Markets

Beware

Unintended Consequences

There are no simple solutions to fix cattle markets, if they need to be fixed.

by ***Wes Ishmael***

Markets have no conscience. They don't care who wins or loses.

Left alone, markets find their way, rationing supply and demand in an extraordinarily effective fashion, no matter the shocks.

That's worth keeping in mind amid the seeming disconnect between beef and cattle prices the last couple of years.

"Cattle producers are frustrated, and with good reason. In sale barns and state meetings across the country, we're hearing the same story of sky-high input costs and intense market volatility. Across the industry, there's a consensus that market dynamics which consistently squash producer profitability are not sustainable for live cattle or beef producers," said Jerry Bohn, president of the National Cattlemen's Beef Association (NCBA) in June. "As members of Congress create policy that directly impacts business conditions for our producers, it is critical that they consider the grassroots input and firsthand experiences of folks on the ground. Our letter provides that perspective and reinforces how urgently we need something to shift here to strengthen the security of the beef supply chain. NCBA has strong working relationships with members on both sides of the aisle, we have grassroots policy to back the actions we outlined today, and we hope the conversation in Washington around these critical policy areas will progress quickly."

The letter Bohn referred to was one NCBA sent — with the support of 37 affiliate state cattle organizations — urging the leadership of the U.S. Senate and House Agriculture Committees to address critical areas of concern in the cattle and beef industry. Those issues included beef processing capacity, labor policies affecting the beef processing workforce, the need to reauthorize Livestock Mandatory Reporting and calling for the U.S. Department of Justice to complete its ongoing investigation into the meatpacking sector.

"I understand the frustration. I've owned and bred cattle most of my life, and I have friends and family that make a living ranching and feeding cattle. However, with stakeholders that are invested throughout the entire supply chain, from rancher to packer to retailer, I have to look at the beef industry from an objective, analysis-based perspective," said Dustin Aherin, a RaboResearch animal protein analyst for Rabobank. This was in testimony during a June hearing before the U.S. Senate Agriculture Committee. That hearing came under the heading of "Examining Markets, Transparency and Prices from Cattle Producer to Consumer."

Layers of demand

Gazing through an objective lens, economics explain how beef can be worth so much at the same time cattle can be worth so much less in relative terms.

Supply and demand is easy to grasp in general terms.

The scarcer the supply of a particular good, relative to static or increasing demand, the higher the unit price of that product. Increase demand enough and unit prices can also increase for a constant or growing supply.

Reality is more complex because seemingly related products experience different levels of supply and demand. Cattle and beef serve as sterling examples.

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>
> **— Glynn Tonsor**
> **K-State agricultural economist**

Beef prices soared amid scarcity caused by recent black swan events that disrupted beef packing and processing. Those include the 2019 fire that shuttered the Tyson plant at Holcomb, Kan., for several months, as well as the pandemic that took hold in 2020. To lesser degrees, last winter's widespread, frigid storm and the more recent cyber attack on JBS also disrupted beef production.

Beef prices increased following each of those events because less beef was available for purchase relative to consumer beef demand.

At the same time, fed cattle prices declined significantly in the near term and remained capped because packer demand for cattle declined.

Both occurred because of something economists refer to as derived demand. Broadly, derived demand is demand for a product, which stems from demand for another product.

In the case of cattle and beef, different derived demand exists at various intersections of the cattle and beef supply chain. For instance, derived demand by grocers reflects the prices they are willing to pay for a given quantity of beef at the wholesale level. At the other end, derived packer demand reflects prices they are willing to pay for a given quantity of fed cattle. As seen during the black swan events, derived demand at each intersection can run in opposite directions. Beef prices increased, encouraging more beef production. Fed cattle prices declined because packing capacity declined and packers could not process more cattle, despite the economic incentive to do so.

"Cattle are not beef. Cattle are one of several inputs into beef production. Other major inputs include labor, physical capital and technology. These inputs are always seeking, but never finding, the perfect balance between one another. This creates cycles. Input imbalances are communicated through prices, whether that's cattle prices, wages or investments," Aherin explained. "Over the past several years, extreme and unexpected events have severely restricted several of these inputs. For example: facilities in the August 2019 Tyson plant fire and labor during the pandemic. A working market sends price signals to adjust. These same price signals created record high cattle prices and packer losses in 2014 and 2015."

Pick the target

Depending on who's manning the soapbox, there are lots of other reasons for cattle price woes, from U.S. beef imports and exports to Country of Origin Labeling to packer concentration and a host of others. Plus, these distinctly separate issues often are cobbled together as one and hurled into the fray of debate.

Identifying whether there are specific problems and potential remedies requires more singular focus.

