	300
Ag Resource	188	550
Ag Review	158	510
Agri-Edge (cash only)	113	330
Agri-Edge (hedge)	118	330
AgriVisor (aggressive cash)	153	324
AgriVisor (aggressive hedge)	159	324
AgriVisor (basic cash)	149	324
AgriVisor (basic hedge)	146	324
Allendale (futures only)	137	240
Brock (cash only)	152	240
Brock (hedge)	142	240
Freese-Notis	168	342
Grain Field Report	137	?
Harris Weather/Elliott Advisory	139	168
Pro Farmer (cash only)	156	300
Pro Farmer (hedge)	143	300
Progressive Ag	163	171
Stewart-Peterson Advisory Reports	146	180
Stewart-Peterson Strictly Cash	148	120
Top Farmer Intelligence	137	180
Zwicker Cycle Letter	104	239
Descriptive Statistics:		
Average	147	285
Median	148	300
Minimum	104	120
Maximum	188	550
Range	83	430
Standard Deviation	19	103
Market Benchmarks		
24-month average	150	
16-month average	154	
Harvest Price	175	
Farmer Benchmark	160	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 38 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 38 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1996 crop year is a two-year marketing window from June 1995 through May 1997.

Table 50. Revenue Performance Results for 20 Market Advisory Programs, Soft Red Winter Wheat, 1997 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	114	240
AgLine by Doane (cash only)	185	300
Ag Resource	92	550
Ag Review	128	450
AgriVisor (aggressive cash)	143	324
AgriVisor (aggressive hedge)	143	324
AgriVisor (basic cash)	143	324
AgriVisor (basic hedge)	143	324
Allendale (futures only)	195	240
Brock (cash only)	216	240
Brock (hedge)	227	240
Freese-Notis	210	342
Pro Farmer (cash only)	187	324
Pro Farmer (hedge)	184	324
Progressive Ag	158	171
Stewart-Peterson Advisory Reports	197	180
Stewart-Peterson Strictly Cash	205	99
Top Farmer Intelligence	166	180
Utterback	253	360
Zwicker Cycle Letter	143	239
Descriptive Statistics:		
Average	172	289
Median	175	312
Minimum	92	99
Maximum	253	550
Range	162	451
Standard Deviation	41	101
Market Benchmarks		
24-month average	209	
16-month average	201	
Harvest Price	197	
Farmer Benchmark	198	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 65 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 65 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1997 crop year is a two-year marketing window from June 1996 through May 1998.

Table 51. Revenue Performance Results for 21 Market Advisory Programs, Soft Red Winter Wheat, 1998 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	59	280
AgLine by Doane (cash only)	105	300
AgLine by Doane (hedge)	106	300
Ag Resource	107	600
Ag Review	115	450
AgriVisor (aggressive cash)	116	299
AgriVisor (aggressive hedge)	107	299
AgriVisor (basic cash)	110	299
AgriVisor (basic hedge)	105	299
Allendale (futures only)	138	240
Brock (cash only)	141	240
Brock (hedge)	157	240
Freese-Notis	132	360
Pro Farmer (cash only)	122	324
Pro Farmer (hedge)	126	324
Progressive Ag	129	240
Stewart-Peterson Advisory Reports	137	180
Stewart-Peterson Strictly Cash	137	99
Top Farmer Intelligence	114	240
Utterback	142	300
Zwicker Cycle Letter	113	269
Descriptive Statistics:		
Average	120	294
Median	116	299
Minimum	59	99
Maximum	157	600
Range	98	501
Standard Deviation	21	98
Market Benchmarks		
24-month average	147	
16-month average	127	
Harvest Price	136	
Farmer Benchmark	127	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 51 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 51 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1998 crop year is a two-year marketing window from June 1997 through May 1999.

Table 52. Revenue Performance Results for 23 Market Advisory Programs, Soft Red Winter Wheat, 1999 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	167	280
Ag Review	135	360
AgLine by Doane (cash only)	161	300
AgLine by Doane (hedge)	161	300
AgResource	209	600
AgriVisor (aggressive cash)	166	299
AgriVisor (aggressive hedge)	163	299
AgriVisor (basic cash)	166	299
AgriVisor (basic hedge)	160	299
Allendale (futures only)	200	300
Brock (cash only)	161	240
Brock (hedge)	163	240
Cash Grain	153	356
Freese-Notis	144	360
Pro Farmer (cash only)	145	420
Pro Farmer (hedge)	150	420
Risk Management Group (cash only)	177	500
Risk Management Group (futures &	174	500
Risk Management Group (options o	169	500
Stewart-Peterson Advisory Reports	151	150
Stewart-Peterson Strictly Cash	162	99
Top Farmer Intelligence	164	180
Utterback Marketing Services	156	300
Descriptive Statistics:		
Average	163	330
Median	162	300
Minimum	135	99
Maximum	209	600
Range	74	501
Standard Deviation	16	119
Market Benchmarks		
24-month average	165	
16-month average	152	
Harvest Price	164	
Farmer Benchmark	148	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 62 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 62 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1999 crop year is a two-year marketing window from June 1998 through May 2000.

Table 53. Revenue Performance Results for 18 Market Advisory Programs, Soft Red Winter Wheat, 2000 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Review	151	360
AgLine by Doane (cash only)	136	300
AgLine by Doane (hedge)	136	300
AgResource	125	600
AgriVisor (aggressive cash)	136	299
AgriVisor (aggressive hedge)	138	299
AgriVisor (basic cash)	136	299
AgriVisor (basic hedge)	138	299
Allendale	171	300
Brock (cash only)	153	240
Brock (hedge)	151	240
Freese-Notis	142	360
Pro Farmer (cash only)	146	420
Pro Farmer (hedge)	145	420
Stewart-Peterson Advisory Reports	132	150
Stewart-Peterson Strictly Cash	146	99
Top Farmer Intelligence	140	180
Utterback Marketing Services	116	300
Descriptive Statistics:		
Average	141	304
Median	139	300
Minimum	116	99
Maximum	171	600
Range	56	501
Standard Deviation	12	111
Market Benchmarks		
24-month average	146	
16-month average	138	
Harvest Price	153	
Farmer Benchmark	143	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 58 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 58 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2000 crop year is a two-year marketing window from June 1999 through May 2001.

Table 54. Revenue Performance Results for 19 Market Advisory Programs, Soft Red Winter Wheat, 2001 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	177	600
Ag Review	147	360
AgLine by Doane (cash only)	155	300
AgLine by Doane (hedge)	152	300
AgResource	166	600
AgriVisor (aggressive cash)	150	299
AgriVisor (aggressive hedge)	140	299
AgriVisor (basic cash)	150	299
AgriVisor (basic hedge)	140	299
Allendale	181	300
Brock (cash only)	155	240
Brock (hedge)	155	240
Freese-Notis	146	360
Northstar Commodity	118	480
Pro Farmer (cash only)	156	420
Pro Farmer (hedge)	161	420
Stewart-Peterson Advisory Reports	146	150
Top Farmer Intelligence	151	180
Utterback Marketing Services	140	300
Descriptive Statistics:		
Average	152	339
Median	151	300
Minimum	118	150
Maximum	181	600
Range	63	450
Standard Deviation	14	121
Market Benchmarks		
24-month average	155	
16-month average	148	
Harvest Price	159	
Farmer Benchmark	159	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 59 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 59 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2001 crop year is a two-year marketing window from June 2000 through May 2002.

Table 55. Revenue Performance Results for 20 Market Advisory Programs, Soft Red Winter Wheat, 2002 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	143	600
Ag Review	155	360
AgLine by Doane (cash only)	154	300
AgLine by Doane (hedge)	154	300
AgResource	163	600
AgriVisor (aggressive cash)	172	299
AgriVisor (aggressive hedge)	164	299
AgriVisor (basic cash)	172	299
AgriVisor (basic hedge)	165	299
Allendale	130	300
Brock (cash only)	147	240
Brock (hedge)	147	240
Freese-Notis	163	360
Grain Field Marketing	135	200
Northstar Commodity	171	480
Pro Farmer (cash only)	139	420
Pro Farmer (hedge)	132	420
Stewart-Peterson Advisory Reports	145	150
Top Farmer Intelligence	137	180
Utterback Marketing Services	150	300
Descriptive Statistics:		
Average	152	332
Median	152	300
Minimum	130	150
Maximum	172	600
Range	42	450
Standard Deviation	14	122
Market Benchmarks		
24-month average	142	
16-month average	147	
Harvest Price	148	
Farmer Benchmark	151	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 50 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 50 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2002 crop year is a two-year marketing window from June 2001 through May 2003.

Table 56. Revenue Performance Results for 21 Market Advisory Programs, Soft Red Winter Wheat, 2003 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	228	399
Ag Review	217	400
AgLine by Doane (cash only)	211	129
AgLine by Doane (hedge)	211	129
AgResource	205	550
AgriVisor (aggressive cash)	218	235
AgriVisor (aggressive hedge)	227	235
AgriVisor (basic cash)	218	235
AgriVisor (basic hedge)	227	235
Allendale	204	360
Brock (cash only)	209	545
Brock (hedge)	222	545
Freese-Notis	214	300
Grain Field Marketing	217	200
Northstar Commodity	217	485
Pro Farmer (cash only)	207	468
Pro Farmer (hedge)	211	468
Stewart-Peterson Advisory Reports	221	180
Top Farmer Intelligence	210	180
Utterback Marketing Services	212	300
Descriptive Statistics:		
Average	215	329
Median	215	300
Minimum	204	129
Maximum	228	550
Range	24	421
Standard Deviation	7	144
Market Benchmarks		
24-month average	208	
16-month average	212	
Harvest Price	197	
Farmer Benchmark	212	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 67 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 67 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2003 crop year is a two-year marketing window from June 2002 through May 2004.

Table 57. Revenue Performance Results for 21 Market Advisory Programs, Soft Red Winter Wheat, 2004 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue SRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	206	399
Ag Market Pro	185	1,500
Ag Review	193	400
AgLine by Doane (cash only)	183	129
AgLine by Doane (hedge)	174	129
AgResource	182	550
AgriVisor (aggressive cash)	192	235
AgriVisor (aggressive hedge)	188	235
AgriVisor (basic cash)	192	235
AgriVisor (basic hedge)	189	235
Allendale	189	360
Brock (cash only)	183	545
Brock (hedge)	184	545
Freese-Notis	195	300
Grain Field Marketing	191	200
Northstar Commodity	183	485
Pro Farmer (cash only)	184	468
Pro Farmer (hedge)	185	468
Stewart-Peterson Advisory Reports	183	180
Top Farmer Intelligence	183	180
Utterback Marketing Services	167	300
Descriptive Statistics:		
Average	186	385
Median	185	300
Minimum	167	129
Maximum	206	1500
Range	39	1371
Standard Deviation	8	292
Market Benchmarks		
24-month average	181	
16-month average	181	
Harvest Price	189	
Farmer Benchmark	178	

Notes: Advisory revenue per acre for soft red winter wheat is calculated as net advisory price times 58 bushels. Market or farmer benchmark revenue per acre for soft red winter wheat is calculated as the benchmark price times 58 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2004 crop year is a two-year marketing window from June 2003 through May 2005.

Table 58. Revenue Performance Results for 24 Market Advisory Programs, Hard Red Winter Wheat, 1995 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	108	240
AgLine by Doane (cash only)	90	300
Ag Resource	105	600
Ag Review	103	360
Agri-Edge (cash-only)	88	330
Agri-Edge (hedge)	87	330
AgriVisor (aggressive cash)	68	299
AgriVisor (aggressive hedge)	87	299
AgriVisor (basic cash)	71	299
AgriVisor (basic hedge)	84	299
Allendale (futures only)	76	150
Brock (cash only)	72	240
Brock (hedge)	69	240
Freese-Notis	83	360
Grain Field Report	86	144
Harris Weather/Elliott Advisory	95	168
North American Ag.	111	360
Pro Farmer (cash only)	91	225
Pro Farmer (hedge)	103	225
Prosperous Farmer	75	395
Stewart-Peterson Advisory Reports	71	156
Stewart-Peterson Strictly Cash	77	99
Top Farmer Intelligence	50	180
Zwicker Cycle Letter	76	239
Descriptive Statistics:		
Average	84	272
Median	85	270
Minimum	50	99
Maximum	111	600
Range	61	501
Standard Deviation	15	106
Market Benchmarks		
24-month average	71	
16-month average	89	
Harvest Price	94	
Farmer Benchmark	97	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 22 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 22 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1995 crop year is a two-year marketing window from June 1994 through May 1996.

Table 59. Revenue Performance Results for 23 Market Advisory Programs, Hard Red Winter Wheat, 1996 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	113	240
AgLine by Doane (cash only)	119	300
Ag Resource	137	550
Ag Review	118	510
Agri-Edge (cash only)	79	330
Agri-Edge (hedge)	87	330
AgriVisor (aggressive cash)	94	324
AgriVisor (aggressive hedge)	106	324
AgriVisor (basic cash)	96	324
AgriVisor (basic hedge)	100	324
Allendale (futures only)	106	240
Brock (cash only)	101	240
Brock (hedge)	106	240
Freese-Notis	121	342
Grain Field Report	99	?
Harris Weather/Elliott Advisory	107	168
Pro Farmer (cash only)	102	300
Pro Farmer (hedge)	107	300
Progressive Ag	118	171
Stewart-Peterson Advisory Reports	103	180
Stewart-Peterson Strictly Cash	103	120
Top Farmer Intelligence	103	180
Zwicker Cycle Letter	78	239
Descriptive Statistics:		
Average	105	285
Median	103	300
Minimum	78	120
Maximum	137	550
Range	59	430
Standard Deviation	13	103
Market Benchmarks		
24-month average	106	
16-month average	113	
Harvest Price	132	
Farmer Benchmark	112	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 26 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 26 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1996 crop year is a two-year marketing window from June 1995 through May 1997.

Table 60. Revenue Performance Results for 20 Market Advisory Programs, Hard Red Winter Wheat, 1997 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	71	240
AgLine by Doane (cash only)	109	300
Ag Resource	51	550
Ag Review	85	450
AgriVisor (aggressive cash)	86	324
AgriVisor (aggressive hedge)	86	324
AgriVisor (basic cash)	86	324
AgriVisor (basic hedge)	86	324
Allendale (futures only)	122	240
Brock (cash only)	118	240
Brock (hedge)	126	240
Freese-Notis	119	342
Pro Farmer (cash only)	103	324
Pro Farmer (hedge)	101	324
Progressive Ag	88	171
Stewart-Peterson Advisory Reports	109	180
Stewart-Peterson Strictly Cash	112	99
Top Farmer Intelligence	95	180
Utterback	144	360
Zwicker Cycle Letter	86	239
Descriptive Statistics:		
Average	99	289
Median	98	312
Minimum	51	99
Maximum	144	550
Range	94	451
Standard Deviation	21	101
Market Benchmarks		
24-month average	117	
16-month average	112	
Harvest Price	108	
Farmer Benchmark	108	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 37 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 37 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1997 crop year is a two-year marketing window from June 1996 through May 1998.

Table 61. Revenue Performance Results for 21 Market Advisory Programs, Hard Red Winter Wheat, 1998 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	82	280
AgLine by Doane (cash only)	122	300
AgLine by Doane (hedge)	129	300
Ag Resource	113	600
Ag Review	119	450
AgriVisor (aggressive cash)	117	299
AgriVisor (aggressive hedge)	105	299
AgriVisor (basic cash)	109	299
AgriVisor (basic hedge)	104	299
Allendale (futures only)	145	240
Brock (cash only)	133	240
Brock (hedge)	145	240
Freese-Notis	125	360
Pro Farmer (cash only)	127	324
Pro Farmer (hedge)	129	324
Progressive Ag	126	240
Stewart-Peterson Advisory Reports	136	180
Stewart-Peterson Strictly Cash	130	99
Top Farmer Intelligence	108	240
Utterback	134	300
Zwicker Cycle Letter	114	269
Descriptive Statistics:		
Average	122	294
Median	125	299
Minimum	82	99
Maximum	145	600
Range	63	501
Standard Deviation	15	98
Market Benchmarks		
24-month average	138	
16-month average	128	
Harvest Price	134	
Farmer Benchmark	120	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 51 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 51 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1998 crop year is a two-year marketing window from June 1997 through May 1999.

Table 62. Revenue Performance Results for 23 Market Advisory Programs, Hard Red Winter Wheat, 1999 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Profit by Hjort	146	280
Ag Review	120	360
AgLine by Doane (cash only)	138	300
AgLine by Doane (hedge)	138	300
AgResource	178	600
AgriVisor (aggressive cash)	139	299
AgriVisor (aggressive hedge)	137	299
AgriVisor (basic cash)	139	299
AgriVisor (basic hedge)	135	299
Allendale (futures only)	185	300
Brock (cash only)	133	240
Brock (hedge)	134	240
Cash Grain	139	356
Freese-Notis	129	360
Pro Farmer (cash only)	127	420
Pro Farmer (hedge)	129	420
Risk Management Group (cash only)	146	500
Risk Management Group (futures &	149	500
Risk Management Group (options (	148	500
Stewart-Peterson Advisory Reports	130	150
Stewart-Peterson Strictly Cash	141	99
Top Farmer Intelligence	144	180
Utterback Marketing Services	139	300
Descriptive Statistics:		
Average	141	330
Median	139	300
Minimum	120	99
Maximum	185	600
Range	64	501
Standard Deviation	15	119
Market Benchmarks		
24-month average	142	
16-month average	133	
Harvest Price	140	
Farmer Benchmark	139	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 54 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 54 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 1999 crop year is a two-year marketing window from June 1998 through May 2000.

Table 63. Revenue Performance Results for 18 Market Advisory Programs, Hard Red Winter Wheat, 2000 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Review	94	360
AgLine by Doane (cash only)	95	300
AgLine by Doane (hedge)	95	300
AgResource	71	600
AgriVisor (aggressive cash)	96	299
AgriVisor (aggressive hedge)	92	299
AgriVisor (basic cash)	96	299
AgriVisor (basic hedge)	92	299
Allendale	109	300
Brock (cash only)	101	240
Brock (hedge)	101	240
Freese-Notis	94	360
Pro Farmer (cash only)	94	420
Pro Farmer (hedge)	96	420
Stewart-Peterson Advisory Reports	84	150
Stewart-Peterson Strictly Cash	106	99
Top Farmer Intelligence	93	180
Utterback Marketing Services	74	300
Descriptive Statistics:		
Average	93	304
Median	95	300
Minimum	71	99
Maximum	109	600
Range	38	501
Standard Deviation	9	111
Market Benchmarks		
24-month average	98	
16-month average	93	
Harvest Price	95	
Farmer Benchmark	94	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 36 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 36 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2000 crop year is a two-year marketing window from June 1999 through May 2001.

Table 64. Revenue Performance Results for 19 Market Advisory Programs, Hard Red Winter Wheat, 2001 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	120	600
Ag Review	100	360
AgLine by Doane (cash only)	90	300
AgLine by Doane (hedge)	89	300
AgResource	99	600
AgriVisor (aggressive cash)	93	299
AgriVisor (aggressive hedge)	92	299
AgriVisor (basic cash)	93	299
AgriVisor (basic hedge)	92	299
Allendale	103	300
Brock (cash only)	91	240
Brock (hedge)	91	240
Freese-Notis	93	360
Northstar Commodity	81	480
Pro Farmer (cash only)	98	420
Pro Farmer (hedge)	95	420
Stewart-Peterson Advisory Reports	93	150
Top Farmer Intelligence	103	180
Utterback Marketing Services	92	300
Descriptive Statistics:		
Average	95	339
Median	93	300
Minimum	81	150
Maximum	120	600
Range	39	450
Standard Deviation	8	121
Market Benchmarks		
24-month average	106	
16-month average	102	
Harvest Price	109	
Farmer Benchmark	106	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 41 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 41 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2001 crop year is a two-year marketing window from June 2000 through May 2002.

Table 65. Revenue Performance Results for 20 Market Advisory Programs, Hard Red Winter Wheat, 2002 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	89	600
Ag Review	95	360
AgLine by Doane (cash only)	92	300
AgLine by Doane (hedge)	92	300
AgResource	92	600
AgriVisor (aggressive cash)	106	299
AgriVisor (aggressive hedge)	102	299
AgriVisor (basic cash)	106	299
AgriVisor (basic hedge)	102	299
Allendale	76	300
Brock (cash only)	88	240
Brock (hedge)	88	240
Freese-Notis	96	360
Grain Field Marketing	78	200
Northstar Commodity	104	480
Pro Farmer (cash only)	80	420
Pro Farmer (hedge)	71	420
Stewart-Peterson Advisory Reports	81	150
Top Farmer Intelligence	72	180
Utterback Marketing Services	74	300
Descriptive Statistics:		
Average	89	332
Median	91	300
Minimum	71	150
Maximum	106	600
Range	35	450
Standard Deviation	12	122
Market Benchmarks		
24-month average	76	
16-month average	82	
Harvet Price	81	
Farmer Benchmark	88	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 27 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 27 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2002 crop year is a two-year marketing window from June 2001 through May 2003.

Table 66. Revenue Performance Results for 21 Market Advisory Programs, Hard Red Winter Wheat, 2003 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	124	399
Ag Review	119	400
AgLine by Doane (cash only)	120	129
AgLine by Doane (hedge)	120	129
AgResource	123	550
AgriVisor (aggressive cash)	118	235
AgriVisor (aggressive hedge)	125	235
AgriVisor (basic cash)	118	235
AgriVisor (basic hedge)	125	235
Allendale	117	360
Brock (cash only)	119	545
Brock (hedge)	126	545
Freese-Notis	126	300
Grain Field Marketing	118	200
Northstar Commodity	127	485
Pro Farmer (cash only)	122	468
Pro Farmer (hedge)	122	468
Stewart-Peterson Advisory Reports	132	180
Top Farmer Intelligence	122	180
Utterback Marketing Services	117	300
Descriptive Statistics:		
Average	122	329
Median	122	300
Minimum	117	129
Maximum	132	550
Range	15	421
Standard Deviation	4	144
Market Benchmarks		
24-month average	120	
16-month average	118	
Harvest Price	108	
Farmer Benchmark	119	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 38 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 38 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2003 crop year is a two-year marketing window from June 2002 through May 2004.

Table 67. Revenue Performance Results for 21 Market Advisory Programs, Hard Red Winter Wheat, 2004 Crop Year, Commercial Storage Costs

Market Advisory Program	Advisory Revenue HRW	Annual Cost of Service
	---$ per acre (harvest equivalent)---	---$ per year---
Ag Financial Strategies	111	399
Ag Market Professional	100	1,500
Ag Review	103	400
AgLine by Doane (cash only)	97	129
AgLine by Doane (hedge)	93	129
AgResource	98	550
AgriVisor (aggressive cash)	103	235
AgriVisor (aggressive hedge)	101	235
AgriVisor (basic cash)	103	235
AgriVisor (basic hedge)	102	235
Allendale (futures only)	98	360
Brock (cash-only)	97	545
Brock (hedge)	101	545
Freese-Notis	103	300
Grain Field Marketing	103	200
Northstar Commodity	94	485
Pro Farmer (cash only)	94	468
Pro Farmer (hedge)	95	468
Stewart-Peterson Advisory Reports	98	180
Top Farmer Intelligence	96	180
Utterback Marketing Services	81	300
Descriptive Statistics:		
Average	99	385
Median	98	300
Minimum	81	129
Maximum	111	1500
Range	30	1371
Standard Deviation	6	292
Market Benchmarks		
24-month average	97	
16-month average	97	
Harvest Price	105	
Farmer Benchmark	93	

Notes: Advisory revenue per acre for hard red winter wheat is calculated as net advisory price times 31 bushels. Market or farmer benchmark revenue per acre for hard red winter wheat is calculated as the benchmark price times 31 bushels. Advisory revenue per acre and benchmark revenue are stated on a harvest equivalent basis. The annual cost of a service is not subtracted from advisory revenue per acre. The 2004 crop year is a two-year marketing window from June 2003 through May 2005.

Table 68. Pricing Results for 35 Market Advisory Programs, Soft Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	1995 Net Advisory Price	1996 Net Advisory Price	1997 Net Advisory Price	1998 Net Advisory Price	1999 Net Advisory Price	2000 Net Advisory Price	2001 Net Advisory Price	2002 Net Advisory Price	2003 Net Advisory Price	2004 Net Advisory Price
				---$ per bushel (harvest equivalent)---						
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	3.01	2.86	3.40	3.55
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.20
Ag Profit by Hjort	4.54	4.08	1.75	1.15	2.69	N/A	N/A	N/A	N/A	N/A
Ag Review	4.71	4.17	1.97	2.25	2.18	2.60	2.50	3.10	3.24	3.33
AgLine by Doane (cash only)	4.11	4.47	2.85	2.07	2.60	2.34	2.63	3.09	3.15	3.16
AgLine by Doane (hedge)	N/A	N/A	N/A	2.08	2.60	2.34	2.58	3.09	3.15	3.00
AgResource	4.21	4.94	1.41	2.10	3.38	2.15	2.82	3.26	3.06	3.14
Agri-Edge (cash only)	4.01	2.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	3.98	3.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	3.21	4.03	2.20	2.27	2.67	2.35	2.54	3.44	3.25	3.30
AgriVisor (aggressive hedge)	4.00	4.18	2.20	2.09	2.63	2.38	2.38	3.29	3.39	3.24
AgriVisor (basic cash)	3.03	3.91	2.20	2.15	2.67	2.35	2.54	3.44	3.25	3.30
AgriVisor (basic hedge)	3.91	3.84	2.20	2.05	2.58	2.38	2.38	3.31	3.39	3.26
Allendale (futures only)	3.32	3.62	3.01	2.71	3.22	2.96	3.06	2.60	3.04	3.26
Brock (cash only)	3.44	3.99	3.32	2.77	2.59	2.63	2.62	2.93	3.13	3.16
Brock (hedge)	3.32	3.73	3.49	3.08	2.62	2.60	2.63	2.93	3.31	3.17
Cash Grain	N/A	N/A	N/A	N/A	2.46	N/A	N/A	N/A	N/A	N/A
Freese-Notis	3.65	4.43	3.23	2.58	2.33	2.45	2.47	3.27	3.19	3.36
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.71	3.23	3.29
Grain Field Report	3.79	3.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	4.11	3.65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	4.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	2.00	3.42	3.24	3.15
Pro Farmer (cash only)	3.94	4.09	2.87	2.40	2.34	2.51	2.65	2.78	3.09	3.16
Pro Farmer (hedge)	4.38	3.76	2.83	2.47	2.42	2.50	2.72	2.64	3.15	3.20
Progressive Ag	N/A	4.29	2.42	2.54	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	3.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	2.85	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	2.81	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	2.73	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	3.36	3.85	3.02	2.69	2.43	2.27	2.47	2.91	3.29	3.16
Stewart-Peterson Strictly Cash	3.63	3.90	3.15	2.70	2.62	2.52	N/A	N/A	N/A	N/A
Top Farmer Intelligence	3.00	3.60	2.55	2.23	2.64	2.41	2.56	2.75	3.14	3.16
Utterback Marketing Services	N/A	N/A	3.90	2.78	2.52	1.99	2.38	3.00	3.16	2.87
Zwicker Cycle Letter	3.89	2.74	2.20	2.21	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	3.79	3.87	2.64	2.35	2.63	2.43	2.58	3.04	3.21	3.21
Median	3.90	3.90	2.69	2.27	2.62	2.40	2.56	3.04	3.21	3.20
Minimum	3.00	2.74	1.41	1.15	2.18	1.99	2.00	2.60	3.04	2.87
Maximum	4.71	4.94	3.90	3.08	3.38	2.96	3.06	3.44	3.40	3.55
Range	1.70	2.20	2.49	1.92	1.20	0.96	1.07	0.83	0.36	0.68
Standard Deviation	0.47	0.49	0.63	0.40	0.26	0.21	0.24	0.27	0.11	0.13
Market Benchmarks										
24-month average	3.60	3.94	3.21	2.88	2.67	2.51	2.63	2.85	3.11	3.13
16-month average	3.96	4.06	3.09	2.50	2.45	2.38	2.51	2.93	3.17	3.12
Harvest Price	4.01	4.61	3.03	2.66	2.64	2.64	2.70	2.96	2.94	3.25
Farmer Benchmark	4.12	4.22	3.05	2.50	2.39	2.46	2.69	3.02	3.16	3.07

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 69. Pricing Results for 35 Market Advisory Programs, Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	1995 Net Advisory Price	1996 Net Advisory Price	1997 Net Advisory Price	1998 Net Advisory Price	1999 Net Advisory Price	2000 Net Advisory Price	2001 Net Advisory Price	2002 Net Advisory Price	2003 Net Advisory Price	2004 Net Advisory Price
				---$ per bushel (harvest equivalent)---						
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	2.92	3.31	3.26	3.57
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.22
Ag Profit by Hjort	4.91	4.36	1.91	1.62	2.71	N/A	N/A	N/A	N/A	N/A
Ag Review	4.70	4.52	2.30	2.34	2.23	2.62	2.44	3.52	3.12	3.31
AgLine by Doane (cash only)	4.08	4.56	2.95	2.40	2.56	2.64	2.19	3.42	3.17	3.13
AgLine by Doane (hedge)	N/A	N/A	N/A	2.53	2.56	2.64	2.18	3.42	3.17	3.00
AgResource	4.76	5.27	1.37	2.21	3.30	1.98	2.41	3.42	3.24	3.17
Agri-Edge (cash only)	4.01	3.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	3.95	3.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	3.10	3.62	2.33	2.30	2.58	2.66	2.28	3.92	3.10	3.33
AgriVisor (aggressive hedge)	3.96	4.07	2.33	2.06	2.54	2.54	2.25	3.76	3.30	3.26
AgriVisor (basic cash)	3.23	3.68	2.33	2.14	2.58	2.66	2.28	3.92	3.10	3.33
AgriVisor (basic hedge)	3.83	3.86	2.33	2.04	2.50	2.54	2.25	3.79	3.30	3.29
Allendale	3.44	4.06	3.30	2.84	3.42	3.02	2.51	2.80	3.08	3.16
Brock (cash only)	3.29	3.88	3.18	2.62	2.46	2.81	2.21	3.25	3.13	3.14
Brock (hedge)	3.15	4.07	3.41	2.84	2.48	2.81	2.22	3.26	3.33	3.26
Cash Grain	N/A	N/A	N/A	N/A	2.57	N/A	N/A	N/A	N/A	N/A
Freese-Notis	3.78	4.67	3.22	2.45	2.38	2.60	2.27	3.55	3.31	3.31
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.88	3.11	3.32
Grain Field Report	3.90	3.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	4.31	4.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	5.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	1.98	3.85	3.35	3.04
Pro Farmer (cash only)	4.12	3.94	2.78	2.49	2.34	2.60	2.40	2.96	3.21	3.05
Pro Farmer (hedge)	4.66	4.12	2.72	2.54	2.39	2.67	2.32	2.62	3.20	3.07
Progressive Ag	N/A	4.55	2.38	2.48	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	3.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	2.70	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	2.75	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	2.74	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	3.20	3.98	2.95	2.68	2.41	2.34	2.26	3.00	3.48	3.15
Stewart-Peterson Strictly Cash	3.51	3.97	3.02	2.55	2.61	2.93	N/A	N/A	N/A	N/A
Top Farmer Intelligence	2.29	3.98	2.56	2.11	2.67	2.57	2.50	2.68	3.22	3.10
Utterback Marketing Services	N/A	N/A	3.90	2.64	2.58	2.06	2.25	2.72	3.09	2.61
Zwicker Cycle Letter	3.44	3.01	2.33	2.24	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	3.84	4.02	2.68	2.39	2.61	2.59	2.32	3.30	3.21	3.18
Median	3.87	3.98	2.64	2.45	2.57	2.63	2.27	3.37	3.20	3.17
Minimum	2.29	3.01	1.37	1.62	2.23	1.98	1.98	2.62	3.08	2.61
Maximum	5.05	5.27	3.90	2.84	3.42	3.02	2.92	3.92	3.48	3.57
Range	2.76	2.25	2.54	1.23	1.19	1.05	0.94	1.29	0.40	0.96
Standard Deviation	0.67	0.51	0.58	0.29	0.27	0.26	0.19	0.43	0.11	0.19
Market Benchmarks										
24-month average	3.25	4.09	3.16	2.70	2.63	2.71	2.59	2.81	3.15	3.14
16-month average	4.04	4.36	3.02	2.50	2.46	2.59	2.48	3.04	3.11	3.14
Harvest Price	4.28	5.06	2.92	2.62	2.59	2.63	2.66	2.99	2.83	3.38
Farmer Benchmark	4.42	4.31	2.91	2.35	2.57	2.61	2.58	3.25	3.13	2.99

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 70. Revenue Results for 35 Market Advisory Programs, Soft Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	1995 Advisory Revenue	1996 Advisory Revenue	1997 Advisory Revenue	1998 Advisory Revenue	1999 Advisory Revenue	2000 Advisory Revenue	2001 Advisory Revenue	2002 Advisory Revenue	2003 Advisory Revenue	2004 Advisory Revenue
					---$ per acre (harvest equivalent)---					
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	177	143	228	206
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	185
Ag Profit by Hjort	205	155	114	59	167	N/A	N/A	N/A	N/A	N/A
Ag Review	212	158	128	115	135	151	147	155	217	193
AgLine by Doane (cash only)	185	170	185	105	161	136	155	154	211	183
AgLine by Doane (hedge)	N/A	N/A	N/A	106	161	136	152	154	211	174
AgResource	190	188	92	107	209	125	166	163	205	182
Agri-Edge (cash only)	181	113	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	179	118	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	144	153	143	116	166	136	150	172	218	192
AgriVisor (aggressive hedge)	180	159	143	107	163	138	140	164	227	188
AgriVisor (basic cash)	136	149	143	110	166	136	150	172	218	192
AgriVisor (basic hedge)	176	146	143	105	160	138	140	165	227	189
Allendale (futures only)	150	137	195	138	200	171	181	130	204	189
Brock (cash only)	155	152	216	141	161	153	155	147	209	183
Brock (hedge)	149	142	227	157	163	151	155	147	222	184
Cash Grain	N/A	N/A	N/A	N/A	153	N/A	N/A	N/A	N/A	N/A
Freese-Notis	164	168	210	132	144	142	146	163	214	195
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	135	217	191
Grain Field Report	171	137	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	185	139	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	188	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	118	171	217	183
Pro Farmer (cash only)	177	156	187	122	145	146	156	139	207	184
Pro Farmer (hedge)	197	143	184	126	150	145	161	132	211	185
Progressive Ag	N/A	163	158	129	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	148	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	177	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	174	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	169	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	151	146	197	137	151	132	146	145	221	183
Stewart-Peterson Strictly Cash	163	148	205	137	162	146	N/A	N/A	N/A	N/A
Top Farmer Intelligence	135	137	166	114	164	140	151	137	210	183
Utterback Marketing Services	N/A	N/A	253	142	156	116	140	150	212	167
Zwicker Cycle Letter	175	104	143	113	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	171	147	172	120	163	141	152	152	215	186
Median	175	148	175	116	162	139	151	152	215	185
Minimum	135	104	92	59	135	116	118	130	204	167
Maximum	212	188	253	157	209	171	181	172	228	206
Range	77	83	162	98	74	56	63	42	24	39
Standard Deviation	21	19	41	21	16	12	14	14	7	8
Market Benchmarks										
24-month average	162	150	209	147	165	146	155	142	208	181
16-month average	178	154	201	127	152	138	148	147	212	181
Harvest Price	180	175	197	136	164	153	159	148	197	189
Farmer Benchmark	185	160	198	127	148	143	159	151	212	178

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 71. Revenue Results for 35 Market Advisory Programs, Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	1995 Advisory Revenue	1996 Advisory Revenue	1997 Advisory Revenue	1998 Advisory Revenue	1999 Advisory Revenue	2000 Advisory Revenue	2001 Advisory Revenue	2002 Advisory Revenue	2003 Advisory Revenue	2004 Advisory Revenue
				---$ per acre (harvest equivalent)---						
Ag Financial Strategies	N/A	N/A	N/A	N/A	N/A	N/A	120	89	124	111
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100
Ag Profit by Hjort	108	113	71	82	146	N/A	N/A	N/A	N/A	N/A
Ag Review	103	118	85	119	120	94	100	95	119	103
AgLine by Doane (cash only)	90	119	109	122	138	95	90	92	120	97
AgLine by Doane (hedge)	N/A	N/A	N/A	129	138	95	89	92	120	93
AgResource	105	137	51	113	178	71	99	92	123	98
Agri-Edge (cash only)	88	79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	87	87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	68	94	86	117	139	96	93	106	118	103
AgriVisor (aggressive hedge)	87	106	86	105	137	92	92	102	125	101
AgriVisor (basic cash)	71	96	86	109	139	96	93	106	118	103
AgriVisor (basic hedge)	84	100	86	104	135	92	92	102	125	102
Allendale (futures only)	76	106	122	145	185	109	103	76	117	98
Brock (cash only)	72	101	118	133	133	101	91	88	119	97
Brock (hedge)	69	106	126	145	134	101	91	88	126	101
Cash Grain	N/A	N/A	N/A	N/A	139	N/A	N/A	N/A	N/A	N/A
Freese-Notis	83	121	119	125	129	94	93	96	126	103
Grain Field Marketing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	78	118	103
Grain Field Report	86	99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	95	107	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	N/A	N/A	N/A	N/A	N/A	N/A	81	104	127	94
Pro Farmer (cash only)	91	102	103	127	127	94	98	80	122	94
Pro Farmer (hedge)	103	107	101	129	129	96	95	71	122	95
Progressive Ag	N/A	118	88	126	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	146	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	149	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	148	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	71	103	109	136	130	84	93	81	132	98
Stewart-Peterson Strictly Cash	77	103	112	130	141	106	N/A	N/A	N/A	N/A
Top Farmer Intelligence	50	103	95	108	144	93	103	72	122	96
Utterback Marketing Services	N/A	N/A	144	134	139	74	92	74	117	81
Zwicker Cycle Letter	76	78	86	114	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:										
Average	84	105	99	122	141	93	95	89	122	99
Median	85	103	98	125	139	95	93	91	122	98
Minimum	50	78	51	82	120	71	81	71	117	81
Maximum	111	137	144	145	185	109	120	106	132	111
Range	61	59	94	63	64	38	39	35	15	30
Standard Deviation	15	13	21	15	15	9	8	12	4	6
Market Benchmarks										
24-month average	71	106	117	138	142	98	106	76	120	97
16-month average	89	113	112	128	133	93	102	82	118	97
Harvest Price	94	132	108	134	140	95	109	81	108	105
Farmer Benchmark	97	112	108	120	139	94	106	88	119	93

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year.

