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Abstract

This study sought to examine the nature of farmers' use of market advisory services based on the results of a survey of US crop producers. The survey revealed that market advisory service users tend to be significantly more risk seeking than non-users. Survey results indicated a large range in patterns of use of advisory services. Most farmers use advisory services to the greatest extent for marketing information, market analysis, and to keep up with markets. General guidelines (market strategies and price information) are utilized more than specific advice (e.g., specific pricing decisions, price forecasts). Only 11% of farmers reported that they closely follow the marketing recommendations provided by advisory services. Nonetheless, farmers report that the information provided by advisory services has a substantial impact on their marketing decisions. The implications of these results for advisory services, farmers, extension programs and research are discussed.

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Crop Farmers' Use of Market Advisory Services

Introduction

Farmers place a high value on market advisory services (MAS) as a source of price risk management information and advice. For example, in a rating of 17 risk management information sources, Patrick and Ullerich report that MAS are outranked only by farm records and computerized information services. Schroeder et al. find that a sample of Kansas farmers rank MAS as the number one source of information for developing price expectations. Davis and Patrick report that marketing consultants have the largest impact on the use of forward pricing by soybean producers. Norvell and Lattz find that marketing consultants tie for first place (with accountants), in a list of seven, as likely to be most important to Illinois farmers in the future. The rating of importance of MAS among participants at Purdue Top Farmer Workshops has steadily increased from fifth in 1997 to fourth in 1999 to third in 2001 (Patrick).

Surveys also report that a growing number of farmers subscribe to market advisory services. Among the participants at Purdue's Top Farmer Workshop, the share of subscribers grew from 53 percent in 1997 to 62 percent in 2001. Davis and Patrick report that 39 percent of farmers in Mississippi and 49 percent of farmers in Indiana used marketing consultants or subscribed to market information services in 1999. Along with the increased use of market advisory services for management decisions, farmers are willing to spend increasing amounts of money to receive this advice. Among Purdue's Top Farmer Workshop participants, annual expenses on marketing advice moved from the fourth highest expense for consultants to the second highest from 1991 to 2001, growing in absolute terms from $755 to $3,455. The majority of respondents that used marketing consultants in Coble et al's survey indicated that they spent $1,000 or more on marketing advice in 1998. It appears that the increasing importance of MAS in the decision making process of farmers is part of an overall trend towards increased firm reliance on external consultants in operational capacities, as pointed out by some researchers (e.g., Henderson; Venkatesan).

Previous studies have focused primarily on the pricing performance of MAS in corn, soybeans and wheat (e.g., Martines-Filho, Good, and Irwin; Irwin, Martines-Filho, and Good). A key assumption in these evaluations is that a representative farmer follows the recommendations exactly as provided by the advisory services. Limited evidence is available on how farmers actually use the marketing recommendations provided by advisory services. Pennings et al (2004, 2005) examine factors that determine the impact of MAS on farmers' marketing decisions. They argue that perceived MAS performance, the way in which MAS recommendations are delivered, and the match between a particular MAS and an individual farmer's marketing philosophy are important factors explaining the impact of MAS recommendations. Other studies have evaluated MAS as sources of consulting advice and information (e.g., Ortmann, et al; Jones, Battle, and Schnitkey). These studies have found that the use of consulting advice may be affected by the operator's age, farm size, farm ownership, education and risk aversion, among other factors. Ortmann, et al revealed that farmers rate their marketing management skills lower than their other management skills. They also found that marketing sources of information were ranked lower than other sources of information, which

may indicate that the needs of farmers are not being met in this area. These findings emphasize the need to investigate further the nature of MAS use.

The purpose of this study is to provide new and more comprehensive evidence about crop farmers' use of MAS. More specifically, in this study we (1) identify the levels of MAS use by US commercial farmers, (2) differentiate farmers who use MAS, (3) describe farmer valuation of MAS relative to other sources of marketing information and their selection of particular MAS, (4) demonstrate changes in MAS use under different market conditions, (5) describe the nature of MAS use, and (6) discuss the impact of MAS use on producer marketing behavior. These issues are examined based on the results of a survey of commercial agricultural producers conducted in January/February 2000. The study is concluded by providing practical implications of the survey findings for advisory services, farmers, extension programs and research. To introduce the subject of advisory services, some background information is presented in the next section.

Overview of the Market Advisory Service Industry

Market advisory services first began to emerge in the mid-1970s (Doane Agricultural Services being the one exception), following the huge run-up in commodity prices due to several extreme and highly unusual developments that contributed to historic market volatility.[1] Some of the first MAS included Farmers Grain and Livestock, in Des Moines, Iowa; Top Farmers of America, in Milwaukee, Wisconsin; Doane Agricultural Services, in St. Louis, Missouri; and Professional Farmers of America (ProFarmer) in Cedar Falls, Iowa. Doane Agricultural Services preceded all of the other companies by several decades, as it was formed in the 1930s. However, the primary focus of Doane in its early years was farm management, rather than marketing advice. The first companies geared toward giving specific marketing advice were Farmers Grain and Livestock and Top Farmers of America. ProFarmer initially started with market and policy information and moved later into the specific market advice area.

The early MAS were created in order to provide farmers with marketing information in an environment of increased market volatility. During the intervening years, these companies generally have gone through four evolutionary stages: Stage I - providing fundamental and technical market information, newsletters, and marketing tool seminars; Stage II - providing specific marketing recommendations in addition to stage I services; Stage III - providing electronic access via services such as the Data Transmission Network (DTN); and Stage IV - providing individual electronic access via e-mail and the Internet, as well as offering "customized" marketing recommendations for individual clients.

Overall, MAS may be described as firms whose primary business is to provide marketing information to farmers in order to help them decide how, when and where to market their crops and livestock. As noted above, the central focus of advisory services is providing market information, analysis and specific marketing recommendations to subscribers. Related services often provided by such firms include market and government policy information, seminars on

[1] Material in this section is heavily based on private e-mail communication with Robert Wisner of Iowa State University.

marketing tools and techniques, and in some cases, speculative futures and options trading advice. Marketing recommendations range from the relatively simple (e.g., sell 50% of 2003 soybean production today in the cash market) to the highly complex (e.g., if futures reach $3.25/bushel, sell 75% of expected 2004 corn production by purchasing December 2004 corn put options with a strike price of $3.50/bushel; to offset part of the cost of the put options write an equal amount of call options on March 2005 corn futures with a strike price of $3.75/bushel). Recommendations vary substantially across services in a given crop year, and in many cases, within a crop year for an individual MAS (Bertoli et al., 1999; Martines-Filho et al., 2003a, 2003 b; Colino et al., 2004a, 2004b).

These services are delivered for a fee in the form of a newsletter, hotline, website or e-mail. The fee structure typically differs between "basic" and "customized" marketing programs. A basic program provides market analysis, information, and what is probably best described as "one-size fits all" or "generic" marketing recommendations. A customized program generally provides marketing recommendations tailored to individual client needs, direct access to market analysts, as well as the information provided to basic service subscribers. Statistics on the subscription fees for the advisory services tracked by the AgMAS Project during the 1995 through 2001 crop years are shown in Figure 1.[2] These fees represent the fixed annual cost for a basic program and average about $300/year for this time period. The range of fees is skewed with minimum fees around $140-$180/year and maximum fees of about $550-$600/year. This data indicates the cost of basic programs is relatively small compared to whole farm revenue for most commercial-size farm operations. Irwin, Martines-Filho and Good report that subscription costs in 2001 average less than one-tenth of one percent of total advisory revenue for a 2,000 acre central Illinois corn and soybean farm and about two-tenths of a percent for a 500 acre farm. Available data on the cost of customized programs is sketchier. Information from advisory service websites and other promotional material indicate fees are charged based on anticipated production, either on per acre or per bushel basis. A typical fee is in the range of three to five cents per bushel. In contrast to the cost of a basic package, costs for a customized package may be substantial. For example, costs for a 2,000 acre corn/soybean farm could easily be as high as $7,000/year (assuming production of 150,000 bushels of corn, 50,000 bushels of soybeans, $0.03/bushel fee for corn and $0.05/bushel fee for soybeans).[3]

Today, the market advisory service industry is approaching maturity with dozens of firms offering services to producers. There are serious challenges to would-be entrants, because of the strongly-established customer positions of existing firms. While evaluating their market shares is outside the scope of this paper, informal evidence suggests that the industry leaders include ProFarmer, followed by Doane and Brock Associates. In the business of providing marketing information, MAS compete with each other; traditional sources of information, such as university extension services, magazines and newspapers (among others); and new sources, such as E-Markets (http:www.e-markets.com).

