DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
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COVID-19 Impacts on Arkansas' Agricultural and Rural Economies

UPDATE:
Beef Price Spreads

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On September 11, USDA's Economic Research Service (ERS) published their latest data on monthly meat price spreads for beef, pork, and poultry and eggs. For beef, price spreads include farm-wholesale, farm-retail, and wholesale-retail. This report focuses on the farm-wholesale beef price spread as it has received considerable attention recently.

The farm-wholesale beef spread is calculated using USDA's Agricultural Marketing Service prices and is comprised of wholesale and farm beef values. At first glance, an obvious challenge with a farm-wholesale price spread for beef is that values must represent the same product as it moves through the beef supply chain. To do this, USDA ERS calculates farm and wholesale values that are based on a "standard animal." The standard animal is the 5-Area weighted average price of a 35-65% choice live FOB steer. The gross farm value is obtained by converting the 5-Area steer price into cents per pound on a retail-weight basis using a conversion factor of 2.14, and the net farm value is gross farm value less byproduct allowance. The wholesale value is the average price of beef that leaves packing plants, on a retail-weight basis. The farm-wholesale beef price spread is wholesale value less net farm value. Complete documentation of ERS methodology for price spreads is found at https://www.ers.usda.gov/data-products/meat-price-spreads/documentation/.

The beef price spread represents the difference in the value of a choice steer at the farm and wholesale levels in comparable units. Many use the farm-wholesale beef price spread as a measure of the farm-to-wholesale marketing margin. However, there are essential and sometimes overlooked differences between price spreads and margins. A marketing margin is broadly defined as the cost of transforming a product. In this case, the marketing costs from transforming a live steer into wholesale beef cuts.

The USDA ERS farm-wholesale beef price spread is perhaps the most widely used data series for monitoring adjustments to wholesale gross margins. While the farm-wholesale price spread represents the difference in a product's value, it does not reflect a packer's gross margin (Hahn, Angadjivand, Sewadeh, and Edwards 2015). A gross margin is a difference between a product's selling and purchase price. There is significant variation in these selling and purchase prices across time, firms, and animals. At best, the farm-wholesale beef price spread is the average gross margin (Hahn 2005).

Figure 1 plots the farm-wholesale beef price spread for the September 2018-August 2020 period. The spread reached a record high of 389.5 cents per retail pound in May 2020. For comparison, the May 2019 price spread was 82.5 cents per retail pound. More recently, it appears that the price spread has started to return to relatively more normal levels. The August 2020 farm-wholesale beef price spread is 99.2 cents per retail pound, a 1.85% increase over July 2020. A common criticism is that cattle and meat prices did not have the same reaction to the many COVID-19 related disruptions. Specifically, wholesale meat prices reached record highs while cattle prices were in decline.

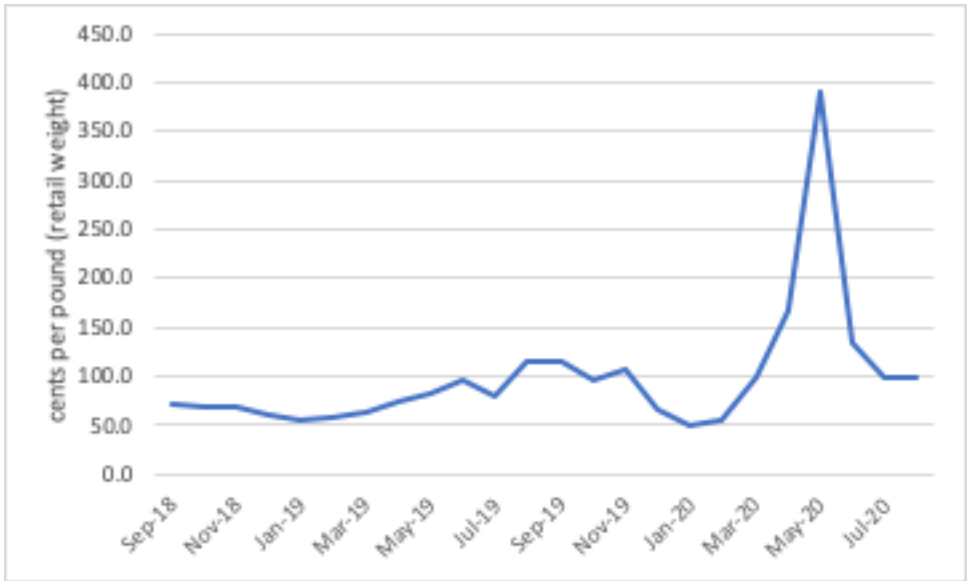

Figure 1. Farm-Wholesale Beef Price Spread, September 2018-August 2020
Source: USDA ERS