Table 72. Pricing Results for 35 Market Advisory Programs, Soft Red Winter Wheat, Two-Year through Ten-Year Averages, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	2003-04 Two-Year Average	2002-04 Three-Year Average	2001-04 Four-Year Average	2000-04 Five-Year Average	1999-04 Six-Year Average	1998-04 Seven-Year Average	1997-04 Eight-Year Average	1996-04 Nine-Year Average	1995-04 Ten-Year Average
					---$ per bushel (harvest equivalent)---				
Ag Financial Strategies	3.47	3.27	3.21	N/A	N/A	N/A	N/A	N/A	N/A
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Profit by Hjort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Review	3.28	3.22	3.04	2.95	2.82	2.74	2.65	2.81	3.00
AgLine by Doane (cash only)	3.16	3.13	3.01	2.87	2.83	2.72	2.74	2.93	3.05
AgLine by Doane (hedge)	3.08	3.08	2.96	2.83	2.79	2.69	N/A	N/A	N/A
AgResource	3.10	3.15	3.07	2.89	2.97	2.84	2.67	2.92	3.05
Agri-Edge (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	3.28	3.33	3.13	2.98	2.93	2.83	2.75	2.90	2.93
AgriVisor (aggressive hedge)	3.31	3.30	3.07	2.93	2.88	2.77	2.70	2.86	2.98
AgriVisor (basic cash)	3.28	3.33	3.13	2.98	2.93	2.82	2.74	2.87	2.89
AgriVisor (basic hedge)	3.32	3.32	3.08	2.94	2.88	2.76	2.69	2.82	2.93
Allendale (futures only)	3.15	2.97	2.99	2.98	3.02	2.98	2.98	3.05	3.08
Brock (cash only)	3.14	3.07	2.96	2.89	2.84	2.83	2.89	3.02	3.06
Brock (hedge)	3.24	3.14	3.01	2.93	2.88	2.91	2.98	3.06	3.09
Cash Grain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Freese-Notis	3.27	3.27	3.07	2.95	2.84	2.81	2.86	3.03	3.09
Grain Field Marketing	3.26	3.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grain Field Report	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	3.20	3.27	2.95	N/A	N/A	N/A	N/A	N/A	N/A
Pro Farmer (cash only)	3.13	3.01	2.92	2.84	2.76	2.70	2.73	2.88	2.98
Pro Farmer (hedge)	3.17	2.99	2.93	2.84	2.77	2.73	2.74	2.85	3.01
Progressive Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	3.23	3.12	2.96	2.82	2.76	2.75	2.78	2.90	2.95
Stewart-Peterson Strictly Cash	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Top Farmer Intelligence	3.15	3.01	2.90	2.80	2.78	2.70	2.68	2.78	2.80
Utterback Marketing Services	3.01	3.01	2.85	2.68	2.65	2.67	2.82	N/A	N/A
Zwicker Cycle Letter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:									
Average	3.21	3.15	3.01	2.89	2.84	2.78	2.77	2.91	2.99
Median	3.21	3.14	3.01	2.89	2.84	2.76	2.74	2.90	3.00
Minimum	3.01	2.97	2.85	2.68	2.65	2.67	2.65	2.78	2.80
Maximum	3.47	3.33	3.21	2.98	3.02	2.98	2.98	3.06	3.09
Range	0.46	0.36	0.36	0.31	0.37	0.31	0.34	0.28	0.29
Standard Deviation	0.10	0.13	0.09	0.08	0.09	0.08	0.11	0.09	0.08
Market Benchmarks									
24-month average	3.12	3.03	2.93	2.84	2.81	2.82	2.87	2.99	3.05
16-month average	3.14	3.07	2.93	2.82	2.76	2.72	2.77	2.91	3.02
Harvest Price	3.09	3.05	2.96	2.90	2.85	2.83	2.85	3.05	3.14
Farmer Benchmark	3.12	3.08	2.99	2.88	2.80	2.76	2.79	2.95	3.07

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year. The average, minimum, maximum and range are computed across the advisory program averages in the indicated column. As a result, the statistics reflect performance only for those advisory programs active during each of the indicated crop years.

Table 73. Pricing Results for 35 Market Advisory Programs, Hard Red Winter Wheat, Two-Year through Ten-Year Averages, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	2003-04 Two-Year Average	2002-04 Three-Year Average	2001-04 Four-Year Average	2000-04 Five-Year Average	1999-04 Six-Year Average	1998-04 Seven-Year Average	1997-04 Eight-Year Average	1996-04 Nine-Year Average	1995-04 Ten-Year Average
				---$ per bushel (harvest equivalent)---					
Ag Financial Strategies	3.42	3.38	3.27	N/A	N/A	N/A	N/A	N/A	N/A
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Profit by Hjort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Review	3.22	3.32	3.10	3.01	2.88	2.80	2.74	2.93	3.11
AgLine by Doane (cash only)	3.15	3.24	2.98	2.91	2.85	2.79	2.81	3.00	3.11
AgLine by Doane (hedge)	3.09	3.20	2.94	2.88	2.83	2.79	N/A	N/A	N/A
AgResource	3.21	3.28	3.06	2.84	2.92	2.82	2.64	2.93	3.11
Agri-Edge (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	3.21	3.45	3.16	3.06	2.98	2.88	2.81	2.90	2.92
AgriVisor (aggressive hedge)	3.28	3.44	3.14	3.02	2.94	2.82	2.76	2.90	3.01
AgriVisor (basic cash)	3.21	3.45	3.16	3.06	2.98	2.86	2.79	2.89	2.92
AgriVisor (basic hedge)	3.29	3.46	3.16	3.03	2.94	2.82	2.75	2.88	2.97
Allendale (futures only)	3.12	3.02	2.89	2.92	3.00	2.98	3.02	3.13	3.16
Brock (cash only)	3.14	3.18	2.93	2.91	2.83	2.80	2.85	2.96	3.00
Brock (hedge)	3.29	3.28	3.01	2.97	2.89	2.88	2.95	3.07	3.08
Cash Grain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Freese-Notis	3.31	3.39	3.11	3.01	2.90	2.84	2.89	3.09	3.16
Grain Field Marketing	3.22	3.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grain Field Report	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	3.20	3.41	3.05	N/A	N/A	N/A	N/A	N/A	N/A
Pro Farmer (cash only)	3.13	3.07	2.90	2.84	2.76	2.72	2.73	2.86	2.99
Pro Farmer (hedge)	3.13	2.96	2.80	2.78	2.71	2.69	2.69	2.85	3.03
Progressive Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	3.32	3.21	2.97	2.85	2.77	2.76	2.78	2.92	2.95
Stewart-Peterson Strictly Cash	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Top Farmer Intelligence	3.16	3.00	2.88	2.82	2.79	2.69	2.68	2.82	2.77
Utterback Marketing Services	2.85	2.81	2.67	2.55	2.55	2.56	2.73	N/A	N/A
Zwicker Cycle Letter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:									
Average	3.20	3.23	3.01	2.91	2.85	2.79	2.79	2.94	3.02
Median	3.21	3.26	3.01	2.91	2.88	2.80	2.77	2.92	3.01
Minimum	2.85	2.81	2.67	2.55	2.55	2.56	2.64	2.82	2.77
Maximum	3.42	3.46	3.27	3.06	3.00	2.98	3.02	3.13	3.16
Range	0.56	0.65	0.60	0.51	0.45	0.41	0.38	0.31	0.40
Standard Deviation	0.12	0.19	0.15	0.13	0.11	0.09	0.10	0.09	0.11
Market Benchmarks									
24-month average	3.14	3.03	2.92	2.88	2.84	2.82	2.86	3.00	3.02
16-month average	3.13	3.10	2.94	2.87	2.80	2.76	2.79	2.97	3.07
Harvest Price	3.11	3.07	2.97	2.90	2.85	2.81	2.83	3.07	3.20
Farmer Benchmark	3.06	3.13	2.99	2.91	2.86	2.78	2.80	2.97	3.11

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year. The average, minimum, maximum and range are computed across the advisory program averages in the indicated column. As a result, the statistics reflect performance only for those advisory programs active during each of the indicated crop years.

Table 74. Revenue Results for 35 Market Advisory Programs, Soft Red Winter Wheat, Two-Year through Ten-Year Averages, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	2003-04 Two-Year Average	2002-04 Three-Year Average	2001-04 Four-Year Average	2000-04 Five-Year Average	1999-04 Six-Year Average	1998-04 Seven-Year Average	1997-04 Eight-Year Average	1996-04 Nine-Year Average	1995-04 Ten-Year Average
					---$ per acre (harvest equivalent)---				
Ag Financial Strategies	217	192	189	N/A	N/A	N/A	N/A	N/A	N/A
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Profit by Hjort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Review	205	188	178	173	166	159	155	156	161
AgLine by Doane (cash only)	197	183	176	168	167	158	161	162	165
AgLine by Doane (hedge)	193	180	173	166	165	156	N/A	N/A	N/A
AgResource	194	183	179	168	175	165	156	160	163
Agri-Edge (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	205	194	183	174	172	164	162	161	159
AgriVisor (aggressive hedge)	207	193	180	172	170	161	159	159	161
AgriVisor (basic cash)	205	194	183	174	172	163	161	159	157
AgriVisor (basic hedge)	208	194	181	172	170	161	158	157	159
Allendale (futures only)	196	174	176	175	179	173	176	172	170
Brock (cash only)	196	180	174	169	168	164	171	168	167
Brock (hedge)	203	184	177	172	170	168	176	172	170
Cash Grain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Freese-Notis	204	191	179	172	167	162	168	168	168
Grain Field Marketing	204	181	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grain Field Report	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	200	190	172	N/A	N/A	N/A	N/A	N/A	N/A
Pro Farmer (cash only)	195	176	171	166	163	157	161	160	162
Pro Farmer (hedge)	198	176	172	167	164	159	162	160	163
Progressive Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	202	183	174	165	163	159	164	162	161
Stewart-Peterson Strictly Cash	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Top Farmer Intelligence	197	177	170	164	164	157	158	156	154
Utterback Marketing Services	189	176	167	157	157	155	167	N/A	N/A
Zwicker Cycle Letter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:									
Average	201	185	177	169	168	161	163	162	163
Median	201	183	176	169	167	161	161	160	162
Minimum	189	174	167	157	157	155	155	156	154
Maximum	217	194	189	175	179	173	176	172	170
Range	28	19	22	18	22	19	21	16	16
Standard Deviation	6	7	5	5	5	5	6	5	5
Market Benchmarks									
24-month average	195	177	172	166	166	163	169	167	166
16-month average	196	180	172	165	163	158	163	162	164
Harvest Price	193	178	173	169	168	164	168	169	170
Farmer Benchmark	195	180	175	168	165	160	165	164	166

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year. The average, minimum, maximum and range are computed across the advisory program averages in the indicated column. As a result, the statistics reflect performance only for those advisory programs active during each of the indicated crop years.

Table 75. Revenue Results for 35 Market Advisory Programs, Hard Red Winter Wheat, Two-Year through Ten-Year Averages, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	2003-04 Two-Year Average	2002-04 Three-Year Average	2001-04 Four-Year Average	2000-04 Five-Year Average	1999-04 Six-Year Average	1998-04 Seven-Year Average	1997-04 Eight-Year Average	1996-04 Nine-Year Average	1995-04 Ten-Year Average
				---$ per acre (harvest equivalent)---					
Ag Financial Strategies	117	108	111	N/A	N/A	N/A	N/A	N/A	N/A
Ag Market Pro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Profit by Hjort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag Review	111	105	104	102	105	107	104	106	106
AgLine by Doane (cash only)	109	103	100	99	105	108	108	109	107
AgLine by Doane (hedge)	107	102	99	98	105	108	N/A	N/A	N/A
AgResource	111	105	103	97	110	111	103	107	107
Agri-Edge (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agri-Edge (hedge)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AgriVisor (aggressive cash)	111	109	105	103	109	110	107	106	102
AgriVisor (aggressive hedge)	113	109	105	102	108	108	105	105	103
AgriVisor (basic cash)	111	109	105	103	109	109	106	105	102
AgriVisor (basic hedge)	114	110	105	103	108	107	105	104	102
Allendale (futures only)	108	97	98	100	115	119	119	118	114
Brock (cash only)	108	101	99	99	105	109	110	109	105
Brock (hedge)	114	105	102	101	107	112	114	113	109
Cash Grain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Freese-Notis	114	108	104	102	107	109	110	112	109
Grain Field Marketing	111	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grain Field Report	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harris Weather/Elliott Advisory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North American Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Commodity	111	109	102	N/A	N/A	N/A	N/A	N/A	N/A
Pro Farmer (cash only)	108	99	99	98	103	106	106	105	104
Pro Farmer (hedge)	108	96	96	96	101	105	105	105	105
Progressive Ag	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Prosperous Farmer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (cash only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (futures & options)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Management Group (options only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stewart-Peterson Advisory Reports	115	104	101	98	103	108	108	107	104
Stewart-Peterson Strictly Cash	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Top Farmer Intelligence	109	97	98	97	105	105	104	104	99
Utterback Marketing Services	99	91	91	88	96	102	107	N/A	N/A
Zwicker Cycle Letter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Descriptive Statistics:									
Average	110	103	101	99	106	108	108	108	105
Median	111	104	102	99	105	108	107	106	105
Minimum	99	91	91	88	96	102	103	104	99
Maximum	117	110	111	103	115	119	119	118	114
Range	18	19	20	15	18	17	16	14	15
Standard Deviation	4	5	4	4	4	4	4	4	4
Market Benchmarks									
24-month average	108	98	100	99	106	111	112	111	107
16-month average	108	99	100	98	104	108	108	109	107
Harvest Price	106	98	101	99	106	110	110	112	110
Farmer Benchmark	106	100	101	100	106	108	108	109	108

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. N/A denotes "Not Applicable," since the indicated program did not exist or was not evaluated for the given crop year. The average, minimum, maximum and range are computed across the advisory program averages in the indicated column. As a result, the statistics reflect performance only for those advisory programs active during each of the indicated crop years.

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Table 76. Average Pricing Performance Results for Market Advisory Programs by Underlying Components, Soft Red Winter and Hard Red Winter Wheat, 1995 - 2004 Crop Years, Commercial Storage Costs

Commodity/Advisory Program and Benchmark	Unadjusted Cash Sales Price	Commercial Storage Costs			Net Cash Sales Price	Futures & Options Gain	Brokerage Costs	LDP / MLG	Net Advisory Price
		Physical Storage	Shrinkage	Interest					
			---$ per bushel---						
Panel A: Average Price Components									
SRW									
Advisory Programs	3.10	0.16	0.00	0.09	2.85	0.01	0.02	0.14	2.98
24-Month Market Benchmark	3.08	0.08	0.00	0.05	2.95	0.00	0.00	0.10	3.05
16-Month Market Benchmark	3.11	0.13	0.00	0.07	2.91	0.00	0.00	0.10	3.02
Average Harvest Price	3.01	0.00	0.00	0.00	3.01	0.00	0.00	0.13	3.14
Farmer Benchmark	3.07	0.08	0.00	0.04	2.95	0.00	0.00	0.11	3.07
HRW									
Advisory Programs	3.18	0.13	0.00	0.11	2.94	0.01	0.02	0.08	3.02
24-Month Market Benchmark	3.06	0.06	0.00	0.05	2.96	0.00	0.00	0.07	3.02
16-Month Market Benchmark	3.19	0.10	0.00	0.08	3.01	0.00	0.00	0.06	3.07
Average Harvest Price	3.12	0.00	0.00	0.00	3.12	0.00	0.00	0.07	3.20
Farmer Benchmark	3.18	0.08	0.00	0.07	3.03	0.00	0.00	0.08	3.11
Panel B: Average Difference in Price Components									
SRW									
Advisory Programs - 24-Month Benchmark	0.03	0.08	0.00	0.05	-0.10	0.01	0.02	0.03	-0.07
Advisory Programs - 16-Month Benchmark	-0.01	0.03	0.00	0.02	-0.07	0.01	0.02	0.03	-0.04
Advisory Programs - Average Harvest Price	0.08	0.16	0.00	0.09	-0.17	0.01	0.02	0.01	-0.17
Advisory Programs - Farmer Benchmark	0.03	0.08	0.00	0.05	-0.11	0.01	0.02	0.02	-0.10
HRW									
Advisory Programs - 24-Month Benchmark	0.13	0.07	0.00	0.06	0.00	0.00	0.02	0.02	0.01
Advisory Programs - 16-Month Benchmark	-0.02	0.03	0.00	0.02	-0.07	0.00	0.02	0.02	-0.06
Advisory Programs - Average Harvest Price	0.04	0.13	0.00	0.11	-0.19	0.00	0.02	0.01	-0.20
Advisory Programs - Farmer Benchmark	-0.01	0.04	0.00	0.04	-0.09	0.00	0.02	0.00	-0.10

Notes: Net cash sales price is calculated as unadjusted cash sales price minus commercial storage costs. Net advisory price is calculated as net cash sales price plus futures and options gains minus brokerage costs plus LDP/MLG, and therefore, is stated on a harvest equivalent basis. Market and farmer benchmark prices also are stated on a harvest equivalent basis. LDP stands for loan deficiency payment and MLG stands for marketing loan gain. LDP/MLGs were not paid for the 1995 - 1997 and 2002 - 2004 crop years for soft red winter wheat and the 1995-1997, 2002 and 2004 crop years for hard red winter wheat. Average differences for 1995-2004 are computed over the full set of advisory programs. As a result, differences in the averages reported in Panel A may not equal the average differences reported in Panel B. N/A denotes "Not Applicable."

Table 77. Comparison of Survivor and Grand Averages, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, 1995-2004 Crop Years, Commercial Storage Costs

Commodity/Average	2003-04 Two-Year Average	2002-04 Three-Year Average	2001-04 Four-Year Average	2000-04 Five-Year Average	1999-04 Six-Year Average	1998-04 Seven-Year Average	1997-04 Eight-Year Average	1996-04 Nine-Year Average	1995-04 Ten-Year Average
				---$ per bushel (harvest equivalent)---					
Soft Red Winter Wheat									
Survivor Average	3.13	3.15	3.01	2.89	2.84	2.78	2.77	2.91	2.99
Grand Average	3.21	3.16	3.02	2.91	2.86	2.78	2.76	2.90	3.00
Difference	-0.08	0.00	0.00	-0.02	-0.01	0.00	0.01	0.01	-0.01
				---$ per bushel (harvest equivalent)---					
Hard Red Winter Wheat									
Survivor Average	3.12	3.23	3.01	2.91	2.85	2.79	2.79	2.94	3.02
Grand Average	3.20	3.23	3.02	2.94	2.88	2.80	2.79	2.94	3.04
Difference	-0.08	0.00	-0.01	-0.03	-0.02	-0.01	0.00	0.00	-0.03
				---$ per acre (harvest equivalent)---					
SRW Advisory Revenue									
Survivor Average	163	185	177	169	168	161	163	162	163
Grand Average	200	185	177	170	169	162	163	161	162
Difference	-38	0	0	-1	-1	0	1	1	1
				---$ per acre (harvest equivalent)---					
HRW Advisory Revenue									
Survivor Average	105	103	101	99	106	108	108	108	105
Grand Average	110	103	101	100	108	110	108	108	105
Difference	-5	0	0	-1	-2	-1	-1	0	0

Notes: Net advisory revenues and benchmark revenues are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. "Survivor averages" are based on advisory programs active in all crop years of a given averaging period. "Grand averages" are based on all advisory programs active in a given averaging period, whether they "survived" the entire period or not. The measure of survivorship bias for each averaging period is simply the difference between the survivor and grand averages. Average differences may not equal the difference between the reported survivor and grand averages due to rounding.

Table 78. Proportion of Advisory Programs in the Top-, Middle-, and Bottom Third of the Price Range by Crop Year, Soft Red Winter and Hard Red Winter Wheat, Commercial Storage Costs

Crop Year	Number of Programs	Proportion of Programs in Price Range for 24-Month Marketing Window			Proportion of Programs in Price Range for 16-Month Marketing Window		
		Top Third or Above	Middle Third	Bottom Third or Below	Top Third or Above	Middle Third	Bottom Third or Below
		---%---			---%---		
Panel A: Soft Red Winter Wheat							
1995	24	25	63	13	17	38	46
1996	23	35	52	13	9	78	13
1997	20	10	10	80	15	20	65
1998	21	0	52	48	33	43	24
1999	23	9	43	48	35	30	35
2000	18	6	28	67	11	61	28
2001	19	26	11	63	32	32	37
2002	20	70	20	10	50	40	10
2003	20	50	50	0	20	80	0
2004	21	43	52	5	52	43	5
1995-2004 Average		27	38	35	27	46	26
Panel B: Hard Red Winter Wheat							
1995	24	25	67	8	25	4	71
1996	23	26	52	22	22	57	22
1997	20	10	15	75	20	20	60
1998	21	0	24	76	14	38	48
1999	23	9	43	48	30	52	17
2000	18	22	39	39	33	50	17
2001	19	5	16	79	5	26	68
2002	20	70	30	0	50	45	5
2003	20	30	65	5	30	65	5
2004	21	48	48	5	43	52	5
1995-2004 Average		24	40	36	27	41	32

Table 79. Proportion of Advisory Programs in the Top-, Second-, Third-, and Bottom Quarter of the Price Range by Crop Year, Soft Red Winter and Hard Red Winter Wheat, Commercial Storage Costs

Crop Year	Number of Programs	Proportion of Programs in Price Range for 24-Month Marketing Window				Proportion of Programs in Price Range for 16-Month Marketing Window			
		Top Quarter or Above	Second Quarter	Third Quarter	Bottom Quarter or Below	Top Quarter or Above	Second Quarter	Third Quarter	Bottom Quarter or Below
		---%---				---%---			
Panel A: Soft Red Winter Wheat									
1995	24	17	50	25	8	13	13	42	33
1996	23	13	39	35	13	9	35	43	13
1997	20	5	10	10	75	10	10	15	65
1998	21	0	5	67	29	5	48	33	14
1999	23	9	17	39	35	26	22	30	22
2000	18	0	11	61	28	11	22	39	28
2001	19	16	16	26	42	26	11	42	21
2002	20	50	30	10	10	35	35	25	5
2003	20	25	75	0	0	15	45	40	0
2004	21	5	86	5	5	5	86	5	5
1995-2004 Average		14	34	28	24	15	33	31	21
Panel B: Hard Red Winter Wheat									
1995	24	25	33	38	4	21	4	33	42
1996	23	22	39	26	13	9	39	30	22
1997	20	5	20	15	60	15	10	25	50
1998	21	0	5	48	48	5	14	52	29
1999	23	9	9	61	22	17	35	30	17
2000	18	6	28	44	22	22	39	22	17
2001	19	5	0	26	68	5	16	16	63
2002	20	65	15	20	0	30	40	30	0
2003	20	5	65	30	0	5	65	30	0
2004	21	5	90	0	5	5	90	0	5
1995-2004 Average		15	30	31	24	13	35	27	24

Table 80. Proportion of Farmer Benchmarks Within Price Range, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Panel: Thirds

	Proportion of Farmer Benchmarks in Price Range for 24-Month Marketing Window				Proportion of Farmer Benchmarks in Price Range for 16-Month Marketing Window		
	Top Third or Above	Middle Third	Bottom Third or Below		Top Third or Above	Middle Third	Bottom Third or Below
	---%---				---%---		
Soft Red Winter Wheat							
Farmer Benchmark	20	60	20		10	90	0
Hard Red Winter Wheat							
Farmer Benchmark	20	50	30		0	100	0

Panel: Quarters

	Proportion of Farmer Benchmarks in Price Range for 24-Month Marketing Window					Proportion of Farmer Benchmarks in Price Range for 16-Month Marketing Window			
Crop Year	Top Quarter or Above	Second Quarter	Third Quarter	Bottom Quarter or Below		Top Quarter or Above	Second Quarter	Third Quarter	Bottom Quarter or Below
	---%---					---%---			
Soft Red Winter Wheat									
Farmer Benchmark	10	40	40	10		0	70	30	0
Hard Red Winter Wheat									
Farmer Benchmark	10	30	50	10		0	40	60	0

Table 81. Comparison of Benchmarks and Median Cash Prices for Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

| | Median Cash Price | | Market Benchmarks | |
	24 Month Window	16 Month Window	24 Month	16 Month
Crop Year				
Panel A: Soft Red Winter Wheat				
1995	3.48	4.15	3.60	3.96
1996	3.85	3.93	3.94	4.06
1997	3.27	3.19	3.21	3.09
1998	2.67	2.13	2.74	2.50
1999	2.19	2.05	2.27	2.45
2000	2.25	2.07	2.24	2.38
2001	2.44	2.39	2.43	2.51
2002	2.77	2.89	2.85	2.93
2003	3.04	3.16	3.11	3.17
2004	3.04	3.03	3.13	3.12
1995-2004 Average	2.90	2.90	2.95	3.02
Panel B: Hard Red Winter Wheat				
1995	3.56	4.48	3.25	4.04
1996	3.95	4.01	4.09	4.36
1997	3.16	3.05	3.16	3.02
1998	2.71	2.44	2.61	2.50
1999	2.29	2.08	2.28	2.46
2000	2.53	2.46	2.56	2.59
2001	2.69	2.43	2.59	2.48
2002	2.81	3.00	2.81	3.04
2003	3.09	3.08	3.08	3.11
2004	2.97	2.95	3.14	3.14
1995-2004 Average	2.97	3.00	2.96	3.07

Table 82. Proportion of Advisory Programs above Benchmarks for Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, 1995-2004 Crop Years, Commercial Storage Costs

Crop Year	Number of Programs	Proportion of Programs Above Market Benchmark						Proportion of Programs Above Farmer Benchmark	
		24-Month Average		16-Month Average		Harvest Price			
		---%---						---%---	
Panel A: Soft Red Winter Wheat Price									
1995	24	67		42		33		21	**
1996	23	43		35		4	**	17	**
1997	20	20	**	25	*	25	*	25	*
1998	21	5	**	38		29		38	
1999	23	35		78	**	39		87	**
2000	18	33		61		6	**	39	
2001	19	32		63		21	*	21	*
2002	20	75	*	60		55		50	
2003	20	85	**	55		100	**	55	
2004	21	90	**	90	**	38		90	**
1995-2004 Average		49		55		35	**	44	
Panel B: Hard Red Winter Wheat Price									
1995	24	79	**	33		25	*	21	**
1996	23	35		22	**	4	**	26	*
1997	20	25	*	30		40		40	
1998	21	10	**	38		19	**	57	
1999	23	30		78	**	35		48	
2000	18	22	*	67		50		56	
2001	19	5	**	16	**	5	**	5	**
2002	20	80	**	65		70		65	
2003	20	65		75	*	100	**	65	
2004	21	67		62		5	**	95	**
1995-2004 Average		43	*	48		34	**	47	
Panel C: SRW Revenue									
1995	24	67		42		33		21	**
1996	23	43		35		4	**	17	**
1997	20	20	**	25	*	25	*	25	*
1998	21	5	**	38		29		38	
1999	23	35		78	**	39		87	**
2000	18	33		61		6	**	39	
2001	19	32		63		21	*	21	*
2002	20	75	*	60		55		50	
2003	20	85	**	55		100	**	55	
2004	21	90	**	90	**	38		90	**
1995-2004 Average		49		55		35	**	44	
Panel D: HRW Revenue									
1995	24	79	**	33		25	*	21	**
1996	23	35		22	**	4	**	26	*
1997	20	25	*	30		40		40	
1998	21	10	**	38		19	**	57	
1999	23	30		78	**	35		48	
2000	18	22	*	67		50		56	
2001	19	5	**	16	**	5	**	5	**
2002	20	80	**	65		70		65	
2003	20	65		75	*	100	**	65	
2004	21	67		62		5	**	95	**
1995-2004 Average		43	*	48		34	**	47	

Notes: A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. Average proportions for 1995-2004 are computed over the full set of advisory programs. As a result, averages of individual crop year proportions may not equal the average proportions reported for 1995-2004. Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 83. Comparison of Average Net Advisory Prices and Benchmark Prices for Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Crop Year	Number of Programs	Average Net Advisory Price	Market Benchmark 24-Month Average	Market Benchmark 16-Month Average	Market Benchmark Harvest Price	Farmer Benchmark	Difference Between Advisors and Market Benchmark 24-Month Average	Difference Between Advisors and Market Benchmark 16-Month Average	Difference Between Advisors and Market Benchmark Harvest Price	Difference Between Advisors and Farmer Benchmark
		---$ per bushel (harvest equivalent)---					---¢ per bushel (harvest equivalent)---			
Panel A: SRW Prices										
1995	24	3.79	3.60	3.96	4.01	4.12	19	-17	-22	-33
1996	23	3.87	3.94	4.06	4.61	4.22	-7	-19	-74	-35
1997	20	2.64	3.21	3.09	3.03	3.05	-57	-45	-39	-41
1998	21	2.35	2.88	2.50	2.66	2.50	-53	-15	-31	-14
1999	23	2.63	2.67	2.45	2.64	2.39	-3	18	-1	24
2000	18	2.43	2.51	2.38	2.64	2.46	-8	5	-21	-3
2001	19	2.58	2.63	2.51	2.70	2.69	-5	6	-12	-11
2002	20	3.04	2.85	2.93	2.96	3.02	19	11	8	2
2003	20	3.21	3.11	3.17	2.94	3.16	11	5	28	5
2004	21	3.21	3.13	3.12	3.25	3.07	8	9	-4	14
1995-2004 Average		3.00	3.05	3.02	3.14	3.07	-7.1	-4.3	-17.4	-9.5
Panel B: HRW Prices										
1995	24	3.84	3.25	4.04	4.28	4.42	59	-20	-45	-58
1996	23	4.02	4.09	4.36	5.06	4.31	-7	-34	-104	-29
1997	20	2.68	3.16	3.02	2.92	2.91	-48	-34	-24	-23
1998	21	2.39	2.70	2.50	2.62	2.35	-31	-11	-23	4
1999	23	2.61	2.63	2.46	2.59	2.57	-2	15	3	4
2000	18	2.59	2.71	2.59	2.63	2.61	-12	1	-3	-2
2001	19	2.32	2.59	2.48	2.66	2.58	-27	-15	-34	-26
2002	20	3.30	2.81	3.04	2.99	3.25	50	27	31	5
2003	20	3.21	3.15	3.11	2.83	3.13	7	10	38	8
2004	21	3.18	3.14	3.14	3.38	2.99	4	4	-20	19
1995-2004 Average		3.04	3.02	3.07	3.20	3.11	0.4	-6.2	-19.6	-10.6

Notes: Net advisory prices and benchmark prices are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. Averages for 1995-2004 are computed over the full set of advisory programs. As a result, averages of individual crop year prices or differences may not equal the averages reported for 1995-2004.

Table 84. Comparison of Average Net Advisory Revenues and Benchmark Revenues for Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs

Crop Year	Number of Programs	Average Net Advisory Revenue	Market Benchmark			Farmer Benchmark	Difference Between Advisors and Market Benchmark			Difference Between Advisors and Farmer Benchmark
			24-Month Average	16-Month Average	Harvest Price		24-Month Average	16-Month Average	Harvest Price	
			---$ per acre (harvest equivalent)---				---$ per acre (harvest equivalent)---			
Panel A: SRW Revenue										
1995	24	171	162	178	180	185	9	-8	-10	-15
1996	23	147	150	154	175	160	-3	-7	-28	-13
1997	20	172	209	201	197	198	-37	-29	-25	-26
1998	21	120	147	127	136	127	-27	-7	-16	-7
1999	23	163	165	152	164	148	-2	11	0	15
2000	18	141	146	138	153	143	-5	3	-12	-2
2001	19	151	155	148	159	159	-3	4	-7	-7
2002	20	152	142	147	148	151	10	5	4	1
2003	20	215	208	212	197	212	7	3	18	3
2004	21	185	181	181	189	178	5	5	-2	8
1995-2004 Average		162	166	164	170	166	-4.4	-2.0	-8.0	-4.3
Panel B: HRW Revenue										
1995	24	84	71	89	94	97	13	-4	-10	-13
1996	23	105	106	113	132	112	-2	-9	-27	-7
1997	20	99	117	112	108	108	-18	-13	-9	-9
1998	21	122	138	128	134	120	-16	-6	-12	2
1999	23	141	142	133	140	139	-1	8	1	2
2000	18	93	98	93	95	94	-4	0	-1	-1
2001	19	94	106	102	109	106	-11	-6	-14	-11
2002	20	89	76	82	81	88	13	7	8	1
2003	20	122	120	118	108	119	3	4	15	3
2004	21	98	97	97	105	93	1	1	-6	6
1995-2004 Average		105	107	107	110	108	-1.8	-1.7	-5.8	-2.7

Notes: Net advisory revenues and benchmark revenues are stated on a harvest equivalent basis. A crop year is a two-year marketing window from June of the year previous to harvest through May of the year after harvest. Averages for 1995-2004 are computed over the full set of advisory programs. As a result, averages of individual crop year revenues or differences may not equal the averages reported for 1995-2004.

