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Department of Agricultural and Consumer Economics, University of Illinois Urbana-Champaign

Thinking Out of the Box about Crop and Livestock Marketing

Scott Irwin and Darrel Good

Department of Agricultural and Consumer Economics
University of Illinois

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Crop and livestock producers have long identified price risk as one of the highest risk management priorities of the farm business. One of the major challenges of marketing is the extreme variability in prices, not only across years, but within years. A second challenge in making pricing decisions is that future prices cannot be anticipated with a high degree of accuracy. Producers have a long time period in which to price their production. Livestock futures contracts are available 18 months into the future while crop contracts are available four years into the future. The factors that determine prices cannot be accurately forecast that far into the future. Even limiting the pricing window to a few months before livestock reach market weight or a few months before crops are harvested through the storage period, price-determining factors can and often do change dramatically, making the decision about when and how much to price extremely difficult.

The purpose of this post is to re- introduce a new approach to making crop and livestock pricing decisions. This new "pricing matrix" approach, first introduced in January 2008 for corn and soybeans, is an integrated model of pricing that considers a broader range of strategies than the traditional approach that focuses on "beating the market". This approach is likely more useful for crop producers, due to the annual nature of crop production and the wide marketing window, but can also be applied to pricing of livestock.

The Traditional Approach to Marketing

The traditional approach to making pricing decisions has been to use a combination of analytical techniques (generally characterized as fundamental and technical analysis) to forecast price behavior and then time pricing decisions based on those forecasts. That approach has essentially been one of attempting to "beat the market". In general, producers remain very frustrated by the traditional decision-making process and believe that they often do a poor job of pricing.

The failure of the traditional approach to pricing can be traced to two factors. The first is a narrow focus on market timing (attempting to beat the market) that ignores the potential implications of marketefficiency concepts. In basic terms, market efficiency implies that the current price structure reflects all known information, and therefore, the only way to beat the market is to possess information not available to the market or to have superior analytical skills. The second is a lack of differentiation of pricing strategies based on the skills, characteristics, and beliefs of individual producers.

A portfolio approach to making pricing decisions has the potential to make a very significant, positive impact on the marketing performance of producers. Not only is there significant potential to improve pricing performance, particularly for the chronic poor performers, but there is opportunity to reduce price risk for individual producers and to reduce the level of frustration associated with marketing.

The New Approach to Marketing

The first step in this new approach is to select the appropriate time window for pricing crops and livestock. One method of defining the pricing window is the period extending from the initial production planning time to the end of the storage season for crops or until livestock reach market weight. For corn, soybeans, and winter wheat in the Midwest, production decisions normally begin in the fall of the year when winter wheat is seeded and fall tillage and fertilizer decisions are made for corn and soybeans. The storage season typically extends through July or August of the year following harvest for corn and soybeans and through April or May in the year following wheat harvest. This results in a pricing window about 20 to 24 months in length. For hog producers, production decisions generally begin with the decision to retain gilts in the breeding herd, with pigs reaching market weight about a year later. The pricing window for cattle being placed in the feedlot is not as clearly defined. Production planning begins sometime before the cattle are placed, when feeder cattle purchasing and perhaps feed purchasing decisions are made, and the marketing window ends when cattle reach market weight. This may be a period of about 9 months.

The second step in the new approach is to determine the relevant set of pricing strategies. The traditional approach is to develop a plan for the timing of pricing decisions and pair this with the selection of a pricing tool (spot cash sales, forward contract, futures, or options). A sounder approach is to define a pricing philosophy, or approach to pricing, that includes a portfolio of self-directed and externally-managed pricing strategies.

Self-directed strategies may include: 1) mechanical strategies that routinely price a percentage of production at predetermined intervals and 2) active strategies that time sales based on a producer's own price analysis and evaluation (this is the traditional approach to pricing).

Externally-managed strategies are those where someone else makes pricing decisions and may include: 1) mechanical strategies with pricing pre-determined by decision-rule contracts (primarily for crops); and 2) active strategies where timing decisions are based on the recommendations of professional market advisors.

The third step in the new approach is to decide on the proportions of the crop to be marketed via each of the pricing strategies. This is the heart of the new approach to pricing and is depicted in the following matrix:

	Mechanical	Active
Self-Directed	% ?	% ?
Externally-Managed	% ?	% ?

The percentages distributed among the cells in the pricing matrix (marketing approaches) will be primarily influenced by five factors that may be unique to each producer; 1) view on market efficiency, 2) risk preference, 3) financial position, 4) pricing skill, and 5) decision-making discipline. The following expanded version of the pricing matrix matches different skills and beliefs with the rows and columns of the pricing matrix:

	Mechanical	Active
Self-Directed	Disciplined Marketer Markets are Efficient Risk Averse High Debt Poor Pricing Skills	Disciplined Marketer Markets are Inefficient Risk Seeking Low Debt Good Pricing Skills
Externally-Managed	Undisciplined Marketer Markets are Efficient Risk Averse High Debt Poor Pricing Skills	Undisciplined Marketer Markets are Inefficient Risk Seeking Low Debt Good Pricing Skills

