



KANSAS FARM MANAGEMENT ASSOCIATION

Your Farm - Your Information - Your Decision

N E W S L E T T E R

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RISK PREFERENCES AND MANAGEMENT STRATEGIES OF COW-CALF PRODUCERS

This article is the second part of a three part series that will report the results of the KFMA cow-calf survey conducted in May and June of 2009. Surveys were mailed to all KFMA members with a whole-farm analysis and a cowherd in 2008. Survey participants were asked questions pertaining to production practices, marketing and production methods, risk preferences, and perceived comparative advantages. An article published in the December 2009 KFMA Newsletter examined production and marketing practices of survey respondents. This part of the series will focus on differences in farm characteristics and management strategies by risk preference category. An article contained in next month's newsletter will discuss perceived comparative advantages of survey respondents. A word of thanks goes out to all of the cooperating KFMA members and economists.

There were 272 survey respondents that answered the five questions pertaining to risk presented in Table 1. The first risk question pertained to how a respondent's neighbors would describe their risk taking behavior. The second and third risk questions were related to retained ownership strategies as well as best and worst case calf return scenarios. The fourth and fifth risk questions related to investing in an innovative business that had a large chance for

gain, but also exhibited a significant chance of losing everything. In the case of each risk question, a survey respondent that picked "a" is more averse to risk than a respondent that picked a higher lettered answer. The answers to the five risk questions were used to compute a risk preference score. This score was computed by assigning a "1" to "a", "2" to "b", etc., to the answer for each question and then squaring the numeric scores for each question. Using this method, the most risk averse producer would have a risk preference score of 5 while the most risk preferring producer would have a score of 113. Three producers had a score of 5. The highest score was 86.

Survey respondents were sorted into three categories based on their risk preference scores. Two categories represented risk averse producers. A risk averse producer would prefer a stable income flow over an income flow that is variable assuming that the expected return is the same between the two choices. A score from 5 to 21 was designated as "strongly risk averse". A score from 22 to 38 was designated as "slightly risk averse". Finally, a score of 39 or above was designated as "risk neutral". There were 98, 135, and 39 survey participants in the strongly risk averse, slightly risk averse, and risk neutral categories.

Table 2 summarizes farm characteristics and risk preferences by respondent category. Farm size, financial performance, and the debt to asset ratio were inversely related to risk aversion. In other words, respondents in the strongly risk averse category tended to manage smaller

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operations, have lower levels of financial performance, and a lower debt to asset ratio.

Survey respondents were asked a question related to retained ownership. Approximately 37 percent of the survey respondents retained ownership of their calves. The percentage of producers that retained ownership is presented by risk preference category in table 3. The survey respondents that were designated as risk neutral were much more likely to retain ownership. This result implies that retained ownership is strongly related to risk aversion. Specifically, less risk averse producers are more willing to retain ownership.

In order to further examine respondents' preferences for retaining ownership of their calves, survey respondents were asked two questions that allowed them to indicate reasons for retaining ownership or reasons for not retaining ownership. Reasons to retain ownership and for not retaining ownership are listed in table 3. The reason to retain ownership with the most responses for each risk preference category was that producers see the risk worthwhile to earn the potential of more dollars per head. The most common reason for not retaining ownership was also related to risk. A large proportion of survey respondents (from 36 to 53 percent depending on the risk preference category) reported that they do not retain ownership because they do not want to take the risk involved with ownership of feeders. The second most common response for not retaining ownership was the desire to receive revenue earlier, rather than waiting until calves were backgrounded or finished (15 to 39 percent of the respondents).

The relative importance of general risk factors to the beef cow enterprise is reported in table 4. A higher score indicates that survey respondents were more concerned about a particular risk factor. The three risk factors with the highest average scores were drought, unexpectedly low cattle prices, and changes in government environmental programs for the strongly risk

averse category; and drought, unexpectedly low cattle prices, and rented pasture availability for the other two risk preference categories. Labor availability, the price of labor, and credit availability had lower average scores than the other risk factors.

Table 5 presents the relative importance of risk factors impacting farm income. A higher score indicates that the factor was considered to be relatively more important by survey respondents. The three most important risk factors for each risk preference category were maintaining animal health, being a low-cost producer, and receiving premiums for calves sold. It is interesting to note that maintaining financial/credit reserves appeared to be more important to strongly risk averse respondents whereas retaining calves and diversification appeared to be more important for the respondents that were designated as risk neutral.

