Issues Affecting the Marketing of Missouri Livestock and Poultry

Preliminary CAFNR Report to Missouri Farm Bureau

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Introduction

The Missouri livestock and poultry sectors are important components of Missouri agriculture. According to the United States Department of Agriculture, Economic Research Service (USDA-ERS), Missouri animal and products cash receipts totaled $4.709 billion in 2018 representing 46 percent of total Missouri agricultural cash receipts. A 2016 analysis of the economic effects of Missouri agriculture shows that the reaches of the livestock and poultry sectors are far beyond the farm-level. This study shows total sales to livestock and poultry farming totaled $7.6 billion in 2016 and more than $9.5 billion in total was generated from the processing of livestock and poultry products in Missouri. "Economic Contributions of Missouri Agriculture and Forestry." Decision Innovation Solutions. December 2016. https://agriculture.mo.gov/economicimpact/county-pdf/MissouriAgForestryEconomicContributionStudy.pdf

There has been considerable debate surrounding prices paid for many livestock and poultry products as consolidation continues in the meat processing sector. As the number of market participants purchasing slaughter ready animals continues to decline the opportunity to have non-competitive pricing increases. This report will not answer the question of what should be done in these industries to address the consolidation that is unfolding in these markets but will hopefully illuminate the current available information so that stakeholders and policymakers can be better prepared as alternatives to the current system are debated.

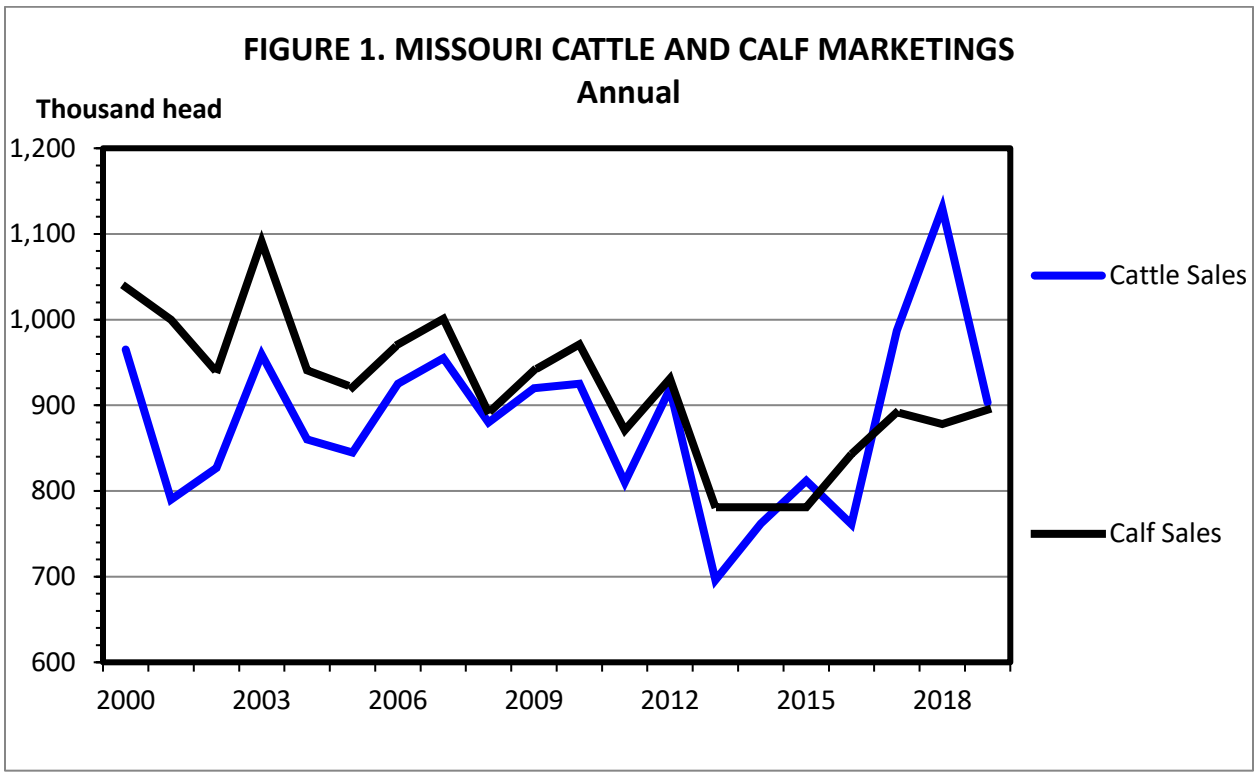
The cattle industry will be the primary focus of this report, but other industries will be addressed in portions of this report as necessary. This report will summarize other research that has been conducted related to the many issues the cattle industry faces today with a special focus on the impacts to Missouri.

The focus of the first sections of the report will be to describe the current data available to the livestock industry. Establishing a common base of information will help focus the sections of the report that address some of the issues of interest to producers.

The Missouri Cattle Industry

Missouri is the third largest state in the nation in terms of beef cow inventory, trailing only Texas and Oklahoma with 2,083 thousand head as of January 2020. The Missouri cattle sold each year generally are destined for feedyards in other states to be fed until slaughter. Figure 1 provides the data on cattle marketings (all cattle greater than 500 pounds) and calf marketings (all cattle less than 500 pounds) on an annual basis. Commercial cattle slaughter in Missouri has been below 50 thousand head in recent years, and far less than the average 2 million head of cattle and calves marketed by Missouri producers on an annual basis.

Missourian cattle producers have allowed the state to earn a reputation of providing higher quality cattle that convert feed efficiently, are healthy and grade well as the state has invested in superior genetics. These higher quality cattle are often priced on a formula basis to take advantage of the premiums available for the higher quality beef they produce.



Cattle Pricing History and Livestock Mandatory Price Reporting

The United States Department of Agriculture's, Agricultural Marketing Service (USDA-AMS) collects livestock price data and related market information from meat packers under the authority of the Agricultural Marketing Act of 1946. This information became mandatory to collect in 2001.

As the livestock industry became increasingly concentrated in the 1990s, fewer animals were sold through negotiated purchases, and with increasing frequency, were sold under alternative marketing arrangements. Some livestock producers, believing such arrangements made it difficult for them to gauge market prices for livestock, called for livestock mandatory reporting for packers who purchase and process livestock and market the meat.