For instance, much ongoing industry discussion and proposed legislation revolves around negotiated cash price discovery (price discovery).

Keep in mind price discovery is different than price determination.

"Price discovery is the process of buyers and sellers arriving at a transaction price for a given quality and quantity of a product at a given time and place," explained Ted Schroeder, agricultural economist at Kansas State University (K-State) and Clem Ward, professor emeritus at Oklahoma State University (OSU), in "Price

Determination Versus Price Discovery." This was during another time in cattle history when cattle prices were low.

"Price determination is the interaction of the broad forces of supply and demand that determine the market price level," according to Ward and Schroeder. "It shows the interaction of a supply curve and a demand curve to determine the general price level."

In other words, you can discover a transaction price with more confidence through increased price discovery, but it does nothing to change overall price levels — it alters neither product supply nor product demand.

"It's not clear we have a price discovery problem. We have thinner cash markets, but there is no indication of a persistent price discovery problem at this point," says Derrell Peel, OSU Extension livestock marketing specialist.

Even so, various legislative proposals seek to mandate specific levels of regional cash trade each week, while organizations like NCBA and some affiliates continue to pursue voluntary efforts to bolster cash transactions.

Termed the 75% plan, the voluntary NCBA framework sets cash transaction levels by region. If 75% of the level isn't met 75% of the time, then a virtual trigger is tripped, inching the organization closer to pursuing a mandated approach.

At the beginning of July, the Texas Cattle Feeders Association (TCFA) released data indicating the voluntary approach was working in its region.

"TCFA members have surpassed levels established in the NCBA plan. More specifically, our members averaged 13,681 head per week in Q2 of 2021, 10,893 head per week in Q1 of 2021 and 9,593 head per week in Q4 of 2020 compared to the TCFA goal of 9,750 head in the NCBA plan. By any measure, we have proven that an industry solution to increasing negotiated trade will work," explained TCFA chairman Scott Anderson in the July 2 TCFA Newsletter. "We do not need a government mandate and all the unintended consequences that could result. Our members have clearly demonstrated their commitment to increasing negotiated trade and improving price discovery. We want the market to work and will continue to also focus on leverage and competition issues that are negatively impacting the market."

Alternative marketing arrangements serve consumers

Debate about cash price discovery often includes Alternative Marketing Arrangements (AMAs) because the industry's use of them diluted spot cash trade. Think in terms of marketing methods, such as grids and formulas. AMAs typically utilize a negotiated cash price discovered elsewhere as a base before applying pre-determined premiums and discounts. So, they utilize cash prices but don't contribute to cash price discovery.

Table 1: How fed cattle are traded

	2014	2019	2020
Negotiated	23%	21%	23%
Formula	58%	66%	65%

Data Source: Glynn Tonsor, Kansas State University

Glynn Tonsor, K-State agricultural economist, provided perspective of AMA use during the Senate Agriculture Committee hearing. He noted 23% of domestic fed cattle traded on a negotiated basis in 2014, while 58% traded via formulas, an AMA. Negotiated transactions accounted for 21% of the fed cattle traded in 2019 and 23% in 2020. Those same years, formula transactions accounted for 66% and 65%, respectively.

Extensive research documents reasons why AMAs grew more popular than the negotiated cash market as a means of trading fed cattle.

In fact, Congress mandated that the Grain Inspection and Stockyards Administration (GIPSA) conduct an investigation more than a decade ago. Completed in 2007, it was the GIPSA Livestock and Meat Marketing Study (GLMMS).

"In aggregate, restrictions on the use of AMAs for sale of livestock to meat packers would have negative economic effects on livestock producers, meat packers and consumers," according to the study.

According to the GIPSA study, benefits to producers and packers include: cost management, risk management, market access, assured quality and consistency, and cost savings

Stephen Koontz, an agricultural economist at Colorado State University, served as lead economist for the GIPSA effort. Subsequently, he conducted the pioneering Price Discovery Research Project (PDRP) completed a few years ago.

According to Koontz's PDRP and subsequent research, fed cattle forward contracts benefit those that use them \$15-\$25 per head. The use of formula arrangements benefits those that use them \$25-\$40 per head. That's why AMAs overtook cash trade as the preferred marketing mechanism.

