Agricultural and Food Policy Center
Texas A&M University

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Analysis of S.3229 – Cattle Price Discovery and Transparency Act of 2021

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Briefing Paper 22-02

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Introduction

On November 9, 2021, Sens. Chuck Grassley (R-Iowa), Deb Fischer (R-Neb.), Jon Tester (D-Mont.), and Ron Wyden (D-Ore.) announced a compromise cattle market proposal that was subsequently introduced as S. 3229, the *Cattle Price Discovery and Transparency Act of 2021*. This bill proposes to establish a regional mandatory minimum threshold for the percentage of cattle purchased under negotiated grid or negotiated pricing terms, establish a cattle contract library, and expand reporting requirements for cattle pricing and slaughter. Senator John Boozman, Ranking Member, Senate Committee on Agriculture, Nutrition, and Forestry, asked the Agricultural and Food Policy Center (AFPC) to examine the impact of the bill on the various segments of the beef and cattle supply chain. This report builds on work published by AFPC in October 2021 at the request of the bipartisan leadership of the House Committee on Agriculture in the 116th Congress.[1]

This examination of the anticipated impact of S. 3229 is made up of two parts: an analysis of the impact of the bill on negotiated trade volume and a qualitative, economic-based summary of expected effects. The expected effects are presented in a matrix format, highlighting the anticipated directional effects of each portion of the bill on a set of criterion, including cattle and beef prices, market transparency, price discovery, and data confidentiality.

Expected Impact of Negotiated Trade Volume Mandates on Forecasted Negotiated Trade Volume

S. 3229 does not impose finalized thresholds of negotiated trade by region. Rather, the bill requires the Secretary of Agriculture (the Secretary) to establish those thresholds – in consultation with the Chief Economist – following public comment. S. 3229 does, however, establish minimum and maximum bounds on negotiated trade by region. The bill establishes regional mandatory minimum thresholds of negotiated cash and negotiated grid trades based on each region's 18-month average trade. Importantly, by design:

- No regional minimum level can be more than three times that of the lowest regional minimum, and
- No regional minimum can be lower than the 18-month average trade at the time the bill is enacted.

In practice, had the bill been enacted on January 1, 2022, the minimum bounds of required negotiated trade would have been based on those presented in Table 1. This analysis excludes Colorado from the typical 5-area cattle region due to lack of consistent data.

[1] https://www.afpc.tamu.edu/research/publications/710/cattle.pdf

Table 1. S. 3229 Negotiated Volume Bounds Utilizing July 2020-December 2021 Data

	Texas-Oklahoma-New Mexico	Kansas	Nebraska	Iowa-Minnesota
18-month Average Weekly Negotiated Volume, Jul. 2020 – Dec. 2021	13,052	22,227	33,231	26,567
18-month Average Weekly Total Volume, Jul. 2020 – Dec. 2021	86,494	83,255	54,624	31,720
18-month Average Weekly Negotiated Volume as Percent of Total Volume, Jul. 2020 – Dec. 2021	15.1%	26.7%	60.8%	83.8%
Minimum Weekly Negotiated Trade as Percent of Total Trade Allowed Under S. 3229	15.1%	26.7%	45.3%*	45.3%*

* Limited to three times the minimum regional 18-month average set by Texas-Oklahoma-New Mexico.

Do the minimum and maximum bounds of the bill as proposed impose an economic cost to the cattle market? To answer that question, we establish an unrestricted forecast of negotiated trade for each region and subsequently impose the structure of the bounds proposed in S. 3229. In each region, we modeled expected negotiated trade as a function of:

- The trend in negotiated trade,
- Whether or not the cattle cycle was in a year of herd size increase or decrease (cycle),
- Seasonality of historic negotiated trade,
- A dummy variable accounting for the introduction of the industry-led '75% Plan',
- The previous week's negotiated trade volume, and
- Total weekly fed cattle trade.

The model used Monte-Carlo simulation techniques to sample 500 iterations of each empirically-distributed variable. The resulting values collected from each of the 500 iterations were the basis for calculating the expected amount of negotiated trade by region. The difference in the expected amount of unrestricted negotiated trade and the amount of negotiated trade compelled by S. 3229 provides a measure of the cost of the negotiated trade provisions in S. 3229.