Extensive data is collected today by USDA-AMS under mandatory livestock reporting. At times the data available can be overwhelming. USDA-AMS does not release individual transaction data but rather summarizes the data to retain confidentiality in the prices that are reported.

Table 1 shows the types of livestock transactions collected by USDA-AMS under mandatory livestock reporting. These definitions are important to understand as alternative livestock pricing methods are considered.

Table 1. Livestock Mandatory Reporting (LMR) Transaction Types

Some types of transactions required under LMR are for specific livestock, such as cattle or swine, while others apply to all covered species.

Negotiated purchase: a cash or "spot" market purchase by a packer of livestock from a producer under which the base price for the livestock is determined by seller-buyer interaction and agreement on a delivery day. Cattle are delivered to the packer within 30 days of the agreement. Swine are delivered within 14 days.

Negotiated grid purchase (cattle): the negotiation of a base price, from which premiums are added and discounts are subtracted, determined by seller-buyer interaction and agreement on a delivery day. Cattle are usually delivered to the packer not more than 14 days after the date the livestock are committed to the packer.

Forward contract: an agreement for the purchase of livestock, executed in advance of slaughter, under which the base price is established by reference to publicly available prices. For example, forward contracts may be priced on quoted Chicago Mercantile Exchange prices or other comparable public prices.

Formula marketing arrangement: the advance commitment of livestock for slaughter by any means other than a negotiated or negotiated grid purchase or a forward contract using a method for calculating price in which the price is determined at a future date.

Swine or pork market formula purchase: a purchase of swine by a packer in which the pricing mechanism is a formula price based on a market for swine, pork, or a pork product other than a future or option for swine, pork, or a pork product.

Negotiated formula purchase (swine): a purchase of swine based on a swine/pork market formula that is negotiated lot-by-lot and scheduled for delivery and committed to the packer within 14 days of the negotiation. The sales are reported as producer- or packer-sold.

Other market formula purchase: a purchase of swine by a packer in which the pricing mechanism is a formula price based on one or more futures or options contracts, and the sales are reported as producer- or packer-sold.

Other purchase arrangement: a purchase of swine by a packer that is not a negotiated purchase, swine or pork market formula purchase, negotiated formula, or other market formula purchase and does not involve packer-owned swine. The sales are reported as producer- or packer-sold.

Packer-sold swine: the swine that are owned by a packer (including a subsidiary or affiliate of the packer) for more than 14 days immediately before sale for slaughter and sold for slaughter to another packer.

Packer-owned: livestock that packers (includes a subsidiary or affiliate of swine packers) own for at least 14 days immediately before slaughter. Information such as weight and dressing percent is reported on packer-owned livestock.

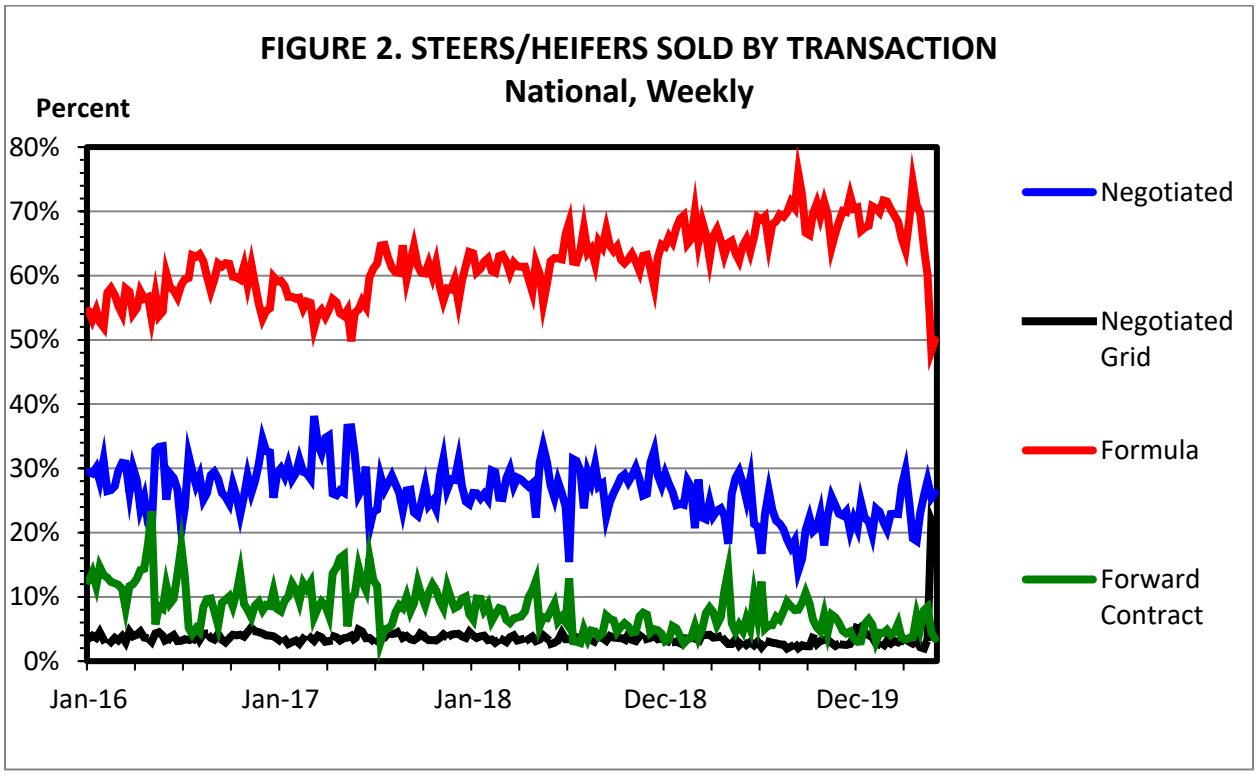
Source: Livestock Mandatory Reporting Act: Overview for Reauthorization in the 116th Congress, June 19, 2019, Congressional Research Service, https://crsreports.congress.gov/product/pdf/R/R45777.

