

An Assessment of the Economic Damages caused by COVID-19 on Feeder Cattle Prices

Chris Prevatt¹, Andrew Griffith², Ken Kelley³, and Max Runge³

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The last several months have been exceptionally stressful for all participants in the U.S. cattle industry due to the outbreak of COVID-19 (coronavirus) in China and its resulting spread throughout the world. The unknowns of this health crisis have resulted in extreme volatility in U.S. cattle markets. The entire U.S. cattle and beef supply chain has been impacted by COVID-19. The goal of this paper is to present an assessment of feeder cattle price impacts through April 2, 2020.

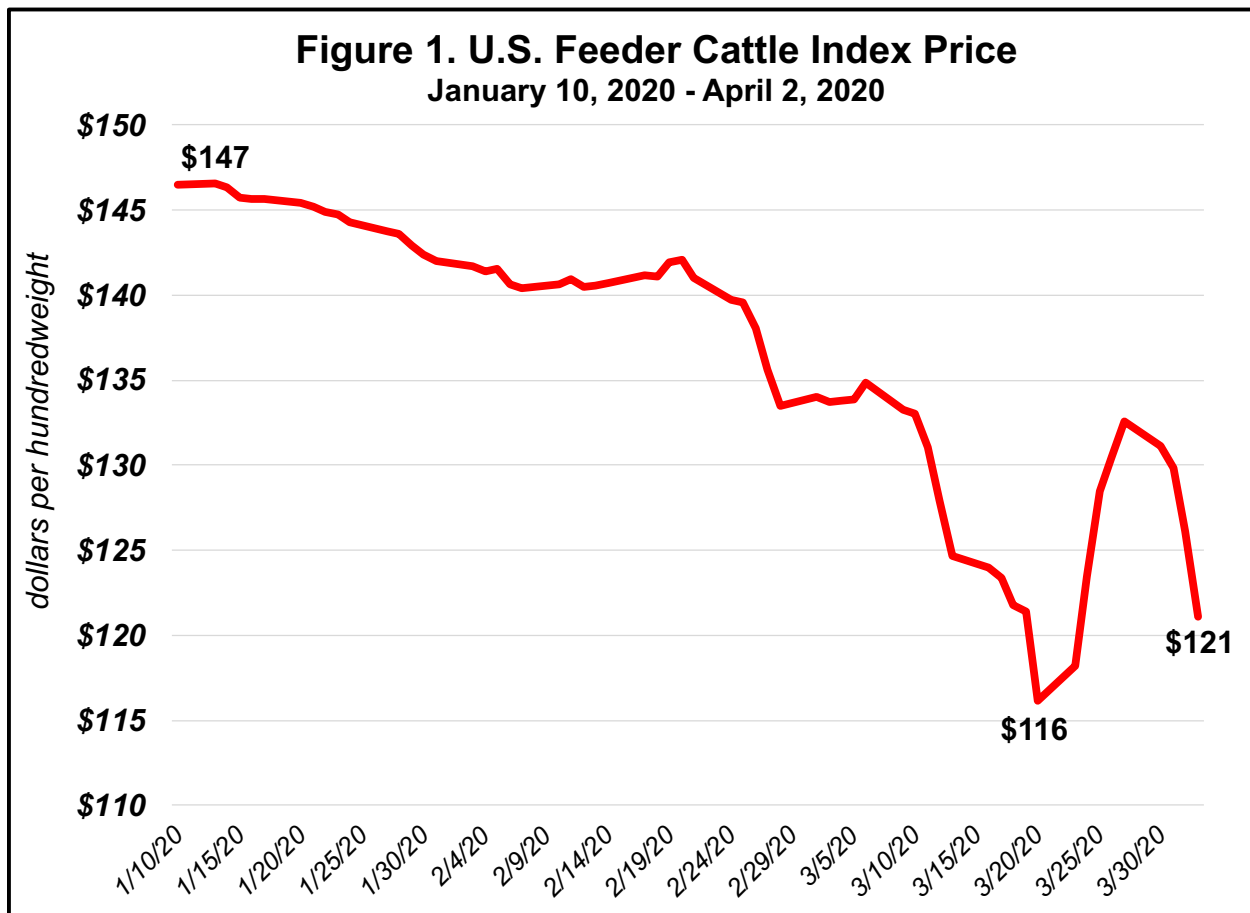
In late 2019 and early 2020, many forecasts were projecting higher U.S. cattle prices during 2020 relative to 2019. A combination of many factors (a plateauing U.S. cattle inventory, low corn prices, low U.S. unemployment, strong domestic and export beef demand, new trade agreements, etc.) supported higher U.S. cattle and beef prices. The improvement in cattle prices was well documented by Chicago Mercantile Exchange Live Cattle and Feeder Cattle Futures Contracts, USDA Agricultural Marketing Service, CattleFax, and Livestock Market Information Center's (LMIC) price forecasts.