[2] The data are found in the annual AgMAS corn and soybean pricing reports published for the 1995-2001 crop years. The latest example is Irwin, Martines-Filho, and Good, 2003. Earlier reports can be accessed at the AgMAS Project website [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

[3] Given the level of market expenditures reported by attendees at Purdue Top Farmer Workshops ($3,455 in 2001), the cost comparisons presented here suggest that commercial farms make substantial use of customized programs.

This study presents new evidence regarding MAS use. The evidence was collected through a survey of US crop farmers from three major production regions- the Midwest, the Great Plains, and the Southeast. The next section describes the data-gathering procedures and the characteristics of the sample generated as a result of the survey.

Data Collection and Sample Characteristics

The empirical evidence on farmers' use of MAS, as presented in this study, was generated through a survey of US crop farmers conducted in January/February 2000. The survey instrument was sent to 3,990 farmers in the Midwest, Great Plains and Southeast.[4] The sample of addresses was drawn from directories kept by a US firm that delivers agricultural market information and MAS via satellite. The questionnaires were sent on January 21, 2000, and the cut-off date for returning questionnaires was March 10, 2000. A total of 1,399 usable questionnaires were sent back, yielding a response rate of 35%, which is high compared to previous surveys among small- and medium-sized enterprises (Jobber; Karimabay, and Brunn). The details of survey development and execution are discussed in Pennings, Irwin and Good. This study utilizes 1,285 complete responses.

The demographic characteristics of survey respondents reported in Table 1 suggest that the survey respondents can be classified as relatively large commercial farmers. The scale of the farm operation of the survey respondents was about four times the national average (as reported by the 1997 Census of Agriculture) if measured by total acreage and about five times the national average if measured by gross annual sales. On average, the respondents farmed nearly 2,000 acres and had gross annual sales exceeding $500,000. Most had annual sales above $100,000. The survey respondents were, on average, somewhat younger than the overall population of US farmers: 44 versus 54 years of age. Regionally, the highest concentration (52%) of survey respondents was in the Midwest, followed by the Great Plains (30%), and the Southeast (18%). As shown in Table 2, the principal crops for this group of farmers were corn, soybeans and wheat. A total of 56 % of the respondents reported that they also had livestock in their farm operation.[5]

This group of farmers appears similar to commercial farmers described in previous surveys in terms of age (Shroeder et al.) and farm size (Patrick, Musser, and Eckman; Goodwin and Schroeder; Coble, et al). However, the sample used in this study is more general in geographic terms. The following sections describe the use of MAS by this group of farmers.

Users of Market Advisory Services

Based on the findings from previous studies (e.g., Ortmann, et al; Jones, Battle, and Schnitkey), the sample of survey respondents was stratified between MAS users and non-users

[4] The Midwest is represented by Illinois, Iowa, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. Great Planes include Colorado, Kansas, Montana, North Dakota, Oklahoma, South Dakota, and Texas. South East includes Alabama, Arkansas, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, South Carolina and Virginia.

[5] Details on producers' livestock operations are available upon request.

across basic demographic characteristics shown to affect farmers' use of consultants.[6] The data reported in Table 3 indicate that about 82% of the survey respondents (1,053 respondents) used MAS, while 18% (232 respondents) did not use MAS. The highest use of MAS (85%) was reported in the Midwest, the lowest (78%) in the Great Plains. Comparison of the sub-groups showed that MAS users and non-users cannot be differentiated based on age and farm size. However, adoption of MAS may be associated with geographical differences in MAS use.

Pennings et al (2004) argued that heterogeneity in the likelihood of using MAS is determined by crop producers' risk attitudes, among other factors. Because producers' risk attitudes are unobserved, they were examined using statements 2-5 listed in Table 4. Producers were asked to indicate their agreement with these statements on a nine-point semantic scale ranging from "strongly disagree" (1) to "strongly agree" (9). The construct reliability of this scale was analyzed using the method proposed by Hair et al. Construct reliability refers to the extent to which an indicator or set of items is consistent with what it is intended to measure and hence relates to the consistency of the measures (Hair et al). The construct reliability of this scale, which may range from 0 (not reliable) to 1 (perfectly reliable), was high, at 0.85 (Hair et al). Other measures of reliability yielded the following results: χ^2 /df = 1.0 (p= 0.37); GFI = 0.99; RMSEA= 0.0.[7] Therefore this scale may be presumed to reflect accurately the attitudes of producers toward risk. This analysis suggests that MAS users reveal a significantly greater preference for risk than non-users. This finding is intuitive, because if farmers are willing to take more risk, they are more likely to be involved in sophisticated marketing schemes and may be in greater need for marketing information and advice. This conclusion is consistent with the findings of Goodwin and Schroeder, who argued that farmers with more preference for risk are more likely to adopt forward pricing.

Evaluation of Sources of Marketing Information and Selection of a Specific Service

As mentioned in the overview section, MAS compete with other sources of marketing information. Table 5 reveals that MAS are the third most important source of marketing information for this sample of crop farmers. This finding is consistent with evidence presented in previous studies (e.g. Patrick and Ullerich, Shroeder et al., Norvell and Lattz, Schnitkey et al). Satellite systems are considered the most important source of marketing information, which is consistent with Patrick and Ullerich's findings. Notable is the importance of USDA reports. The impact of a local elevator was ranked very high, while university extension services and marketing clubs received relatively low ratings. It is important to keep in mind, however, that these results reflect farmers' opinions dating to the spring of 2000. With the emergence of new

[6] Non-users of MAS are producers who answered "Yes" to the statement "Do not use market advisory services at all." Producers who used one of the market advisory services listed in the survey or another market advisory service are considered MAS users.

[7] The likelihood-ratio Chi-square statistic (χ^2) tests whether the matrices observed and those estimated differ. Statistical significance levels indicate the probability that these differences are due solely to sampling variations. The Goodness-of-Fit Index (GFI), which represents the overall degree of fit, that is, the squared residuals from prediction compared with the actual data, ranges from 0 (poor fit) to 1.0 (perfect fit). The Root Mean Squared Error of Approximation (RMSEA) estimates how well the fitted model approximates the population covariance matrix per degree of freedom. Browne and Cudeck (1986) suggested that a value below 0.08 indicates a close fit.

web-based information sources and increasing access to them, the importance of associated Internet sources may be rated much higher today.

As sources of marketing information, MAS also compete with one another. The first column of Table 6 reports the percentage of farmers that have ever used a specific MAS. The MAS listed in Table 6 represent the ten most popular MAS in 2000 in terms of subscriptions by satellite users. The largest proportion of survey respondents, nearly 70%, had subscribed to ProFarmer at some point in time, followed by Brock Associates, and AgLine by Doane. Nearly half of farmers used other MAS not listed in this table. Only 18% of the farmers reported that they did not use MAS at all. The distributional information found in Figure 2 shows that only 43% of the MAS users relied on a single MAS, while the other 57% subscribed to multiple services. This observation implies that the majority of MAS users rely on a portfolio of services and the impact of individual MAS may be difficult to differentiate.

The use of any particular MAS may be related to familiarity with it and farmer perceptions about its marketing style. According to Table 6, the survey respondents were most familiar with ProFarmer and least familiar with CommStock Investments Inc. and Brent Harris Elliott Wave. This finding is not surprising, given that ProFarmer is one of the oldest MAS, while CommStock Investments Inc. and Brent Harris Elliott Wave are newer MAS. In general, the trial rates reported by farmers in the first column are closely correlated with familiarity about specific MAS (ρ of the rankings is equal to 0.94).