Figures 1-4 show the expected unrestricted negotiated trade plotted against the negotiated trade minimums compelled by S. 3229 through December 2026, a 5-year outlook. Each figure represents one of four cattle sales regions and each figure shows two different data series. The first series, plotted with a solid blue line, is a forecast of expected weekly negotiated volume as a percent of total weekly volume with no restrictions imposed. The second series, plotted with a dashed yellow line, is the minimum allowable threshold of

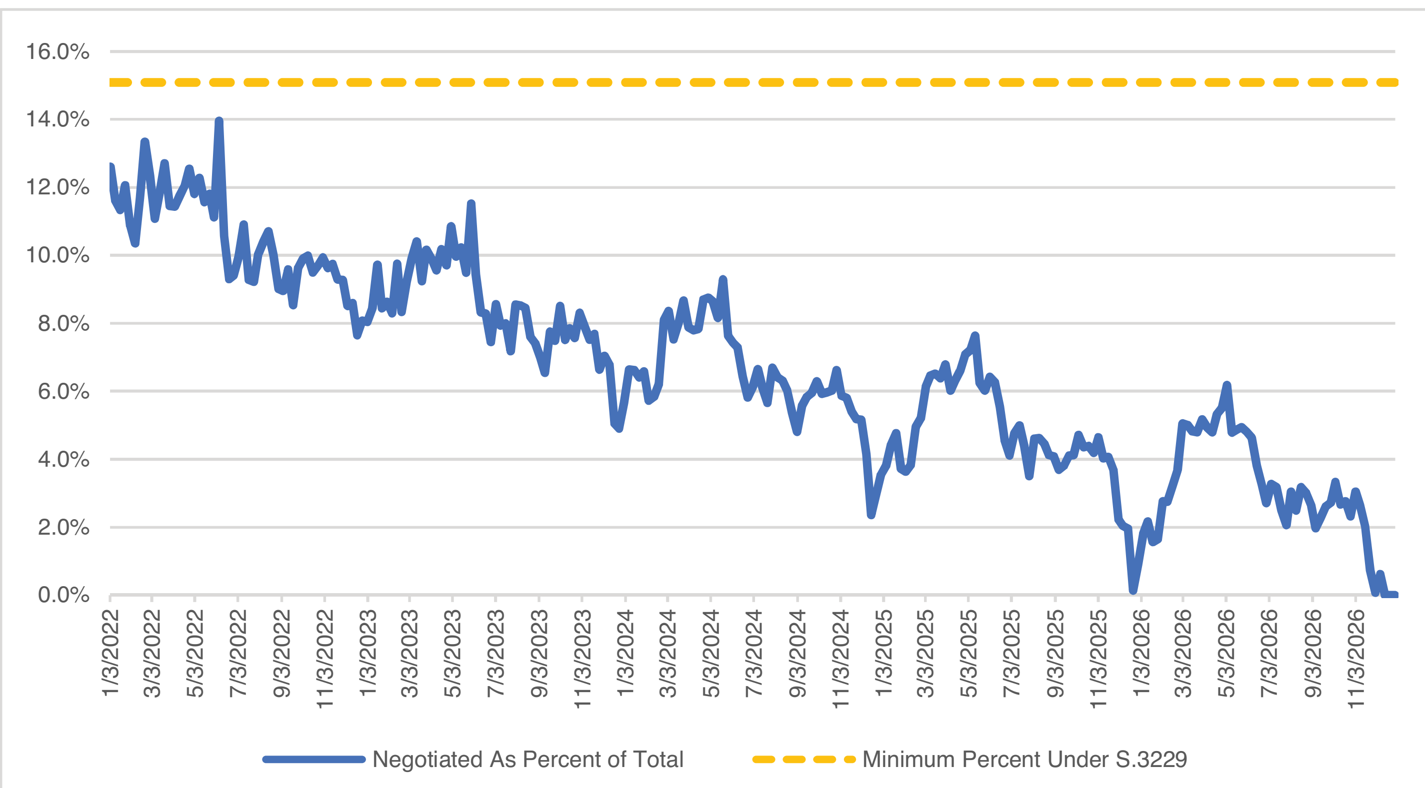

Figure 1: Weekly Unrestricted Negotiated Volume vs. Weekly Policy-Imposed (Restricted) Negotiated Volume, Texas-Oklahoma-New Mexico, Forecast of 2022-2026.

