Assessing the Cattle Contracts Library & Fed Cattle Market Transparency

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Executive Summary

The primary purposes of this report are to assess market information provided by the Cattle Contracts Library (CCL), project probable fed cattle market impacts of the CCL, and provide corresponding recommendations that ultimately aid in fed cattle market transparency. The CCL was launched early in 2023 following the Consolidated Appropriations Act of 2022 directing USDA AMS (United States Department of Agriculture, Agricultural Marketing Service) to create a Cattle Contracts Library Pilot Program to increase market transparency for cattle producers. We share the goal of having public reporting aid in market transparency and note that exactly how that is accomplished evolves over time in part reflecting ongoing dynamics in the U.S. fed cattle industry.

We use information available directly from the CCL and pre-existing AMS market news reports, selected published research, informal discussions with industry participants, as well as our team's expert opinion and experience with USDA data products, to guide our assessment. This report starts with a brief background on the CCL's origination and then provides a summary of information available in the CCL. We show how CCL information compares to information from other USDA reports. Subsequently, we discuss potential market impacts that may follow from introduction of the CCL and end with recommendations for USDA AMS to consider as they aid market transparency in the ever-evolving U.S. beef-cattle industry.

Main findings of our assessment include:

1) The dashboard used to report CCL information is an easy to use and generally understandable way to report complex contract data. Certainly, the format AMS designed and used to consistently summarize information contained in what are likely variable

specifications across approximately 200 contracts is commendable. Caveats apply to the value of specific data as we discuss later, but the overall CCL data product is well designed and noteworthy for the efficacy of presentation. Furthermore, having historical CCL data available in readily downloadable spreadsheet format is convenient and eases data analysis.

2) Our limited discussions with industry participants indicate CCL information is not prominent on the radar of many market participants. The CCL is not discussed much in industry and not routinely used, though is most likely to be used during contract negotiations. In marketing agreement negotiations, packers and/or feeders might use CCL data to calibrate their respective requests or respond to the other party's requests.
3) CCL-covered contracts vary in a multitude of ways reflecting diversity in desired beef products originating from an assortment of fed cattle. This reality makes publishing summary statistics of individual contract elements challenging as such summaries cannot adequately account for interdependence across contract elements.
4) Most reported contract specifications change little week-to-week. In particular, CCL-reported details on base price source, base price adjustment, and most premium/discount values are stable week-to-week.
5) Some CCL-reported premiums and discounts align with information available in the 5-Area Weekly Direct Slaughter Cattle – Premium and Discounts report (LM_CT169). This is especially true of Select and Standard discounts which typically change weekly. However, not all CCL-reported premiums and discounts align well either at a point in time or over time across different sources.
6) Some aspects of how the CCL is executed (distributional reporting in particular) align with recommendations we previously have made regarding LMR (Livestock Mandatory Reporting) that if similarly applied in LMR could enhance market transparency.[1]
7) USDA AMS market news reports are documented for the first known time by the CCL to be the most prevalent base price sources. Further, state/region reports by USDA from LMR most used in CCL contracts align with prevalence of fed cattle production volumes more

[1] See Rogers et al. (2023), Schroeder, Coffey, and Tonsor (2023), Schroeder, Schulz, and Tonsor (2019), and Tonsor (2021) for previously made LMR suggestions.

than prevalence of negotiated cash sales as a percentage of slaughter cattle marketings. Dominant base price sources for our period of assessment depend upon, in ranked order, USDA reports from 1) Nebraska, 2) Kansas, and 3) Texas/Oklahoma/New Mexico market regions with all others (5-Area, Iowa/Minnesota) combined representing a much smaller share of base sources.

8) As with all publicly available data, the ability of users to benefit from the CCL varies across analytical skills, availability of analysts, access to complementary proprietary data, and other factors. As such, larger commercial entities are generally better equipped to leverage public data in their respective operations—CCL data are no exception.

Recommendations:

Ultimately, given the shared goal of increased market transparency our primary recommendation is to use insights from this CCL review, along with multiple past assessments of LMR, to adjust and enhance LMR. The demonstrated success in the CCL pilot of reporting distributional information (25th and 75th percentiles) is important to appreciate and raises our recognition of the value of similar application in LMR to increase insights on price distributions beyond the common approach of reporting minimum and maximum values that are less likely to be market representative.[2] Further, the CCL pilot confirms wide diversity of contract specifications that could directly guide additions or adjustments to information collected by USDA in their administration of LMR to better reflect sources of fed cattle value differentiation.

LMR utilizes transactions data whereas the CCL collects contract terms. As such, LMR is better positioned to collect and report detailed factors affecting net prices paid for fed cattle. In contrast, the CCL is better suited for collecting and revealing contract terms and specifications such as base price sources and adjustments, contract volumes, and special contract allowances or incentives. While both the CCL and LMR provide market information, they are not independent. Currently the CCL and LMR risk being too overlapping, and mixed in

[2] This aligns with suggestions by Schroder and Tonsor (2017) and Tonsor (2021) to report 15th and 85th percentile rather than range statistics to provide more informative insight on price variation.

market coverage, leading to the role of each being less defined and potentially reducing effectiveness of market reporting collectively. This may have happened in the design of the CCL, in part, because LMR data being collected are inadequate to sufficiently report premiums and discounts being paid for specific animal and lot attributes across transactions.[3]

The goal of enhancing market transparency could be better achieved through adjustments in USDA LMR data collection and reporting. If such enhancements to LMR would be implemented, the CCL program could evolve to be a targeted supplement, pragmatically published less frequently, to guide and inform LMR rather than be a standalone "add on" to LMR and other USDA AMS products. Furthermore, adjustments to LMR would likely improve market transparency not only in formula trade transactions but also in other fed cattle marketing methods not included in the CCL.

Particularly if our primary suggestion of focusing on LMR enhancement is not implemented, we encourage narrower points outlined in this report specific to CCL administration be considered. These targeted recommendations include:

1. *Add clarity on the role of the CCL*
    - Is the CCL intended to report longer-term contract terms and specifications or is it meant to report evolving short-run market information? Currently, the CCL appears to be doing some of each. LMR is arguably better suited for market information reporting and the CCL for contract terms and specification (premium/discounts, base price source prevalence, etc.) reporting.
2. *Pursue common set of CCL-covered packers to align with LMR*
    - This would enable better joint use of CCL and LMR products and likely reduce confusion and/or incorrect interpretations associated with different packer coverage.
3. *Implement less frequent publishing of CCL data*

[3] As noted in other assessments, we believe "adequacy" of LMR data could be improved by updating data collection forms to align with contemporary fed cattle marketing.

- Most contracts are long-term agreements in which specifications do not change week-to-week. While base price levels, Choice-Select spread, and a few other pricing components in a contract may change weekly, the sources used for these are what is most important for CCL reporting. For example, sources of base prices are unique and useful information reported in the CCL as similarly would be sources for Choice-Select spreads, etc. Regular market reporting of base price levels and changing premiums and discounts are reported elsewhere by USDA (e.g., LM_CT155 and LM_CT169 reports) and are better suited for more comprehensive LMR collection and reporting.
- Furthermore, publishing summarized CCL data less frequently would not make new contract innovations immediately apparent to the public.
- Finally, this would also help reduce tendency of "comparing apples and oranges" across USDA AMS published weekly reports.

4. *Establish, but not necessarily report, minimum volume thresholds to determine whether individual premiums or discounts are published.*
    - This may help posted CCL data better align with actual market activity by alleviating risks of posted information being associated with a small, unrepresentative segment of the described market.

Concluding remarks:

We end by reiterating that complexities of the U.S. fed cattle market are easy to underappreciate. There is ongoing evolution in how cattle are raised, how cattle are valued, how beef is marketed, and how contemporary business is conducted. The broad impacts of these trends enhance economic welfare and correspond with needs for public market reporting to also adapt over time. As decisions are made around the roles and execution details of the CCL, and more broadly, the full suite of USDA products, realities of industry complexity and its dynamic nature should be incorporated into information product designs and reporting —otherwise we fear public efforts to enhance market transparency will fall short.

Assessing the Cattle Contracts Library &

Fed Cattle Market Transparency

I. Background on Cattle Contract Library Origination

The Consolidated Appropriations Act of 2022 directed USDA Agricultural Marketing Service (AMS) to create a Cattle Contracts Library (CCL) Pilot program. As described by AMS (USDA AMS, 2023) the CCL pilot program requires covered[4] packers to provide information on contracts used to purchase cattle, as well as information on the volume of cattle purchases under active contracts. AMS takes information received from packers, aggregates to a national level, and publishes summary data in an on-line dashboard. The stated goals are to increase market transparency, improve price discovery, and provide enhanced contract signals to producers.[5] For additional background, note Ferrier (2023) provides an extended review of how the CCL originated.

A final rule on the CCL program was published by AMS on December 7, 2022. On January 6, 2023 covered packers had to begin submitting required contractual clauses for each active contract. AMS also held listening sessions focused on the CCL both in 2022 before Pilot program initiation and in 2023 after the CCL was launched. More recently on October 4, 2023 AMS announced it "will continue the Cattle Contracts Library Pilot Program in its present form in order to continue reporting vital market information for farmers and ranchers while gathering additional information on the effectiveness of the pilot."[6]

Before diving into specific aspects of the CCL, it is useful to summarize available details on CCL information use. AMS provided data on usage of CCL information as reflected in CCL

[4] Here covered packers are companies that over the immediately preceding five calendar years have slaughtered an average of not less than 5% of fed cattle slaughtered nationally. Importantly, this CCL definition covers fewer packers than are subject to livestock mandatory reporting (LMR). AMS estimated that approximately 40 packing plants operated by 16 companies would be subject to the Pilot program (https://www.federalregister.gov/documents/2022/12/07/2022-26389/cattle-contracts-library-pilot-program).
[5] Additional details including stated goals is available online here: https://www.ams.usda.gov/sites/default/files/media/CCL_ExplanatoryNotes.pdf.
[6] The October 4th announcement is available online here: https://www.ams.usda.gov/content/usda-continues-cattle-contracts-library-pilot-program.

website traffic. The CCL dashboard contains information on five tabs but only information on total views is used here to reduce double-counting users across multiple tabs. Moreover, if the same viewer queries the CCL website 10 times in one month this will appear as 10 views while if five different viewers each query the CCL website twice this would also appear as 10 views. Accordingly, available total views information is beneficial but not a definitive indication of how many industry participants use CCL information or how often repeat users visit the CCL website. Given that context, for the first eight months of CCL availability, there was a combined total of 8,538 views. Total views peaked in late March and early April 2023, likely corresponding with CCL launch and information being relatively new. Total website views in August and September were less than one-third the volume experienced in early April. This decline in total views likely also reflects many CCL data points do not change substantially week-to-week, a point documented in this report.

Given the challenge in cleanly interpreting total website views, it may be helpful to note a couple of other public resources to provide context. Schroeder et al. (2019) noted the web page containing USDA ERS meat price spread information was the second most visited page in the Market and Trade Division of ERS with more than 100,000 visits over the 2016-2017 fiscal year. Similar to the volume of CCL views, as of November 1, 2023, there were 6,786 views in 2023 of Meat Demand Monitor information posted to K-State's AgManager.info website.

II. How AMS Gathers and Disseminates CCL Information

Dashboard Information Tabs

To illustrate the information publicly available from the CCL, we start with the "Main Form," "Base Price Form," "Spec Form," "Premium and Discount (PD) Form," and "Volume Form" data collection instruments that AMS provides covered packers.[7] These five forms outline required fields (categories/variables) and descriptions of each field. Information collected from these five submission forms establishes a baseline of what could possibly be publicly reported by

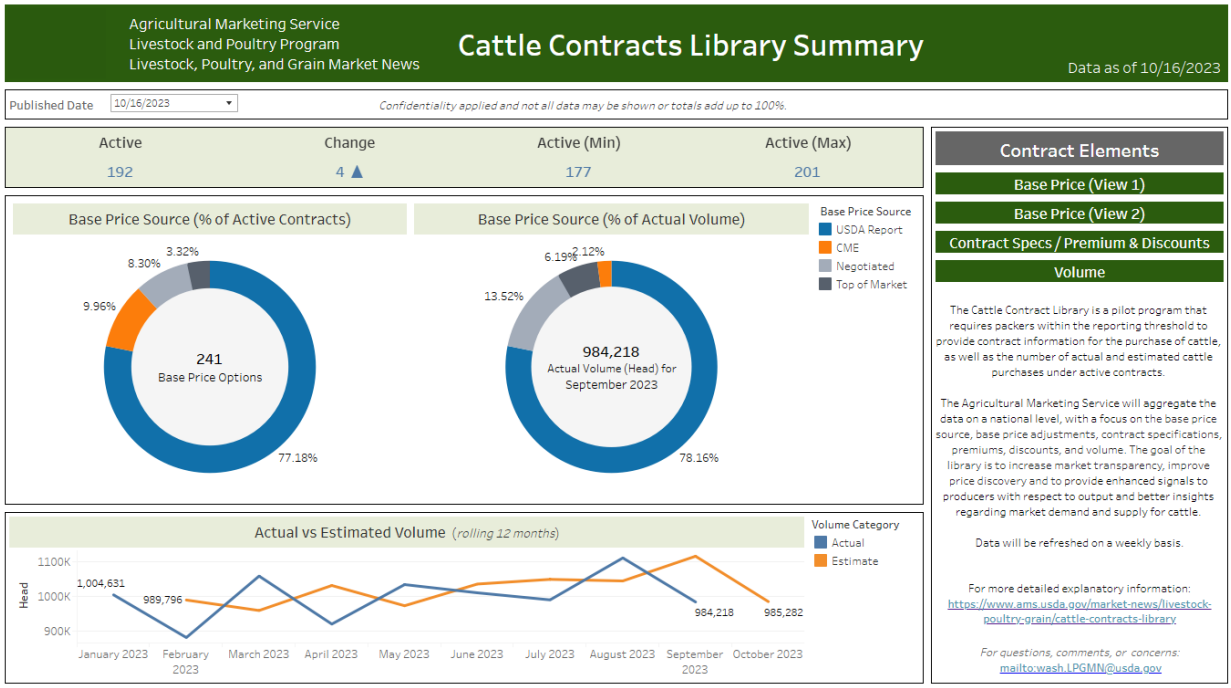
[7] PDF files of these forms are available at:
https://www.ams.usda.gov/sites/default/files/media/LPGMN_CCLFormInfo.pdf

AMS. Ultimately, the weekly CCL data summary AMS publishes ties back to these forms. Figures 2.1-2.5 document dissemination of CCL information published on October 16, 2023. In short, AMS uses data procured from the five forms that covered packers complete and generates publicly available information which is accessible via an online dashboard.[8] Screenshots of the dashboard interfaces are shown in Figures 2.1-2.5.

Figure 2.1 shows the summary home tab of the CCL dashboard. The number of contracts (192 active) is reported. Summary frequency statistics are provided on base price sources for active contracts and volumes of cattle marketed in the previous month. A total of 241 Base Price Options are reported, highlighting one source of differentiation across many covered contracts.[9] Nearly 1 million head of actual volume for September 2023 is reported. More than three-fourths of active contracts reference some USDA AMS published market report to establish a base price. A similar proportion of cattle marketed in September 2023 via CCL contracts used USDA reports as a base price source. During the week ending October 13, 2023 (October 16, 2023 CCL published report), base prices were negotiated for 13.52% of cattle sold in September and 8.30% of active contracts had negotiated base prices. Top of the market established base prices for 6.19% of September cattle were being used in 3.32% of active contracts. Base prices were established by Chicago Mercantile Exchange (CME) prices for 2.12% of cattle marketed in September and in 9.96% of active contracts. Combined, the base price source statistics imply that larger volume (head) contracts were more likely to have base prices negotiated while top of the market and CME based contract base prices likely corresponded with lower volumes. Finally, this tab includes a timeline summary both for actual and estimated volumes, indicating CCL covered volumes by month have varied between 900,000 and 1.1 million head.

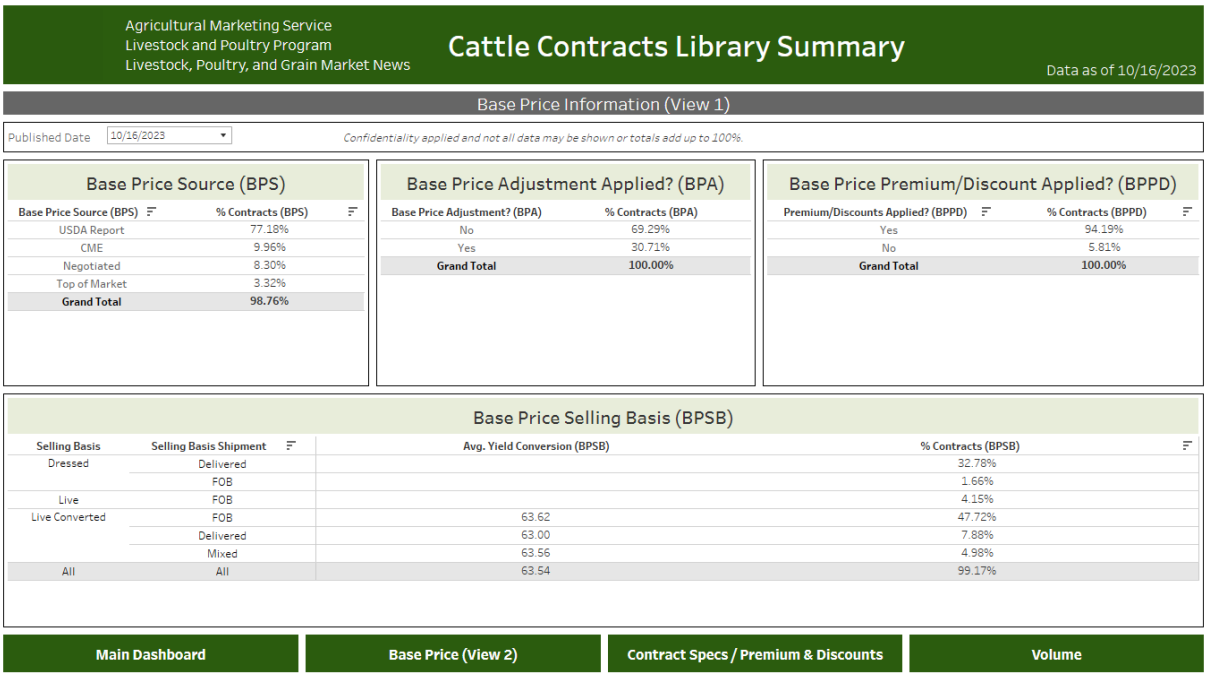
[8] The dashboard is available at: https://mymarketnews.ams.usda.gov/Cattle_Contract_Library
[9] We are not exactly sure how this total is calculated and encourage associated documentation to be added.