Table 85. Significance Tests of Average Advisory Program Dollar Returns , Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, 1995-2004 Crop Years, Commercial Storage Costs

Commodity/ Benchmark	Difference Between Average Advisory Program and Benchmark										Average Difference	Standard Error	t-statistic	Two-tail p-value
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004				
---¢ per bushel (harvest equivalent)---														
Soft Red Winter Wheat														
Market Benchmarks:														
24-Month Average	19	-7	-57	-53	-3	-8	-5	19	11	8	-8	9	-0.89	0.40
16-Month Average	-17	-19	-45	-15	18	5	6	11	5	9	-4	6	-0.67	0.52
Harvest Price	-22	-74	-39	-31	-1	-21	-12	8	28	-4	-17	9	-1.90	0.09
Farmer Benchmark	-33	-35	-41	-14	24	-3	-11	2	5	14	-9	7	-1.34	0.21
Hard Red Winter Wheat														
Market Benchmarks:														
24-Month Average	59	-7	-48	-31	-2	-12	-27	50	7	4	-1	11	-0.07	0.94
16-Month Average	-20	-34	-34	-11	15	1	-15	27	10	4	-6	7	-0.89	0.40
Harvest Price	-45	-104	-24	-23	3	-3	-34	31	38	-20	-18	13	-1.42	0.19
Farmer Benchmark	-58	-29	-23	4	4	-2	-26	5	8	19	-10	7	-1.32	0.22
---$ per acre (harvest equivalent)---														
SRW Revenue														
Market Benchmarks:														
24-Month Average	9	-3	-37	-27	-2	-5	-3	10	7	5	-5	5	-0.94	0.37
16-Month Average	-8	-7	-29	-7	11	3	4	5	3	5	-2	4	-0.53	0.61
Harvest Price	-10	-28	-25	-16	0	-12	-7	4	18	-2	-8	4	-1.80	0.11
Farmer Benchmark	-15	-13	-26	-7	15	-2	-7	1	3	8	-4	4	-1.13	0.29
HRW Revenue														
Market Benchmarks:														
24-Month Average	13	-2	-18	-16	-1	-4	-11	13	3	1	-2	3	-0.64	0.54
16-Month Average	-4	-9	-13	-6	8	0	-6	7	4	1	-2	2	-0.78	0.46
Harvest Price	-10	-27	-9	-12	1	-1	-14	8	15	-6	-5	4	-1.45	0.18
Farmer Benchmark	-13	-7	-9	2	2	-1	-11	1	3	6	-3	2	-1.23	0.25

Notes: Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 86. Significance Tests of the Average Advisory Program Percentage Returns, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, 1995-2004 Crop Years, Commercial Storage Costs

Commodity/ Benchmark	Difference Between Average Advisory Program and Benchmark										Average Difference	Standard Error	t-statistic	Two-tail p-value
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004				
					---%---									
Soft Red Winter Wheat														
Market Benchmarks:														
24-Month Average	5.4	-1.9	-17.8	-18.3	-1.2	-3.2	-1.9	6.7	3.5	2.7	-2.6	2.8	-0.93	0.37
16-Month Average	-4.2	-4.7	-14.5	-5.9	7.4	2.2	2.5	3.7	1.5	3.0	-0.9	2.0	-0.44	0.67
Harvest Price	-5.4	-16.1	-12.8	-11.7	-0.2	-8.0	-4.4	2.7	9.4	-1.3	-4.8	2.4	-1.95	0.08
Farmer Benchmark	-8.0	-8.3	-13.3	-5.8	10.0	-1.3	-4.2	0.8	1.6	4.5	-2.4	2.2	-1.10	0.30
Hard Red Winter Wheat														
Market Benchmarks:														
24-Month Average	18.2	-1.7	-15.3	-11.6	-0.6	-4.4	-10.6	17.8	2.1	1.3	-0.5	3.6	-0.13	0.90
16-Month Average	-4.9	-7.8	-11.3	-4.6	6.2	0.3	-6.3	8.8	3.2	1.2	-1.5	2.0	-0.73	0.48
Harvest Price	-10.4	-20.5	-8.2	-8.9	1.0	-1.2	-12.7	10.5	13.6	-6.0	-4.3	3.3	-1.30	0.23
Farmer Benchmark	-13.2	-6.7	-8.0	1.6	1.5	-0.8	-9.9	1.6	2.5	6.3	-2.5	2.0	-1.22	0.25
					---%---									
SRW Revenue														
Market Benchmarks:														
24-Month Average	5.4	-1.9	-17.8	-18.3	-1.2	-3.2	-1.9	6.7	3.5	2.7	-2.6	2.8	-0.93	0.37
16-Month Average	-4.2	-4.7	-14.5	-5.9	7.4	2.2	2.5	3.7	1.5	3.0	-0.9	2.0	-0.44	0.67
Harvest Price	-5.4	-16.1	-12.8	-11.7	-0.2	-8.0	-4.4	2.7	9.4	-1.3	-4.8	2.4	-1.95	0.08
Farmer Benchmark	-8.0	-8.3	-13.3	-5.8	10.0	-1.3	-4.2	0.8	1.6	4.5	-2.4	2.2	-1.10	0.30
HRW Revenue														
Market Benchmarks:														
24-Month Average	18.2	-1.7	-15.3	-11.6	-0.6	-4.4	-10.6	17.8	2.1	1.3	-0.5	3.6	-0.13	0.90
16-Month Average	-4.9	-7.8	-11.3	-4.6	6.2	0.3	-6.3	8.8	3.2	1.2	-1.5	2.0	-0.73	0.48
Harvest Price	-10.4	-20.5	-8.2	-8.9	1.0	-1.2	-12.7	10.5	13.6	-6.0	-4.3	3.3	-1.30	0.23
Farmer Benchmark	-13.2	-6.7	-8.0	1.6	1.5	-0.8	-9.9	1.6	2.5	6.3	-2.5	2.0	-1.22	0.25

Notes: For a given year, percentage difference is computed as the percentage difference between the average advisory price or revenue and the benchmarks. Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 87. Statistical Tests on the Performance of Individual Market Advisory Programs, 1995-2004 Crop Years, Commercial Storage Costs

Panel A. SRW Prices

Market Advisory Program	24 Month Benchmark			16 Month Benchmark			Average Harvest Price			Farmer Benchmark		
	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value
	---$ per bushel---			---$ per bushel---			---$ per bushel---			---$ per bushel---		
Ag Review	-0.05	0.20	0.82	-0.01	0.15	0.94	-0.14	0.15	0.39	-0.06	0.14	0.65
AgLine by Doane (cash only)	0.00	0.13	0.97	0.03	0.07	0.69	-0.10	0.07	0.22	-0.02	0.06	0.74
AgResource	0.00	0.26	0.99	0.03	0.23	0.90	-0.10	0.21	0.66	-0.02	0.22	0.93
AgriVisor (aggressive cash)	-0.12	0.14	0.41	-0.09	0.14	0.53	-0.22	0.14	0.16	-0.14	0.14	0.34
AgriVisor (aggressive hedge)	-0.07	0.16	0.65	-0.04	0.12	0.75	-0.17	0.12	0.22	-0.09	0.11	0.44
AgriVisor (basic cash)	-0.17	0.15	0.30	-0.13	0.15	0.40	-0.26	0.15	0.13	-0.18	0.15	0.27
AgriVisor (basic hedge)	-0.12	0.15	0.44	-0.09	0.12	0.47	-0.21	0.14	0.15	-0.14	0.12	0.27
Allendale (futures only)	0.03	0.11	0.79	0.06	0.15	0.67	-0.06	0.15	0.69	0.01	0.16	0.94
Brock (cash only)	0.01	0.03	0.82	0.04	0.07	0.58	-0.09	0.09	0.39	-0.01	0.09	0.92
Brock (hedge)	0.04	0.06	0.54	0.07	0.11	0.53	-0.06	0.14	0.70	0.02	0.13	0.88
Freese-Notis	0.04	0.09	0.63	0.08	0.07	0.26	-0.05	0.08	0.55	0.03	0.07	0.73
Pro Farmer (cash only)	-0.07	0.08	0.41	-0.03	0.04	0.41	-0.16	0.06	0.02	-0.08	0.03	0.03
Pro Farmer (hedge)	-0.04	0.11	0.70	-0.01	0.07	0.91	-0.14	0.10	0.22	-0.06	0.07	0.42
Stewart-Peterson Advisory Reports	-0.11	0.05	0.05	-0.07	0.07	0.34	-0.20	0.10	0.09	-0.12	0.09	0.21
Top Farmer Intelligence	-0.25	0.09	0.02	-0.21	0.11	0.09	-0.34	0.13	0.03	-0.26	0.13	0.07

Panel B. HRW Prices

Market Advisory Program	24 Month Benchmark			16 Month Benchmark			Average Harvest Price			Farmer Benchmark		
	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value
	---$ per bushel---			---$ per bushel---			---$ per bushel---			---$ per bushel---		
Ag Review	0.09	0.21	0.68	0.04	0.12	0.76	-0.08	0.12	0.51	0.00	0.10	0.98
AgLine by Doane (cash only)	0.09	0.13	0.52	0.04	0.06	0.54	-0.09	0.10	0.40	0.00	0.07	0.96
AgResource	0.09	0.31	0.78	0.04	0.25	0.87	-0.08	0.22	0.71	0.00	0.22	1.00
AgriVisor (aggressive cash)	-0.10	0.16	0.55	-0.15	0.17	0.39	-0.27	0.22	0.24	-0.19	0.18	0.31
AgriVisor (aggressive hedge)	-0.01	0.17	0.94	-0.06	0.12	0.61	-0.19	0.16	0.28	-0.10	0.11	0.36
AgriVisor (basic cash)	-0.10	0.16	0.56	-0.15	0.16	0.38	-0.27	0.21	0.23	-0.19	0.17	0.29
AgriVisor (basic hedge)	-0.05	0.17	0.78	-0.10	0.13	0.47	-0.22	0.18	0.24	-0.14	0.12	0.27
Allendale (futures only)	0.14	0.08	0.12	0.09	0.14	0.53	-0.03	0.18	0.86	0.05	0.17	0.77
Brock (cash only)	-0.03	0.07	0.72	-0.08	0.10	0.48	-0.20	0.17	0.27	-0.12	0.14	0.42
Brock (hedge)	0.06	0.07	0.44	0.01	0.12	0.94	-0.11	0.18	0.55	-0.03	0.16	0.85
Freese-Notis	0.13	0.12	0.30	0.08	0.08	0.31	-0.04	0.12	0.74	0.04	0.10	0.70
Pro Farmer (cash only)	-0.03	0.11	0.77	-0.08	0.05	0.12	-0.21	0.12	0.12	-0.12	0.06	0.05
Pro Farmer (hedge)	0.01	0.16	0.96	-0.04	0.09	0.66	-0.16	0.12	0.21	-0.08	0.08	0.34
Stewart-Peterson Advisory Reports	-0.08	0.07	0.30	-0.13	0.10	0.25	-0.25	0.17	0.16	-0.17	0.14	0.27
Top Farmer Intelligence	-0.25	0.11	0.04	-0.30	0.18	0.12	-0.43	0.21	0.08	-0.34	0.21	0.14

Panel C. SRW Revenues

Market Advisory Program	24 Month Benchmark			16 Month Benchmark			Average Harvest Price			Farmer Benchmark		
	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value
	---$ per acre---			---$ per acre---			---$ per acre---			---$ per acre---		
Ag Review	-5.35	11.15	0.64	-2.67	8.93	0.77	-8.60	8.88	0.36	-5.04	8.25	0.56
AgLine by Doane (cash only)	-1.86	6.17	0.77	0.83	3.66	0.83	-5.10	3.99	0.23	-1.55	3.29	0.65
AgResource	-3.81	14.99	0.81	-1.12	13.97	0.94	-7.05	12.84	0.60	-3.50	13.59	0.80
AgriVisor (aggressive cash)	-7.50	8.32	0.39	-4.81	7.70	0.55	-10.74	7.67	0.19	-7.19	7.77	0.38
AgriVisor (aggressive hedge)	-5.57	8.95	0.55	-2.89	7.03	0.69	-8.81	7.43	0.27	-5.26	6.89	0.46
AgriVisor (basic cash)	-9.37	8.60	0.30	-6.68	8.12	0.43	-12.61	8.17	0.16	-9.06	8.25	0.30
AgriVisor (basic hedge)	-7.56	8.81	0.41	-4.88	7.02	0.50	-10.81	7.71	0.19	-7.25	6.95	0.32
Allendale (futures only)	3.07	5.96	0.62	5.75	8.00	0.49	-0.18	7.33	0.98	3.38	8.40	0.70
Brock (cash only)	0.58	1.58	0.72	3.27	3.70	0.40	-2.66	4.42	0.56	0.89	4.53	0.85
Brock (hedge)	3.08	3.01	0.33	5.77	5.44	0.32	-0.16	6.79	0.98	3.39	6.40	0.61
Freese-Notis	1.27	4.42	0.78	3.96	3.17	0.24	-1.97	4.36	0.66	1.58	3.74	0.68
Pro Farmer (cash only)	-4.65	4.15	0.29	-1.97	2.23	0.40	-7.89	2.72	0.02	-4.34	1.74	0.03
Pro Farmer (hedge)	-3.06	5.42	0.59	-0.37	3.66	0.92	-6.30	4.58	0.20	-2.75	3.30	0.43
Stewart-Peterson Advisory Reports	-5.60	2.80	0.08	-2.91	3.25	0.39	-8.84	5.08	0.12	-5.29	4.24	0.24
Top Farmer Intelligence	-12.77	5.02	0.03	-10.09	5.56	0.10	-16.02	5.73	0.02	-12.46	6.03	0.07

Panel D. HRW Revenues

Market Advisory Program	24 Month Benchmark			16 Month Benchmark			Average Harvest Price			Farmer Benchmark		
	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value	Average Difference	Standard Error	Two-tail p-value
	---$ per acre---			---$ per acre---			---$ per acre---			---$ per acre---		
Ag Review	-1.45	6.15	0.82	-0.99	3.89	0.80	-4.71	4.19	0.29	-1.85	3.46	0.61
AgLine by Doane (cash only)	0.15	3.88	0.97	0.60	1.95	0.77	-3.12	3.26	0.36	-0.26	2.12	0.91
AgResource	-0.40	10.27	0.97	0.06	9.12	1.00	-3.67	8.38	0.67	-0.80	8.29	0.93
AgriVisor (aggressive cash)	-4.98	5.15	0.36	-4.53	4.77	0.37	-8.25	5.87	0.19	-5.38	4.62	0.27
AgriVisor (aggressive hedge)	-3.75	5.84	0.54	-3.29	4.29	0.46	-7.01	5.32	0.22	-4.15	3.54	0.27
AgriVisor (basic cash)	-5.37	5.47	0.35	-4.92	4.81	0.33	-8.64	5.89	0.18	-5.78	4.45	0.23
AgriVisor (basic hedge)	-4.79	5.86	0.44	-4.34	4.44	0.35	-8.06	5.65	0.19	-5.19	3.77	0.20
Allendale (futures only)	6.43	4.29	0.17	6.89	5.92	0.27	3.16	6.40	0.63	6.03	6.23	0.36
Brock (cash only)	-1.79	2.38	0.47	-1.34	2.78	0.64	-5.06	4.62	0.30	-2.20	3.82	0.58
Brock (hedge)	1.62	2.66	0.56	2.08	3.63	0.58	-1.64	5.31	0.76	1.22	4.91	0.81
Freese-Notis	1.75	3.85	0.66	2.21	2.28	0.36	-1.51	3.85	0.70	1.35	3.15	0.68
Pro Farmer (cash only)	-3.35	3.23	0.33	-2.90	1.48	0.08	-6.62	3.50	0.09	-3.76	1.97	0.09
Pro Farmer (hedge)	-2.35	4.19	0.59	-1.89	2.42	0.45	-5.62	3.53	0.15	-2.75	2.65	0.33
Stewart-Peterson Advisory Reports	-3.34	2.71	0.25	-2.89	2.98	0.36	-6.61	4.79	0.20	-3.74	4.11	0.39
Top Farmer Intelligence	-8.47	3.65	0.05	-8.02	4.55	0.11	-11.74	5.39	0.06	-8.88	4.83	0.10

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Table 88. Ten-Year Average and Standard Deviation for 15 Market Advisory Programs, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, 1995-2004 Crop Years, Commercial Storage Costs

Market Advisory Program	SRW		HRW		SRW Revenue		HRW Revenue	
	Average Net Advisory Price	Standard Deviation of Net Advisory Price	Average Net Advisory Price	Standard Deviation of Net Advisory Price	Average Revenue	Standard Deviation of Revenue	Average Revenue	Standard Deviation of Revenue
	---$/bushel---		---$/bushel---		---$/acre---		---$/acre---	
Ag Review	3.00	0.89	2.80	0.51	161	35	107	12
AgLine by Doane (cash only)	3.05	0.75	2.79	0.46	165	30	108	19
AgResource	3.05	1.03	2.82	0.60	163	41	111	34
AgriVisor (aggressive cash)	2.93	0.61	2.88	0.60	159	29	110	16
AgriVisor (aggressive hedge)	2.98	0.75	2.82	0.63	161	33	108	17
AgriVisor (basic cash)	2.89	0.59	2.86	0.63	157	31	109	16
AgriVisor (basic hedge)	2.93	0.69	2.82	0.65	159	33	107	16
Allendale (futures only)	3.08	0.30	2.98	0.29	170	28	119	36
Brock (cash only)	3.06	0.44	2.80	0.39	167	26	109	19
Brock (hedge)	3.09	0.39	2.88	0.43	170	31	112	22
Freese-Notis	3.09	0.66	2.84	0.53	168	29	109	16
Pro Farmer (cash only)	2.98	0.61	2.72	0.35	162	26	106	19
Pro Farmer (hedge)	3.01	0.64	2.69	0.33	163	29	105	22
Stewart-Peterson Advisory Reports	2.95	0.49	2.76	0.46	161	29	108	24
Top Farmer Intelligence	2.80	0.41	2.69	0.37	154	28	105	23
Minimum	2.80	0.30	2.69	0.29	154	26	105	12
Maximum	3.09	1.03	2.98	0.65	170	41	119	36
Range	0.29	0.73	0.29	0.35	16	15	14	24
Randomly Selected Program	2.99	0.62	2.81	0.48	163	31	109	21
Market Benchmarks								
24-month average	3.05 †	0.45 †	2.84 †	0.23 †	166 †	25 †	110	22
16-month average	3.02 †	0.60 †	2.80	0.32	164 †	28 †	107	18
Harvest Price	3.14	0.66	2.86 †	0.30 †	170 †	21 †	110 †	19 †
Farmer Benchmark	3.07	0.64	2.83 †	0.34 †	166 †	26 †	108	17

Note: Results are shown only for the 15 advisory programs included in all 10 years of the AgMAS corn and soybean evaluations. Net advisory prices and benchmark prices are stated on a harvest equivalent basis. Consequently, advisory and benchmark revenue are also stated on a harvest equivalent basis. A crop year is a two-year window from September of the year previous to harvest through August of the year after harvest. The average price and standard deviation of a randomly selected advisory program are computed as the average across the average prices and standard deviations, respectively, for the 15 individual programs. The dagger symbol indicates that a benchmark dominates the randomly selected program in terms of average price and risk.

Table 89. Predictability of Market Advisory Program Performance by Winner and Loser Categories Between Pairs of Adjacent Crop Years, Soft Red Winter and Hard Red Winter Wheat Prices, 1995-2004 Crop Years

Year t	Year t+1		SRW Winner t+1	SRW Loser t+1	Two-tail p-value for Fisher's Exact Test		HRW Winner t+1	HRW Loser t+1	Two-tail p-value for Fisher's Exact Test	
			---number of services---				---number of services---			
1995	1996	Winner t	6	5		Winner t	7	4		
		Loser t	5	6	1.00	Loser t	4	7	0.39	
1996	1997	Winner t	4	6		Winner t	5	5		
		Loser t	6	3	0.37	Loser t	5	4	1.00	
1997	1998	Winner t	9	1		Winner t	9	1		
		Loser t	1	9	0.00	**	Loser t	1	9	0.00	**
1998	1999	Winner t	4	6		Winner t	4	6		
		Loser t	6	3	0.37	Loser t	6	3	0.37	
1999	2000	Winner t	4	5		Winner t	6	3		
		Loser t	5	4	1.00	Loser t	3	6	0.35	
2000	2001	Winner t	6	3		Winner t	5	4		
		Loser t	3	5	0.35	Loser t	4	4	1.00	
2001	2002	Winner t	3	7		Winner t	5	5		
		Loser t	7	2	0.07	Loser t	5	4	1.00	
2002	2003	Winner t	6	4		Winner t	5	5		
		Loser t	4	6	0.66	Loser t	5	5	1.00	
2003	2004	Winner t	7	3		Winner t	6	4		
		Loser t	3	7	0.18	Loser t	4	6	0.66	
1995-2004		Winner t	49	40		Winner t	52	37		
Pooled		Loser t	40	45	0.36	Loser t	37	48	0.07	

Note: The selection strategy consists of ranking services by pricing performance (net advisory price and return result in the same rankings) in the first year of the pair (e.g., *t* = 1995) and then forming two groups of programs: "winners" are those services in the top half of the rankings and "losers" are services in the bottom half. Next, the same services are ranked by pricing performance for the second year of the pair (e.g., *t+1* = 1996), and again divided into "winners" and "losers." For a given comparison, advisory services must fall in one of the following categories: winner *t*-winner *t+1*, winner *t*-loser *t+1*, loser *t*-winner *t+1*, loser *t*-loser *t+1*. The odds ratio is the ratio of the odds of a winning service in *t* being a winning service in *t+1* to the odds of a losing service in *t* being a winning service in *t+1*. Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 90. Predictability of Market Advisory Program Performance by Winner and Loser Categories Between Pairs of Adjacent Crop Years, Soft Red Winter and Hard Red Winter Wheat Prices, 1995-2004 Crop Years

Year *t*	Year *t+1*		SRW Winner *t+1*	SRW Loser t+1	Two-tail *p*-value for Fisher's Exact Test		HRW Winner *t+1*	HRW Loser t+1	Two-tail *p*-value for Fisher's Exact Test	
			---%---				---%---			
1995	1996	Winner *t*	55	45		Winner *t*	64	36		
		Loser *t*	45	55	1.00	Loser *t*	36	64	0.39	
1996	1997	Winner *t*	40	60		Winner *t*	50	50		
		Loser *t*	67	33	0.37	Loser *t*	56	44	1.00	
1997	1998	Winner *t*	90	10		Winner *t*	90	10		
		Loser *t*	10	90	0.00 **	Loser *t*	10	90	0.00	**
1998	1999	Winner *t*	40	60		Winner *t*	40	60		
		Loser *t*	67	33	0.37	Loser *t*	67	33	0.37	
1999	2000	Winner *t*	44	56		Winner *t*	67	33		
		Loser *t*	56	44	1.00	Loser *t*	33	67	0.35	
2000	2001	Winner *t*	67	33		Winner *t*	56	44		
		Loser *t*	38	63	0.35	Loser *t*	50	50	1.00	
2001	2002	Winner *t*	30	70		Winner *t*	50	50		
		Loser *t*	78	22	0.07	Loser *t*	56	44	1.00	
2002	2003	Winner *t*	60	40		Winner *t*	50	50		
		Loser *t*	40	60	0.66	Loser *t*	50	50	1.00	
2003	2004	Winner *t*	70	30		Winner *t*	60	40		
		Loser *t*	30	70	0.18	Loser *t*	40	60	0.66	
1995-2004 Pooled		Winner *t*	55	45		Winner *t*	58	42		
		Loser *t*	47	53	0.36	Loser *t*	44	56	0.07	

Note: The selection strategy consists of ranking programs by net advisory price in the first year of the pair (e.g., *t* = 1995) and then forming two groups of programs: "winners" are those services in the top half of the rankings and "losers" are services in the bottom half. Next, the same programs are ranked by net advisory price for the second year of the pair (e.g., *t+1* = 1996), and again divided into "winners" and "losers." For a given comparison, advisory programs must fall in one of the following categories: winner *t*-winner *t+1*, winner t-loser *t+1*, loser *t*-winner *t+1*, loser *t*-loser *t+1*. If advisory program performance is unpredictable, approximately the same counts will be found in each of the four combinations. Fisher's Exact Test is the appropriate statistical test because both row and column totals are pre-determined in the 2 x 2 contingency table formed on the basis of winner and loser counts. Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 91. Predictability of Market Advisory Program Ranks Between Adjacent Pairs of Crop Years, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price, 1995-2004 Crop Years, Commercial Storage Costs

Year t	Year t+1		Rank Correlation	
			Soft Red Winter Wheat	**Hard Red Winter Wheat**
1995	1996	Correlation	0.30	0.48 *
		z-statistic	1.39	2.23
		Two-tail p-value	0.16	0.03
1996	1997	Correlation	-0.19	0.04
		z-statistic	-0.84	0.17
		Two-tail p-value	0.40	0.87
1997	1998	Correlation	0.86 **	0.84 **
		z-statistic	3.84	3.75
		Two-tail p-value	0.00	0.00
1998	1999	Correlation	-0.24	-0.19
		z-statistic	-1.03	-0.82
		Two-tail p-value	0.30	0.41
1999	2000	Correlation	-0.14	0.10
		z-statistic	-0.57	0.41
		Two-tail p-value	0.57	0.68
2000	2001	Correlation	0.36	-0.03
		z-statistic	1.47	-0.11
		Two-tail p-value	0.14	0.91
2001	2002	Correlation	-0.61 **	-0.25
		z-statistic	-2.68	-1.09
		Two-tail p-value	0.01	0.27
2002	2003	Correlation	0.45 *	0.18
		z-statistic	2.02	0.82
		Two-tail p-value	0.04	0.41
2003	2004	Correlation	0.43	-0.05
		z-statistic	1.92	-0.21
		Two-tail p-value	0.05	0.83
	1995-2004 Average	Correlation	0.13	0.12

Note: Return correlations are based on the 24-month average market benchmark price or revenue, with the return for each service computed as the continuously-compounded rate of return (natural logarithm of the ratio of net advisory price to the benchmark price or revenue). Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 92. Predictability of Market Advisory Program Performance by Quantiles Between Pairs of Adjacent Crop Years, Soft Red Winter and Hard Red Winter Wheat Prices, 1995-2004 Crop Years

Performance Quantile in Year *t*	SRW Average Price in year *t*	SRW Average Price in year *t*+1	SRW 24-Month Average Return in year *t*+1	HRW Average Price in year *t*	HRW Average Price in year *t*+1	HRW 24-Month Average Return in year *t*+1
	---$/bu.---		---percent---	---$/bu.---		---percent---
Top Third	3.32	2.92	-3.4	3.37	2.96	-3.0
Middle Third	2.96	2.85	-5.6	2.98	2.91	-3.9
Bottom Third	2.62	2.87	-5.6	2.64	2.88	-5.2
Top Third minus Bottom Third						
Average	0.70	0.06	2.2	0.73	0.08	2.2
t-statistic	N/A	0.51	0.45	N/A	0.91	0.68
Two-tail *p*-value	N/A	0.62	0.66	N/A	0.39	0.52
Top Fourth	3.37	2.96	-2.3	3.47	2.98	-2.5
Second Fourth	3.05	2.82	-6.6	3.09	2.90	-4.3
Third Fourth	2.84	2.87	-4.9	2.86	2.93	-3.0
Bottom Fourth	2.55	2.86	-5.6	2.55	2.84	-6.6
Top Fourth minus Bottom Fourth						
Average	0.82	0.09	3.3	0.91	0.14	4.1
t-statistic	N/A	0.72	0.61	N/A	1.34	1.14
Two-tail *p*-value	N/A	0.49	0.56	N/A	0.22	0.29
Top 2 Programs	3.55	2.95	-3.0	3.63	2.99	-3.2
Bottom 2 Programs	2.40	2.80	-8.6	2.40	2.81	-7.8
Top 2 minus Bottom 2						
Average	1.15	0.15	5.5	1.22	0.17	4.6
t-statistic	N/A	0.83	0.68	N/A	1.06	0.80
Two-tail *p*-value	N/A	0.43	0.52	N/A	0.32	0.44

Note: The selection strategy consists of sorting programs by net advisory price in the first year of the pair (e.g.,*t* = 1995) and forming groups of programs (thirds, fourths, top two and bottom two). Next, the average net advisory price for each group is computed for the first year of the pair. Then, the average net advisory price of the group formed in the first year is computed for the second year of the pair (e.g., *t*+1 = 1996). Next, the average net advisory price for the second year is averaged across the comparisons. There are a total of nine comparisons (1995 vs. 1996, 1996 vs. 1997, 1997 vs. 1998, 1998 vs. 1999, 1999 vs. 2000, 2000 vs. 2001, 2001 vs. 2002, 2002 vs. 2003, and 2003 vs. 2004), so there are eight degrees of freedom for the *t*-test. Some average differences of the top and bottom groups may not equal the difference of the averages for the groups due to rounding. N/A denotes "Not Applicable." Two stars indicates significance at the one percent level and one star indicates significance at the five percent level

Table 93. Predictability of Market Advisory Program Performance by Quantiles Between Pairs of Adjacent Crop Years, Soft Red Winter and Hard Red Winter Wheat Revenues, 1995-2004 Crop Years

Performance Quantile in Year t	SRW			HRW		
	Average Revenue in year t	Average Revenue in year $t+1$	24-Month Average Return in year $t+1$	Average Revenue in year t	Average Revenue in year $t+1$	24-Month Average Return in year $t+1$
	---$/acre.---		---percent---	---$/acre.---		---percent---
Top Third	179	162	-3.4	118	108	-3.0
Middle Third	160	159	-5.6	105	107	-3.9
Bottom Third	141	160	-5.6	93	105	-5.2
Top Third minus Bottom Third						
Average	37.48	2.39	2.2	24.58	3.16	2.2
t-statistic	N/A	0.40	0.45	N/A	0.89	0.68
Two-tail p-value	N/A	0.70	0.66	N/A	0.40	0.52
Top Fourth	182	164	-2.3	120	109	-2.5
Second Fourth	164	157	-6.6	108	106	-4.3
Third Fourth	153	161	-4.9	101	108	-3.0
Bottom Fourth	138	160	-5.6	91	104	-6.6
Top Fourth minus Bottom Fourth						
Average	44.09	4.21	3.3	29.69	5.72	4.1
t-statistic	N/A	0.62	0.61	N/A	1.46	1.14
Two-tail p-value	N/A	0.55	0.56	N/A	0.18	0.29
Top 2 Programs	191	164	-3.0	128	110	-3.2
Bottom 2 Programs	130	157	-8.6	86	103	-7.8
Top 2 minus Bottom 2						
Average	61.78	6.79	5.5	42.15	7.69	4.6
t-statistic	N/A	0.73	0.68	N/A	1.28	0.80
Two-tail p-value	N/A	0.48	0.52	N/A	0.24	0.44

Note: The selection strategy consists of sorting programs by net advisory revenue in the first year of the pair (e.g., t = 1995) and forming groups of programs (thirds, fourths, top two and bottom two). Next, the average net advisory revenue for each group is computed for the first year of the pair. Then, the average net advisory revenue of the group formed in the first year is computed for the second year of the pair (e.g., t+1 = 1996). Next, the average net advisory revenue for the second year is averaged across the comparisons. There are a total of nine comparisons (1995 vs. 1996, 1996 vs. 1997, 1997 vs. 1998, 1998 vs. 1999, 1999 vs. 2000, 2000 vs. 2001, 2001 vs. 2002, 2002 vs. 2003, and 2003 vs. 2004), so there are eight degrees of freedom for the t-test. Some average differences of the top and bottom groups may not equal the difference of the averages for the groups due to rounding. N/A denotes "Not Applicable." Two stars indicates significance at the one percent level and one star indicates significance at the five percent level

Table 94. Predictability of Market Advisory Program Performance by Quantiles Between Pairs of Non-Overlapping Crop Years, Soft Red Winter and Hard Red Winter Wheat Prices, 1995-2004 Crop Years

	SRW			HRW		
Performance Quantile in Year t	Average Price in year t	Average Price in year $t+2$	24-Month Average Return in year $t+2$	Average Price in year t	Average Price in year $t+2$	24-Month Average Return in year $t+2$
	---\$/bu.---		---percent---	---\$/bu.---		---percent---
Top Third	3.32	2.67	-8.5	3.39	2.75	-5.6
Middle Third	2.92	2.79	-4.0	2.95	2.81	-2.9
Bottom Third	2.56	2.80	-4.2	2.58	2.76	-4.9
Top Third minus Bottom Third						
Average	0.76	-0.13	-5.2	0.82	-0.01	-0.9
t-statistic	N/A	-1.61	-1.53	N/A	-0.09	-0.32
Two-tail p-value	N/A	0.15	0.17	N/A	0.93	0.76
Top Fourth	3.39	2.67	-8.8	3.49	2.70	-7.5
Second Fourth	3.06	2.69	-7.7	3.08	2.82	-2.8
Third Fourth	2.78	2.85	-1.5	2.82	2.79	-3.5
Bottom Fourth	2.50	2.80	-3.4	2.51	2.78	-4.1
Top Fourth minus Bottom Fourth						
Average	0.90	-0.13	-5.4	0.98	-0.08	-3.4
t-statistic	N/A	-1.40	-1.36	N/A	-0.72	-0.73
Two-tail p-value	N/A	0.20	0.21	N/A	0.49	0.49
Top 2 Programs	3.57	2.63	-10.4	3.65	2.68	-8.7
Bottom 2 Programs	2.37	2.80	-3.4	2.34	2.76	-4.2
Top 2 minus Bottom 2						
Average	1.19	-0.17	-7.0	1.31	-0.09	-4.6
t-statistic	N/A	-1.44	-1.53	N/A	-0.64	-0.75
Two-tail p-value	N/A	0.19	0.17	N/A	0.54	0.48

Note: The selection strategy consists of sorting programs by net advisory price in the first year of the pair (e.g.,t = 1995) and forming groups of programs (thirds, fourths, top two and bottom two). Next, the average net advisory price for each group is computed for the first year of the pair. Then, the average net advisory price of the group formed in the first year is computed for the second year of the pair (e.g., $t+1$ = 1996). Next, the average net advisory price for the second year is averaged across the comparisons. There are a total of nine comparisons (1995 vs. 1996, 1996 vs. 1997, 1997 vs. 1998, 1998 vs. 1999, 1999 vs. 2000, 2000 vs. 2001, 2001 vs. 2002, 2002 vs. 2003, and 2003 vs. 2004), so there are eight degrees of freedom for the t-test. Some average differences of the top and bottom groups may not equal the difference of the averages for the groups due to rounding. N/A denotes "Not Applicable." Two stars indicates significance at the one percent level and one star indicates significance at the five percent level

Table 95. Predictability of Market Advisory Program Performance by Quantiles Between Pairs of Non-Overlapping Crop Years, Soft Red Winter and Hard Red Winter Wheat Revenues, 1995-2004 Crop Years

Performance Quantile in Year *t*	SRW			HRW		
	Average Revenue in year *t*	Average Revenue in year *t*+2	24-Month Average Return in year *t*+2	Average Revenue in year *t*	Average Revenue in year *t*+2	24-Month Average Return in year *t*+2
	---$/acre.---		---percent---	---$/acre.---		---percent---
Top Third	173	157	-8.5	118	106	-5.6
Middle Third	152	164	-4.0	103	108	-2.9
Bottom Third	133	165	-4.2	91	107	-4.9
Top Third minus Bottom Third						
Average	40.29	-8.00	-5.2	26.97	-0.56	-0.9
t-statistic	N/A	-1.56	-1.53	N/A	-0.22	-0.32
Two-tail *p*-value	N/A	0.16	0.17	N/A	0.83	0.76
Top Fourth	177	157	-8.8	121	105	-7.5
Second Fourth	159	159	-7.7	107	108	-2.8
Third Fourth	145	168	-1.5	99	108	-3.5
Bottom Fourth	130	165	-3.4	88	107	-4.1
Top Fourth minus Bottom Fourth						
Average	47.75	-7.86	-5.4	32.58	-2.27	-3.4
t-statistic	N/A	-1.37	-1.36	N/A	-0.55	-0.73
Two-tail *p*-value	N/A	0.21	0.21	N/A	0.60	0.49
Top 2 Programs	187	155	-10.4	127	103	-8.7
Bottom 2 Programs	123	164	-3.8	83	108	-4.2
Top 2 minus Bottom 2						
Average	63.72	-8.74	-6.5	44.43	-4.28	-4.6
t-statistic	N/A	-1.24	-1.41	N/A	-0.78	-0.75
Two-tail *p*-value	N/A	0.25	0.20	N/A	0.46	0.48

Note: The selection strategy consists of sorting programs by net advisory revenue in the first year of the pair (e.g., t = 1995) and forming groups of programs (thirds, fourths, top two and bottom two). Next, the average net advisory revenue for each group is computed for the first year of the pair. Then, the average net advisory revenue of the group formed in the first year is computed for the second year of the pair (e.g., t+1 = 1996). Next, the average net advisory revenue for the second year is averaged across the comparisons. There are a total of nine comparisons (1995 vs. 1996, 1996 vs. 1997, 1997 vs. 1998, 1998 vs. 1999, 1999 vs. 2000, 2000 vs. 2001, 2001 vs. 2002, 2002 vs. 2003, and 2003 vs. 2004), so there are eight degrees of freedom for the t-test. Some average differences of the top and bottom groups may not equal the difference of the averages for the groups due to rounding. N/A denotes "Not Applicable." Two stars indicates significance at the one percent level and one star indicates significance at the five percent level

Table 96. Predictability of Market Advisory Program Performance by Winner and Loser Categories Between Pairs of Non-Overlapping Adjacent Crop Years, Soft Red Winter and Hard Red Winter Wheat Prices, 1995-2004 Crop Years

Year t	Year $t+2$		SRW Winner $t+2$	Loser $t+2$	Two-tail p-value for Fisher's Exact Test		HRW Winner $t+2$	Loser $t+2$	Two-tail p-value for Fisher's Exact Test
			---number of services---				---number of services---		
1995	1997	Winner t	3	6		Winner t	4	5	
		Loser t	6	3	0.35	Loser t	5	4	1.00
1996	1998	Winner t	5	5		Winner t	6	4	
		Loser t	5	4	1.00	Loser t	4	5	0.66
1997	1999	Winner t	3	6		Winner t	4	5	
		Loser t	6	3	0.35	Loser t	5	4	1.00
1998	2000	Winner t	7	2		Winner t	6	3	
		Loser t	2	7	0.06	Loser t	3	6	0.35
1999	2001	Winner t	6	3		Winner t	5	4	
		Loser t	3	5	0.35	Loser t	4	4	1.00
2000	2002	Winner t	3	6		Winner t	5	4	
		Loser t	6	2	0.15	Loser t	4	4	1.00
2001	2003	Winner t	2	8		Winner t	5	5	
		Loser t	8	1	0.01 **	Loser t	5	4	1.00
2002	2004	Winner t	6	4		Winner t	7	3	
		Loser t	4	6	0.66	Loser t	3	7	0.18
1995-2004		Winner t	35	40		Winner t	42	33	
Pooled		Loser t	40	31	0.25	Loser t	33	38	0.32

Note: The selection strategy consists of ranking services by pricing performance (net advisory price and return result in the same rankings) in the first year of the pair (e.g., t = 1995) and then forming two groups of programs: "winners" are those services in the top half of the rankings and "losers" are services in the bottom half. Next, the same services are ranked by pricing performance for the second year of the pair (e.g., $t+2$ = 1997), and again divided into "winners" and "losers." For a given comparison, advisory services must fall in one of the following categories: winner t-winner $t+2$, winner t-loser $t+2$, loser t-winner $t+2$, loser t-loser $t+2$. The odds ratio is the ratio of the odds of a winning service in t being a winning service in $t+2$ to the odds of a losing service in t being a winning service in $t+2$. Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 97. Predictability of Market Advisory Program Performance by Winner and Loser Categories Between Pairs of Non-Overlapping Adjacent Crop Years, Soft Red Winter and Hard Red Winter Wheat Prices, 1995-2004 Crop Years

Year t	Year t+2		SRW Winner t+2	SRW Loser t+2	SRW Two-tail p-value for Fisher's Exact Test		HRW Winner t+2	HRW Loser t+2	HRW Two-tail p-value for Fisher's Exact Test
			---%---				---%---		
1995	1997	Winner t	33	67		Winner t	44	56	
		Loser t	67	33	0.35	Loser t	56	44	1.00
1996	1998	Winner t	50	50		Winner t	60	40	
		Loser t	56	44	1.00	Loser t	44	56	0.66
1997	1999	Winner t	33	67		Winner t	44	56	
		Loser t	67	33	0.35	Loser t	56	44	1.00
1998	2000	Winner t	78	22		Winner t	67	33	
		Loser t	22	78	0.06	Loser t	33	67	0.35
1999	2001	Winner t	67	33		Winner t	56	44	
		Loser t	38	63	0.35	Loser t	50	50	1.00
2000	2002	Winner t	33	67		Winner t	56	44	
		Loser t	75	25	0.15	Loser t	50	50	1.00
2001	2003	Winner t	20	80		Winner t	50	50	
		Loser t	89	11	0.01 **	Loser t	56	44	1.00
2002	2004	Winner t	60	40		Winner t	70	30	
		Loser t	44	67	0.66	Loser t	30	70	0.18
1995-2004 Pooled		Winner t	47	53		Winner t	56	44	
		Loser t	56	44	0.25	Loser t	46	54	0.32

Note: The selection strategy consists of ranking services by pricing performance (net advisory price and return result in the same rankings) in the first year of the pair (e.g., t = 1995) and then forming two groups of programs: "winners" are those services in the top half of the rankings and "losers" are services in the bottom half. Next, the same services are ranked by pricing performance for the second year of the pair (e.g., t+2 = 1997), and again divided into "winners" and "losers." For a given comparison, advisory services must fall in one of the following categories: winner t-winner t+2, winner t-loser t+2, loser t-winner t+2, loser t-loser t+2. The odds ratio is the ratio of the odds of a winning service in t being a winning service in t+2 to the odds of a losing service in t being a winning service in t+2. Two stars indicates significance at the one percent level and one star indicates significance at the five percent level.