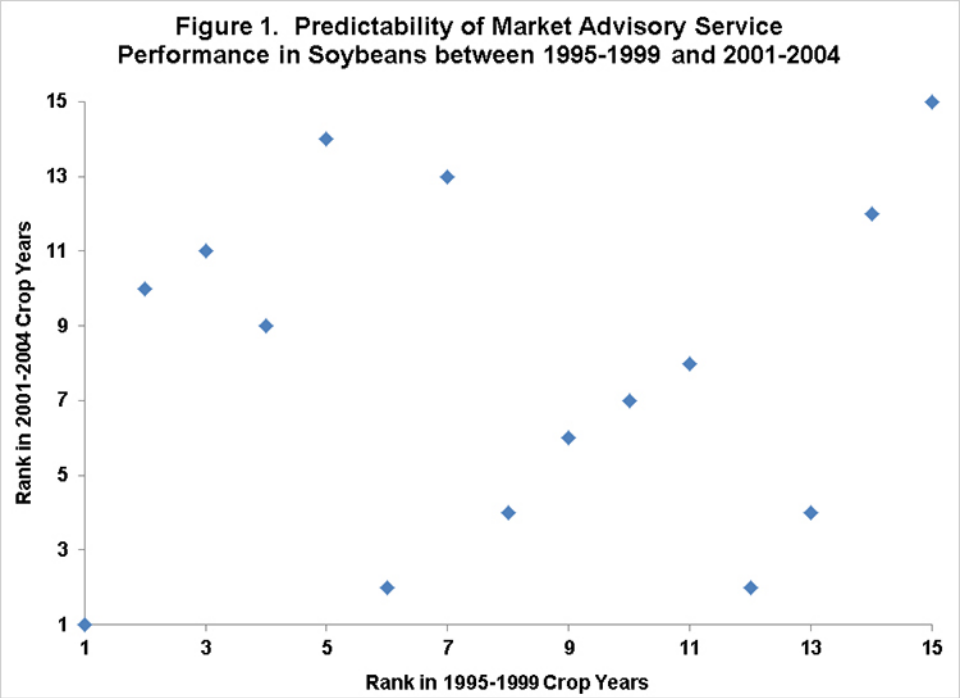
The rows in the expanded matrix are divided based on marketing discipline, with disciplined marketers preferring self-directed approaches and undisciplined marketers preferring externally managed approaches. Discipline in this context is characterized by the ability to stay with a pricing plan once it is formulated and "pulling-the-trigger" when pricing decisions should be made. The columns are divided based on the other four factors. If a producer believes that cash, futures, and options markets are efficient in the sense of fully reflecting available information, then that producer generally should follow mechanical pricing strategies that assume it is impossible to beat the market. Producers who believe markets are efficient should follow active pricing strategies only if they possess information not available to the market or have superior analytical skills. If a producer believes that cash, futures, and options markets are inefficient, then active strategies that attempt to beat the market will be preferred. Risk-averse producers with high debt will prefer mechanical strategies that are likely less risky than active strategies, and vice versa. Finally, producers with poor pricing skills will prefer mechanical strategies and producers with good pricing skills will prefer active strategies. Pricing skills refers here to the ability to successfully time market price movements. Note that if a producer believes he/she has poor pricing skills, regardless of the view on market efficiency, the producer should only consider mechanical pricing strategies.

Advisory Services

When considering the use of active pricing strategies based on the recommendations of professional market advisory services, producers should have realistic expectations about the ability of the services to "beat the market". The most comprehensive research on market advisory service performance was conducted by the authors over the period 1995 through 2004. The extensive analysis focused on two measures of performance: 1) the average price a producer would have received by following the recommendations of an advisory service relative to a market benchmark price and 2) the predictability of the performance of the advisory services. Table 1 summarizes the average price performance of the services by commodity. Figure 1 provides an example of predictability of performance in soybeans based on the rank among all services of average price performance in the first 5 years and the rank in the last 4 years of the study. The results indicate that, as a group, the advisory services outperformed the market (marginally) only for soybeans and that it is difficult to predict performance from year-to-year. Even though the most recent results are for 2004, there is not an obvious reason why the findings about performance relative to the market should not still be applicable to the current time period.

Table 1. Summary of AgMAS Performance Evaluation of Agricultural Market Advisory Services, 1995-2004

	Corn ($/bu.)	Soybeans ($/bu.)	Wheat ($/bu.)	Hogs ($/cwt.)	Cattle ($/cwt.)
Net Price of Advisory Services	2.29	6.00	3.00	42.75	69.79
Market Benchmark Price	2.28	5.86	3.05	43.10	70.16
Difference (units)	0.01	0.14	-0.05	-0.35	-0.37
Difference (%)	0.63	2.46	-1.54	-0.81	-0.53



The full AgMAS reports are available here:

The Pricing Performance of Market Advisory Services in Corn and Soybeans Over 1995-2004
The Pricing Performance of Market Advisory Services in Wheat Over 1995-2004
The Pricing Performance of Market Advisory Services in Hogs Over 1995-2004
The Pricing Performance of Market Advisory Services in Cattle Over 1995-2004

Summary

The pricing matrix approach to developing pricing strategies is a general approach to making pricing decisions. It is similar to the oft recommended strategy of diversifying one's investments across different types of investment products. The emphasis here is on strategy and not on the implementation of specific pricing decisions (pricing tool, timing, etc.). Implementation of pricing decisions within a cell of the pricing matrix will be impacted by a variety of factors, including crop insurance selections and government program payments.

As a final point, we want to emphasize our belief that many producers are substantially under-diversified in terms of pricing approaches, with an over-reliance on self-directed active strategies (upper-right cell of the pricing matrix). Diversification across the four cells of the pricing matrix would likely improve

marketing performance for these producers. In addition, diversification would more than likely reduce the risk and frustration of making pricing decisions for most producers.