Figure 2.1. CCL Dashboard, Summary Tab



The "Base Price (View 1)" tab, shown in Figure 2.2 starts with the same frequency (over contracts rather than head count volume) of base price source information that appears on the Main/Summary tab. Yes/No details on base price adjustments as well as premiums and discounts are provided. For the October 16, 2023 report nearly one-in-three contracts included a base price adjustment and nearly all (94.19%) had a premium or discount applied. The final data conveyed in this tab reports base price selling basis. Nearly one-half of contracts were live converted, FOB, with a yield conversion of 63.62% while about one-third of contracts were specified on a dressed delivered basis. The remaining ~20% of contracts varied dressed, live, or live converted and FOB, delivered, or mixed. Again, this conveys notable diversity in contract specifications building upon the earlier point of there being 241 Base Price Options for 192 active contracts reported in this period.

Figure 2.2. CCL Dashboard, Base Price (View 1) Tab

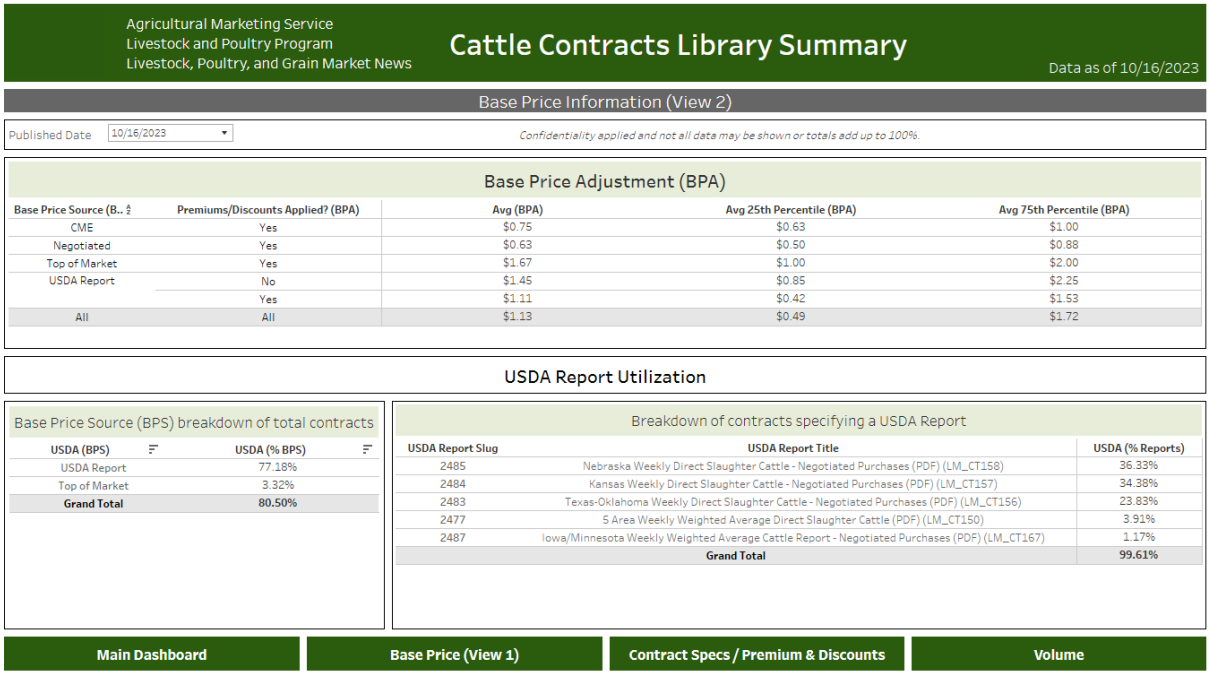


The "Base Price (View 2)" tab shown in Figure 2.3 expands insight on Base Price Adjustments (BPA) reporting average, average 25th percentile, and average 75th percentile values. A key take-home point is the relative value of BPAs, when compared to overall animal value, is modest. That is, in 2023 thru early October as analyzed here the U.S. fed cattle market has traded within the range of $160/cwt to $190/cwt with a general, upward trend in prices. Meanwhile, across all contracts in the CCL for the October 16th period (when fed cattle broadly traded around $185/cwt) the average BPA was $1.13, with the 25th percentile being $0.49 and the 75th percentile being $1.72. Perhaps not surprisingly, the highest average BPA (and highest 25th percentile value) is reported for Top of the Market based contracts. However, note the highest 75th percentile value is reported for USDA based reports without a premium/discount applied. These differences highlight trade-offs faced in base price source selection that likely occur in most periods of contract negotiations.

Figure 2.3. also contains information specific to contracts using a USDA report. Conditionally for the 80.50% in the October 16th period that used a USDA report, over one-third (36.33%) used the Nebraska LM_CT158 report, an additional one-in-three used the Kansas

LM_CT157 report, nearly one-in-four used the TX-OK LM_CT156 report[10], fewer than 4% used the 5 Area 150 report, and only 1.17% used the IA-MN LM_CT167 report. Some may be surprised by these differences in prevalence of use across USDA market reports, given past discussions around negotiated markets for live cattle.

Figure 2.3. CCL Dashboard, Base Price (View 2) Tab



Agricultural Marketing Service
Livestock and Poultry Program
Livestock, Poultry, and Grain Market News

Cattle Contracts Library Summary

Data as of 10/16/2023

Base Price Information (View 2)

Published Date 10/16/2023

Confidentiality applied and not all data may be shown or totals add up to 100%.

Base Price Adjustment (BPA)

Base Price Source (B..	Premiums/Discounts Applied? (BPA)	Avg (BPA)	Avg 25th Percentile (BPA)	Avg 75th Percentile (BPA)
CME	Yes	$0.75	$0.63	$1.00
Negotiated	Yes	$0.63	$0.50	$0.88
Top of Market	Yes	$1.67	$1.00	$2.00
USDA Report	No	$1.45	$0.85	$2.25
	Yes	$1.11	$0.42	$1.53
All	All	$1.13	$0.49	$1.72

USDA Report Utilization

Base Price Source (BPS) breakdown of total contracts

USDA (BPS)	USDA (% BPS)
USDA Report	77.18%
Top of Market	3.32%
Grand Total	**80.50%**

Breakdown of contracts specifying a USDA Report

USDA Report Slug	USDA Report Title	USDA (% Reports)
2485	Nebraska Weekly Direct Slaughter Cattle - Negotiated Purchases (PDF) (LM_CT158)	36.33%
2484	Kansas Weekly Direct Slaughter Cattle - Negotiated Purchases (PDF) (LM_CT157)	34.38%
2483	Texas-Oklahoma Weekly Direct Slaughter Cattle - Negotiated Purchases (PDF) (LM_CT156)	23.83%
2477	5 Area Weekly Weighted Average Direct Slaughter Cattle (PDF) (LM_CT150)	3.91%
2487	Iowa/Minnesota Weekly Weighted Average Cattle Report - Negotiated Purchases (PDF) (LM_CT167)	1.17%
	Grand Total	**99.61%**

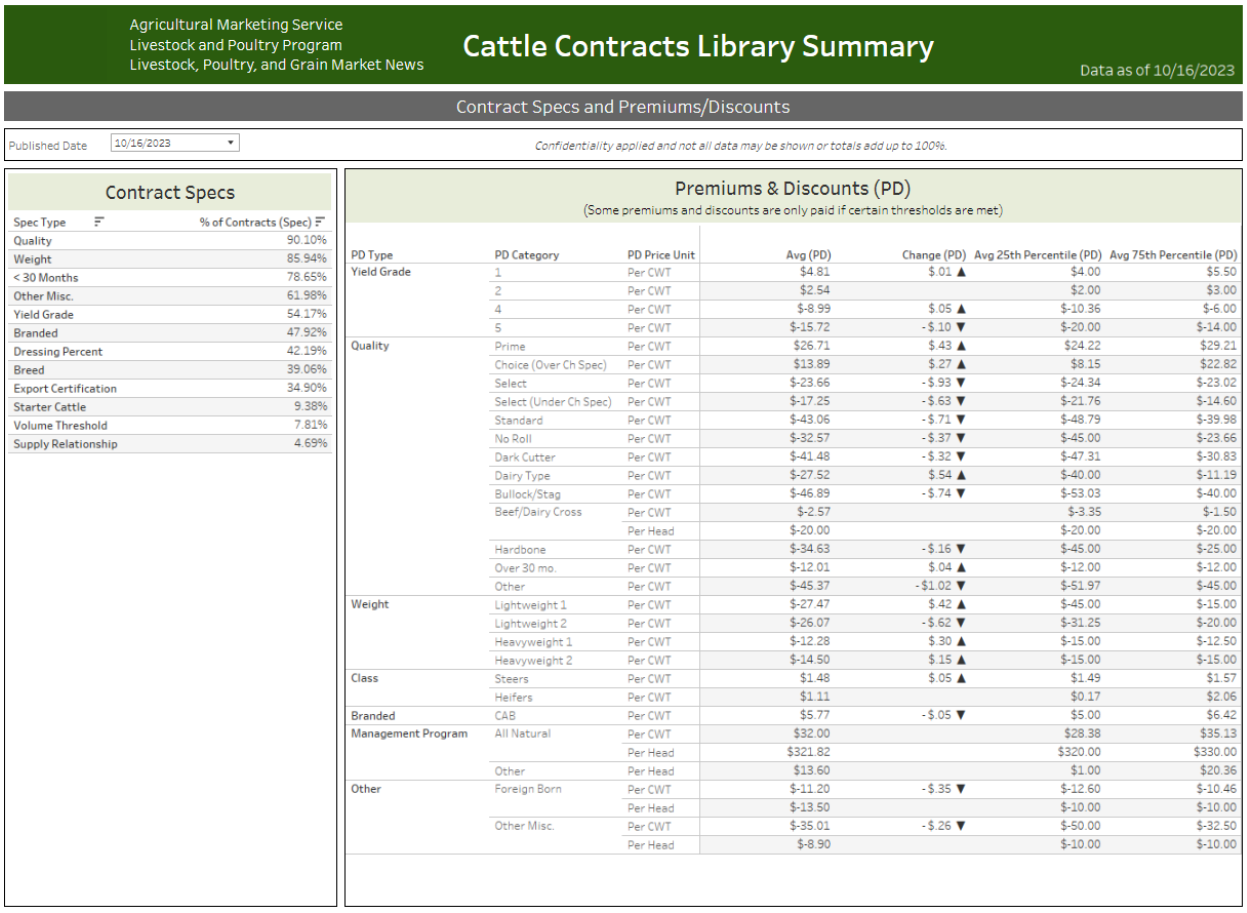
Main Dashboard | Base Price (View 1) | Contract Specs / Premium & Discounts | Volume

The fourth CCL tab contains several details that AMS obtains from the "Spec Form" and "Premium and Discount (PD) Form" completed by covered packers. Figure 2.4 shows that for October 16, 2023 CCL report the majority of contracts included a Quality, Weight, <30 Months, Other Misc., and Yield Grade specification. Further, over one-in-three contracts included either Branded, Dressing Percentage, Breed, or Export Certification. Combined, the wide and varied inclusion of the 12 specification types listed here again conveys notable differentiation in covered contracts. This also documents most contracts contain multiple specifications. However, there is no current way to ascertain what combinations of specifications might exist in a single contract. These points are discussed in more detail later in this report.

[10] Note that LM_CT156 is referenced elsewhere by USDA AMS (and in this report) as the Texas/Oklahoma/New Mexico (or TX/OK/NM) report.

This CCL tab also outlines whether premiums and discounts (PD) apply on a per cwt (most common) or per head basis and reports average PD, average 25th percentile PD values, and average 75th percentile PD values. For instance, the average premium for CAB was $5.77/cwt with 50% of contracts falling between $5.00/cwt and $6.42/cwt.

Figure 2.4. CCL Dashboard, Contract Specs/Premium & Discount Tab



Agricultural Marketing Service
Livestock and Poultry Program
Livestock, Poultry, and Grain Market News

Cattle Contracts Library Summary

Data as of 10/16/2023

Contract Specs and Premiums/Discounts

Published Date 10/16/2023

Confidentiality applied and not all data may be shown or totals add up to 100%.

Contract Specs

Spec Type	% of Contracts (Spec)
Quality	90.10%
Weight	85.94%
< 30 Months	78.65%
Other Misc.	61.98%
Yield Grade	54.17%
Branded	47.92%
Dressing Percent	42.19%
Breed	39.06%
Export Certification	34.90%
Starter Cattle	9.38%
Volume Threshold	7.81%
Supply Relationship	4.69%

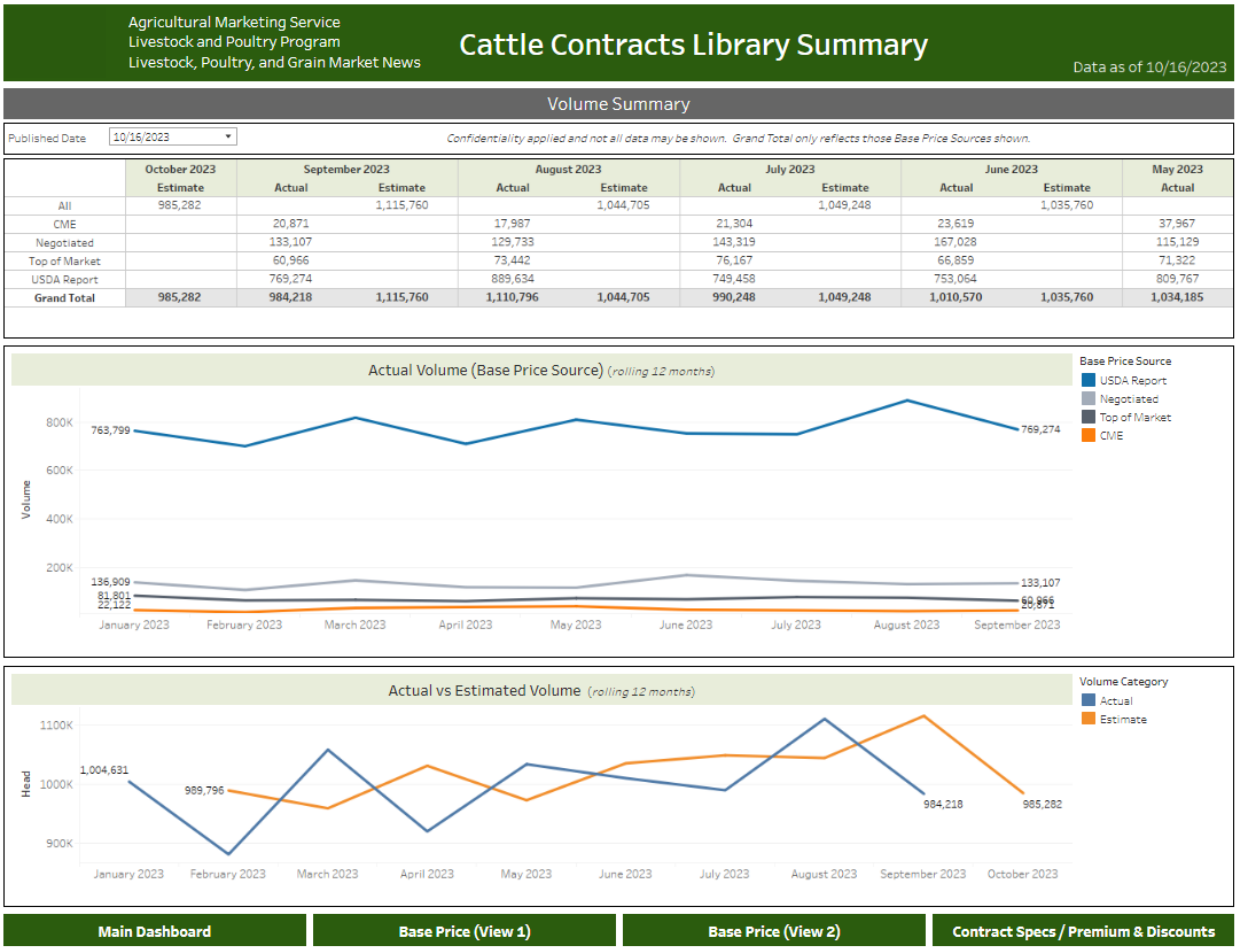
Premiums & Discounts (PD)

(Some premiums and discounts are only paid if certain thresholds are met)

PD Type	PD Category	PD Price Unit	Avg (PD)	Change (PD)	Avg 25th Percentile (PD)	Avg 75th Percentile (PD)
Yield Grade	1	Per CWT	$4.81	$.01 ▲	$4.00	$5.50
	2	Per CWT	$2.54		$2.00	$3.00
	4	Per CWT	$-8.99	$.05 ▲	$-10.36	$-6.00
	5	Per CWT	$-15.72	-$.10 ▼	$-20.00	$-14.00
Quality	Prime	Per CWT	$26.71	$.43 ▲	$24.22	$29.21
	Choice (Over Ch Spec)	Per CWT	$13.89	$.27 ▲	$8.15	$22.82
	Select	Per CWT	$-23.66	-$.93 ▼	$-24.34	$-23.02
	Select (Under Ch Spec)	Per CWT	$-17.25	-$.63 ▼	$-21.76	$-14.60
	Standard	Per CWT	$-43.06	-$.71 ▼	$-48.79	$-39.98
	No Roll	Per CWT	$-32.57	-$.37 ▼	$-45.00	$-23.66
	Dark Cutter	Per CWT	$-41.48	-$.32 ▼	$-47.31	$-30.83
	Dairy Type	Per CWT	$-27.52	$.54 ▲	$-40.00	$-11.19
	Bullock/Stag	Per CWT	$-46.89	-$.74 ▼	$-53.03	$-40.00
	Beef/Dairy Cross	Per CWT	$-2.57		$-3.35	$-1.50
		Per Head	$-20.00		$-20.00	$-20.00
	Hardbone	Per CWT	$-34.63	-$.16 ▼	$-45.00	$-25.00
	Over 30 mo.	Per CWT	$-12.01	$.04 ▲	$-12.00	$-12.00
	Other	Per CWT	$-45.37	-$1.02 ▼	$-51.97	$-45.00
Weight	Lightweight 1	Per CWT	$-27.47	$.42 ▲	$-45.00	$-15.00
	Lightweight 2	Per CWT	$-26.07	-$.62 ▼	$-31.25	$-20.00
	Heavyweight 1	Per CWT	$-12.28	$.30 ▲	$-15.00	$-12.50
	Heavyweight 2	Per CWT	$-14.50	$.15 ▲	$-15.00	$-15.00
Class	Steers	Per CWT	$1.48	$.05 ▲	$1.49	$1.57
	Heifers	Per CWT	$1.11		$0.17	$2.06
Branded	CAB	Per CWT	$5.77	-$.05 ▼	$5.00	$6.42
Management Program	All Natural	Per CWT	$32.00		$28.38	$35.13
		Per Head	$321.82		$320.00	$330.00
	Other	Per Head	$13.60		$1.00	$20.36
Other	Foreign Born	Per CWT	$-11.20	-$.35 ▼	$-12.60	$-10.46
		Per Head	$-13.50		$-10.00	$-10.00
	Other Misc.	Per CWT	$-35.01	-$.26 ▼	$-50.00	$-32.50
		Per Head	$-8.90		$-10.00	$-10.00

The final CCL tab conveys volume information as shown in Figure 2.5. Initial volume estimates for all CCL contracts in the current month are reported (985,282 here). This is supplemented with historical data, both for initial estimates and later actual reported volumes for each of the past four months. Beyond these aggregate volume details, statistics based on previous month actual volume by base price source are included to provide historical context for reference in reviewing base price information available in other CCL tabs.