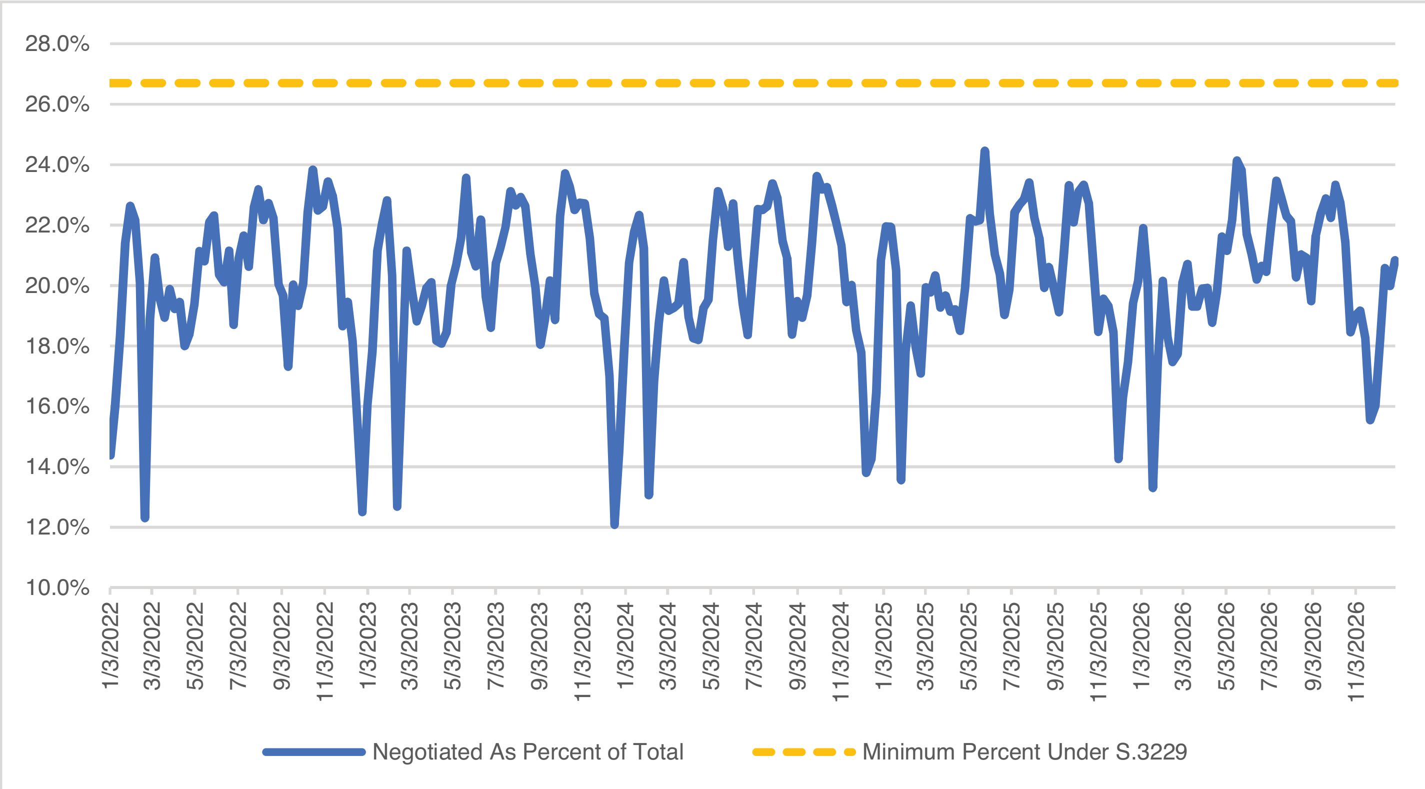

Figure 2: Weekly Unrestricted Negotiated Volume vs. Weekly Policy-Imposed (Restricted) Negotiated Volume, Kansas, Forecast of 2022-2026.

