

# **Feasibility Assessment of Reporting Negotiated Slaughter Cattle Purchases in Separate Delivery Window Categories**

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**Stakeholder Meeting**

**December 12, 2019**

**Kansas City**



## ***LMR Background***

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- **LMR Act of 1999 implemented 2001**
  - **Industry requested increased market transparency**
- **LMR undergoes reauthorization ~ every 5 years**
  - **September 2005 statutory authority lapsed**
  - **2013 Fed shutdown blackout LMR**
  - **2018 Fed shutdown LMR “essential”**
  - **LMR expires Sept 30, 2020 - next reauthorization**

# ***LMR Evolved***

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- **LMR information became:**
  - **Primary price discovery information source**
  - **Base price contracts/ formula agreements**
  - **Futures settlement**
  - **Livestock price insurance products**
  - **Indemnity payments**
  - **Policy analysis**

# ***LMR Reporting Structure***

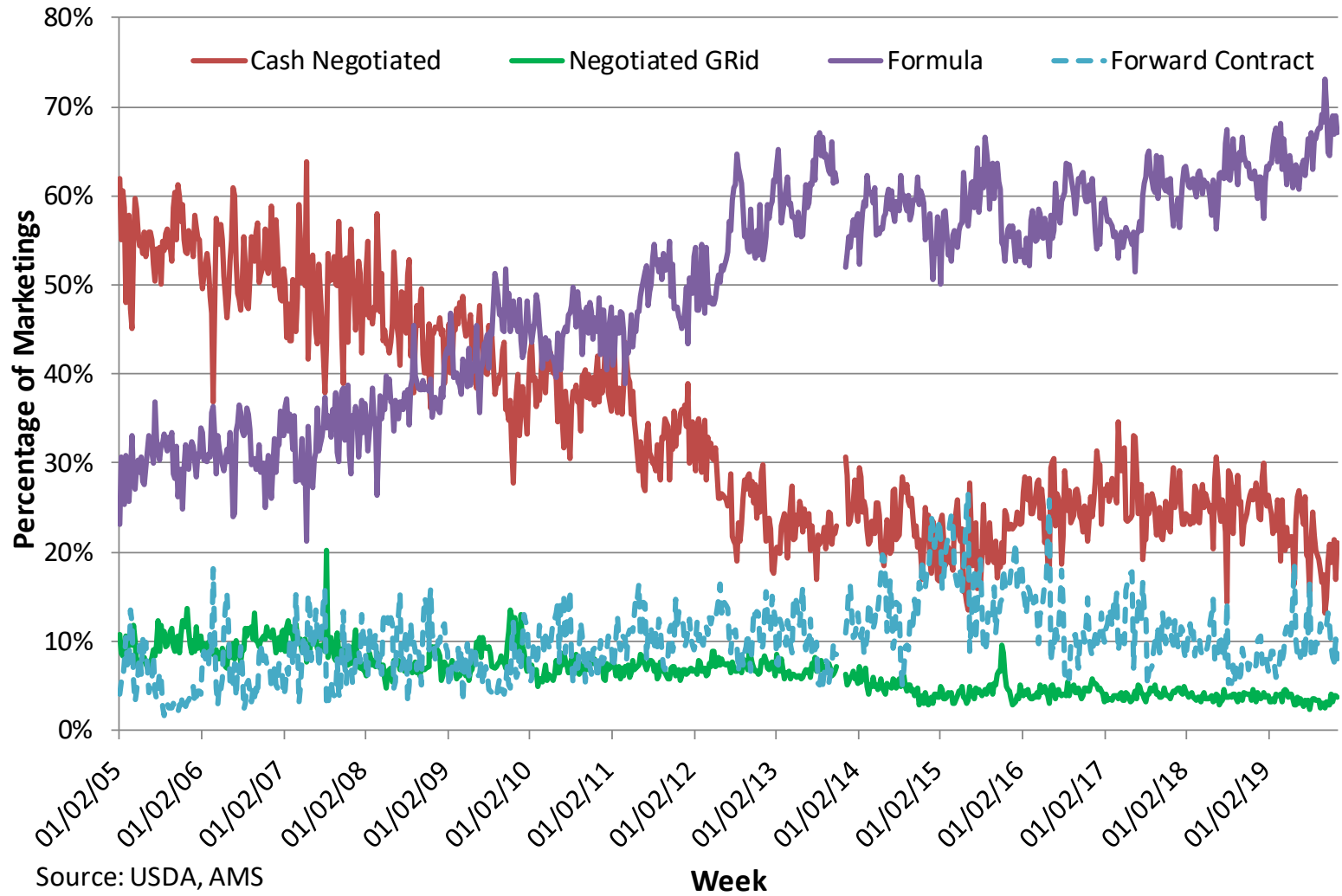
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- Packers slaughter 125,000+ hd annual report – twice daily
- ~ 38 cattle plants covered
- Covers about 92% national fed cattle transactions

## **Purchase Types**

- ***Negotiated Cash*** – cash purchases 0-30 day delivery
- ***Formula*** – price of formula any means other than negotiated, grid, or forward contract
- ***Forward Contract*** – forward purchase base reference to CME
- ***Negotiated Grid*** – base negotiated, final net price grid
- ***Packer-Owned*** – cattle owned by packer at least 14 days

## Ways Domestic Fed Cattle are Purchased and Priced, Weekly, 2005- November 2019

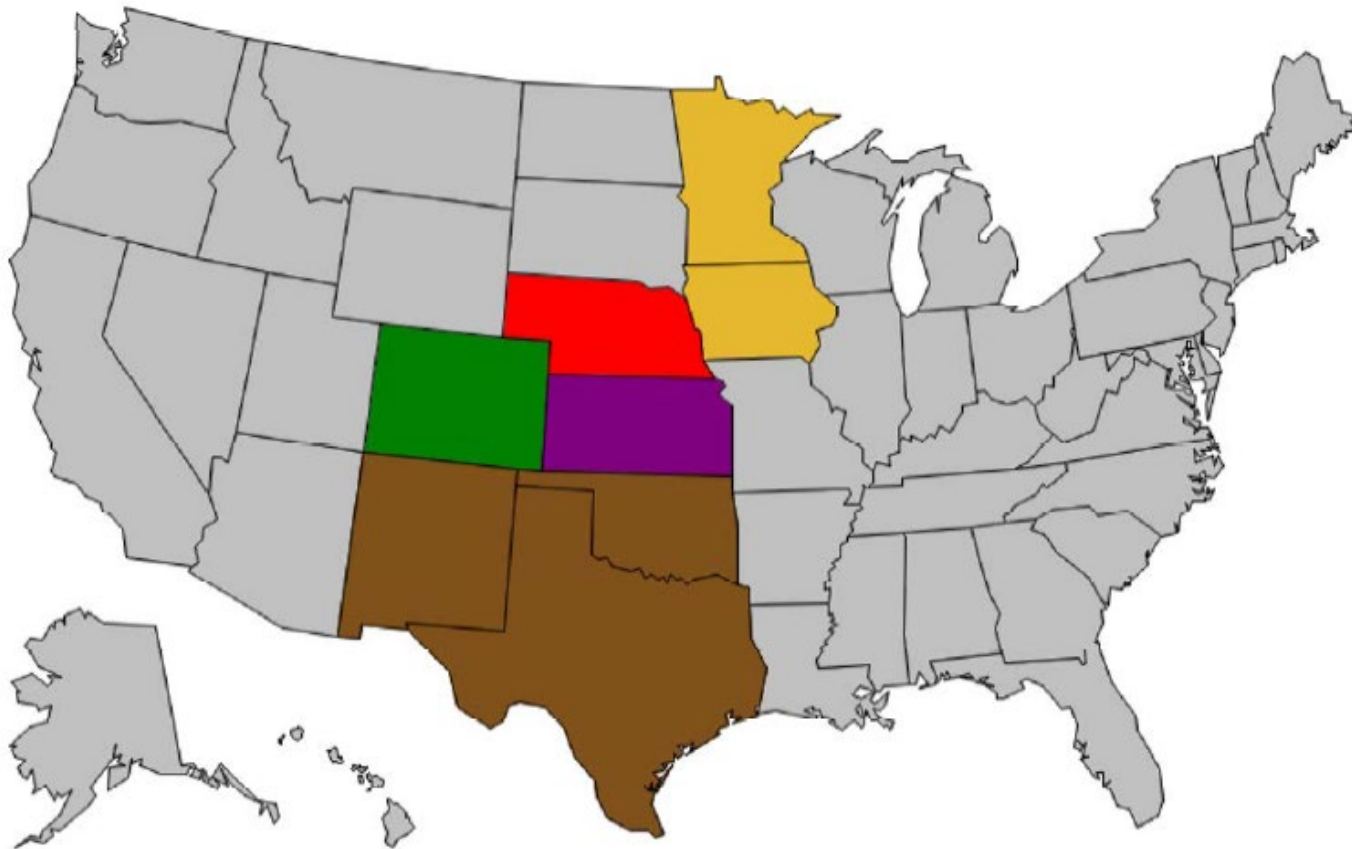


Source: USDA, AMS

# Shares National Domestic Fed Cattle (non-dairy) Negotiated Cash Trade in 5-Areas, 2014-18

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Alignment 1 - Current AMS Regions



# Purpose & Objectives

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## *Purpose*

**Assess feasibility reporting fed cattle purchases separate 0-14 & 15-30 day delivery windows**

- Regional reporting realignment?
- Maintain confidentiality

## *Objectives*

- 1. Can market information be reported  
0-14 & 15-30 day nationally / regionally  
complying with 3/70/20 confidentiality?**
- 2. Would market realignment reduce confidentiality  
constraint and tradeoff information quality?**

# Livestock Mandatory Reporting (LMR)

Confidentiality Guidelines for the Livestock Mandatory Reporting Program

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The Livestock Mandatory Reporting Act of 1999 requires USDA to publish mandatory data on livestock and meat price trends, contracting arrangements, and supply and demand conditions in a manner that protects the identity of reporting entities and preserves the confidentiality of proprietary transactions.

<https://www.ams.usda.gov/sites/default/files/media/ConfidentialityGuidelines.pdf>



## **Confidentiality Guidelines Livestock Mandatory Reporting Program**

3/70/20 confidentiality guideline requires following three conditions:

1. At least three reporting entities need to provide data at least 50 percent of the time over the most recent 60-day time period.
2. No single reporting entity may provide more than 70 percent of the data for a report over the most recent 60-day time period.
3. No single reporting entity may be the sole reporting entity for an individual report more than 20 percent of the time over the most recent 60-day time period.

# Resonating Issue

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*Confidentiality is easier to maintain with data aggregation but trades off with information content and value*

**Can aggregate across:**

- **Reporting geography**
- **Time period covered by report**
- **Types of cattle included**
- **Types of transactions included**

**Tradeoff of aggregation:**

- **Reduces granularity & value of information**

# Procedure

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## Provided LMR Negotiated Trade cattle transactions 2014-18

### Baseline Analysis

Assessed confidentiality current 5-Area report

- 0-14 days
- 15-30 days
- 0-30 days

### Alternative Alignments

Alternative regional alignments assessing

- confidentiality impacts
- trade volumes represented
- quality of market information impacts
  - statistical market analysis

# What the Data look like

Source: copied from <https://www.ams.usda.gov/sites/default/files/LMRCattleReporting.pdf>

Source...	Purchase Type...	Clas...	Selling...	Selling Basi...	Head...	Estimated Average...	Average Price (\$/c...	% Choice...	Classific...	Dressing...	Origin	Deli...	Pre...	Pre...	Pre...	P...	Dis...	Dis...	Dis...
Imported	Negotiated Grid...	Steer	Dressed	Delivered	33	922.1	139.78	81.8	Choice	62.3	Canada	1-14		0.68	0.72		-0.50	-11.00	-4.10
Imported	Negotiated Grid...	Steer	Dressed	Delivered	26	809.5	141.89	50.0	Choice	62.5	Canada	1-14		0.53	0.93			-14.00	
Domestic	Formula Net	Steer	Dressed	Delivered	84	1,050.5	144.82	98.8	Choice	63.8	Utah	1-14		1.04			-16.00		-0.77
Imported	Negotiated Grid...	Steer	Dressed	Delivered	33	875.8	148.15	93.9	Choice	63.2	Canada	1-14		0.56	0.31		-0.52	-0.60	-6.60
Domestic	Negotiated Grid...	Steer	Dressed	FOB	14	796.1	150.73	92.8	Choice	60.1	Pennsylv...	1-14		3.05	0.29			-3.12	-6.31
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	35	985.3	151.34	82.8	Choice	63.8	Iowa	1-14							
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	34	990.5	152.30	91.1	Choice	64.0	Iowa	1-14							
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	38	927.1	153.47	94.7	Choice	63.4	Iowa	1-14							-0.50
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	34	971.7	153.69	94.1	Choice	64.0	Iowa	1-14							-0.31
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	97	944.8	154.00	75.0	Choice	64.5	Nebraska	1-14							
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	35	1,016.1	154.00	97.1	Choice	63.4	Iowa	1-14							
Domestic	Negotiated Grid...	Steer	Dressed	Delivered	166	953.5	154.00	65.0	Choice	62.2	Nebraska	1-14							
Domestic	Formula Net	Steer	Dressed	Delivered	150	860.2	154.12	87.3	Choice	61.5	Colorado	1-14		1.61			-0.77		
Domestic	Negotiated Grid...	Steer	Dressed	FOB	12	710.7	154.51	91.6	Choice	59.4	Pennsylv...	1-14		5.91				-3.95	-3.30
Domestic	Formula Net	Steer	Dressed	Delivered	111	986.5	154.84	91.8	Choice	64.4	Idaho	1-14		2.62			-3.25		-3.89
Domestic	Formula Net	Steer	Dressed	Delivered	291	959.3	154.88	59.4	Choice	63.3	Oklahoma	1-14		0.83			-2.97		-1.25
Domestic	Formula Net	Steer	Dressed	Delivered	110	840.6	154.96	46.3	Select	63.5	Idaho	1-14		0.50				-4.90	
Domestic	Negotiated Grid...	Steer	Dressed	FOB	36	839.5	155.19	100.0	Choice	61.3	Pennsylv...	1-14		1.87					-6.24
Domestic	Formula Net	Steer	Dressed	Delivered	169	804.9	155.26	39.6	Select	61.1	Idaho	1-14		0.15			-0.09	-4.16	