Figure 2.5. CCL Dashboard, Volume Tab



	October 2023	September 2023		August 2023		July 2023		June 2023		May 2023
	Estimate	Actual	Estimate	Actual	Estimate	Actual	Estimate	Actual	Estimate	Actual
All	985,282		1,115,760		1,044,705		1,049,248		1,035,760	
CME		20,871		17,987		21,304		23,619		37,967
Negotiated		133,107		129,733		143,319		167,028		115,129
Top of Market		60,966		73,442		76,167		66,859		71,322
USDA Report		769,274		889,634		749,458		753,064		809,767
Grand Total	**985,282**	**984,218**	**1,115,760**	**1,110,796**	**1,044,705**	**990,248**	**1,049,248**	**1,010,570**	**1,035,760**	**1,034,185**

Overall, the CCL dashboard is an effective, easy to use, and relatively straightforward way to summarize contract information in informative ways while maintaining confidentiality of individual contract information. Important drivers of the value of market information include accessibility and interpretability of reported data that the dashboard provides. We applaud AMS for figuring out a way to take complex, disparate contract details and condensing reported information in a succinct manner. Although as we highlight elsewhere, reporting information contained in the CCL is not without concerns. What AMS has developed and published in response to federal legislation is overall commendable. Sentiments we have heard about listening sessions AMS held with industry stakeholders during design of the CCL reflect that these sessions were appreciated and AMS was responsive to stakeholder concerns raised. There are several ways the CCL dashboard information might be used as noted in this report,

but as researchers we especially value and use the downloadable summary data of all past CCL reports in Excel format available with a single click in the dashboard.

As with many new data products, longer-run value of information contained in the CCL increases as data are analyzed over time so trends, ranges, and variation can be evaluated. Our ability to complete this report benefited from having even a relatively short time series data set available from the 37 weekly CCL report data available. We anticipate AMS recognizes the value of both the dashboard frameworks as well as archiving easy to access historical data as a model to consider for other on-line published market information products.

Explanatory Notes

The CCL contains "Explanatory Notes" that are immensely helpful for users to better understand information contained in the CCL Dashboard.[11] The notes are, for the most part, clearly written and easy to understand. However, several details reported in the CCL Dashboard could use more explanation in the Explanatory Notes to be more interpretable for Dashboard users. In particular, the following recommendations are made to enhance the Explanatory Notes.

Base Price

1. *Top of Market* is defined on page 2 of the Explanatory Notes. However, it is unclear whether *Top of Market* refers to a price range on a specific USDA market report or something else such as plant or packer specific *Top of Market* price paid. The source or types of sources used in establishing *Top of Market* could be outlined in the Notes. *Top of Market* itself does not sound like a Base Price Source *per se* but rather which price to use from an unidentified source or sources.
2. *Base Price (Adjustment Value)* is defined on page 4 of Explanatory Notes and the average and percentile adjustments are tabulated in the dashboard. However, we do

[11] These CCL Explanatory Notes are published online at: https://www.ams.usda.gov/sites/default/files/media/CCL_ExplanatoryNotes.pdf

not see either in the dashboard or the Notes whether price adjustments are live-or dressed-weight. The units on reported adjustment values need to be delineated and we recommend they be identified in both the dashboard and the Explanatory Notes.

Contract Specs and Premiums/Discounts

3. In the Quality section several items could use clarification in the Notes:
   a. *Choice (Over Ch Spec)* is not meaningful unless the percentage of Choice and above is identified and if it varies then this is even more evidence of the problem with interpreting this category. At the very least, reporting the average and range of Choice percentages being used in the Notes and the Dashboard would be advised. Depending on how large this range is, this may make interpretation of this premium more, or less, meaningful.[12]
   b. Select (Under Ch Spec) same issue as *Choice (Over Ch Spec).*
   c. *Other* in this section has a large price discount, but what this category constitutes is not described in the Notes. As a result, this quality category is largely meaningless and leaves one to speculate on what it represents. We recommend examples of what *Other* includes be listed in the Notes and updated over time as prudent.

4. *Weight* has four categories of *Lightweight1, Lightweight2, Heavyweight1*, *Heavyweight2.* As presented and defined they are too vague to be useful. We recommend the range of weights these designations represent be indicated in the Notes.

III. Deeper Look at Information Provided by CCL: Assessment throughout 2023 and Comparison to LMR Reported Information

The presentation above documents weekly information reported by AMS in the CCL. Of additional interest is how CCL reported information has varied since initiation in early 2023 and how this information compares to data provided in the pre-existing LMR information AMS

[12] Note this aligns with regression relationships of CCL and 5-Area USDA reports discussed in the next chapter.

provides. Specifically, the LM_CT150 report ("5-Area Weekly Weighted Average Direct Slaughter Cattle") report provides head count, weight range, price range, average weight, and weighted average price information for different cattle and sales groupings (i.e., Steers-Live FOB, Heifers-Dressed Delivered) but no information on premiums and discounts – in this assessment we use the phrase "5-Area 150" when referencing LM_CT150 information. Meanwhile, the LM_CT169 report ("5-Area Weekly Weighted Average Direct Slaughter Cattle Premium and Discounts") report provides range, weighted average, and change vs prior week information for different value adjustments (i.e., Prime, Choice, CAB, Yield Grade, Weight). Accordingly, we use "5-Area 169" to reference information related to premiums and discounts from LM_CT169.

We use the 5-Area 150 and 5-Area 169 information as our main points of comparison with CCL information published on a national level.[13] Accordingly, we move beyond individual week examination to document trends over the January-September 2023 period with an additional focus on how certain categories compare with 5-Area information.

Table 3.1 lists the premium/discount categories published in the CCL and the 5-Area 169 report. There are multiple examples of overlapping categories (e.g., All Natural, Quality, Yield Grade, Weight) as well as situations where the CCL provides information on categories not reported in the 5-Area 169 report (e.g., additional Management Program detail, breakouts of "Other"). Also noteworthy is that even in cases of a category being common to both the CCL and 5-Area 169 report, there are important differences in approach. Namely, exact thresholds used vary in several cases. The Quality distinctions of Choice and Select differ, the level of specificity in Yield Grade differ, and the approach to Weight categories differ.

[13] As noted later in this study, there are a multitude of LMR based reports we could make comparisons to. Two of note are the National Weekly Direct Slaughter Cattle – Premiums and Discounts report (LM_CT155) that is available for additional premium/discount comparison and the National Weekly Direct Slaughter Cattle – Formulated and forward Contract report (LM_CT151). Here we primarily use the LM_CT169 report, and the included weighted average values because weighted-average premiums and discounts across grids are less apt to be heavily influenced by outliers compared to simple averages. In a few cases we use the LM_CT150 report for comparison to some negotiated trade points of interest.

Table 3.1. List of Premium/Discount Categories in CCL and 5-Area 169 Report

P/D Type	Cattle Contracts Library	5-Area Direct Slaughter
Management Program	All Natural	All Natural
Quality	Bullock/Stag	Bullock/Stag
Branded	CAB	CAB
Quality	Dairy Type	Dairy - Type
Quality	Dark Cutter	Dark Cutter
Quality	Hardbone	Hardbone
Quality	Over 30 mo.	Over 30 Months of Age
Quality	Prime	Prime
Quality	Choice (Over Ch Spec)	
Quality		Choice
Quality	Select (Under Ch Spec)	
Quality	Select	Select
Quality	Standard	Standard
Yield Grade	1	1.0-2.0 < .10"
Yield Grade		2.0-2.5 < .20"
Yield Grade		2.5-3.0 < .40"
Yield Grade	2	
Yield Grade		3.0-3.5 < .60"
Yield Grade		3.5-4.0 < .80"
Yield Grade	4	4.0-5.0 < 1.2"
Yield Grade	5	5.0/up > 1.2"
Weight		400-500 lbs
Weight		500-550 lbs
Weight		550-600 lbs
Weight		600-900 lbs
Weight		900-1000 lbs
Weight		1000-1050 lbs
Weight		over 1050 lbs
Weight	Lightweight 1	
Weight	Lightweight 2	
Weight	Heavyweight 1	
Weight	Heavyweight 2	
Quality		NHTC
Class	Heifers	
Class	Steers	
Management Program	Other	
Other	Beta Agonist Free	
Other	Foreign Born	
Other	Other Misc.	
Quality	Beef/Dairy Cross	
Quality	No Roll	
Quality	Other	

Note: Outdated 5-Area 169 Categories omitted: Weight 900-950 lbs, 950-1000 lbs, over 1000 lbs; Hide Brand Location; Quality Average Choice or Better

While Table 3.1 lists premium/discount (PD) categories available for comparison, it is important to go further and examine reported values. Table 3.2 provides statistics on PD values reported separately in the CCL and the 5-Area 169 report. This provides a summary of average PD values as well as how these have varied over time, rather than just across contracts for a given point in time such as in Figure 2.4.

Consider CAB (3rd row of Table 3.2). The average of weekly average CAB premiums in the CCL for January 31st – October 9th was $5.24/cwt; the average of weekly CCL reported 25th (75th) percentile premiums for CAB was $4.04/cwt ($6.13/cwt); and the standard deviation across weeks of the weekly CCL-reported CAB average premium was $0.36/cwt. For the same period in the 5-Area 169 report average CAB premiums were $4.47cwt and ranged between a minimum of $2.97/cwt and maximum of $7.35/cwt. To show reported CAB premium information over time and across USDA reporting source, Figures 3.1 and 3.2 are included. Consistent with the higher standard deviation shown in Table 3.2., there appears to be more variability in the CAB premium reported in the 5-Area 169 report. One however must be careful to not overreact in comparing extreme range values from the 5-Area 169 report with interquartile range values from the CCL as that represents two different statistics.[14] [15]

Given the diversity of CCL covered contracts noted earlier, it is useful to look at several premiums/discounts. Figures 3.3-3.14 provide parallel information for Prime, Select, Standard, Hardbone, All Natural, and Yield Grade 1. Across these figures several things are revealed. There are cases where very little variation occurs over time (in average and/or interquartile statistics) and others where there is noteworthy temporal variation, if not week-to-week, and at least month-to-month. For instance, premiums for Prime (except for minimums reported in

[14] This aligns with past comments such as those by Schroeder and Tonsor (2017) and Tonsor (2021) that showing interquartile or similar percentile ranges rather than minimum and maximum statistics may better illustrate price variation with less sensitivity to extreme outliers that may not be representative of broader trade patterns.
[15] We also briefly note large differences in beef-dairy cross premium/discount conclusions follow from using CCL and 5-Area 169 information. Consistent with Schroeder, Tonsor, and Coffey (2023) this remains an area for additional assessment, across multiple USDA AMS programs, given changes in the role of dairy animals in the U.S. beef industry.

5-Area 169 report) vary week-to-week. Conversely, PD values for Hardbone, All Natural, and Yield Grade 1 exhibit little or no week-to-week variation.

Table 3.2. Statistical Comparison of Premium/Discount Information in CCL and 5-Area 169 Reports, January 31 – October 9, 2023

P/D Category	Cattle Contracts Library				5-Area Direct Slaughter			
	Mean	Std. Dev	Avg 25th Pct	Avg 75th Pct	Mean	Std. Dev	Avg Min	Avg Max
Premium/Discount ($/cwt)								
All Natural	32.00	0.00	28.38	35.13	31.19	0.24	24.00	44.65
Bullock/Stag	-45.77	1.88	-52.42	-40.00	-37.89	0.00	-55.00	-25.00
CAB	5.24	0.36	4.04	6.13	4.47	0.45	2.97	7.35
Dairy - Type	-28.42	0.55	-40.03	-11.58	-4.44	0.00	-14.00	0.00
Dark Cutter	-40.44	1.62	-46.40	-31.08	-36.85	0.00	-55.00	-30.00
Hardbone	-34.11	1.80	-45.00	-23.17	-35.78	2.08	-55.00	-20.00
Over 30 Months of Age	-11.99	0.05	-12.00	-12.00	-16.68	0.00	-40.00	-10.00
Prime	25.05	1.70	21.24	28.21	17.66	1.61	0.00	29.92
Choice (Over Ch Spec)	12.13	3.55	6.82	19.60				
Choice					0.00	0.00	0.00	0.00
Select (Under Ch Spec)	-14.82	4.52	-18.33	-12.35				
Select	-20.45	5.38	-21.92	-18.81	-20.49	5.22	-24.97	-14.14
Standard	-41.69	2.16	-47.76	-35.78	-33.19	4.66	-45.00	-21.51
YG 1.0-2.0 < .10"	4.93	0.08	4.00	6.01	5.05	0.00	4.00	8.00
YG 2.0-2.5 < .20"					2.16	0.00	2.00	3.00
YG 2.5-3.0 < .40"					1.97	0.00	0.00	2.50
YG 2.0-3.0	2.60	0.05	2.00	3.00				
YG 3.0-3.5 < .60"					0.00	0.00	0.00	0.00
YG 3.5-4.0 < .80"					0.00	0.00	0.00	0.00
YG 4.0-5.0 < 1.2"	-9.07	0.09	-10.35	-6.00	-10.33	0.17	-15.00	-8.00
YG 5.0/up > 1.2"	-15.49	0.11	-19.07	-13.57	-14.94	0.68	-19.19	-10.00
400-500 lbs					-36.55	0.00	-45.00	-15.00
500-550 lbs					-25.13	0.00	-45.00	-12.00
550-600 lbs					-3.48	0.03	-15.00	0.00
600-900 lbs					0.00	0.00	0.00	0.00
900-1000 lbs					-0.77	0.00	-15.00	0.00
1000-1050 lbs					-2.73	0.00	-15.00	0.00
over 1050 lbs					-16.67	0.00	-25.00	-10.00
Lightweight 1	-27.72	0.65	-45.00	-15.00				
Lightweight 1	-25.54	0.22	-27.49	-20.22				
Heavyweight 1	-12.63	0.12	-15.00	-12.50				
Heavyweight 2	-14.37	0.14	-15.00	-15.00				
NHTC					22.43	0.00	19.00	26.00
Heifers	1.59	0.27	0.88	2.77				
Steers	1.42	0.01	1.25	1.57				
Foreign Born	-10.36	0.21	-12.58	-10.00				
Other Misc.	-34.48	0.82	-47.74	-30.09				
Beef/Dairy Cross	-2.73	0.29	-3.62	-1.68				
No Roll	-31.41	2.63	-45.00	-21.68				
Quality-Other	-43.76	2.45	-49.71	-44.03				
Premium/Discount ($/head)								
All Natural	316.68	4.69	312.97	330.00				
Management Program-Other	13.60	0.00	1.00	20.36				
Beta Agonist Free[a]	14.23	0.11	13.99	15.00				
Foreign Born	-13.22	0.24	-10.00	-10.00				
Other Misc.[b]	-8.90	0.00	-10.00	-10.00				
Beef/Dairy Cross	-20.00	0.00	-20.00	-20.00				

Note: [a] Missing values after August 7th. [b] Missing values January 31st and February 26th . N=37; Outdated 5-Area 169 Categories omitted: Weight 900-950 lbs, 950-1000 lbs, over 1000 lbs; Hide Brand Location; Quality Average Choice or Better

