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Implications of Behavioral Finance for Farmer Marketing Strategy Recommendation

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Paper presented at the NCR-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management
St. Louis, Missouri, April 23-24, 2001

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Implications of Behavioral Finance for Farmer Marketing Strategy Recommendations

Behavioral finance is a relatively new field of inquiry that may help better understand farmer marketing. The theory argues that people tend to make certain psychological biases that cause them to not be fully rational in an economic sense. For example, people tend to be about twice as upset about a loss as they would be happy about a gain of the same size. The theory can help explain why producers would pay a marketing consultant even when markets are efficient. Extension programs need to consider the psychology of marketing. The theory suggests that decisions need to be framed in terms of their effect on the whole farm operation and in terms of profits over a series of years.

Key Words: behavioral finance, marketing strategies, cognitive failure

Introduction

The old model of extension marketing programs assumed inefficient markets, asymmetric information, and producer ignorance. Extension education programs were geared toward increasing producer incomes with outlook information and by educating them on how to use futures and options. Yet, research results show that agricultural markets are very close to being efficient (Brorsen and Irwin; Zulauf and Irwin). There is a more recent body of theory called behavioral finance that may have some implications for extension marketing programs. This theory suggests that many people are not completely rational in an economic sense because people tend to make psychological mistakes.

The objectives of this paper are: 1) to present a synthesis of the efficient market theory and behavioral theories and 2) to explain what the theories imply about producer marketing strategies. 3) The theory and research supports producers' use of time-tested cash market strategies, especially mechanical strategies. The theory also suggests that extension programs should consider psychological well-being as well as economic well-being. Further, extension programs can help farmers frame decisions in terms of their effect on the whole farm's profit.

Efficient Market Hypothesis

The efficient market hypothesis is the theory upon which modern extension programs should be based. The theory says that (1) all available supply and demand information is used to determine today's price, and that when storage and interest costs are ignored, (2) the best predictor of tomorrow's price is today's price, and (3) expected returns will be the same no matter when a commodity is priced. The theory also appears under other names such as rational expectations (Thraen and Irwin) and the law of one price (Kohls and Uhl).

The efficient market theory says that prices reflect all available information. Since new information causes prices to change it is new information that makes tomorrow's price different from today's price. This fact raises questions about analysts' ability to predict prices.

People or companies that acquire information before anyone else in the market may earn a profit in the market. Companies pay millions of dollars to obtain fundamental information first. The information is then used to set offer and bid prices. A producer that has no unique information can not expect to make money via information and price predictions.

Another method to earn a profit in the market is to analyze information better than the collective ability of the market. Just having information is not enough. The price impact of the information must be determined. The direction and magnitude of future price movements must be predicted.

Normally, producers do not obtain information before anyone else. They do not have superior analytical ability nor can they afford the time to conduct analysis in a timely fashion. Producers often depend on information providers and receive market information after prices have already changed. The efficient market hypothesis implies that producer marketing strategies should focus on keeping marketing costs low and responding to market signals rather than on price predictions.

Two recent studies support the efficient market theory. One is a Kansas study that used ten years of farm record data collected from 1,000 farms (Kastens, Dhuyvetter and Nivens). The study found that the producers that had high profits had low costs, adapted to new technology and had high yields. Prices received had the least ability to differentiate profit between producers.

The AgMAS project collected four years of marketing recommendations from 25 advisory services (Good, et. al.). Results from the study showed that the average price per bushel received for corn from following the recommendations averaged about two cents per bushel less than from a naïve strategy of spreading sales across the marketing year. Soybean recommendations produces about four cents per bushel more than the naïve strategy.

These and other studies do not show that the efficient market theory is exactly true. The studies show that the theory is very close to being true. In other words, the commodity markets are not perfectly efficient, but most are close. Deviations from market efficiency are expected to be either small and/or short-lived. We are argue that agricultural producers should view futures markets as efficient because they are based on a typical producer's information set.

Behavioral Finance

Behavioral finance theories are even less supportive of producers trying to speculate on when to sell a commodity than the efficient market theory (see Kahneman and Riepe or Shefrin for a complete discussion of behavioral finance theories). The efficient market theory says that producers that speculate on when to sell the commodity will only lose transactions costs. Behavioral finance says that, because of natural human tendencies, producers that speculate will lose more than transactions costs. Many strategies that successful futures speculators use (eg. technical analysis) are designed to take advantage of these human tendencies. Five types of psychological mistakes are defined in the following.

Anchoring

People are reluctant to revise long-held opinions in the face of new information. For example, someone who has long believed that there is money to be made by trying to time the market will likely be reluctant to adopt the efficient market ideas. Anchoring can also occur in terms of crops or livestock grown. Current grain prices are saying that high cost producers should stop growing some commodities. Rather than listening to the market, some producers are planting a commodity because that is what they have always done.