Figures 2 through 6 show that trends in cattle and hog marketings, which began many years ago are continuing today. Much of this data was summarized from databases maintained by the Livestock Marketing Information Center (http://lmic.info). Figure 2 shows weekly movements in cattle purchasing arrangements over the past five plus years. COVID19 has resulted in marked changes to how cattle have been purchased in 2020. The trend toward growing purchases of cattle on a weekly basis by formula has recently switched to negotiated grid pricing as cattle are being held in feedyards for an extended period due to processing slowdowns. These slowdowns are affecting how these cattle grade and the resulting expected premiums. Even with the recent reduction in cattle purchases based off of a formula, this method is still the dominant method for purchasing cattle.

Figure 3 shows monthly transactions for all cattle since 2011 and highlights the trend of more cattle being purchased on a formula basis rather than a negotiated basis. In 2011, nearly 40 percent of cattle were purchased on a negotiated basis, but that monthly figure is now at times less than 20 percent.

Figures 4 and 5 show cattle purchase methods on a live basis and on a dressed basis. These figures show that most live cattle are purchased on a negotiated basis, while most dressed cattle are purchased on a formula basis.

Figure 6 shows that just as in the cattle industry, the number of hogs purchased on a negotiated basis continues to decline. One difference between how cattle and hogs are purchased is that some purchases of hogs are based at least in part on the price of pork or a pork product.



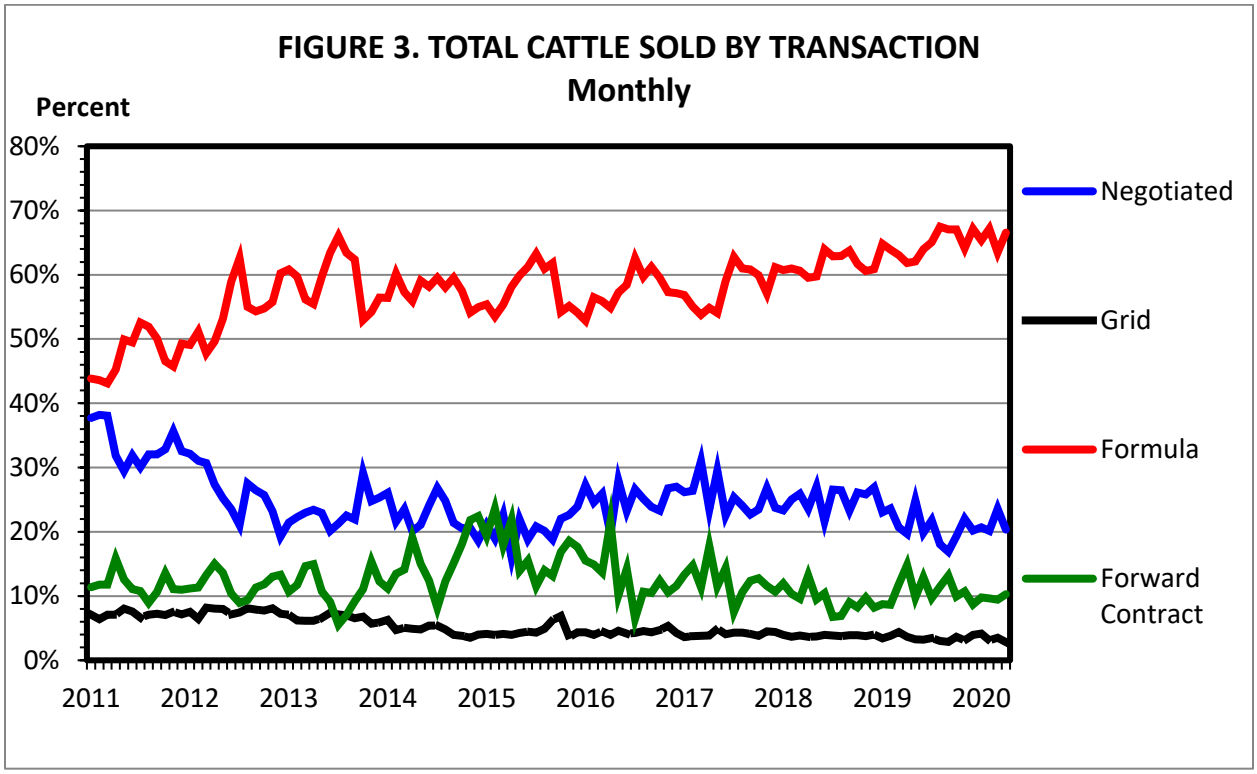


FIGURE 3. TOTAL CATTLE SOLD BY TRANSACTION
Monthly
Percent
80%
70%
60%
50%
40%
30%
20%
10%
0%
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Negotiated
Grid
Formula
Forward Contract

