

# National Beef Cattle Slaughter Marketing Margins

---

*Chris Boyer, Associate Professor*

*Charley Martinez, Assistant Professor*

*David W. Hughes, Professor and Greever Endowed Chair in Agribusiness Development*

*Department of Agricultural and Resource Economics*

**September 2020**

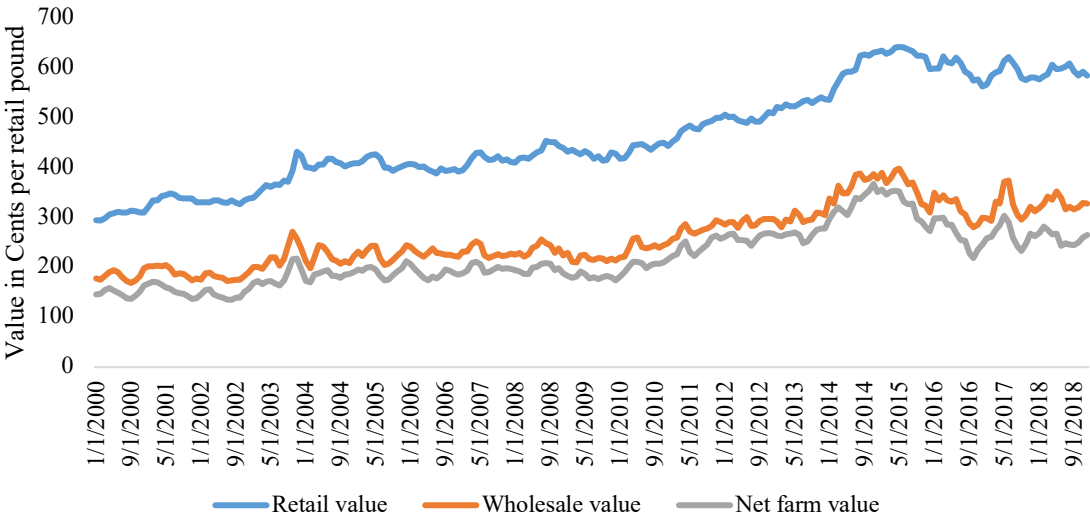
## Overview

Historical profitability of U.S. beef cattle slaughtering facilities is not easy to accurately measure since production costs and revenue data are not publicly available. However, for decades, several groups have been interested in knowing this information for various reasons including entrepreneurial purposes. The point of this article is to present national data and discussion around profitability of U.S. beef cattle slaughter facilities.

## Marketing Margins

A common method to gauge profitability of beef cattle slaughter facilities is marketing margins. Marketing margins are the divergence of cattle and meat prices or the differences between retail or wholesale beef prices and cattle prices. This spread in prices is usually evaluated for choice grade beef, since most cattle grade choice, but several different cattle and meat prices have been used to measure marketing margins. Brester et al. (2009), however, showed this approach, regardless of cattle and meat prices used, is not an accurate measurement of profitability because it only considers average aggregate revenue for large U.S. slaughter facilities. For example, there has been a historic increase in the marketing margins during the COVID-19 pandemic, but this increase does not account for a change in operating costs due to paying sick employees, shutting down facilities, installing partitions, paying overtime to employees, employees opting to not work, paying for COVID-19 testing, and slowing lines by spacing out workers.

Below are two graphs from USDA Economic Research Service data, which show monthly retail, wholesale and net farm values for choice yield grade 3 beef ([link to data](#)). **Figure 1** shows the value for the retailer, wholesaler and net farm value in cents per pound of retail beef equivalent. Retail value is defined as the value of weighted average of an animal’s retail meat cuts measured in cents per pound; wholesale value is defined as the average value of meat as it leaves the packing plant measured in cents per pound of retail beef; and net farm value is gross farm value minus the value of byproducts, representing the value of the meat to the farmer, measured in cents per pound of retail weight. Definitions are found on the USDA ERS website ([link](#)). These are aggregated values across the U.S. and are generated monthly, following dynamic asymmetric econometric models (Hahn, 2004). Again, these graphs show the retail, wholesale and net farm values but do not consider costs.