Table 6 also presents evidence regarding farmers' perception of the marketing styles of various MAS. Brock Associates, AgResource Company, and Allendale Inc. are considered the most aggressive MAS, while AgLine by Doane, AgriVisor Services Inc., and Stewart Peterson are perceived as the most conservative. Interactions with farmers during the pre-study period revealed that farmers appear to associate MAS aggressiveness with the intensity of use of futures and options markets rather than with cash market instruments. Both Brock Associates and AgLine by Doane are among the most commonly-used MAS, therefore both aggressive and conservative features may be attractive to different farmers. In fact, it may be the match between the MAS and the individual farmer's marketing philosophy, rather than MAS marketing style alone, that determines the choice of MAS. Survey respondents indicated that they are likely to use a MAS if it matches their marketing philosophy, with an average response of 6.23 on a one-to-nine scale (1=certainly not use, 9=certainly use). On the other hand, they indicated that they are not be likely to use a MAS if it does not match their philosophy, with an average response of 3.07 on the same scale. These findings are consistent with the results of Pennings et al. (2004), who demonstrate that the likelihood of farmer's use of MAS is driven, at least to a certain extent, by the match of the farmer's marketing philosophy and the MAS' marketing style.

Another aspect of MAS use is farmer satisfaction. Table 6 reports the level of satisfaction with specific MAS of farmers that have subscribed to a particular MAS. Interestingly, CommStock Investments, one of the least-used MAS, received the highest satisfaction rating. Farmers were also very satisfied with the use of AgResource, ProFarmer, and Brock Associates, some of the most commonly-used MAS. Overall, respondents appear to be moderately satisfied with the 10 advisory services listed in Table 6. Satisfaction with MAS use does not appear to be closely related to the other categories of MAS use described in Table 6 except for marketing

style.[8] According to these results producers appear to favor more aggressive MAS. Previous studies (e.g., Ginzberg; Zeithaml, Parasuraman, and Berry) suggest that farmers evaluate MAS based on the outcome of the service (MAS performance) and the process of service delivery. These aspects of MAS will be reviewed later in this paper.

Figure 3 describes the frequency of farmer switching between different MAS. On average, the survey respondents switched MAS once every 3.3 years. This means that MAS must find a new pool of subscribers approximately every three years. This finding is consistent with the trial rates reported in the first two columns of Table 6. The percentage of farmers that have ever used a specific MAS adds up to 331%, which implies that the average farmer in this survey has tried about three different services. Only 28% of MAS users reported that they had never switched MAS. Most of these "loyal" users subscribed to the older MAS: ProFarmer, AgLine by Doane, and Brock. The other 72% of MAS users seem to be chasing "the hot advisor." This finding is consistent with similar evidence presented in the finance literature (e.g., Chevalier and Ellison; Sirri and Tufano) that describes how "hot" money flows into and out of mutual funds.

Market Advisory Service Use in Different Market Conditions

This survey also investigated how the use of MAS may change depending on different market conditions. To explore this issue, farmers were asked to indicate the probability of subscribing to MAS under the following scenarios: (1) low crop prices, (2) normal crop prices, (3) and high crop prices. Figure 4 indicates that, on average, farmers revealed a downward-sloping use of MAS relative to crop prices, with the average probability of subscribing to MAS ranging from 56 to 64 percent, depending on market conditions. Interestingly, this "demand indicator" for MAS in different market conditions was not homogeneous. Farmers may be divided into three groups, based on their use of MAS in different market conditions. As shown in Figure 3, Group A represents about 39 percent of the survey respondents, who follow the general tendency of downward-sloping MAS use relative to crop prices. Thus, the probability of MAS use by this group increases as the crop prices fall. This relationship suggests that this group may be most interested in the risk-reducing characteristics of MAS. Group B, composed of about 15 percent of the survey respondents, revealed an upward-sloping use of MAS relative to crop prices. This group is most likely to subscribe to MAS when the crop prices are high. This group may be sensitive to the cost of MAS, as MAS become relatively less expensive with high crop prices. Finally, Group C, which represents about 40 percent of survey respondents, revealed a flat 70 percent likelihood to subscribe to MAS regardless of market conditions. This group clearly represents the most stable and loyal MAS users.

Several characteristics of these groups, similar to the ones reviewed before for all MAS users, are presented in Table 7. This information reveals that these three groups exhibit regional differences, with the largest proportion of Midwest farmers belonging to group C (flat use), and the largest proportion of farmers in the Great Plains and the Southeast representing group A (downward-sloping use). Farmers can also be differentiated based on their farm size, measured by gross sales, with the largest producers following Group C-type behavior, followed by Group A and B. Producers representing Group A appear most risk averse, and have the highest belief in

[8] The rank correlation between satisfaction and trial rate is 0.17, between satisfaction and familiarity is 0.17, and between satisfaction and marketing style is 0.45.

the risk-reducing properties of MAS of all three groups. Group A also highly values the price-enhancing characteristics of MAS. Group B had the lowest scores in all categories, except risk attitude and the cost of MAS. This group appears to be the most sensitive to the cost of MAS. This suggests that this group may be the least interested in using MAS of the three groups. Group C appears the most likely to use MAS, as it has the highest scores in all categories.

Nature of Market Advisory Service Use

After the choice of MAS has been made and a farmer has selected to a particular service or combination of services, the subscriber receives information and pricing recommendations from the MAS. At this point it becomes interesting to know how farmers use this information. Table 8 describes the extent to which farmers use various types of MAS advice. These data suggest that MAS are used to the greatest extent for marketing information, market analysis, and to keep up with markets. Advisory services are more often used in an attempt to receive an above-average price than to reduce price and income risk and reduce price fluctuations. Somewhat contrarily, however, farmers do not believe that the use of MAS will give them much chance to beat the market. General guidelines (e.g., market strategies and price information) are utilized more than specific advice (e.g., specific pricing decisions, price forecasts). Farmers appear to be cautious about using specific MAS recommendations to make pricing decisions, as they indicated that they generally use MAS recommendations as background information, compare it with other information sources and do not follow MAS advice precisely. Only 11 percent of the farmers follow the specific pricing recommendations of MAS closely.[9] Thus, only a relatively small segment of MAS users follow the type of behavior assumed in previous studies of MAS performance (e.g., Irwin, Martines-Filho, and Good).

Since the behavior of the average MAS user may be different from that of close followers of MAS, Table 9 compares all MAS users and close followers in terms of the impact of MAS and the implementation of MAS pricing recommendations.[10] The impact of MAS on farmer pricing decisions is substantial for the entire group of users (6 on the scale from 1 to 9) and very strong (8 on the scale from 1 to 9) for close followers. Both groups are very likely to implement recommendations associated with the use of cash-market strategies, both before (in the form of cash forward contracts) and after harvest. The next most popular pricing recommendations are buying call options and selling futures after harvest, for all users, and selling futures before and after harvest, for close followers. These are followed by buying put and call options prior to harvest for both groups. The use of both instruments may be indicative of sophisticated options positions, such as fences or window strategies. The least favored recommendations for both groups were buying futures before and after harvest, and buying put options after harvest, which, interestingly enough, is a conventional hedging strategy. Overall, there is little difference between the two subgroups in terms of which types of recommendations they implement, only that close followers are significantly more likely to implement them.

[9] The sub-segment of close followers, relative to all MAS users, is concentrated more in the Midwest and less in the Southeast, with shares of 61 and 10 percent, respectively. They are slightly younger (43 years) than the average user and operate larger farms with gross sales averaging $600,610.

[10] Close followers are producers who indicated that they follow MAS recommendations very closely (Table 7). All MAS users include producers who used one of the market advisory services listed in the survey or another market advisory service.

Finally, the nature of MAS use may be affected by the process of service delivery (e.g., Ginzberg). Farmers' valuation of some of these aspects is described in Table 10. These aspects are grouped in three general categories that reflect the delivery process of MAS, namely, the process itself, methods used to arrive at recommendations, and particular tools recommended for application. This data suggests that the most valued features of the delivery process are daily updates of analyses and consistency of recommendations. The most important methods used to arrive at recommendations are fundamental analysis, specialist opinions regarding particular crops, and technical analysis. Farmers appear to value recommendations that include futures and options more than recommendations that use only cash instruments. However, as discussed in the previous paragraph, they seem more likely to follow cash-oriented recommendations. This discrepancy may be explained by the fact that all farmers have to sell their crops in the cash market, but not all of them use futures and options. Farmers do not seem to care too much whether the analysis is based on the knowledge of one person or a group, nor do they care about the way the information is presented (text versus charts). The frequency of futures and options use is not important to them either. Overall, this evidence demonstrates that farmers do not evaluate service quality solely on the marketing performance of the service, but also on the process of service delivery.