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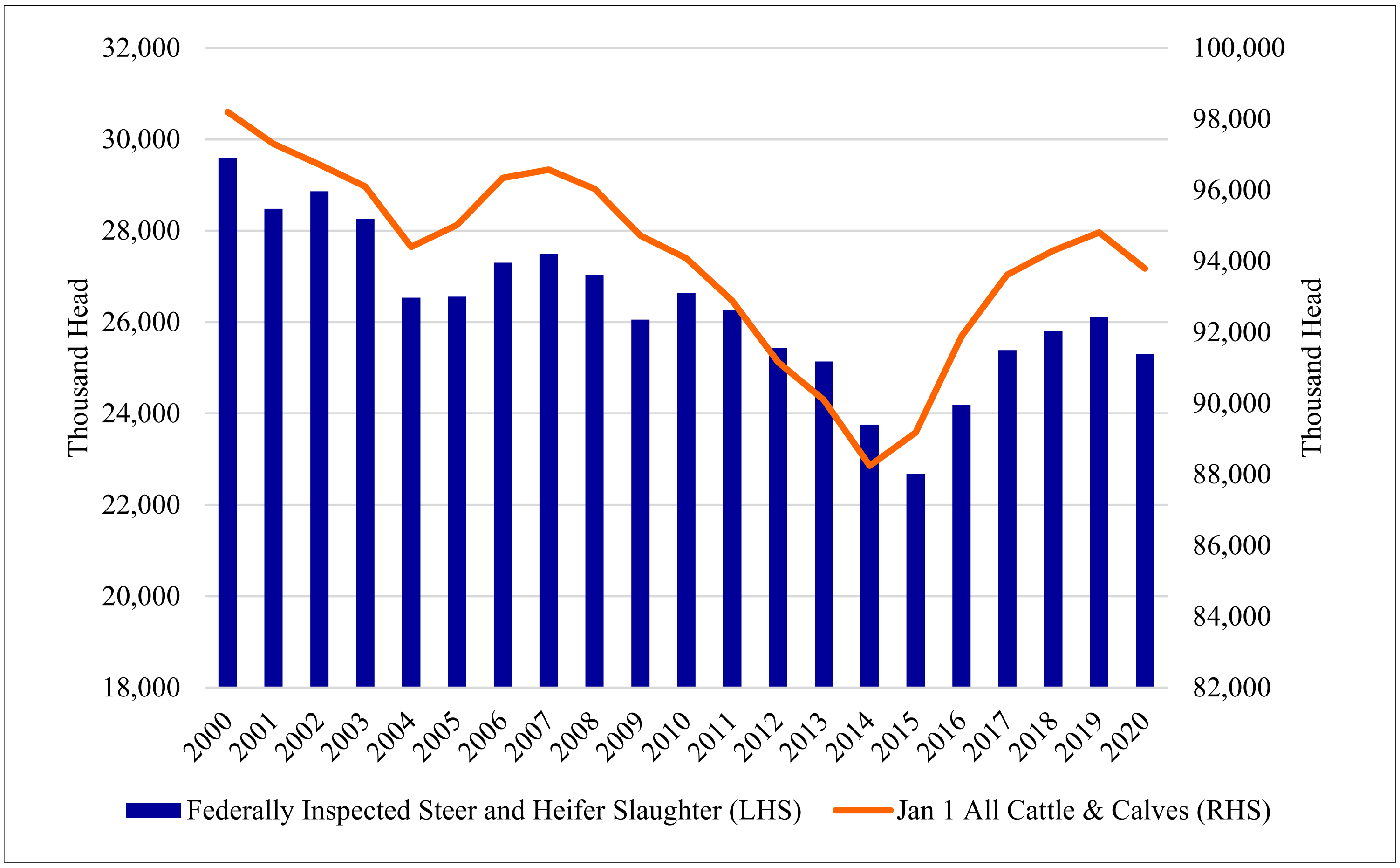
Figure 1: Annual Fed Cattle Slaughter and Total Cattle Inventory, 2000-2020



Source: USDA NASS, LMIC, Rabobank 2021

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"The main beneficiaries of these relationships are the cow-calf producing sector and the U.S. consumer. We have known this for a long time, and we have solid empirical evidence," Koontz explained in a letter to NCBA last year.

More simply, AMAs came into being at the behest of producers who wanted to be paid based on the value of cattle they brought to market, rather than receiving the average same-for-all price that used to define the market.

"The core point is that while cattle prices, beef prices and estimated margins in the industry certainly differed in recent years from 2014, it is dangerous and inaccurate to assert this simply reflects changes in how fed cattle are marketed," Tonsor explained in Senate testimony. "Rather, in my opinion, consistent with a large and ever-growing body of published research, core differences in supply and demand underlie these market changes. Stated directly: Without contemporary use of AMAs, I believe cattle prices would be lower as production efforts would not align as well with consumer demands."

Consider that as AMA use grew, so did industry focus on meeting consumer demand. The most glaring example comes in the fact that 83% of fed cattle under federal inspection graded Choice and Prime last year. In 2006, it was 54%.