# Data Filtering & Aggregation

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## Transaction data filters

- Included only cash negotiated purchases
- Excluded <11 head transactions (as does AMS)
- Excluded dairy
- Included only domestic transactions
- Included only steers, heifers, mixed steers/heifers
- Excluded identifiable data errors not fixable

## Data aggregation

- All analysis conducted on weekly data
- Combined steers, heifers, mixed steers/heifers
- Combined dressed & live
- Combined FOB & delivered

**After filtering over 198,718 negotiated transactions in data**

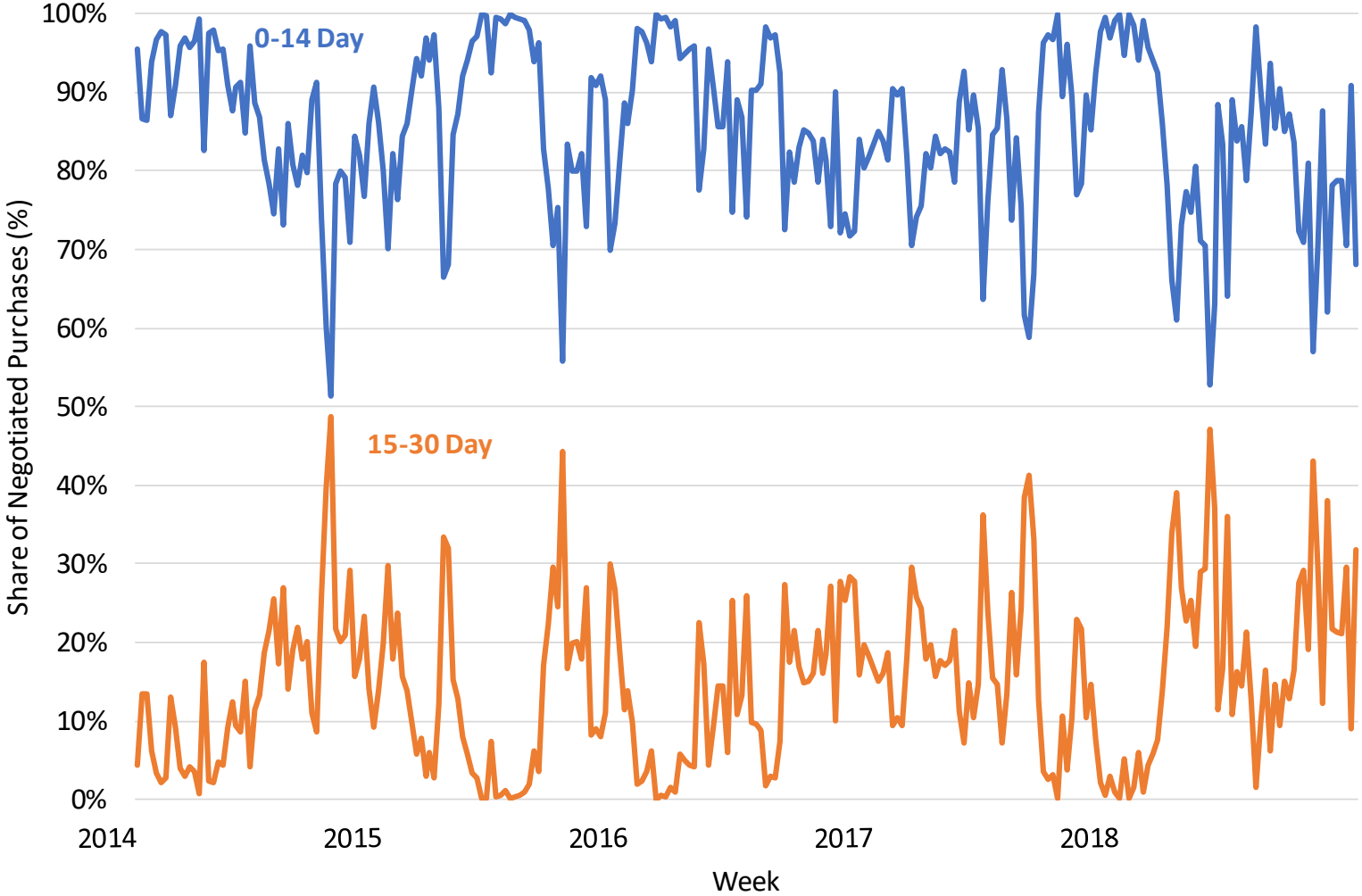
## **0-14, 15-30, & 0-30 day**

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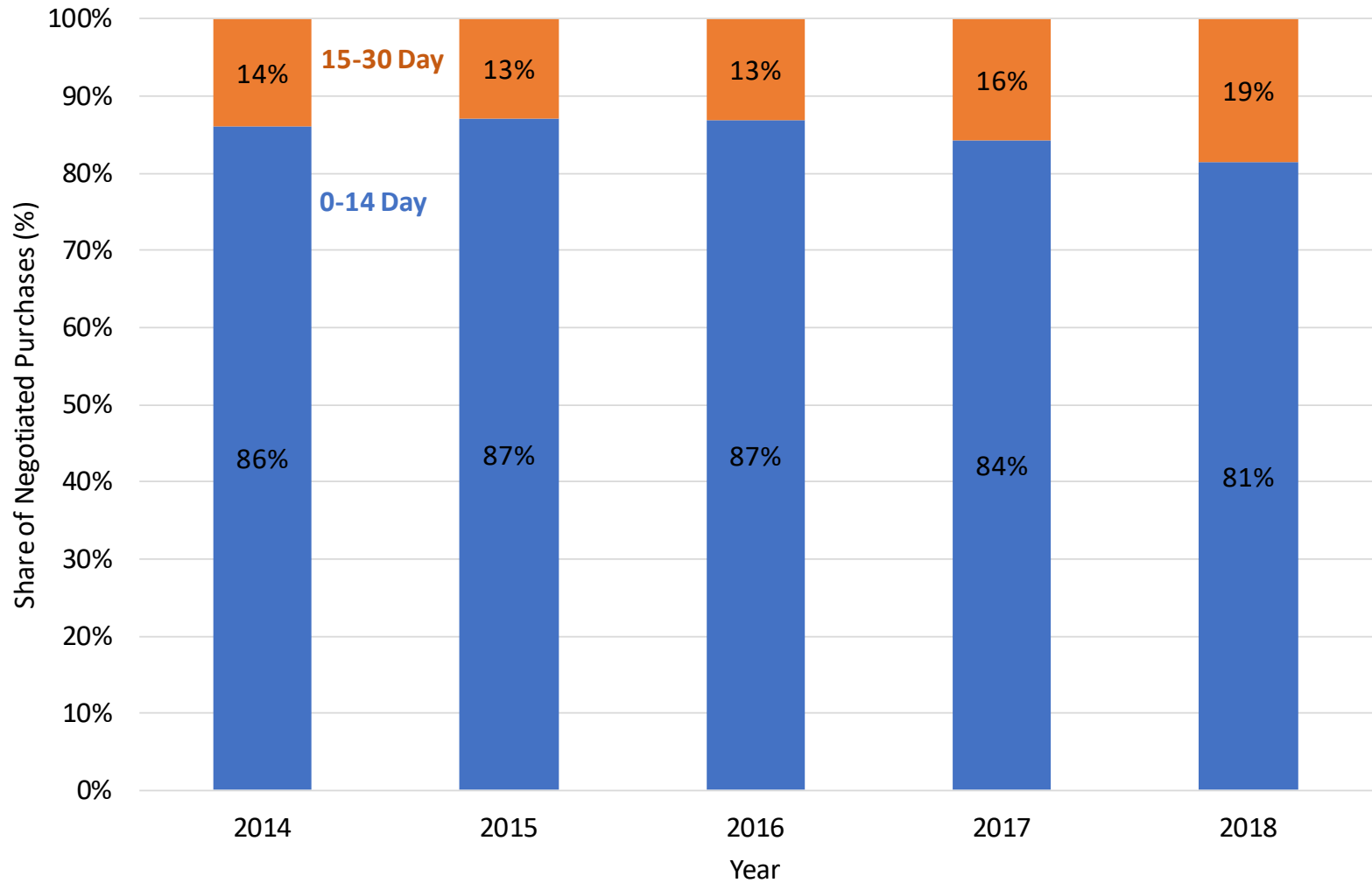
**For each alternative market alignment we assessed:**

- Confidentiality reporting 0-14, 15-30, & 0-30 day
- Overall statistical impacts on prices reported