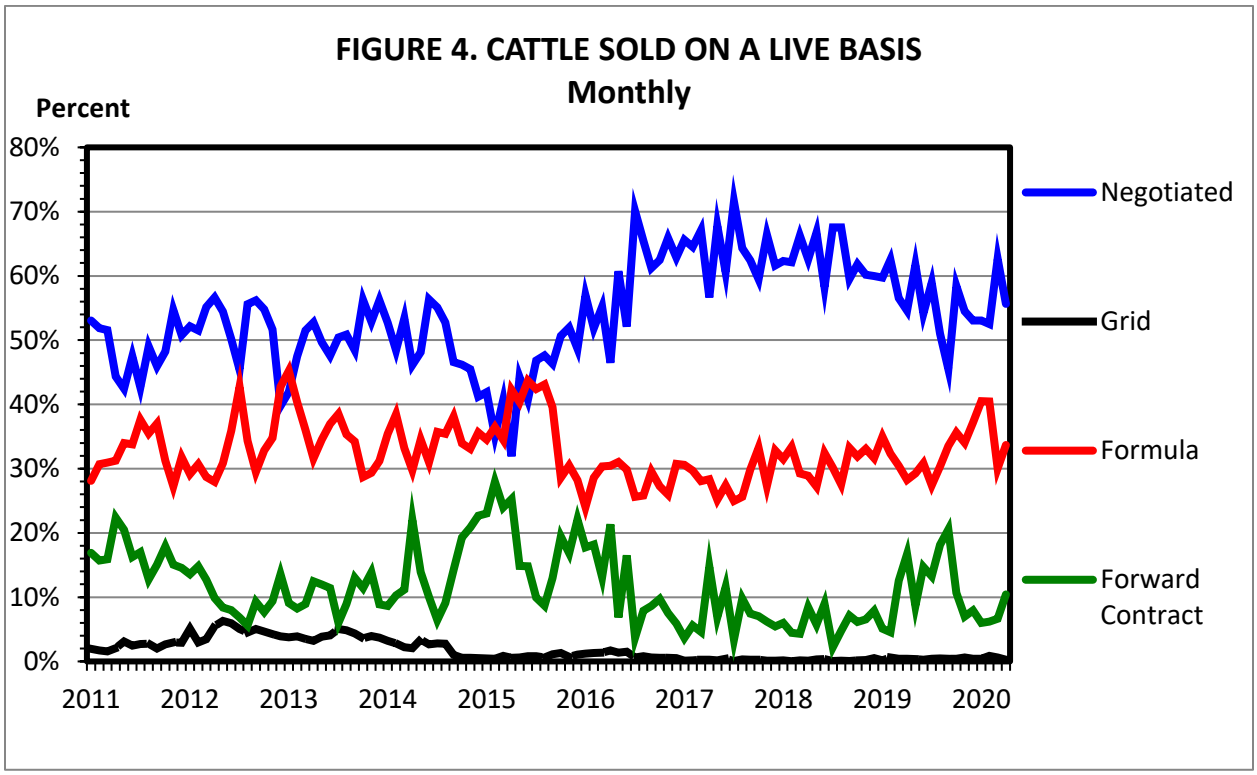


FIGURE 4. CATTLE SOLD ON A LIVE BASIS
Monthly
Percent
80%
70%
60%
50%
40%
30%
20%
10%
0%
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Negotiated
Grid
Formula
Forward Contract

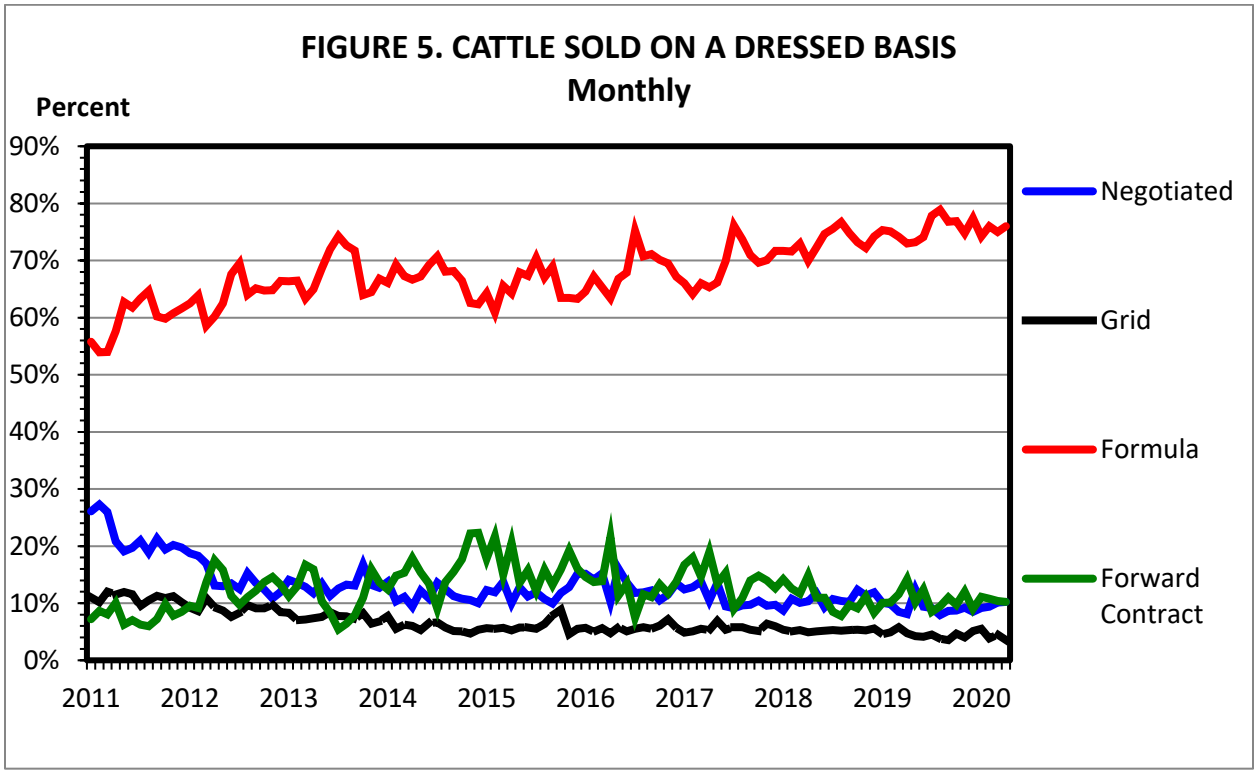


FIGURE 5. CATTLE SOLD ON A DRESSED BASIS
Monthly
Percent
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Negotiated
Grid
Formula
Forward Contract