Table 98. Predictability of Market Advisory Program Performance Between the 1995-1998 and 2000-2004 Crop Years by Groups, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, Commercial Storage Costs

Performance Group in 1995-1998	Soft Red Winter Wheat		Hard Red Winter Wheat		SRW Revenue		HRW Revenue	
	Average Price 1995-1998	Average Price 2000-2004	Average Price 1995-1998	Average Price 2000-2004	Average Revenue 1995-1998	Average Revenue 2000-2004	Average Revenue 1995-1998	Average Revenue 2000-2004
	---$ per bushel (harvest equivalent)---		---$ per bushel (harvest equivalent)---		---$ per acre (harvest equivalent)---		---$ per acre (harvest equivalent)---	
Top Third	3.39	2.90	3.47	2.91	165	170	110	100
Middle Third	3.22	2.89	3.31	2.90	155	170	107	98
Bottom Third	2.95	2.94	2.91	3.00	140	170	92	102
Top Third minus Bottom Third	0.43	-0.04	0.56	-0.09	25.01	-0.84	17.31	-1.75
Top Fourth	3.41	2.91	3.49	2.88	166	170	109	100
Second Fourth	3.30	2.86	3.39	2.93	158	168	108	99
Third Fourth	3.11	2.94	3.14	2.95	147	172	100	100
Bottom Fourth	2.87	2.92	2.81	2.98	137	171	90	101
Top Fourth minus Bottom Fourth	0.54	-0.01	0.68	-0.09	29.27	-0.60	18.89	-0.94
Top Two Programs	3.44	2.94	3.47	2.93	169	172	112	101
Bottom Two Programs	2.83	2.89	2.79	2.94	136	169	90	100
Top Two minus Bottom Two	0.60	0.05	0.68	-0.01	32.45	2.80	22.39	1.15

Note: Results are shown only for the 15 advisory programs included in all 10 years of the AgMAS winter wheat evaluations. The selection strategy consists of sorting the 15 programs by average net advisory price over 1995-1998 and forming groups of programs (thirds, fourths, top two and bottom two). Next, the average net advisory price for each group is computed for 1995-1998. Then, the average net advisory price of the group formed over 1995-1998 is computed for 2000-2004. Since there is only one pair of observations in each case, statistical tests cannot be applied.

Table 99. Predictability of Market Advisory Program Performance Between the 1995-1999 and 2001-2004 Crop Years by Groups, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, Commercial Storage Costs

Performance Group in 1995-1998	Soft Red Winter Wheat		Hard Red Winter Wheat		SRW Revenue		HRW Revenue	
	Average Price 1995-1999	Average Price 2001-2004	Average Price 1995-1999	Average Price 2001-2004	Average Revenue 1995-1999	Average Revenue 2001-2004	Average Revenue 1995-1999	Average Revenue 2001-2004
	---$ per bushel (harvest equivalent)---		---$ per bushel (harvest equivalent)---		---$ per acre (harvest equivalent)---		---$ per acre (harvest equivalent)---	
Top Third	3.22	3.02	3.32	2.97	164	176	117	101
Middle Third	3.12	2.97	3.13	2.99	157	176	111	100
Bottom Third	2.88	3.07	2.84	3.10	145	179	102	104
Top Third minus Bottom Third	0.34	-0.04	0.48	-0.13	18.86	-3.38	15.80	-2.32
Top Fourth	3.23	3.01	3.35	3.01	164	176	119	101
Second Fourth	3.15	2.97	3.21	2.96	160	175	113	100
Third Fourth	3.04	3.05	3.01	3.05	151	178	106	103
Bottom Fourth	2.82	3.06	2.77	3.06	143	179	100	103
Top Fourth minus Bottom Fourth	0.41	-0.04	0.58	-0.05	21.61	-2.29	18.23	-2.06
Top Two Programs	3.24	3.04	3.40	2.98	166	175	122	101
Bottom Two Programs	2.80	3.02	2.75	3.02	142	177	100	102
Top Two minus Bottom Two	0.45	0.02	0.64	-0.04	24.28	-1.43	21.44	-0.91

Note: Results are shown only for the 15 advisory programs included in all 10 years of the AgMAS winter wheat evaluations. The selection strategy consists of sorting the 15 programs by average net advisory price over 1995-1999 and forming groups of programs (thirds, fourths, top two and bottom two). Next, the average net advisory price for each group is computed for 1995-1999. Then, the average net advisory price of the group formed over 1995-1999 is computed for 2001-2004. Since there is only one pair of observations in each case, statistical tests cannot be applied.

Table 100. Comparison of Average Price or Revenue between Futures and Options Advisory Programs and Cash Only Programs, Soft Red Winter and Hard Red Winter Wheat Net Advisory Price and Revenue, 1995-2004 Crop Years, Commercial Storage Costs

Commodity/ Program Category	Number of Programs	Average Net Advisory Price or Revenue										Average	Standard Error	t-statistic	Two-tail p-value
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004				
		---$ per bushel (harvest equivalent)---													
Soft Red Winter Wheat:															
Futures and Options Programs		3.86	3.85	2.58	2.34	2.64	2.42	2.57	3.01	3.23	3.21	2.97			
Cash Only Programs		3.62	3.91	2.76	2.39	2.62	2.45	2.60	3.13	3.18	3.22	2.99			
Difference		0.24	-0.06	-0.18	-0.06	0.02	-0.03	-0.03	-0.13	0.05	-0.01	-0.02	0.04	-0.52	0.61
		---$ per bushel (harvest equivalent)---													
Hard Red Winter Wheat:															
Futures and Options Programs		3.93	4.11	2.67	2.37	2.64	2.53	2.34	3.24	3.24	3.18	3.02			
Cash Only Programs		3.62	3.81	2.77	2.42	2.55	2.72	2.27	3.50	3.14	3.20	3.00			
Difference		0.31	0.30	-0.10	-0.04	0.09	-0.18	0.07	-0.25	0.10	-0.02	0.03	0.06	0.46	0.66
		---$ per acre (harvest equivalent)---													
SRW Revenue:															
Futures and Options Programs		174	146	168	119	164	140	152	150	216	186	162			
Cash Only Programs		163	149	180	122	162	142	153	157	213	187	163			
Difference		11	-2	-12	-3	1	-2	-2	-6	3	-1	-1	2	-0.65	0.53
		---$ per acre (harvest equivalent)---													
HRW Revenue:															
Futures and Options Programs		86	107	99	121	143	91	96	87	123	99	105			
Cash Only Programs		80	99	102	123	138	98	93	94	119	99	105			
Difference		7	8	-4	-2	5	-7	3	-7	4	-1	1	2	0.37	0.72

Notes: Advisory programs are categorized as "futures and options programs" and "cash only programs" based on the names provided by advisory services. Some cash only programs actually may occasionally recommend futures and options positions. The difference for a given crop year may not equal the differnce for the reported prices or revenues due to rounding.

Table 101: Summary of Assumed Values for Key Variables Used in Simulation of Advisory Program Performance, 1995-2004 Crop Years

Panel A. Expected, May Forecast, and Actual Illinois Soft Red Winter and Kansas Hard Red Winter Whea Yields, 1995 - 2004 Crop Years

	Soft Red Winter Wheat Yields			Hard Red Winter Wheat Yields		
Crop Year	Expected	May	Actual	Expected	May	Actual
	---bushels per acre---			---bushels per acre---		
1995	55.6	57.0	45.0	41.0	20.0	22.0
1996	54.4	41.0	38.0	37.6	23.0	26.0
1997	52.0	50.0	65.0	35.8	26.0	37.0
1998	54.3	54.0	51.0	36.2	37.0	51.0
1999	54.4	52.0	62.0	38.3	43.0	54.0
2000	56.0	55.0	58.0	40.6	47.0	36.0
2001	56.9	54.0	59.0	40.4	31.0	41.0
2002	57.9	60.0	50.0	40.9	31.0	27.0
2003	57.5	56.0	67.0	39.2	33.0	38.0
2004	59.2	62.0	58.0	39.1	39.0	31.0

Panel B. Harvest Definition for Illinois Soft Red Winter and Kansas Hard Red Winter Wheat, 1995 - 2004 Crop Years

	Soft Red Winter Wheat		Hard Red Winter Wheat	
Crop Year	Harvest Mid-Point	Harvest Window	Harvest Mid-Point	Harvest Window
1995	7/5	6/23 - 7/14	7/11	6/29 - 7/20
1996	7/5	6/25 - 7/16	7/2	6/21 - 7/12
1997	7/9	6/27 - 7/18	7/3	6/24 - 7/15
1998	6/26	6/17 - 7/08	6/24	6/15 - 7/06
1999	6/28	6/17 - 7/08	7/6	6/24 - 7/15
2000	6/28	6/19 - 7/10	6/19	6/08 - 6/28
2001	6/25	6/14 - 7/05	6/26	6/15 - 7/06
2002	6/24	6/13 - 7/03	6/26	6/17 - 7/08
2003	6/27	6/18 - 7/09	6/27	6/18 - 7/09
2004	6/22	6/10 - 7/01	6/22	6/10 - 7/01

Table 101: Continued

Panel C. Interest Rates, 1995 - 2004 Crop Years

Crop Year	Illinois Interest Rate	Kansas Interest Rate
	---% per year---	---% per year---
1995	10.20	10.40
1996	9.70	10.00
1997	9.70	10.10
1998	9.40	9.80
1999	9.30	9.80
2000	10.20	10.50
2001	8.00	8.60
2002	7.20	7.90
2003	6.40	7.20
2004	6.60	7.30

Panel D. Harvest Price and CCC Loan Rate for Illinois Soft Red Winter and Kansas Hard Red Winter Wheat, 1995 - 2004 Crop Years

	SRW		HRW	
Crop Year	Harvest Price	CCC Loan Rate	Harvest Price	CCC Loan Rate
	---$ per bushel---		---$ per bushel---	
1995	4.01		4.28	
1996	4.61		5.06	
1997	3.03		2.92	
1998	2.58	2.57	2.60	2.45
1999	2.13	2.61	2.14	2.45
2000	2.35	2.61	2.53	2.45
2001	2.29	2.61	2.66	2.45
2002	2.96	2.61	2.99	2.69
2003	2.94	2.59	2.67	2.71
2004	3.25	2.56	3.38	2.71

Figure 1. Distribution of Track Record Lengths for Wheat Market Advisory Programs, 1995-2004
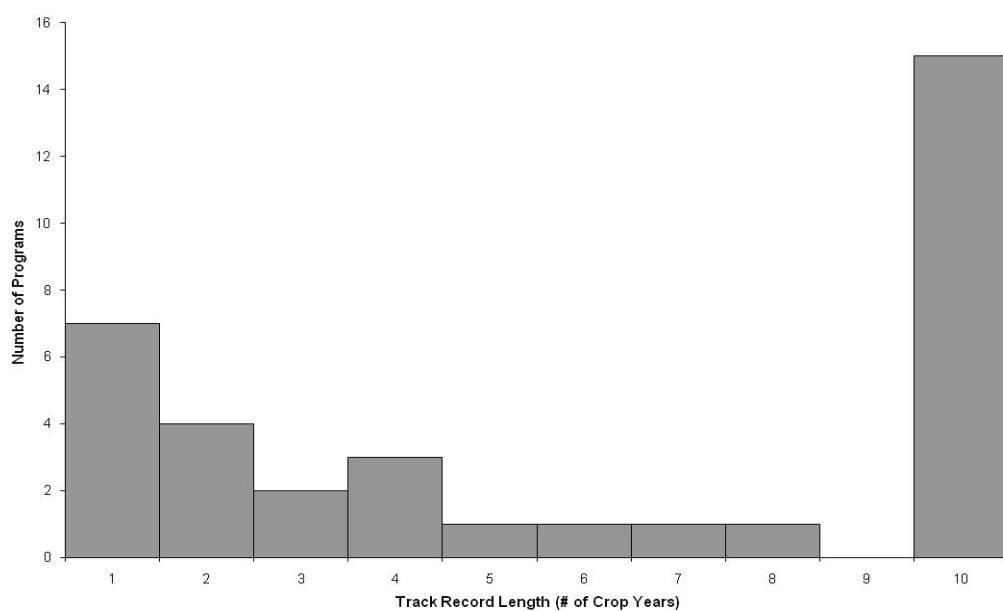
Figure 2. Marketing Profile Examples for Advisory Programs in Soft Red Winter Wheat, 2004 Crop Year

Panel A. Conservative Program
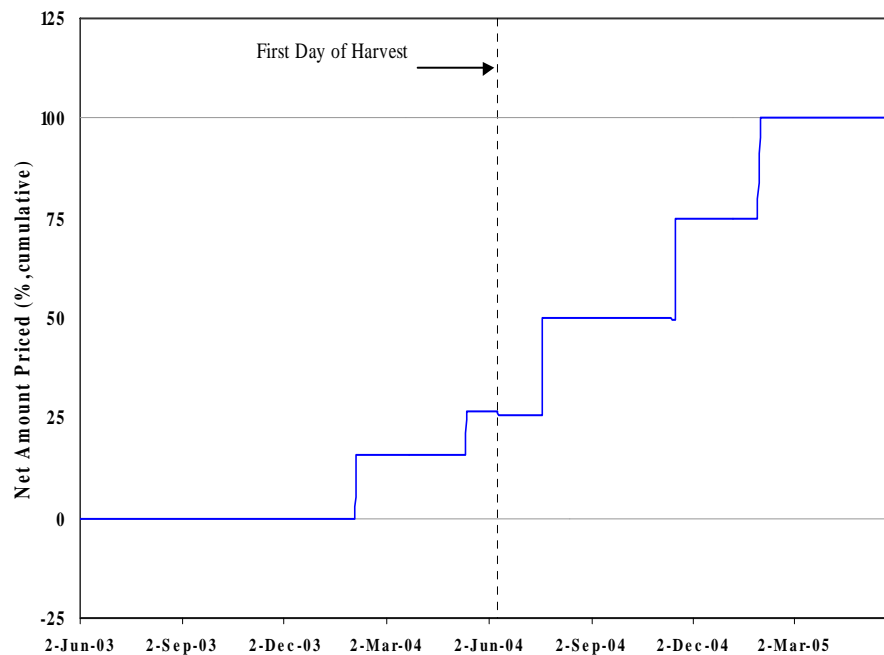
Panel B: Aggressive Program
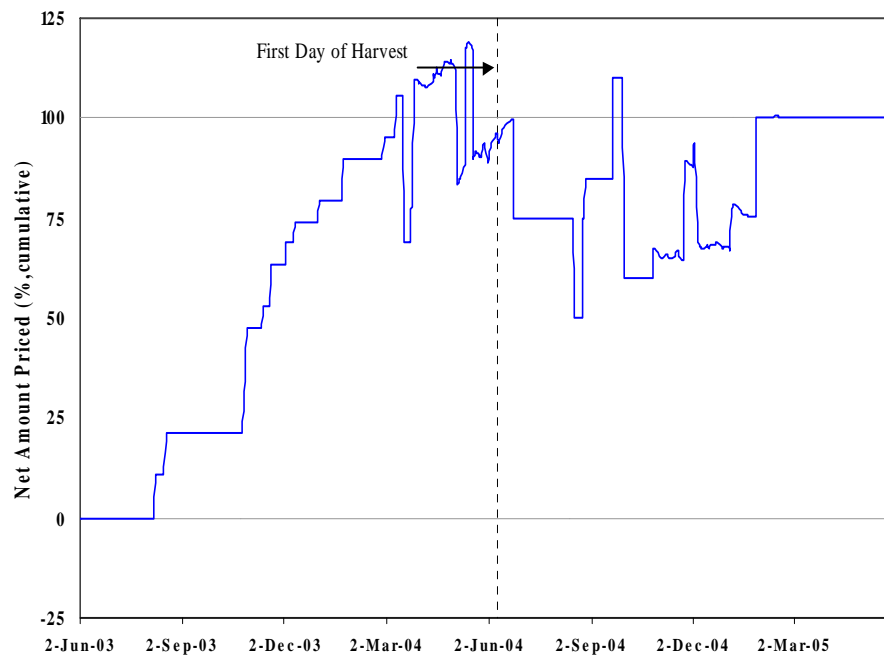
Figure 3. Average Marketing Profiles for Advisory Programs, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years

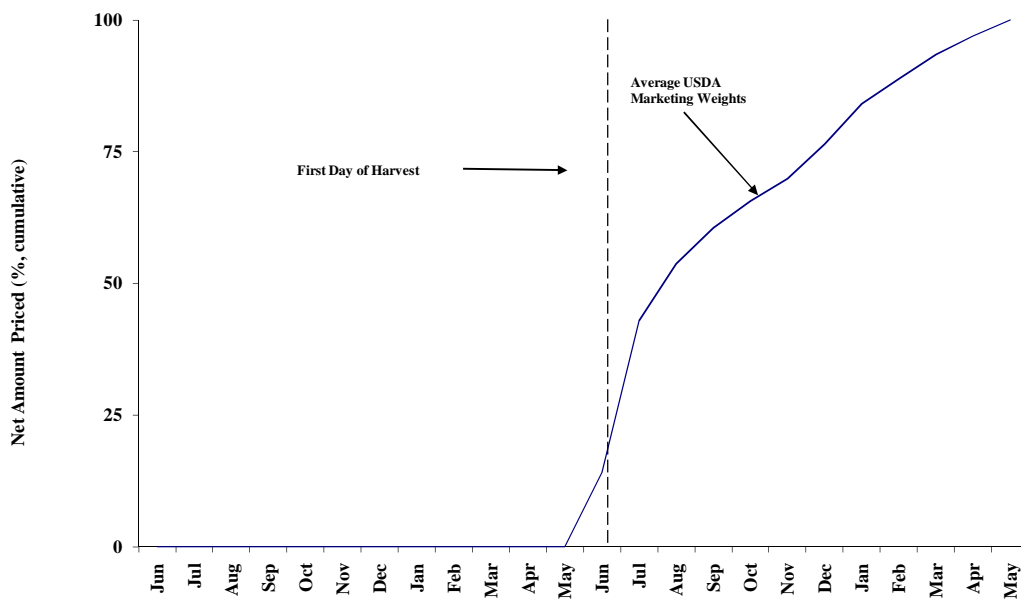**Panel A: Soft Red Winter Wheat**

Average

Panel B: Hard Red Winter Wheat

Average
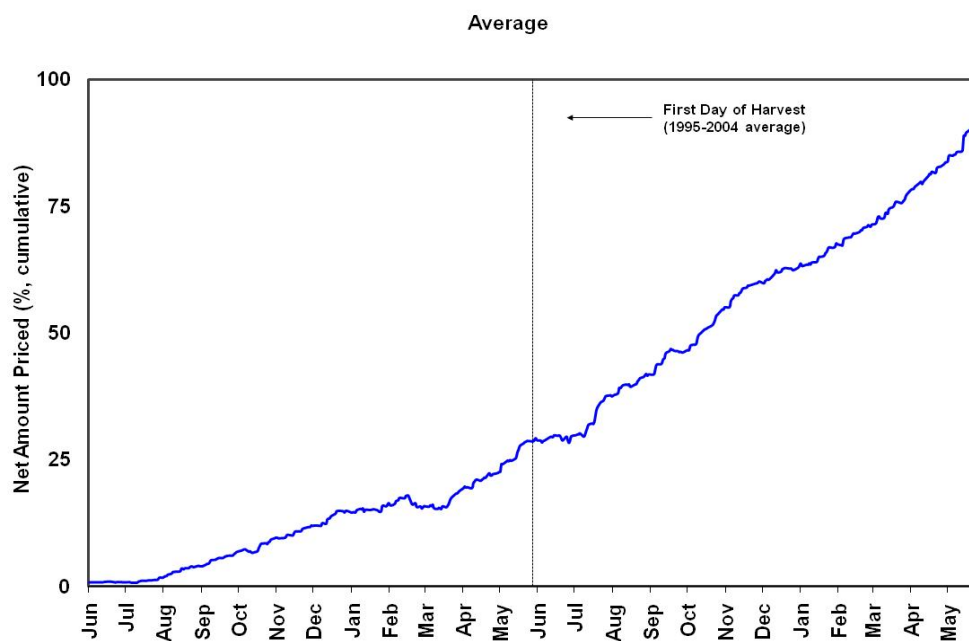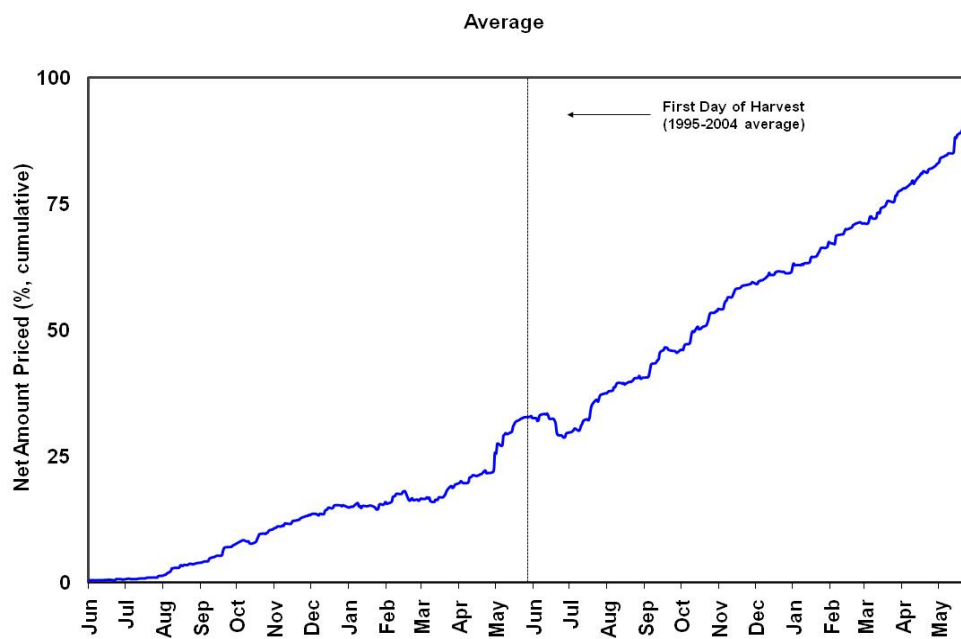
Figure 4. West Southwest Illinois Crop Reporting District