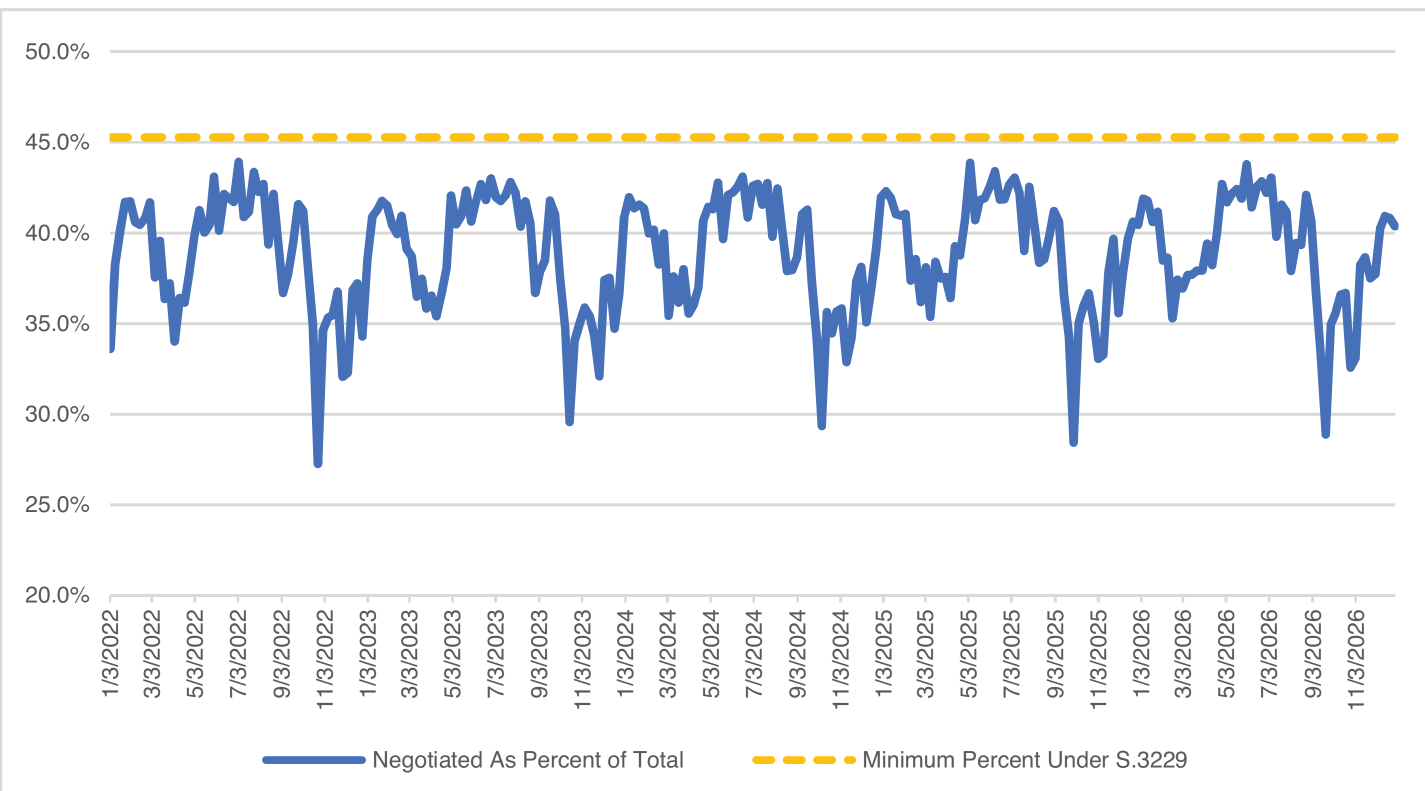

Figure 3: Weekly Unrestricted Negotiated Volume vs. Weekly Policy-Imposed (Restricted) Negotiated Volume, Nebraska, Forecast of 2022-2026.

weekly negotiated volume as a percent of total sales under S. 3229, had the bill been in force on January 1, 2022. When the blue line falls below the yellow line, the difference in the two lines represents the percent by which unrestricted negotiated trade falls short of the minimum thresholds established by S. 3229.