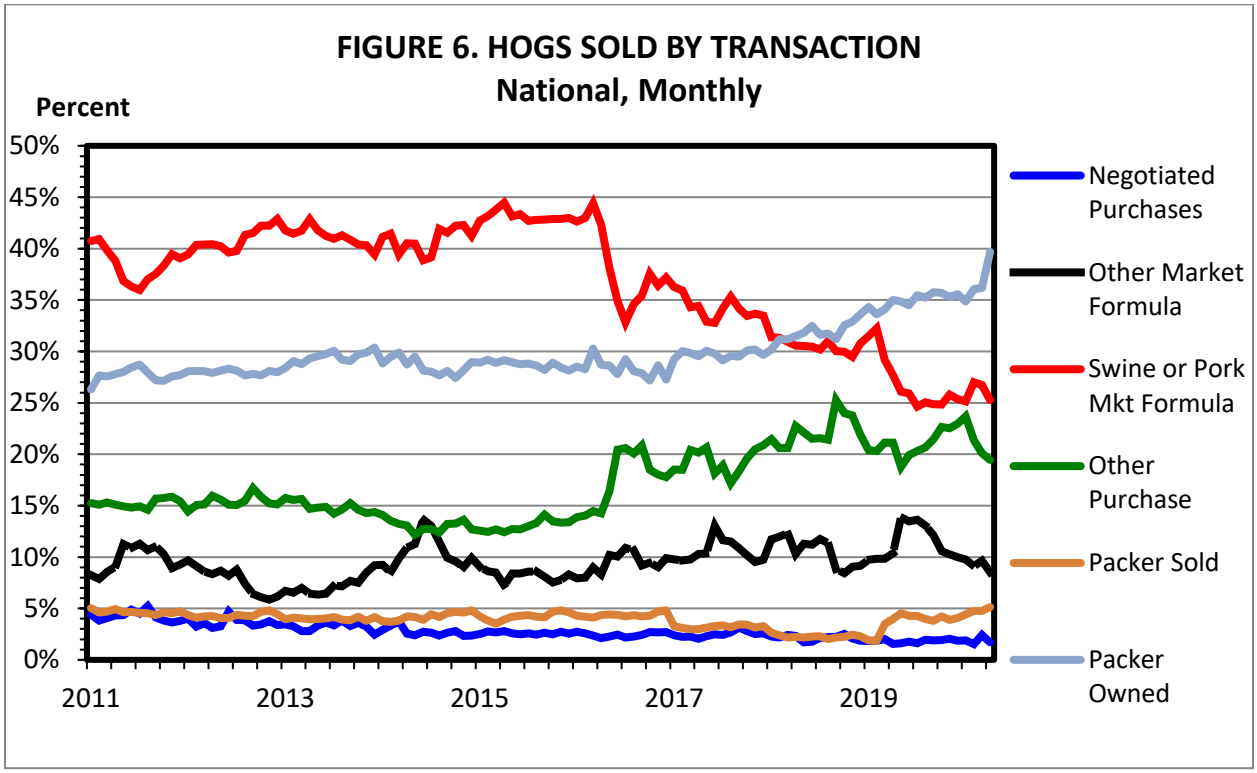


FIGURE 6. HOGS SOLD BY TRANSACTION
National, Monthly
Percent
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
2011
2013
2015
2017
2019
Negotiated Purchases
Other Market Formula
Swine or Pork Mkt Formula
Other Purchase
Packer Sold
Packer Owned

Current Cattle Prices

Because of LMR data required to be kept by USDA-AMS, there is a substantial amount of price data generated daily related to fed cattle prices. Most beef processors are required under LMR to report every transaction made each day as they purchase cattle by the different market arrangements. Figures 7 and 8 show average prices paid for steers by transaction and in total on both a dressed and live basis. This data is shown on a weekly basis.

With the COVID19 outbreak in 2020, some of these alternative pricing options have moved differently at times. However, prior to the recent COVID19 outbreak, prices under different marketing arrangements moved very closely to one another on a weekly basis. The largest difference occurred in cattle forward contracted on both a live and dressed basis, as these pricing methods price cattle in advance of when they are processed, which at times provides higher prices than current markets and at other times lower prices than current markets. Observation of all alternative prices does not suggest that any method is significantly different from another method used in fed cattle transactions.

Table 2 shows a portion of the USDA-AMS daily report on formula and grid purchases. This table shows that not only does USDA-AMS report weighted averages for formula and grid purchased cattle, but they also provide the range of prices paid each day for these transaction types. Inclusion of this table highlights just how much data is available each day from USDA-AMS as they report market activity.

Table 2. National Daily Direct Slaughter Cattle – Formula and Grid Purchases - Summary

USDA National Daily Direct Slaughter Cattle - Formulated And Grid Purchases - Summary

Agricultural Marketing Service
Livestock, Poultry, and Grain Market News

June 03, 2020
LM_CT109

Email us with accessibility issues regarding this report.

For Primarily Tuesday, 06/02/2020

Formula Net - Dressed Basis						
	Head Count	Wtd Avg Dress Pct	Weight Range	Avg Wt	Price Range	Avg Net Price
Steer						
Over 80% Choice	10,333	63.7	766 - 1,090	917	181.79 - 225.87	195.63
65 - 80% Choice	3,674	64.2	763 - 1,009	905	180.08 - 200.62	188.55
35 - 65% Choice	2,382	63.4	715 - 976	871	183.43 - 196.51	188.97
0 - 35% Choice	58	62.7	944 - 944	944	192.32 - 192.32	192.32
Heifer						
Over 80% Choice	7,268	63.9	658 - 952	825	177.15 - 233.60	196.18
65 - 80% Choice	1,472	63.6	716 - 863	795	175.46 - 202.02	190.90
35 - 65% Choice	402	61.6	596 - 877	800	180.00 - 187.63	184.97
0 - 35% Choice			-		-	
Mixed Steer/Heifer						
Over 80% Choice	4,687	63.3	715 - 1,024	869	179.11 - 226.68	193.83
65 - 80% Choice	782	61.7	652 - 916	784	169.99 - 189.35	183.32
35 - 65% Choice	390	61.6	711 - 947	846	160.91 - 189.20	180.22
0 - 35% Choice			-		-	
All Steers & Heifers	31,448	63.6	596 - 1,090	873	160.91 - 233.60	193.30
Mixed Steer/Heifer/Cow						
Over 80% Choice			-		-	