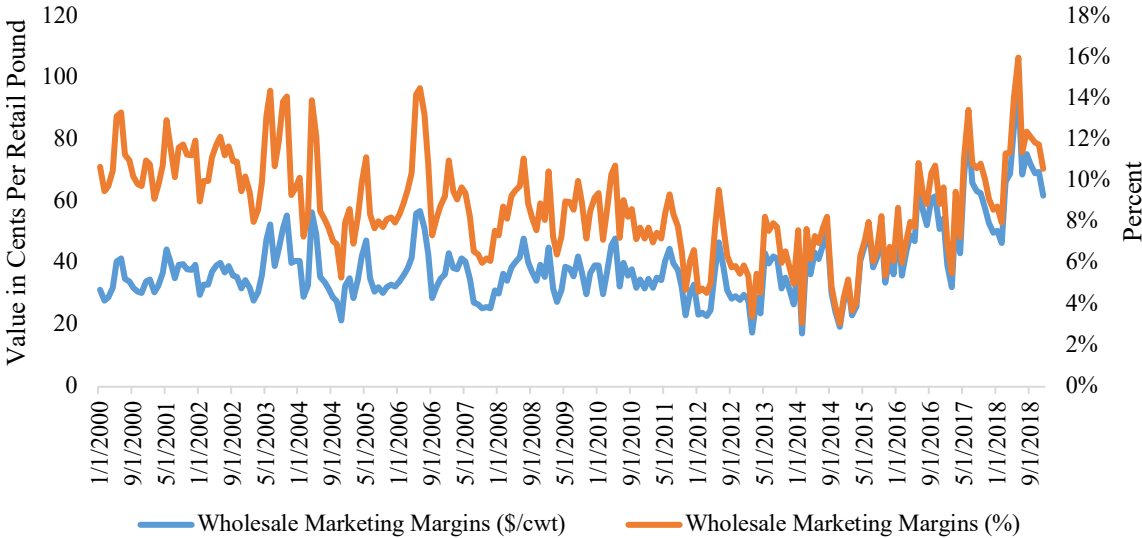


**Figure 1. Retail, Wholesale and Net Farm Value of Beef From 2000-2018 in Cents Per Retail Pound.**

In 2019 and 2020, two unusual events occurred, causing losses in slaughter capacity and resulted in increases in marketing margins. The first event was the Finney County Tyson Foods (Holcomb, KS) slaughterhouse fire in August 2019 and the second was COVID-19. These two events caused cattle supply chain disruptions, resulting in cattle price decline due to decreasing processing facility demand. Therefore, we only present data from 2000-2018 and exclude 2019 and 2020.

For our purposes, we are interested in the difference between the orange and gray line in **Figure 1**, which is assumed to be the wholesaler marketing margin. We ignore the retail value. This gap demonstrates the average net change in the marketing margin for the wholesaler.

**Figure 2** shows the wholesaler marketing margin in cents per retail pound and as a percentage of retail beef value. The wholesale marketing margin is found by subtracting the net farm value from the wholesale value. The percentage was found by dividing the wholesale marketing margin by the total retail value of the animal. Over this time period, the average change in wholesaler marketing margin was 8 percent or 39 cents per retail pound over the 18-year period. During this time frame, wholesaler marketing margins ranged from a low of 3 percent (or \$0.17 per retail pound) to a high of 16 percent (\$0.95 per retail pound). While the data is not presented, the highest recorded marketing margin occurred in April 2020, with the wholesaler marketing margin being 26 percent or \$1.65 per retail pound.