Survey respondents were also asked how they managed farm income volatility. Choices were purchase insurance, off-farm income, saving funds in good years, selling more cull cows during hard times and retaining more at other times, and utilizing marketing methods to sell calves. Respondents were asked to check all that apply to their operation. Figure 1 presents the averages for each risk preference category. Saving funds in good years had the highest average response. It is also interesting to note that marketing was relatively more important to the survey respondents that were designated as risk neutral.

In summary, farm characteristics, management strategies, and the relative importance of various risk factors vary considerably among cow-calf producers. The most risk averse producers tended to manage smaller operations, have lower levels of financial performance, and a lower debt to asset ratio. Less risk averse producers were much more likely to retain ownership and utilize marketing methods to manage risk. Next month's newsletter will contain an article that examines differences in

perceived comparative advantages among survey respondents.

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Table 1. Survey Questions Related to Risk Preferences.

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15. In your farm/ranch management, how would your neighbors describe your risk taking behavior?
 - a. A risk avoider
 - b. Cautious
 - c. Willing to take risks after adequate research
 - d. A real gambler

 16. You can sell your calves at different production stages. If given the following options, which would you choose.
 - a. Sell at weaning
 - b. Retain for two months post weaning with a 30% chance of netting \$5/hd, 10% chance of losing \$10/hd, or 60% chance of netting no additional \$/hd
 - c. Retain through finishing with a 30% chance of netting an additional \$40/hd, 15% chance of losing \$50/hd, or 55% chance of netting no additional \$/hd

 17. Given the best and worst case potential outcomes from marketing your weaned calves, which net return/loss prospect would you most prefer from the four listed below?
 - a. \$20/calf return best case; \$0/calf loss worst case
 - b. \$35/calf return best case; \$20/calf loss worst case
 - c. \$65/calf return best case; \$35/calf loss worst case
 - d. \$100/calf return best case; \$75/calf loss worst case

 18. Your trusted friend is putting together investors to fund a new innovative business venture. The venture could pay back more than 50 times the investment if successful. If the venture is a bust, the entire investment is worthless. Your friend estimates the chance of success is 20%. How much would you invest?
 - a. Nothing
 - b. \$1,000
 - c. \$10,000
 - d. \$50,000
 - e. \$100,000
 - f. More than \$100,000

 19. If your trusted friend and banker each conclude that success of the venture in the above question is 60% instead of 20%, how much would you invest?
 - a. Nothing
 - b. \$1,000
 - c. \$10,000
 - d. \$50,000
 - e. \$100,000
 - f. More than \$100,000
-

Table 2. Farm Characteristics and Risk Preferences of Cow-Calf Survey Participants.

	Strongly Risk Averse	Slightly Risk Averse	Risk Neutral
<u>Farm Characteristics</u>			
Value of Farm Production	\$283,541	\$450,447	\$643,240
Net Farm Income	\$73,434	\$125,390	\$181,203
Total Acres	1,726	2,279	3,135
Crop Acres	876	1,311	1,620
Number of Cows	97	105	161
Percent of Labor Devoted to Crops	64.82%	69.12%	63.72%
Operating Profit Margin Ratio	0.1331	0.2055	0.2259
Asset Turnover Ratio	0.2857	0.3991	0.3858
Debt to Asset Ratio	0.1630	0.2820	0.2766
<u>Risk Preferences</u>			
Question 15	2.06	2.49	2.95
Question 16	1.42	1.90	2.59
Question 17	1.69	2.67	3.28
Question 18	1.12	1.60	2.38
Question 19	1.67	2.53	3.51
Risk Preference Score	14.93	28.42	46.87

Table 3. Retained Ownership of Calves by Cow-Calf Survey Participants.