For example, as noted in Figure 2, in Kansas during May 2025, there is a point at which expected negotiated trade accounts for 24.5% of total trade. That represents 36,258 head; total expected sales for Kansas that week are 148,284 head. The minimum requirement for weekly negotiated trade in Kansas is 26.7% of total trade, or 39,587 head. The gap between the dashed line and the solid line represents the week's unrestricted negotiated trade shortfall with respect to S. 3229, or 3,330 head. In other words, for this particular week, S. 3229 would force an additional 3,330 head in Kansas into negotiated trade from some other type of sale method.

Figure 1 indicates that the burden of compelled negotiated trade will fall heaviest on the Southern Plains (Texas-Oklahoma-New Mexico); in fact, the burden grows as one moves farther south. The natural trend has been toward smaller volumes of negotiated trade since Mandatory Price Reporting (MPR, often now termed Livestock Mandatory Reporting, or LMR) began splitting negotiated and non-negotiated sales. That trend holds true in the forecast of negotiated trade through 2026 on the Southern Plains. Importantly, though Figure 1 forecasts unrestricted negotiated trade falling to and remaining at zero, we do not expect that negotiated trade will fall completely to zero, but asymptotically approach a near-zero value over time.

The trend in Kansas (Figure 2) is also toward lower negotiated trade volumes over time, though not matching the rate of Texas-Oklahoma-New Mexico. Seasonality appears to have a greater influence on unrestricted negotiated trade volume than in Texas-Oklahoma-New Mexico, pulling unrestricted negotiated trade volumes up and keeping volumes in Kansas closer to the S. 3229 mandated minimums. In fact, if we consider the most