Market Advisory Service Use and Marketing Behavior

The impact of MAS use on farmer marketing behavior is examined next in terms of the use of forward pricing tools and marketing frequency. The use of forward pricing tools by MAS users, non-users, and close followers is reported in Table 11. These data reveal that MAS users are generally more active marketers, as they use all of the selected forward-pricing techniques more than non-users. The smallest difference in use is for the simplest instruments, such as cash forward contracts. This difference increases for hedge-to-arrive contracts and almost doubles for the use of futures and options. The use of forward-pricing techniques is even greater among close followers of MAS, particularly futures and options both before and after harvest and hedge-to-arrive contracts before harvest. These results indicate that MAS users (especially close followers) are much more likely to use forward-pricing techniques, particularly futures and options, than non-users. This finding is consistent with the finding in previous studies (e.g., Davis and Patrick) that market advisory service use is an important determinant of the forward pricing behavior of farmers.

Current respondents, on average, use forward-pricing techniques much less than the participants in the Purdue Top Farmer Workshop (Patrick) and the respondents to the 1996 Kansas survey (Schroeder et al). The use of forward pricing techniques by the participants of these previous surveys appears similar to the responses of the close followers of MAS. The results of the current survey are very similar to the results of Coble et al.'s study into the use of futures and options, but differ dramatically in the use of minimum-price contracts. The participants of the Coble et al. study are likely to have used MAS as well, but to a much smaller degree, since only about 20% of the participants in this study reported non-zero spending on marketing consultants. This comparison suggests that the use of forward-pricing techniques in the current survey falls between the more general sample of farmers used in Coble et al.'s study and the more restricted sample used in Purdue studies.

Another interesting aspect of farmer marketing behavior is marketing frequency. Table 12 shows the number of times that producers of corn, soybeans, wheat and cotton make pricing decisions, based on the current survey and some previous studies (Coble et al; Goodwin and Kastens). Consistent with the evidence presented in previous studies, the current survey reveals that most farmers make 2-5 pricing decisions a year. In both the current and the Coble et al. survey, the lowest pricing frequency was reported for cotton farmers (2-3 times a year) and the highest for corn farmers (6 times a year). Wheat farmers make about four pricing decisions a year, on average, which is consistent with Goodwin and Kastens' findings. In general, the pricing frequency found in the current survey was consistent with Coble et al.'s findings and slightly higher than Goodwin and Kastens' results for corn and soybeans (6 versus 4 times, respectively, for corn, and 3 versus 4.5 times for soybeans).[11] Only among producers of soybeans and cotton did MAS users show a greater pricing frequency than non-users. The pricing frequency among corn and wheat producers revealed no significant differences between users and non-users of MAS. This evidence suggests that the use of MAS does not always result in a higher pricing frequency for producers.

Summary and Conclusions

Farmers in the US continue to identify price and income risk as one of their greatest management challenges. Numerous surveys show that farmers place a high value on market advisory services (MAS) as a source of price risk management information and advice. While the pricing performance of MAS has been examined in detail, there is limited evidence about how farmers actually use these services. This study sought to examine the nature of farmers' use of advisory services based on the results of a survey of US crop producers. The survey questioned 3,990 farmers in the Midwest, Great Plains, and Southeast and provided 1,285 complete responses for the purposes of this study. The sample of survey respondents appears representative of large-scale commercial farmers in the US.

The survey revealed that about 82% of the respondents used MAS. Users of MAS cannot be differentiated from non-users based on demographic characteristics, such as age and farm size. However, MAS users tend to be significantly more risk seeking than non-users. The use of a specific MAS appears to be closely correlated with farmer familiarity with the MAS. Farmers value both aggressive and conservative MAS, which suggests the match between the marketing philosophy of a farmer and MAS may play a key role in MAS choice. These findings imply that a MAS may be able to expand its customer base if it makes more producers aware of its services, and its marketing style, in particular. The biggest potential for the new customer base is among more risk-seeking producers that may be in greater need of marketing advice.

Stability of customer base may be an important issue for MAS. Respondents to this survey reported that they switched MAS on average about once every three years. This finding implies that MAS must find a new pool of subscribers about every three years, and therefore, their marketing efforts are extremely important. Additionally, farmers reported moderate levels of satisfaction with MAS use overall. These findings are consistent with conclusions by Ortmann

[11] This difference may be caused by the fact that Goodwin and Kastens' survey was based in Kansas, where corn and soybeans are secondary crops.

et al. that producers' needs for marketing information are not being fully met. Therefore, MAS (as well as other sources of marketing information) may need to invest in further research to identify these specific needs.

Stability of MAS use also may be affected by market conditions. A simple experiment included in the survey indicated that farmers differed in their likelihood of subscribing to MAS in different market conditions. Three groups of farmers were identified that revealed (A) decreasing, (B) increasing, and (C) constant probability of subscribing to MAS relative to crop price levels. Thus, in order to increase stability of use in different market conditions, MAS should concentrate their efforts on the first two groups. It appears that the first group (A) may be most interested in risk-reducing characteristics of MAS, and therefore this group should be presented with recommendations targeted at reducing producers' risk exposure. The second group (B) seems to be very sensitive to the cost of MAS. Hence, some price-discriminating strategies may make MAS more attractive for these farmers.

This survey showed that farmers use MAS for various reasons. Most often MAS are used for marketing information, market analysis, and to keep up with markets. Advisory services are more often used in an attempt to receive an above-average price than to reduce price and income risk. Most farmers use MAS recommendations as background information, compare it with other sources and do not follow MAS advice precisely. Only 11 percent of farmers follow the specific pricing recommendations of MAS closely. Based on this information, it appears that MAS may benefit from providing more differentiated products, some concentrated on general marketing information, some focused on specific pricing recommendations. Such product differentiation may allow MAS to better meet the needs of farmers. In view of our findings regarding the importance of the match between MAS and farmers' marketing philosophies, it is critical that these new products be clearly identified.

The results of this study may be used by producers to compare their use of MAS with that of other users and to form expectations for MAS use. The survey revealed the importance of a good match between the marketing philosophy of a farmer and a MAS in farmers' selection of MAS. Therefore, farmers should carefully consider the marketing style of a particular service while making their choice of MAS. A better "fit" between farmers and MAS may result in higher satisfaction levels and lower switching rates. Only 28% of MAS users reported that they have never switched MAS. The other 72% of MAS users may be chasing "the hot advisor." Such behavior may result in substantial switching costs. Similar behavior on part of mutual fund investors has been shown to be quite costly in terms of realized performance (e.g., McDonald). Additionally, previous studies of MAS performance (e.g., Irwin, Martines-Filho, and Good) show that past performance is not indicative of future performance. This emphasizes the importance of selecting a MAS based on its marketing style rather than past performance.

The insights about the nature of MAS use by U.S. crop farmers presented in this study also have interesting implications for extension program development. University extension services received a very moderate ranking as a source of marketing information by survey respondents, which suggests that information the extension service provides to large commercial farmers is not, in general, highly-valued. Two findings of this study are particularly curious in this context: (1) MAS users are more risk-seeking than non-users and may have a greater need for marketing

advice because they are involved in more sophisticated marketing strategies; and (2) farmers appear more interested in the price-enhancing characteristics of MAS rather than in their risk-reducing features. These findings contribute evidence to the ongoing debate in the agricultural economics literature about the relevance of risk-management education and research. Numerous arguments have been made that risk reduction is not of primary interest to farmers (Christensen and Wimberley), that risk only matters when a producer is in a tight financial situation or is contemplating a major change in farm operations (Patrick and De Vuyst), or that producers' primary concern is how to use the information in order to make money (Anderson and Mapp). On one hand, these arguments emphasize the need for educational programs that incorporate information on price-enhancement opportunities available from various marketing strategies and help producers better understand marketing information. This can be accomplished in part by incorporating more outlook information into extension programs. On the other hand, these findings indicate the importance of educating farmers about market efficiency concepts, which challenge their focus on price enhancement (e.g., Zulauf and Irwin).

Results of this study clearly show that advisory services are highly influential with marketing decisions of large commercial farmers. If this group of farmers is deemed an important target of extension programs, than advisory services may provide an effective way to reach this audience. One approach would be to involve MAS in the design, and potentially, even delivery of extension programs. Another approach would be to create "train-the-trainer" type programs focused on MAS staff directly. This approach has proven quite successful with other groups, such as agricultural lenders.