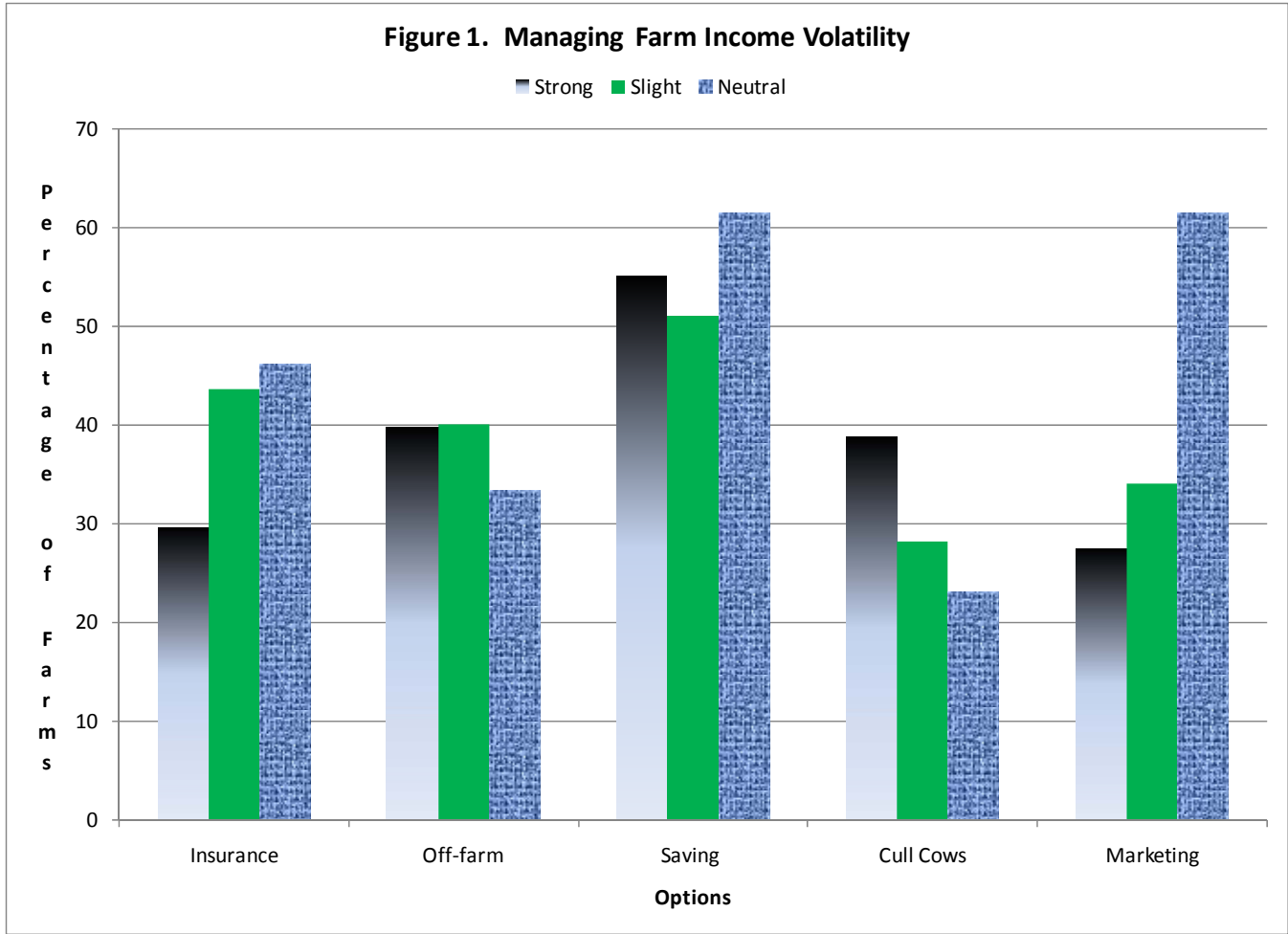
Practice	Strongly Risk Averse	Slightly Risk Averse	Risk Neutral
Retain Ownership of Calves	33.7%	31.1%	66.7%
Reasons to Retain Ownership			
See risk worthwhile	34.7%	31.1%	66.7%
Receive performance data	5.1%	11.1%	41.0%
Receive carcass data	6.1%	10.4%	33.3%
Get a good return for genetic improvements	8.2%	13.3%	51.3%
Reasons for Not Retaining Ownership			
Don't receive additional profit	26.5%	13.3%	12.8%
Don't need to receive carcass data	7.1%	5.2%	2.6%
Don't want to take the risk involved	52.0%	52.6%	35.9%
Want to receive revenue earlier	37.8%	38.5%	15.4%
Don't have a relationship established with a feedlot	28.6%	28.9%	12.8%

Table 4. Relative Importance of General Risk Factors to Beef Cow Enterprise.