FIGURE 7. STEER PRICES, DRESSED, BY TRANSACTION
National, Weekly

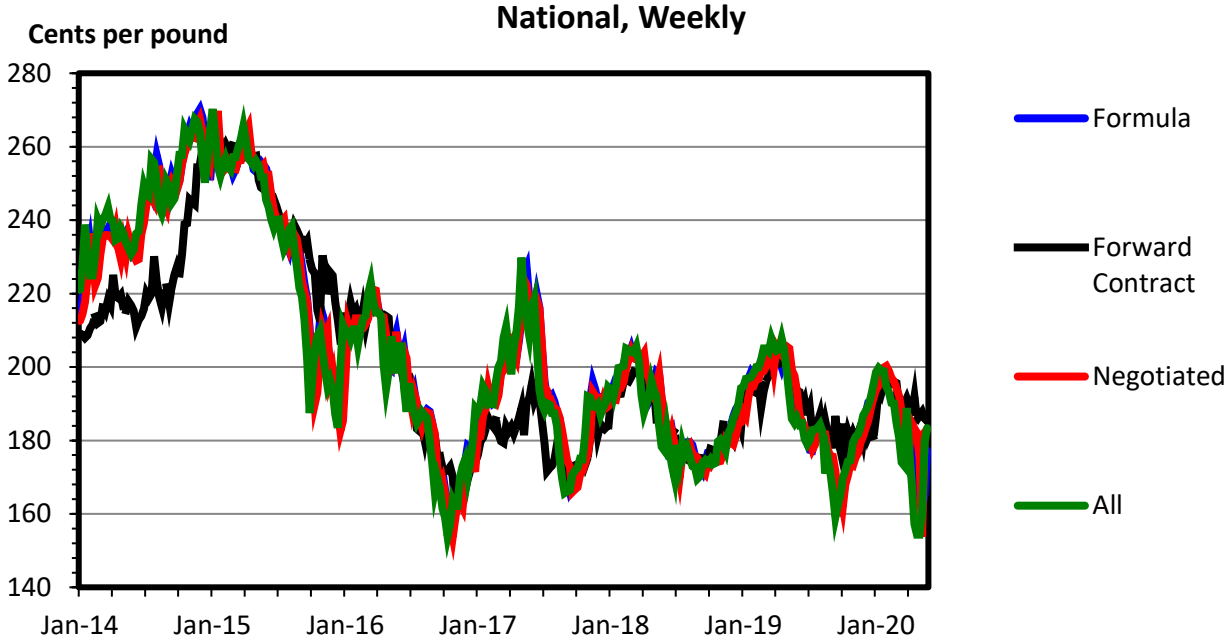
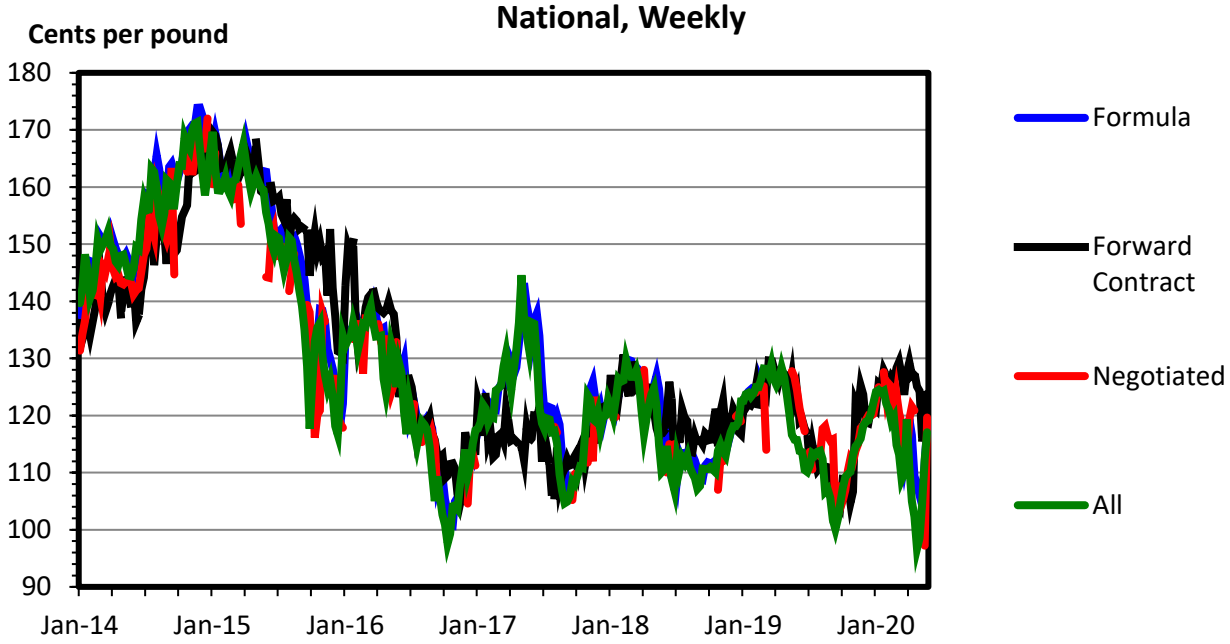


FIGURE 8. STEER PRICES, LIVE, BY TRANSACTION
National, Weekly



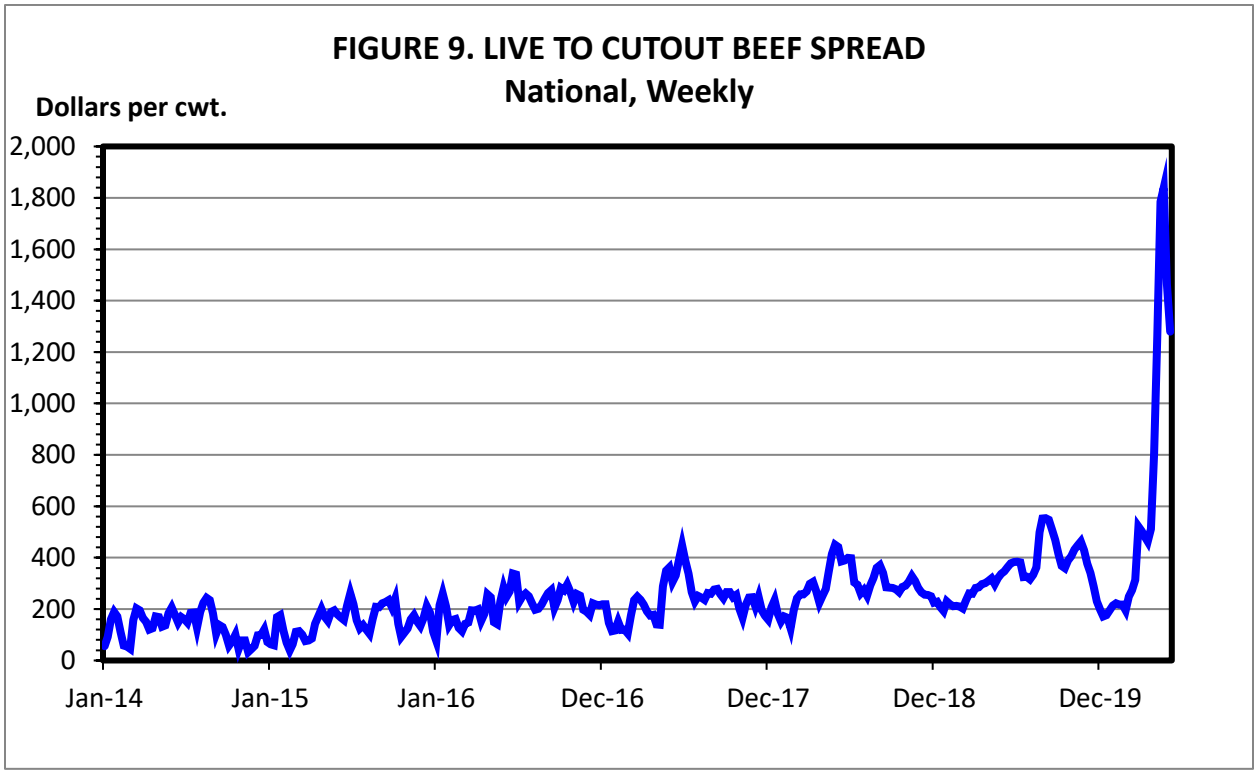
Current Issues Surrounding Fed Cattle Prices