Figure 3.1. CAB Premium in CCL, January 31 – October 9, 2023

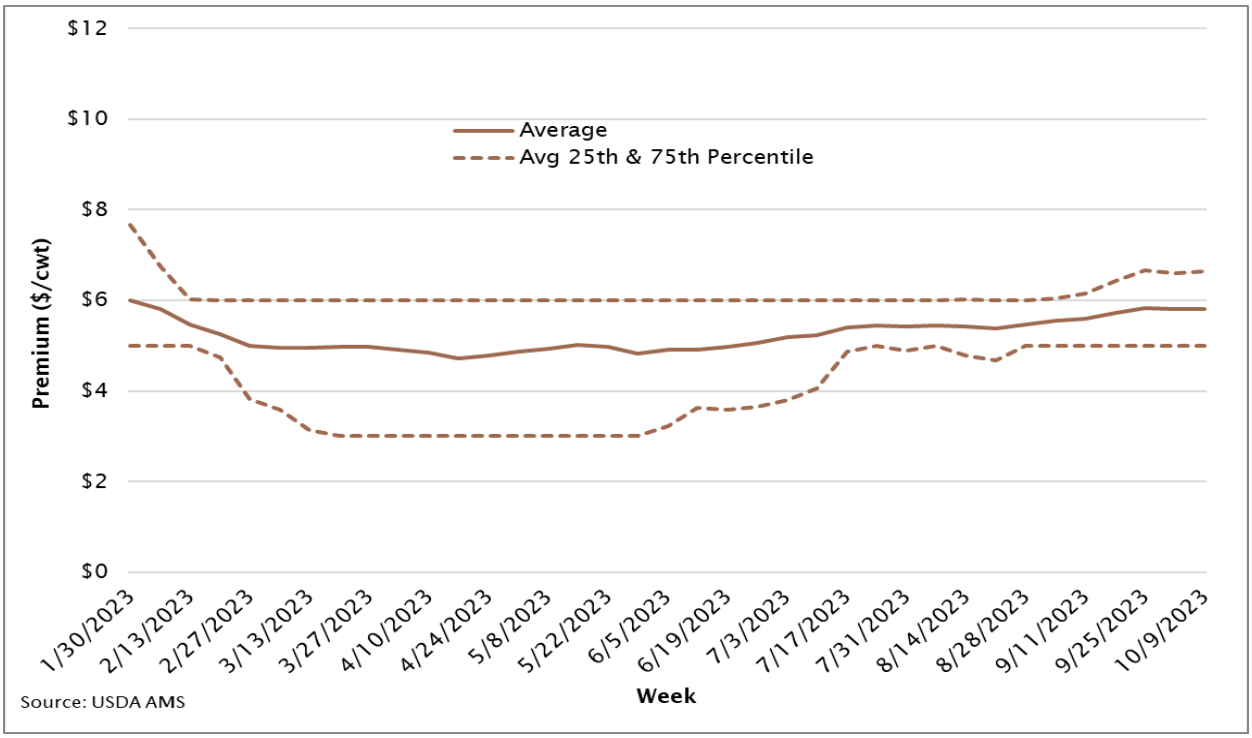


Figure 3.2. CAB Premium in 5-Area 169 Report, January 31 – October 9, 2023

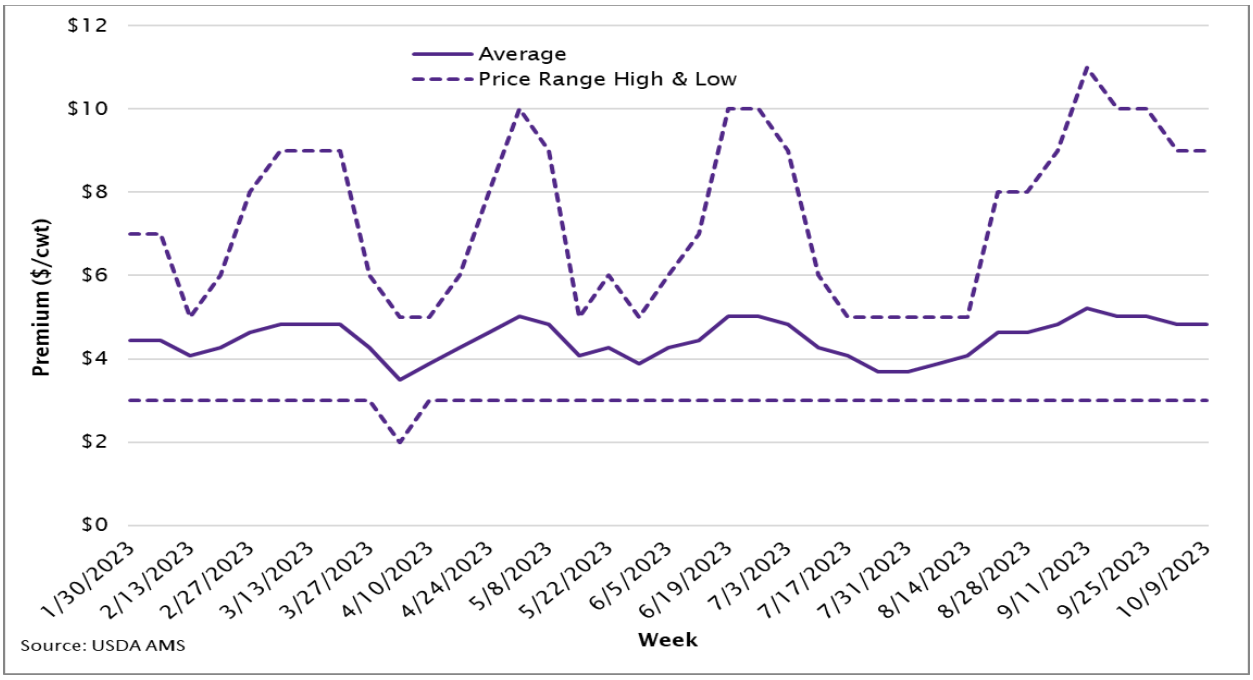


Figure 3.3. Prime Premium in CCL, January 31 – October 9, 2023

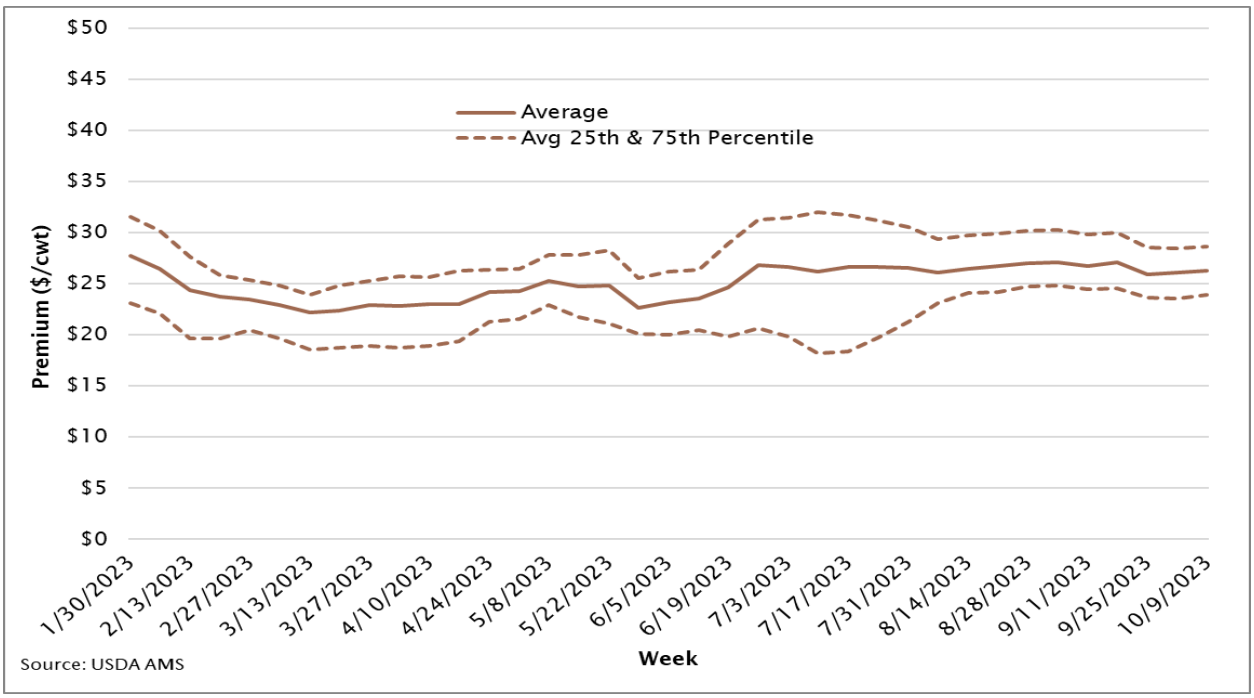


Figure 3.4. Prime Premium in 5-Area 169 Report, January 31 – October 9, 2023

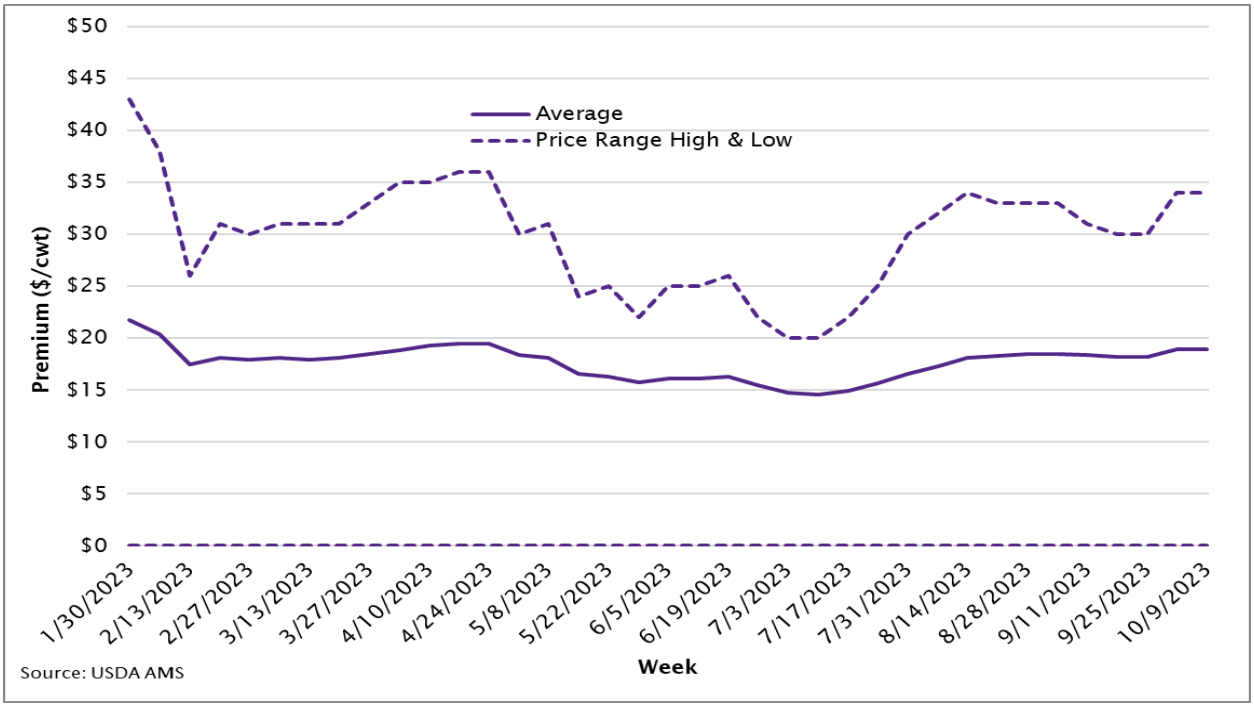


Figure 3.5. Select Discount in CCL, January 31 – October 9, 2023

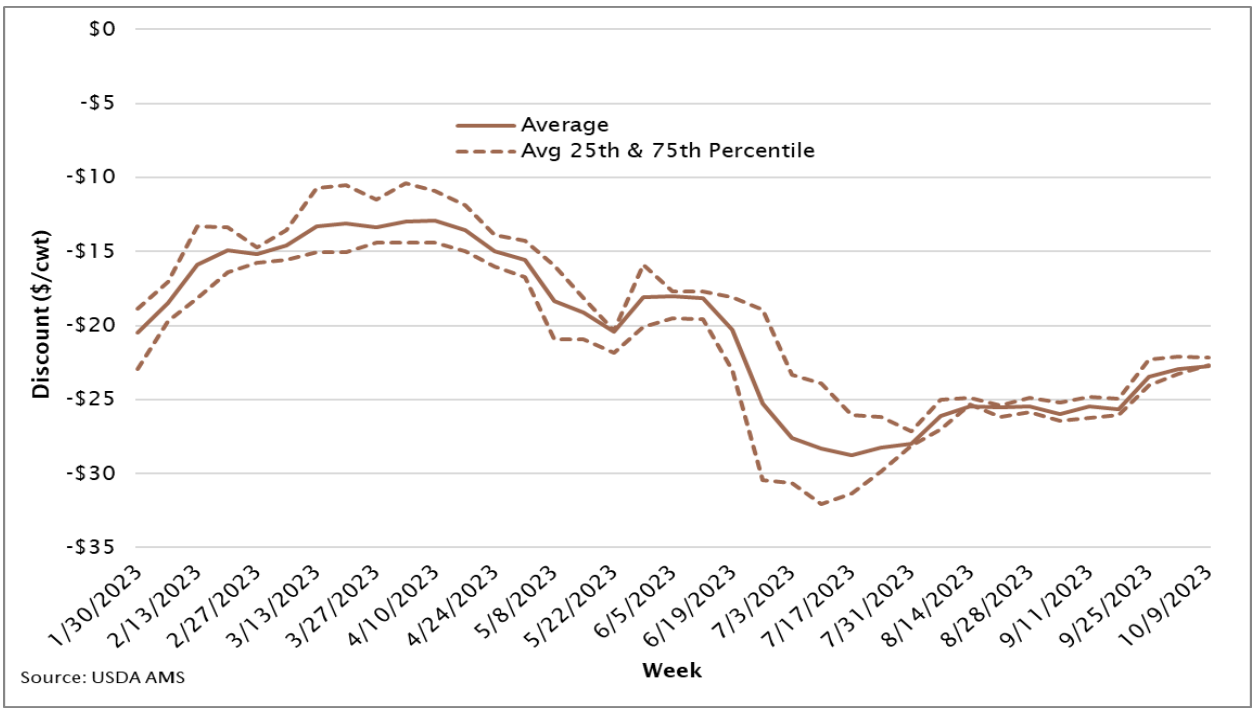


Figure 3.6. Select Discount in 5-Area 169 Report, January 31 – October 9, 2023

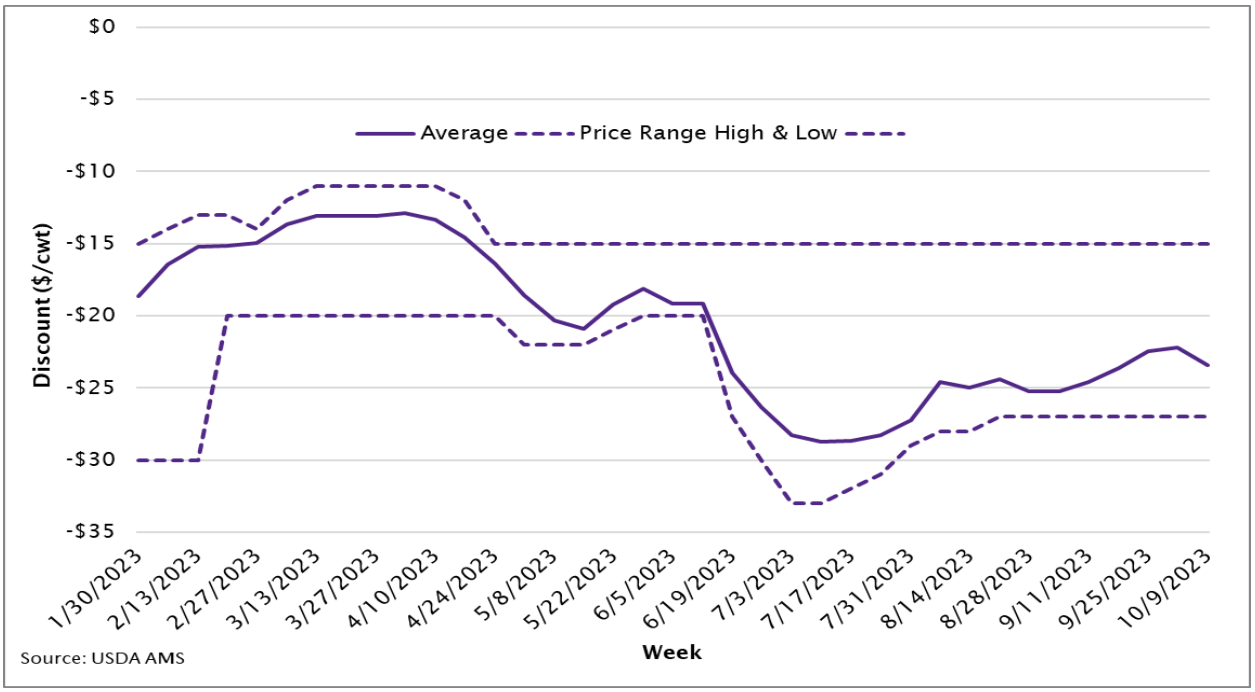