The results of this study also have important research implications. This study demonstrated that MAS have a substantial impact on producer pricing decisions. Therefore, MAS use should be included in future studies of producer marketing behavior. In fact, some recent studies (e.g., Katchova and Miranda) already consider MAS use as a part of farmers' decision process regarding the use of marketing contracts. Additionally, previous studies of MAS performance (Irwin, Martines-Filho, and Good) are based on the assumption that farmers exactly follow the marketing recommendations provided by services. The conclusions strictly refer to the 11 percent of producers that follow MAS recommendations closely. Research is needed that examines the relationship between the degree of implementation of MAS advice and subsequent pricing performance. This study also emphasized the importance of the match between farmers' and MAS marketing styles in farmers' use of MAS. However, objective information about advisory service marketing style is quite difficult for farmers to obtain. Thus, there is a need to investigate marketing styles of various MAS in order to determine style categories based on objective quantitative factors. Such information may be used by farmers to improve their choice of MAS.

References

Anderson, K.B. and H.P. Mapp. "Risk Management Programs in Extension." *Journal of Agricultural and Resource Economics* 21(1996):31-38.

Bertoli, R., C.R. Zuluaf, S.H. Irwin, T.E. Jackson, and D.L. Good. "The Marketing Style of Advisory Services for Corn and Soybeans in 1995." AgMAS Project Research Report 1999-02, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, August 1999. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

Browne, M.W., and Cudeck, R. "Single Sample Cross-Validation Indices for Covariance Structures." *Multivariate Behavioral Research* 24(1986):445-455.

Chevalier, J. and G. Ellison. "Risk Taking by Mutual Funds as a Response to Incentives." *Journal of Political Economy* 105 (1997):1167-1200.

Christensen, R.L and R.C. Wimberley. "Issues in Research and Education." *Food,Agriculture, and Rural Policy into the Twenty-First Century: Issues and Trade-offs.* Hallberg, M.C., Spitze, R.G.F., Ray D.E., eds. Boulder and Oxford: Westview Press, 1994: 381-96.

Coble, K.H., G.F. Patrick, T.O. Knight, and A.E. Baquet. "Crop Producer Risk Management Survey: A Preliminary Summary of Selected Data." Information Report 99-001, Department of Agricultural Economics, Mississippi State University, September 1999.

Colino, E.V., S.M. Cabrini, S.H. Irwin, D.L. Good, and J. Martines-Filho. "Advisory Service Marketing Profiles for Corn in 2001." AgMAS Project Research Report 2004-01, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, April 2004a. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

Colino, E.V., S.M. Cabrini, S.H. Irwin, D.L. Good, and J. Martines-Filho. "Advisory Service Marketing Profiles for Soybeans in 2001." AgMAS Project Research Report 2004-02, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, April 2004b. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

Davis, T.D., and G.F. Patrick. "Forward Marketing Behavior of Soybean Producers." Selected paper presented at the American Agricultural Economics Association annual meetings, Tampa, Florida, July 30-August 2, 2000.

Ginzberg, M. J. "Finding an Adequate Measure of OR/MS Effectiveness." *Interfaces* 8,(1978):59-62.

Goodwin, B.K., and T.L. Kastens. "An Analysis of Marketing Frequency by Kansas Crop Producers." *Review of Agricultural Economics* 18(1996): 575-584.

Goodwin, B.K., and T.C. Schroeder. “Human Capital, Production Education Programs, and the Adoption of Forward-Pricing Methods.” *American Journal of Agricultural Economics* 76(November 1994):936-47.

Hair, J. F., R. E. Anderson, R. L. Tanham, and W. C. Black. *Multivariate Data Analysis.* Englewood Cliffs, NJ: Prentice Hall, Inc., 1995.

Henderson, J.C. “Plugging into strategic partnerships: The critical IS connection.” *Sloan Management Review,* 30(1990):7-18.

Jobber, D. “Improving Response Rates in Industrial Mail Surveys.” *Industrial Marketing Management* 15(1986):183-95.

Jones, E., M.T. Batte, and G.D. Schnitkey. “The Impact of Economic and Socioeconomic Factors on the Demand for Information: A Case Study of Ohio Commercial Farmers.” *Agribusiness,* 5(1989):557-571.

Irwin, S.H, Martines-Filho, J., and Good, D.L. “The Pricing Performance of Market Advisory Services in Corn and Soybeans over 1995-2001.” AgMAS Project Research Report 2003-05, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, July 2003. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

Katchova, A. L. and M. J. Miranda. "Two-Step Econometric Estimation of Farm Characteristics Affecting Marketing Contract Decisions." *American Journal of Agricultural Economics* 86(2004): 88-102.

Karimabay, H., and P.J. Brunn. “Postal Surveys to Small Manufacturers” *Industrial Marketing Management* 20(1991):319-26.

Martines-Filho, J, S.H. Irwin, D.L. Good, S.M. Cabrini, B.G. Stark, Wei Shi, R.L. Webber, L.A. Hagedorn, and S.L. Williams. “Advisory Service Marketing Profiles for Corn Over 1995-2000.” AgMAS Project Research Report 2003-03, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, July 2003a. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

Martines-Filho, J, S.H. Irwin, D.L. Good, S.M. Cabrini, B.G. Stark, Wei Shi, R.L. Webber, L.A. Hagedorn, and S.L. Williams. “Advisory Service Marketing Profiles for Soybeans Over 1995-2000.” AgMAS Project Research Report 2003-04, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, July 2003b. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

Martines-Filho, J., D.L. Good, and S.H. Irwin. “1999 Pricing Performance of Market Advisory Services for Wheat.” AgMAS Project Research Report 2001-03, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, April 2001. [http://www.farmdoc.uiuc.edu/agmas/reports/index.html]

McDonald, I. "Study Shows Investors Lack Timing." *The Wall Street Journal*, July 16, 2003, p. D7.

Norvell, J.M., and D.H. Lattz. "Value-Added Crops, GPS Technology and Consultant Survey: Summary of a 1998 Survey to Illinois Farmers." University of Illinois, College of Agricultural, Consumer and Environmental Sciences, Working Paper, July 1999.

Ortmann, G.F., G.F. Patrick, W.N. Musser, and D.H. Doster. "Use of Private Consultants and Other Sources of Information by Large Cornbelt Farmers." *Agribusiness* 9(1993):391-402.

Patrick, G.F., Private Communication, Purdue University, June 2002.

Patrick, G.F., W.N. Musser, and D.T. Eckman. "Forward Marketing Practices and Attitudes of Large-Scale Midwestern Grain Producers." *Review of Agricultural Econo*mics 20(1998):38-53.

Patrick, G.F., and E. A. DeVuyst. "Whence and Whither in Farm Management Risk Research and Extension Delivery?" *Canadian Journal of Agricultural Economics* 43(1995):1-14.

Patrick, G.F., and S. Ullerich. "Information Sources and Risk Attitudes of Large-Scale Farmers, Farm Managers, and Agricultural Bankers." *Agribusiness* 12(1996):461-71.

Pennings, J.M.E., O. Isengildina, S.H. Irwin, and D.L. Good. "The Impact of Market Advisory Service Recommendations on Producers' Marketing Decisions." *Journal of Agricultural and Resource Economics* 30(2005): forthcoming.

Pennings, J.M.E., S.H. Irwin, and D.L. Good, and O. Isengildina. "Heterogeneity in the Likelihood of Market Advisory Service Use by U.S. Crop Producers." Working Paper, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, March 2004.

Pennings, J.M.E., S.H. Irwin, and D.L. Good. "Surveying Farmers: A Case Study." *Review of Agricultural Economics*, 24(2002):266-277.

Schnitkey, G., M. Batte, E. Jones, and J. Botomogno. "Information Preferences of Ohio Commercial Farmers: Implications for Extension." *American Journal of Agricultural Economics* 74(1992):486-496.

Sirri, E.R. and R. Tufano. "Costly Search and Mutual Fund Flows." *Journal of Finance* 53(1998):1589-1622.

Schroeder, T.C., J.L. Parcell, T. Kastens, and K.C. Dhuyvetter. "Perceptions of Marketing Strategies: Farmers Versus Extension Economists." *Journal of Agricultural and Resource Economics* 23(1998):279-93.

Venkatesan, J. “Strategic Sourcing: To Make or Not to Make.” *Harvard Business Review* 70(1992):98-107.

