

Value of Gain and Seasonal Price Indices

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Value of Gain

Value of gain (VOG) may be a term that is relatively new to Louisiana cattle producers, but this term simply refers to the additional revenue that may be obtained by selling cattle at a heavier weight a few months later than normal. As an example, consider a producer who typically sells steers in October of the year at 425 pounds. For October 2008, the average selling price for 400-450 pounds was \$99.65/cwt. Now suppose that the same producer held those steers until January 2009 when the animals weighed 625 pounds. The average Louisiana price for 600-650 lb steers was \$87.59 in January 2009. By adding 200 lbs to the steer, the value of gain (additional revenue) would have been \$61.96. The formula for calculating this is:

$$\text{Value of Gain} = \frac{(\text{Final Weight} * \text{Price}) - (\text{Initial Weight} * \text{Price})}{(\text{Final Weight} - \text{Initial Weight})} * 100.$$

The value of gain can also be viewed as the estimated cost of gain that a producer would need to achieve to breakeven on costs associated with adding the additional weight. Producers who are able to achieve costs of gain that are cheaper than the values of gain may find the practice of retaining calves to heavier weights a profitable venture if resources including management and forage production capability are available and will not be strained.

Seasonal Price Indices

Production agriculture is affected by seasonal production and demand cycles that are influenced by weather conditions as well as biological processes. These supply and demand conditions lead to seasonal price patterns. Seasonal price patterns repeat themselves due to the biological processes inherent in cow/calf production. Seasonality is also a result of the movement of cattle from cow/calf production to stocker operations and finally feedlots in the High Plains. Awareness of seasonal price patterns can improve production and marketing decisions made by producers.

Seasonal price indices reflect normal price patterns that exist due to supply and demand factors. These factors include weather conditions, type of cattle being sold, and consumer demand. Seasonal indices become more reliable as more historical price data is available. Changes in consumer purchasing habits or supply availability can impact seasonal patterns either on a permanent or temporary basis.

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A seasonal index of cattle prices is simply the price for a given month divided by the yearly average. This ratio may be multiplied by 100 to express the monthly index as a percentage. For example, an index of 1.04 (or 104) suggests the price for the month is 4% above the yearly average.

Spreadsheet Decision Tool

On the LSU AgCenter website is a spreadsheet decision tool that calculates the indices and values of gain automatically for producers. This spreadsheet is regularly updated and may be found in the beef marketing, economics, and business channel (http://www.lsuagcenter.com/en/crops_livestock/livestock/beef_cattle/marketing_economics_business/). The following sections explain how to use the spreadsheet.

There are four tabs or worksheets at the bottom of the file entitled “Intro,” “Prices,” “Value of Gain,” and “VOG-User Scenarios.” In the “Intro” tab, you will find several light blue cells which can be adjusted to show different price histories, values of gain, or user-specified scenarios (see figure 1). Light blue cells will either be a drop down menu box where users may select one of several pre-defined classes or input data. Cells that contain a drop down box appear when that cell is highlighted and the options appear when the arrow is clicked as demonstrated in figure 1. Also, there are several red triangles which show additional information when the user holds the cursor over that triangle (see figure 2).

| | Scenario | | | | | |
|---|------------|------------|------------|------------|------------|------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Starting month (Jan=1, Feb=2, etc) | 10 | 7 | 5 | 4 | 3 | 5 |
| Class (weight/sex) of Cattle - Starting | 450 lb str | 300 lb str | 200 lb hfr | 250 lb str | 200 lb str | 200 lb str |
| Ending month (Oct=10, Nov=11, etc) | 11 | 10 | 11 | 6 | 8 | 7 |
| Class (weight/sex) of Cattle - Ending | 600 lb str | 450 lb str | 400 lb hfr | 550 lb str | 550 lb str | 350 lb str |
| Weight gain | 150 | 150 | 200 | 300 | 350 | 150 |
| Months / Average daily gain (ADG)* | 2 / 2.47 | 4 / 1.23 | 7 / 0.94 | 3 / 3.29 | 6 / 1.92 | 3 / 1.64 |

Figure 1. Screenshot of Introduction tab

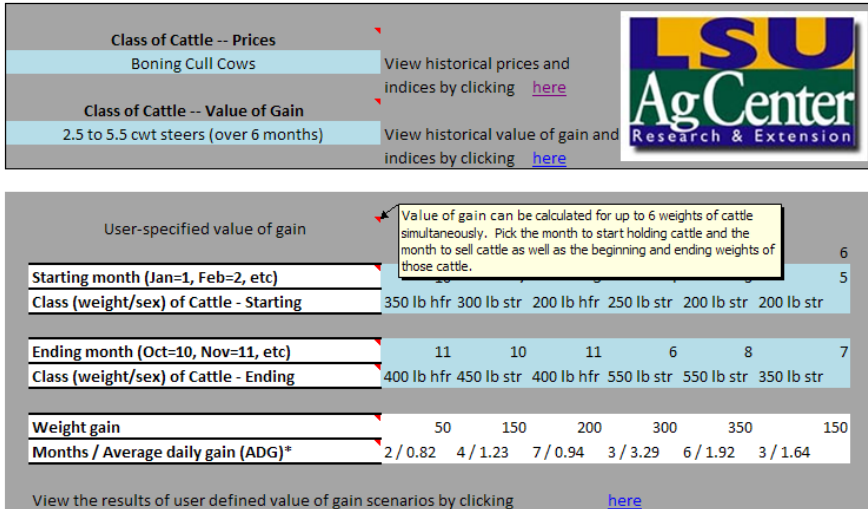


Figure 2. Additional information from holding mouse over red triangle

Class of Cattle – Prices

Underneath this title is a drop down box containing different weight classes of steer and heifer categories that are typically sold in Louisiana. Two cull cow classes, Boning and Lean, are also included. The Boning cull cow class represents cows weighing 800-1200 pounds expected to be 80 to 85% lean. The Lean cull cow class is cows weighing 850-1200 pounds that are 85-90% lean. By clicking on the blue box, a drop down tab (see figure 1) appears and by clicking on that arrow, the user can select one category of cattle to see a price history and seasonal indices for that class of cattle as well as graphs similar to those shown at the end of this document. Clicking on word “here” to the right of this menu will automatically take the user to the “Prices” tab where these histories and graphs can be viewed.

