



## COMPARATIVE ADVANTAGE

Understanding a farm's strategic position is increasingly important in today's competitive environment. For a farm to be successful over a long period of time it must respond rapidly to competitive and market changes, benchmark to achieve best practices, and establish a few core areas of strength. A farm can outperform other operations only if it can establish a difference that can be preserved. To do this, a farm must either deliver greater value to customers, create comparable value at lower cost (i.e., improve efficiency), or do both. Delivering greater value allows a farm to charge relatively higher prices for its products while improving efficiency results in lower per unit costs.

Table 1 presents the relationship between comparative advantage (sometimes referred to as competitive advantage), relative price per unit, and relative cost per unit. The combinations of price and cost that lead to a comparative advantage are indicated in purple while the combinations that lead to a comparative disadvantage are indicated in red. To obtain a comparative advantage, a farm must receive relative higher per unit prices and have average to below average per unit costs; or receive average per unit prices and have below average per unit costs. Most farms try to achieve the later and thus attempt to be in box "6" in table 1.

Two examples of identifying a comparative advantage are highlighted in this article. The first example is illustrated in figure 1. This figure presents the economic total expense ratio for KFMA farms with five years of continuous data from 2004 to 2008. Farms with an economic total expense ratio below one are earning an economic profit. Approximately 28 percent of the farms earned an economic profit over the five-year period.

The second example is illustrated in table 2. The data in table 2 was generated using data from KFMA farms with continuous data from 1988 to 2007. The cost shares were computed by dividing the cost items by value of farm production. Return on assets does not include capital gains on land. The farms in the first column had above average levels of cost efficiency over the 20-year period. In contrast, the farms in the third column had below average levels of cost efficiency over the 20-year period. The cost efficiency level of the farms in the second column was not statistically different from the average level. The percent of farms represented in the first, second, and third column of table 1 was 30, 42, and 28 percent, respectively. It is important to note that there was a significant difference between all of the variables for the farms with above average and below average cost efficiency levels. The farms with above average cost efficiency levels, on average, were larger, were more cost efficient, and had higher profit margin, asset turnover, and return on asset ratios. These results illustrate that it is possible to have a comparative advantage or a sustained

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competitive advantage over a long period of time. More information pertaining to the information presented in table 2 can be found in Yeager and Langemeier (2009) which is posted on my contributor site under “Recommendations for Further Reading”.

I encourage you to use the framework outlined in this article to identify your comparative

advantage. Benchmarking technical and economic performance can be used to ascertain whether a farm has a comparative advantage. Next month’s newsletter will focus on benchmarking.

*Michael Langemeier, Professor  
Department of Agricultural Economics  
Kansas State University*