Risk Factor	Strongly Risk Averse	Slightly Risk Averse	Risk Neutral
Drought	3.84	3.78	3.74
Unexpectedly low cattle prices	4.02	3.97	3.89
High replacement heifer prices	2.91	2.81	2.64
Variation in non-feed input prices	3.34	3.20	3.15
Changes in government environmental programs	3.83	3.48	3.41
Storms	3.45	3.32	3.26
Changes in government programs	3.51	3.26	3.16
High hay/forage prices	3.43	3.30	3.13
Animal Disease	3.66	3.50	3.26
High land prices	3.72	3.61	3.54
Rented pasture availability	3.47	3.67	3.63
Labor availability	2.90	2.78	2.87
High price of labor	2.80	2.83	2.77
Credit availability	2.87	2.89	2.92
High interest rates	3.41	3.53	3.56

Table 5. Relative Importance of Risk Factors Impacting Farm Income.

Risk Factor	Stongly Risk Averse	Slightly Risk Averse	Risk Neutral
Maintaining animal health	4.43	4.41	4.23
Being a low-cost producer	4.24	4.17	4.13
Receiving premiums for calves sold	3.95	4.01	3.92
Maintaining financial/credit reserves	3.93	3.84	3.71
Retaining calves for market timing	3.48	3.44	3.71
Specializing in one phase of cattle production	3.22	3.18	3.03
Diversifying in numerous ranch/farm enterprises	3.47	3.56	3.74
Forward contracting futures & options	2.47	2.80	2.97



CATTLE FINISHING NET RETURNS

This article will discuss the KSU cattle finishing return series. Periodically, the department has computed cattle finishing returns for Kansas. Plans are to update this series monthly and post the information on the Ag Manager web site (www.agmanager.info). Several sources of data were used to compute the cattle finishing net returns discussed below. Feeder and fed cattle prices were obtained from the seasonal cattle price spreadsheet updated monthly by Kevin Dhuyvetter. Average daily gain, feed conversion, days on feed, in weight, out weight, and feeding cost of gain were obtained from monthly issues of the *Focus on Feedlots* newsletter. Interest rates were obtained from the Kansas Federal Reserve Bank of Kansas City.

Figure 1 presents monthly steer finishing net returns from January 2000 to December 2009. It is important to note that net returns were computed using closeout month rather than placement month. The last closeout month with a positive net return was September 2008. Losses per head in 2009 ranged from \$38 in November to \$302 in January. Breakeven prices for January and February of 2010 are projected to be from \$88 to \$90. With these breakeven prices, losses per head are expected to range from \$40 to \$70 in the first two months of 2010. For March through June of 2010, breakeven prices are expected to range from \$84 to \$86. It is certainly possible for net returns to be at breakeven or slightly positive from March to June.

Correlation coefficients can be used to examine the relationship between net returns, feeding cost of gain, and the feeder to fed cattle price ratio. Correlation is a statistical measure of how variables move together and is bounded by -1.0 and 1.0. A value of -1.0 indicates two variables move together perfectly, but in opposite directions, while a value of 1.0 indicates two variables move up and down together proportionally. Values close to zero indicate two variables have little relationship to each other.

Net returns were significant and negatively correlated with feeding cost of gain ($r = -0.401$). Figure 2 illustrates monthly feeding cost of gain from January 2000 to December 2009. The relatively high feeding cost of gain in 2008 and 2009 certainly contributed to cattle finishing losses during these two years.

Net returns were also significant and negatively correlated with the feeder to fed cattle price ratio ($r = -0.823$). The strong correlation between these variables reveals the importance of this price ratio to net returns. The feeder to fed cattle price ratio is illustrated in figure 3. The average price ratio over the 10-year period

was 1.18. Of course, it is not possible to fully anticipate what fed cattle prices will be when purchasing feeder cattle. Large deviations from the mean price ratio indicate periods for which expected and actual fed cattle prices were quite different. The closeout months with ratios above 1.40 exhibited cattle finishing losses ranging from \$149 to \$179 per head. The extremely large losses from December 2008 to February 2009 were the result of relatively high feeding cost of gain (\$87 to \$91 per cwt) and relatively high feeder to fed cattle price ratios (1.34 to 1.35).