Once on the “Prices” worksheet tab, users will see the monthly average price by year as well as a short and long run average. Below that table of historical monthly prices is the seasonal price index for the class of cattle chosen. This seasonal price index reflects how far above (or below) the selected monthly price was relative to the yearly average price. For example, a value of 0.96 represents that the monthly price was 96% of the yearly average price (or 4% below that year’s average). Similarly, a value of 1.04 suggests that the hypothetical monthly average price was 104% of the yearly average (or 4% above the average annual price for that class of cattle).

Class of Cattle – Value of Gain

Similar to the prices menu, the “Class of Cattle – Value of Gain” menu works in the same manner. In this situation, producers can see the additional revenues that would have been captured in previous years by retaining calves to a heavier weight over a several month period. In the figure above, the user has selected to view the value of gain for a steer calf weighing 250 lbs that was held until it weighed 500 lbs. This weight gain took six months to achieve (an average daily gain of 1.64 lbs). Once again a user can click on “here” to the right of this menu and automatically be taken to the “Value of Gain” tab where the historical value of gains for

these weight gains are shown, the appropriate seasonal indices, and graphs. Producers who are able to achieve costs of gain for cheaper than the historical values of gain have the potential to make a profit by holding cattle to heavier weights.

As with the “Prices” tab, the “Value of Gain” tab includes the value of gain by month and year and then the seasonal index for value of gain below. The seasonal index for value of gain is similar to the seasonal price index as a value of 1.04 is 4% above the annual average value of gain.

A final note on this section is that Louisiana cattle prices are reported in 50 pound increments. As such, the example above shows that a producer is holding a calf from 250 lbs to 550 lbs. In this spreadsheet, any animal weighing between 250-300 lbs is classified as 250 lbs while any animal weighing 550-600 lbs is classified as 550 lbs. Producers may view price series for steers and heifers weighing more than 600 lbs, but the value of gain option is not available for these weights due to these price ranges only being reported by USDA AMS starting in 2008. Value of gain is also not calculated for cull cow classes.

The scenarios covered in this section reflect the gains that are most likely to occur over the course of a year based on information from LSU AgCenter research stations and input from LSU AgCenter animal scientists. An individual producer’s experiences may differ from the expected, pre-set scenarios and the following section covers how use to adjust scenarios based on that experience.

User-specified Value of Gain

The previous section dealt with pre-set assumptions that would as accurately as possible reflect the statewide average conditions producers would experience. A separate section is included that allows producers to tailor assumptions based on their previous operational experiences. Up to six scenarios that can be created that will allow value of gains to be calculated for different weights and sexes of cattle. Users can pick the starting and ending months for the weight gain which are entered by the user. The weight and sex of the cattle options is once again a drop down menu that appears by clicking on the appropriate cell. Error messages appear if different cattle sexes are picked for an individual scenario as well as if ending weight is less than starting weight. The weight gain is automatically calculated once the weights are selected by the user as well as the months it takes to gain the specified weight and the average daily gain. Users should note that if the period starts in October and ends in November, the spreadsheet assumes that the weight gain starts on the first day of October and ends on the last day of November. Users can click on “here” to be transported to the “VOG-User Scenarios” tab to see the historical values of gain and a graph of the user defined scenarios.

Graphs

In the “Prices” and “Value of Gain” tabs, users may adjust the graphs. To do so, users input a “1” or a “0” in the blue cells to adjust which years they want to see historical prices or seasonal indices for. A long term and short term option are pre-set into the seasonal indices chart.

Although the figure below shows only the graphs from the “Prices” tab, the options are available on the “Value of Gain” tab are identical.

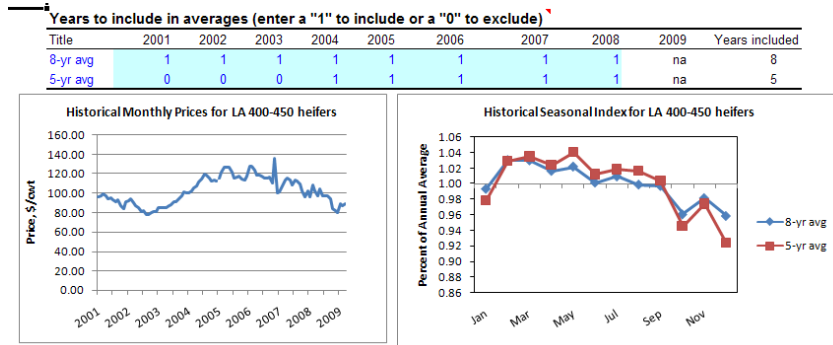


Figure 3. Historical Price and Seasonal Index Graphs

Users who want to print the information they generate may do so by clicking the “print” button. The spreadsheet printing options have been set up so that only the information as shown in figure 1 will be printed from the “Intro” tab. Only the historical prices and seasonal indices and graphs will be printed from the other three tabs. Other information is contained in the spreadsheet which generates the information users see, but that is protected and cannot be changed.