Figure 3.7. Standard Discount in CCL, January 31 – October 9, 2023

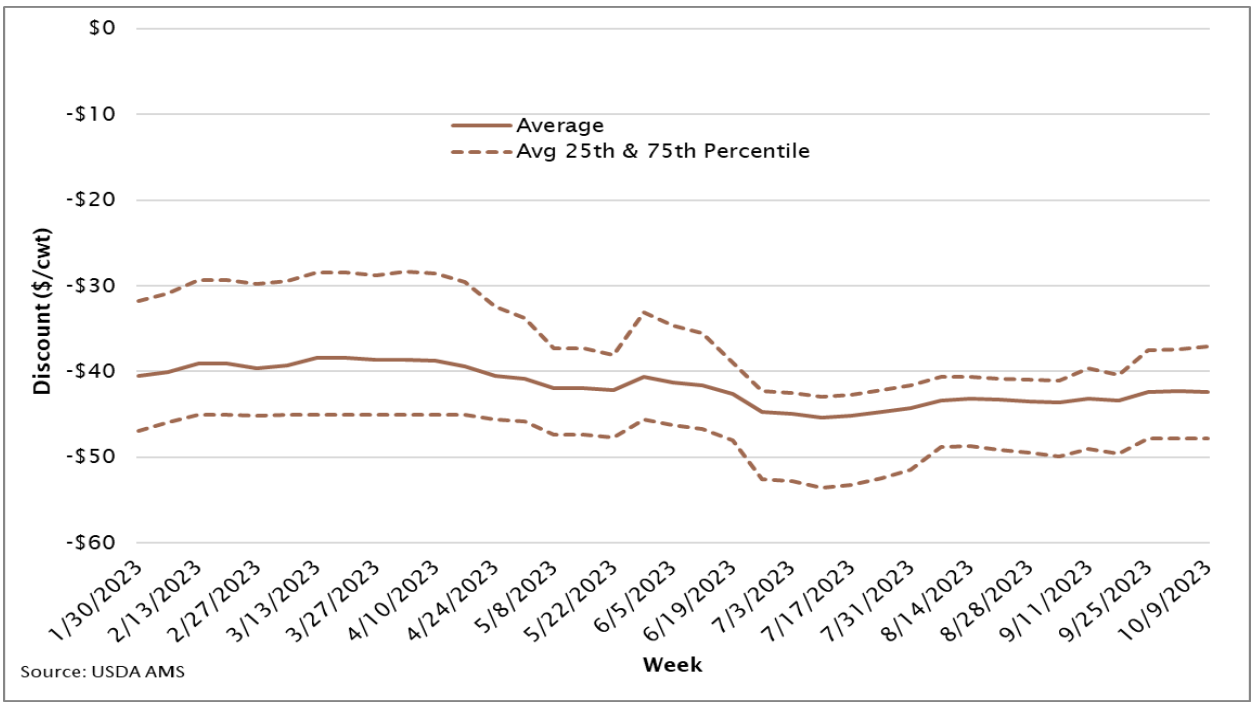


Figure 3.8. Standard Discount in 5-Area 169 Report, January 31 – October 9, 2023

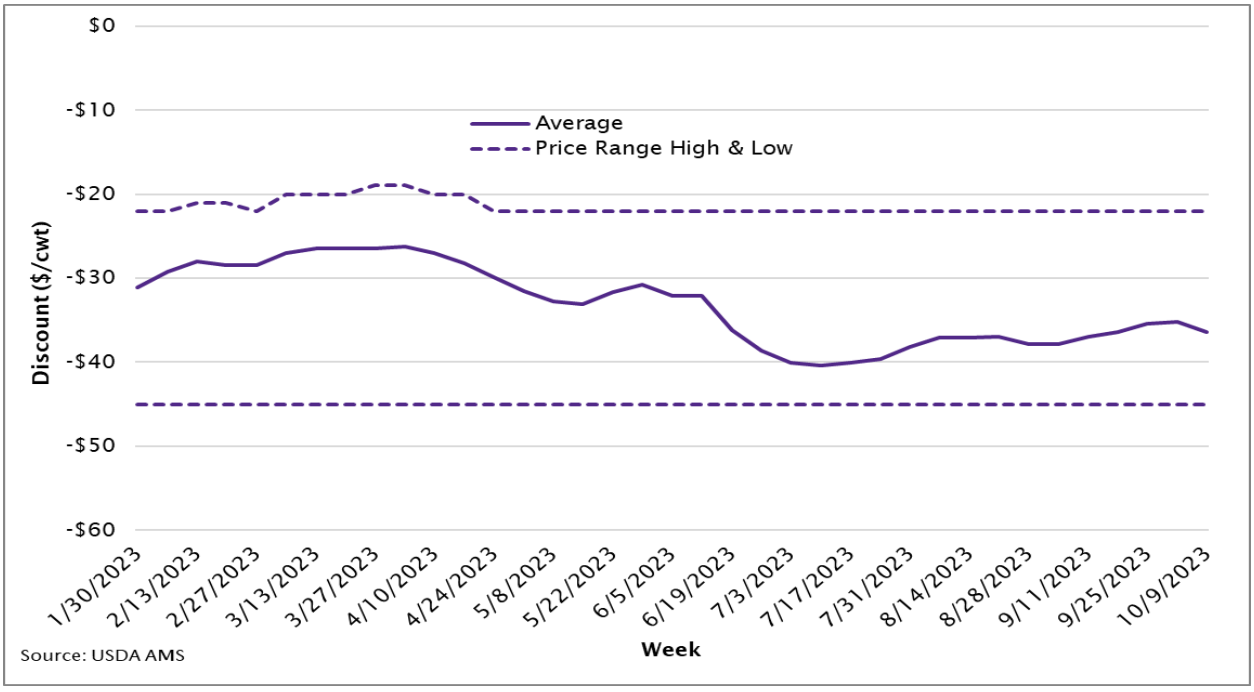


Figure 3.9. Hardbone Discount in CCL, January 31 – October 9, 2023

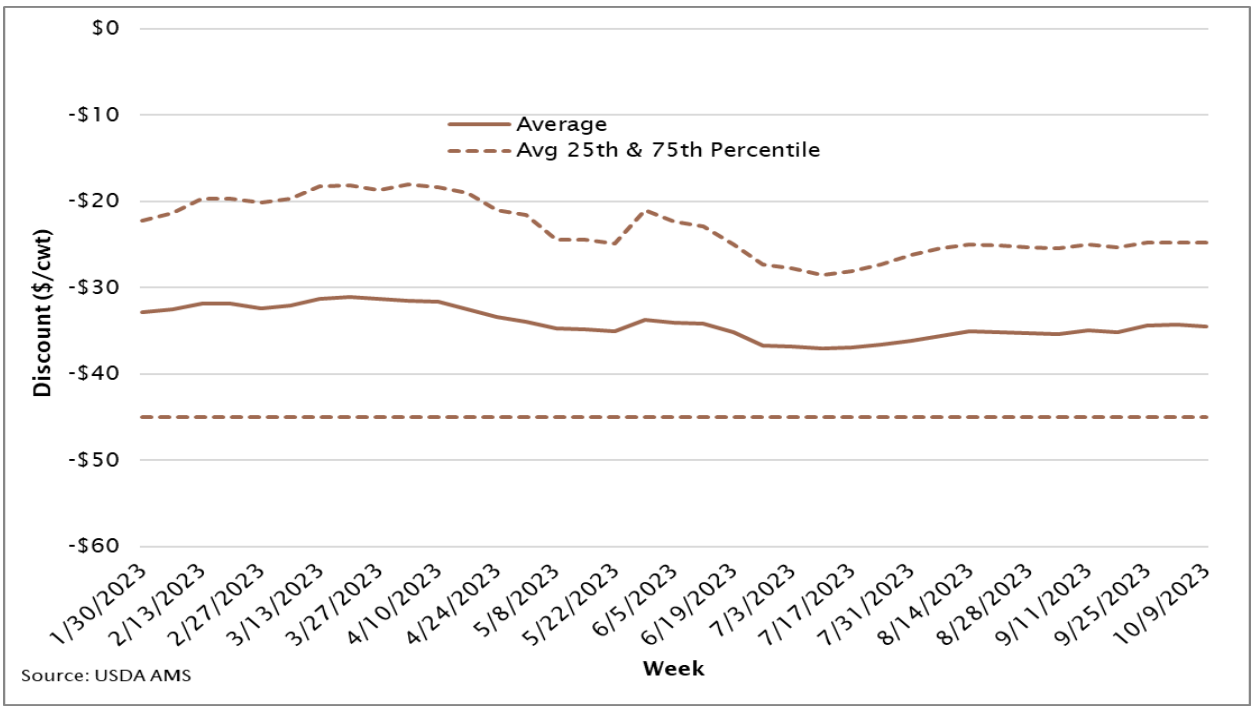


Figure 3.10. Hardbone Discount in 5-Area 169 Report, January 31 – October 9, 2023

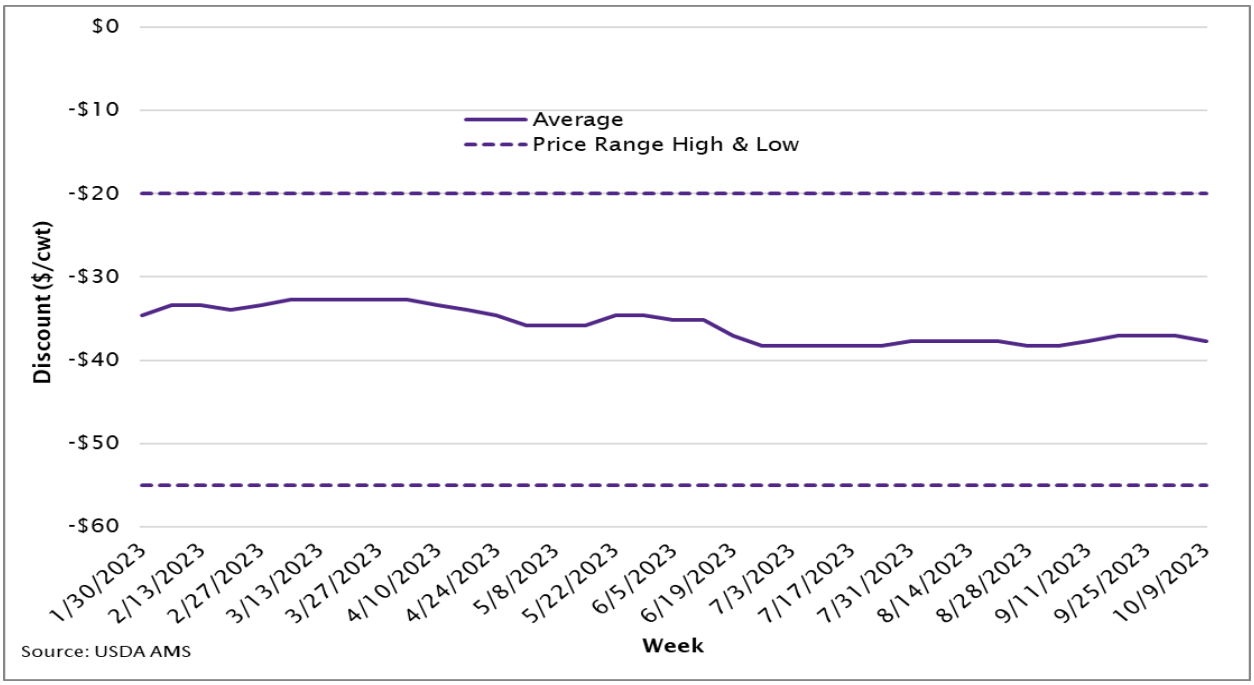


Figure 3.11. All Natural Premium in CCL, January 31 – October 9, 2023

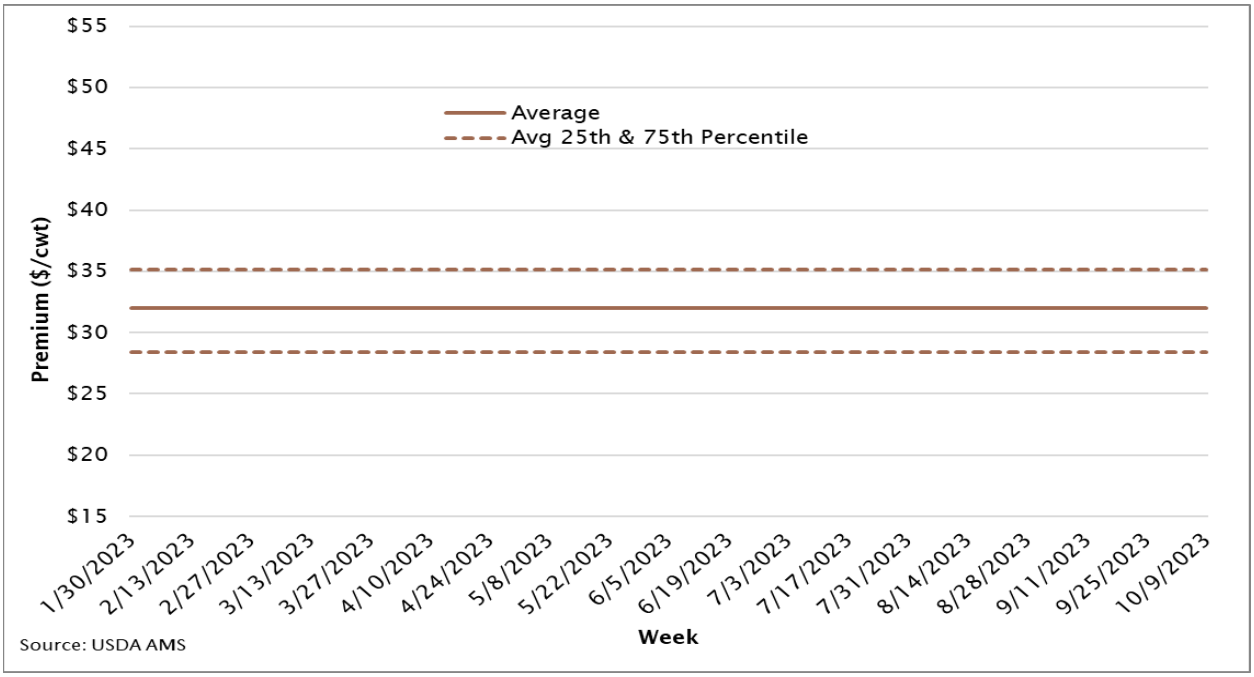


Figure 3.12. All Natural Premium in 5-Area 169 Report, January 31 – October 9, 2023