As indicated above, plans are to update the cattle finishing return series and breakeven price projections monthly. This information will be posted to the Ag Manager web site. This article emphasized the importance of feeding cost of gain and the feeder to fed cattle price ratio to cattle finishing net returns. A future newsletter article will examine the relationship between feeding cost of gain, average daily gain, feed conversion, corn prices, and alfalfa prices.

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Figure 1. Historical Net Returns for Finishing Steers

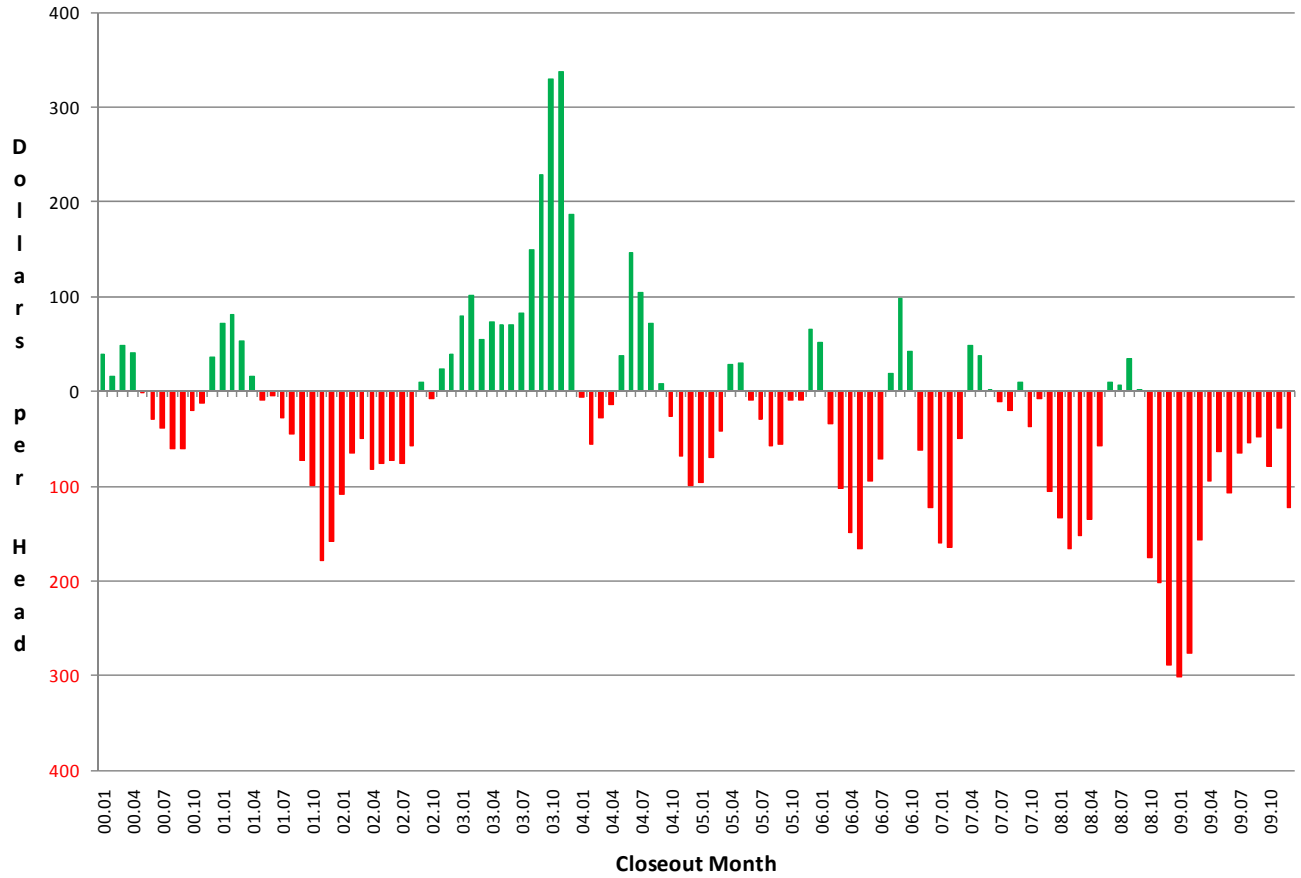


Figure 2. Feeding Cost of Gain for Steers

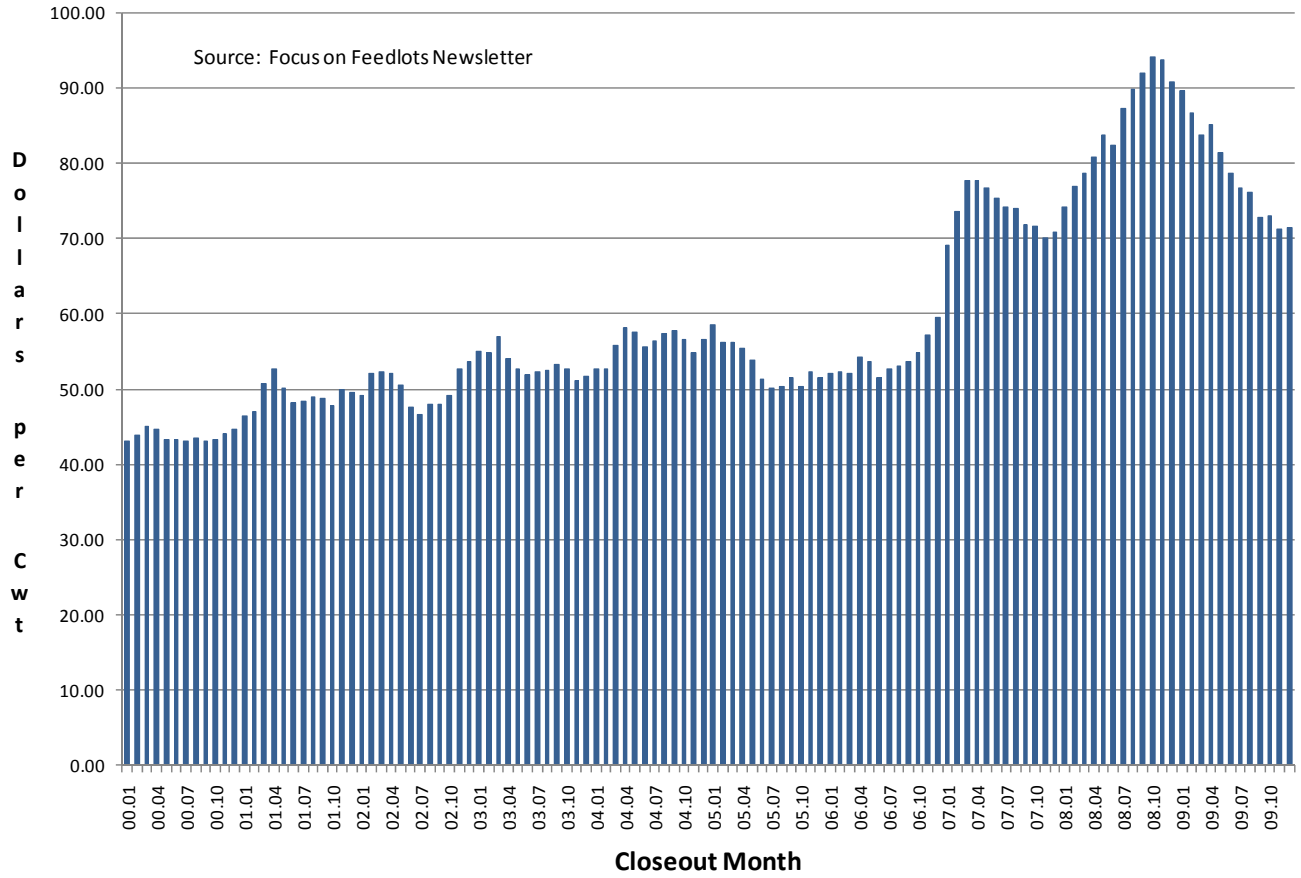
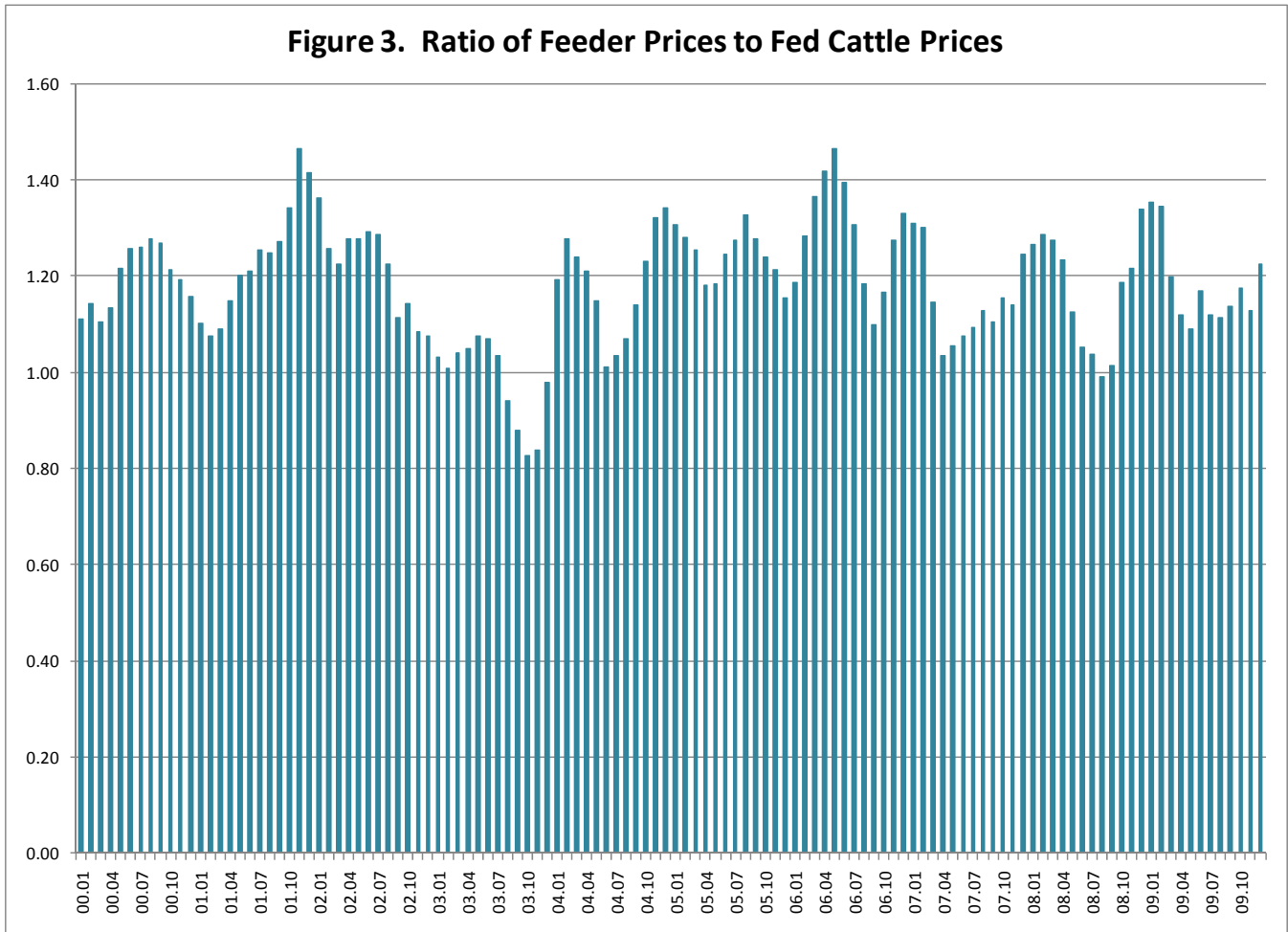


Figure 3. Ratio of Feeder Prices to Fed Cattle Prices



RECOMMENDATIONS FOR FURTHER READING

The purpose of this section of the newsletter is to briefly discuss articles and web sites that may be of interest to readers. In general, the articles discussed will not report on original research. Rather, the articles will contain citations to web sites and articles that discuss topics of general interest.