There has been significant focus on the spread between live cattle prices and choice boxed beef prices in the last several months, especially as cattle prices have tended to move lower from the record levels found in 2014. A fire in a western Kansas beef processing plant in August 2019 was followed by a period of the spread increasing substantially as capacity was curtailed when the fire caused that processing plant to shut down for much of the remainder of 2019. COVID19 has also resulted in wide and historically large swings in the spread between live fed cattle prices and choice boxed beef prices.

There are many ways to calculate the spread between live fed cattle prices and boxed beef prices, none of which are exact. Figure 9 shows data assembled by the Livestock Marketing Information Center. This series uses Kansas live fob steer prices and the choice boxed beef price in calculating the spread. Assumptions about byproduct values and beef produced from an average steer are necessary to generate the final results.

Figure 9 shows that the general movement of the spread has been to widen since 2014. This is not surprising given that feedyards had a much more limited supply of slaughter ready cattle back in 2014 than has been the case recently which required processors to bid more aggressively to keep plants near capacity. This spread tends to run counter cyclical to the cattle price cycle.

Both the plant fire in 2019 and COVID19 in 2020 contributed to the drastic increases in the spread that occurred recently. As cattle processing plants have come back online after many of them shut down with workers testing positively for COVID19, the live to cutout spread continues to narrow. Current movements in cattle and boxed beef prices suggest that a further narrowing may occur.

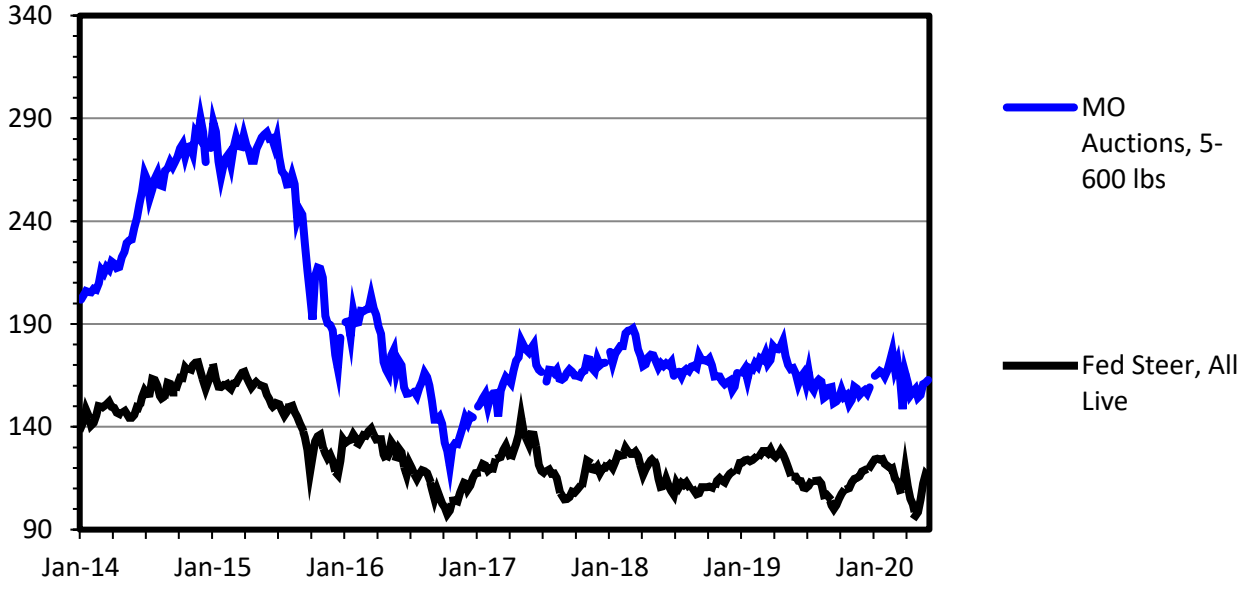


As the cattle industry debates strategies related to cattle pricing, it will remain difficult to pick any pricing strategy that would have effectively dealt with the COVID19 outbreak. COVID19 effects were impossible to consider as we began 2020. Despite how the industry has been pushed and pulled as the pandemic has unfolded, it is amazing how well the livestock industry has handled this large unprecedented shock.

Missouri Remains a Feeder Cattle State

Most of Missouri's cattle are sold as feeder cattle at auction markets around the state. Figure 10 highlights that prices paid for fed cattle often affect what buyers are willing to pay for Missouri feeder cattle, but the relationship between feeder cattle and fed cattle prices are also driven by other factors. In 2015 feeder cattle prices were substantially higher than fed cattle prices as feeder cattle supplies were very tight. As feeder cattle supplies recovered in late 2016 and early 2017, feeder cattle prices moved lower relative to fed cattle prices. As the fed cattle pricing discussion unfolds in Missouri it is important to remember that the relationship between feeder and fed cattle prices depends on many factors, including market changes outside of the cattle complex such as the price of corn and other feedstuffs.

FIGURE 10. FED AND FEEDER STEER PRICES, Weekly



A Review of Livestock Pricing Issues

The sections that follow are meant to be a summary of the points or issues that have been raised related to how livestock are priced today. This will be primarily focused on how fed cattle are priced but other livestock industries face similar issues. These sections are meant to be a review of the current information generated by livestock economists from land-grant institutions from around the country.