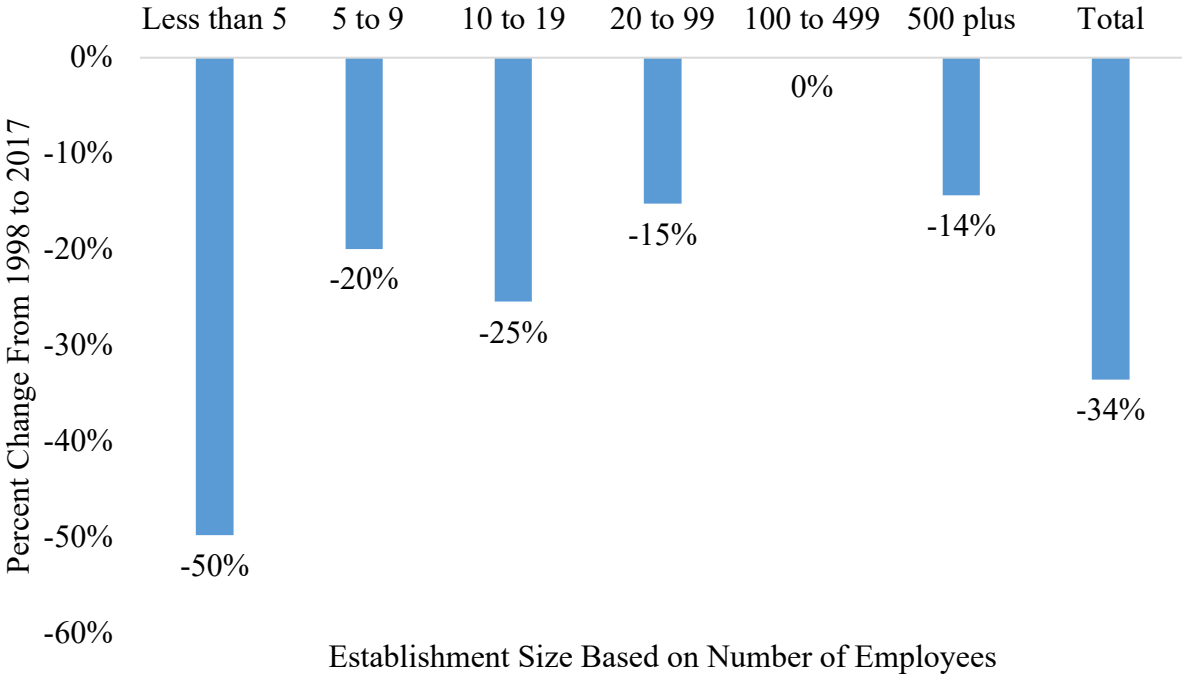
**Figure 2. Wholesale Marketing Margins From 2000-2018 in Cents Per Retail Pound and Percent of Total Retail Value.**

**Scale Effects**

While marketing margins presented can provide some insight into changes in the revenue of the facilities across the U.S., these numbers do not reflect the profitability in slaughtering facilities by size. To shed some light on the size effects of slaughter facility profitability, we present data from the U.S. Census Bureau ([link here](#)). These data show the number of established U.S. large-scale animal slaughter facilities<sup>1</sup> from 1998 to 2017. During this time frame, the total number of establishments declined by a total of 34 percent (**Figure 3**). The largest decline occurred for facilities with less than five employees (50 percent). Facilities with five to nine employees had a 20 percent decline, and those with 10 to 19 employees had a 25 percent decline (**Figure**

<sup>1</sup> Animal (except poultry) slaughtering, North American Industry Classification System sector 311611.

3). These data indicate economies of scale in the packing industry are important. However, some small-scale slaughtering facilities have remained in operation during this time period, implying some level of profitability. Some of these small-scale slaughter facilities could be able to stay in business due to local or regional markets, as indicated by several recent feasibility studies for Tennessee (Hughes et al., 2020).



**Figure 3. Change in the Number of Establishments by Employment Class for Large Animal Slaughter Facilities From 1998 to 2017.**

**Summary**

This article presents national data on changes in marketing margins and established large animal slaughter facilities in the U.S. Insight from these data shows average marketing margins for slaughtering beef cattle accounts for, on average, 9 percent of the value of retail beef. Additionally, economies of scale seem to be an important factor in these operations remaining in business.

## References

Brester, G.W., J.M. Marsh, and J.A. Atwood. 2009. "Evaluating the Farmer's-Share-of-the-Retail-Dollar Statistic." *Journal of Agricultural and Resource Economics* 34(2):213-236.

Hahn, W. 2004. "Beef and Pork Values and Price Spreads Explained." USDA ERS publication LDP-M-118-01. Available here: <https://wayback.archive-it.org/5923/20110903181317/http://ers.usda.gov/publications/ldp/APR04/ldpm11801/ldpm11801r.pdf>

Hughes, David W., Dwight Loveday, Harry Crissy, Neal Schrick, Edward Yu, and Andrew Griffith. 2020. "Feasibility of a Tennessee Cull-Cow Processing Facility." University of Tennessee Extension publication, W 894. <https://extension.tennessee.edu/publications/Documents/W894.pdf>

USDA ERS Price Data. Available here: <https://www.ers.usda.gov/data-products/meat-price-spreads/>

U.S. Census Bureau. 2020. "Statistics of U.S. Businesses (SUSB)." Available at <https://www.census.gov/programs-surveys/susb.html>



UTIA.TENNESSEE.EDU

W 939 9/20 Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development. University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating. UT Extension provides equal opportunities in programs and employment.