Wisner, R.W., Private E-mail Communication, Iowa State University, September 2002.

Zeithaml, V. A., A. Parasuraman, and L. L. Berry. *Delivery Quality Service: Balancing Customer Perceptions and Expectations*. Don Mills, Canada: Free Press, 1990.

Zulauf, C.R. and S.H. Irwin. “Market Efficiency and Marketing to Enhance Income of Crop Producers.” *Review of Agricultural Economics* 20(1998):308-331.

Table 1. Percentage Distribution of Demographic Characteristics of Survey Respondents Relative to Similar Characteristics of the Population of US Farmers from the 1997 Census of Agriculture.

Total acres (owned and rented)

	Survey	Census
Less than 499	1	81
500 to 999	5	9
1,000 to 1,999	44	5
Over 2,000	49	5
Average Acres:	1,929	487

Gross annual farm sales

	Survey	Census
Less than $50,000	0	74
$50,000 to $99,999	1	8
$100,000 to $499,999	55	15
$500,000 to $999,999	26	2
Over $1,000,000	17	1
Average Dollars:	550,275	102,970

Age

	Survey	Census
Under 25	1	1
25 to 34	17	7
35 to 44	40	19
45 to 49	18	12
50 to 59	20	24
60 to 64	4	11
65 and older	2	26
Average Age:	44	54

US regions

	Survey
Midwest	52
Great Plains	30
Southeast	18

Table 2. Percentage Distribution of Production Characteristics of the Survey Respondents.

Annual crop	Over 2,000 acres	1,999-1,500 acres	1,499-1,000 acres	999-500 acres	499-300 acres	Under 300 acres	No acres	Average
			----------Percent----------					Acres
Corn	4.5	16.3	42.3	7.9	6.9	2.9	19.3	1021
Sorghum	1.1	1.5	3.0	5.1	8.3	6.6	74.5	177
Soybeans	2.9	10.9	34.2	14.4	9.9	4.6	23.1	850
Wheat	9.1	14.7	16.3	8.0	13.3	12.4	26.2	827
Cotton	2.2	3.7	4.7	1.5	0.6	0.4	87.0	193
Rice	0.4	1.3	1.8	1.1	0.8	0.1	94.6	67
Hay	5.2	3.1	5.4	7.1	14.9	21.3	42.9	404

Do you have any livestock in your operation?

Yes	56	No	44

Table 3. Percentage Distribution of Demographic Characteristics of Market Advisory Service Users and Non-Users.

Total acres (owned and rented)

	Non-users	Users
Less than 499	1	1
500 to 999	6	5
1,000 to 1,999	43	45
Over 2,000	50	49
Average Acres:	1929	1936

Gross annual farm sales

	Non-users	Users
Less than $50,000	0	0
$50,000 to $99,999	1	1
$100,000 to $499,999	56	53
$500,000 to $999,999	27	27
Over $1,000,000	16	18
Average Dollars:	551,205	573,765

Age

	Non-users	Users
Under 25	1	1
25 to 34	20.	16
35 to 44	32	42
45 to 49	15	18
50 to 59	26	18
60 to 64	4	3
65 and older	3	2
Average Age:	44.4	43.4

US regions

	Non-users	Users
Midwest	15	85
Great Plains	22	78
Southeast	20	80

Table 4. Comparison of Risk Attitudes between Market Advisory Service Users and Non-Users.

Attitudes	Non-Users	Users	t-test	Sig. (2-tailed)
I like "playing it safe"	6.42	6.16	2.058	0.04
I am willing to take higher financial risks in order to realize higher average yields	6.34	6.68	-2.766	0.01
I like taking big financial risks	3.32	3.67	-2.460	0.01
I am willing to take higher financial risks when selling my crops, in order to realize higher average returns	5.48	5.93	-3.408	0.00
I accept more risk in my farm business than other farmers	4.62	4.99	-2.529	0.01

Note: Mean scores are based on a 1 to 9 scale with 1=Strongly disagree, and 9=Strongly agree, MAS stands for market advisory service.

Table 5. Relevance of Various Sources of Marketing Information.

Source	Mean*	Source	Mean*
• Satellite systems	8.17	• Radio	5.73
• USDA reports	6.92	• University Extension service	5.46
• Market advisory services	6.88	• Internet	4.81
• Local elevator	6.25	• Television	4.23
• Farm magazines/newsletters	5.94	• Marketing clubs	4.21

*Based on a 1 to 9 scale with 1=do not rely on, 9=rely heavily on.

Table 6. Producers' Use and Evaluation of Specific Market Advisory Services.

Market Advisory Service	Ever Used	Familiarity		Marketing Style		Satisfaction	
	Percent*	Rank	Mean**	Rank	Mean***	Rank	Mean****	Rank
AgLine by Doane	35	3	4.22	3	4.72	10	5.75	6
AgriVisor Services Inc.	17	8	3.15	8	5.00	9	5.14	10
Brock Associates	37	2	4.87	2	6.17	1	6.24	4
Freese-Notis Weather	20	7	3.59	5	5.76	5	5.45	8
ProFarmer	69	1	6.34	1	5.80	4	6.26	3
AgResource Company	23	6	3.50	6	6.01	2	6.58	2
Allendale Inc.	26	4	3.86	4	5.97	3	5.98	5
CommStock Investments Inc.	10	9	2.61	10	5.57	7	7.07	1
Brent Harris Elliot Wave	10	10	2.64	9	5.61	6	5.29	9
Stewart-Peterson	26	5	3.21	7	5.27	8	5.67	7
Another MAS	47							
Average								
Do not use MAS at all	18							

*Describes a percentage of all producers that have ever used a specific MAS.
**Based on a 1 to 9 scale with 1=not at all familiar, 9=very familiar. Includes responses of all producers.
***Based on a 1 to 9 scale with 1=conservative, 9=aggressive. Includes responses of all producers.
****Based on a 1 to 9 scale with 1=very dissatisfied, 9=very satisfied. Includes responses of producers that have tried a particular MAS.
*****Producers who have tried a particular MAS switched MAS once every listed number of years.
MAS stands for market advisory service.

Table 7. Heterogeneity in the Use of Market Advisory Services in Different Market Conditions.

	Group A	**Group B**	**Group C**	F-test	Sig.
Midwest	35%	15%	43%	5.937	0.001
Great Plains	39%	15%	30%		
Southeast	54%	16%	26%		
Gross Sales	$575,150	$530,425	$624,425	4.082	0.017
Risk Attitude*	6.27	6.54	6.65	5.832	0.001
Tool for risk reduction	7.09	6.55	7.01	3.044	0.028
Tool for price enhancement	6.98	6.50	7.03	3.832	0.010
MAS is expensive	6.10	6.58	5.60	13.064	0.000
Pleased using MAS	6.15	5.82	6.36	6.413	0.000
MAS matches philosophy	6.32	5.97	6.43	3.296	0.020

Note: Group A exhibits a downward-sloping, Group B an upward-sloping, and Group C a flat use of MAS, relative to crop prices. MAS stands for market advisory services Mean scores are based on a 1to 9 scale with 1=Strongly disagree, 9=Strongly agree. Risk attitude is a sum of the mean scores to questions two through five listed in Table 4.

Table 8. Nature of Market Advisory Service Use.

Extent used for:			
	Mean*		Mean*
• Marketing information (facts)	6.95	• To reduce fluctuations in prices	6.00
• Market analysis	6.88	• Make specific pricing decisions	5.97
• Keeping up with markets	6.47	• Forecasting prices	5.95
• To receive a higher than average price	6.47	• Expert opinion	5.77
• General market strategies	6.45	• Govt. program information	5.34
• To reduce price risk	6.34	• To beat the market	5.30
• To reduce income risk	6.32	• Weather forecasts	5.21
• Price information	6.17	•	

Do you use the specific pricing recommendations that the market advisory services provide as background information?

Yes	56.5 %	No	43.5 %

Do you use the specific pricing recommendations that the market advisory services provide to compare them with other information sources?

Yes	51.2 %	No	48.8 %

Do you follow the specific pricing recommendations that the market advisory services provide loosely

Yes	65.6 %	No	34.4 %

Do you follow the specific pricing recommendations that the market advisory services provide closely?

Yes	11.0 %	No	89.0 %

*Based on a 1 to 9 scale with 1=never use, 9=use extremely often.