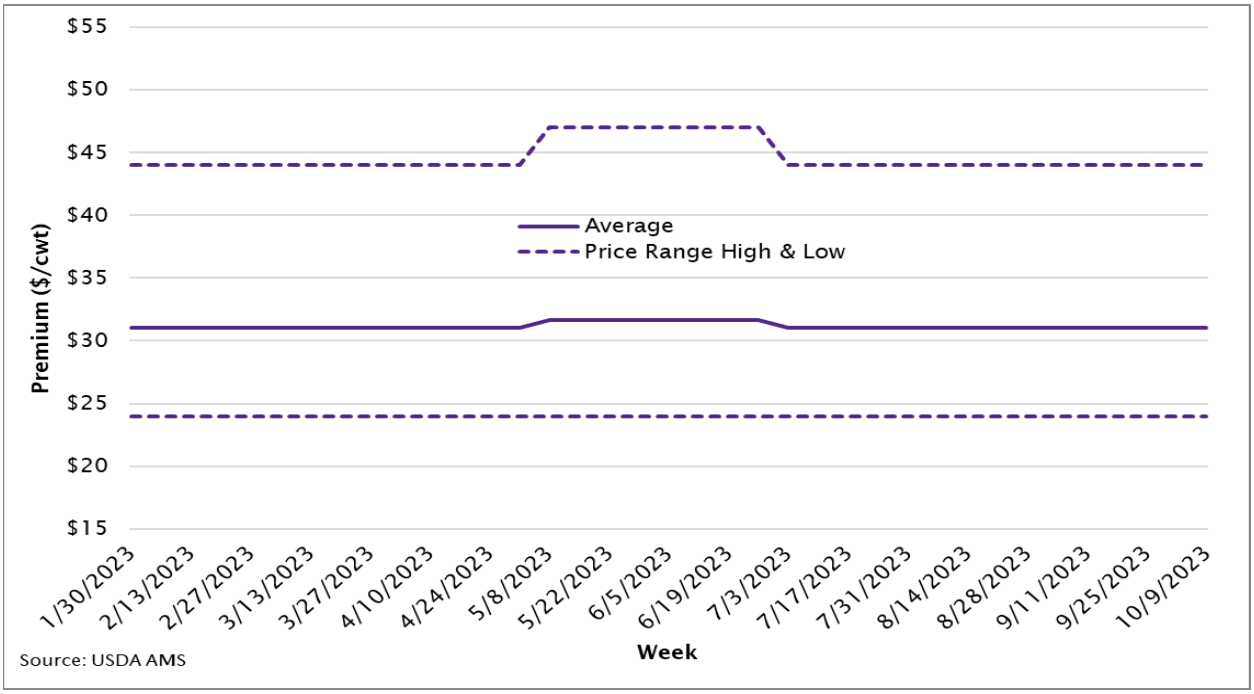


Figure 3.13. Yield Grade 1 Premium in CCL, January 31 – October 9, 2023

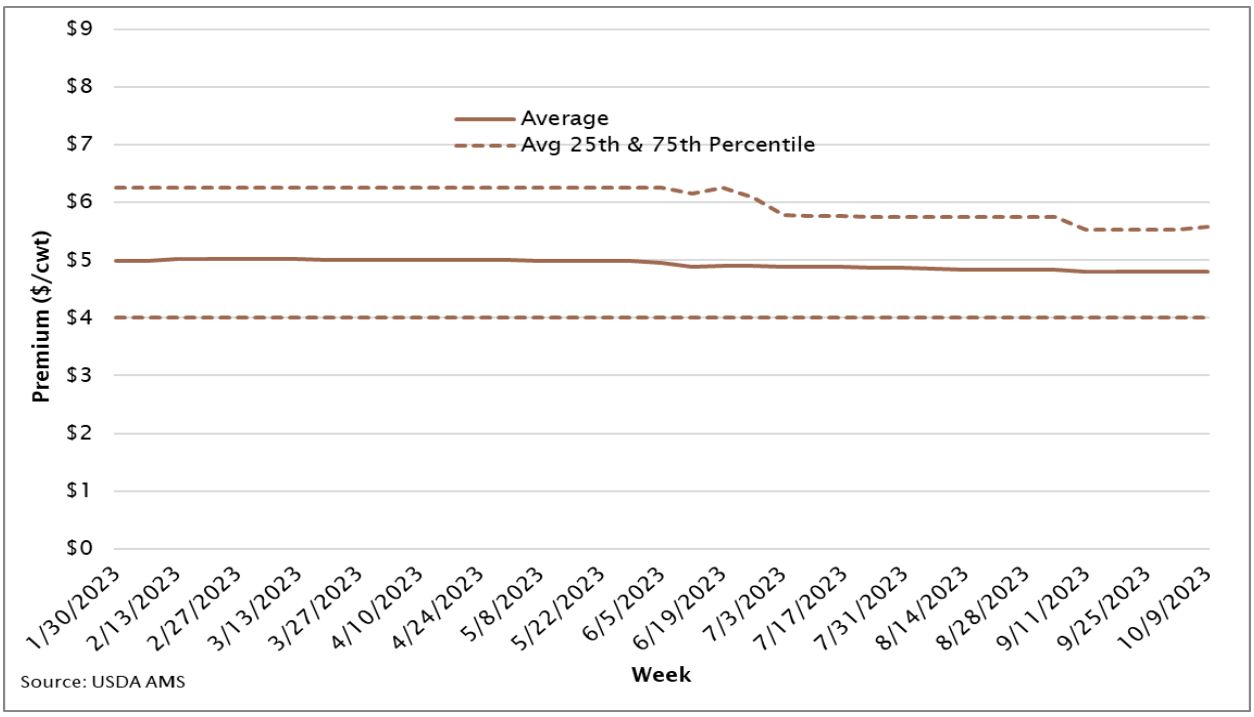
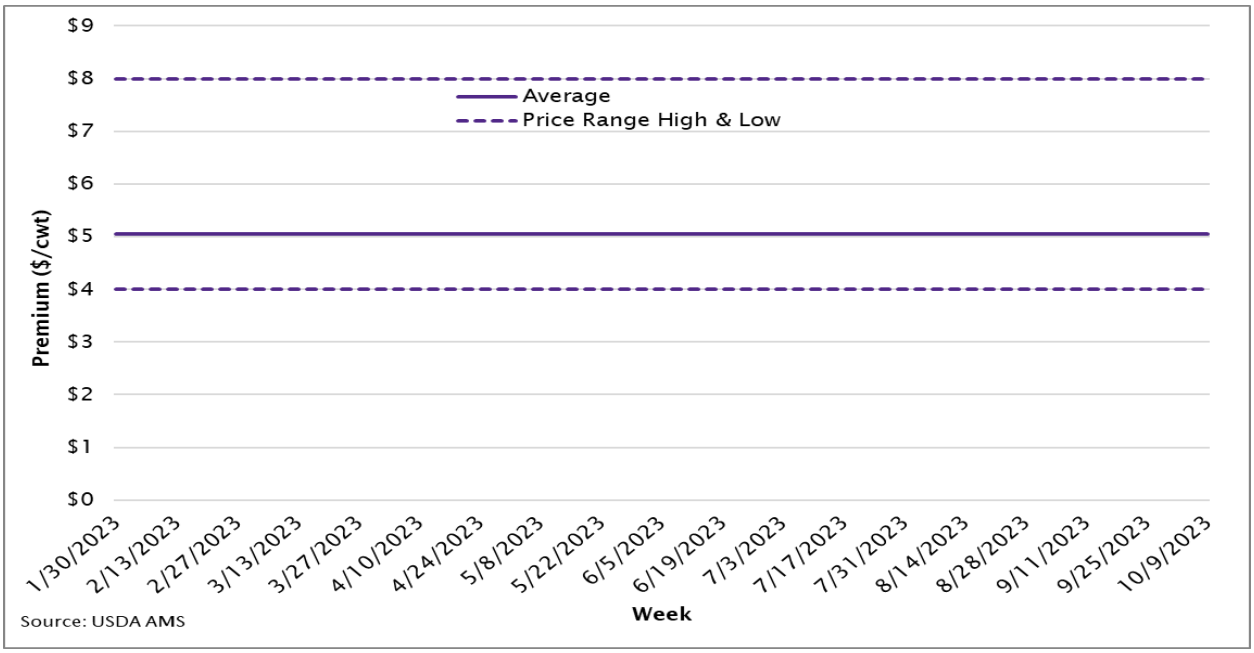


Figure 3.14. Yield Grade 1 Premium in 5-Area 169 Report, January 31 – Oct. 9, 2023



Figures 3.1-3.14 provide visual comparisons of premium and discount values over time, by USDA published source. Another way to compare PD values is by targeted use of regression equations to explore statistical relationships. For five PD categories we specified ordinary least squares models using the 37 weekly observations available for the January 31 – October 9, 2023 period. The dependent variable in these regressions is the CCL-reported average PD value ($/cwt) and independent variables included an intercept and the 5-Area 169 reported average PD value ($/cwt). As shown in Table 3.3, there is a weak statistical relationship between CAB premium values from the two alternative sources and similarly a weak relationship for reported Prime values with each having simple regression R-squared values less than 0.05. These weak relationships may reflect existence of only 37 weekly observations for comparison, limited variation that occurs in the regression variables (see Figures 3.1 - 3.14) meaning there is little variation to explain, and/or the fact the CCL and LMR differ in covered packers and hence contracts involved in this regression comparison.

Table 3.3. Regression Assessment of How CCL Premium/Discount Average Values Relate to 5-Area 169 Report Values, January 31 – October 9, 2023

P/D Category	R^2	RMSE	Intercept Coefficient	5-Area P/D Coefficient
CAB	0.026	0.359	4.663[a]	0.129
Prime	0.001	1.720	25.638[a]	-0.033
Select	0.943	1.299	0.092	1.002[a]
Standard	0.972	0.366	-26.518[a]	0.457[a]
Hardbone	0.871	0.654	-5.349[a]	0.804[a]

Note: [a] Coefficient statistically significant at 5% level. N=37.

Table 3.3 also shows simple regression relationships for Select, Standard, and Hardbone revealing better alignment of CCL and 5-Area 169 reported values than applies for CAB and Prime. Narrowly, using the 37 comparable weekly values for Select, Standard, and Hardbone categories indicate strong and positive relationships between the CCL and 5-Area 169 reports with R-Squared values of 0.87 or higher.

While we included Figures above showing reported All Natural and Yield Grade 1 values, we do not include them in our regression assessment. The lack of variation (see Figures 3.11-3.14) in these reported premiums makes statistical assessment in variation pointless. The key point is that some PD categories experience limited temporal variation and are not aligned between CCL and 5-Area 169 reports. On the other hand, some categories experience notable temporal variation and indeed are aligned between the two USDA sources.

Consistent with the visual inspection of Figures 3.1-3.14 and further examining the columns in Table 3.2 associated with the CCL reveals that premiums and discounts do not vary much over time. Stated narrowly, the standard deviation across time of the weekly average CCL-reported premiums and discounts is small in most cases. At the extreme, for the categories of All Natural, Heifers, Steers, and Management Program - Other there is no variation in average values across the 37 weeks in 2023. Larger standard deviations are apparent over time for Choice and Select. Information on the market value of Choice and Select is also available from sources outside of the CCL, such as the 5-Area 169 report also summarized in Table 3.2 and used in simple regressions outlined in Table 3.3. Table 3.3. demonstrates Choice and Select quality grade PD values from different USDA products are correlated over the 37 weeks analyzed. However, we caution that direct comparison of these numbers in any given week may reveal differences as CCL PD values being from a subset of LMR packers and instructions for exactly what packers report differ from CCL to LMR.

An important point to reinforce is that CCL-reported PD values do not contain corresponding volume information. That is, there is no information contained summarizing the number of animals associated with each PD. Information is reported in the CCL on the percentage of active contracts that contain PD specifications for broad categories of quality, weight, yield grade, etc. (see Figure 2.4), but not for individual items in each category such as Prime, CAB, Choice, etc. for quality and so forth for other categories. For clarity, as shown above in screenshots for October 16, 2023 the CCL dashboard does have a tab presenting volume information. This is “Actual Volume” and “Estimated Volume” information by month. The only distinguishing characteristic on this volume is Base Price Source. Conversely, there is no CCL-reported volume information on PD categories such as CAB, Beta Agonist Free, etc.

listed in Tables 3.1 and 3.2. While this lack of reported volume information most likely reflects both the precision of information available to AMS (see data collection forms referenced above), it also likely reflects realities around confidentiality of reporting. Nonetheless, possible CCL users should note the absence of volume information. The presence of a potential PD in an active contract does not directly reveal its relevance to the current market value of live cattle as we do not know whether the PD impacted the pricing of many (or any) fed cattle that week.

Active Contract Base Price Sources and Comparisons to Negotiated Volume by Region

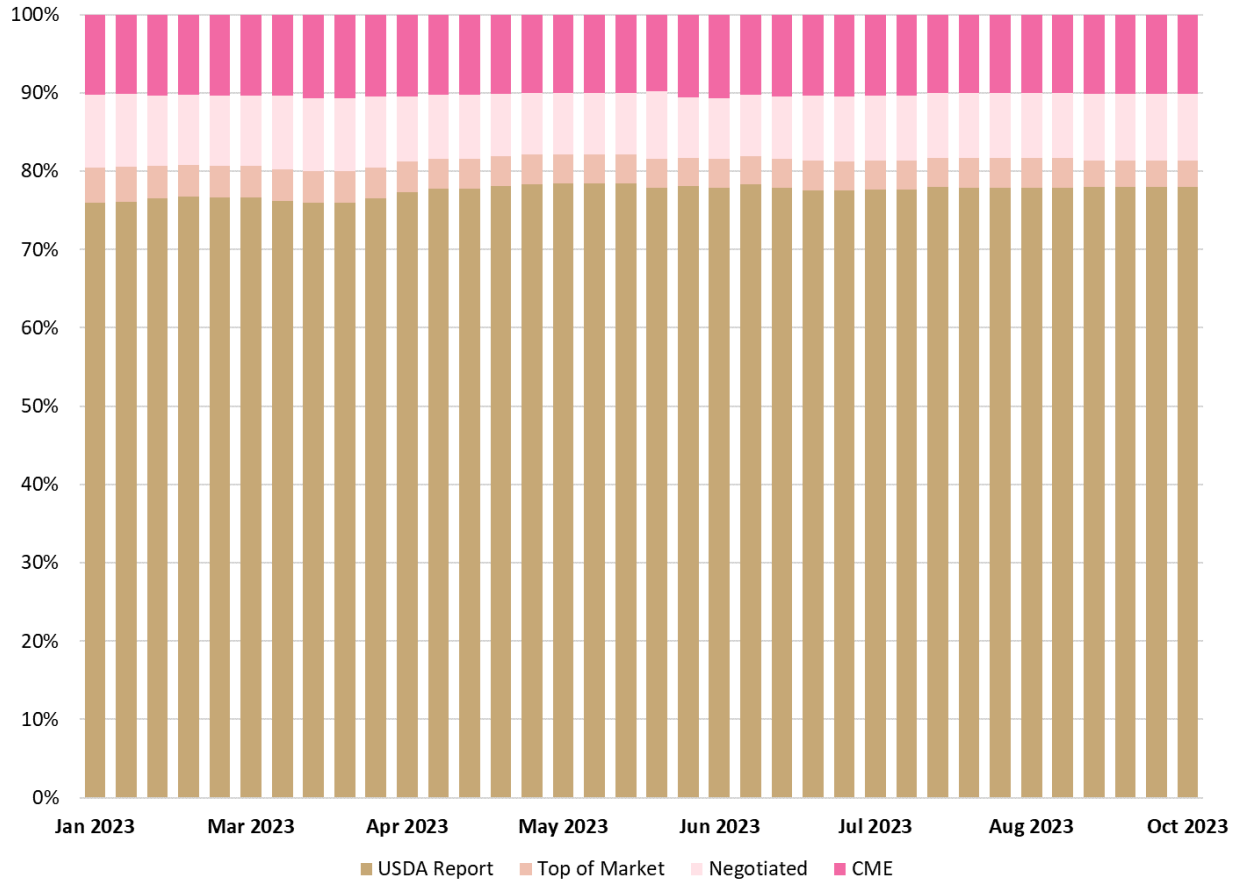
We end this report section with several Tables and Figures that move beyond premium and discount details and reflect further review of CCL information posted between January 31st and October 9, 2023. A summary of this review is 1) week-to-week there is little change in base price sources, 2) the use of USDA reports from specific fed cattle marketing regions does not appear to align with prevalence of negotiated marketings in these regions, and 3) base price adjustments are regularly rather small in magnitude and do not change much week-to-week.

As shown in Table 3.4 and Figure 3.15 since the CCL launched publicly there has been little variation in the prevalence of base price source (BPS). For most weeks about 75% of active contracts reference some USDA published report. CME contract price is the next most common BPS, on average, at 10% of contracts. Negotiating the base price is the practice among 8% of contracts. Top of Market is the least common BPS with just under 4% of active contracts, on average. However, it should be noted that Top of Market can refer to the highest price from a certain USDA report. Therefore, this portion of contracts likely also depends on USDA market reports, consistent with Figure 2.3.

Table 3.4. Percent of Active Contracts by Base Price Source, January 31 – October 9, 2023

	Mean	Median	St Dev	Min	Max
USDA Report	76.54%	76.89%	0.78%	75.00%	77.46%
CME	10.11%	10.13%	0.22%	9.72%	10.53%
Negotiated	8.35%	8.23%	0.50%	7.63%	9.29%
Top of Market	3.76%	3.70%	0.24%	3.35%	4.41%

Figure 3.15. Proportion of Active CCL Contracts by Reported Base Price Source, January 31 – October 9, 2023



Data source: Archived CCL data spreadsheet.

Within contracts referencing a USDA report as a BPS, CCL delineates by specific report used across the following reports: IA/MN (LM_CT167), Kansas (LM_CT157), Nebraska (LM_CT158), TX/OK/NM (LM_CT156), and 5-Area (LM_CT150). There is no indication of exactly what aspect of a given USDA report (e.g., weighted average of all reported cattle, weighted average of reported steers, high end of reported steer range, etc.) is used in the CCL covered contract.

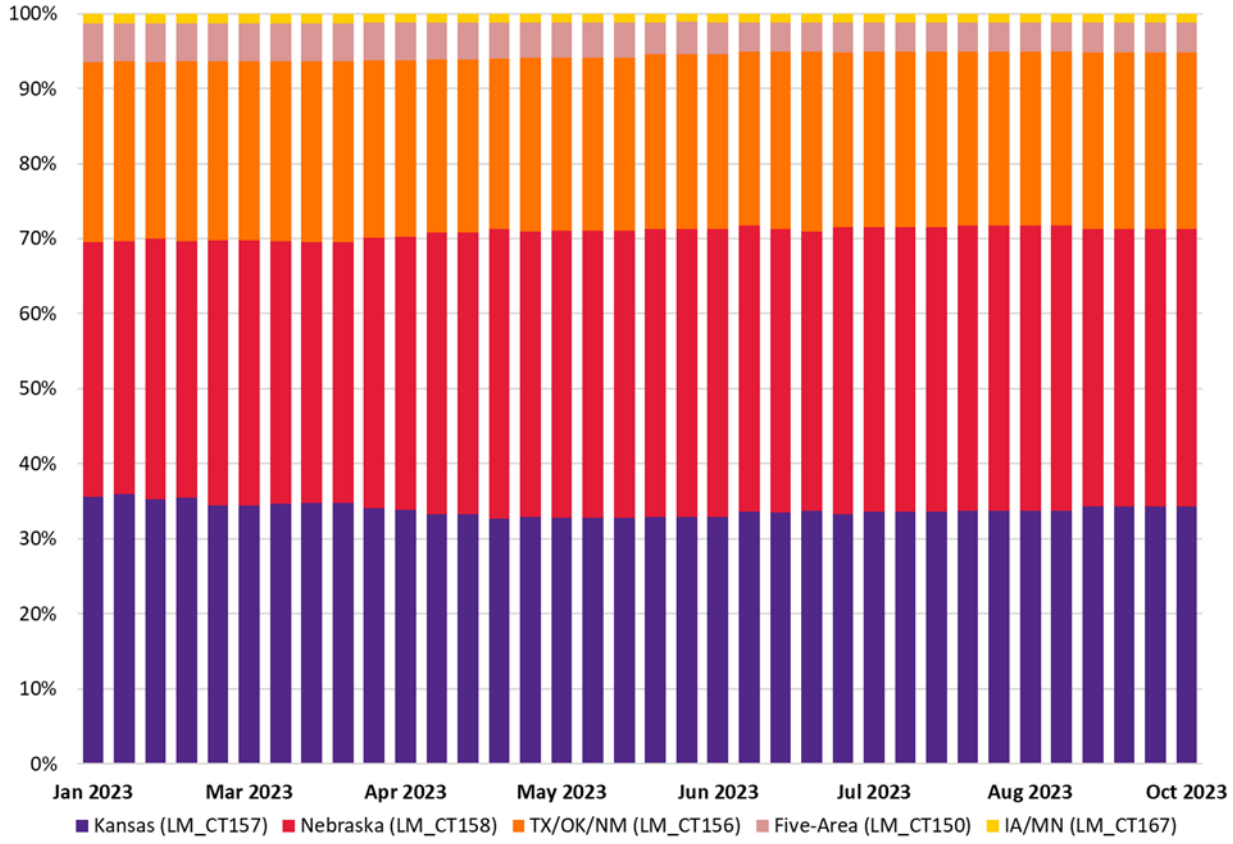
As shown in Table 3.5 and Figure 3.16 on average, the weekly report for Nebraska is the most frequently used as a BPS with the Kansas report being the second most used. The Texas/Oklahoma/New Mexico report is next in terms of use. These three reports represent BPS for almost three-fourths of active contracts (and well over 90% of those referencing a USDA report), on average. The Iowa/Minnesota report is the least used of all regional reports as a BPS. The 5-Area report is, on average, referenced by about 5% of contracts using some USDA report as a BPS. As with the broader BPS categories (Table 3.4 and Figure 3.15), there has been little variation in the relative use of these five reports since the CCL began publishing data.

Table 3.5. Percent of Active Contracts Referencing USDA Reports as a Base Price Source Across USDA Weekly Reports Used, January 31 to October 9, 2023

	Mean	Median	St Dev	Min	Max
Nebraska (LM_CT158)	36.82%	37.57%	1.56%	33.33%	38.49%
Kansas (LM_CT157)	33.70%	33.59%	0.78%	32.54%	35.44%
TX/OK/NM (LM_CT156)	23.34%	23.35%	0.34%	22.62%	24.05%
5-Area (LM_CT150)	4.45%	4.46%	0.51%	3.85%	5.17%
IA/MN (LM_CT167)	1.20%	1.19%	0.05%	1.15%	1.29%

Data Source: Archived CCL data spreadsheet.