**Figure 5. Weekly Shares of 0-14 Day and 15-30 Day Negotiated Purchases, Nationally, 2014-2018**

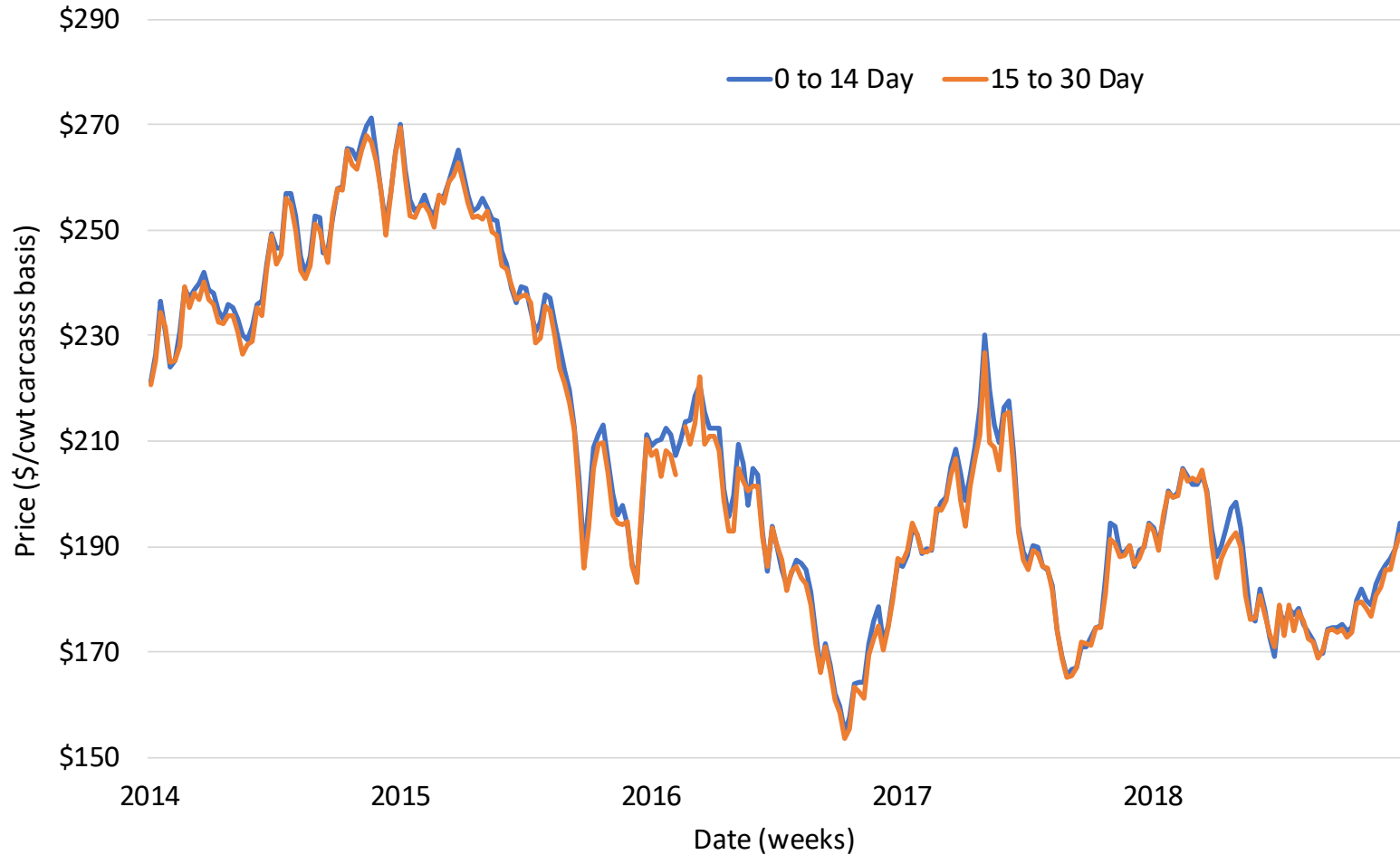


**Figure 6. Annual Shares of 0-14 Day and 15-30 Day Negotiated Purchases, Nationally, 2014-2018**

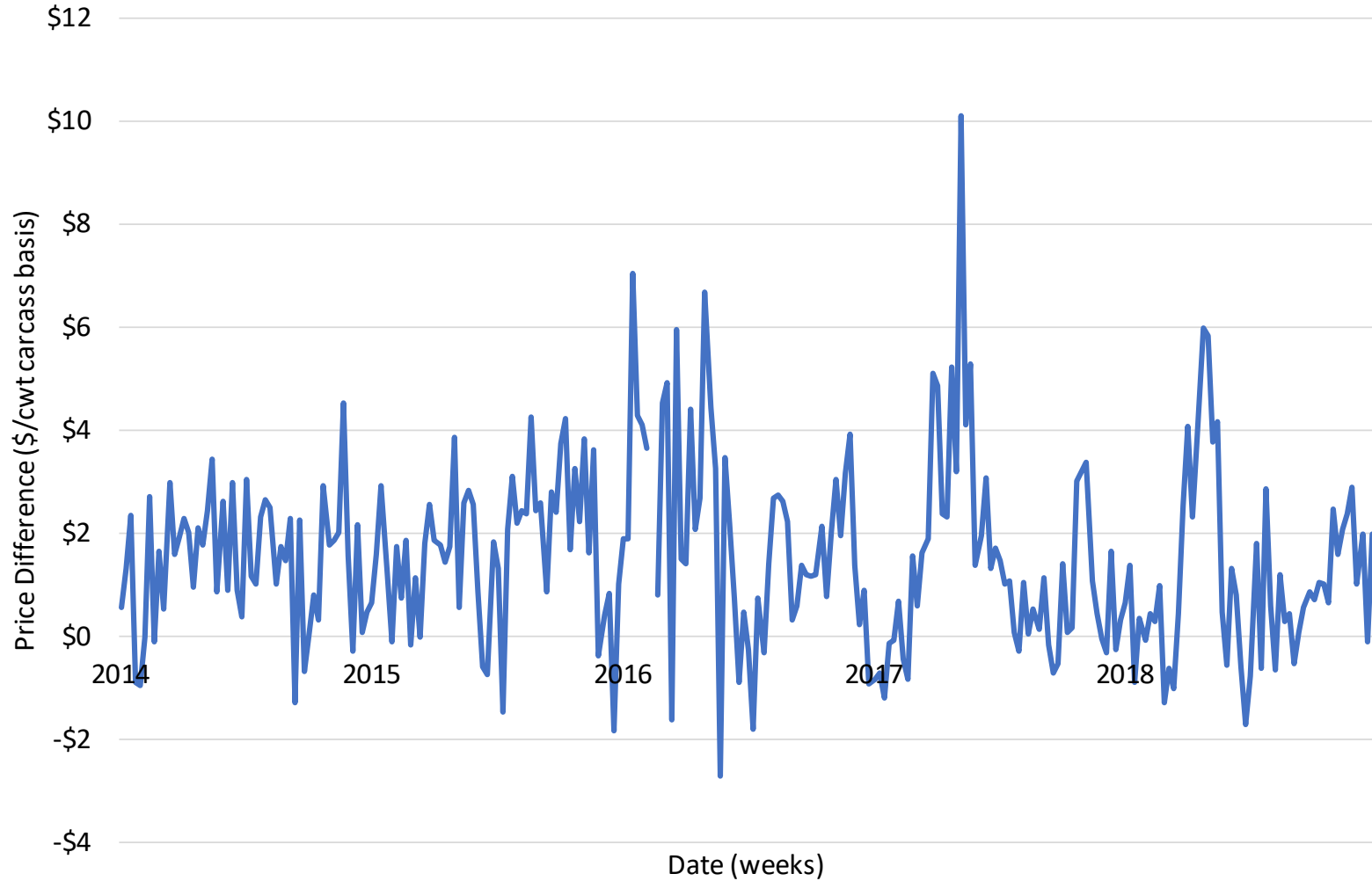




**Figure 11. National Weekly Weighted Average Calculated Dressed Price for 0 to 14 and 15 to 30 Day Delivery, 2014-2018**



**Figure 12. Weekly Calculated National Weighted Average Dressed 0 to 14 Day  
minus 15 to 30 Day Delivery Price, 2014-2018**

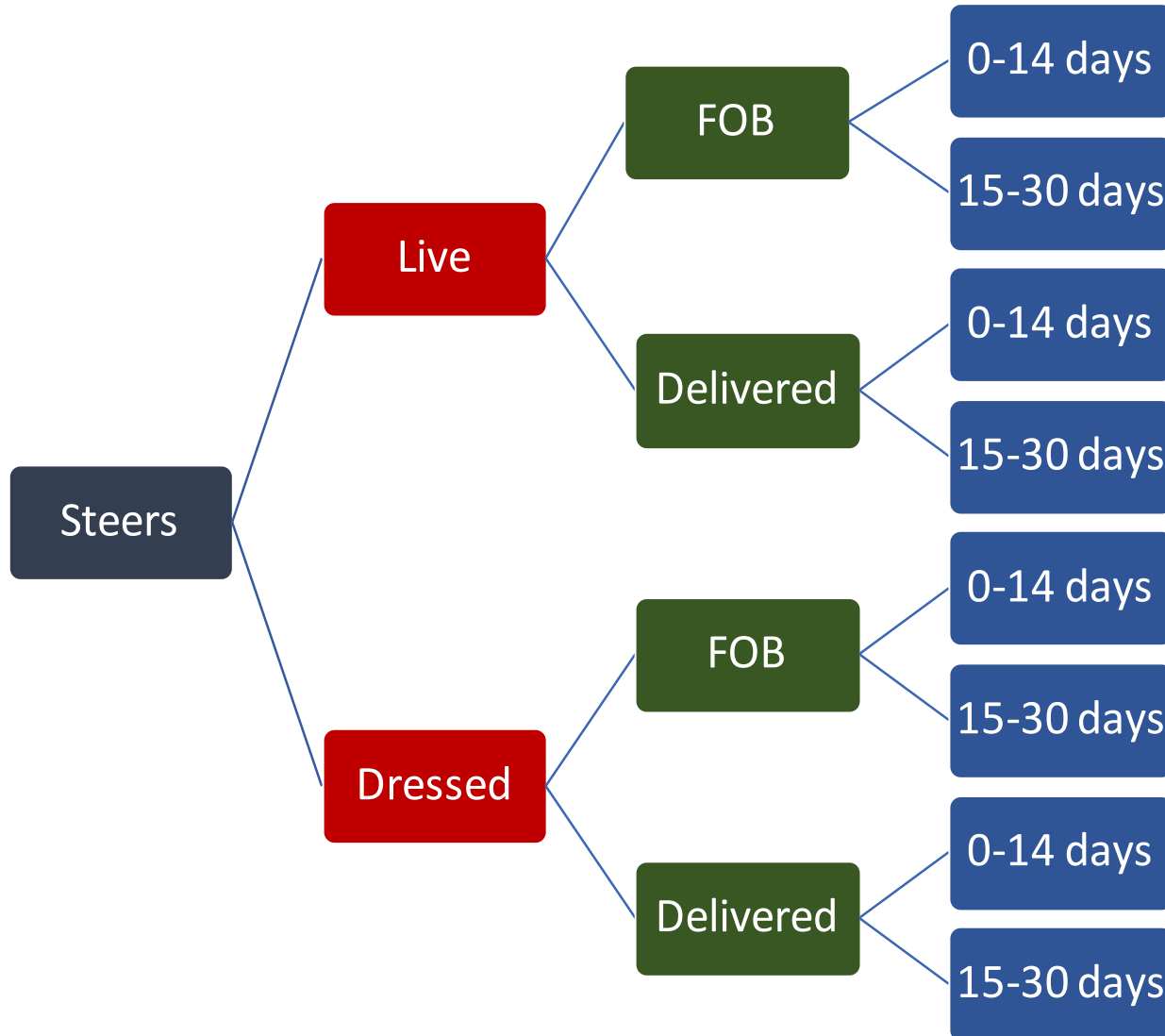


**Figure 10. Estimated Premium for 0 to 14 Day Delivery Relative to 15 to 30 Day Delivery by Year, Model 1**



# Disaggregation Challenges Reporting

Figure 8. Illustration of how Market Reporting Categories Expand with Transaction Types



**Table 4. Illustration of how Data Aggregation Impacts Transaction Numbers and Confidentiality Reportability, 2014-2018**

Data Aggregation <sup>a</sup>	Market Region				
	NE	IA/MN	KS	CO	TX/OK/NM
<u>All</u>					
Transactions	58,590	54,315	34,036	5,613	10,173
% of weeks trade reportable	100	100	100	87	85
<u>Steers</u>					
Transactions	31,610	27,299	16,094	3,011	4,952
% of weeks trade reportable	100	100	100	69	68
<u>Dressed Delivered Steers</u>					
Transactions	16,815	12,077	658	127	6
% of weeks trade reportable	100	100	1	0	0
<u>0-14 Days Dressed Delivered Steers</u>					
Transactions	13,266	9,542	539	120	6
% of weeks trade reportable	98	99	0	0	0
<u>15-30 Days Dressed Delivered Steers</u>					
Transactions	3,549	2,535	119	7	0
% of weeks trade reportable	8	28	0	0	0

# Alternative Market Alignments

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## Considerations:

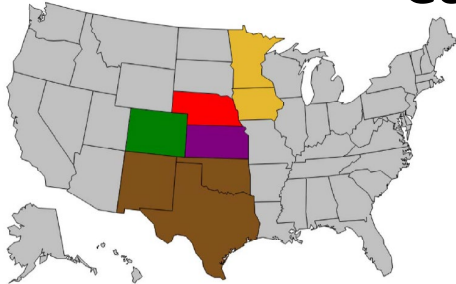
1. **Relevance – volume of negotiated trade**
2. **Location – contiguous / nearby**

## Then tested:

1. **Confidentiality - 0-14, 15-30, & 0-30 day reporting**
2. **Data Quality - statistical reported price impacts**

# Alternative Market Alignment Assessment

Alignment 1 - Current AMS Regions



Geographic proximity



Negotiated trade volume

**Recommended Market Alignment**

3/70/20

**CONFIDENTIAL**

Price Reporting Impact Analysis

ation

Market Integration

LM\_CT100  
St Joseph, MO Tue Nov 12, 2019 USDA Market News Service

5 AREA DAILY WEIGHTED AVERAGE DIRECT SLAUGHTER CATTLE - NEGOTIATED  
Texas/Oklahoma/New Mexico; Kansas; Nebraska; Colorado; Iowa/Minnesota feedlots  
(Includes all transactions regardless of delivery day)  
Recap for: Monday, 11/11/2019

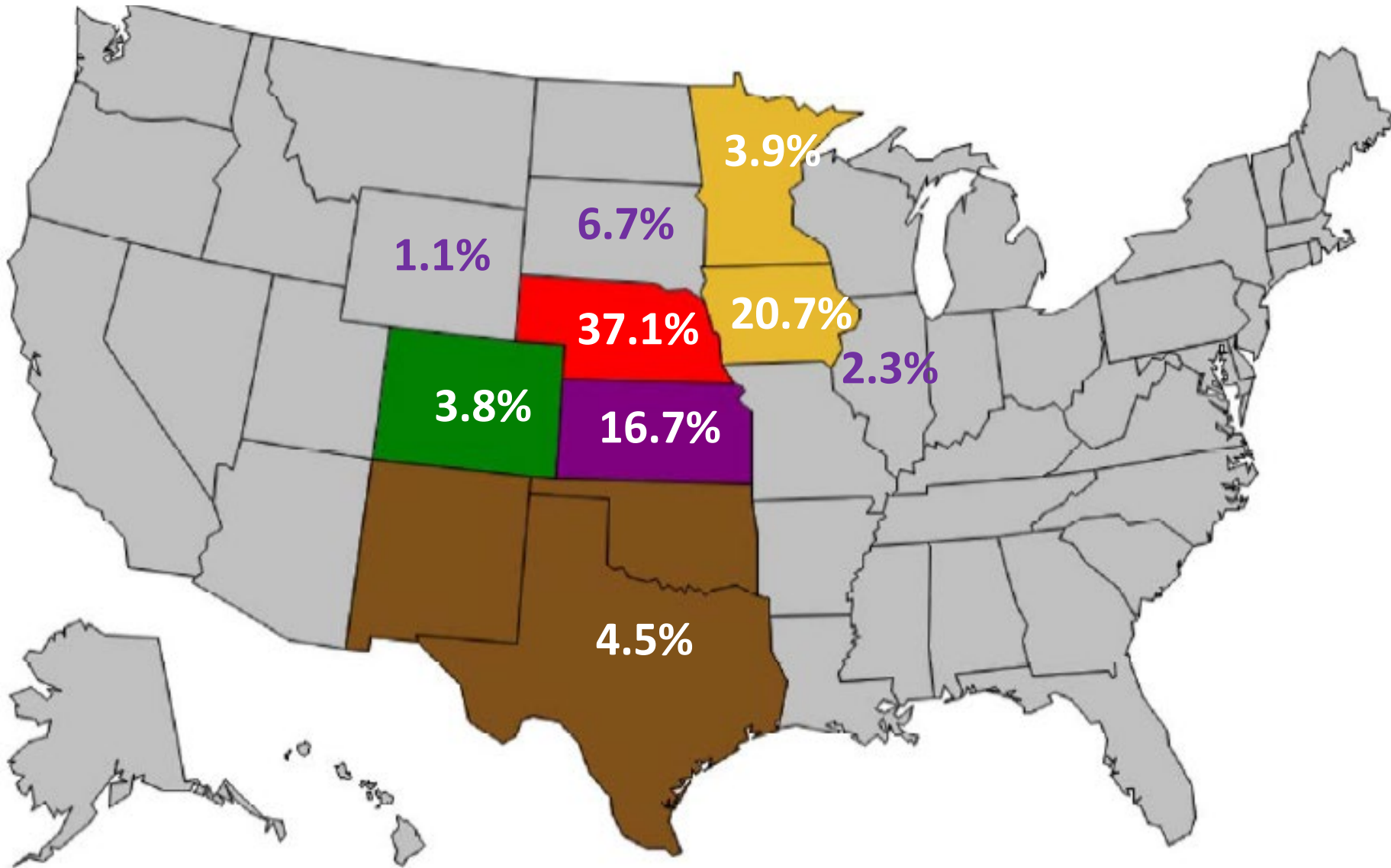
Head Count:	153	Week Ago:	1,822	Last Year:	
Week to Date:	153	Week Ago:	1,822	Last Year:	