Figure 5. Southwest Kansas Crop Reporting District
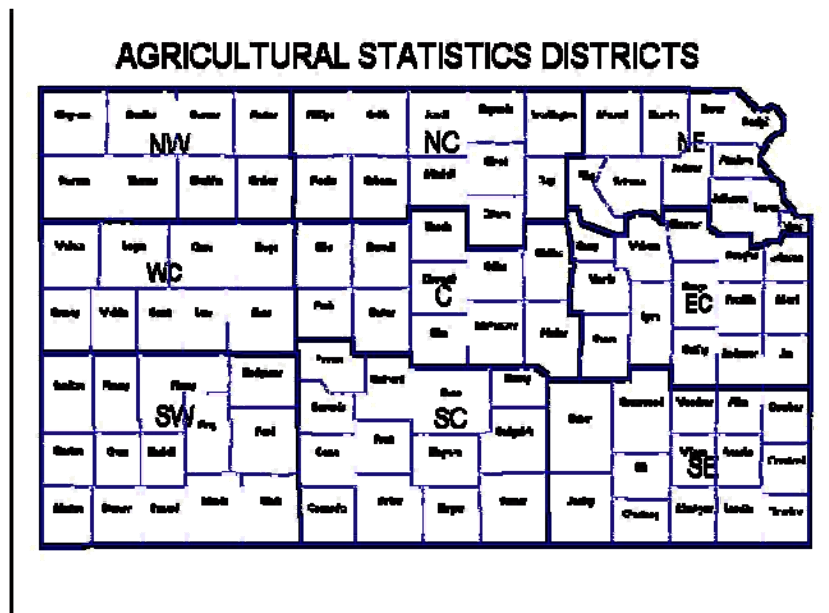
Figure 6. West Southwest Illinois Price Reporting District
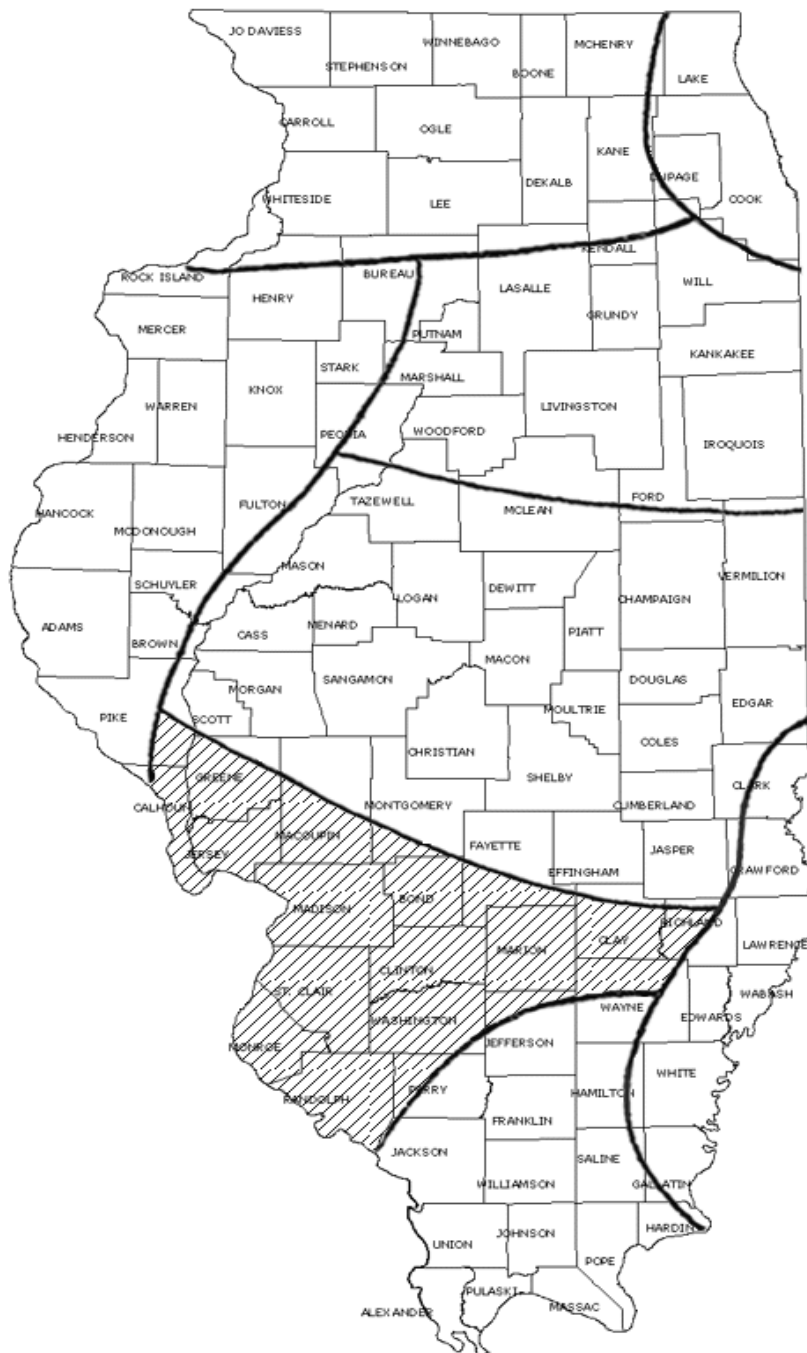
Figure 7. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 1995 Crop Year, Commercial Storage Costs
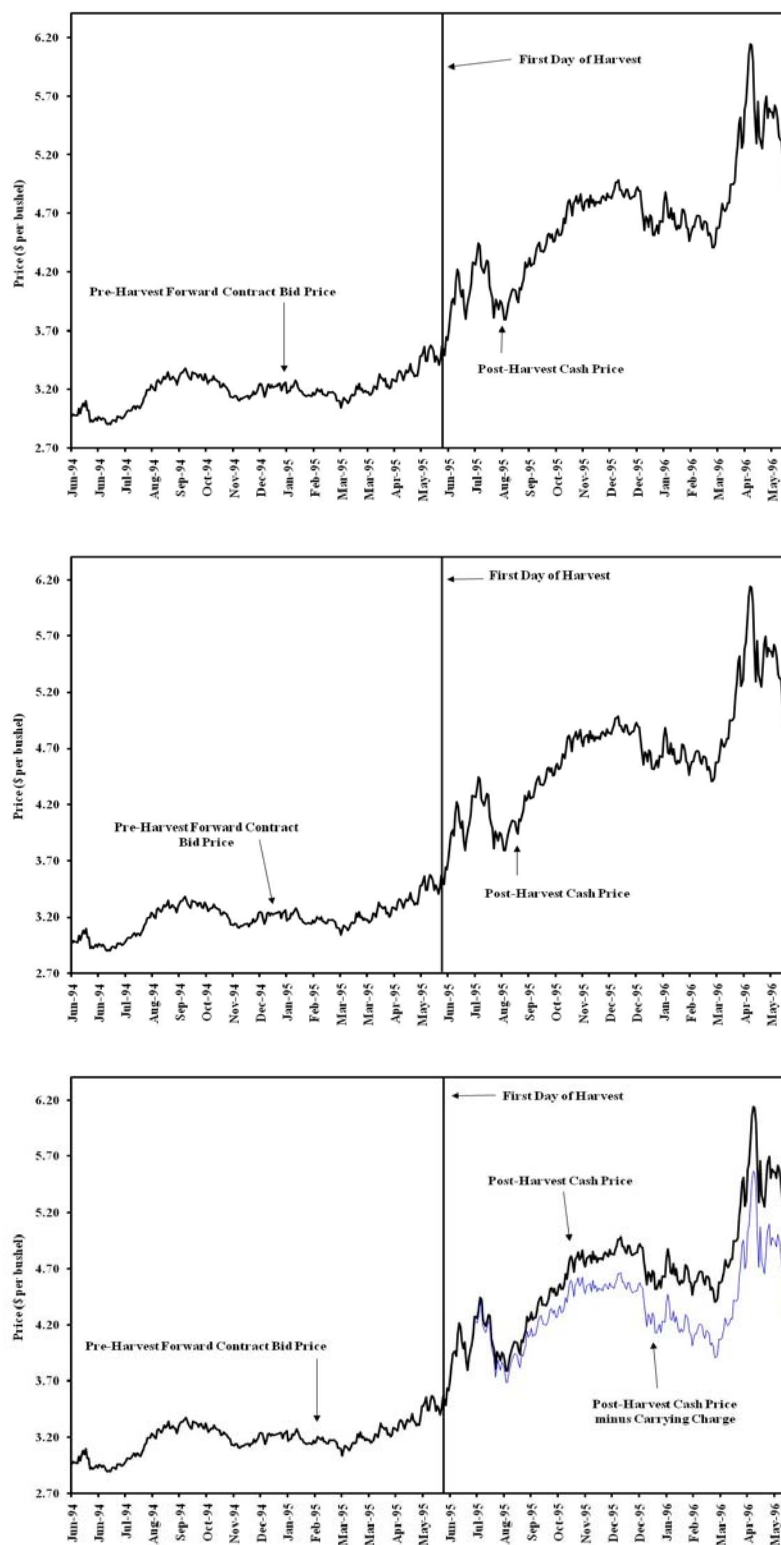
Figure 8. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 1996 Crop Year, Commercial Storage Costs
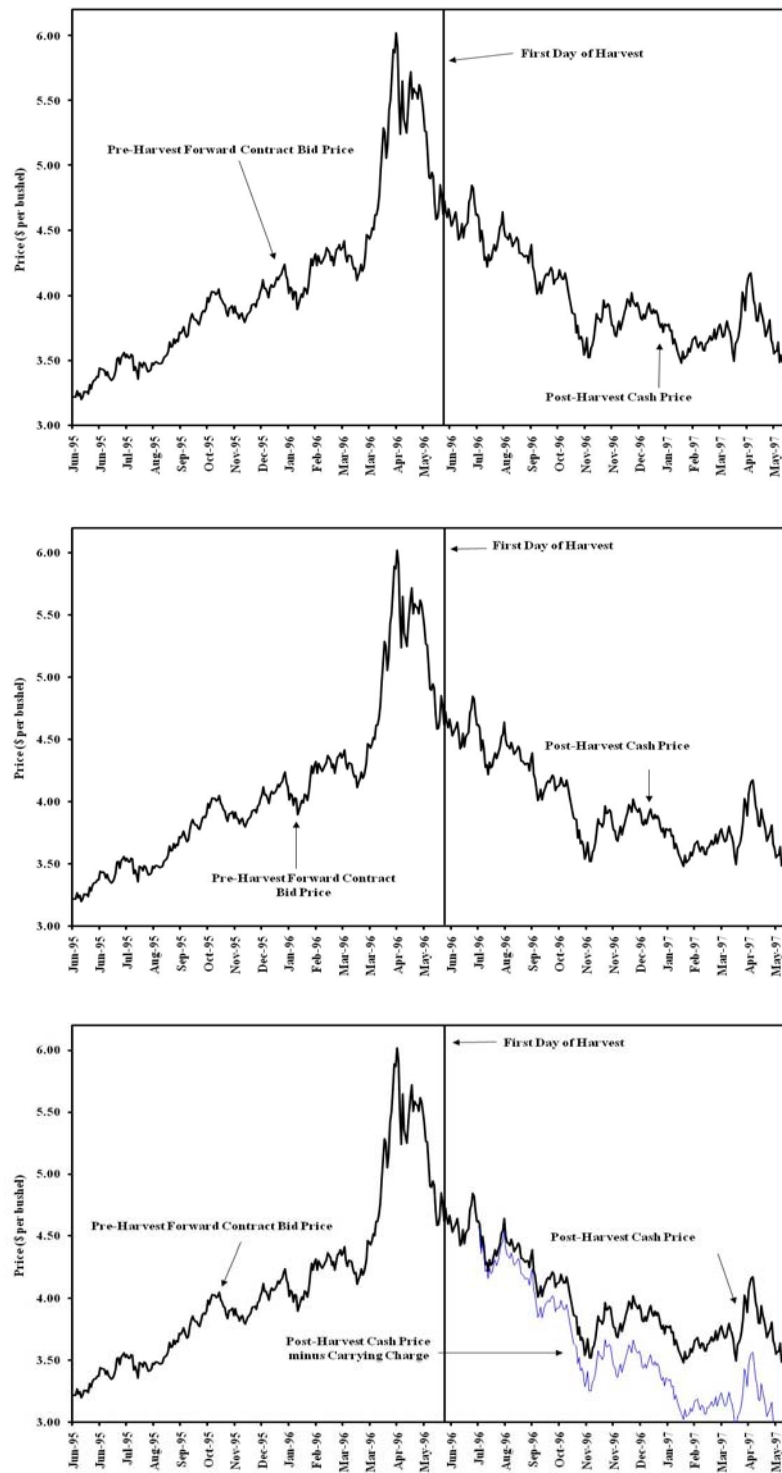
Figure 9. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 1997 Crop Year, Commercial Storage Costs
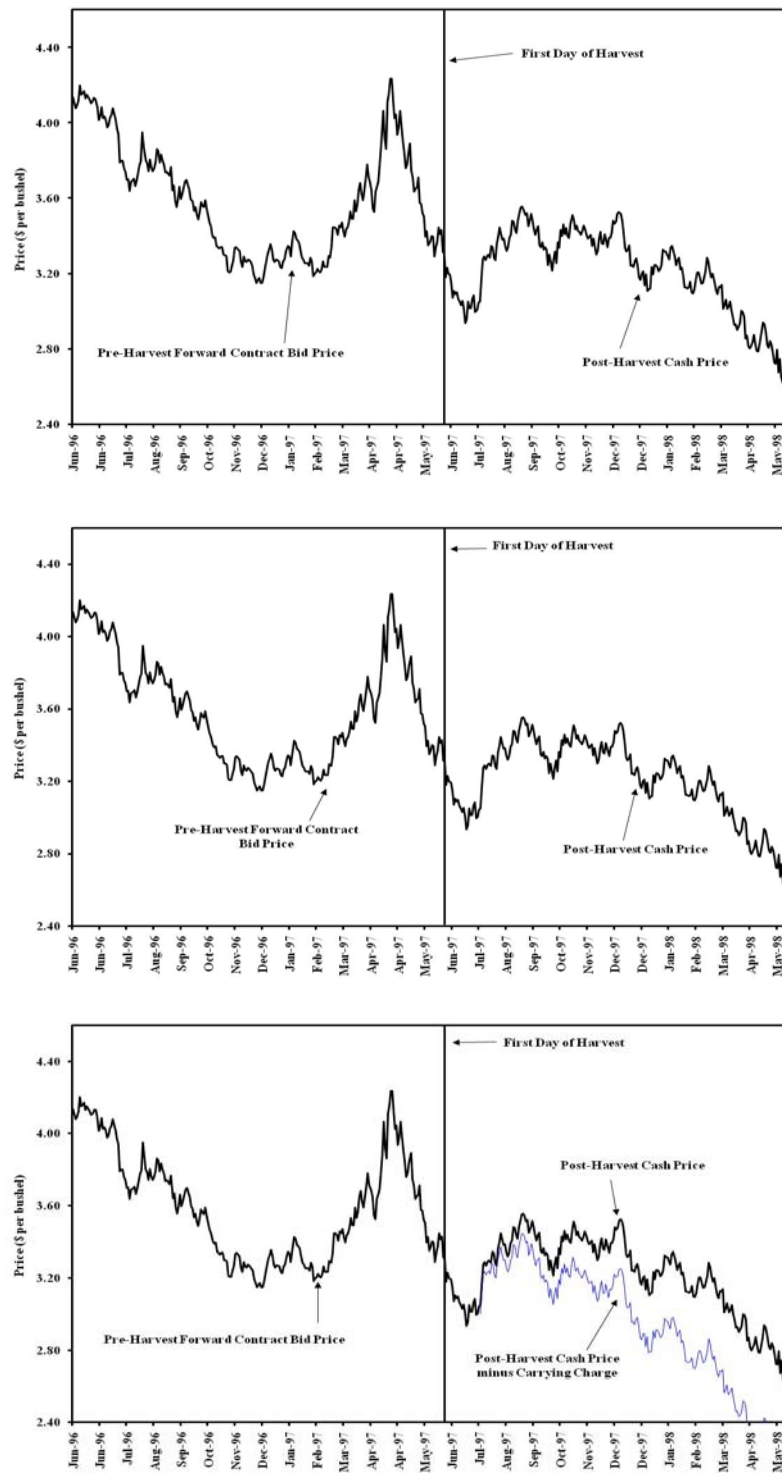
Figure 10. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 1998 Crop Year, Commercial Storage Costs
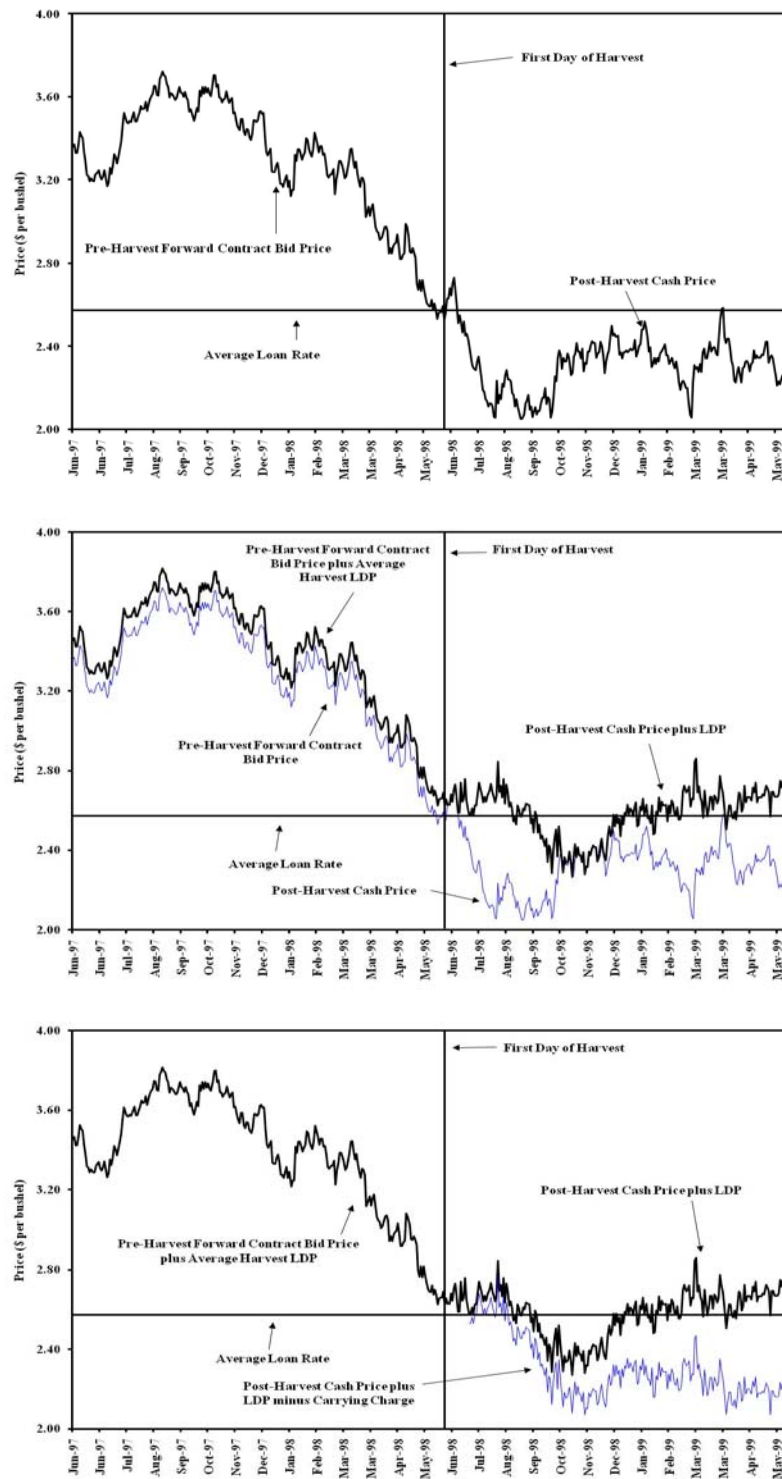
Figure 11. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 1999 Crop Year, Commercial Storage Costs
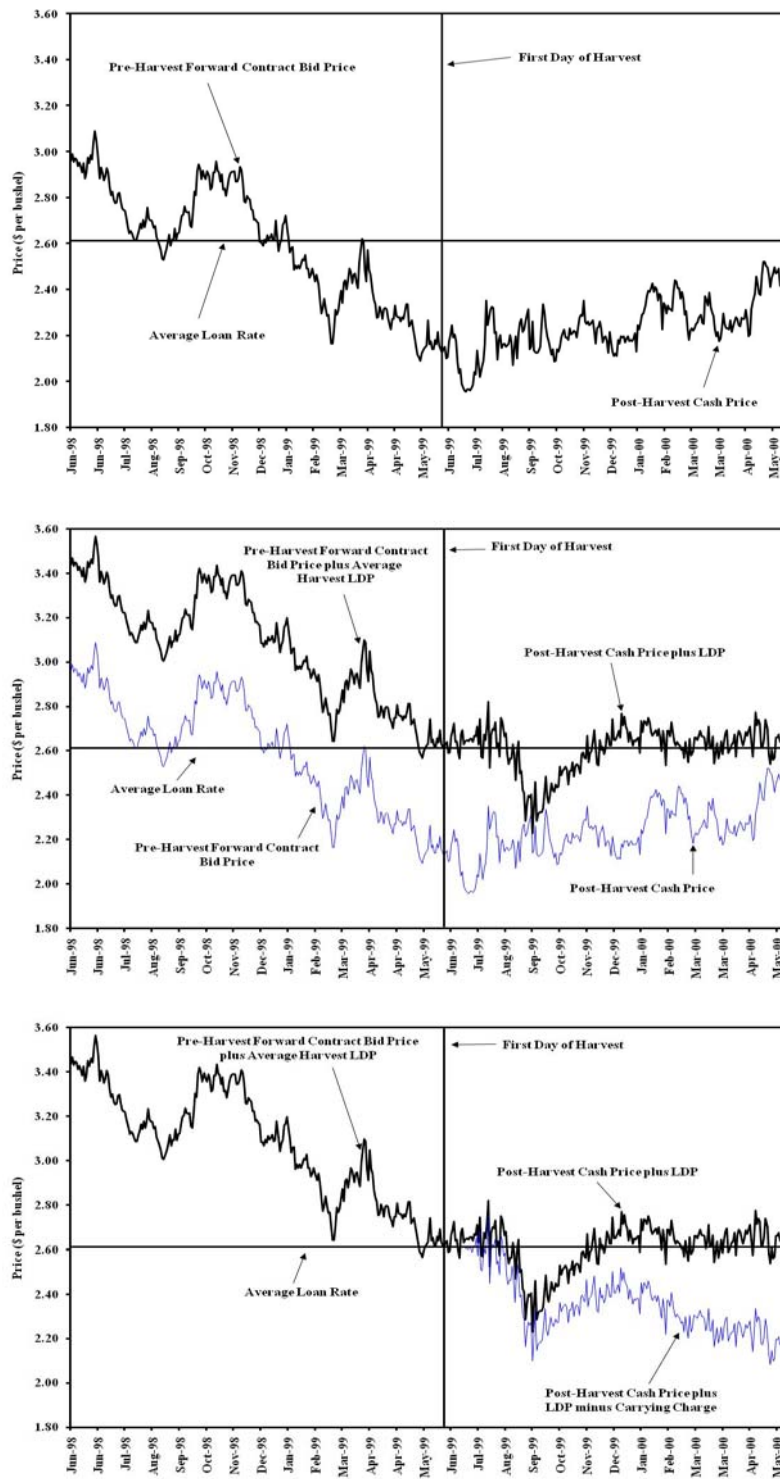
Figure 12. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 2000 Crop Year, Commercial Storage Costs
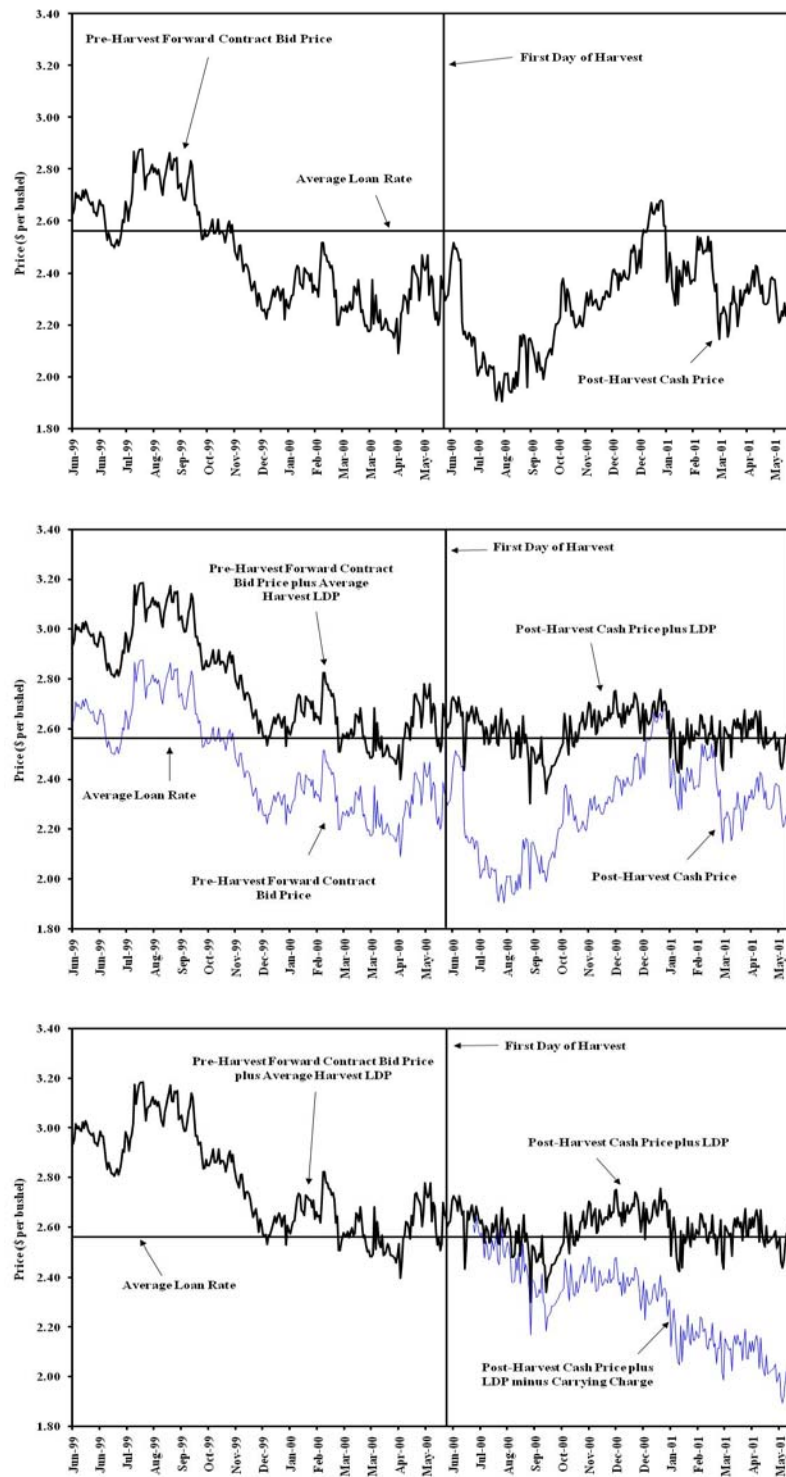
Figure 13. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 2001 Crop Year, Commercial Storage Costs
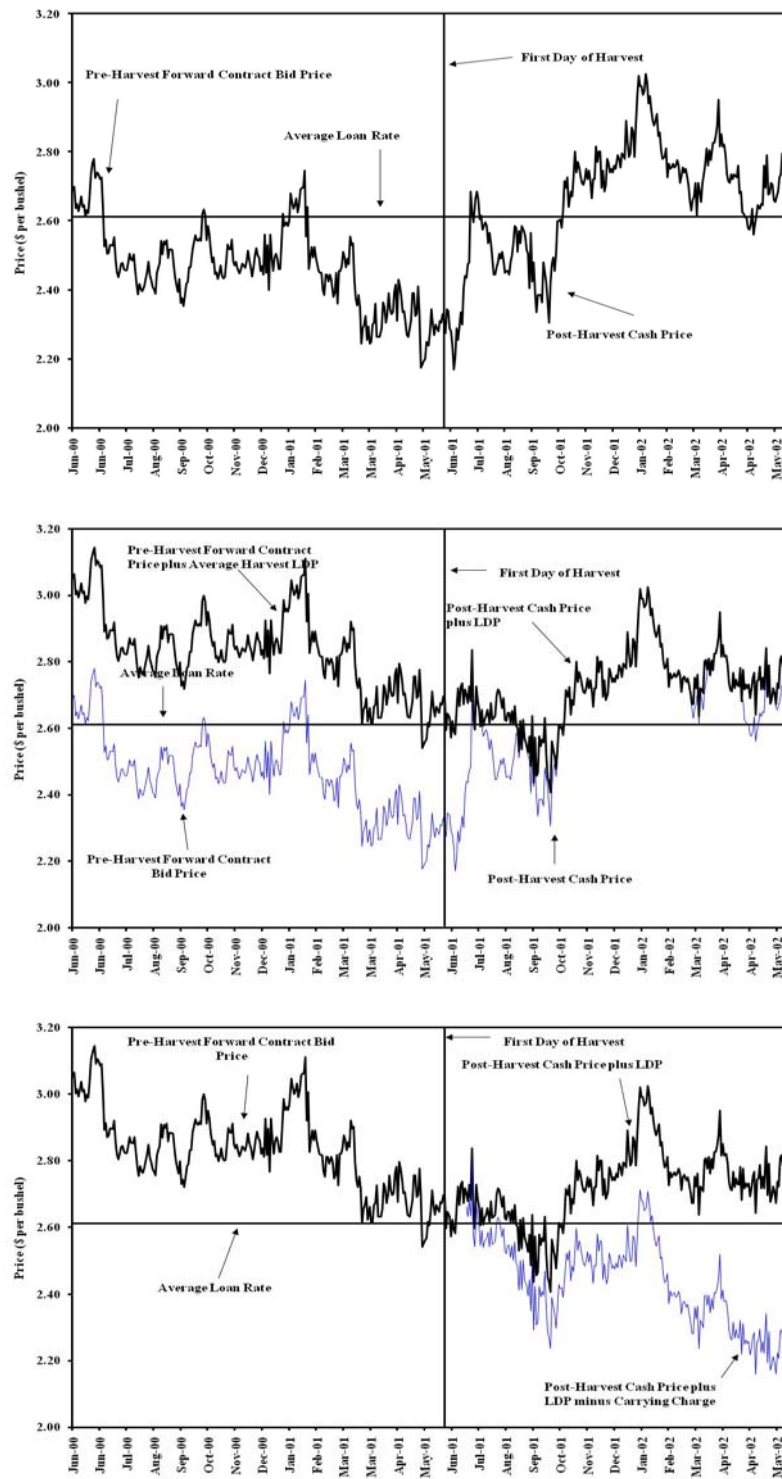
Figure 14. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 2002 Crop Year, Commercial Storage Costs
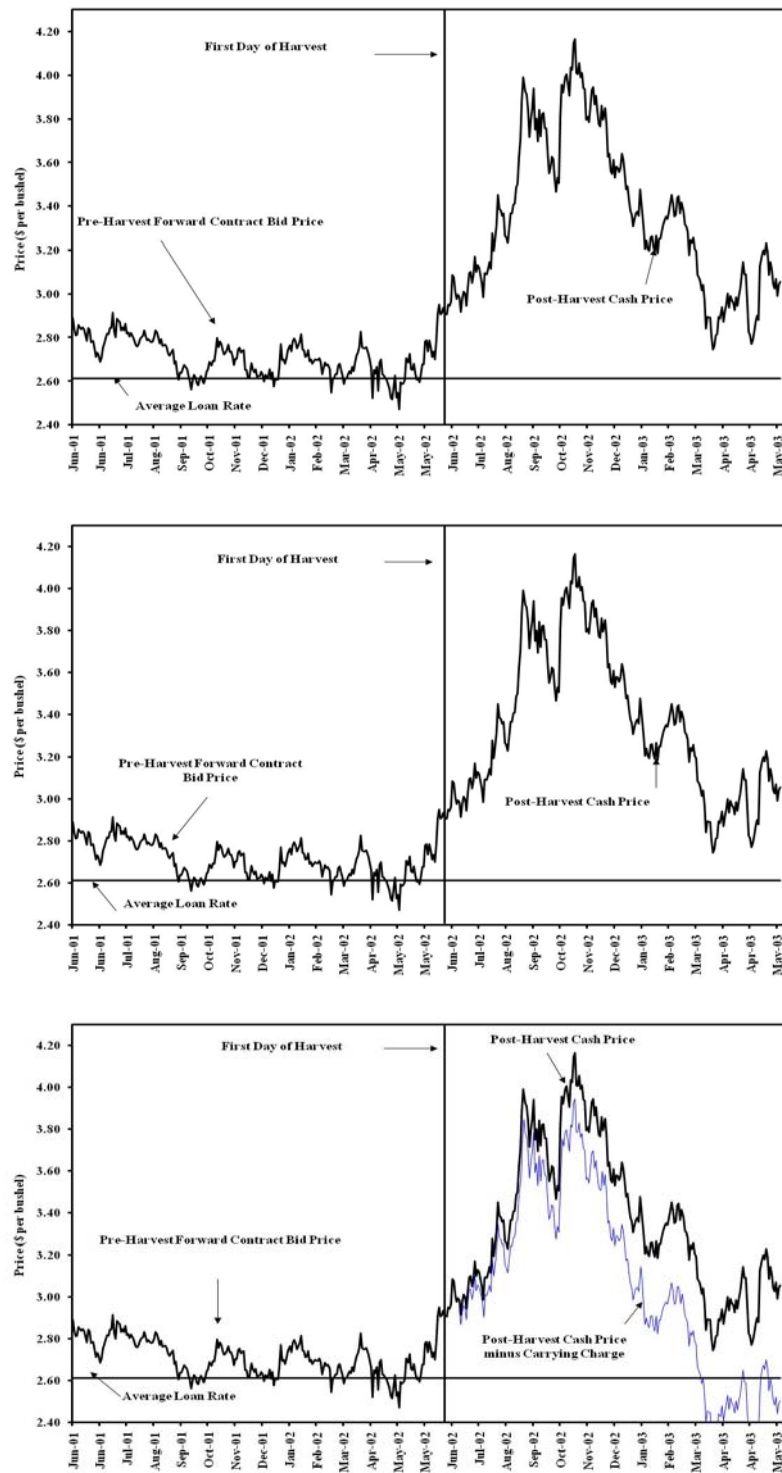
Figure 15. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 2003 Crop Year, Commercial Storage Costs
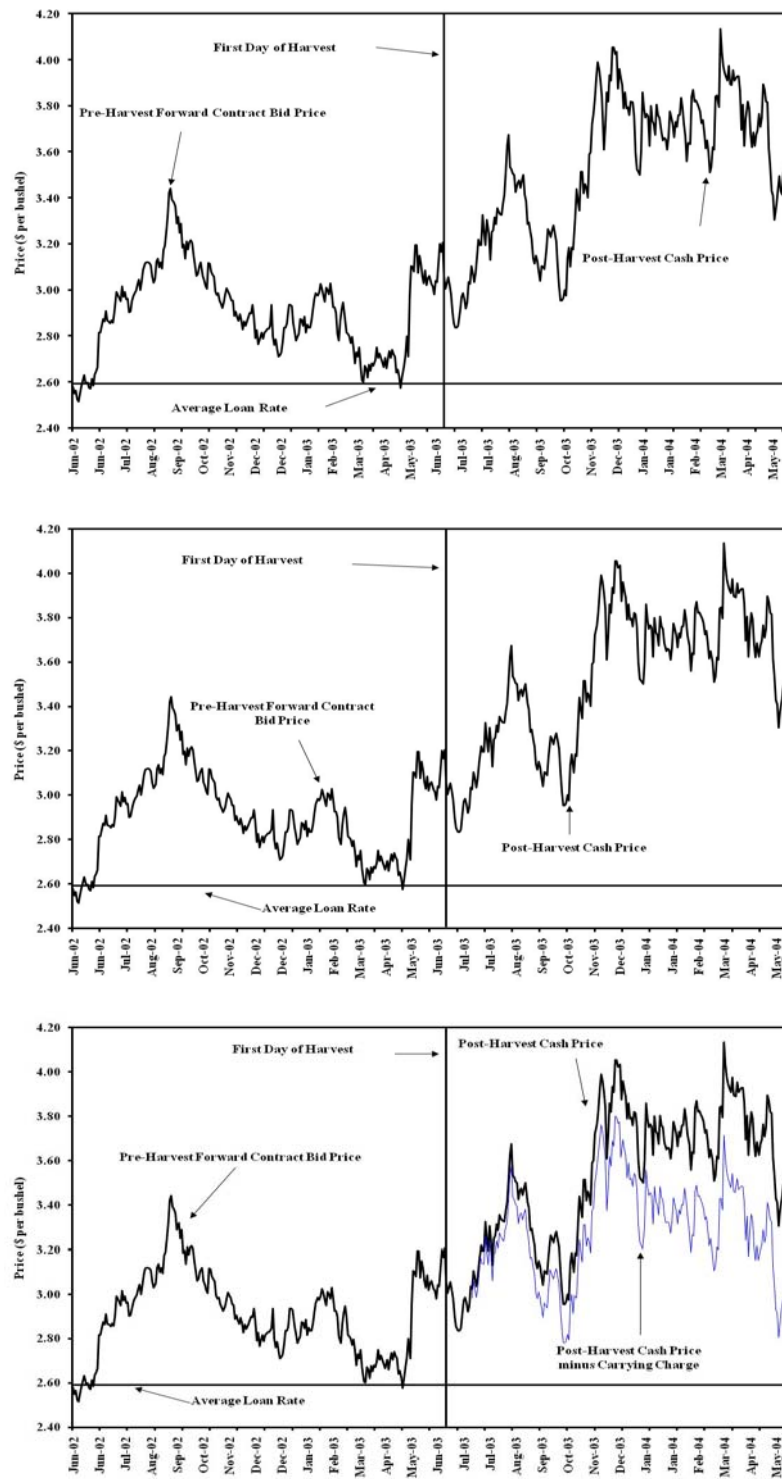
Figure 16. Daily Soft Red Winter Wheat Prices, West Southwest Illinois, 2004 Crop Year, Commercial Storage Costs
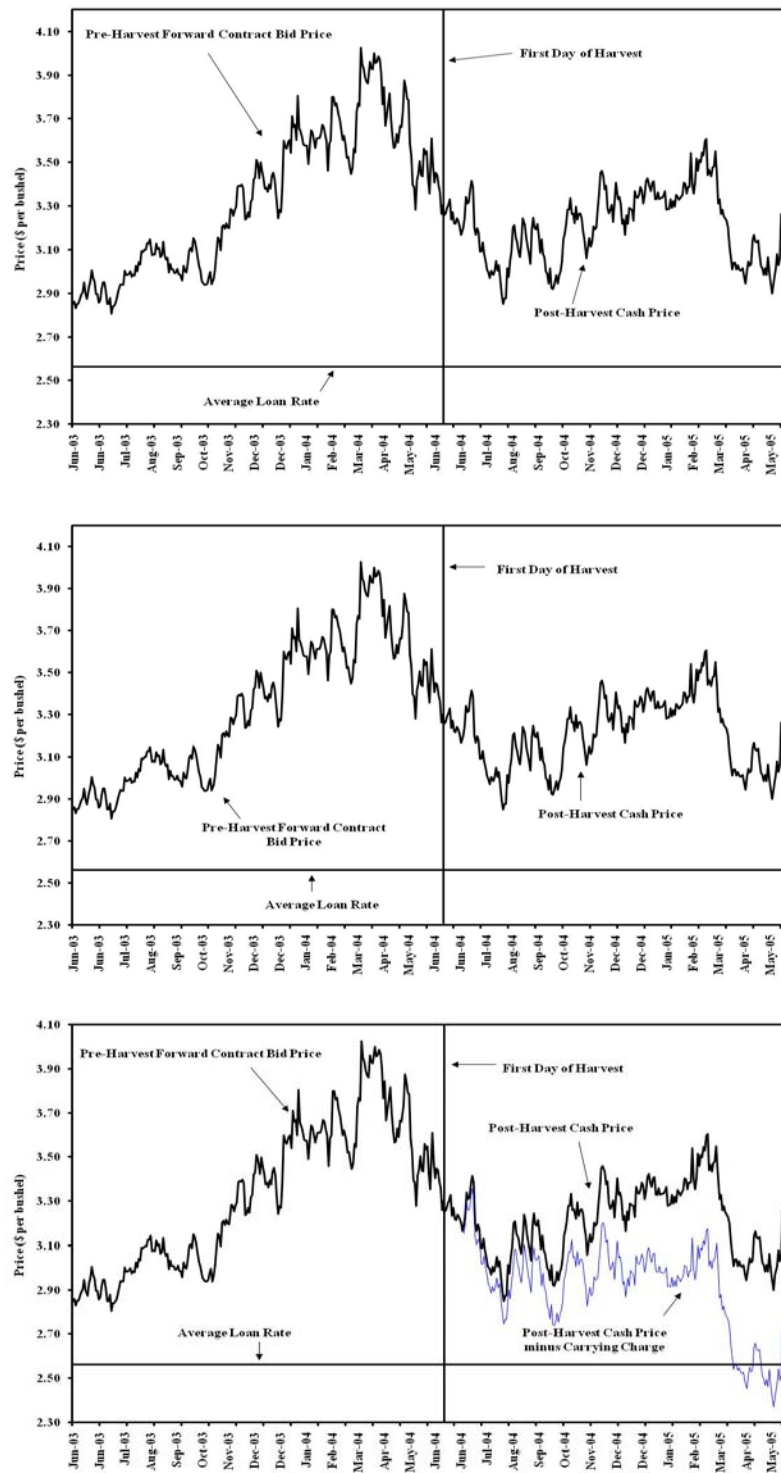
Figure 17. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 1995 Crop Year, Commercial Storage Costs
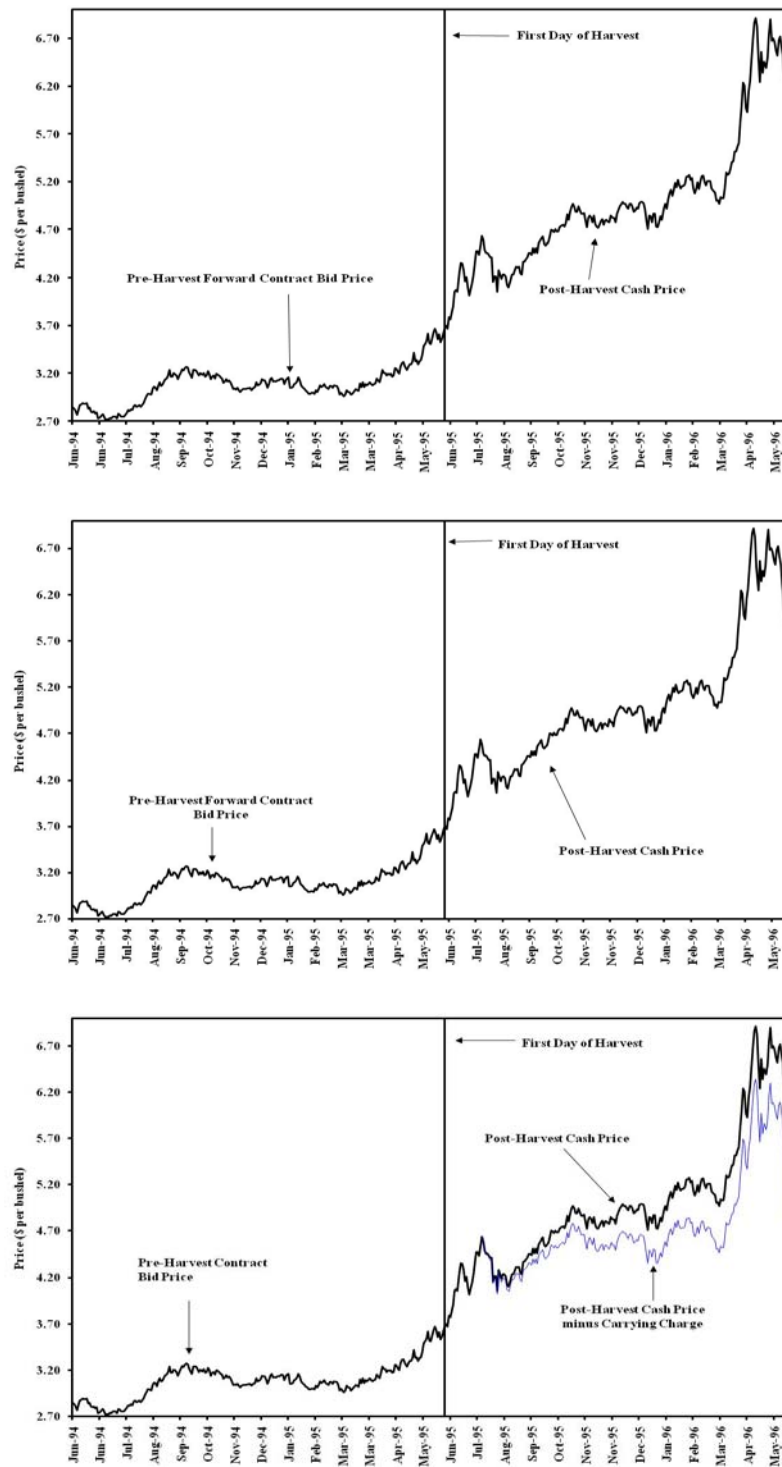
Figure 18. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 1996 Crop Year, Commercial Storage Costs
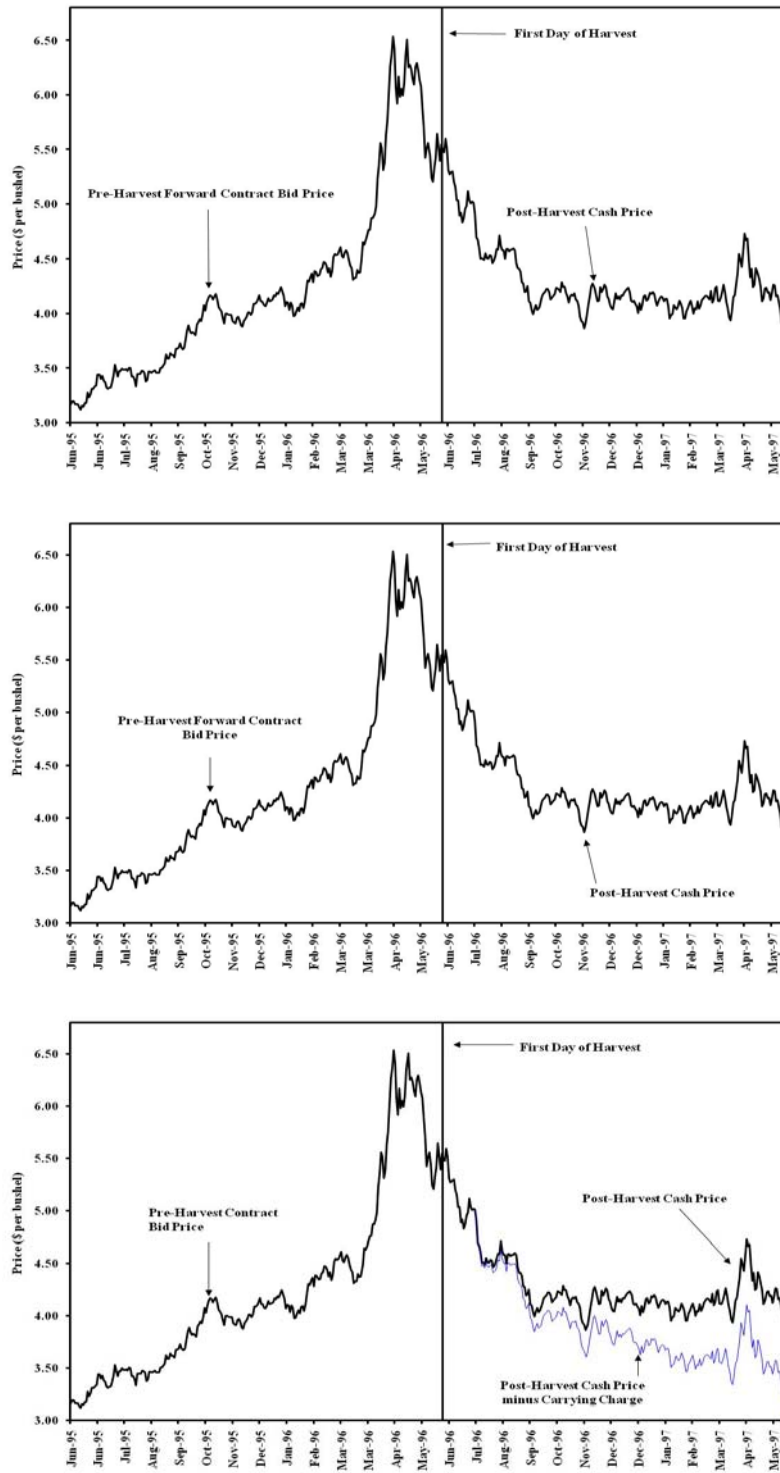
Figure 19. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 1997 Crop Year, Commercial Storage Costs

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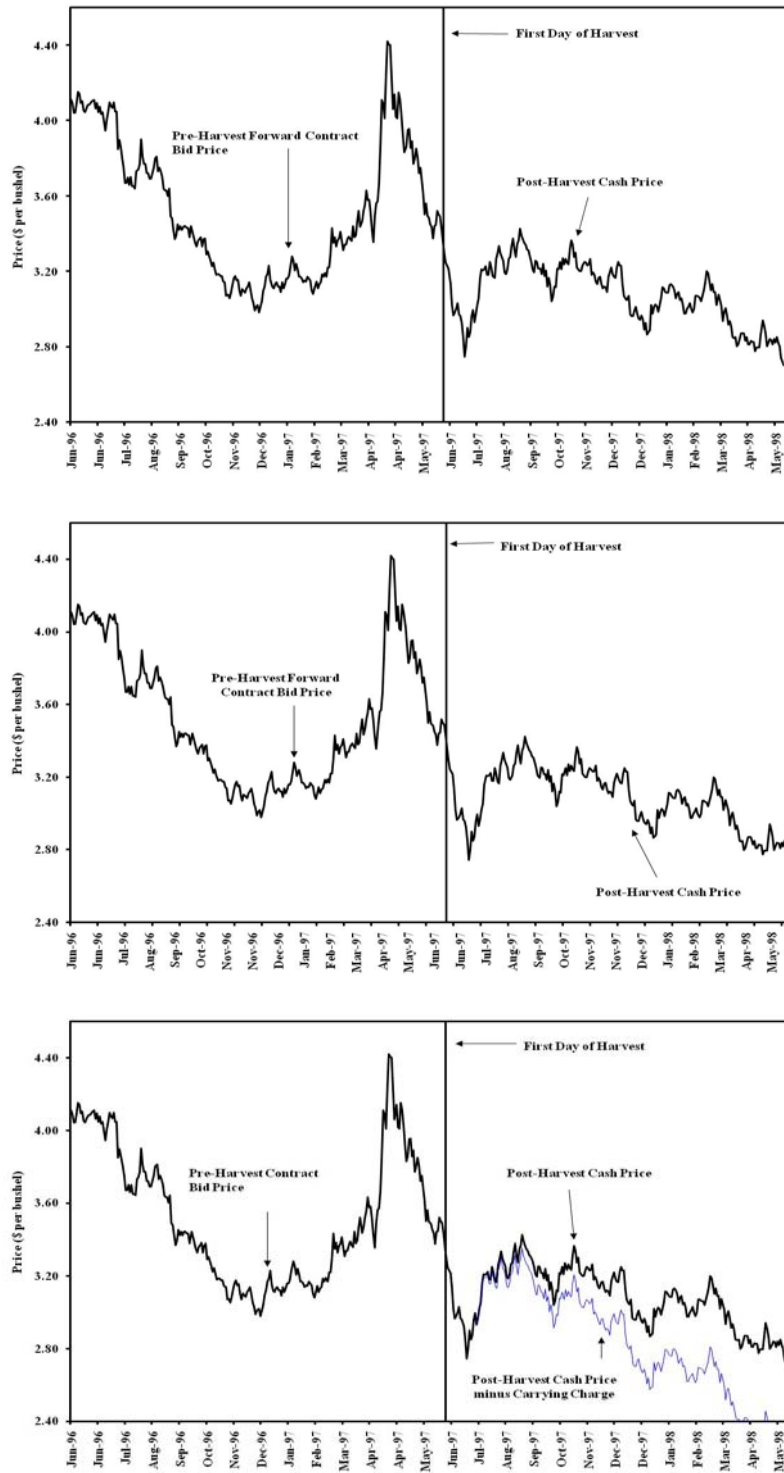
Figure 20. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 1998 Crop Year, Commercial Storage Costs