**Table 1. Identifying a Farm's Comparative Advantage.**

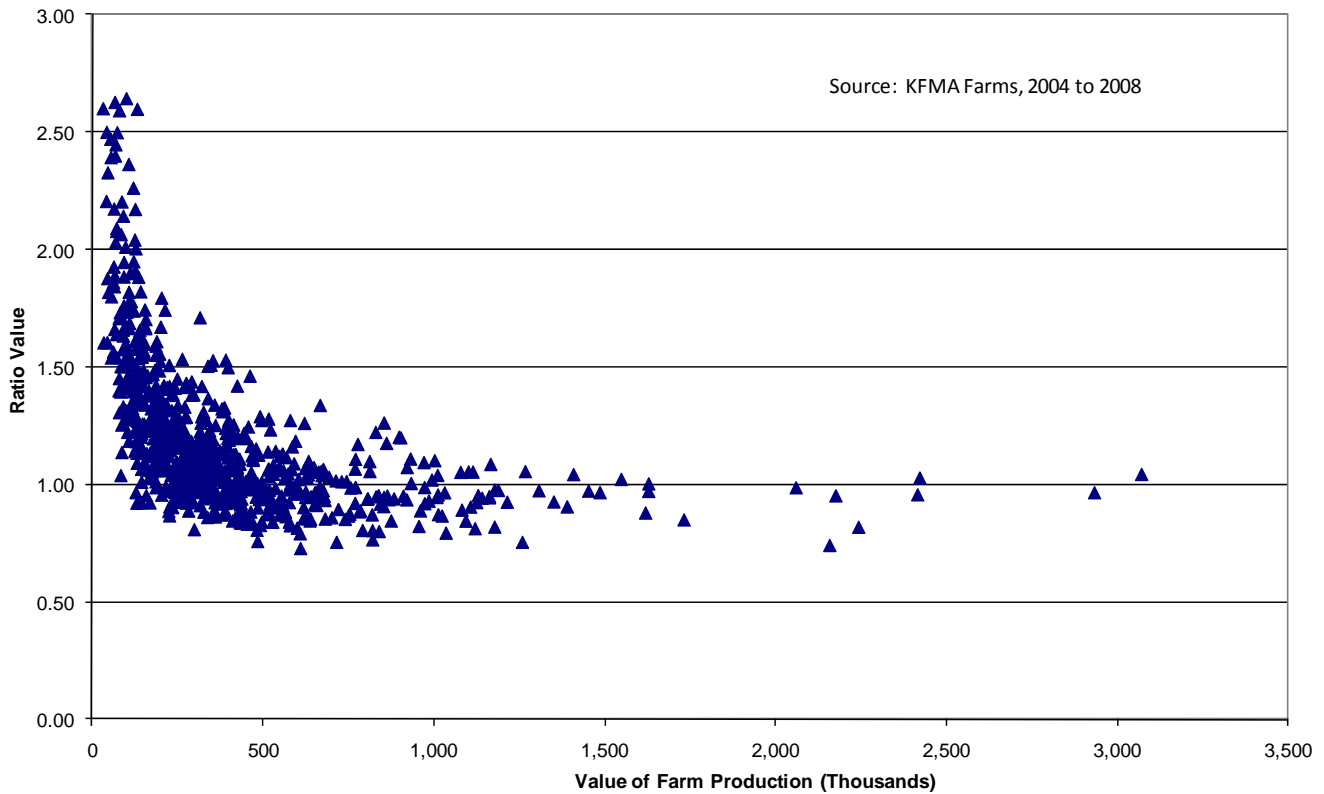
		Relative Price per Unit		
		Lower	Average	Higher
Relative Cost Per Unit	Lower	1 - Indeterminate Position	2 - Comparative Advantage	3 - Comparative Advantage
	Average	4 - Comparative Disadvantage	5 - Parity Position	6 - Comparative Advantage
	Higher	7 - Comparative Disadvantage	8 - Comparative Disadvantage	9 - Indeterminate Position

Adapted using information from *A General Theory of Competition* written by Shelby Hunt.

**Table 2. Characteristics of Farms with Above Average, Average, and Below Average Cost Efficiency, 1988-2007.**

Variable	Above Average	Average	Below Average
Value of Farm Production	332,709	211,173	109,601
Net Farm Income	93,815	46,858	21,734
Total Acres	2,127	1,856	1,216
Crop Labor Percentage	68.91%	74.89%	75.03%
Labor Cost Share	14.30%	14.66%	19.21%
Purchased Input Cost Share	39.93%	33.77%	24.74%
Capital Input Cost Share	45.77%	51.57%	56.05%
Cost Efficiency	0.696	0.589	0.453
Economic Total Expense Ratio	1.039	1.191	1.542
Operating Profit Margin Ratio	0.212	0.136	-0.024
Asset Turnover Ratio	0.338	0.263	0.169
Return on Assets	0.072	0.036	-0.004

Source: Yeager and Langemeier (2009)

**Figure 1. Economic Total Expense Ratio**

## PERCEIVED COMPARATIVE ADVANTAGE OF COW-CALF PRODUCERS

This article is the third part of a three part series discussing 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 cow-herd in 2008. Survey participants were asked questions pertaining to production practices, marketing and production methods, risk preferences, and perceived comparative advantages. Articles published in the December 2009 and January 2010 newsletters examined production and marketing practices, and risk preferences of survey respondents. This part of the series will focus on differences in perceived comparative advantages of producers. Perceptions of the current economic environment and the importance of production practices are also discussed. A word of thanks goes out to all of

the cooperating KFMA members and economists.