Negotiated Cash Sales					
	Head Count	Weight Range	Price Range	Avg Weight	Avg Price
STEERS: LIVE FOB					
Over 80% Choice	77	1,500-1,525	114.00-115.00	1,513	114.52
65 - 80% Choice	-	-	-	-	-
35 - 65% Choice	-	-	-	-	-
0 - 35% Choice	-	-	-	-	-
Total all grades	77	1,500-1,525	114.00-115.00	1,513	114.52
STEERS: LIVE DELIVERED					

Correlations of Weekly Hedonic Price Predicti

	IA		IL		IN		KS	
State	corr	State	corr	State	corr	State	corr	
SD	0.7513	IA	0.6636	IL	0.4091	TX	0.7705	
NE	0.7193	SD	0.6039	OH	0.4061	NE	0.6715	
IL	0.6636	NE	0.4530	IA	0.2917	CO	0.6358	
MN	0.6194	MN	0.4255	MN	0.2850	WY	0.6004	
KS	0.4788	IN	0.4091	CO	0.2675	IA	0.4788	
TX	0.4328	KS	0.3809	NE	0.2419	OK	0.4039	
CO	0.3978	OH	0.3337	SD	0.2367	MN	0.4020	
WY	0.3385	TX	0.3303	KS	0.1941	IL	0.3809	
OH	0.3053	CO	0.3201	OK	0.1575	SD	0.3804	
IN	0.2917	WY	0.2126	WY	0.1507	IN	0.1941	
OK	0.1143	OK	0.1661	TX	0.1454	OH	0.1278	
NM	-0.0645	NM	-0.1758	NM	-0.4551	NM	0.1133	

# Shares Negotiated Transactions, States Representing at least 1% of Negotiated Volume, 2014-18





# Alternative Market Alignments Considered

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## IA/MN

IA/MN/SD/IL

IA/MN/IL/IN/OH

## NE

NE/SD

NE/SD/WY

NE/CO/WY

NE/CO/WY/SD

## KS

KS/CO/WY

KS/TX/OK/NM

## TX/OK/NM

TX/OK/NM/CO

KS/TX/OK/NM

## CO

CO/WY

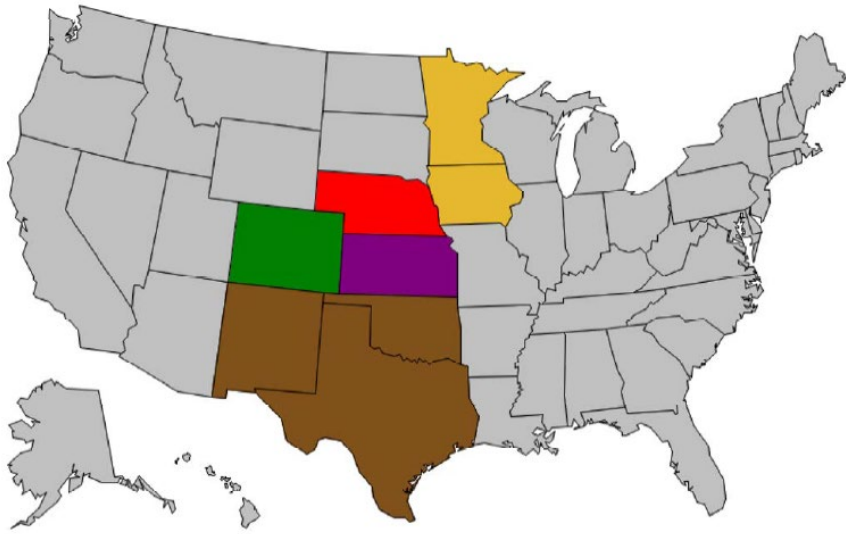
CO/WY/SD

NE/CO/WY

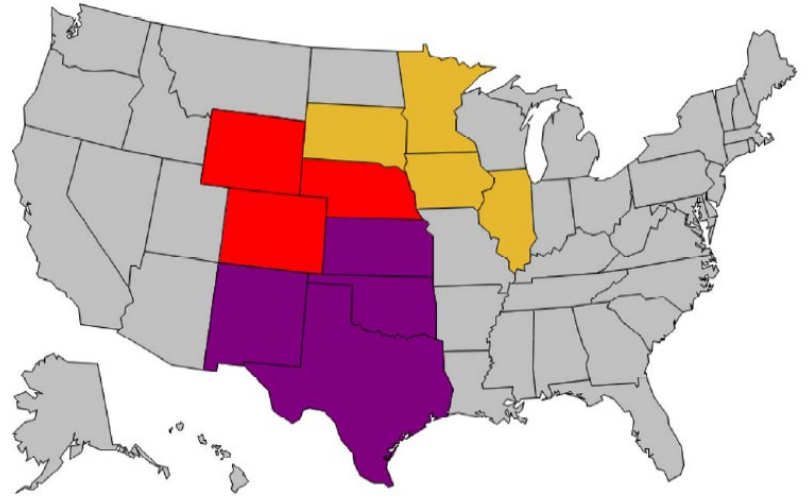
NE/CO/WY/SD

KS/CO/WY

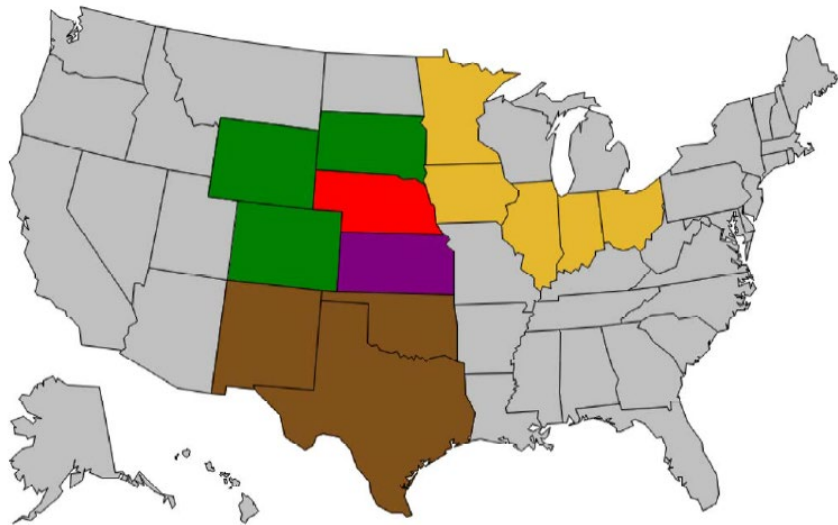
**Alignment 1 - Current AMS Regions**



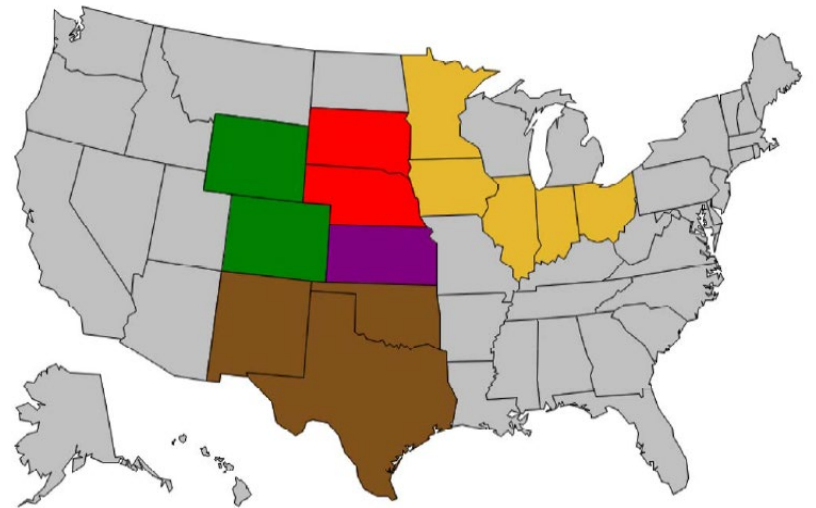
**Alignment 2**



**Alignment 3**



**Alignment 4**



# Percentage of Weeks Confidentiality was met

Region / Delivery Window	2014	2015	2016	2017	2018	2014-18
	% of Weeks Trade Reportable					
<b><u>5-Area</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	93%	12%	14%	63%	75%	50%
<b><u>National Domestic</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	93%	52%	14%	62%	75%	58%

100%

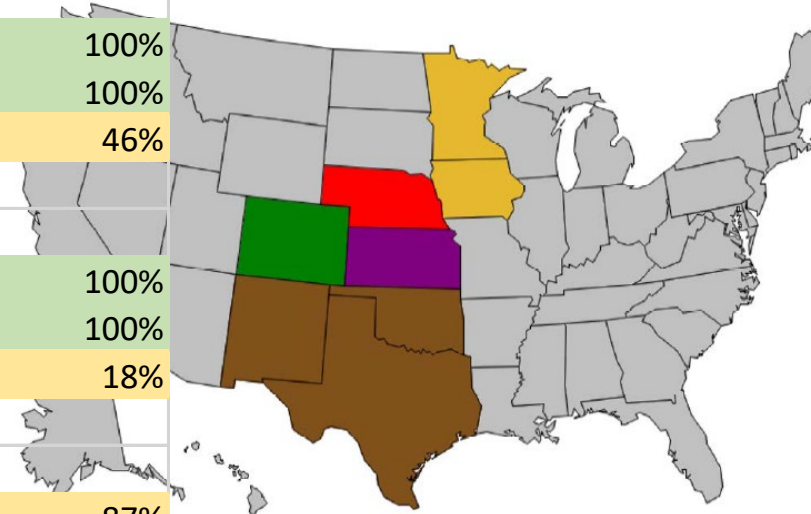
1-99%

0%

## Alignment 1

Region / Delivery Window	2014	2015	2016	2017	2018	2014-18
% of Weeks Trade Reportable						
<b>IA/MN</b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	59%	21%	0%	63%	90%	46%
<b>NE</b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	0%	36%	43%	18%
<b>CO</b>						
0-30 Day	78%	85%	85%	100%	85%	87%
0-14 Day	66%	73%	77%	100%	77%	79%
15-30 Day	0%	0%	0%	0%	0%	0%
<b>KS</b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	0%	0%	0%	0%
<b>TX/NM/OK</b>						
0-30 Day	90%	47%	90%	100%	100%	85%
0-14 Day	85%	40%	90%	100%	100%	83%
15-30 Day	0%	0%	0%	0%	0%	0%

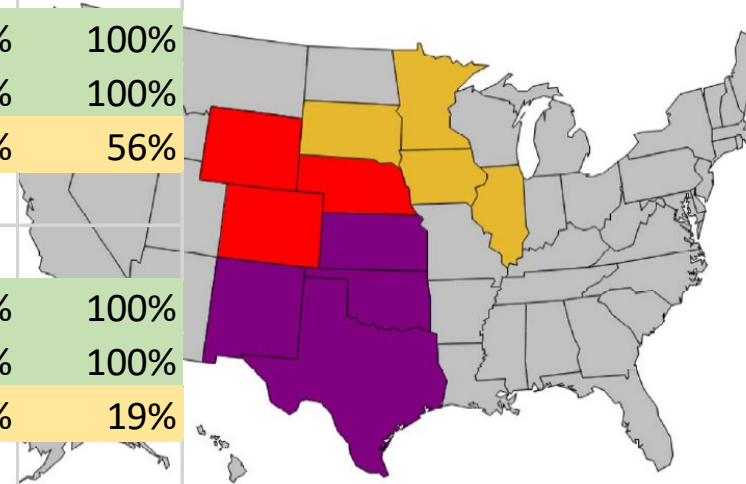
Alignment 1 - Current AMS Regions



**Alignment 2**

	2014	2015	2016	2017	2018	2014-18
% of Weeks Trade Reportable						
<b><u>IA/MN/SD/IL</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	73%	57%	0%	63%	90%	56%
<b><u>NE/CO/WY</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	0%	37%	44%	19%
<b><u>KS/TX/OK/NM</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	24%	0%	0%	0%	0%	5%

Alignment 2



**Alignment 4**

2014 2015 2016 2017 2018 2014-18

% of Weeks Trade Reportable

**IA/MN/IL/IN/OH**

0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	51%	57%	0%	62%	78%	49%

**NE/SD**

0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	8%	55%	43%	20%

**CO/WY**

0-30 Day	98%	90%	90%	100%	87%	93%
0-14 Day	83%	90%	90%	100%	87%	90%
15-30 Day	0%	0%	0%	0%	0%	0%