"We produce more high-quality beef and consumers continue to say they want more," said Randy Blach, CattleFax CEO during this year's International Livestock Forum hosted by Colorado State University and the National Western Stock Show. Based on the U.S. Consumer Beef Demand Index, he said domestic consumer beef demand last year was the strongest in more than 30 years.

"I encourage the industry to proceed forward, in a manner that does not deteriorate economic benefits of the industry's evolution in recent decades, to improve beef quality and align effort with beef demand signals," said Tonsor, in his testimony. "This pursuit can also include regularly assessing the viability of ways to enhance the information content available on actively negotiated cattle and/or consider increased use of alternatives to traditional, spot markets in establishing base cattle values."

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Packing capacity imbalance

Arguably, one issue has been at the root of market frustration over the past two years. That issue is operational beef capacity relative to the supply of cattle in need of harvesting. Not just shackle space, but the labor required.

"Perhaps no relationship is currently more central to economic discussions in the U.S. beef cattle industry than the relationship of fed cattle inventories to processor capacity," Tonsor testified.

"This relationship is ever-evolving, reflecting cattle cycles, drought-induced liquidation, investment interest and many other dynamic factors," Tonsor explained. "To briefly summarize, prior to 2016 it was estimated for many years that there was more processing capacity than fed cattle inventories. That relationship subsequently changed, such that since 2016, fed cattle inventories have often exceeded operational capacity to process them. The Holcomb plant event of 2019 and developments during the COVID-19 pandemic occurred with this backdrop of fed cattle inventories being large relative to operational processing capacity. Economists expect lower fed cattle prices and higher beef prices when a system is at or near operational capacity. On balance, that is what we have observed in markets.

"Going forward, it is generally expected fed cattle volumes will decline and some physical processing capacity may be added; these are also expected market evolutions."

In other words, the imbalance between fed cattle supplies and operational beef packing capacity is what Tonsor terms a relatively recent phenomenon. Supply chain disruptions magnified a situation that already existed.

For perspective, considering available packing capacity in 2020, for slaughter from Monday through Friday each week, relative to the annual fed cattle inventory, Tonsor says, "We had 12% more cattle than we could process in 2020. We had that with or without COVID … Operational capacity in 2020 was the high-water mark in cattle numbers. Per CattleFax, capacity utilization is projected to decline to 100% in 2023 through fewer fed steers and heifers but also through expected capacity expansion."

Announced plans for new or expanded beef packing facilities, if fulfilled, would add at least the equivalent of one new large packing plant.

"If all of the announced plans for plant construction and expansion come to fruition, 7,000 to 8,000 head of daily fed cattle capacity and 1,500 to 2,000 head of daily non-fed capacity could be added to the U.S. beef industry over the next five years," Aherin said in his Senate testimony. "Most all of the greenfield construction or new entrant plans are small to medium sized (500 to 1,500 head per day capacity), supply chain coordinated, and focused on product differentiation. If these smaller plants are going to compete with the efficiency, economic scale and scope of the large incumbents, they will have to be successful in these supply chain relationships and product differentiation."

Expanding packing capacity is not for those with faint hearts or shallow pockets. "The new plant costs that I have been using are $100 million to $120 million for every 1,000 head of daily capacity, although with the recent rise in construction costs and looking at some of the recent new plant announcements, those numbers seem to be creeping higher," Aherin said. "Then, a new endeavor must meet regulatory requirements, build a labor force, and keep enough cash on hand to absorb losses. It's not just about building facilities, it's about building a business model."

With current drought conditions in mind, if the beef cow herd declines by 2% or less, Aherin said there was opportunity for profitable expansion of about 5,000 head per day of packing capacity expansion.

First, take careful aim

As producers, grassroots organizations and lawmakers consider policies and programs aimed at changing various cattle market components, Tonsor urges caution and careful deliberation.

"As economists, we are sincerely concerned about unintended consequences," Tonsor says. "In hindsight, there are most always unintended consequences to any policy change."

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As an example, Tonsor believes part of increased AMA use was an unintended consequence associated with Livestock Mandatory Reporting (LMR), which began with the Livestock Mandatory Reporting Act of 1999. The legislation and subsequent amendments require meat packers to report prices and other information about cattle and boxed beef purchases to USDA. It pertains to other livestock, too.

Broadly, the idea behind LMR was to provide livestock sellers with more information, in order to assess fair market prices. As sellers and buyers grew more comfortable with data generated through mandatory reporting, Tonsor believes they gained enough confidence to begin using the data in formula pricing.

The point of this example, according to Tonsor: "We can't pretend that we can make policy changes without unintended consequences." **HW**