There were 278 survey respondents that answered question #20 which dealt with perceived comparative advantage. The responses were sorted by herd size. There were 159, 78, and 41 producers with herds less than 100 cows, from 100 to 200 cows, and greater than 200 cows, respectively. Table 1 presents farm characteristics by herd size category. The information in this table represents 2008 data. The farms with greater than 200 cows were relatively larger in terms of value of farm production, beef income, total acres, and crop acres. However, their net farm income, operating profit margin, and asset turnover ratio were lower than that of the other two herd size

groups. Given that 2008 was a relatively tough year for livestock producers, these results are not surprising. For a comparison of net farm income by farm type, see the executive summary on the KFMA web site ([www.agmanager.info/kfma](http://www.agmanager.info/kfma)). It is interesting to note that the survey participants with less than 100 cows devoted approximately 74 percent of their time to crops while the producers with more than 200 cows devoted approximately 51 percent of their time to crops.

Table 2 presents the perceived comparative advantages of the cow-calf survey respondents. Producers were asked to mark all of the items that applied to their operations. The total number of items related to a farm's comparative advantage that a respondent could mark was 10. The number of items marked ranged from 0 to 8, and averaged 3.85. There was a significant relationship between the number of items marked and herd size, but the correlation, 0.132, was relatively low (figure 1).

Over 50 percent of the producers with less than 100 cows listed "low cost" and "production skills" as comparative advantages. For the producers with 100 to 200 cows, "cattle genetics", "low cost", and "production skills" were marked as comparative advantages by over 50 percent of the group. Finally, for the producers with more than 200 cows, "cattle genetics", "high quality land/pasture", and "production skills" were marked as comparative advantages by over 50 percent of the group. Interestingly, "low cost" was marked as a comparative advantage by less than 50 percent of producers with more than 200 cows. However, it is important to note that there was not a significant relationship between those that marked "low cost" as a comparative advantage and herd size. Future analysis will examine whether those with a perceived comparative advantage related to price, production, and cost, actually have a comparative advantage with respect to these items.

Given the importance of cost to cow-calf

profitability, survey participants were asked to rank the relative importance of specific cost items. The results are reported in table 3. Not surprisingly, the two most important costs were feed costs, and pasture rent or ownership cost.

Another question on the survey asked producers to indicate whether they strongly agree, agree, are neutral, disagree, or strongly disagree with statements related to the economic environment and production practices. The results for this question are reported in table 4. A higher score in table 4 means that a producer group was more likely to agree (score of 4) or strongly agree (score of 5) with the particular item listed. Comparisons below will focus on the group with less than 100 cows and the group with more than 200 cows. The producers with larger herds were more likely to perceive the cow-herd as the most important part of their business, perceive that individual identification of cattle is crucial to the operation, perceive value-added programs as income enhancing, and indicate that body condition scoring is important. Future analysis will examine whether those that perceive the cow-herd to be the most important part of their business have a lower cost structure and higher net returns per head than those for which the cow-herd is relatively less important.

In summary, farm characteristics vary significantly among herd size groups. The producers with more than 200 cows managed farms with a larger value of farm production and more total acres. The three most common perceived comparative advantages were cattle genetics, low cost, and production skills. The relationship between perceived comparative advantage, the perceived importance of the cow-calf enterprise to the farm, and efficiency and net returns will be explored in future newsletter articles.