**KS**

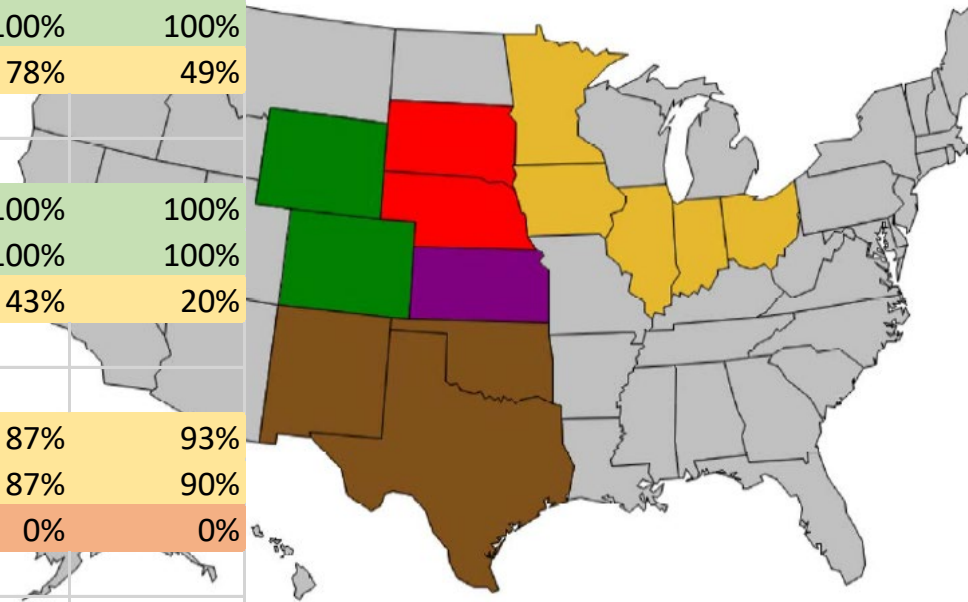
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	0%	0%	0%	0%

**TX/OK/NM**

**TX/OK/NM**

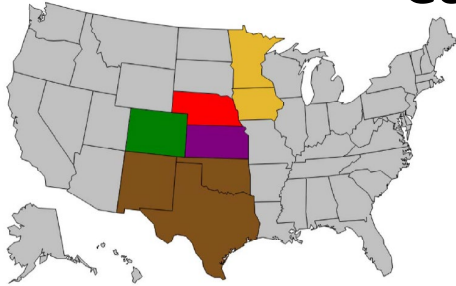
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0-14 Day	85%	40%	90%	100%	100%	83%
15-30 Day	0%	0%	0%	0%	0%	0%

**Alignment 4**



# Alternative Market Alignment Assessment

Alignment 1 - Current AMS Regions



Geographic proximity



Negotiated trade volume

**Recommended Market Alignment**

3/70/20

**CONFIDENTIAL**

Price Reporting Impact Analysis

Market Integration

LM\_CT100  
St Joseph, MO Tue Nov 12, 2019 USDA Market News Service

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65 - 80% Choice	-	-	-	-	-
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Correlations of Weekly Hedonic Price Predicti

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State	corr	State corr	State corr	State corr
SD	0.7513	IA 0.6636	IL 0.4091	TX 0.7705
NE	0.7193	SD 0.6039	OH 0.4061	NE 0.6715
IL	0.6636	NE 0.4530	IA 0.2917	CO 0.6358
MN	0.6194	MN 0.4255	MN 0.2850	WY 0.6004
KS	0.4788	IN 0.4091	CO 0.2675	IA 0.4788
TX	0.4328	KS 0.3809	NE 0.2419	OK 0.4039
CO	0.3978	OH 0.3337	SD 0.2367	MN 0.4020
WY	0.3385	TX 0.3303	KS 0.1941	IL 0.3809
OH	0.3053	CO 0.3201	OK 0.1575	SD 0.3804
IN	0.2917	WY 0.2126	WY 0.1507	IN 0.1941
OK	0.1143	OK 0.1661	TX 0.1454	OH 0.1278
NM	-0.0645	NM -0.1758	NM -0.4551	NM 0.1133

# Statistical Price Modeling

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Understand how realignment impacts  
“quality” of price information  
reported by AMS



# Hedonic Price Analysis Modeling

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**Individual transaction prices vary because of:**

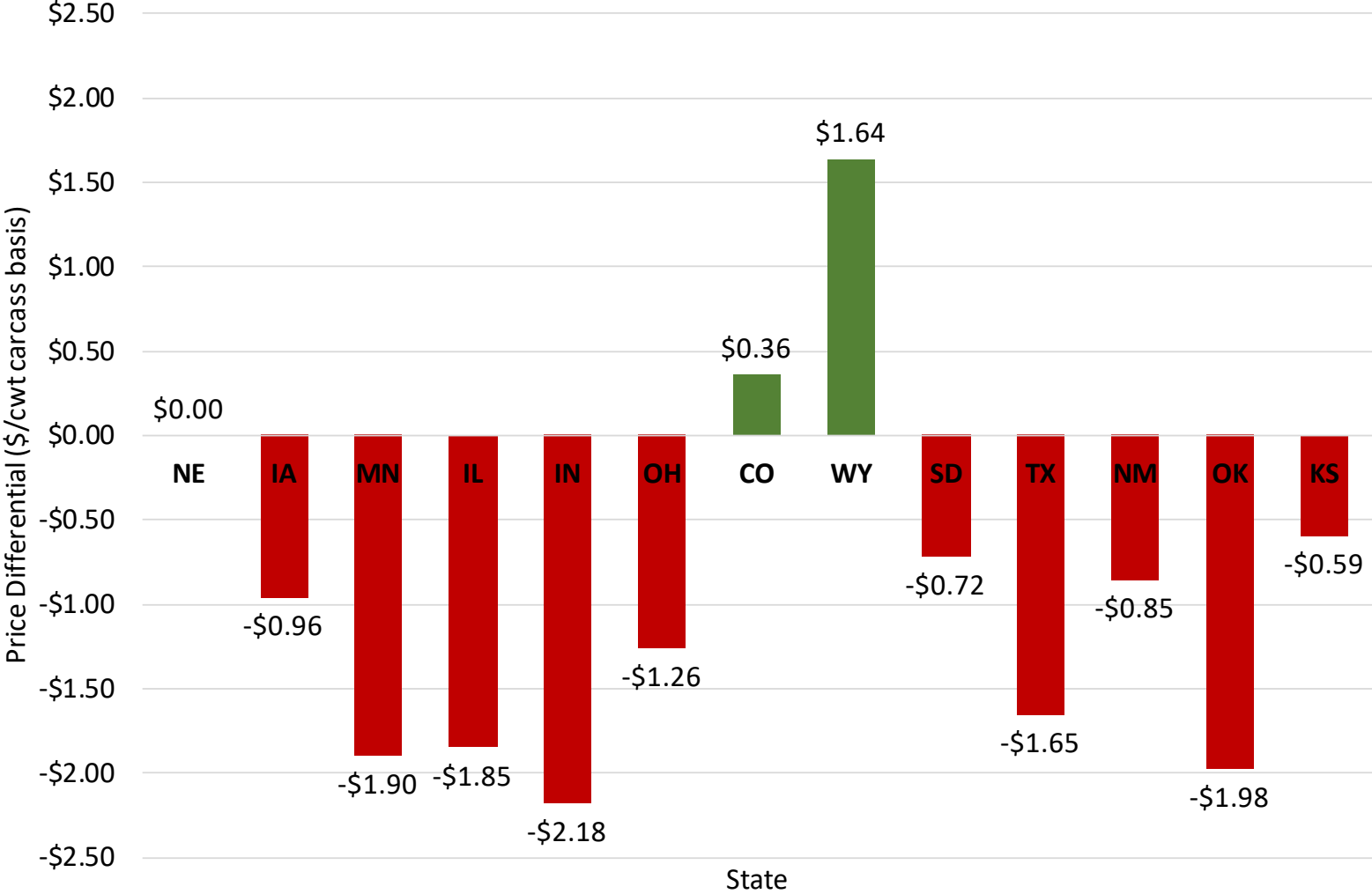
- **Date/Time**
- **Time to delivery (0-14, 15-30 day)**
- **Location**
- **Delivery vs. FOB**
- **Lot attributes (head, sex, weight, quality grade...)**
- **Other localized factors**
- **Unexplained variation not observed in transaction data**

**With large data sets like we had of reliable data we can statistically estimate how each of these factors impacts typical transaction prices –**

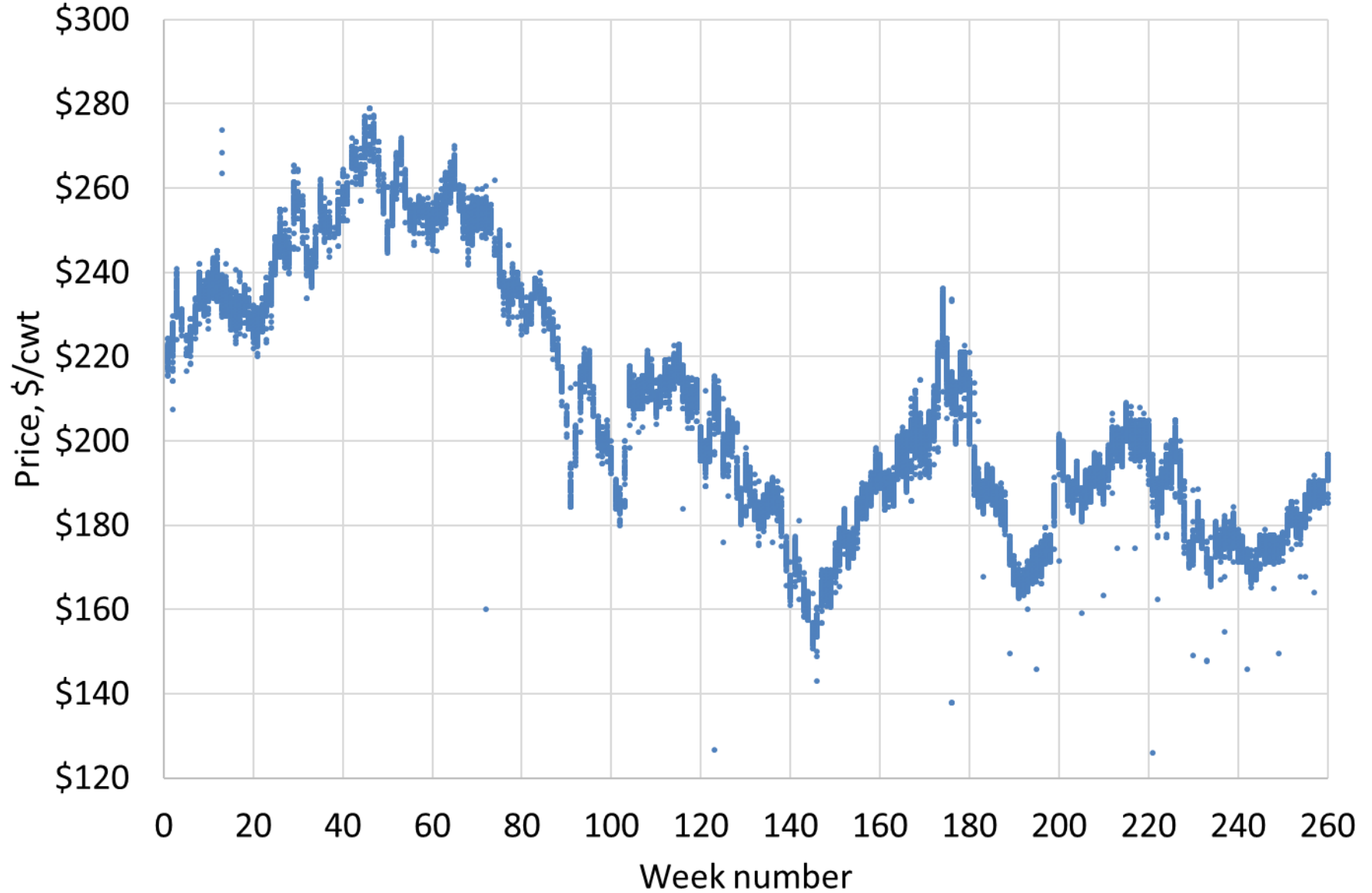
**Figure 10. Estimated Premium for 0 to 14 Day Delivery Relative to 15 to 30 Day Delivery by Year, Model 1**



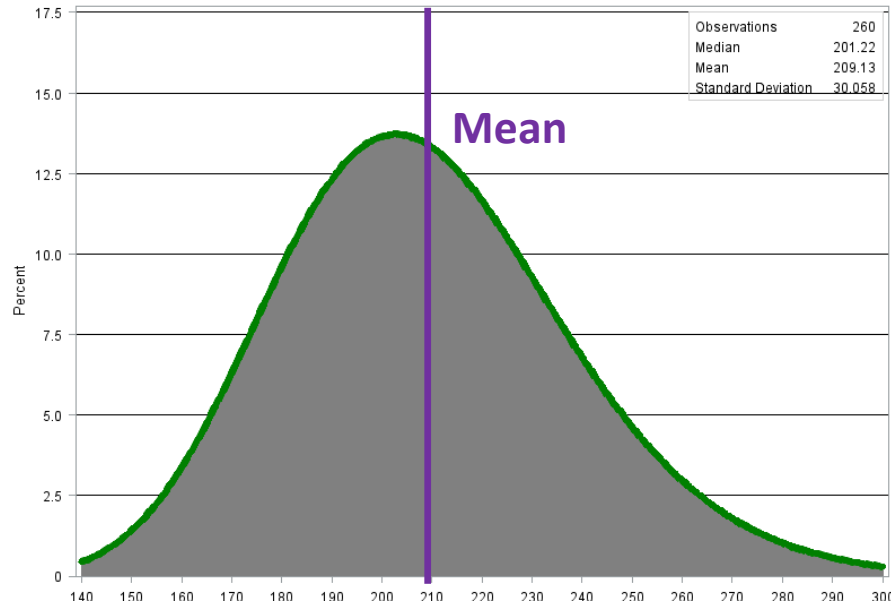
**Figure 9. State of Origin Price Differentials Relative to NE Estimated using Hedonic Model 1**