The Unexpected World Health Crisis Begins

On December 31, 2019 China reported an outbreak of pneumonia in Wuhan, China to the World Health Organization. This was our first knowledge of the health crisis that would spread across China, Asia, and the rest of the world. This health crisis caught the world by surprise with most knowing very little about how to manage this situation. For this analysis, December 31st, is viewed as the beginning date in which losses from COVID-19 could have occurred. Then on January 11th, the Wuhan Municipal Health Commission announced the first death caused by coronavirus. Numerous media releases followed daily about the spread and adverse impacts of the coronavirus. The knowns and especially the "unknowns" concerning coronavirus wreaked havoc on world commodity supply chains and markets. The U.S. cattle industry's export market is absolutely crucial to the prices that cattle producers receive for their feeder calves. Therefore, we view January 11th as the date in which COVID-19 began actively impacting U.S. feeder cattle prices. The focus of our economic assessment period will begin on January 10th. On January 10th, five days before the signing of the 1st Phase Trade Agreement between the U.S. and China, the U.S. Feeder Cattle Index Price was \$146.51 per hundredweight and the CME Feeder Cattle Futures Prices had an average 2020 contract settlement price of \$152.89 per hundredweight.

Approach 1

The U.S. cattle industry has been significantly impacted by this health crisis and the resulting supply chain chaos. The most common way to analyze damages to cattle producers is to evaluate changes in cash market prices. For our first approach, we have analyzed the U.S. Feeder Cattle Index Price. These cash market prices are provided by the USDA's Agricultural Marketing Service and make up actual sales of feeder cattle via auctions, direct trade, video sales, internet sales within the 12-state region of Colorado, Iowa, Kansas, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming. These prices are a computed 7-day weighted average price and provides a proxy for the current U.S. feeder cattle cash market based on an 800-pound feeder steer. Figure 1 shows the substantial decline and significant volatility of the U.S. Feeder Cattle Index Price from January 10th to April 2nd.