*Kelsey Frasier-Pope, Former Graduate  
Research Assistant*

*Ted Schroeder, Professor*

*Michael Langemeier, Professor*

*Department of Agricultural Economics - KSU*

**Table 1. Farm Characteristics of Cow-Calf Survey Participants.**

	Less than 100 Cows	100 to 200 Cows	Greater than 200 Cows
Value of Farm Production	\$365,574	\$460,303	\$519,943
Beef Income	\$39,215	\$102,979	\$160,507
Net Farm Income	\$106,065	\$137,976	\$94,837
Total Acres	1,565	2,568	4,049
Crop Acres	1,073	1,336	1,462
Labor Devoted to Crops	73.58%	61.88%	50.63%
Number of Cows	56	136	278
Operating Profit Margin Ratio	0.2022	0.2144	0.1119
Asset Turnover Ratio	0.4030	0.3470	0.2863
Debt to Asset Ratio	0.2668	0.1954	0.2460

**Table 2. Perceived Comparative Advantage of Cow-Calf Survey Participants.**

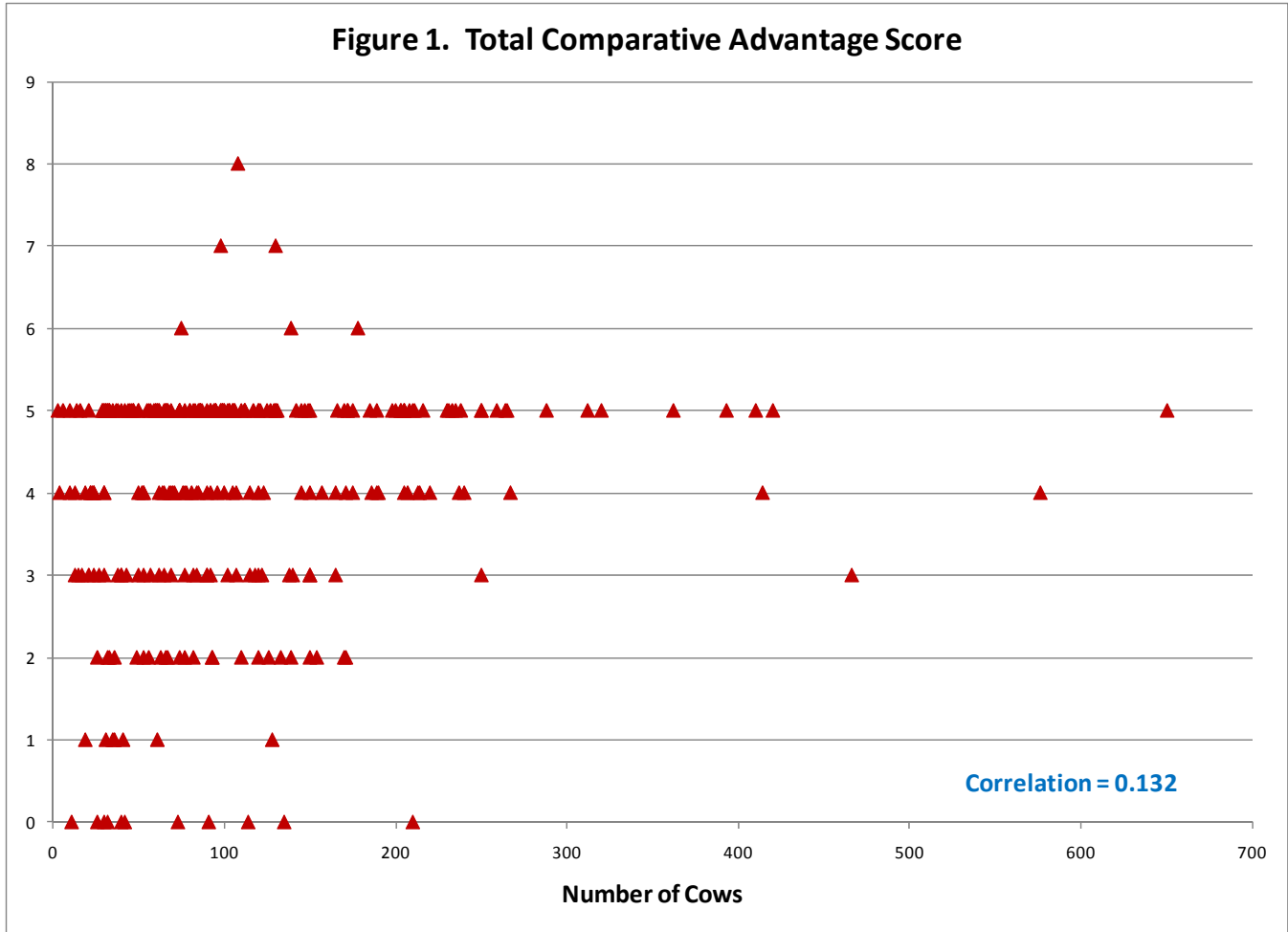
Factor	Less than 100 Cows	100 to 200 Cows	Greater than 200 Cows
Analysis and Use of New Technology	23.3%	26.9%	39.0%
Business Planning Skills	13.2%	26.9%	34.1%
Cattle Genetics	49.1%	70.5%	75.6%
High Quality Land/Pasture	48.4%	43.6%	58.5%
Loan and Interest Rate Management	42.8%	24.4%	31.7%
Low Cost	55.3%	52.6%	48.9%
Machinery Management	37.1%	41.0%	34.1%
Marketing Skills	18.2%	19.2%	12.2%
Personnel Management	32.1%	34.6%	31.7%
Production Skills	65.4%	69.2%	87.8%