Myopic Loss Aversion and Regret

Possibly the most costly of the psychological mistakes is myopic loss aversion. People have been shown to be about twice as distressed about losing a dollar than they gain pleasure from making a dollar. The myopia comes from viewing each outcome separately rather than thinking in terms of the whole farm or the results from a strategy over a number of years. The motivation for loss aversion is to avoid regret. As Kahneman and Tversky's prospect theory suggests, people evaluate gains and losses using a reference price. For example, economic theory would suggest that the price at which a futures contract was sold is irrelevant in deciding when to offset the position, but that is not how people behave.

Myopic loss aversion results in people maintaining losing market positions. Producers will sometimes store a commodity longer than makes economic sense because they are unwilling to accept a loss. Producers may also be reluctant to sell a stored commodity for fear that prices will increase. Myopia might also explain producers preference of forward contracts over futures contracts. Farmers need to be taught to evaluate their decisions in terms of profit on the whole farm over a number of years.

Fallacy of Small Numbers

When only a few observations are available, the natural tendency is to place excess weight on the available data. Most of the literature on marketing strategies makes this mistake. Extension economists expressed willingness to make this mistake when in Brorsen and Anderson's survey most of them disagreed with the statement that marketing strategy recommendations should be based on statistically significant findings.

Other examples are producers using the marketing strategy that worked best last year or the best during the last five years, switching to the "hot" advisory service, and developing a marketing strategy based on local weather. Drought (weather) scares that run up prices may be attributed to the fallacy of small numbers. Traders that rely on this type of "random" data are called noise traders.

Overconfidence

Humans have a natural tendency to want to believe good things about themselves. This leads to overconfidence. Surveys of producers consistently show that producers overestimate the

accuracy of their own price predictions. Overconfident traders are prone to trade excessively and frequent trading lowers returns.

People are uncomfortable believing that events in their life are not under their control. Their ability to influence outcomes is much less than they would like to think. An extreme form is called quasi-magical thinking (Beurskens). An example of which is thinking that a favorite football team lost because you did not wear the right shirt.

Hindsight Bias

Hindsight bias is similar to overconfidence. With hindsight bias, people tend to remember their successes and forget their failures. The positive side about hindsight bias is that it leads to people feeling good about themselves and their accomplishments. Without it we might all be depressed. The negative side is that a producer may think that more money was made from a price forecast than was actually received. Hindsight bias is also intertwined with overconfidence. People tend to regard the events that happened as much more inevitable than they looked before the fact.

Efficient Markets vs. Behavioral Finance

Efficient market theory trumps behavioral finance. As people become aware of their mistakes, they tend to correct them. Behavioral theories that are applicable to producer marketing decisions include overconfidence, fallacy of small numbers, myopic loss aversion, hindsight bias and anchoring. These theories say that producers tend to overestimated the ability to predict prices, base decisions on a few observations, hold losing market positions, base the price forecast and decisions on the recent past, tend to remember successes and forget failures and are reluctant to revise long-held opinions.

A marketing method that producers may use to avoid psychological pitfalls and take advantage of efficient markets is to sell production the same way each year. The decision rule contracts offered by e-markets (www.e-markets.com) are examples of commercial products that use this system of marketing.

Both the theory and the following empirical analysis imply that the particular strategy may not be as important as the discipline to follow the same strategy each year. One way to avoid making psychological mistakes is to use mechanical marketing strategies.

Marketing and Educational Implications

Because of new understanding about market's and individual decision-making there is a need to reorient extension marketing programs. The efficient market hypothesis says that outlook information cannot increase producer incomes. Behavioral finance theory says that producers are likely to be overconfident in their ability to forecast prices. People generally dislike the idea that outcomes are due largely to chance. There is still a role for an outlook education program that assists producers in developing rational expectations about prices and risks.

One way to overcome the psychological mistakes that people are likely to make is to use mechanical marketing strategies. The differences in mean returns from mechanical strategies should be due to differences in costs. In our example, selling at harvest had the lowest costs. Selling at harvest was supported empirically, but with all the noise present we need to be cautious about not committing the fallacy of small numbers.

Outlook programs should consider producers' economic and psychological well being. Maybe we cannot do much to increase producer's incomes, but we can help them feel better about marketing. Decisions should be framed in as broad a context as possible. Try to explain decisions in terms of farm income or wealth and the results of a decision over several years rather than a single year. Further, producers should be informed about EMH, the randomness of events, and behavioral finance. Agricultural economists have much to offer producers.

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