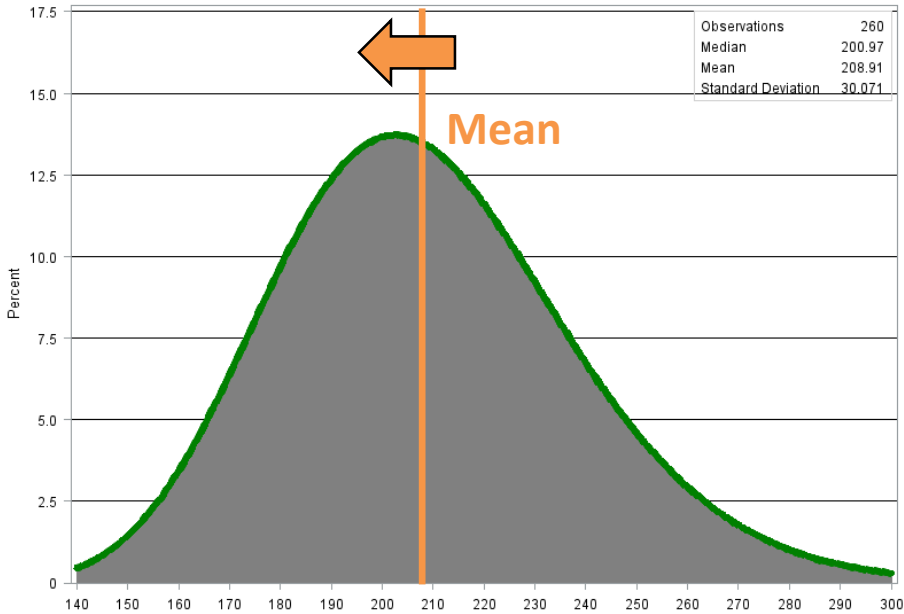
# Kansas Negotiated Fed Cattle Transaction Prices



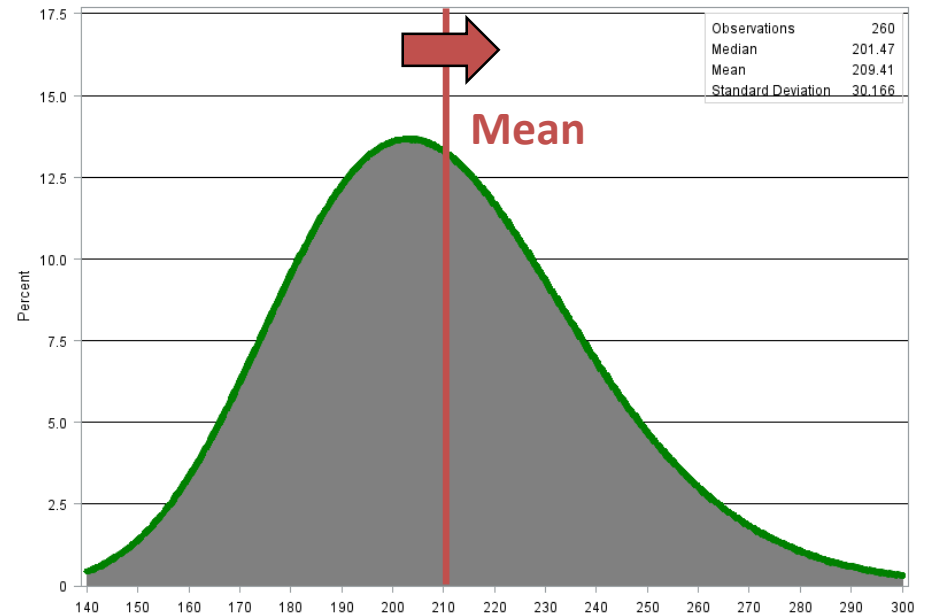
# Base Region: KS



## Alternative Alignment: KS/TX/OK/NM



## Alternative Alignment: KS/CO/WY



# Means and Differences for Weighted Average Dressed Price (\$/cwt) by Region and Alignment, 2014-2018

		Mean	Difference <sup>1</sup>	
Region 1:	IA/MN	208.44		
	IA/MN/SD/IL	208.44	-0.01	
	Alternative	IA/MN/IL/IN/OH	208.30	-0.14
	Alignments	5 Area	209.14	0.70
	National	209.04	0.60	
Region 2:	NE	209.75		
	NE/CO/WY	209.81	0.06	
	NE/SD	209.60	-0.15	
	Alternative	NE/CO/WY/SD	209.66	-0.09
	Alignments	NE/SD/WY	209.63	-0.12
	National	209.14	-0.61	
Region 3:	KS	209.13		
	KS/TX/OK/NM	208.91	-0.23	
	Alternative	KS/CO/WY	209.41	0.28
	Alignments	5 Area	209.14	0.01
	National	209.04	-0.09	
Region 4:	TX/OK/NM	207.77		
	Alternative	TX/OK/NM/CO	209.02	1.04
	Alignments	5 Area	209.14	1.19
	National	209.04	1.09	
Region 5:	CO	210.74		
	CO/WY/SD	209.40	-0.78	
	Alternative	CO/WY	210.39	0.19
	Alignments	5 Area	209.14	-1.06
	National	209.04	-1.16	

Price means are statistically different than the base region

Economic Impact (per head)  
If dressed weight = 863

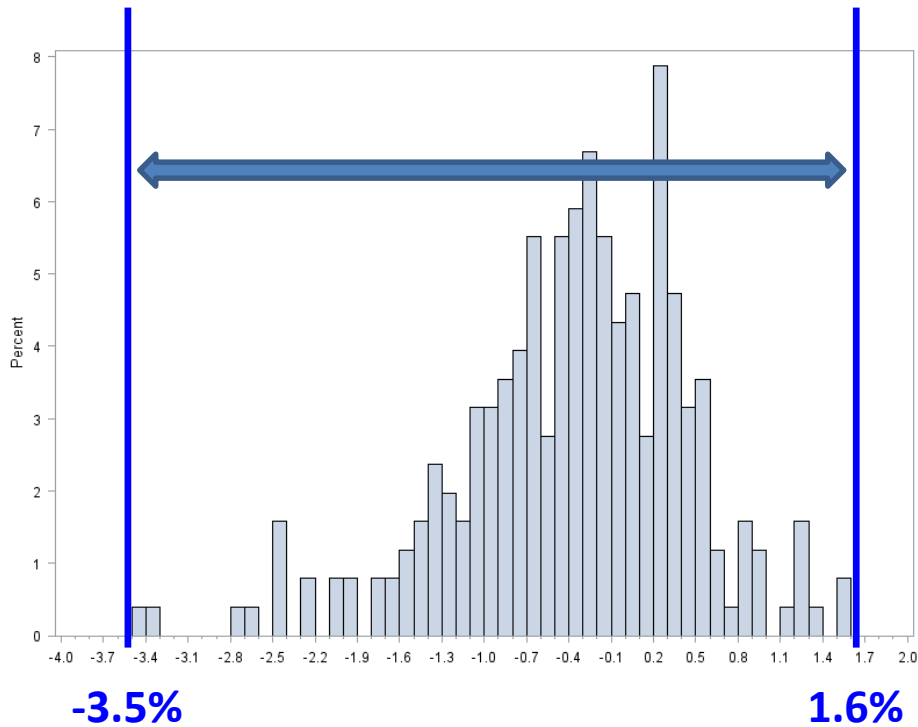
\$9

\$2

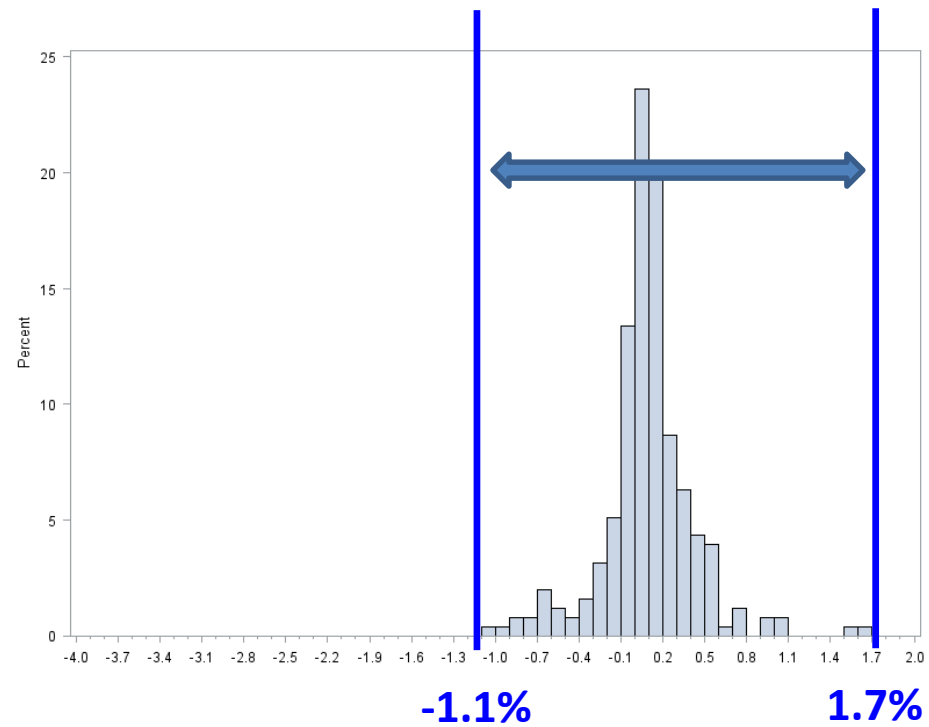
<sup>1</sup> The paired t-test only use cases that have non-missing values for both variables.

# Weekly mean price change as percent of the base mean

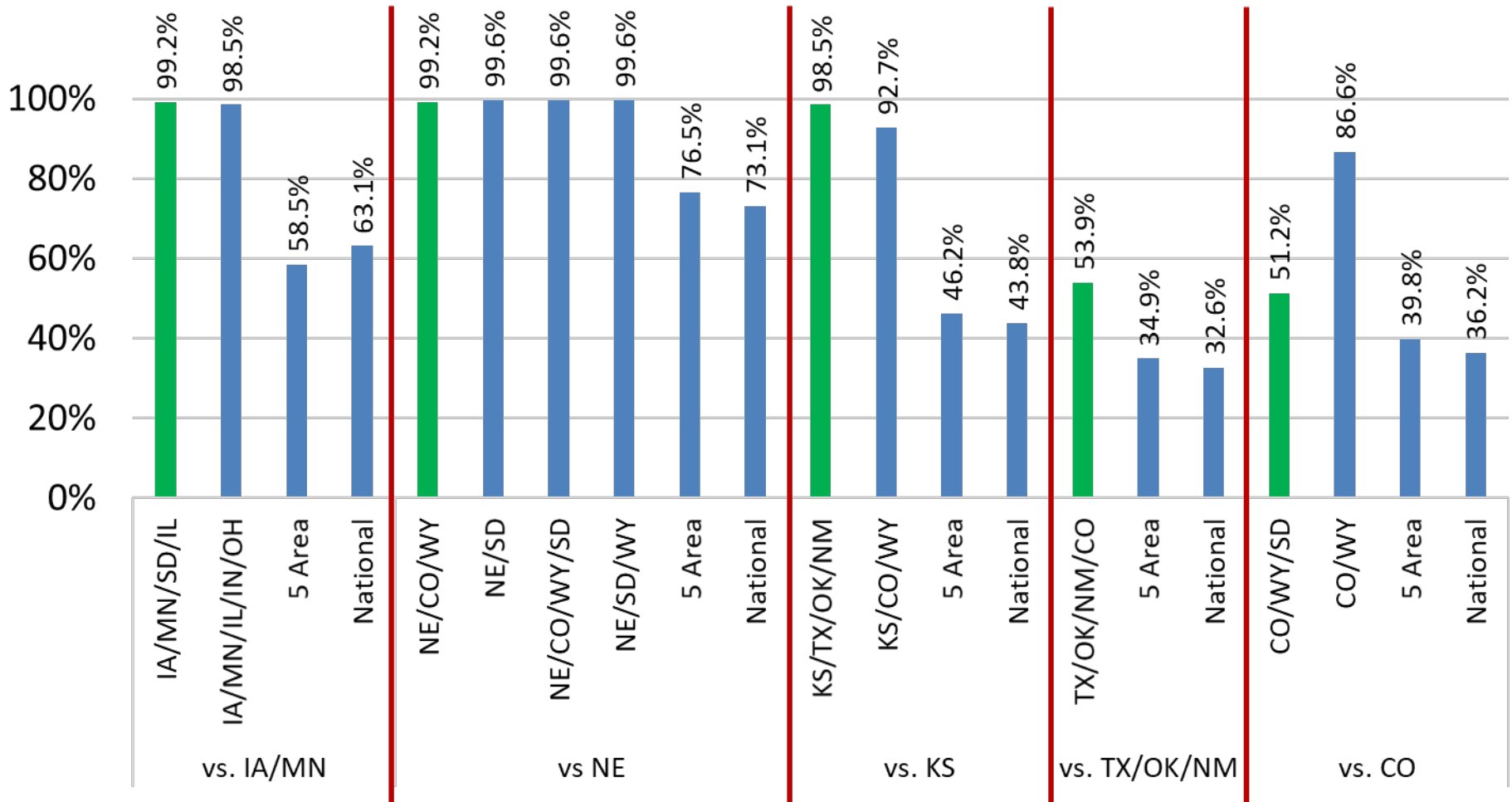
$$((CO/WY/SD - CO) \div CO) \times 100$$