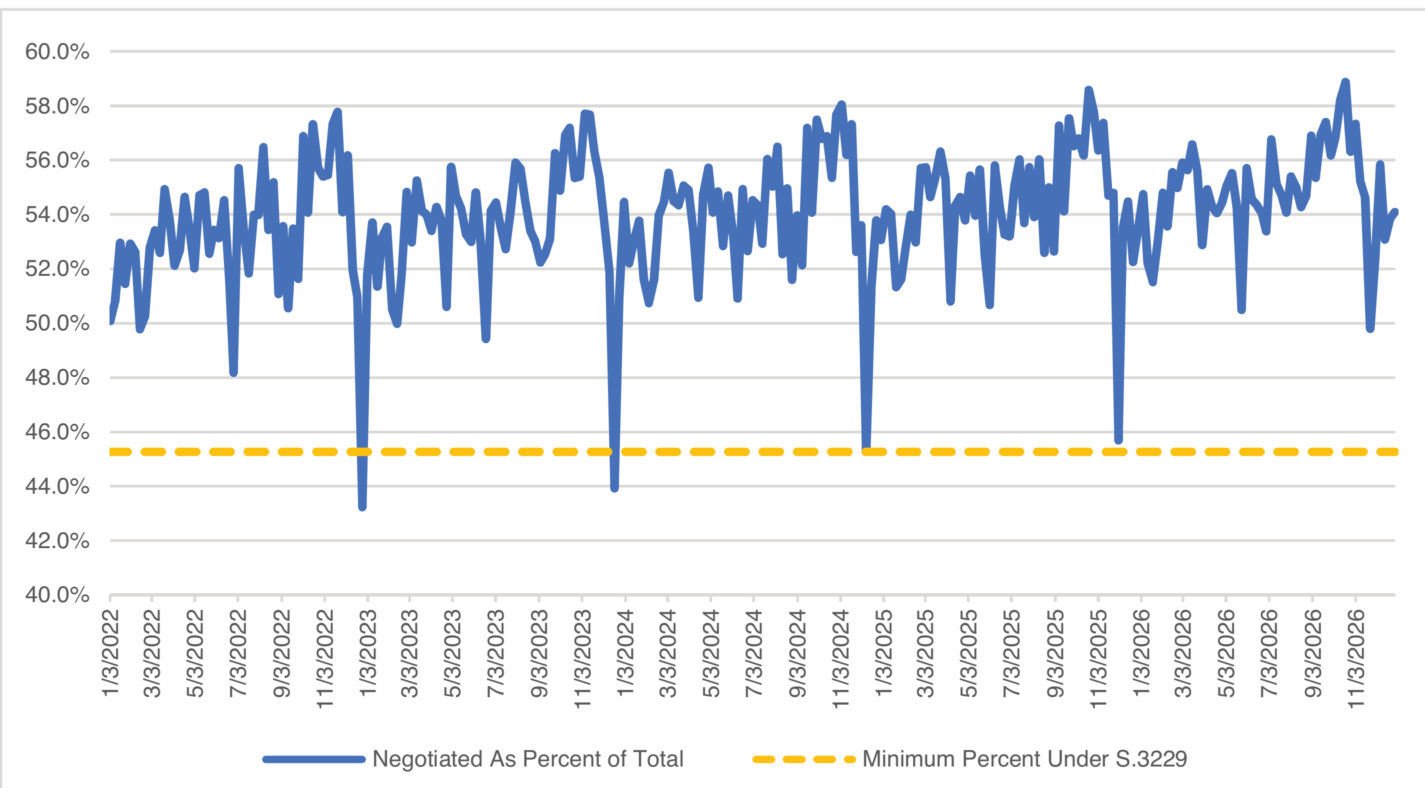

Figure 4: Weekly Unrestricted Negotiated Volume vs. Weekly Policy-Imposed (Restricted) Negotiated Volume, Iowa, Forecast of 2022-2026.

Table 2. Difference in Weekly Forecast Negotiated Volume and Weekly Policy-Imposed Negotiated Volume, Forecast of 2022-2026.

	Average Weekly Expected Deficit, Negotiated Volume	Maximum Expected Deficit, Negotiated Volume	Expected Weeks with Negotiated Volume Deficit Compared to S. 3229 Requirement	Total Expected Additional Negotiated Sales as Result of S. 3229, '22-'26
	Head	*Head*	*Percent*	*Head*
Texas-Oklahoma-New Mexico	9,494	17,142	100	2,477,968
Kansas	7,888	15,019	100	2,058,814
Nebraska	5,773	10,916	100	1,506,643
Iowa-Minnesota	4	624	1	1,050

recent 10-year average of weekly negotiated trade volumes in Kansas (18,737 head) against the 5-year average (19,930 head), we see that negotiated trade reached a stable minimum and began to trend upward again, though it is likely that the industry-led 75% Plan influenced that movement.

Expected negotiated trade in Nebraska (Figure 3) may face the third highest hurdle (behind Texas-Oklahoma-New Mexico, and Kansas) in reaching the levels required by the minimum thresholds under S. 3229. Nebraska's weekly negotiated volume is high relative to all other regions, which may prove to be a challenge under S. 3229. Though Nebraska's weekly negotiated volume is high, the trendline of negotiated volume is marginally lower over time. Because negotiated volume is trending slightly downward, over time negotiated trade in Nebraska tends to fall below the minimums required by S. 3229 more frequently, even with the adjusted minimum percentage accounting for the rule which limits minimum thresholds to only three times the lowest minimum threshold. The strong influence of seasons and cycles (each factor accounts for much more variation in Nebraska than in the other three regions) means that as seasonal and cyclical trends move negotiated trade lower, it is more likely that Nebraska's unrestricted negotiated trade will fall below the S. 3229 mandated minimum levels.

Iowa-Minnesota (Figure 4) will bear the smallest burden from increasing negotiated trade as a result of the implementation of S. 3229. This region, with the greatest historic negotiated volume as a percent of total trade, will bear a very small cost from the implementation of S. 3229.

One important factor in the data is the role of holiday weeks in determining the percent of cattle traded via negotiation vs. AMAs. Holidays typically see a lower utilization of negotiation because there are fewer days to work on a holiday week. Holiday weeks require fewer total purchases. In promulgating a regulation, it will be important to consider the impact of weeks that include a holiday.

Table 2 details the results shown in Figures 1-4 numerically. Again, it is clear that Texas-Oklahoma-New Mexico will be forced to make the greatest adjustments under S. 3229. When comparing unrestricted expected negotiated volumes with the requirements set forth in S. 3229, Texas-Oklahoma-New Mexico would naturally fall out of "compliance" 100% of the weeks from 2022 through 2026. On average, S. 3229 would force an estimated 9,494 additional head into negotiated trade from some other sale method each week in Texas-Oklahoma-New Mexico from 2022-2026. In total, were S. 3229 in force as of January 1, 2022, with the established minimums, roughly 6 million head of live cattle would be forced into negotiated trade from some other type of sale method.