This review is not meant to endorse or reject any of the work that has been done but an attempt to summarize it as a starting point for further discussion or policy direction. This summary is not an exhaustive list of the issues that have been raised over the past several months but will focus on the bigger issues related to livestock pricing.

Not Enough Negotiated Cattle Traded

In the early 2000s more than half of all fed cattle pricing occurred on a negotiated basis. By 2014 the level of negotiated trade has fallen to around 25 percent with little cash cattle trade occurring in some regions of the country.

For those cattle that can generate premiums due to the quality beef they produce, alternatives to a cash market may provide higher revenue. This outcome is part of the reason the livestock industry has moved to pricing alternatives that allow superior animals to receive higher premiums.

Thinly traded markets need continual observation as it becomes easier to manipulate these markets as fewer trades occur over time. There have been many studies that have highlighted the small number of buyers of fed cattle that exist today beyond the declining percentage of negotiated cattle. These studies have not provided concrete conclusions regarding anticompetitive practices occurring today in these negotiated markets.

A recent summary highlights just one of the factors that drives negotiated trade: "Negotiated cattle sales are done either on a live or dressed basis. In the case of live sales, both sides agree on the value of the animal and the packer takes on the dressing percentage risk. When negotiated on a dressed basis, the dressing risk shifts to the feedlot." http://www.dailylivestockreport.com/documents/dlr%2006-03-20.pdf

Recent proposals have been discussed that would require minimum levels of negotiated trade that processors must meet daily. Increasing negotiated trade would by default reduce alternative marketing arrangements that are in use today. A recent LMIC Economic Issues paper (https://www.lmic.info/sites/default/files/EI2%20Alternative%20Marketing%20Arrangements%20-%20Koontz.pdf) authored by Dr. Stephen Koontz, Colorado State University livestock economist, provides the following summary of the economic costs and benefits of these alternative marketing arrangements (AMA's) in cattle markets.

Dr. Koontz summary:

"Based on rigorous economic analysis, there are some key points:

- There are both economic costs and benefits of AMA's.
- The short-term net economic impact of limiting AMA's is negative at about $2.5 billion.
- Economies (efficiencies) for size and scale are significant in beef processing (lower costs and higher profits for larger plants).
- Costs associated with AMA's are related to market power of the packers relative to fed cattle sellers (cattle feeders).
- Benefits of AMA's are cost reductions for packers, which improves processing plant efficiency (reduced personnel, improved plant scheduling and operating efficiency). Some of those cost efficiencies are passed back to cattle feeders and cow-calf operations. Importantly, this has contributed to higher beef product quality.

- Statistical analysis showed that when AMA volumes are larger, relative to plant capacity, fed cattle prices are lower. But the impact is small (i.e., cents per cwt.).
- Without AMA's fewer cattle would be fed in feedlots because borrowing from lenders and the number of investors in that activity would be reduced.
- Detailed interviews with feedlots and packers have pointed to two primary long-run effects of restricting AMA's. First, would be increased risk and reduced capacity utilization at both feedlots and packing plants. Second, would be reduced product quality by moving back to a "commodity" market, and not meeting the needs of branded beef programs.
- Feedlots reported that reverting to a commodity market would result in a sales price loss worth $1.00 per cwt. or more."

Dr. Koontz's study provides information that must be evaluated before determining that more negotiated trade would result in higher cattle prices. More negotiated trade would result in better price discovery but may or may not provide higher cattle prices depending in part where the industry is at in the traditional cattle price cycle.

Mandatory Country of Origin Labeling (MCOOL)

There has been considerable discussion that MCOOL would provide benefits to the cattle industry as consumers prefer a meat product from the U.S. relative to meat products from other countries. Although there is little agreement on the level of costs of implementation of MCOOL it is recognized that there are labeling costs to MCOOL. Proponents of MCOOL state that increased consumer demand will more than offset the additional costs and ultimately raise cattle prices.

A study conducted by USDA's Office of the Chief Economist highlighted that, "First, although consumers desiring COOL information benefit from its provision, there is insufficient evidence to conclude that such benefits translate into measurable increases in consumer demand for beef, pork, or chicken. Due to increases in the costs of production resulting from COOL implementation, however, the results of economic models indicate that consumers over the longer run face higher beef and pork prices and therefore purchase less beef and pork."
https://www.usda.gov/oce/economics/reports/COOL_ReportToCongress.pdf

In late 2015 the World Trade Organization (WTO) ruled that the United States' country-of-origin labeling (COOL) law for beef and pork was discriminatory and said Canada and Mexico could impose retaliatory tariffs of $1.1 billion and $227.8 million respectively. The WTO ruling does not disallow labeling of country of origin, it just does not allow for the government to require it. If the U.S. chooses to implement MCOOL again, Canada and Mexico can use the previous WTO ruling to put in place retaliatory tariffs quickly.

Summary

This report attempts to summarize many of the issues that face livestock markets today relative to how market prices are determined. This summary shows it is a complex task to make definitive statements regarding the efficiency of how price discovery occurs today. Potential solutions must be weighed carefully to determine their ultimate effect on market prices.

The current LMR provides a mechanism for nearly all data regarding livestock purchases to be collected and maintained by USDA-AMS. The summary of data provided to market participants by USDA-AMS also considers confidentiality as it reports summaries of market transactions. Without LMR, livestock

markets may be left with little information to help with price discovery. The government shutdown in 2013 that stopped LMR data collection left markets searching for how to best handle price discovery.

The reduction in negotiated prices for many livestock industries has caused continued questions about whether adequate price discovery occurs today in many livestock markets. As these industries continue to consolidate, price discovery will remain an issue open for debate. It remains important to understand that better price discovery does not necessarily result in higher prices. It only ensures that the market forces at play are better able to determine a "correct" market equilibrium and the chance for anti-competitive behavior is reduced.

Given the wide spreads that have occurred recently between livestock and meat prices, there has been renewed interest in how to best address thinly traded markets. Regulating how processors purchase live animals is one way to address the issue. However, this summary report highlights there are benefits and costs to regulating purchases.

Further efforts are needed to determine the best strategies for price discovery moving forward. Both the costs and benefits must be weighed in determining alternative ways to ensure adequate price discovery in livestock markets.