Jason Henderson and Maria Akers, in a recent Federal Reserve Bank of Kansas City article, discuss trends in agricultural land values in the United States. They note that U.S. agricultural land prices declined in nominal dollars for the first time since 1987 in 2009. This decline was related to lower non-farm demand and relatively weaker crop prices. It is important to note that

land values in Kansas did not decline in 2009. The authors indicate that trends in future agricultural land values will rest heavily on farm income prospects and capitalization rates. According to the authors, current projections support recent land value gains and suggest little risk of a sharp decline in the near term. The article by Henderson and Akers can be found on my contributor site under “Recommendations for Further Reading”.

Ben Bernanke has published an article entitled “The Future of Mortgage Finance in the United States” in a recent issue of the *B.E. Journal of Economic Analysis and Policy*. How mortgages in the United States are financed in the future

has ramifications for the mortgage industry and interest rates. Mortgage securitization in the United States has been dominated by government sponsored enterprises (GSEs), Fannie Mae and Freddie Mac. The author notes that the ability of institutions to sell mortgages they originate into the broader capital market by means of the securitization process has two important purposes: access to wider sources of funds and reduced exposure to interest rate, credit, prepayment, and other risks. The financial crisis was at least partially the result of weakened incentives to properly underwrite and evaluate new mortgage credit, and increased complexity of mortgage securities. These issues need to be addressed in reorganization alternatives. Bernanke discusses three alternative approaches to reorganizing the mortgage and capital markets: privatization; covered bonds, which are used extensively in Europe; and even closer ties to the government. More information can be found in the article, which is posted on my contributor site under "Recommendations for Further Reading".

As indicated in the last two newsletters, a recent book by Johnny Taylor, Jr. and Gary Stern entitled "The Trouble with HR: An Insider's Guide to Finding and Keeping the Best Talent" does a good job of discussing how to select, train, and retain employees. The authors stress the importance of avoiding common traps in the interview process. The first trap is the likeability trap. Choosing the right employee is not the same as choosing who you would like to socialize with after work. The person's background and ability to handle challenges and conflict are more important. The second trap is falling for attractive people. A person's skill is relatively more important than looks and demeanor. The third trap is letting prejudices make the decision. The fourth trap is rushing the job selection. Often replacing an employee seems extremely urgent. Though this is often the case, it is still important to find the right employee for the job. The fifth trap is letting too many people make the selection. Using a team approach to interview a candidate is

helpful, but ultimately one or two people need to make the selection. The sixth trap is not having multiple people interview the potential employee. Using several interviewers often unearths potential pitfalls or problems. The seventh trap is relying too much on the internet. The eighth trap is not making adjustments to the interview process when it is clear that mistakes were made in the past. The last, but not least, trap is ignoring your gut instincts. More information on this topic can be found in the book by Taylor and Stern.

Michael Jensen has recently written an article discussing the importance of integrity in the magazine entitled "Rotman". He defines integrity as honoring your word. Individuals can honor their word in two ways. First, integrity involves keeping your word and delivering on promises in a timely fashion. Second, as soon as an individual knows that he/she can not keep their word, they should inform all parties involved and promise to solve the problems entailed with not keeping their word. The author contends that integrity is a necessary condition for maximum performance and that being out-of-integrity is very damaging to organizations and an individual's daily life. For those seeking more information on this topic, the article by Michael Jensen is posted on my contributor site under "Recommendations for Further Reading".

The Foundation for Economic Education (FEE) was founded in 1946 and is one of the oldest free market organizations in the United States. FEE's mission is to offer individuals a chance to learn about the sanctity of private property, individual liberty, the rule of law, the free market, and moral superiority of individual choice and responsibility over coercion. In addition to offering daily updates that address current topics, the web site for FEE (www.fee.org) contains numerous articles that can be downloaded.

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The Kansas Farm Management Association (KFMA) Newsletter is distributed monthly to provide farm management information to farm decision makers. Further farm management information can be found on the KFMA program website: www.agmanager.info/kfma; and, on the Extension Agricultural Economics website: www.agmanager.info. The Newsletter is edited by Michael Langemeier, Professor, Department of Agricultural Economics, Kansas State University.



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