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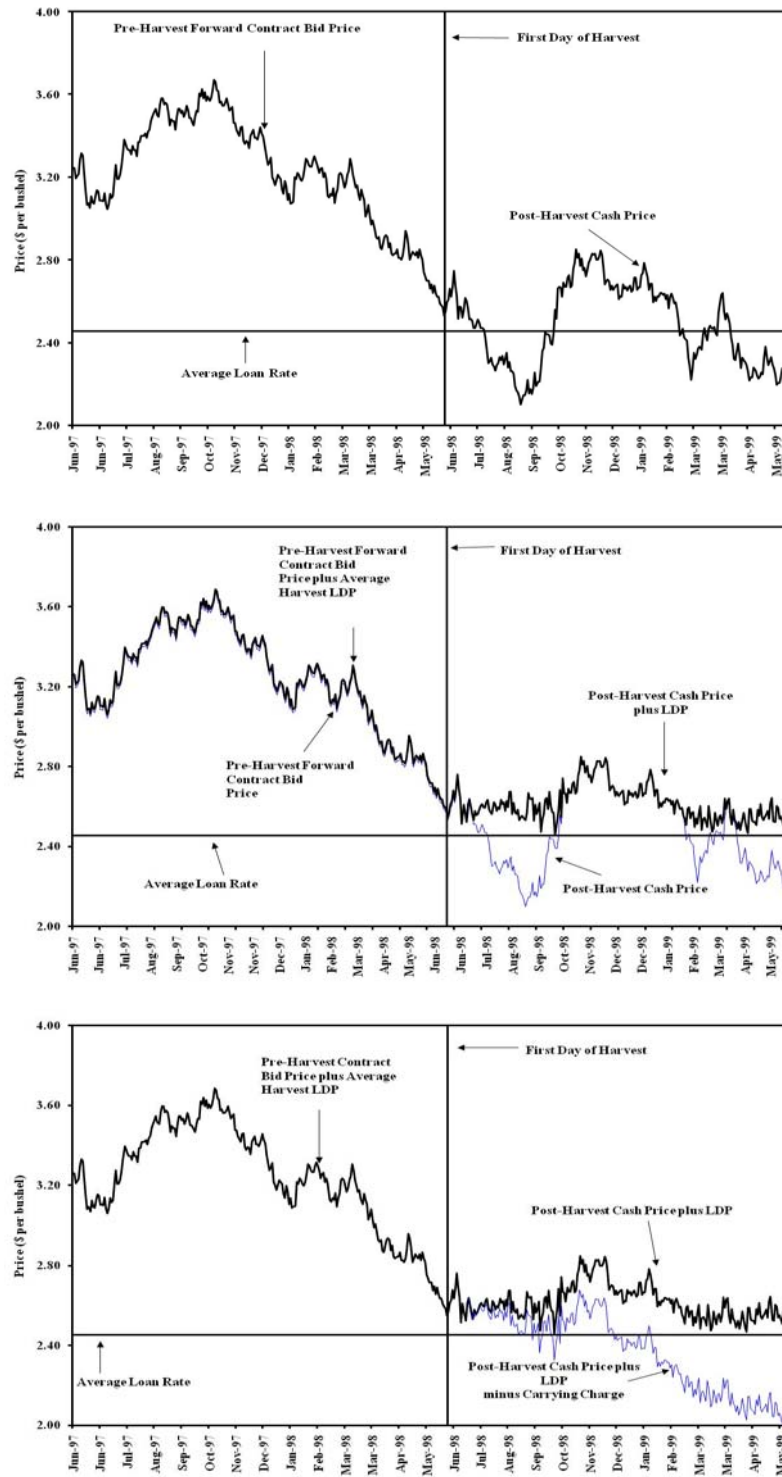
Figure 21. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 1999 Crop Year, Commercial Storage Costs
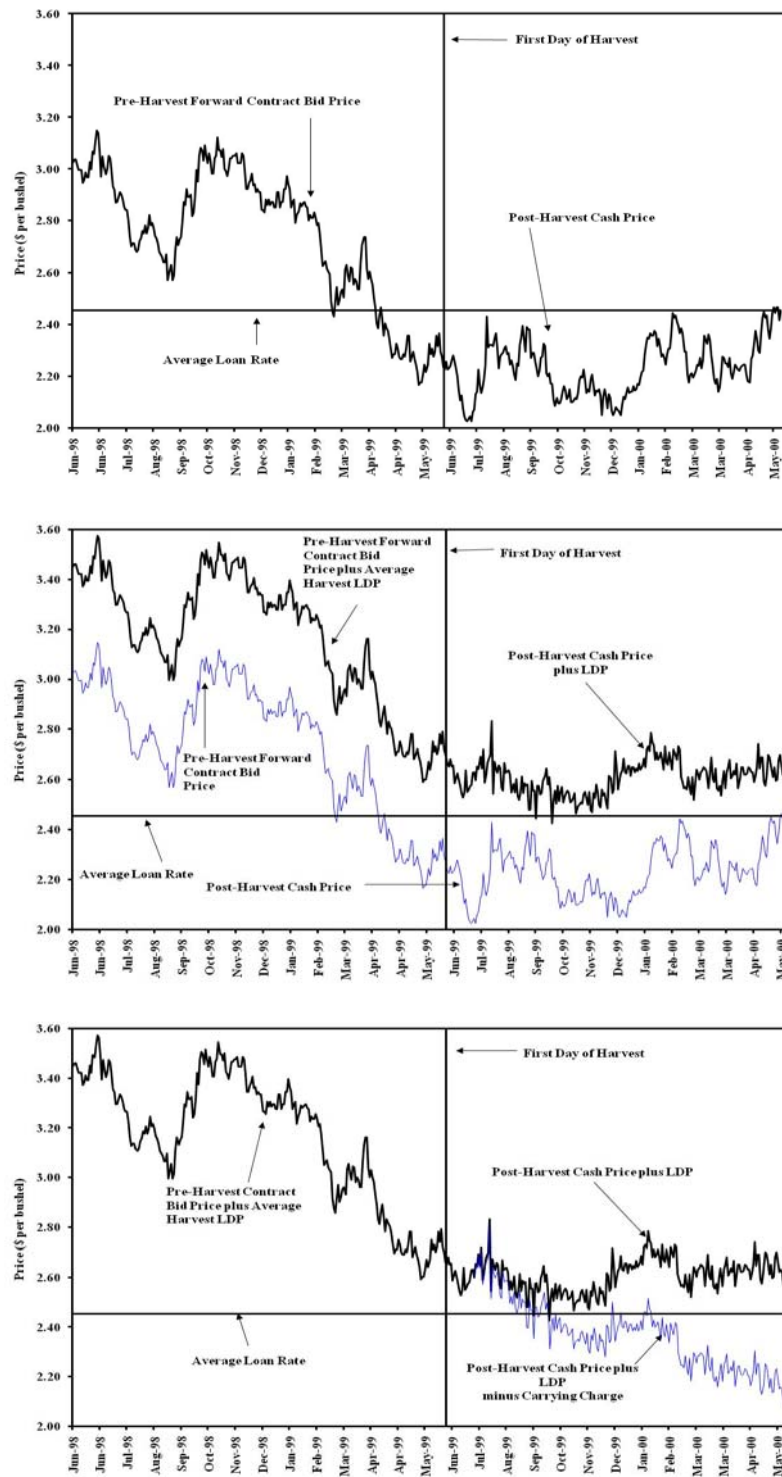
Figure 22. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 2000 Crop Year, Commercial Storage Costs
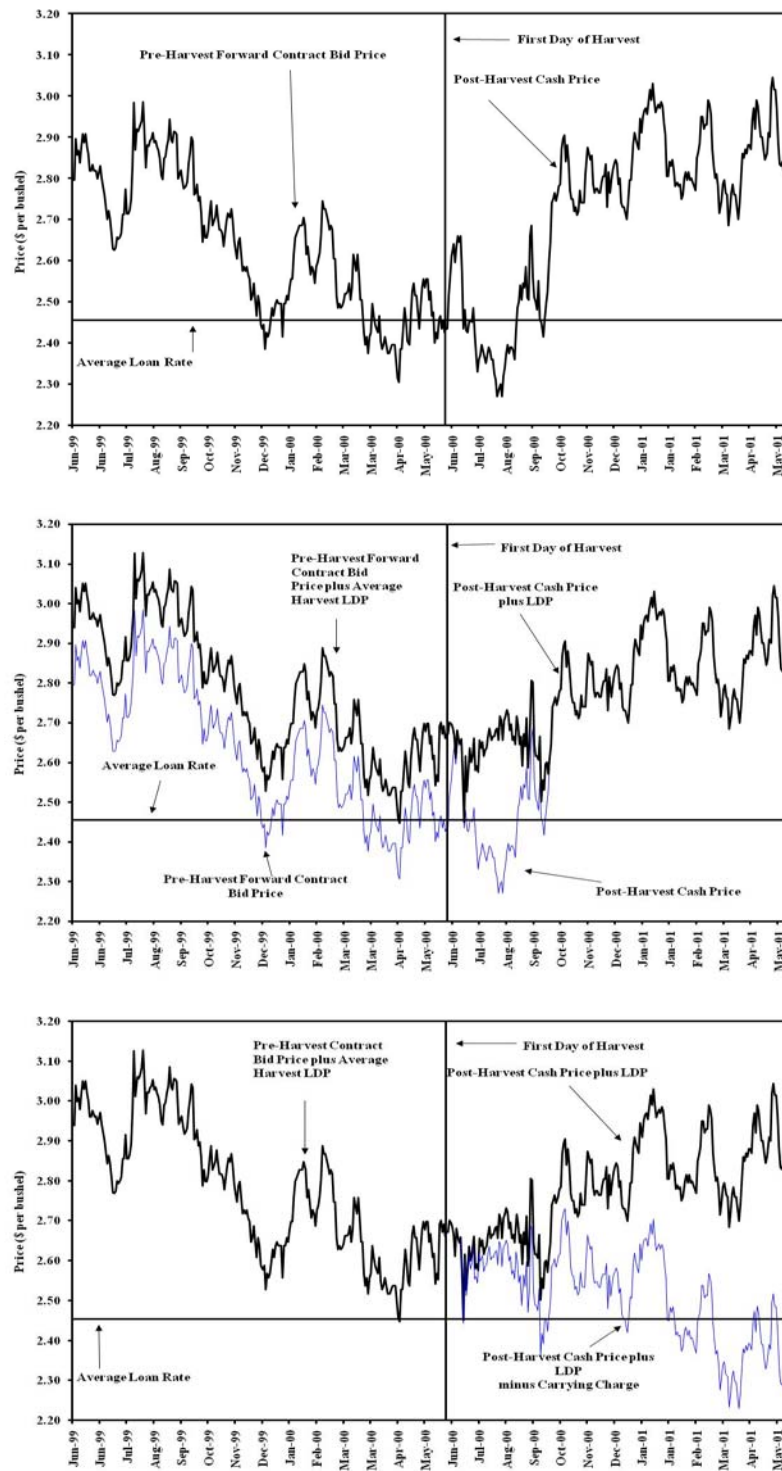
Figure 23. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 2001 Crop Year, Commercial Storage Costs

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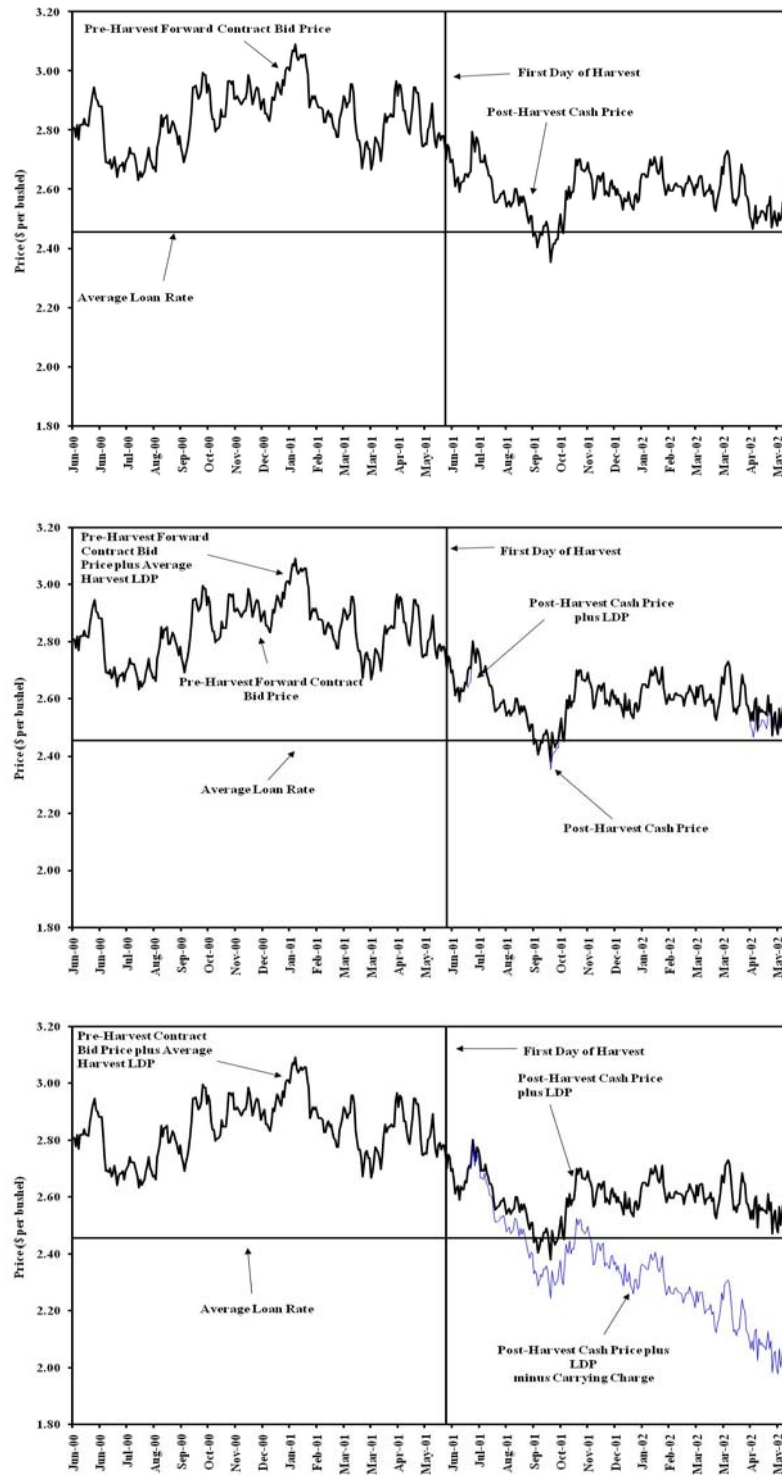
Figure 24. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 2002 Crop Year, Commercial Storage Costs
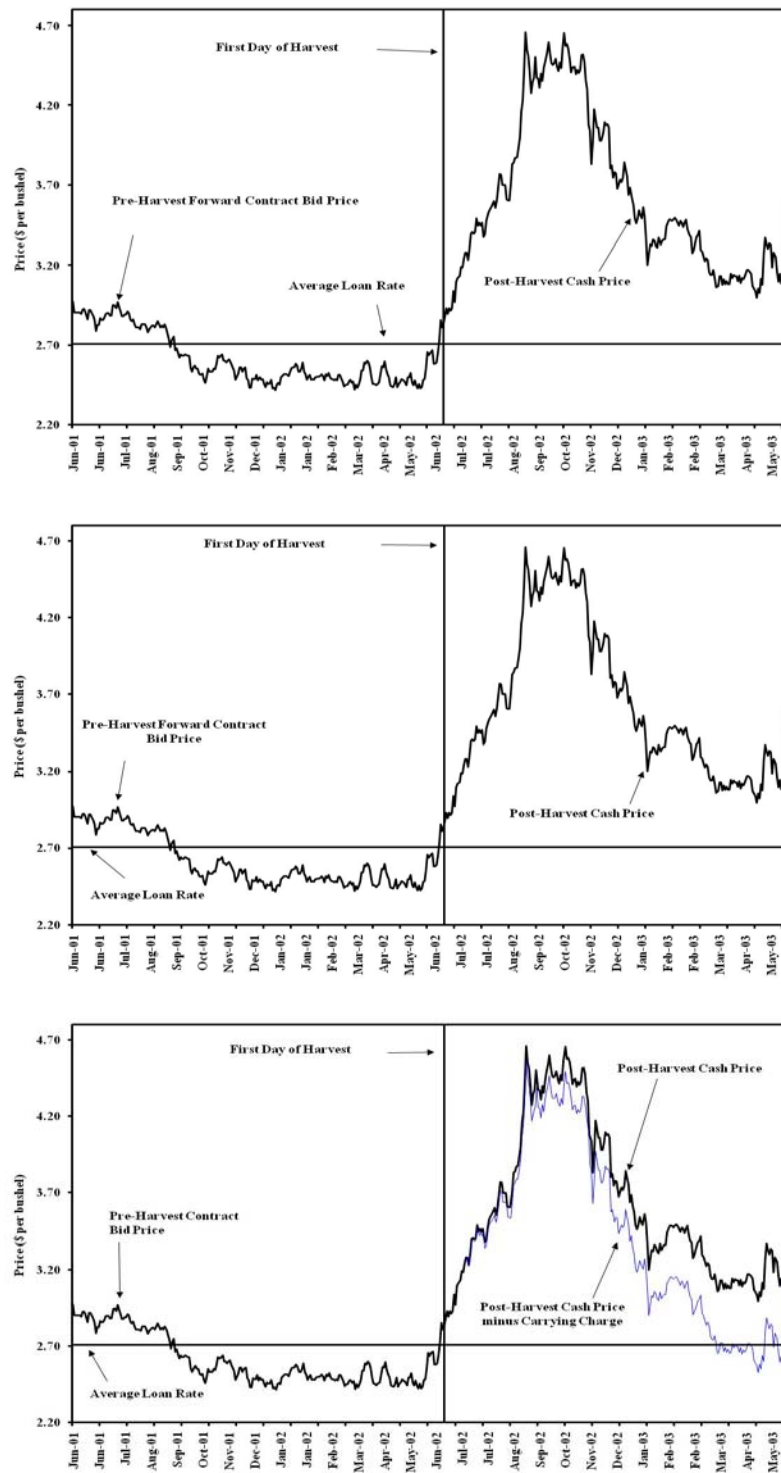
Figure 25. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 2003 Crop Year, Commercial Storage Costs
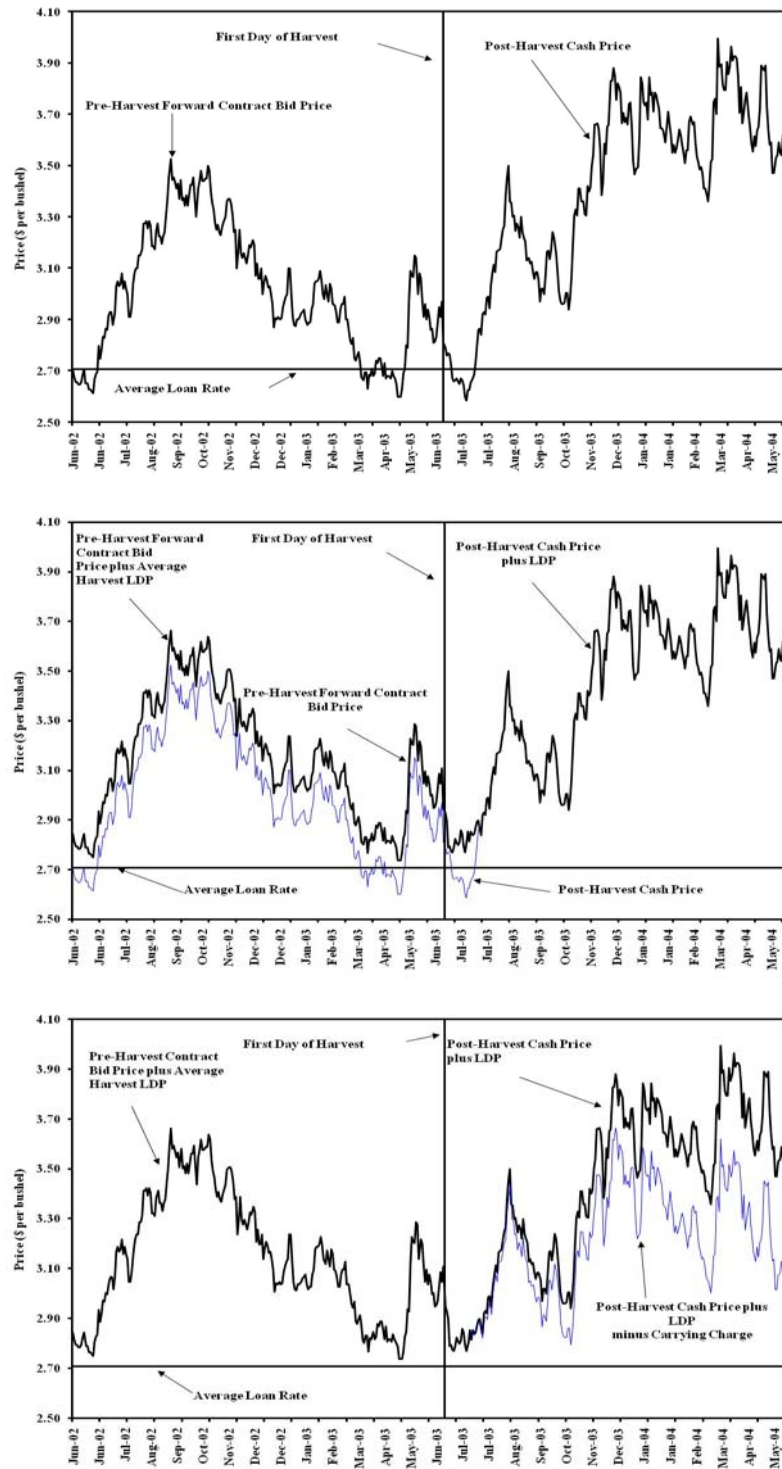
Figure 26. Daily Hard Red Winter Wheat Prices, Southwest Kansas, 2004 Crop Year, Commercial Storage Costs
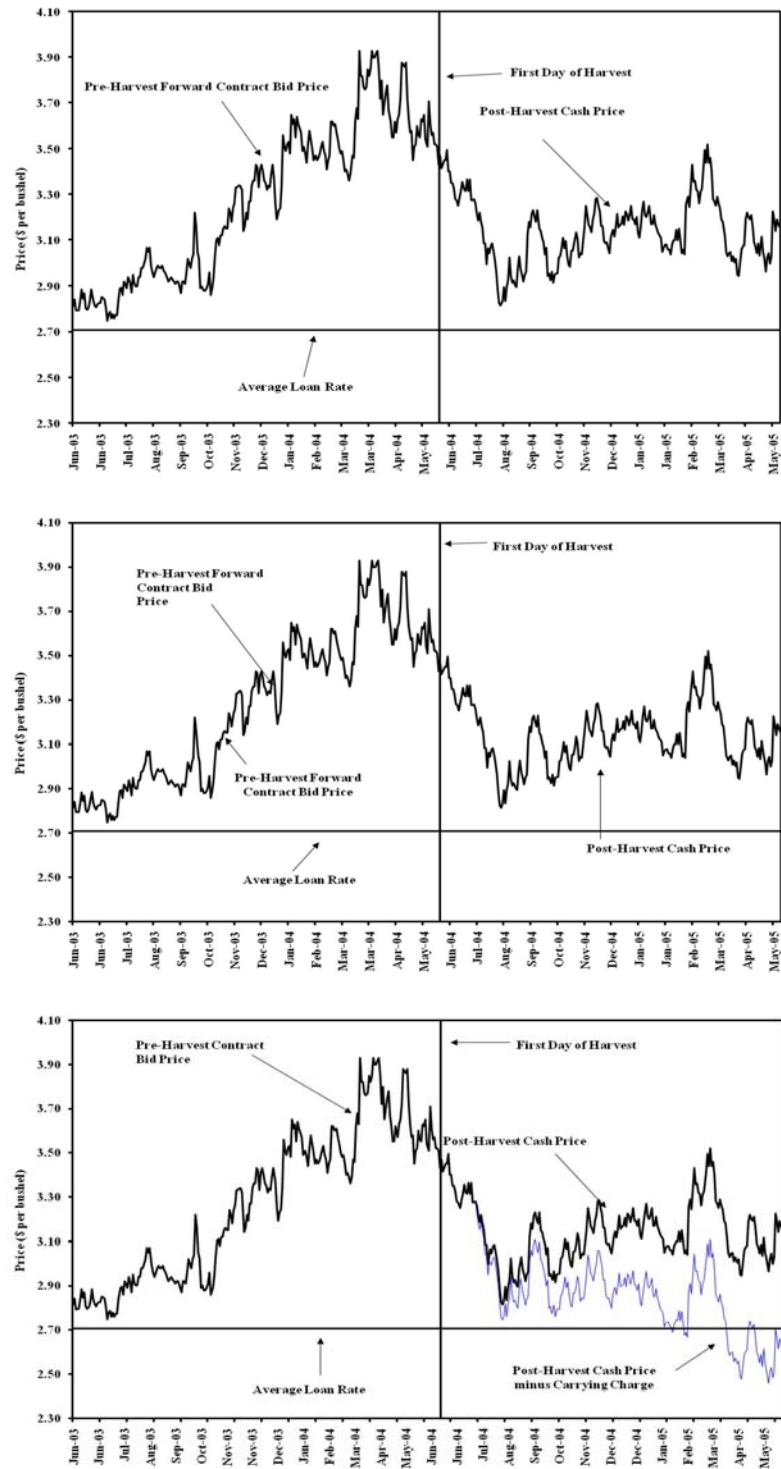
Figure 27. Loan Deficiency Payment (LDP) and Marketing Loan Gain (MLG) Rates for Soft Red Winter and Hard Red Winter Wheat, 1998 Crop Year

Panel A: Soft Red Winter Wheat

1998 Illinois Soft Red Winter Wheat LDP Rate

Panel B: Hard Red Winter Wheat

1998 Kansas Hard Red Winter Wheat LDP Rate

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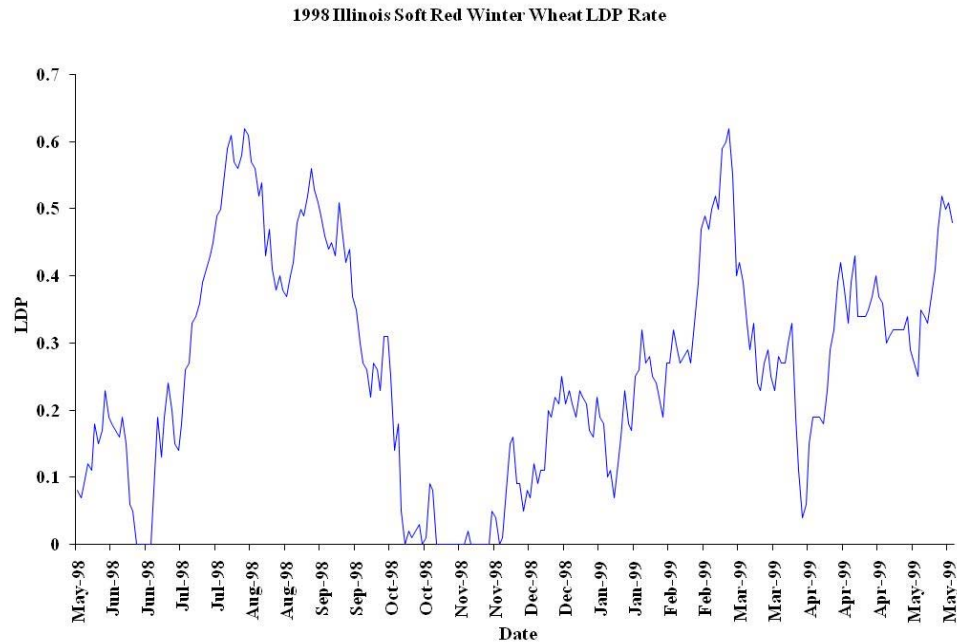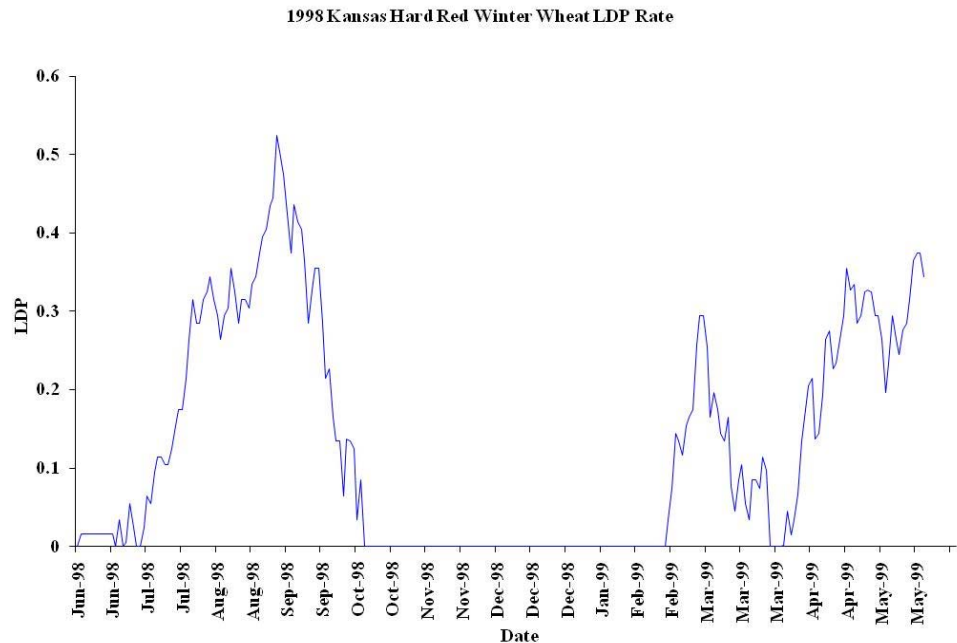
Figure 28. Loan Deficiency Payment (LDP) and Marketing Loan Gain (MLG) Rates for Soft Red Winter and Hard Red Winter Wheat, 1999 Crop Year

Panel A: Soft Red Winter Wheat

1999 Illinois Soft Red Winter Wheat LDP Rate

Panel B: Hard Red Winter Wheat

1999 Kansas Hard Red Winter Wheat LDP Rate

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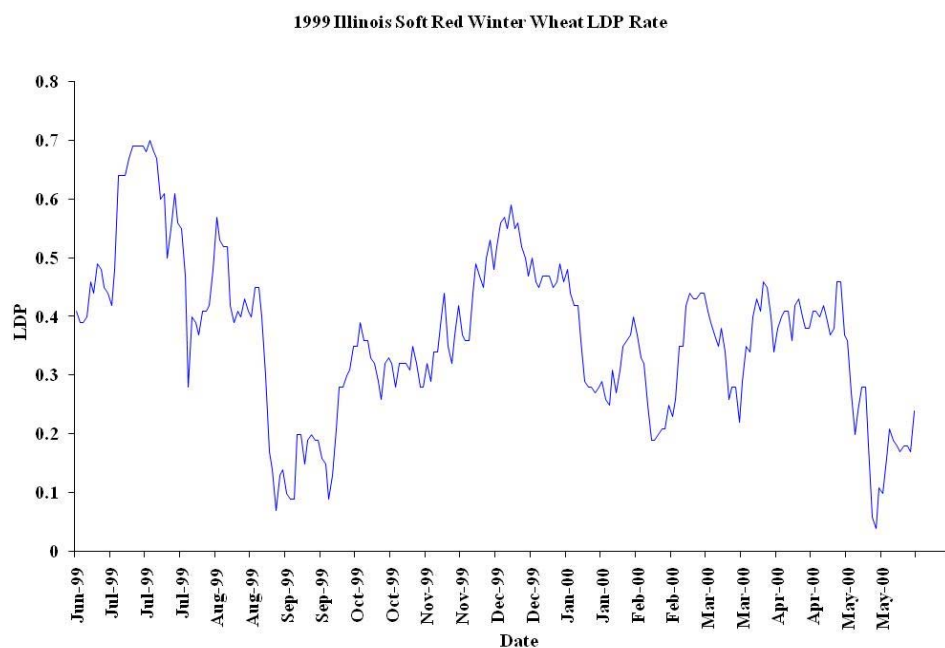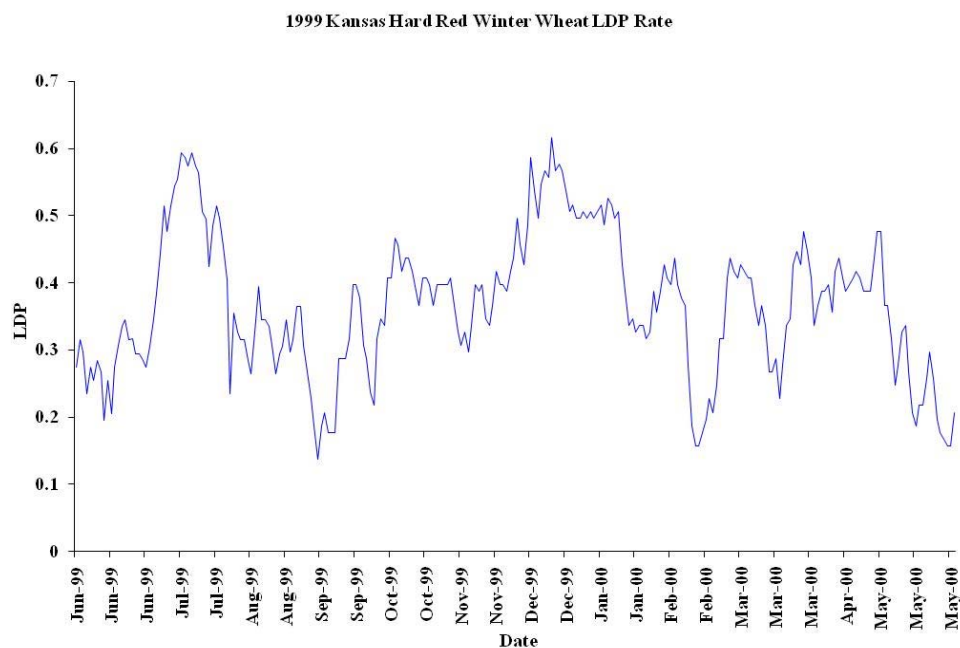
Figure 29. Loan Deficiency Payment (LDP) and Marketing Loan Gain (MLG) Rates for Soft Red Winter and Hard Red Winter Wheat, 2000 Crop Year

Panel A: Soft Red Winter Wheat

2000 Illinois Soft Red Winter Wheat LDP Rate

Panel B: Hard Red Winter Wheat

2000 Kansas Hard Red Winter Wheat LDP Rate

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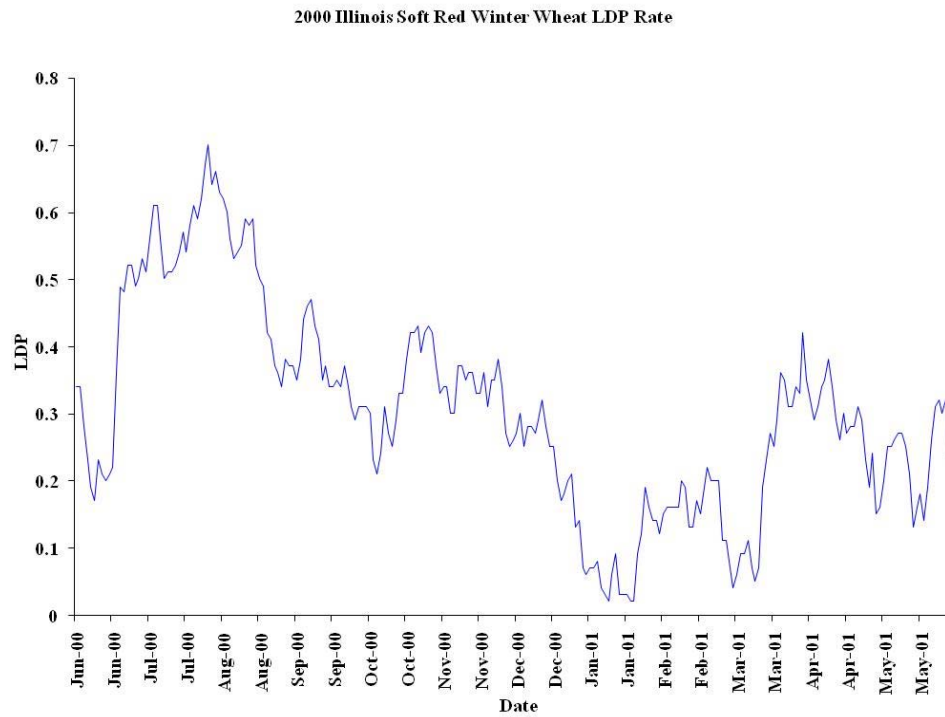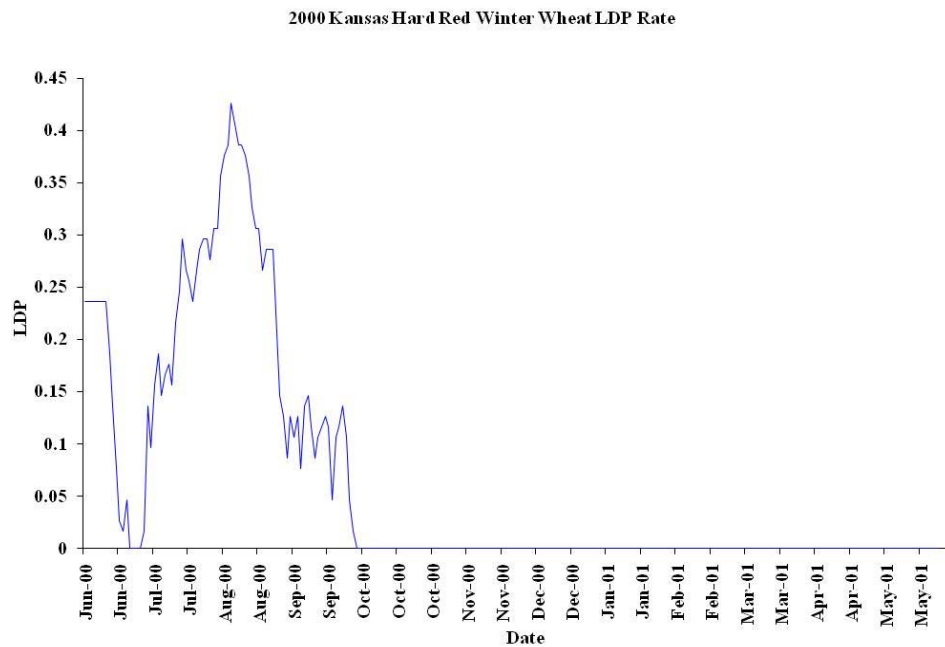
Figure 30. Loan Deficiency Payment (LDP) and Marketing Loan Gain (MLG) Rates for Soft Red Winter and Hard Red Winter Wheat, 2001 Crop Year