**Table 3. Relative Importance of Input Costs.**

Input Cost	Less than 100 Cows	100 to 200 Cows	Greater than 200 Cows
Animal Health Cost	4.80	4.76	4.99
Cost of Breeding Stock	3.79	4.47	4.22
Feed Costs	1.94	1.75	1.85
Fuel	5.80	5.37	5.79
Interest	5.90	6.25	5.95
Labor	5.76	5.40	5.20
Maintenance Costs	5.30	5.33	5.48
Pasture Rent or Ownership Cost	2.71	2.67	2.52

**Table 4. Perceptions of Economic Environment and Importance of Production Practices**

Perception	Less than 100 Cows	100 to 200 Cows	Greater than 200 Cows
Cow-Herd Most Important Part of Business	3.09	3.49	3.68
Focusing More Attention of Financial Management	3.77	3.80	3.83
Focusing More Attention on Marketing	3.51	3.50	3.44
Focusing More Attention on Herd Management	3.51	3.62	3.41
Cattle Identification is Important	3.51	3.84	3.81
Value-Added Program Increases Returns	3.67	3.83	4.14
Disease Prevention is Important	4.25	4.43	4.37
Implement Whole-Herd Health Program	3.77	4.12	3.98
Inspect Herd at Least Twice Weekly	3.83	3.63	3.86
Body Condition Scoring is Important	3.69	3.92	3.88



### FACTORS IMPACTING FEEDING COST OF GAIN

This article discusses the impact of cattle performance and feed prices on feeding cost of gain. Data were obtained from monthly issues of the *Focus on Feedlots* newsletter which reports monthly data on average daily gain, feed conversion, days on feed, in weight, out weight, feeding cost of gain, and inventory prices for corn and alfalfa.

Figure 1 illustrates monthly feeding cost of gain for steers from January 2000 to January 2010. Average feeding cost of gain over this time period was \$59.80 per cwt. Feeding cost of gain has been above \$70 per cwt since February of 2007, and was above \$90 per cwt from September 2008 to December 2008. As

discussed below, feeding cost of gain is sensitive to changes in cattle performance and feed prices.

Regression analysis was used to examine the sensitivity of feeding cost of gain to changes in feed conversions, corn prices, and alfalfa prices. Feed conversion and feeding cost of gain data were obtained directly from the *Focus on Feedlots* newsletter. Corn and alfalfa prices were computed using average inventory prices for the previous four months. This procedure ensures that the feed prices are correctly matched with the closeout month associated with the feed conversion and feeding cost of gain data.