Does this change in negotiated volume have a cost? If so, what is/are those costs specific to changes in negotiated volume? Typically, a move away from alternative marketing arrangements (AMAs) results in lost efficiency. This efficiency loss translates directly into increasing the transaction cost of buying and selling cattle.

First, packers that operate with AMAs tend to have lower marketing costs (Koontz 2020). A seemingly common practice among packers that utilize AMAs is to set prices according to some pre-established combination of factors that may include a schedule of premiums averaged over all pens, estimated adjustments for feeding costs, adjustments for delivery based on ownership status, and more. These adjustments are then added to a base value that fluctuates throughout the year according to some pre-agreed-upon price series; the previous week's price at a given plant, the previous week's price in a given region, or the price on a futures exchange all seem to be common series. The ability to set these prices once, and to then apply those prices across all animals, decreases the time necessary to establish a price for cattle, saving both the seller and buyer time.

Second, reliability of supply is a critical component to operating a large packing plant. Koontz 2020 notes that plants with higher AMA volumes have more stable average monthly volumes. Anecdotally, we know that AMAs assist in the procurement and scheduling of cattle for delivery far into the future. Therefore, we can assume that reducing the use of AMAs will induce more volatility in cattle supply to individual plants. This is a critical point that will increase costs for large plants. Larger plants operate on economies of scale and efficiency; the more animals over which a plant is able to spread its fixed costs, the more profitable it remains. Therefore, an unreliable supply of animals, or gaps in the supply chain, require that a greater amount of fixed costs be allocated to each animal processed.

A third set of increased costs from a mandated reduction in AMA use would be borne by the cattle feeding sector. As previously noted, AMAs introduce an element of stability for the purchase and delivery of live cattle. Koontz 2020 notes that this stability from known marketing arrangements allows cattle feeders to secure investment and better terms on those investments from outside parties; the lowered risk from the use of AMAs makes investment in cattle feeding more attractive to outside investors. More external investment allows cattle feeders to feed more cattle, more efficiently utilizing their capacity. Lowering the use of AMAs would therefore decrease the demand for feeder cattle, lowering the value of calves and subsequently cows.

Having established some of the expected results of mandated lower AMA use, what are the estimated costs? The 2007 'RTI study' synthesized in Koontz 2020, suggests that the impact of 'limiting' the use of AMAs will raise costs by $35 per head sold, with $10 per head accruing to the packer and $25 per head accruing to the cattle feeding industry. Koontz 2020 further notes that the value of AMAs has likely increased from $35 per head to $65 per head. Koontz's values, presented in 2020, apply to a scenario in which AMAs are completely eliminated. S. 3229 does not mandate complete elimination of AMAs. This analysis then represents potential costs only from a reduction in the use of AMAs (or stated another way, an increase in negotiated cash transactions).

Table 3. Expected Cost of S. 3229 Negotiated Trade Provisions at Varied Cost per Head, 2022-2026.

	$20.00/Head	**$30.00/Head**	**$40.00/Head**	**$50.00/Head**	**$60.00/Head**
Texas-Oklahoma-New Mexico	$49,559,365	$74,339,048	$99,118,730	$123,898,413	$148,678,096
Kansas	$41,176,288	$61,764,431	$82,352,575	$102,940,719	$123,528,863
Nebraska	$30,132,862	$45,199,293	$60,265,724	$75,332,155	$90,398,586
Iowa-Minnesota	$21,008	$31,512	$42,016	$52,520	$63,024
Total Cost	**$120,889,523**	**$181,334,284**	**$241,779,046**	**$302,223,807**	**$362,668,569**
Annual Cost	**$24,177,905**	**$36,266,857**	**$48,355,809**	**$60,444,761**	**$72,533,714**

To encompass a range of possible outcomes, Table 3 contains the estimated cost per region, the total cost to the 5-area cattle and beef industry, and the annual cost to the 5-area cattle and beef industry at different potential costs per head from enacting the negotiated trade minimums in S. 3229. The values in Table 3 are calculated using the cost per head multiplied by the total additional negotiated sales induced by S. 3229 by region, presented in Table 3. It is important to remember that these costs are based on the minimum thresholds allowed under S. 3229 had it been in force on January 1, 2022. Were the Secretary to set a higher threshold, we assume that these costs would increase. Note that 41% of the estimated total costs from S. 3229 will be borne by Texas-Oklahoma-New Mexico.