Figure 3.16. Percent of Active Contracts Referencing USDA Reports as a Base Price Source Across USDA Weekly Reports Used, January 31 – October 9, 2023



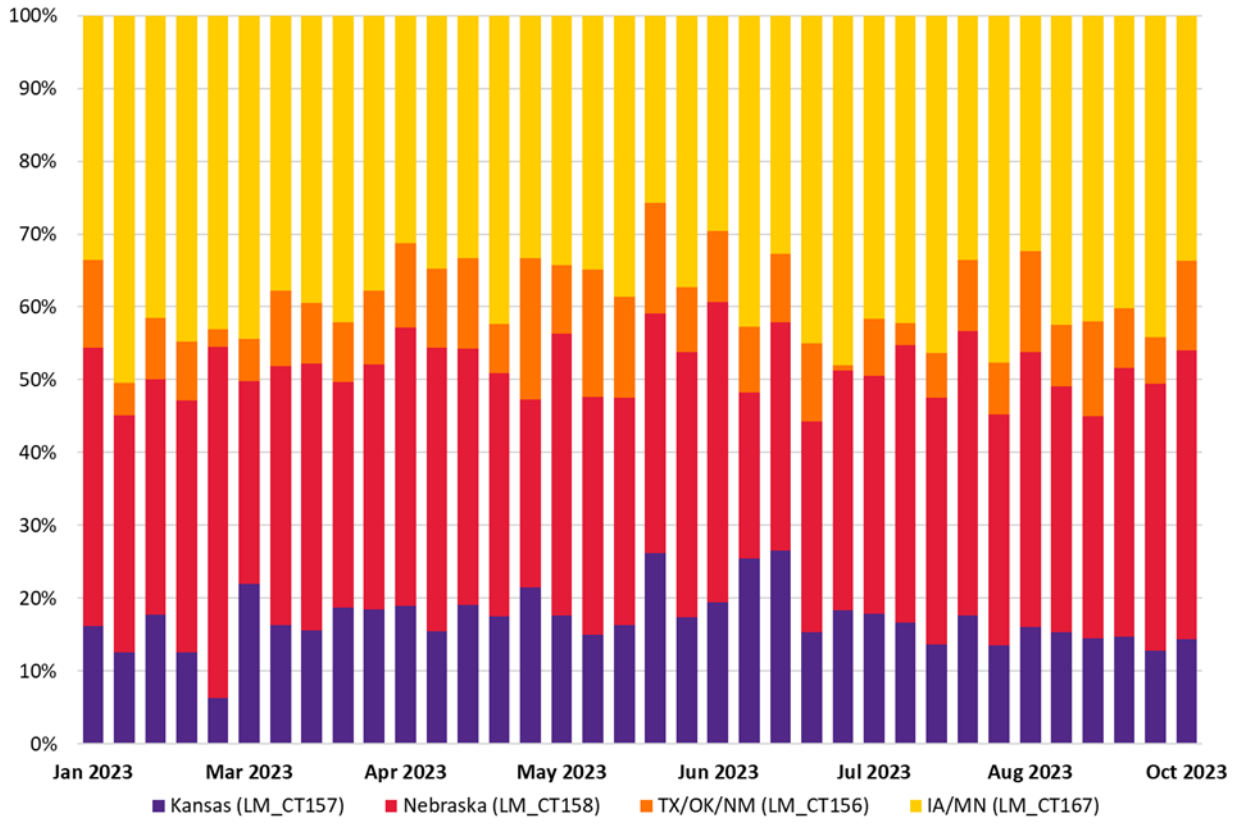
Data source: Archived CCL data spreadsheet

We were not surprised by the CCL indication of little change in BPS over time within 2023. That is, our understanding is most contracts correspond with longer-term relationships aligning fed cattle buyer and seller interests and terms besides BPS are central to contract updating processes. That said, prior to the CCL Pilot we were not aware of any source for tracking BPS details making this new information reported by USDA.

The percentage of active contracts using each BPS reported does not give an indication of volume of cattle priced by each source. However, it is interesting to note that the prevalence of use of contracts (as shown in Table 3.5), is not related with volume of negotiated cattle represented in each report. As shown in Figures 3.16 and 3.17 in most weeks the Iowa/Minnesota report contains more cash negotiated volume than other regions but is

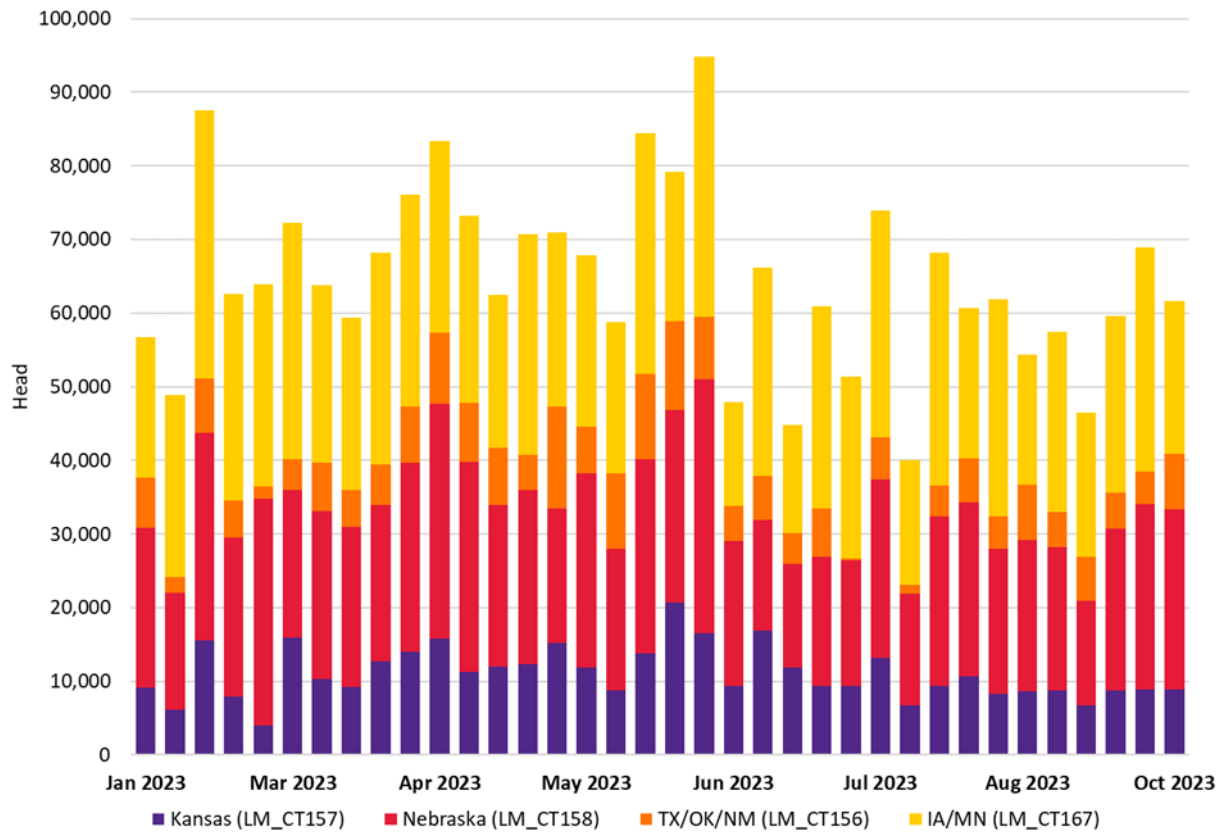
referenced by few active contracts among those covered in the CCL. Likewise, the 5-Area 150 report is used by few active contracts in the CCL as a BPS. It is not possible to deduce the drivers of this behavior from CCL data but apparently, regional specificity is more important than volume to those who are identifying a BPS.

Figure 3.17. 5-Area Negotiated Sales (Percentage) Across Regional Weekly Reports, January 31 – October 9, 2023



Notes: Colorado is one of the five major reporting regions but no negotiated sales were reported in Colorado during the time period analyzed. Data source: MPR Datamart

Figure 3.18. 5-Area Negotiated Sales (Head) Across Regional Weekly Reports, January 31 – October 9, 2023



Notes: Colorado is one of the five major reporting regions but no negotiated sales were reported in Colorado during the time period analyzed.
Data source: MPR Datamart

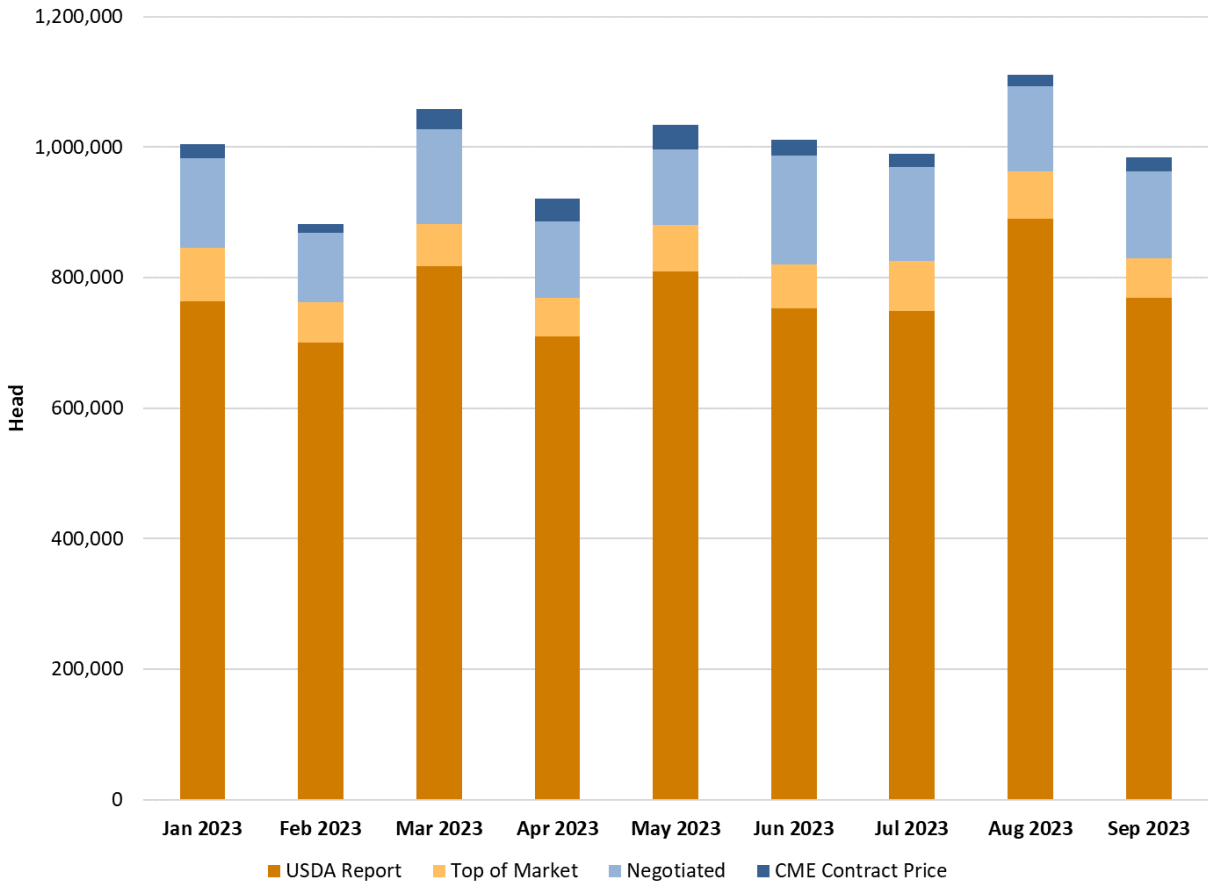
Actual volumes of cattle priced by each general BPS in the previous month are published monthly in the CCL. Summary statistics of the monthly volumes are shown in Table 3.6. The actual volume numbers (Table 3.6) are not equivalent to the weekly percentages of active contracts using each BPS (Table 3.4). The active contracts number gives no indication of volume or time when cattle will be priced. As such, it is difficult to meaningfully compare the two measures. However, it would seem that contracts referencing CME prices as a BPS are for smaller volumes than other BPS since CME represents an average of 10% of active contracts but only 3% of actual volumes.

Table 3.6. Percent of Actual Monthly Volume Priced Across Base Price Sources, January to September 2023

	Mean	Median	St Dev	Min	Max
USDA Report	77.39%	77.28%	1.80%	74.52%	80.09%
CME	2.49%	2.20%	0.81%	1.56%	3.79%
Negotiated	13.26%	13.52%	1.64%	11.13%	16.53%
Top of Market	6.86%	6.62%	0.68%	6.07%	8.14%

Data Source: Archived CCL data spreadsheet.

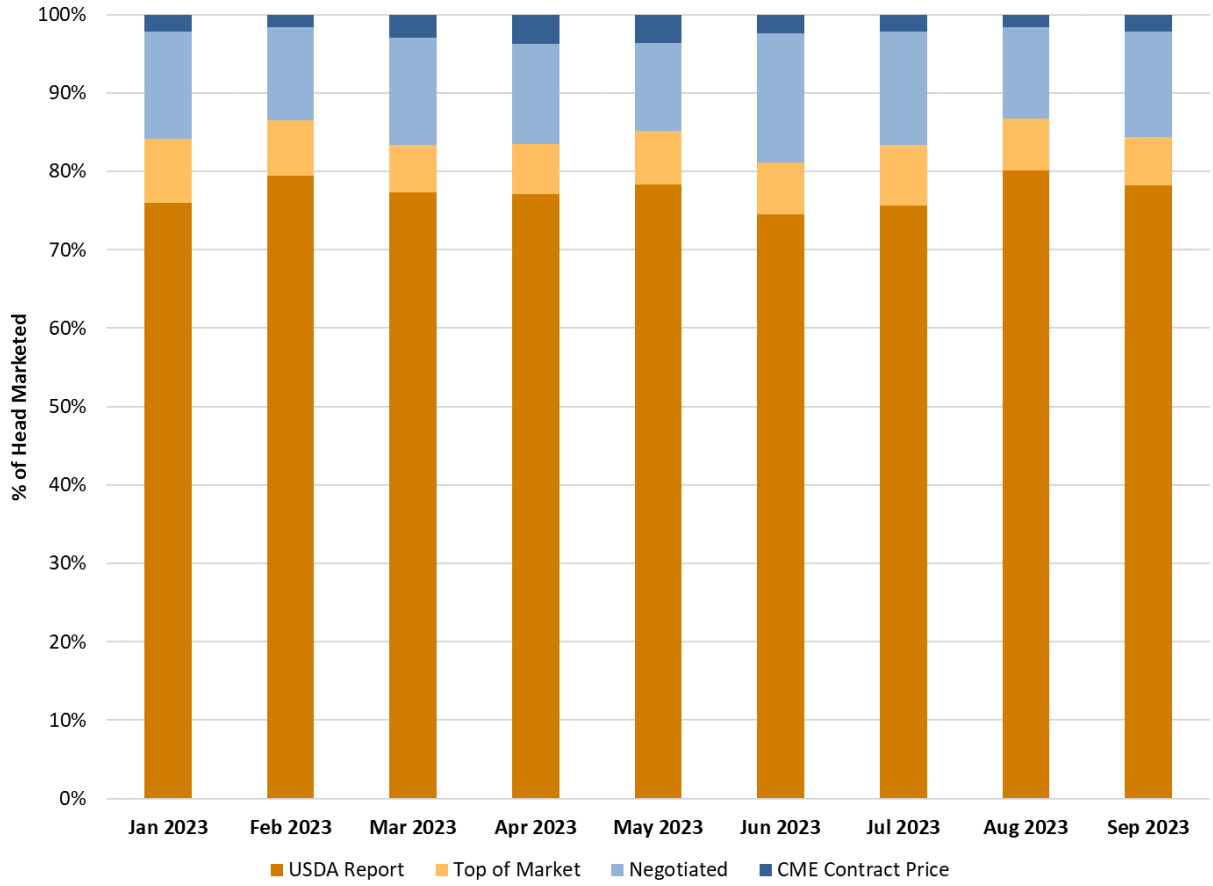
Figure 3.19. Actual Head Marketed Across Base Price Sources in CCL, January to September 2023



Data source: Archived CCL data spreadsheet.

The volumes for each BPS (Figure 3.19) are mostly consistent proportionally (Figure 3.20). Each month, about 75% of CCL volume is priced using a USDA report. If Top of Market references a USDA report, then that number is over 80%.

Figure 3.20. Percent of Actual Head Marketed by Base Price Sources in CCL, January to September 2023

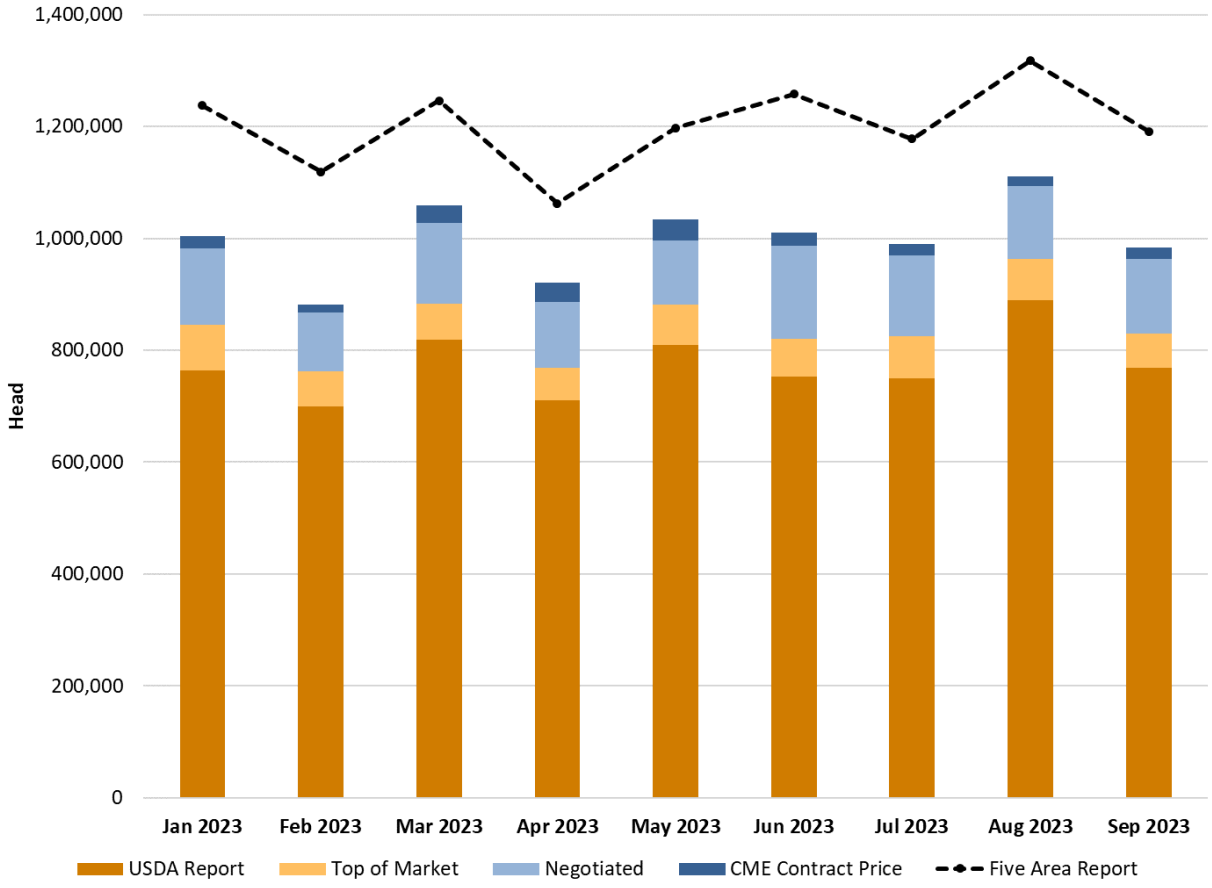


Data source: Archived CCL data spreadsheet.