Results of the regression analysis are reported in table 1 and are as follows: each 0.10 increase in feed conversion increases feeding cost of gain by \$0.96 per cwt, each \$0.10 per bushel increase in corn prices increases feeding cost of gain by \$1.13 per cwt, and each \$5 per ton increase in alfalfa prices increases feeding cost of gain by \$0.30 per cwt. Of course, market forces change corn and alfalfa prices. Feed conversion changes are due to improvements in technology and feeding practices that improve feed conversion; the type of cattle being fed; and the

seasonality of performance.

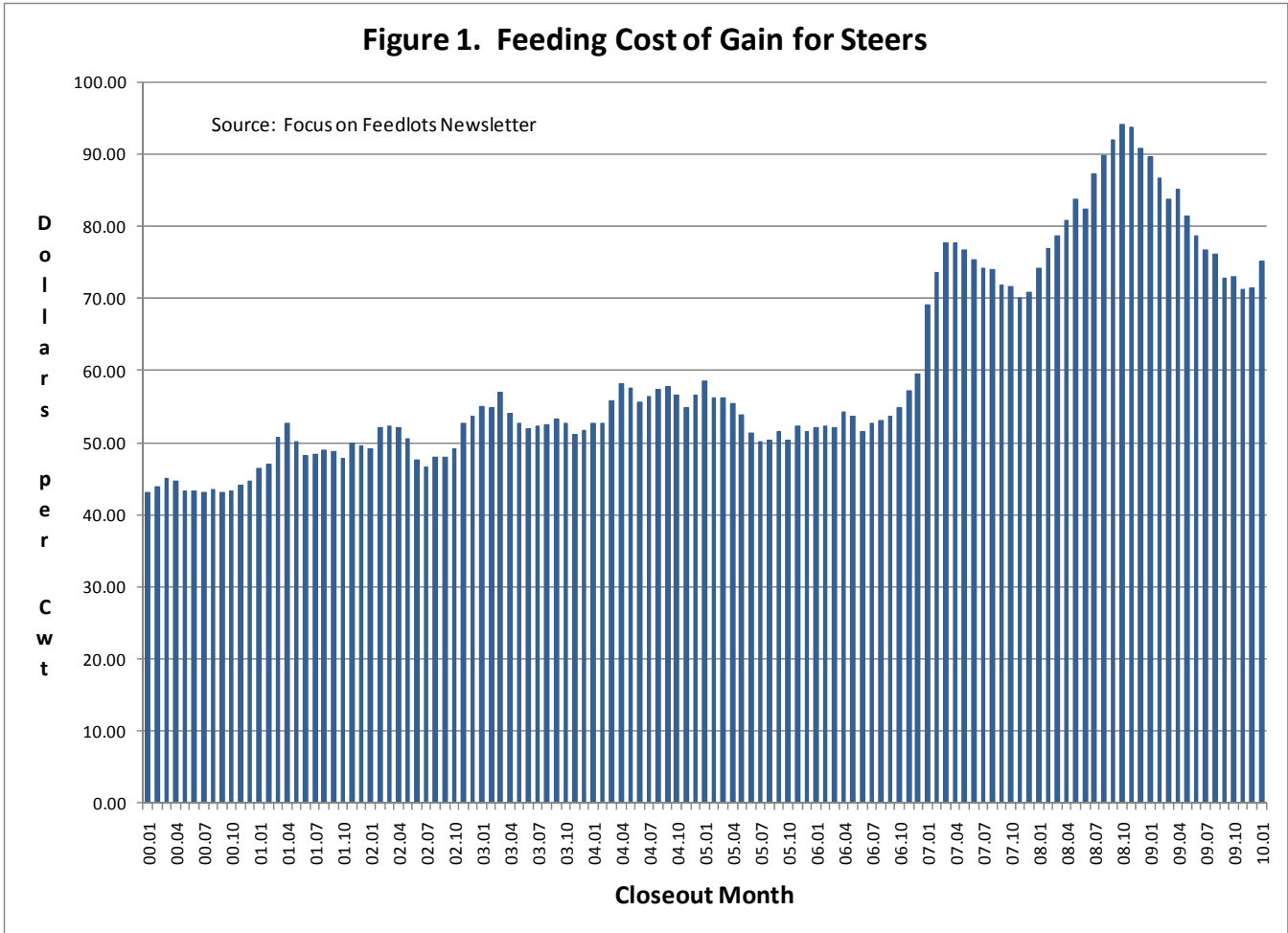
This article illustrated the sensitivity of feeding cost of gain to changes in cattle performance and feed prices. The information in this article will be updated and published in the monthly cattle return series which will be posted to the AgManager web site: [www.agmanager.info](http://www.agmanager.info).