Table 9. Extent of Impact and Implementation of Pricing Recommendations of Market Advisory Services.

	Mean* All Users	Rank	Mean* Close Followers	Rank	Means *t*-test	Sig. (2-tailed)
Impact	5.88		8.01		17.93	0.00
Implementation			----------Pre-Harvest----------			
Cash forward contracts	5.90	2	7.34	2	7.90	0.00
Sell futures	4.89	5	6.91	3	7.87	0.00
Buy put options	4.88	6	6.59	6	6.43	0.00
Buy call options	4.89	5	6.68	5	6.84	0.00
Buy futures	4.53	9	6.50	7	6.94	0.00
			----------Post-Harvest----------			
Sell in cash market	6.50	1	7.60	1	6.61	0.00
Sell futures	4.92	4	6.84	4	7.47	0.00
Buy put options	4.75	7	6.42	9	6.04	0.00
Buy call options	4.95	3	6.68	5	6.41	0.00
Buy futures	4.64	8	6.49	8	6.48	0.00

*Based on a 1 to 9 scale with 1=no impact at all, 9=great impact for "Impact", and 1=would not implement at all, 9=implement exactly for "Implementation."

Table 10. Valuation of Specific Aspects of Marketing Advisory Services.

Process	Mean*	Method	Mean*	Tools	Mean*
Daily updates of recommendations	6.52	Use of fundamental analysis	6.36	Recommendations include futures and options	5.98
Consistent recommendations	6.35	Specialist regarding particular crops	6.15	Recommendations use only cash	4.94
Recommendations focused on your farm operation circumstances	6.05	Use of technical analysis	6.03	High frequency of use of futures and options strategies	4.82
The fact that the market advisory service tries to establish a relationship	5.83	Analysis based on group consensus	5.76	Low frequency of use of futures and options	4.78
Presentation mainly with text	5.18	Analysis based on the knowledge of one person	4.32		
Presentation mainly with charts	4.98				
Market advisory service is also broker	4.04				

*Based on a 1 to 9 scale with 1=do not value at all, 9=value extremely.

Table 11. Percentage of Farmers Using Selected Forward-Pricing Techniques: Current Survey Versus Previous Studies.

Study	Location	Year	N		Futures Hedging	Options Contracts	Cash Forw. Contracts	Min. Price Contracts	Hedge-to-arrive Contracts
					Pre-Harvest				
Present study	Midwest,	2000	232	Non-Users	21	17	63	9	13
	Great Plains		1053	Users	40	33	77	9	19
	Southeast		117	Close Followers	53	48	83	13	26
Coble et al.	IN, MS, NE, TX	1999	1806		35	35	n/a	71	n/a
Purdue Top Farmer	Indiana	2001	39		62	54	82	13	n/a
Participants		1996	26		62	35	77	15	n/a
Schroeder et al.	Kansas	1996	55		45	56	64	n/a	n/a
					Post-Harvest				
Present study	Midwest,	2000	232	Non-Users	18	16	37	7	7
	Great Plains		1053	Users	28	23	53	8	11
	Southeast		117	Close Followers	40	35	54	7	11
Coble et al.	IN, MS, NE, TX	1999	1806		34		n/a	70	n/a

Table 12. Percent Distribution of Marketing Frequency for Selected Crops between Non-users, Users, and Close Followers of Market Advisory Services Relative to Previous Studies.

	Once	2-5 times	6-10 times	11 or more	Average
	Percent				Times
Corn					
Present study					
Non-Users	5.6	52.8	27.3	14.3	6.2
Users	6.2	51.2	31.6	11.1	6.0
Close Followers	3.2	55.8	32.6	8.4	5.5
Coble et al					5.7
Goodwin and Kastens					4.0
Soybeans					
Present study					
Non-Users	8.8	58.8	23.1	9.4	4.0
Users	5.9	60.6	27.0	6.5	5.0
Close Followers	3.1	64.6	25.0	7.3	4.8
Coble et al					4.4
Goodwin and Kastens					3.1
Wheat					
Present study					
Non-Users	23.3	57.4	14.0	5.4	3.4
Users	19.3	63.1	13.8	3.8	3.7
Close Followers	22.7	65.2	9.1	3.0	3.4
Goodwin and Kastens					3.8
Cotton					
Present study					
Non-Users	44.4	51.9	3.7	0.0	2.6
Users	21.8	64.4	12.6	1.1	3.5
Close Followers	n/a	n/a	n/a	n/a	n/a
Coble et al					2.5

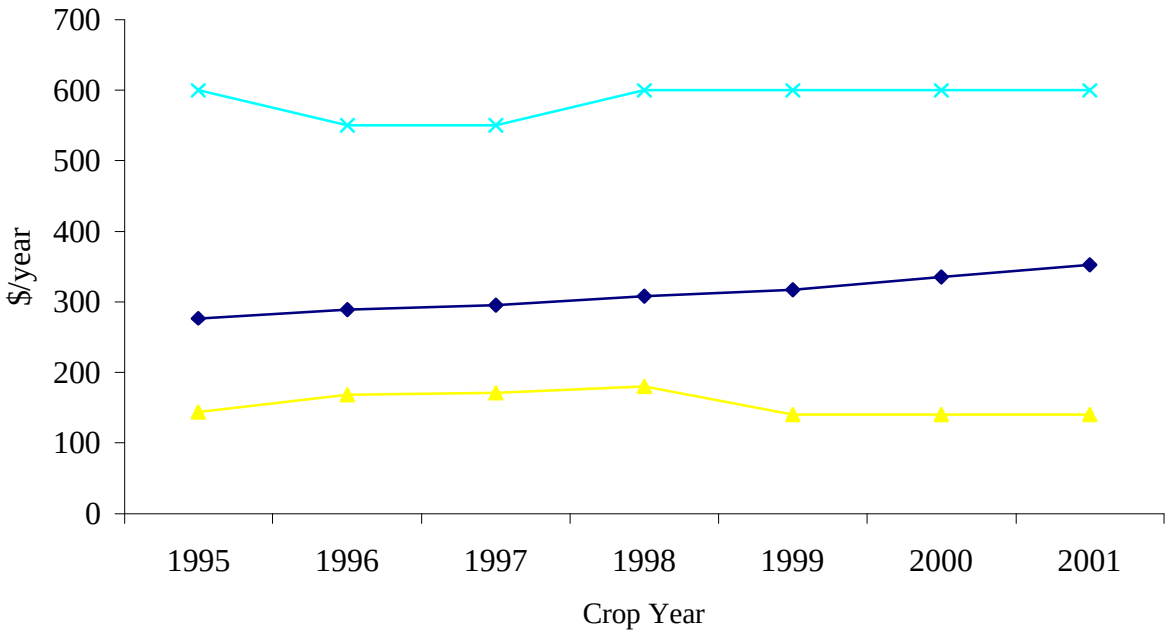

Figure 1. Subscription Fees for Advisory Services Tracked by the AgMAS Project, 1995-2001.

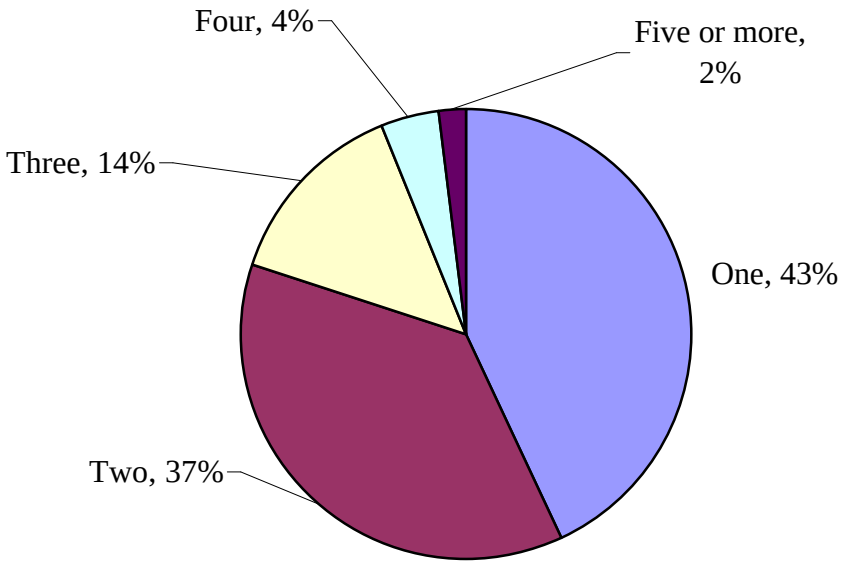

Figure 2. Number of Market Advisory Services Used by Survey Respondents.