Panel A: Soft Red Winter Wheat

2001 Illinois Soft Red Winter Wheat LDP Rate

Panel B: Hard Red Winter Wheat

2001 Kansas Hard Red Winter Wheat LDP Rate

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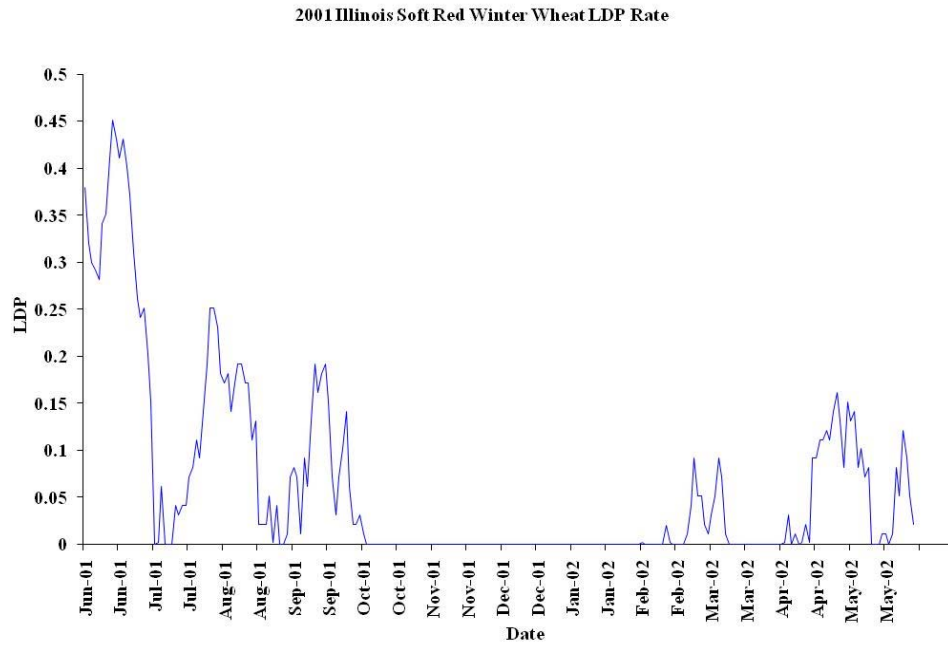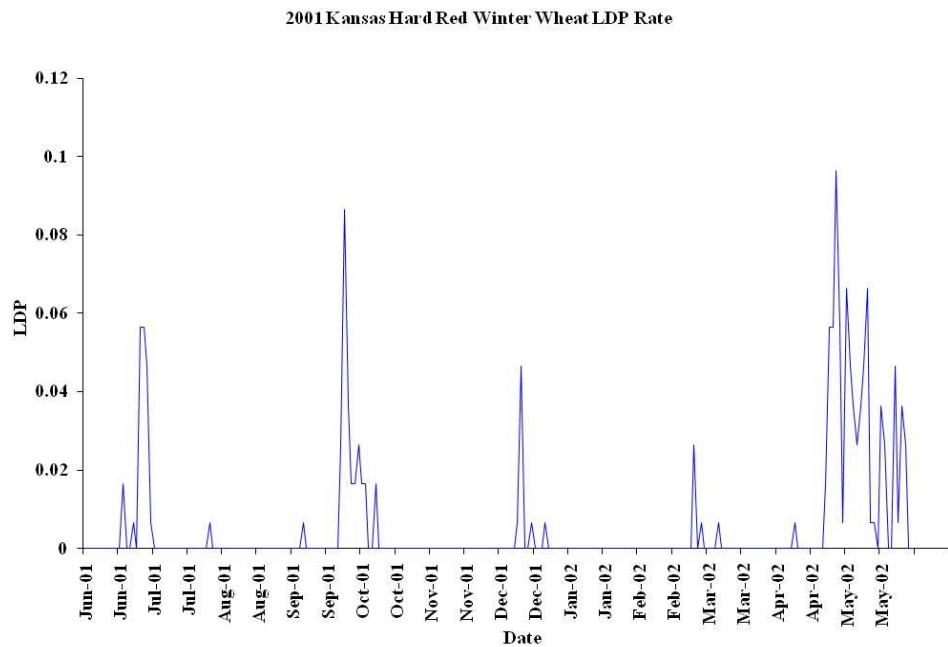
Figure 31. Loan Deficiency Payment (LDP) and Marketing Loan Gain (MLG) Rates for Soft Red Winter and Hard Red Winter Wheat, 2003 Crop Year

Panel A: Soft Red Winter Wheat

2003 Illinois Soft Red Winter Wheat LDP Rate

Panel B: Hard Red Winter Wheat

2003 Kansas Hard Red Winter Wheat LDP Rate

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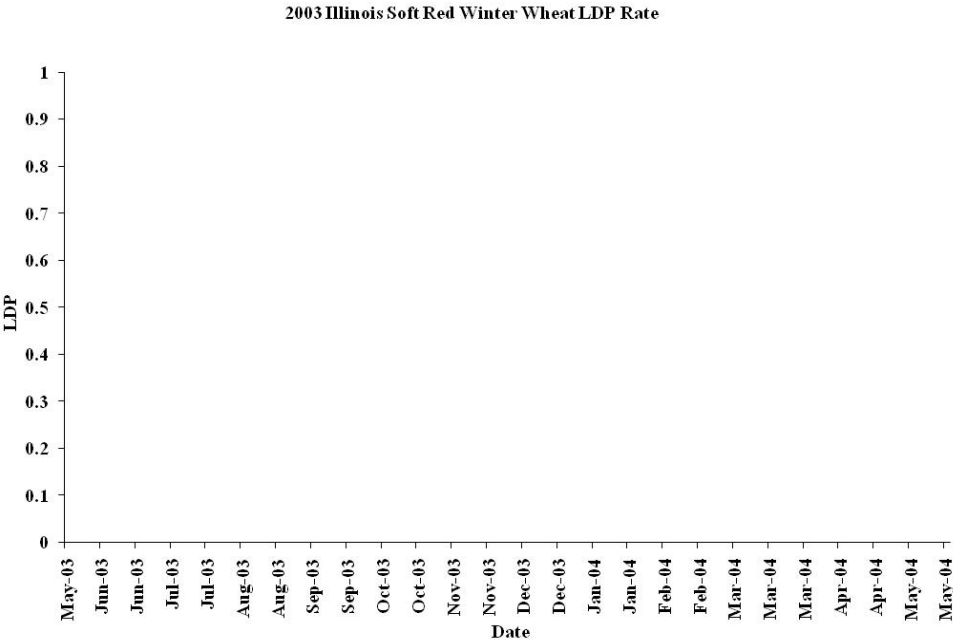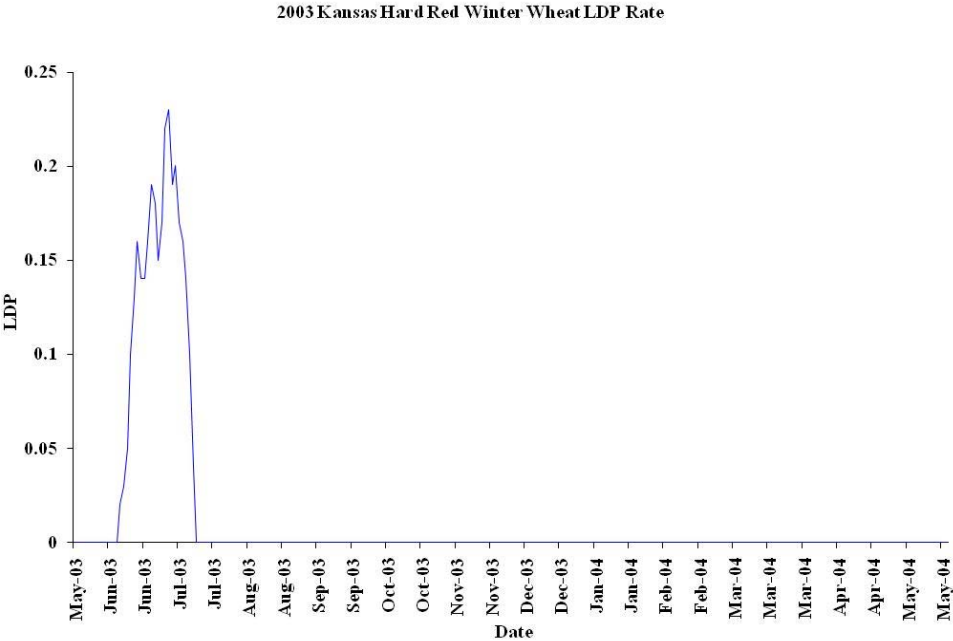
Figure 32. Comparison of Storage Costs for Illinois Soft Red Winter and Kansas Hard Red Winter Wheat, 2004 Crop Year

Commercial Storage Costs
(25,000 bushel bin)

Soft Red Winter Wheat

Hard Red Winter Wheat

Cost per month (cents per bushel)

Months of Storage After Harvest

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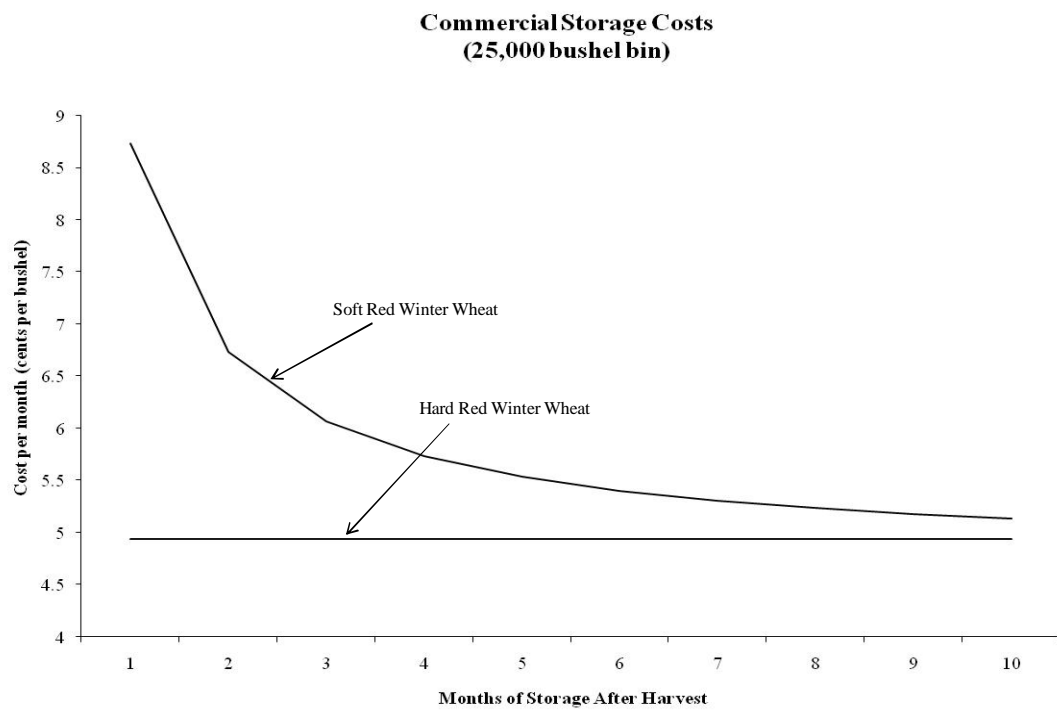
Figure 33. An Example Computation of the Net Advisory Price for Hard Red Winter Wheat, 2004 Crop Year
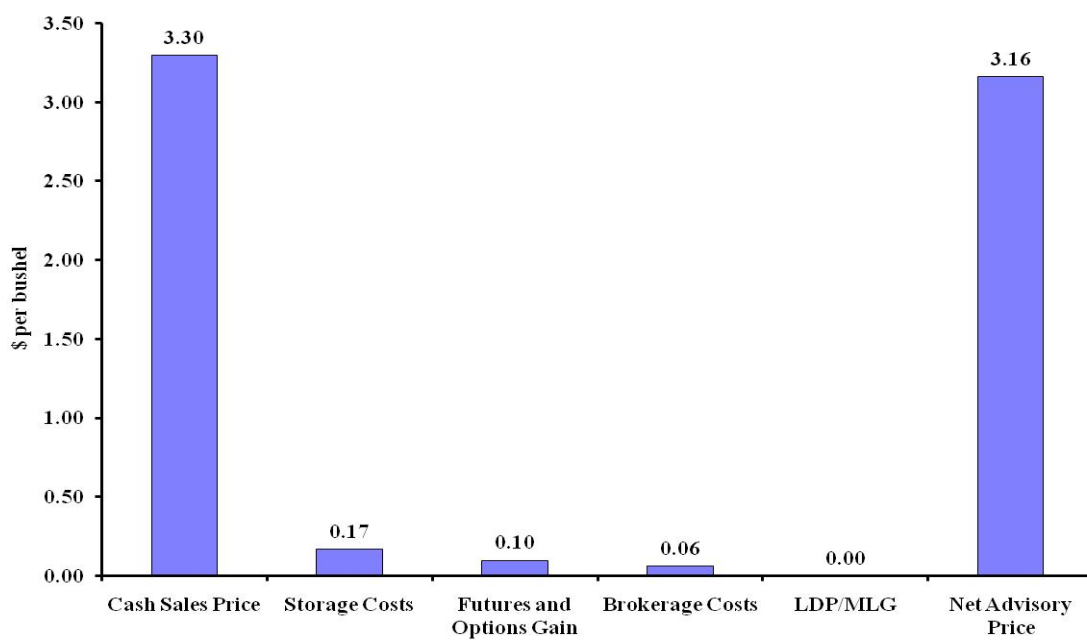
Figure 34. Average Marketing Profiles for Advisory Programs and Market Benchmarks, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years

Panel A: Soft Red Winter Wheat
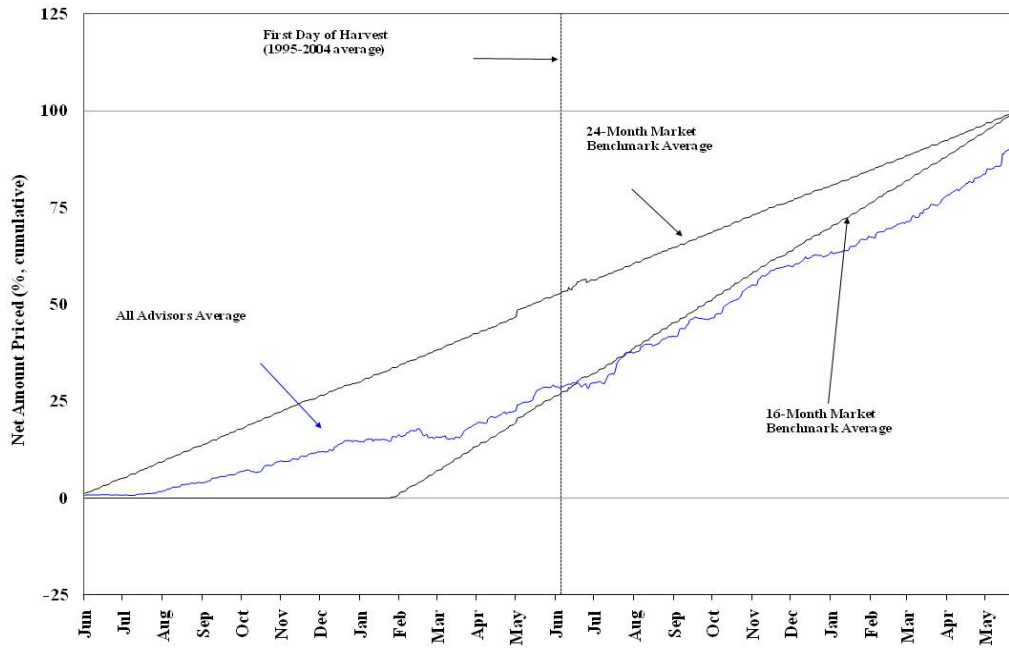
Panel B: Hard Red Winter Wheat
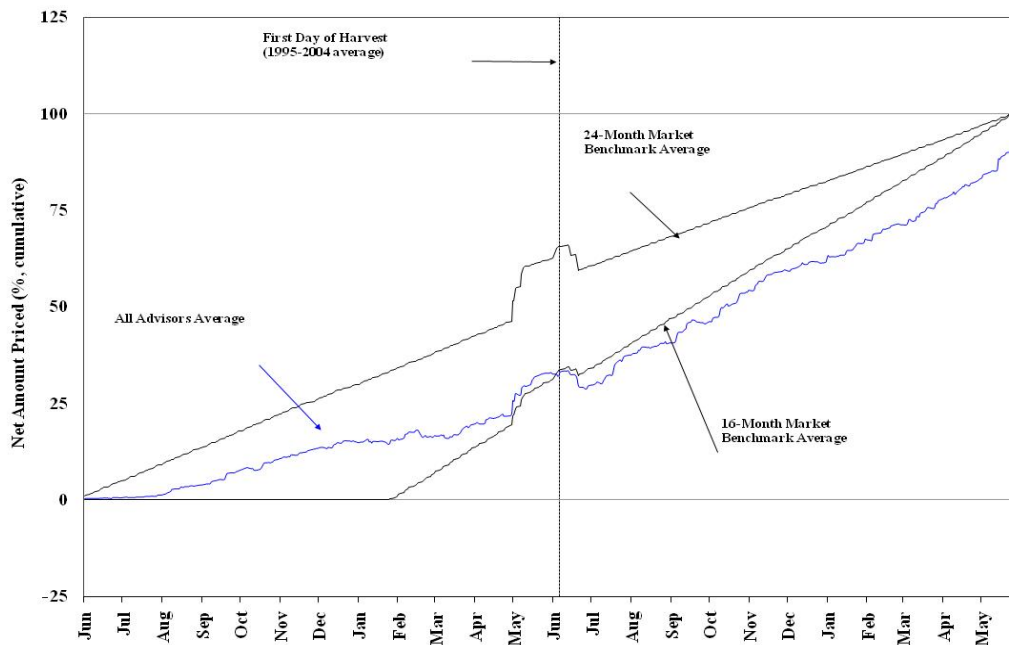
Figure 35. Average USDA Marketing Weights for Illinois Soft Red Winter and Kansas Hard Red Winter Wheat, 1995-2004 Crop Years

Panel A: SRW
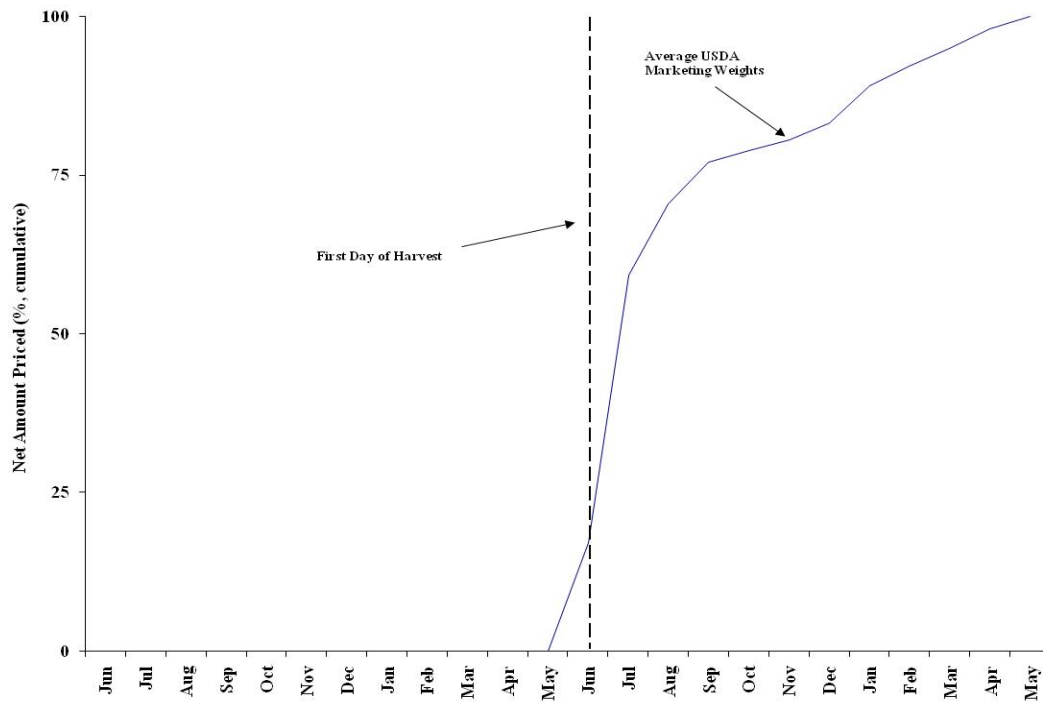
Panel B: HRW

Figure 36. Distribution of Advisory Program Prices or Revenues over the 1995-2004 Crop Years, Commercial Storage Costs

Panel A: Soft Red Winter Wheat
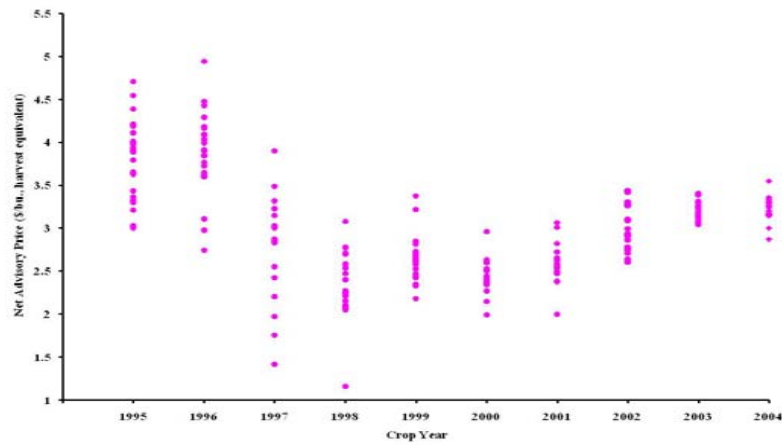
Panel B: Hard Red Winter Wheat
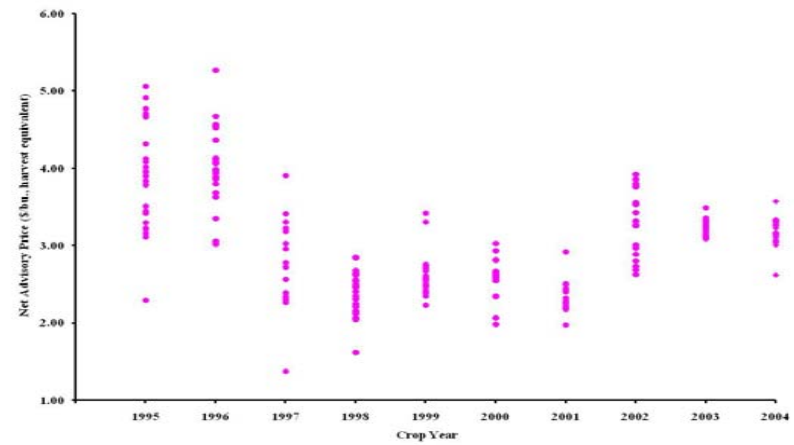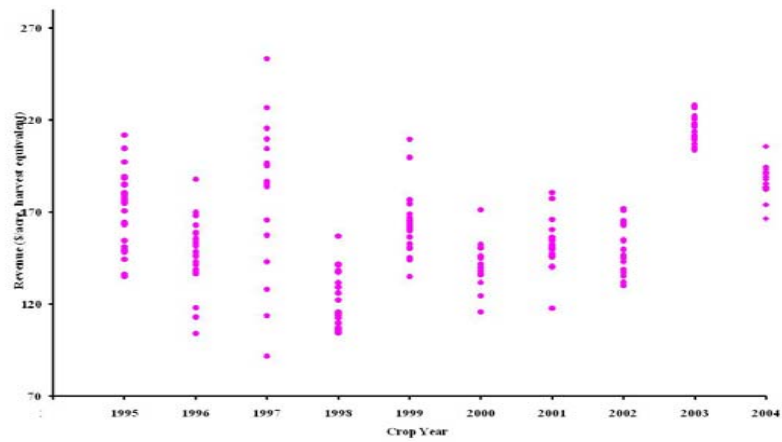
Panel C: SRW Revenue

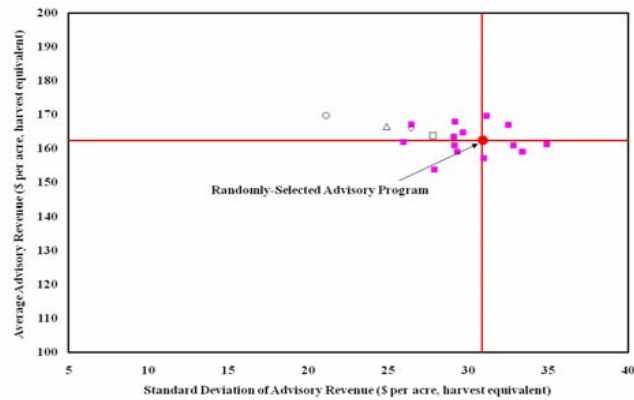Panel D: HRW Revenue
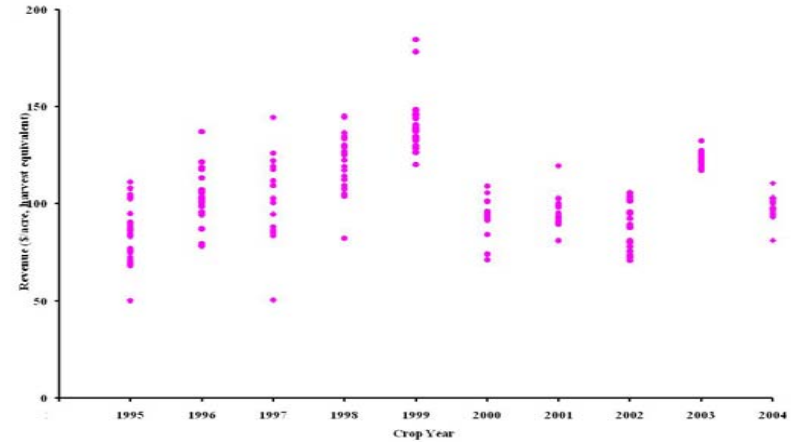
Figure 37. Average Net Advisory Prices and Benchmark Prices for Soft Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs
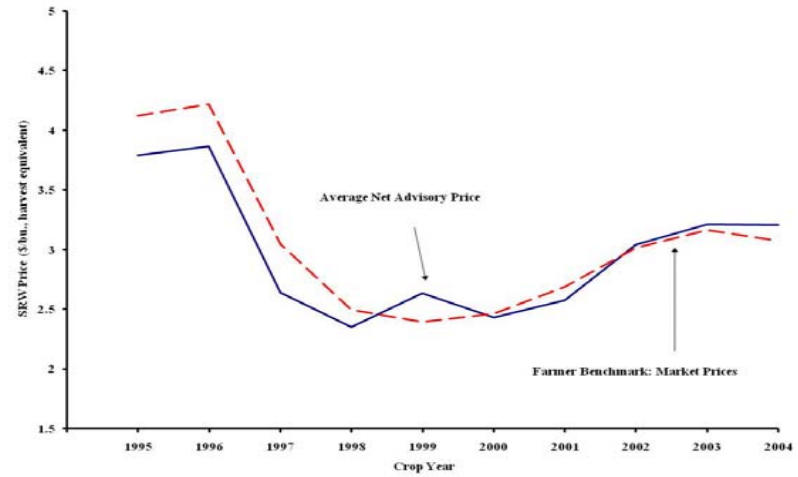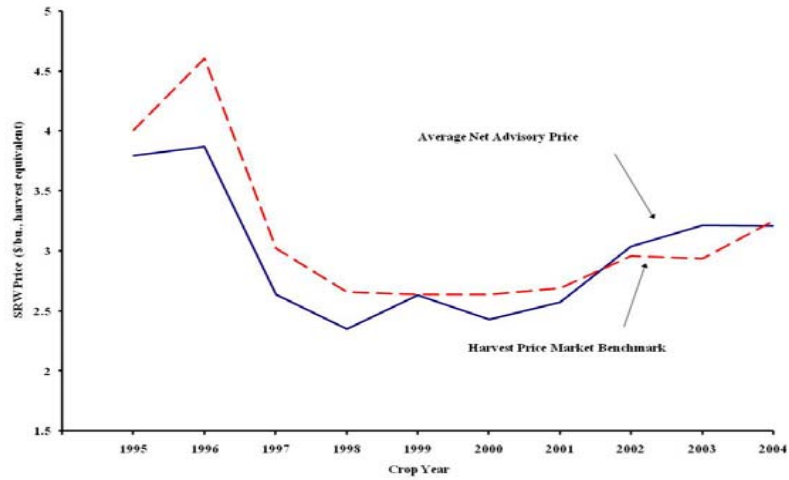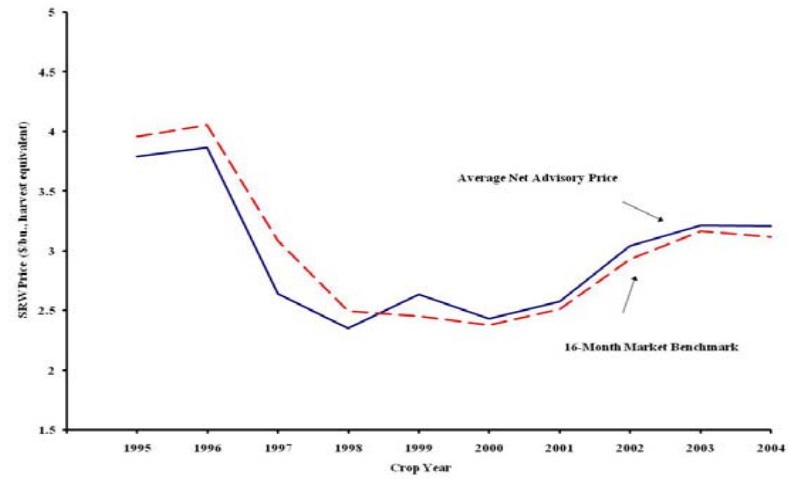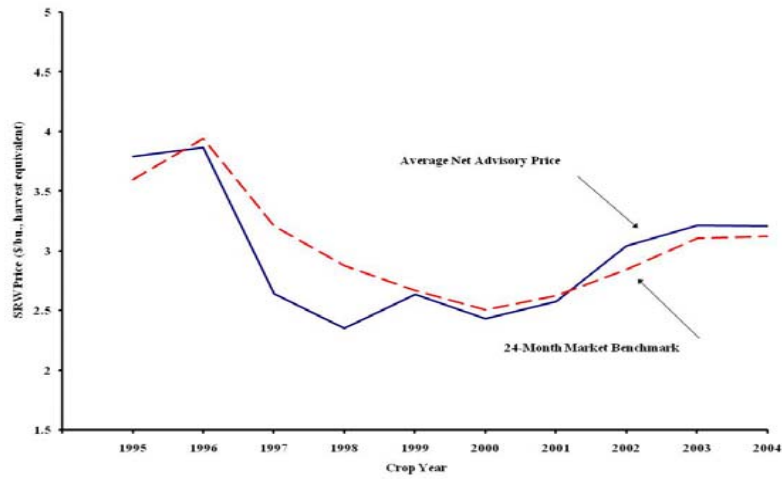
Figure 38. Average Net Advisory Prices and Benchmark Prices for Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs
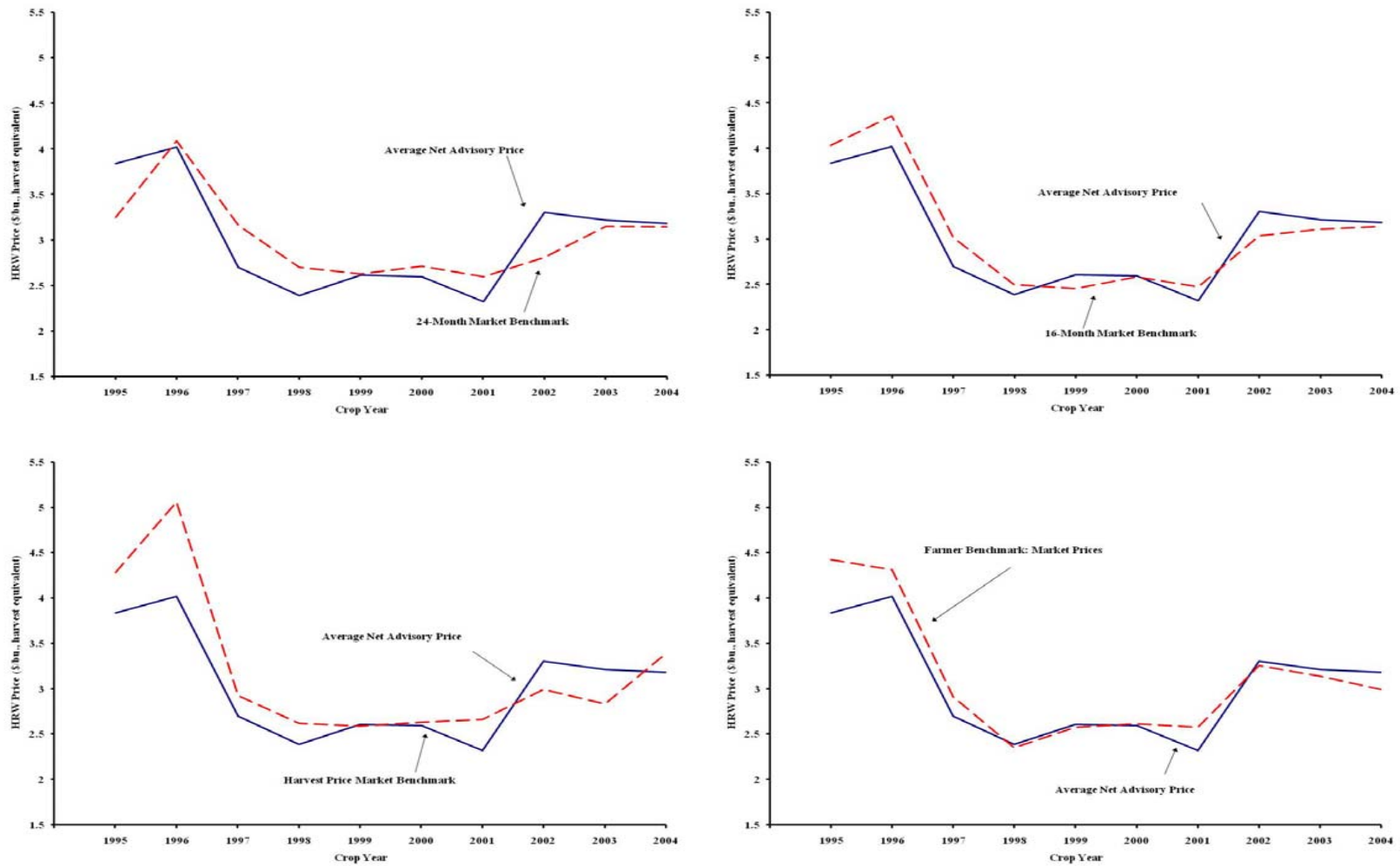
Figure 39. Average Soft Red Winter Wheat Advisory Revenues and Benchmark Revenues, 1995-2004 Crop Years, Commercial Storage Costs
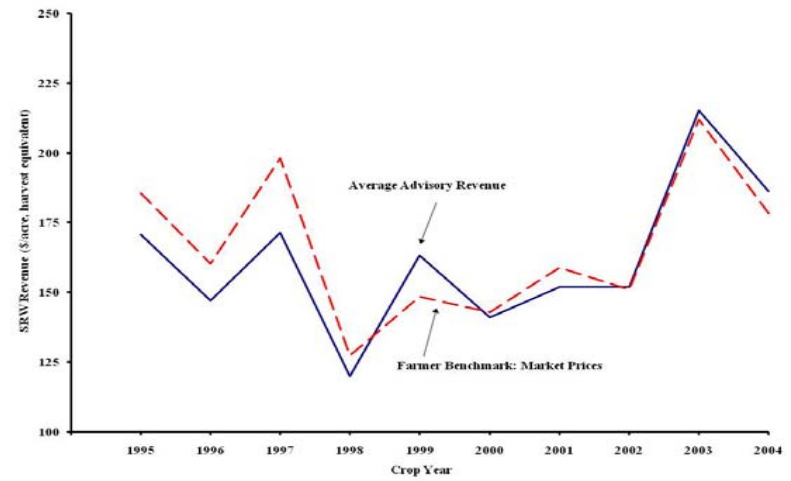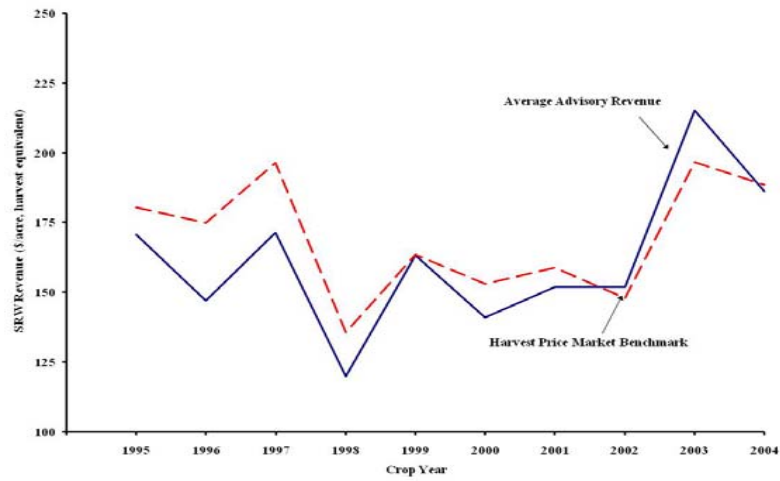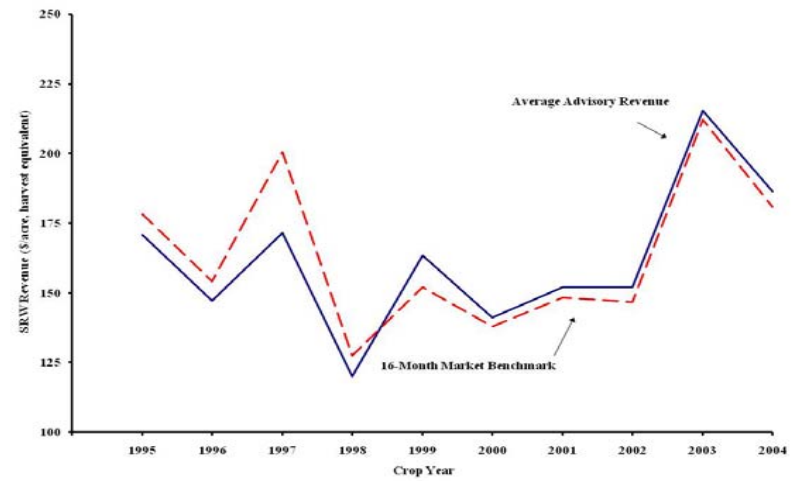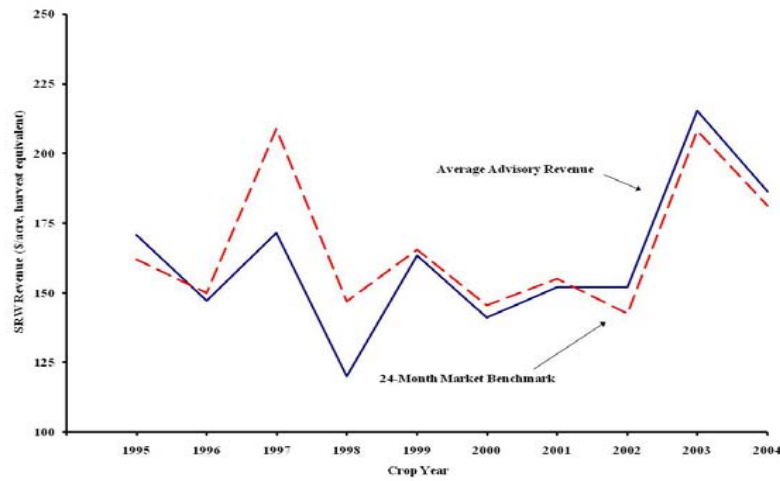
Figure 40. Average Hard Red Winter Wheat Advisory Revenues and Benchmark Revenues, 1995-2004 Crop Years, Commercial Storage Costs