$$((CO/WY - CO) \div CO) \times 100$$

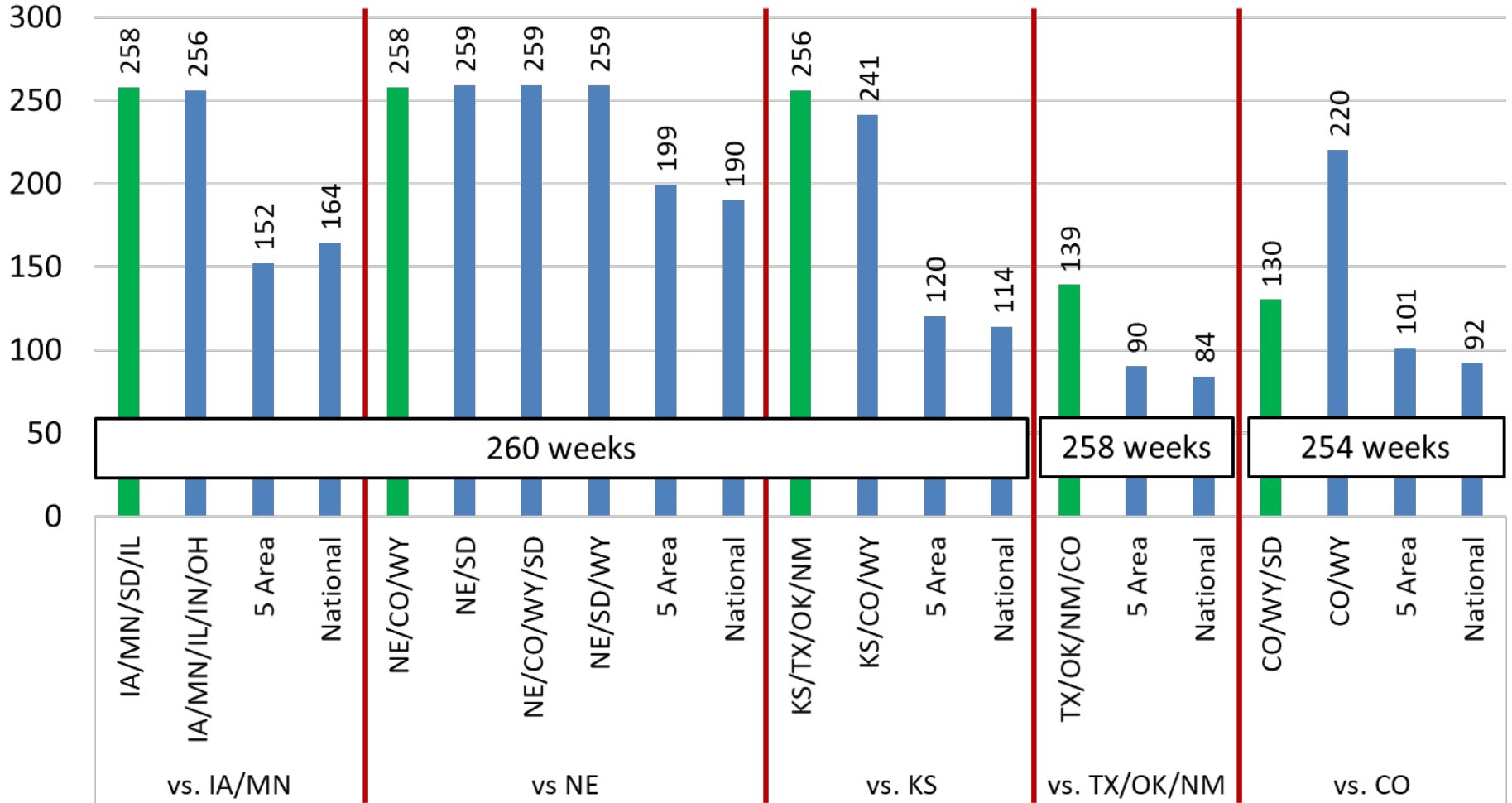


# Percentage of weeks the mean price change falls in the interval: -0.50% to 0.49% of the base mean



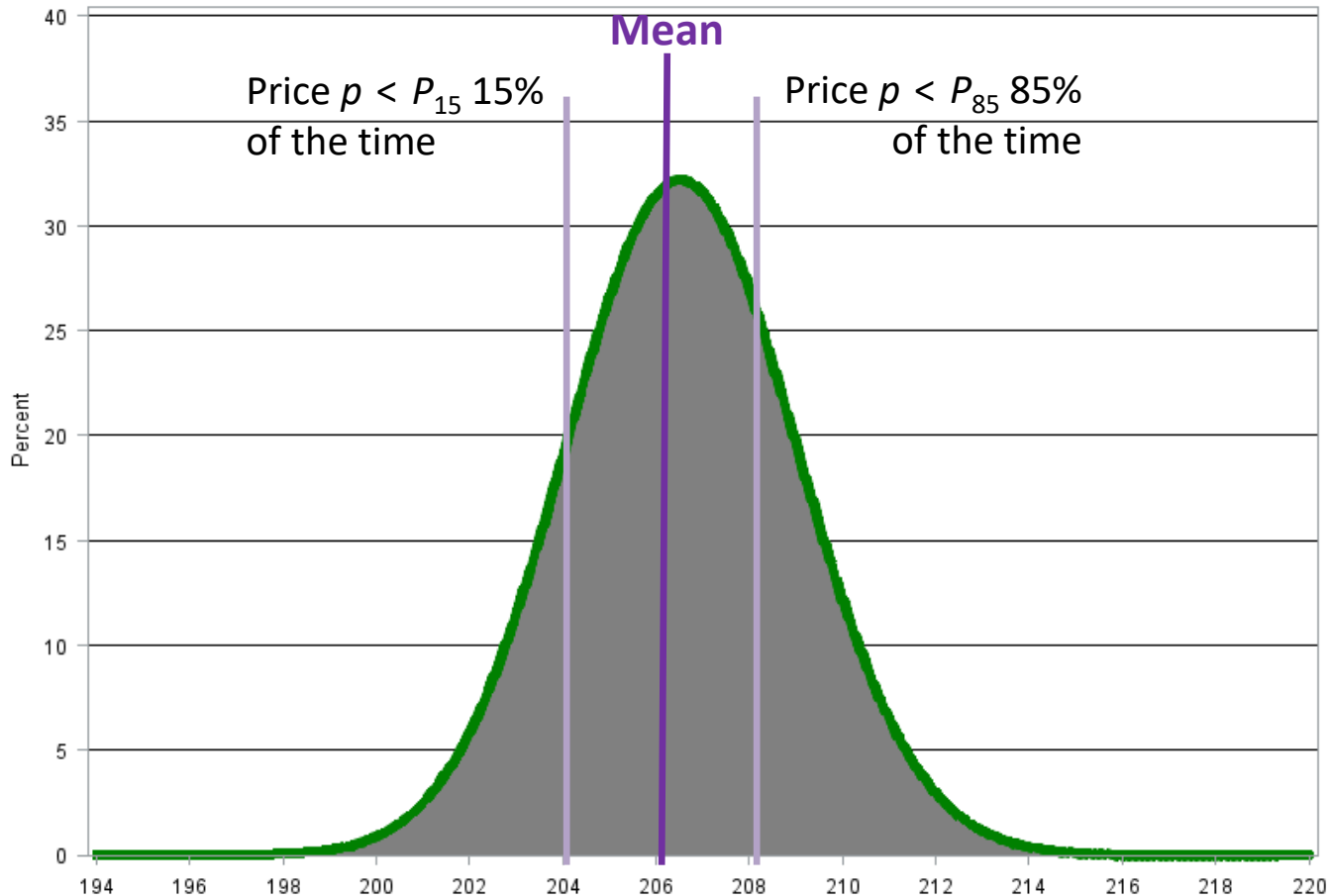


# Number of weeks the mean price change falls in the interval: -0.50% to 0.49% of the base mean



# Spread used to describe variability in prices

## Ex: 1 week price distribution



- Price  $p$  is within the range of  $\{P_{15} - P_{85}\}$  70% of the time
- Spread indicates how well the mean represents the data

# Means and Differences for Price Spreads as Percent of Mean Price by Region and Alignment, 2014-2018

		Mean	Difference <sup>1</sup>
Region 1:	IA/MN	1.97	
	IA/MN/SD/IL	2.09	0.12
	Alternative IA/MN/IL/IN/OH	2.28	0.32
	Alignments 5 Area	2.36	0.39
	National	2.49	0.52
Region 2:	NE	1.91	
	NE/CO/WY	2.06	0.15
	NE/SD	1.86	-0.05
	Alternative NE/CO/WY/SD	2.00	0.09
	Alignments NE/SD/WY	1.89	-0.02
	National	2.49	0.58
Region 3:	KS	1.94	
	KS/TX/OK/NM	1.95	0.02
	Alternative KS/CO/WY	2.14	0.20
	Alignments 5 Area	2.36	0.42
	National	2.49	0.55
Region 4:	TX/OK/NM	1.74	
	TX/OK/NM/CO	2.45	0.71
	Alternative 5 Area	2.36	0.62
	Alignments National	2.49	0.75
Region 5:	CO	2.51	
	CO/WY/SD	2.22	-0.28
	Alternative CO/WY	2.45	-0.01
	Alignments 5 Area	2.36	-0.15
	National	2.49	-0.03

Price spreads are statistically different than the base region

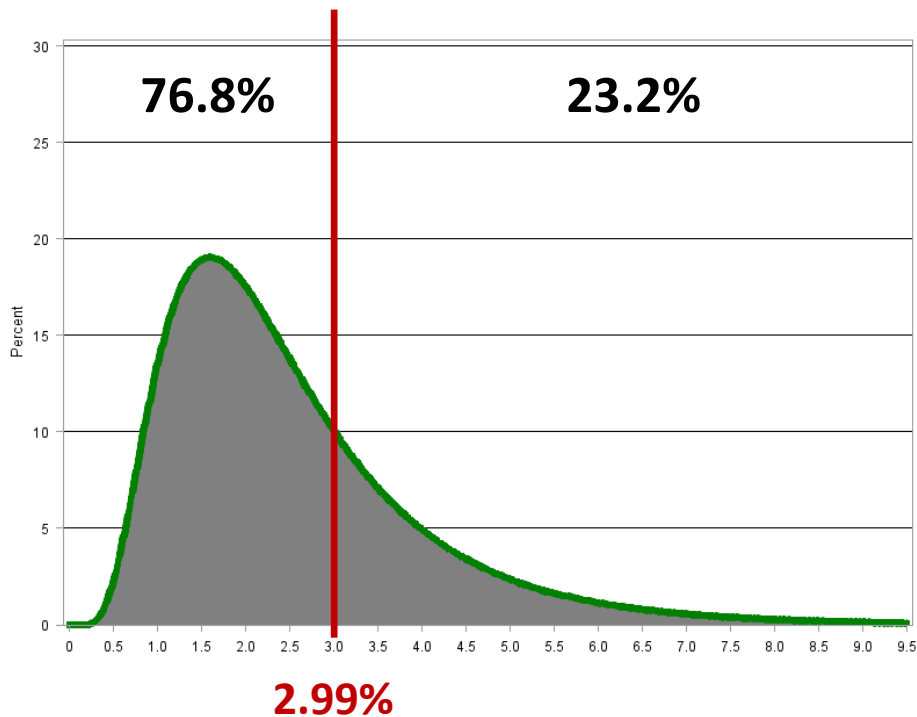
Alternative alignment spreads are lower than the base alignment CO spread

<sup>1</sup> The paired t-test only use cases that have non-missing values for both variables.

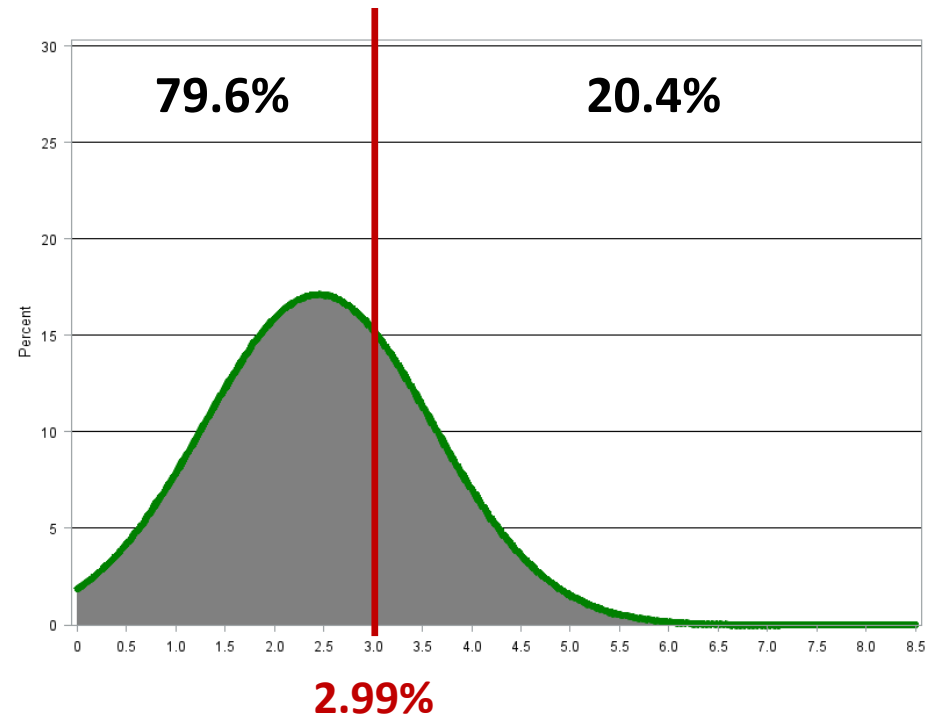
# Spread used to describe variability in prices