Overall Directional Impacts of S. 3229 on Various Stakeholders

The matrix of expected effects of the bill (Table 4) is used to portray a consensus of expected impacts on an array of interest areas. This consensus of expected impacts is based on past research in the area (Fischer, et al.). The three segments of the bill are portrayed across the top of Table 4 and the effect on each interest area is contained in a row. The effect represents an evaluation of the impact on each area.

Negotiated Trade Mandate

Mandated levels of negotiated trade are expected to have negative effects on cattle and calf prices. That is to say that the mandate will result in lower short term fed cattle prices due to the increase in the costs of the feeder-packer cattle sale transaction. Research has shown there is a value to AMAs in the form of lower costs, improved logistics, and reduced risk. Mandating higher levels of negotiated trade will result in higher transaction costs. The higher transaction costs will result in lower cattle and calf prices and higher wholesale and retail beef prices. Lower prices will have the long-term effect of reducing cattle and beef production resulting in higher prices. We would suggest that fed cattle and feeder calf prices would increase back to their long-term expected levels, but not necessarily increase to higher levels. The long run price reversion back to earlier

Table 4. Matrix of Expected Impacts of Proposed Changes in S. 3229 on Stakeholder Groups.

	Negotiated Trade Mandate	**Contract Library**	**Expand Reporting Requirements**
Short Term Feeder Cattle Prices	↓	—	—
Short Term Fed Cattle Prices	↓	—	—
Long Term Feeder Cattle Prices	—	—	—
Long Term Fed Cattle Prices	—	—	—
Short Term Retail Beef Prices	↑	—	—
Long Term Retail Beef Prices	—	—	—
Market Transparency	↑	↑	↑
Price Discovery	↑	—	↑
Confidentiality	—	—	—
Long Term Beef Production	↓	—	—
Negotiated Trade Volume	↑	—	—
Note: — equals no change			

equilibrium levels is driven by the reduction in cattle and beef production. Based on this, one might argue that the industry will be smaller.

Negotiated trade mandates do provide additional price discovery and market transparency. More price discovery, however, does not mean that cattle prices would be higher. It's worth explicitly pointing out the economic tradeoffs that this portion of S. 3229 creates. The bill does increase price discovery, but at the cost of lower prices to cattle producers and higher prices to beef consumers. There is no evidence that increasing price discovery would increase cattle prices.

Contract Library

The effects of the contract library would be exclusively felt in terms of market transparency. The contract library would increase market transparency. Some in the industry believe that there are secret, or special, deals offered to some sellers, but not others. A library would clear up some questions about what is offered. Cattle sellers would be able to see the formulas that have been offered by buyers in the past. Improved knowledge about the conditions of different formulas (e.g. base price, any premiums or discounts, associated grids, delivery requirements) would reduce uncertainty and doubts about how the market functions. The details contained in the library will be important. For example, is a particular formula still offered, how many cattle were sold under each formula, are they still used, are some types no longer offered, different formulas by region are all types of information in the library that would be useful.

Expanded Reporting Requirements

Reporting requirement expansion would impact two areas: transparency and discovery. It would likely increase both of these. Increased market reporting would boost market information to buyers and sellers allowing the incorporation of that information into the transaction and discovery process. More reported price information would make the market more transparent. Expanded reporting is not likely to materially affect any other area listed in Table 4.

Conclusions

This analysis examines the expected effects of S. 3229 on various segments of the beef and cattle supply chain. Bottom line: there are tradeoffs. While more price discovery and market transparency can be achieved, forcing the movement away from AMAs via regional mandatory minimums for negotiated purchases will result in lower cattle prices and higher wholesale and retail beef prices.

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