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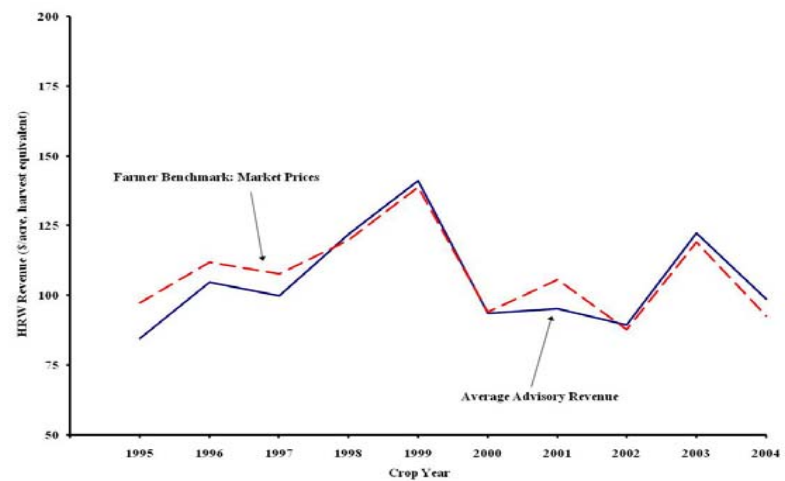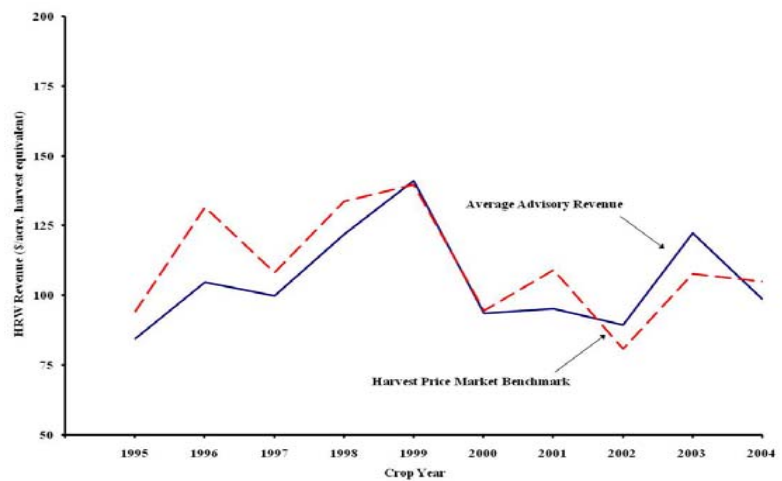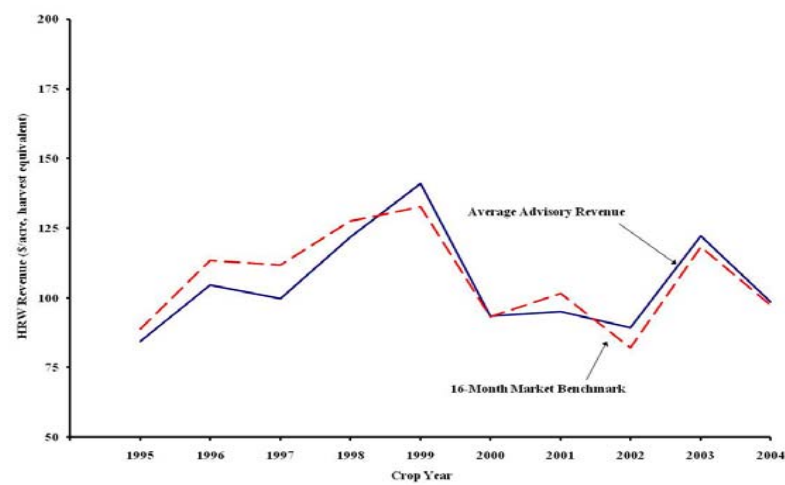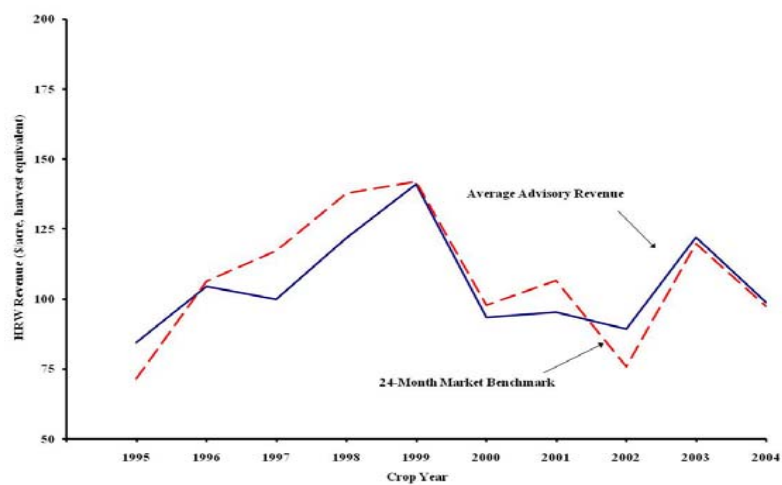
Figure 41. Conventional and Alternative Methods of Determining Top-, Middle-, and Bottom Third of the Price Range, Soft Red Winter Wheat, 2003 Crop Year (No Marketing Loan Benefits Included)
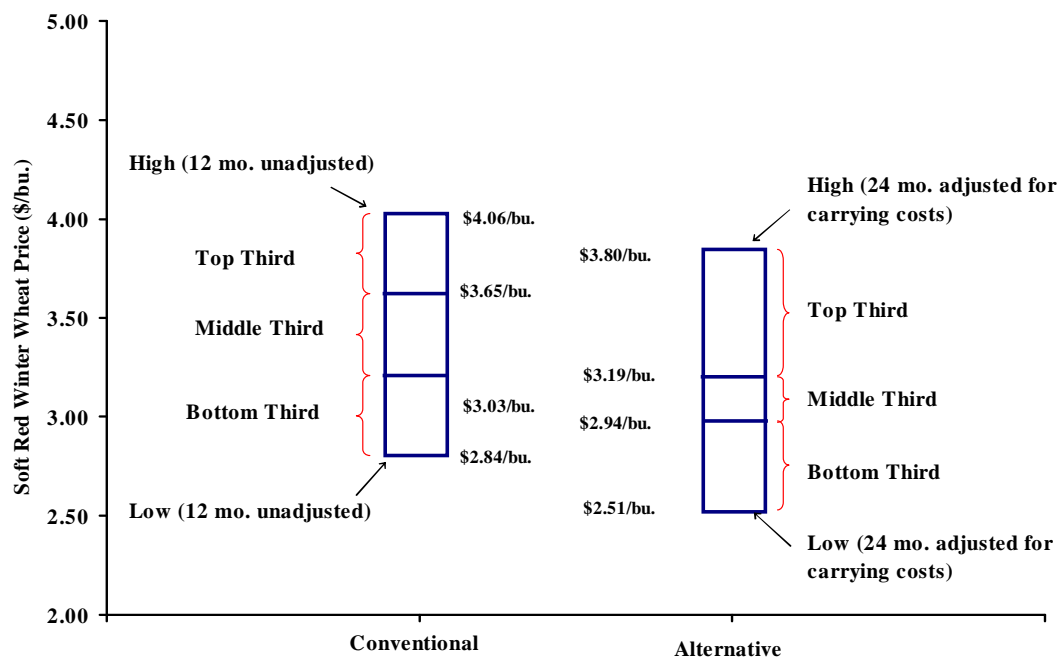
Figure 42. Conventional and Alternative Methods of Determining Top-, Second-, Third-, and Bottom Quarter of the Price Range, Soft Red Winter Wheat, 2003 Crop Year (No Marketing Loan Benefits Included)
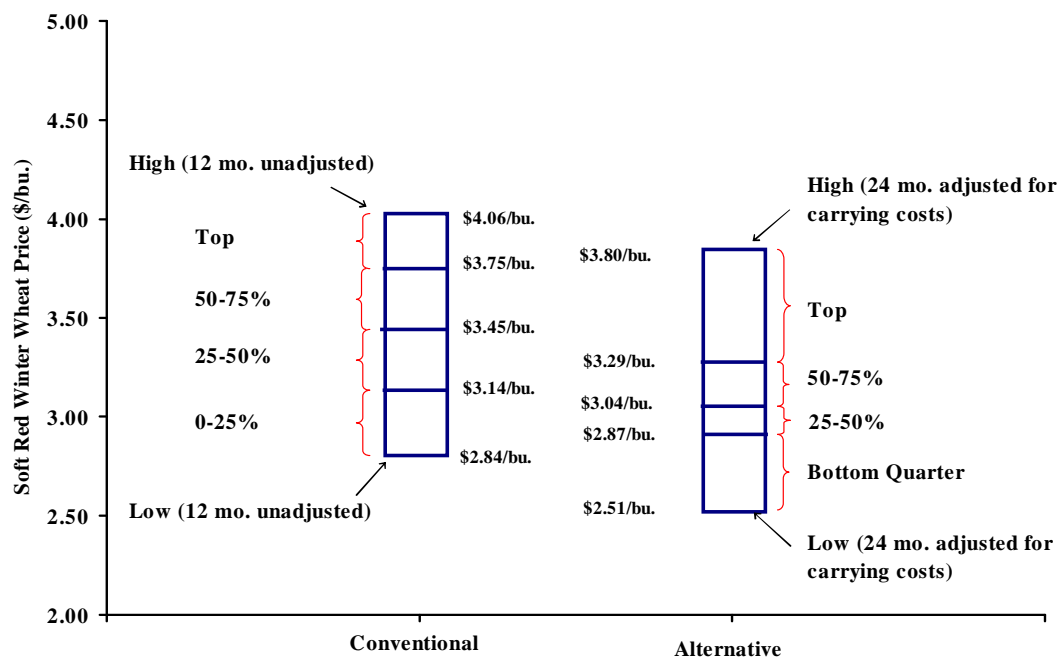
Figure 43. Net Advisory Prices and Top-, Middle-, and Bottom Third Price Ranges for 24-Month Marketing Window, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs (No Marketing Loan Benefits Included)

Panel A: Soft Red Winter Wheat
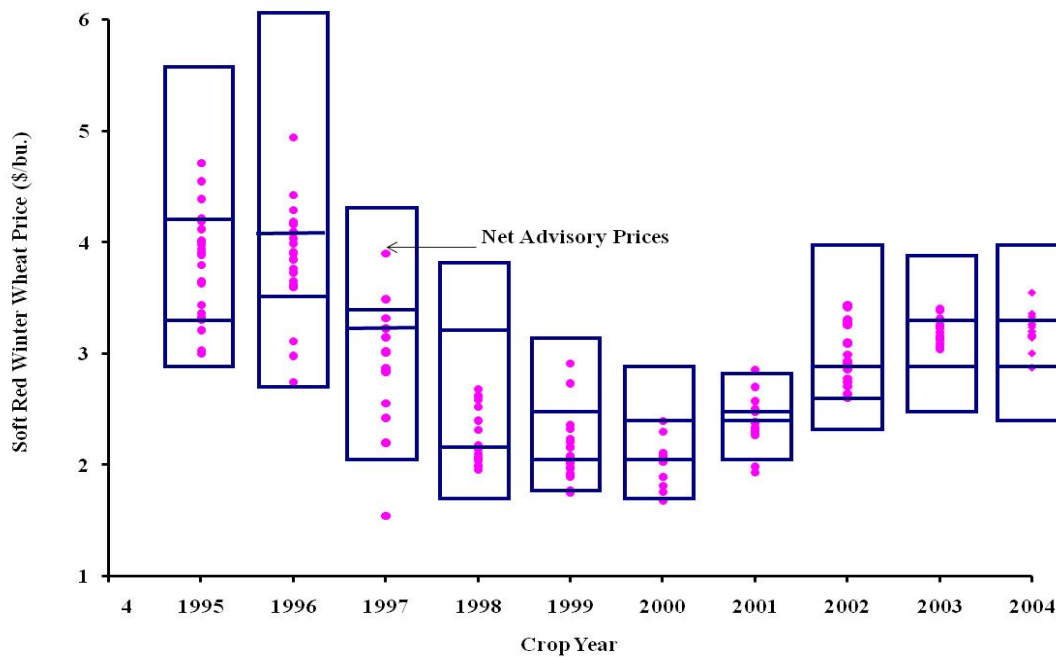
Panel B: Hard Red Winter Wheat
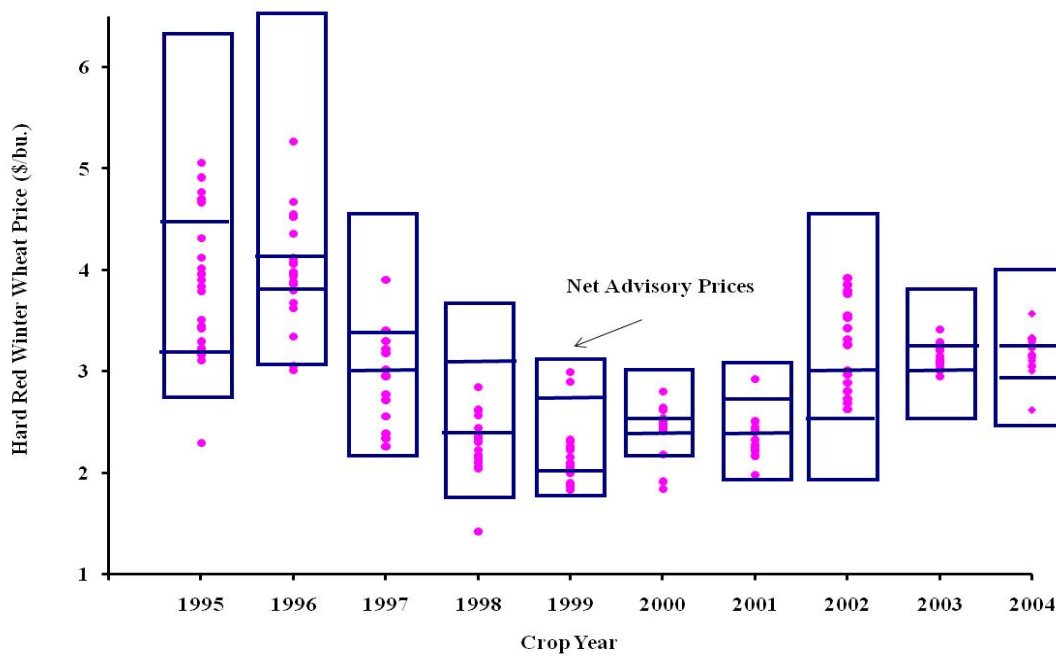
Figure 44. Net Advisory Prices and Top-, Second-, Third-, and Bottom Quarter Price Ranges for 24 Month Marketing Window, Soft Red Winter and Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs (No Marketing Loan Benefits Included)

Panel A: Soft Red Winter Wheat
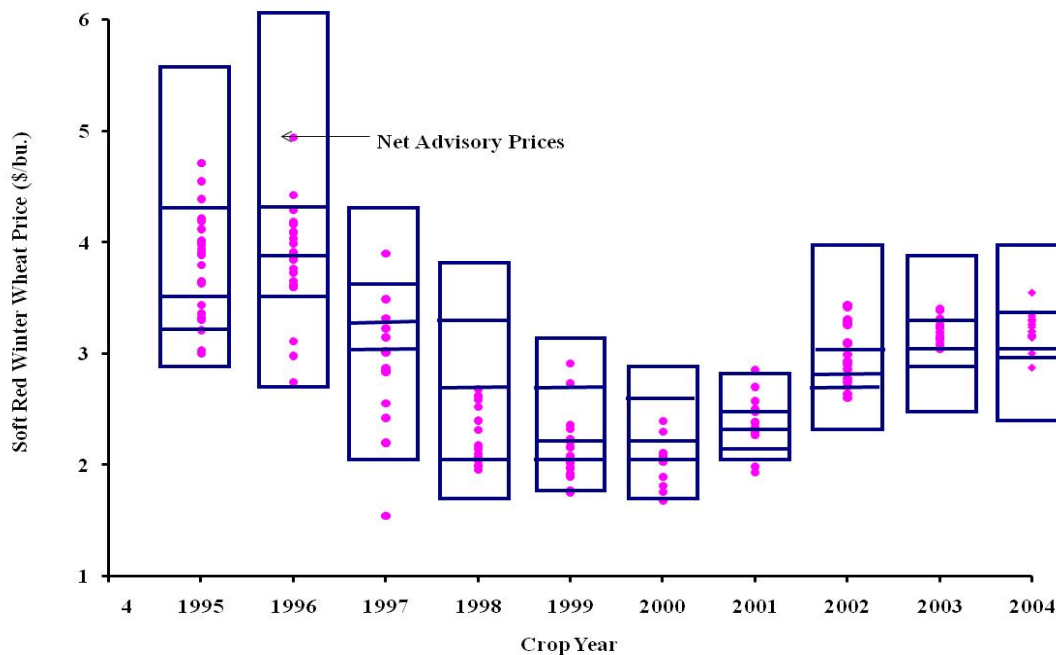
Panel B: Hard Red Winter Wheat
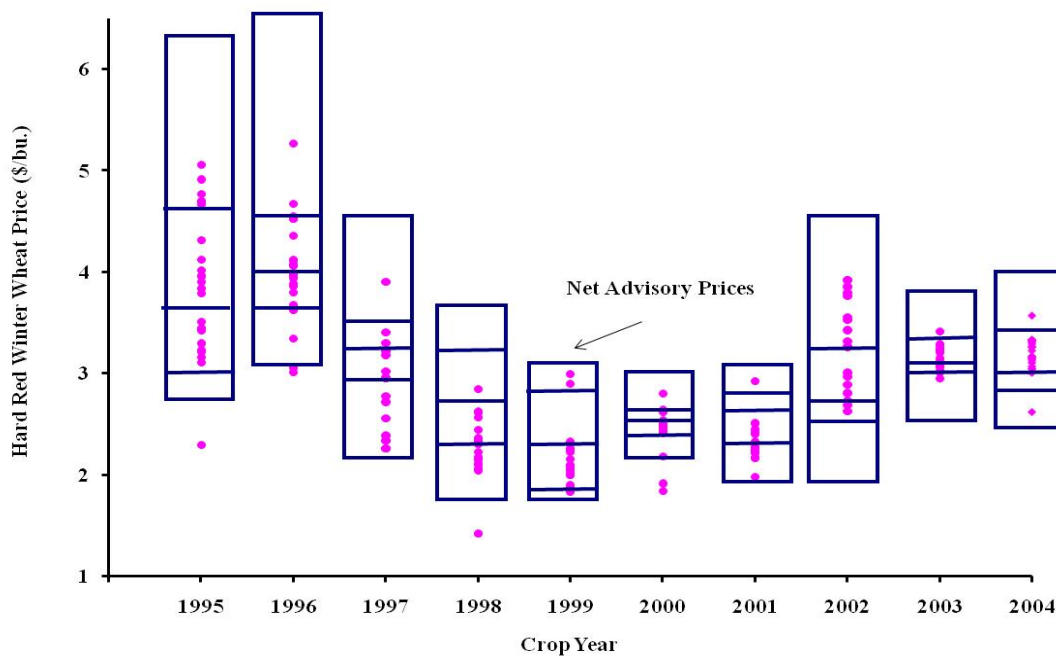
Figure 45. Average Net Advisory Price or Revenue and Standard Deviation for Advisory Programs and Benchmarks, 1995-2004 Crop Years

Panel A: Soft Red Winter Wheat
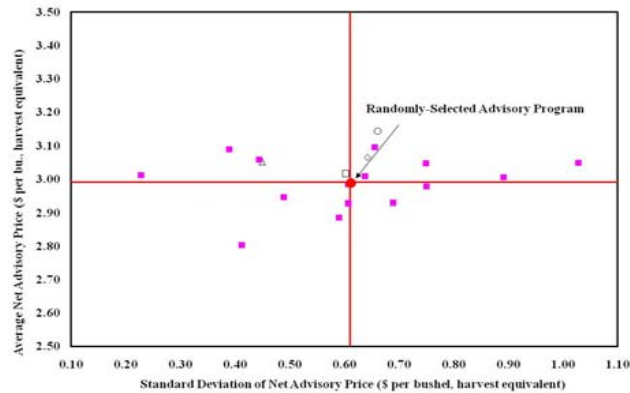
Panel B: Hard Red Winter Wheat
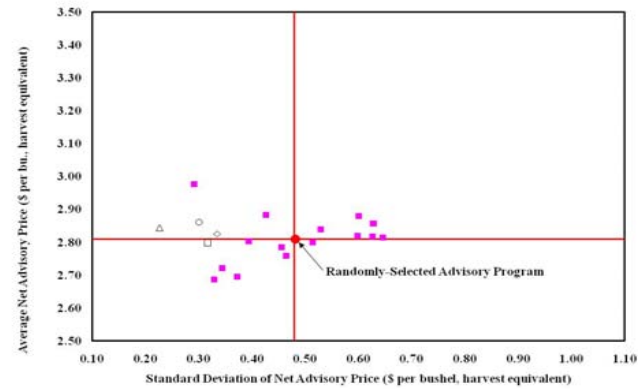
Panel C: SRW Revenue

Panel D: HRW Revenue
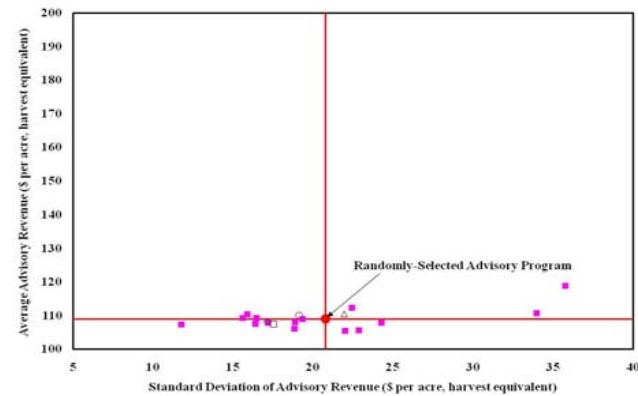
Note: The following legend applies to each chart: solid squares = individual market advisory programs, solid circle = randomly-selected advisory program, open triangle = 24-month market benchmark, open square = 16-month market benchmark, open circle = harvest price, and open diamond = farmer benchmark: market prices.

Figure 46. Average Monthly Spot Market Price of Illinois Soft Red Winter and Kansas Hard Red Winter Wheat, June 1982-May 2005

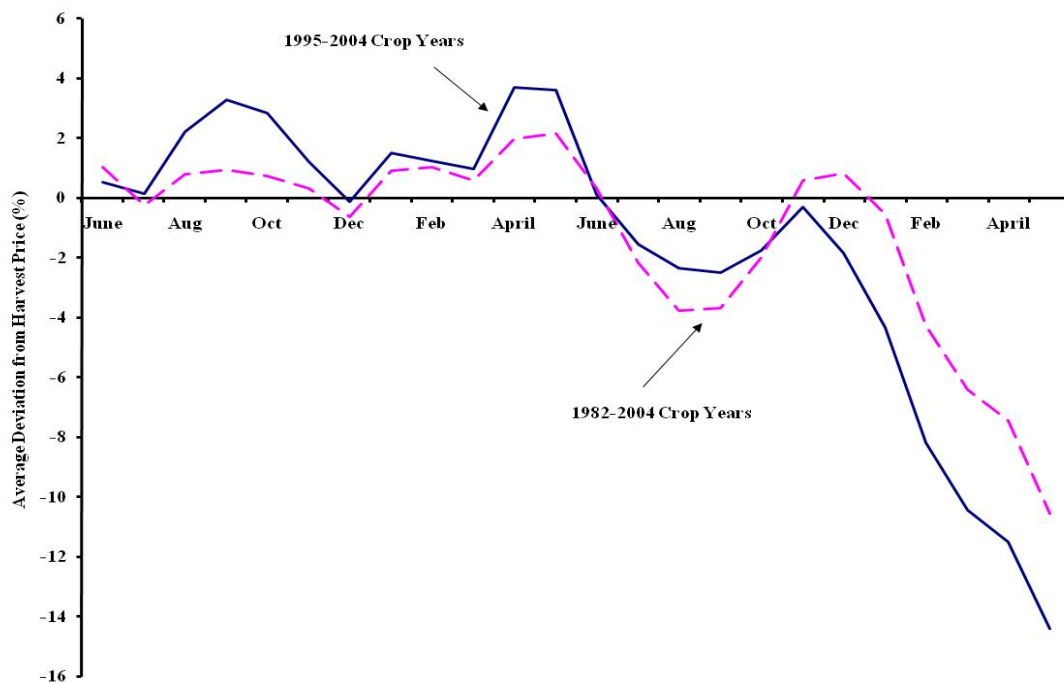**Panel A: Soft Red Winter Wheat**
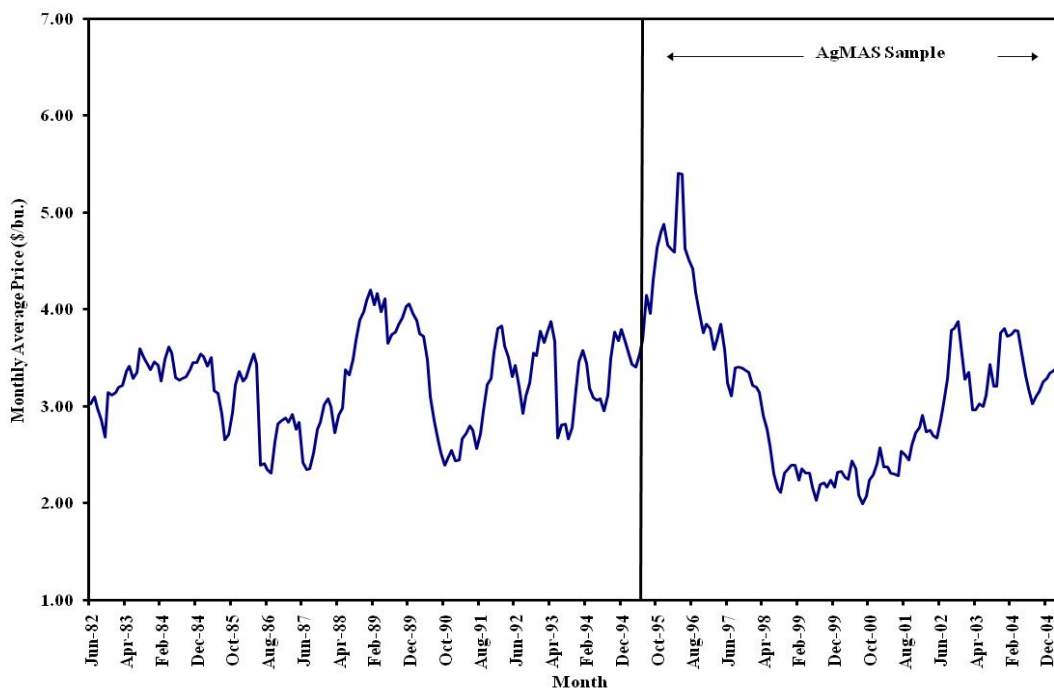
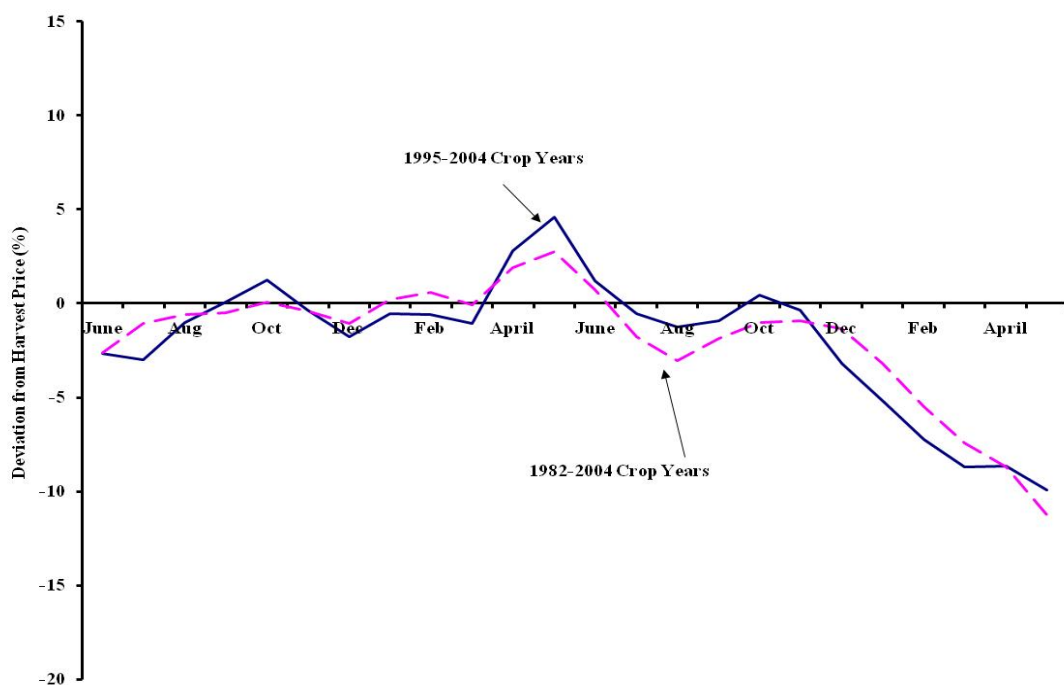**Panel B: Hard Red Winter Wheat**
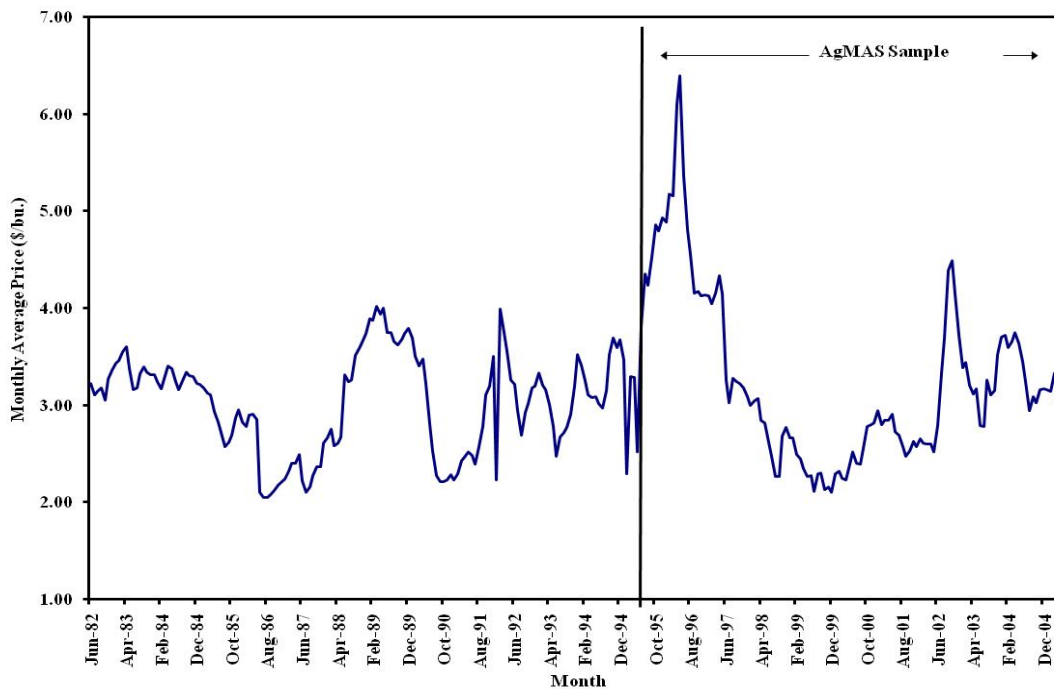
Figure 47. Average Monthly Prices of West Southwest Illinois Soft Red and Southwest Kansas Hard Red Winter Wheat, 1995-2004 and 1982-2004 Crop Years, Commercial Storage Costs Subtracted Post-Harvest (No Marketing Loan Benefits Included)
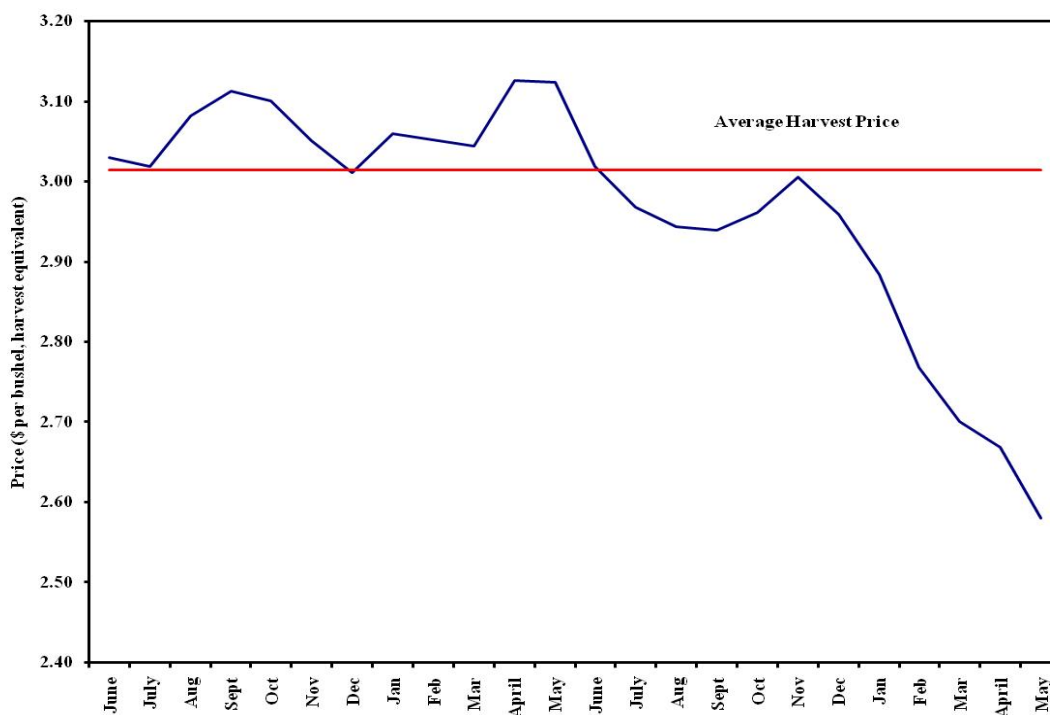
Panel A: Soft Red Winter Wheat

Panel B: Hard Red Winter Wheat

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Figure 48. Average Monthly Prices of Illinois Soft Red Winter and Kansas Hard Red Winter Wheat, 1995-2004 Crop Years, Commercial Storage Costs Subtracted Post-Harvest (No Marketing Loan Benefits Included)

Panel A: Soft Red Winter Wheat

Panel B: Hard Red Winter Wheat