Comparing CCL actual volumes to cattle trade in the major five reporting regions gives an indication as to the extent to which CCL reporting compares with LMR reporting (Figure 3.21). CCL data does not identify the origin of cattle marketed, so those volumes may or may not be included in the LMR 5-Area 150 report. However, comparing CCL volume and LMR volumes demonstrates the expanse of the coverage of the CCL. Under LMR reports, formula priced and negotiated grid priced cattle are (mostly) valued based on carcass performance and

require some kind of contractual arrangement. Adding all volumes of formula and negotiated grid cattle in the five major reporting regions gives an approximate number of total cattle in the 5-area region marketed on a value basis. Since CCL inception, actual monthly CCL volume has been the equivalent of between 78% and 87% of total 5-area value-based reported marketings. Again, this is not the same as saying 78% to 87% of 5-area marketings are captured by CCL volumes because we cannot know for sure where cattle are marketed via CCL contracts.

Figure 3.21. CCL Actual Head Marketed Across Base Price Sources vs. 5-Area Head Confirmed for Formula and Negotiated Grid LMR Purchases, January to September 2023

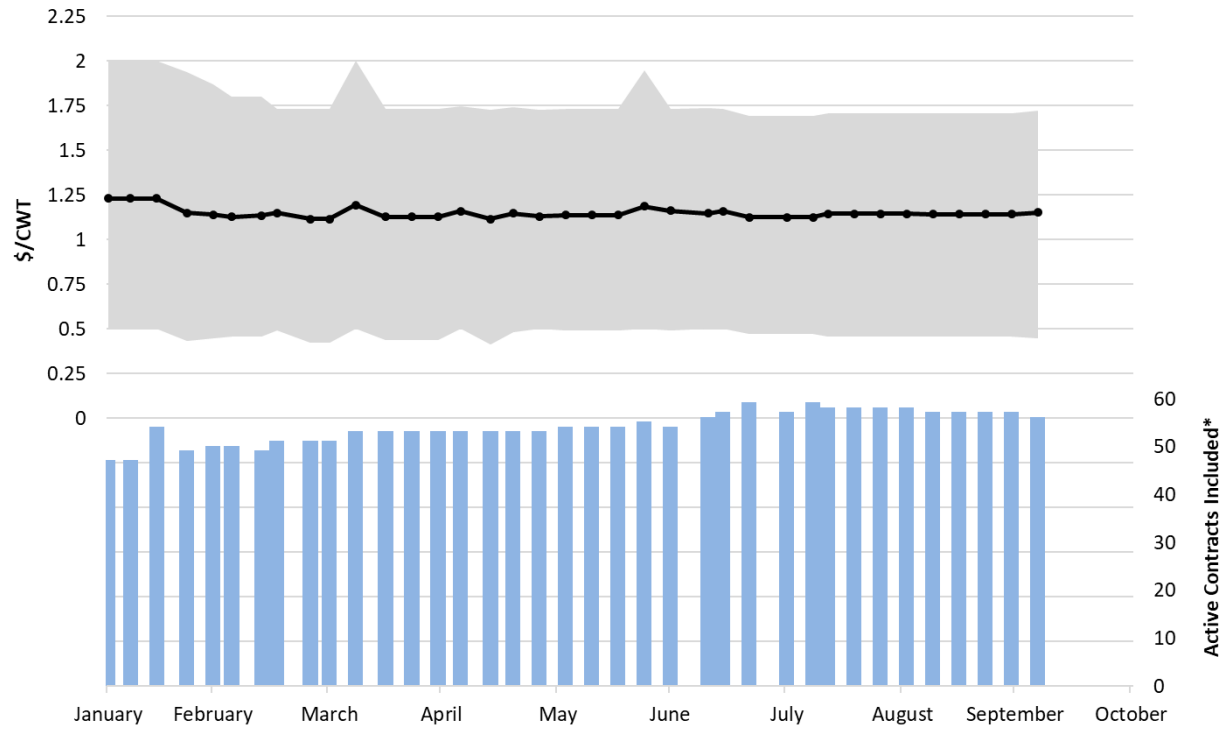


Data sources: Archived CCL data spreadsheet and MPR Datamart.

Figure 3.22 provides a summary of CCL based information on base price adjustment (BPA). This shows the average BPA and the gray bands show the interquartile range (spread between 75th and 25th percentile) for each week. A key observation is there is not much

variation, in the average or interquartile range in BPA. Moreover, given higher fed cattle prices throughout most of 2023 the reported BPA values are a small percentage of overall animal value. There was a small increase in the number of active contracts included which may reflect pilot program status and associated adjustments by covered packers and AMS in initiating the CCL.

Figure 3.22. Base Price Adjustments (BPA) for All Contracts with Base Price Adjustments, January 31 to October 9



*Calculated using CCL data, Active Contracts x %with BPA

IV. Possible Adaptations by Market Participants

There is a long history of livestock producers, policy makers, and other stakeholders being interested in price discovery and related economic aspects of the U.S. fed cattle industry. This coincides with notable changes by USDA over the past 25 years in providing market information. Over this period LMR was initiated, several adjustments have been made to LMR, and most recently the CCL was initiated as a pilot program. Going forward USDA will likely continue to be tasked to evolve and align with ongoing adjustments in the industry (Schroeder, Coffey, and Tonsor, 2021).

The CCL is a new program that, as shown in this report, provides some new information (e.g., base price source details and number of active contracts) and provides some contract details that also appear in other published USDA products. The CCL also only reports information from packers having 5% or more market share which differs from the sample of packers that must report data to USDA under LMR. In other words, packers required to report data to the CCL are a subset of those who report under LMR. We wonder why CCL and LMR do not use the same population of packers as this creates disparate breadths and depths of market information across the two different reporting systems.

The CCL could be a new resource that documents details around fed cattle marketing and in turn may be used in price discovery and contractual agreements. Here it is important to acknowledge that fed cattle buyers and sellers engaged in fed cattle marketing contracts, such as those contained in the CCL, also contribute to price discovery in the industry beyond what occurs in traditional, spot markets. Narrowly, when contracts are established, or updated and hence possibly renegotiated, both buyers and sellers use information available to them to assess available contracts, to consider potential adjustments, and ultimately to decide if a particular contract is beneficial. In this capacity, the CCL could provide both buyers and sellers information that in turn enhances price and contract terms discovery. More broadly throughout all markets, market participants will use available information they deem valuable and the CCL contributes to the set of available information in the U.S. fed cattle markets.

One of our specified tasks in this CCL review was to consider possible adjustments by fed cattle buyers or sellers potentially caused by the CCL. With the CCL only being published since late January 2023 with information for mostly long-term contracts, it is too early to know with confidence how the CCL will affect the overall fed cattle market, let alone contract negotiations. However, based on our experience as well as discussions with industry participants and stakeholders while conducting this project, we offer the following thoughts.

We start with an illustrative example. A cattle buyer might review existing contract specifications and target any premiums that are near or exceed a CCL-reported 75th percentile threshold for renegotiation. As a specific example from Figure 2.4 for October 16, 2023 note for All Natural the average CCL-reported contract premium was $32/cwt with the 25th (75th) percentile being $28.38/cwt ($35.13/cwt). If the buyer in this example recently paid near $35/cwt premium for All Natural cattle they are likely to leverage the CCL as a point of information in efforts to lower the specified premium in a renewed contract. Conversely, a seller receiving near or below $28/cwt CCL-reported 25th percentile might see room for enhancement in their contract's premium and attempt to negotiate accordingly.

From a market perspective, the premiums and discounts and associated percentile ranges reported in the CCL are likely representative of more contracts and volume of cattle than the 5-Area 169 report. It is important to realize neither 5-Area 169 nor CCL summarize transactions. Both instead summarize surveyed packer-stated (5-Area 169) or contractually stipulated (CCL) premiums and discounts. These differences in data collection, as well as the way data are summarized across the two reports, potentially make the CCL premiums and discounts more useful for market participants even though more packers are required to report in the 5-Area 169 report than in the CCL. As we discuss below, having such information collected for transactions under LMR would be superior to either of these current methods of collecting and reporting this information. If market participants place more confidence in CCL premium and discount information known to be in active contracts, then the range of individual premiums and discounts could shrink over time.

Another example can be used to illustrate why CCL data might be preferred by market participants. The Monday October 16, 2023 report range on Prime in the 5-Area 169 report was $0 to $35 with a weighted average of $18.70. In contrast, the CCL for the same week published October 20, 2023 had a 25th – 75th percentile range of $24.48 - $29.60 with a weighted average of $27.00. Clearly these represent different samples and much different market valuations. Which one would a user rely upon? Neither is based on transactions. We suspect since CCL summarizes more contracts than appear to be included in the 5-Area 169 report, CCL values may be more relied upon—the use of interquartile ranges in the CCL likely reinforces this preference. Over time those receiving the lower end of the 25th-75th percentile would strive to get closer to the middle at contract negotiation stage. Those paying closer to the higher end of the range would strive to get closer to the middle as well. Pressure from both ends, if this information is trusted and used, would over time likely shrink the percentile ranges. The CCL has not been active long enough to test this theory and whether adjustments would be symmetric.

While adjustments akin to these examples are likely, several caveats are important to appreciate in broader discussions of the CCL's impact. Consistent with the wide diversity of contract specifications noted in this CCL review, there is wide industry variation within buyer and seller groups. Notable differences include the frequency of contract negotiation; the volume associated with particular contracts; and the quantitative sophistication and time dedicated for analysis by negotiating parties. Furthermore, while this study documents most contracts are multivariate (composed of multiple characteristics), the CCL presents data in univariate (single trait) format.[16] For instance, Figure 2.4 indicates many contracts have both Quality and Weight characteristics, yet CCL public reporting is done for Quality and Weight individually. This is important as contract negotiation occurs across multiple specifications simultaneously and the capacity of buyers and sellers to be informed and subsequently engage in multi-faceted negotiations likely varies in the industry. In other words, the interest and capacity to use and benefit from CCL originating information likely exists for some, but certainly

[16] For clarity this comment is not a criticism as univariate publishing is likely necessary for ease of public presentation and to help mitigate confidentiality concerns.

not all, fed cattle buyers and especially sellers. While this also applies to other USDA efforts such as LMR, it should nonetheless be noted in discussions of possible CCL-based market impacts.

An additional concern of weekly univariate reporting of premiums and discounts is potential to provide an inaccurate representation of the market value of a particular characteristic. That is because, as explained, premiums and discounts exist as a suite of terms in a single contract and, therefore, are interdependent. It is not realistic to think a buyer or seller could achieve a desirable level for a single premium without giving something up elsewhere in the contract. These nuances are missed with univariate reporting but exist in real-world contract assessment. Pragmatically, there might not be a way to avoid this issue but it should be explicitly considered. One approach we have considered is perhaps biannual reports could be added that summarize the frequency of premium/discount categories existing in conjunction to augment current univariate reporting. Our thought around a less frequent summary report focused on characterizing the multivariate suite of contract terms is we expect most details infrequently change and reporting less often may help mitigate confidentiality concerns.

Another important adaptation to consider is a potential consequence tied to industry evolution. It is probable that innovation in how fed cattle are produced and marketed may be curtailed as benefits from new efforts are threatened or diminished. That is, if the CCL erodes confidence by fed cattle sellers or buyers that their design, development, and adoption of a new business arrangement will not last as long or be mimicked sooner because it quickly becomes public information through CCL publication, then forward-looking entities may cease interest in the new effort leading to less innovation in the industry. This is important to appreciate as substantial evidence suggests beef demand has improved in recent decades, at least in part as a result of novel fed cattle marketing methods adjusting to align production with end-user demand signals (e.g., Doumit and Schroeder, 2023; Schroeder, Coffey, and Tonsor, 2021). One way to reduce or delay this from happening is to publish CCL information less frequently than weekly. Less frequent reporting would enable contract innovations to be both delayed in reporting and be more likely to be co-mingled with other contract innovations across time making individual novel introduced contract designs less obvious in CCL reports.

V. Recommendations

Upon completing our review we derived several recommendations for AMS consideration. We start by directly stating we concur with the stated goal of USDA programs, such as the CCL, in aiding market transparency. Exactly how that is accomplished is always up for assessment and will remain a challenge in the dynamic U.S. fed cattle industry. Given that, our current assessment is that if targeted enhancements and adjustments to LMR were implemented, there would be less need for something akin to the current CCL pilot. This CCL review has shown diversity of contract specifications providing a guide to additional information details that seemingly could be collected and subsequently reported by USDA as part of their well-respected LMR efforts. Furthermore, the CCL program has provided an example USDA product that contains percentile (here 25th and 75th percentiles forming an estimated interquartile range) information that conveys valuable distributional information to market participants. Given this successful application in the CCL, we encourage parallel application to LMR products (see Schroeder and Tonsor, 2017 and Tonsor, 2021) to further enhance market transparency. Percentile ranges are much more useful than overall high and low values because these are potentially extreme values of outlier transactions. If said improvements to LMR would be made it is our assessment that the current CCL pilot could evolve to be a less frequently published effort that intentionally supplements LMR products, perhaps serving a role in identifying data collection adjustments (and subsequent USDA dissemination changes) that would align with industry changes.

To help appreciate relative scope of LMR and CCL efforts note that USDA AMS currently publishes 27 daily, 28 weekly, 18 monthly and six annual cattle reports. To obtain underlying LMR data, AMS analyzes approximately 5,000 to 8,000 records per day. These records cover 92% of all fed cattle transactions and 33% of all cow and bull transactions. AMS audits firms to ensure reporting accuracy and preserves confidentiality of transactions. We share this to reinforce our main suggestion on the value of adjusting LMR to provide corresponding perspective on the possible impact on available market information.

Given importance of our main suggestion, we want to reiterate and clearly state that our opinion is adjustments to LMR would reduce the need and role of the CCL and yet help USDA better provide market participants with valuable information that increases overall market transparency. We hope this report and past LMR oriented assessments help accordingly.

If LMR is not enhanced per our main suggestion and the CCL continues on a weekly basis akin to its current operation, then we would have several specific recommendations. These include:

1) We suggest that care be taken to delineate the role and goals of the CCL vs. other USDA sources of market information. In our view, the CCL currently contains both a market reporting element focused on temporally varying components that exists (even if with different definitions or thresholds) in other USDA reports (e.g., Quality grade) and a contract summary element which highlights components that likely vary less over time and are not present in other USDA reports (e.g., base price source details). Further, our comparisons to 5-Area 169 report information indicate cases where premium/discount information from the CCL seems consistent with the 5-Area 169 report and cases where it does not. Accordingly, market participants would benefit from clarification of the relative role of the CCL and how it aligns with other market information.
2) We suggest that a common approach to covered packers in the CCL and LMR be implemented. This would allow better comparison and "merging" of public information available to interested market participants. This also would likely reduce confusion or misinterpretation by market participants considering CCL and non-CCL information. If this expansion is implemented, care should be taken in how CCL reports are released to minimize any firm-specific information that could be gained by analyzing CCL data before and after the expansion.
3) Given very little week-to-week changes in CCL information we suggest something less frequent than weekly be considered in administering publishing the CCL. Our initial suggestion is that a monthly frequency would still reflect most valuable changes in CCL values while also possibly helping reduce both private and public costs of administering the

CCL. Further this less frequent reporting relative to most LMR products would possibly indicate that the primary role of the CCL is to summarize contract characteristics and may ease the tendency of treating insights as comparable or additive when that may be incorrect across USDA products aimed at market reporting. Furthermore, less frequent reporting would be less likely to curtail innovation in contract specification designs because such changes would not show up immediately in the next weekly CCL report.

4) Most current CCL information is posted without corresponding volume information making it hard to assess representativeness of particular CCL-reported values. Particularly if a less frequent approach is taken in publishing the CCL, perhaps a volume-weighted average statistic can be added to the simple averages that are currently reported. Furthermore, consideration for minimum volume thresholds (note minimum head thresholds are applied in LMR cattle reporting) is encouraged to mitigate prospects of a CCL value being reported that applies to a thinly traded, not representative situation. Any efforts to add volume information need to take care to do so in a way that does not give "hints" as to a likely participant in a given contract.
5) There are some expansions to the current "Explanatory Notes" in the CCL that we suggest as outlined earlier in this report.
6) We encourage periodic, perhaps every five years akin to experience with LMR reviews and renewal discussion, review of data submission forms and subsequent publishing of CCL information. This suggestion reflects our opinion that the U.S. fed cattle industry will continue to evolve and so should corresponding public efforts providing market information.

As a final statement we highlight that the complexities of the U.S. fed cattle market are hard to overstate. We concur with the sentiment that led fellow economists (Peel et al, 2020) to state: "The U.S. cattle and beef industry is arguably the most complex set of markets on the planet." This aligns with our previous statements (see Schroeder, Coffey, and Tonsor, 2021) of ongoing evolution in how cattle are raised and valued, and beef is marketed correspond with needs for public market reporting to also adapt over time. We hope our past and current

efforts aid in this adaptation. We reinforce that any consideration of what the CCL is, what it could be, and what role it could play in U.S. fed cattle marketing must keep in mind the complex and dynamic nature of cattle and beef markets.

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