Figure 2 breaks out the farm-wholesale beef price spread into the wholesale and net farm values. COVID-19 introduced several shocks into U.S. meat supply chains. A discussion of COVID-19 related disruptions to meat supply chains are documented in "April 17, 2020-Impacts of Beef, Pork, and Broiler Production" and "May 4, 2020-Impacts on wholesale meat prices" both of which are available at https://www.uaex.edu/life-skills-wellness/health/covid19/COVID-Economic_Impacts_in_Arkansas.aspx. In aggregate, Figure 2 suggests that most of the runup in the farm-wholesale beef price spread can be attributed to the increase in wholesale prices rather than a decline in cattle prices. That is not to say that COVID-19 did not put downward pressure on cattle prices. It did.

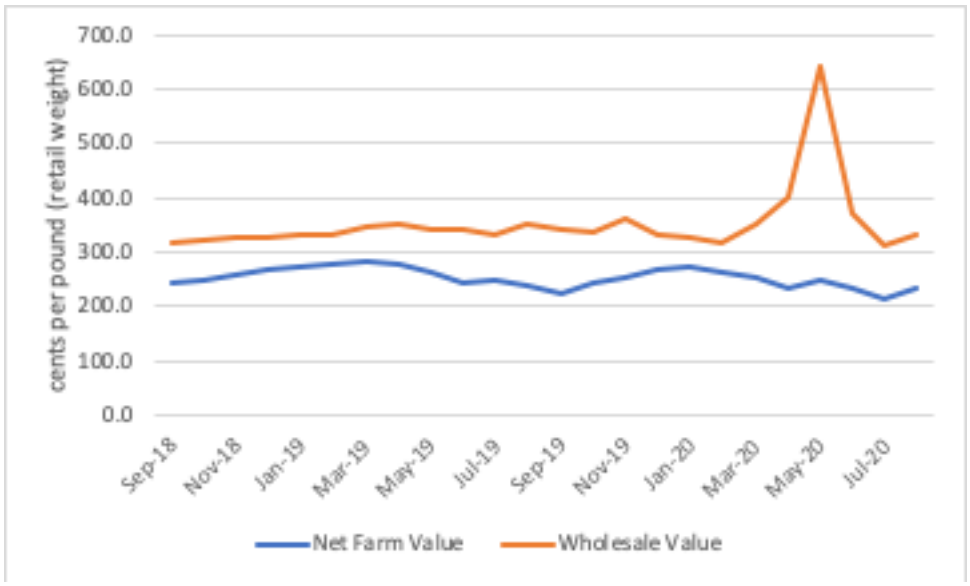

Figure 2. Net Farm Value and Wholesale Value
Source: USDA ERS

From February 2020 to May 2020, wholesale value increased by 101% (Figure 2). At the same time, net farm values declined 5% (Figure 2). From May 2020 to August 2020, wholesale and net farm values have fallen 48% and 7%. However, net farm values have experienced an increase from July 2020. Much of the observed adjustment of wholesale marketing margins results from the second significant COVID-19 disruption to the beef supply chain—several processing facilities' shutdown.

Processing plants began to close as clusters of COVID-19 outbreaks started impacting facility workers' health and safety. The effects of processing plant closures on wholesale beef prices were two-fold. First, plant closures resulted in reduced processing capacity and tighter beef supplies. Second, bringing processing plants back online presented safety and logistical challenges regarding meeting CDC and OSHA guidelines. From March 2020 to May 2020, choice boxed beef cutout values increased by 84% (Figure 3). Processing plant closures also had a demand-side effect. The reduced processing capacity resulted in a bottleneck as fewer plants were able to take cattle. Those that were processing were likely doing so at reduced capacity. This shift in demand for fed cattle put downward pressure on fed cattle prices. From March 2020 to May 2020, the 5-Area live steer price declined 4.3% (Figure 3). Both wholesale beef prices and fed cattle prices have started to return to pre-COVID-19 levels.

Figure 3. Choice Boxed Beef Cutout and 5-Area Live Steer Price
Source: LMIC

Many of the COVID-19 related disruptions have had a pronounced effect on cattle and meat prices. As we move into the fall, overall economic uncertainty and consumer demand will be important factors. The next cattle on feed report that is scheduled for release on September 25 will offer another piece of information on how much progress has been made on working through the backlog of cattle that resulted from plant closures.

References

Hahn, W. 2005. Beef and Pork Values and Price Spreads Explained. U.S. Department of Agriculture Economic Research Service Outlook Report No. LDP-M-118-01. Available at: https://www.ers.usda.gov/webdocs/outlooks/37369/49585_ldpm11801.pdf?v=5961.6.

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