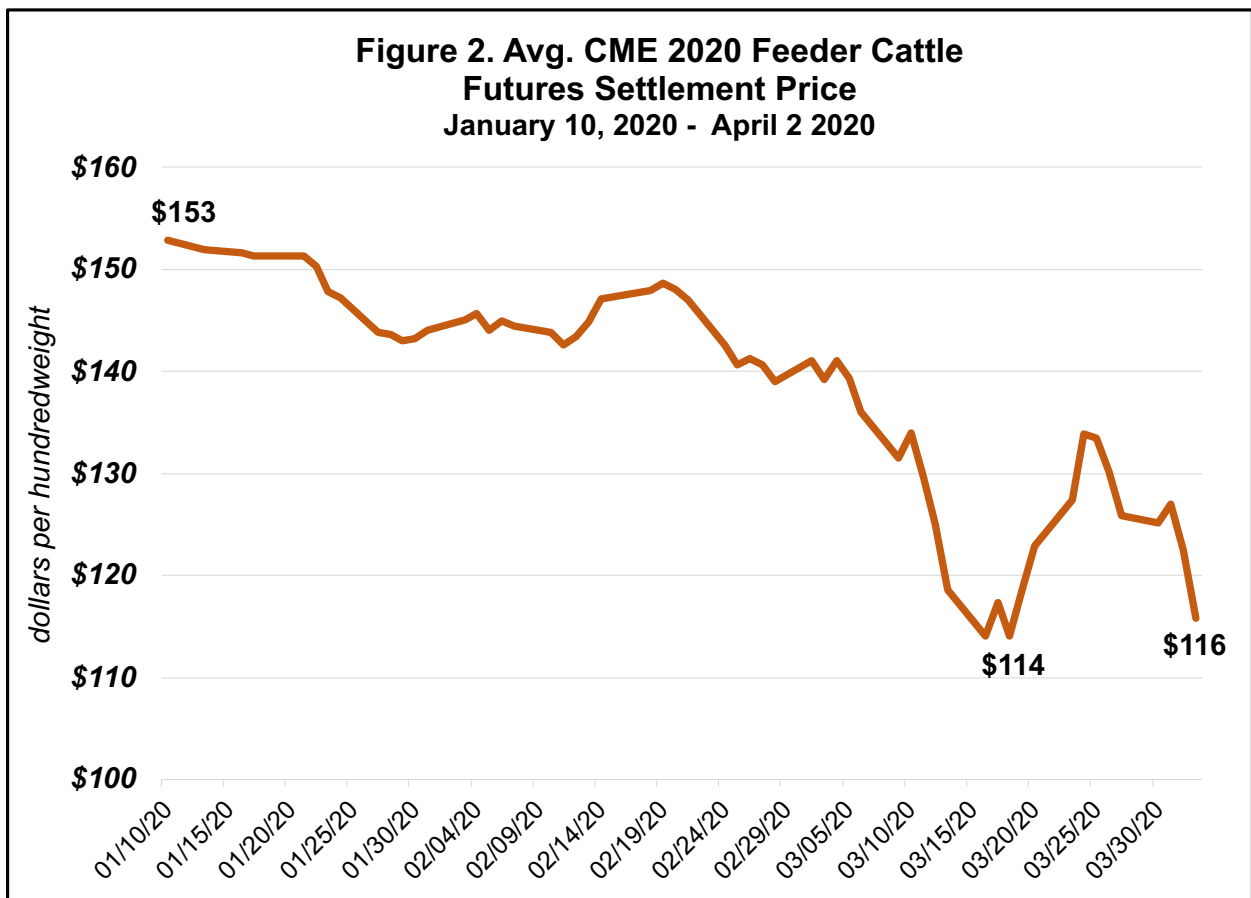
The U.S. Feeder Cattle Index Price declined by \$25.44/cwt. between January 10th and April 2nd. Therefore, the results of this approach currently suggest that there have been damages from COVID-19 of \$203.53 per head for an 800-pound feeder steer. For a load of 60 head of 800-pound feeder steers, that amounts to a decline of \$12,212 per truckload unit.

During the first three months of 2020, the lowest U.S. Feeder Cattle Index Price occurred on March 20th. On that date, feeder cattle prices for an 800-pound feeder steer were projected to be \$30.37 per hundredweight or \$242.93 per head less than they

were on January 10th. For a load of 60 head of 800-pound feeder steers, that amounts to a decline of \$14,576 per truckload unit.

Approach 2

Another approach to measure the impact that COVID-19 has had on feeder cattle prices is to analyze the 2020 CME Feeder Cattle Futures Contract Prices. These prices reflect the markets expectation for feeder cattle during each respective 2020 contract month. Therefore, an average of these prices allows us to assess the potential damages to feeder cattle throughout the 2020 marketing year. Figure 2 shows the substantial decline and significant volatility in the average 2020 CME Feeder Cattle Futures Settlement Price from January 10th to April 2nd.



The average 2020 CME Feeder Cattle Futures Settlement Price declined by \$37.12/cwt. between January 10th and April 2nd. Therefore, the results of this approach currently suggest that there have been damages from COVID-19 of \$296.95 per head for an 800-pound feeder steer. For a load of 60 head of 800-pound feeder steers, that amounts to a decline of \$17,817 per truckload unit.

During the first three months of 2020, the lowest average 2020 CME Feeder Cattle Futures Settlement Price occurred on March 18th. On that date, feeder cattle prices for

an 800-pound feeder steer were projected to be \$38.86 per hundredweight or \$310.89 per head less than they were on January 10th. For a load of 60 head of 800-pound feeder steers, that amounts to a decline of \$18,654 per truckload unit.

In summary, COVID-19 has impacted every cattle operation in the United States. These cattle market impacts have resulted in substantial economic losses for U.S. cattle producers. These losses are ongoing and will likely continue through 2020. Regardless, of when cattle producers market their livestock during 2020, they will likely receive significantly lower prices. Actual impacts will certainly vary widely across operations. Producers should expect markets to continue to be volatile given our current set of circumstances and many unknowns. As more information becomes available, damage estimates for U.S. beef cattle producers can be further documented.

¹University of Florida, ²University of Tennessee, ³Auburn University