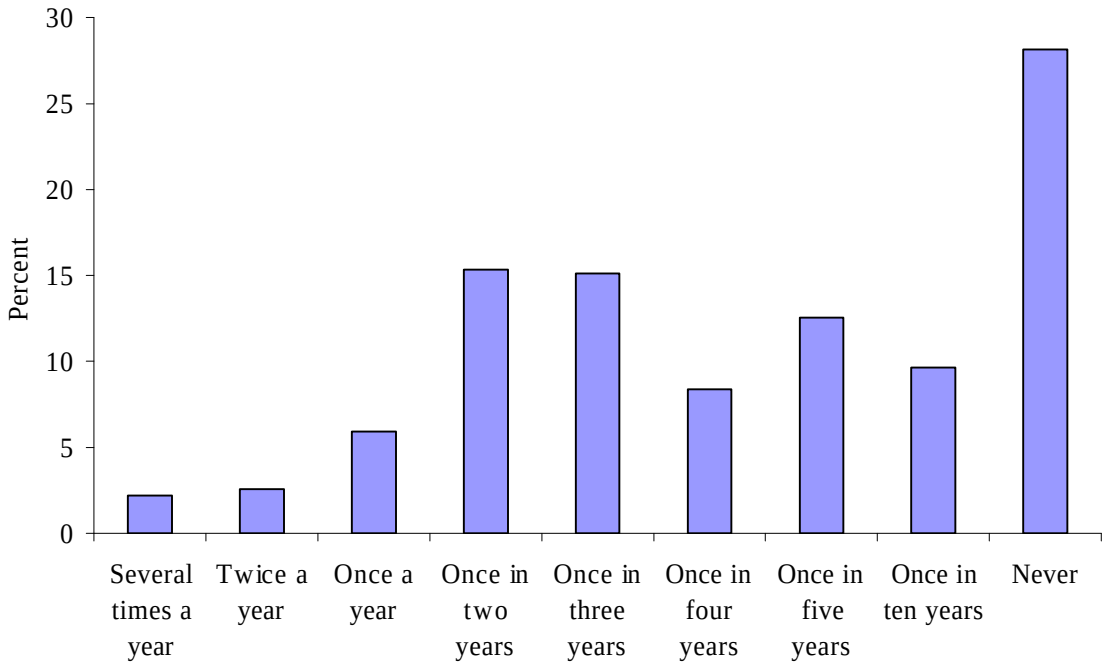

Figure 3. Frequency with which Producers Switched Market Advisory Services.

Crop Price Scenarios refer to: (1) Low Crop Prices, (2) Normal Crop Prices, and (3) High Crop Prices.

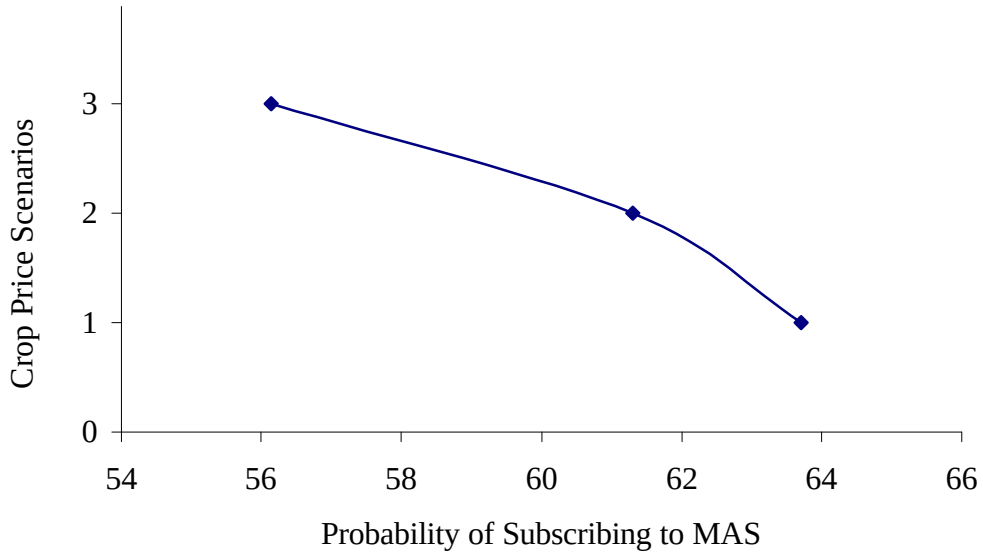

Figure 4. Average Use of Market Advisory Services in Different Market Conditions

Crop Price Scenarios refer to: (1) Low Crop Prices, (2) Normal Crop Prices, and (3) High Crop Prices.

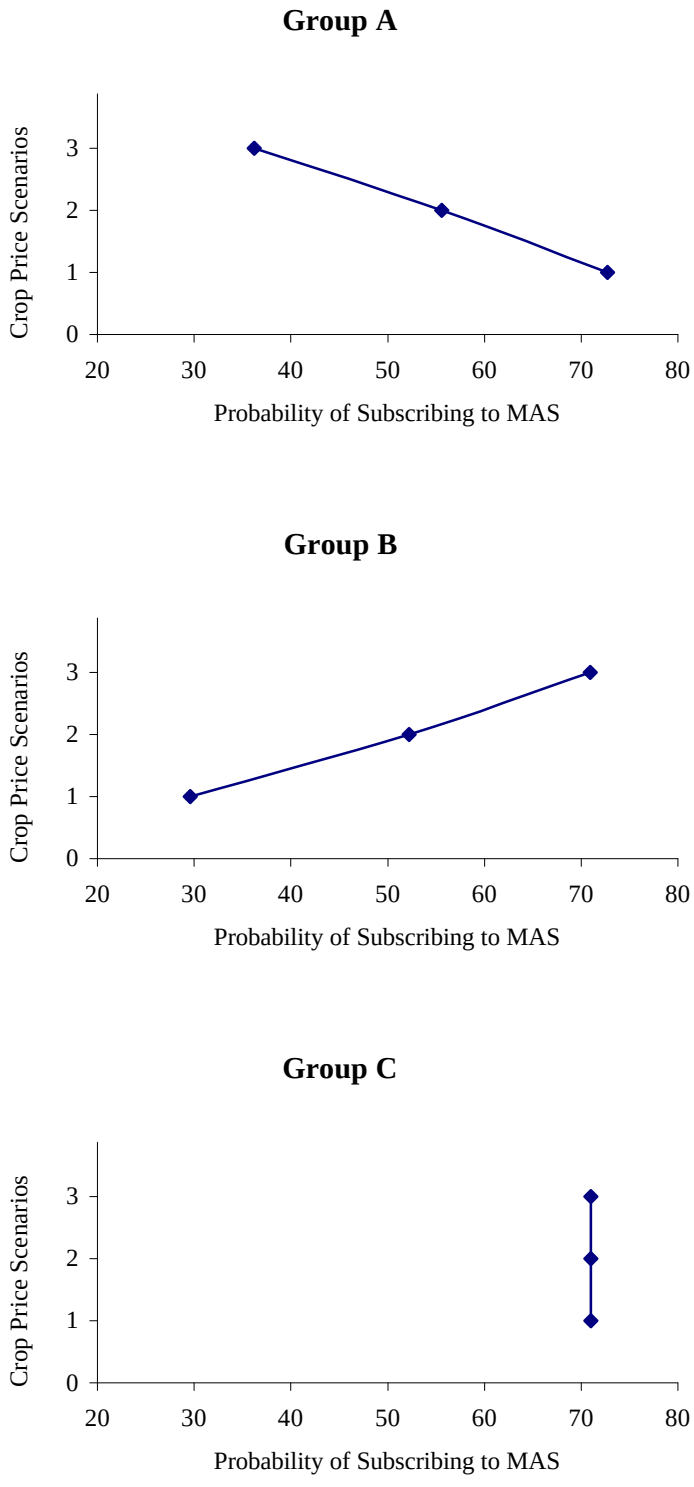

Figure 5. Heterogeneity in the Use of Market Advisory Services in Different Market Conditions.