*Michael Langemeier, Professor  
Department of Agricultural Economics  
Kansas State University*

**Table 1. Factors Impacting Feeding Cost of Gain.**

Factor	Change Analyzed	Per Cwt. Impact
Feed Conversion (index)	+ 0.10	\$0.96
Corn Prices (bu)	+ 0.10	\$1.13
Alfalfa Prices (ton)	+ 5.00	\$0.30

**Figure 1. Feeding Cost of Gain for Steers**



## 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.

Alice Rivlin, from the Brookings Institution, provided testimony to the Senate Budget Committee on February 11. In her testimony she discusses the dangerous trajectory associated with the U.S. budget. The deficit has moved from approximately 40 percent of GDP in fiscal year 2008 to 64 percent this fiscal year. In the next decade, federal spending on Social

Security, Medicare, and Medicaid will make it difficult to close the gap between spending and revenues. The author indicates that a credible plan to stabilize the debt must include reductions in spending, revenue increases, and have the support of the leadership of both political parties. This is a tall order. The complete testimony can be found on my contributor site under “Recommendations for Further Reading”.

Inflation expectations have been a topic of debate among economists in recent months. Kevin Kliesen addresses this topic in a recent article, “Inflation May Be the Next Dragon to Slay”, published by the Federal Reserve Bank of

St. Louis. The author outlines recent policy actions, the difficulty associated with forecasting inflation, and potential inflation risks. Inflation risks are related to the gap between current GDP and potential GDP (the rate of growth possible if we were not in a recession), asset prices, and federal budget deficits. Because all of these things are highly uncertain, there is a wide disparity in inflation expectations. The author notes that a recent survey of economists found that 42 percent of forecasters see a relatively high risk that U.S. inflation will rise sharply in the next five years. However, in this same survey, 34 percent see little or no risk associated with rising inflation. This article can be found on my contributor site under “Recommendations for Further Reading”.

An article by D’Ann Petersen and Latia Assanie entitled “Texas Dodges Worst of Economic Woes” was recently published by the Federal Reserve Bank of Dallas. Though the article

focuses on Texas, it contains a couple of interesting charts pertaining to foreclosure rates by U.S. county. It is very evident from these charts that the Great Plains largely escaped the escalation in foreclosure rates experienced by other parts of the county. The full article can be found on my contributor site under “Recommendations for Further Reading”.

I have referred to the monthly *Focus on Feedlots* newsletter several times in the last couple of months. The *Focus on Feedlots* newsletter reports cattle performance and feeding cost of gain for several feedlots in Kansas. The newsletter can be accessed through the web site of the Department of Animal Science and Industry at Kansas State University, [www.asi.k-state.edu](http://www.asi.k-state.edu).

*Michael Langemeier, Professor  
Department of Agricultural Economics  
Kansas State University*

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](http://www.agmanager.info/kfma); and, on the Extension Agricultural Economics website: [www.agmanager.info](http://www.agmanager.info). The Newsletter is edited by Michael Langemeier, Professor, Department of Agricultural Economics, Kansas State University.



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