## Price Spread as Percent of Mean Price

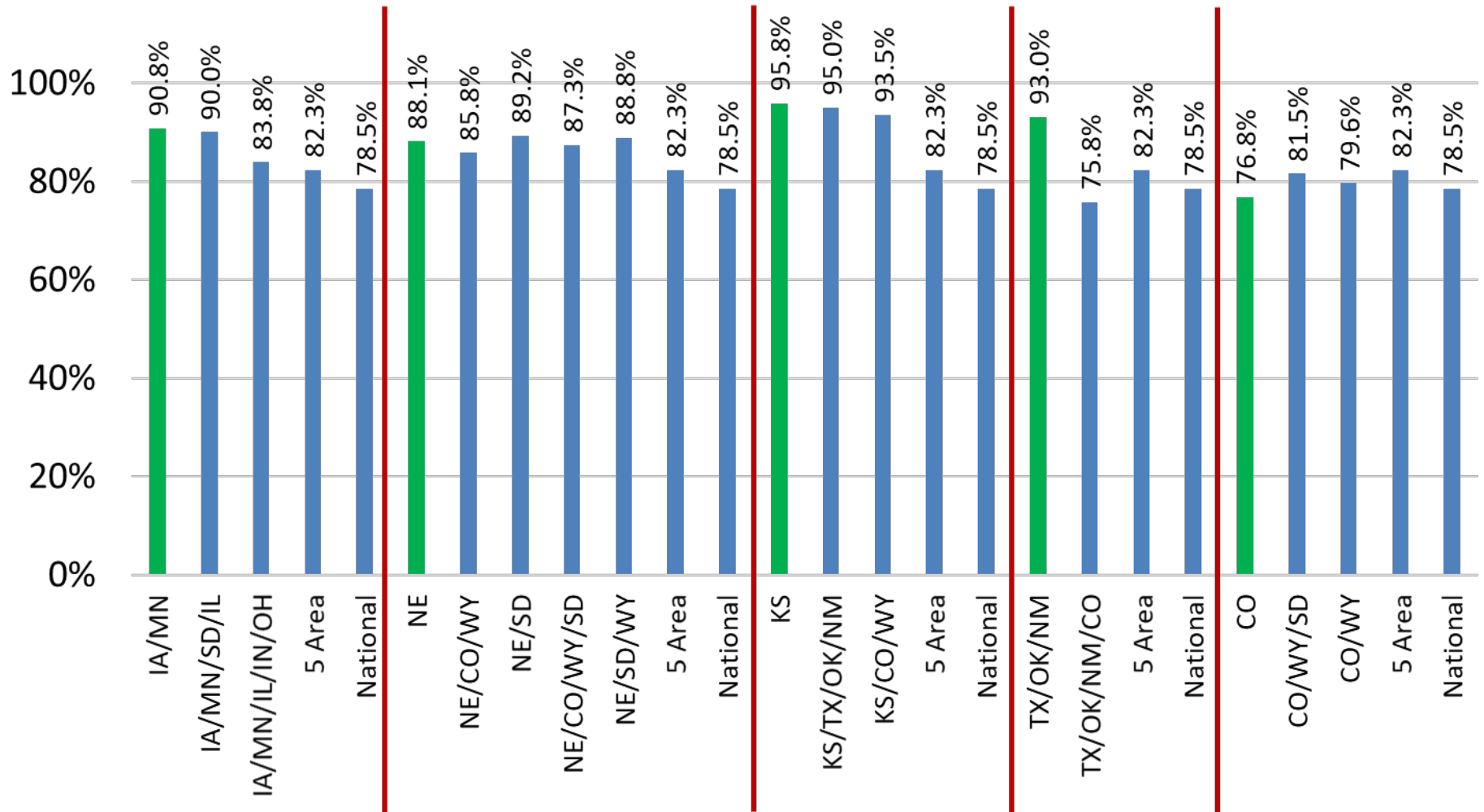
Base Region: CO



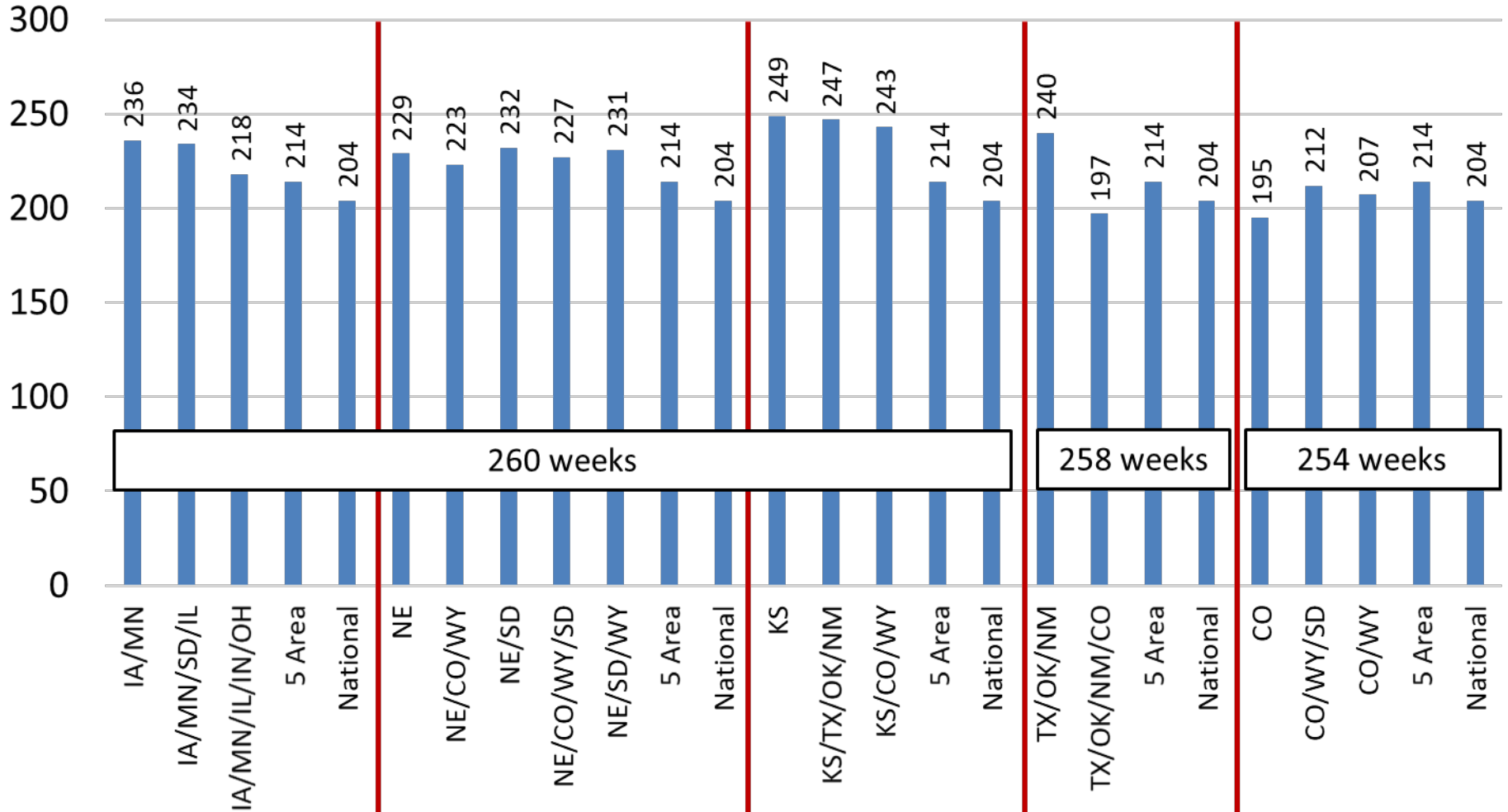
Alternative Alignment: CO/WY



# Percentage of weeks the price spread falls in the range: 0.0% to 2.99% of the mean

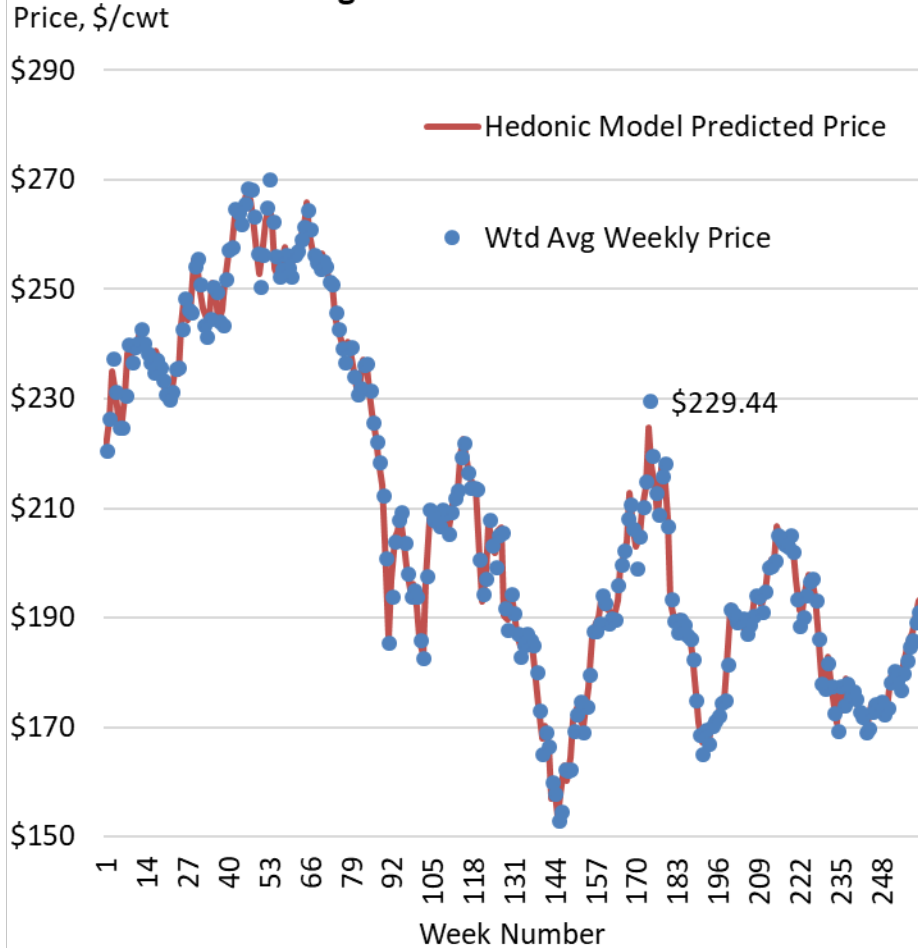


# Percentage of weeks the price spread falls in the range: 0.0% to 2.99% of the mean

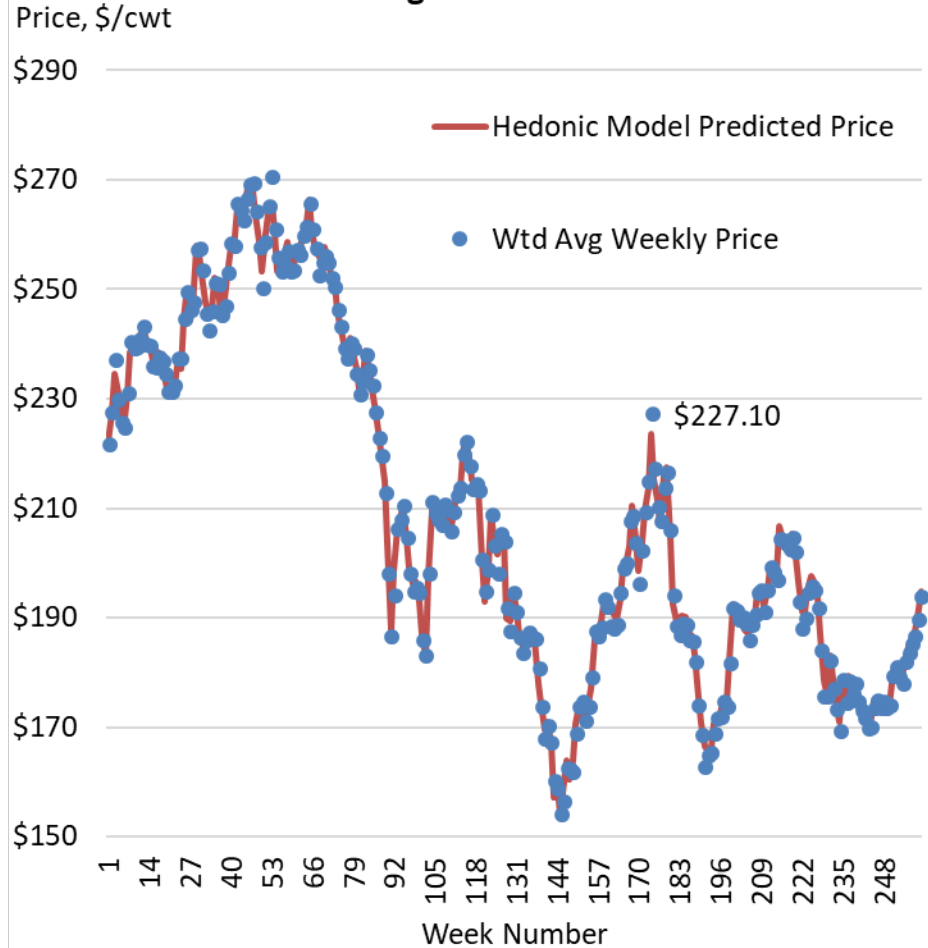


# Market Integration

## Iowa Negotiated Fed Cattle Prices



## South Dakota Negotiated Fed Cattle Prices



# Correlations of Weekly Hedonic Price Prediction Errors, 2014-2018

±0.70 to ±1.0 Strong  
 ±0.50 to ±0.70 Moderate  
 ±0.30 to ±0.50 Weak

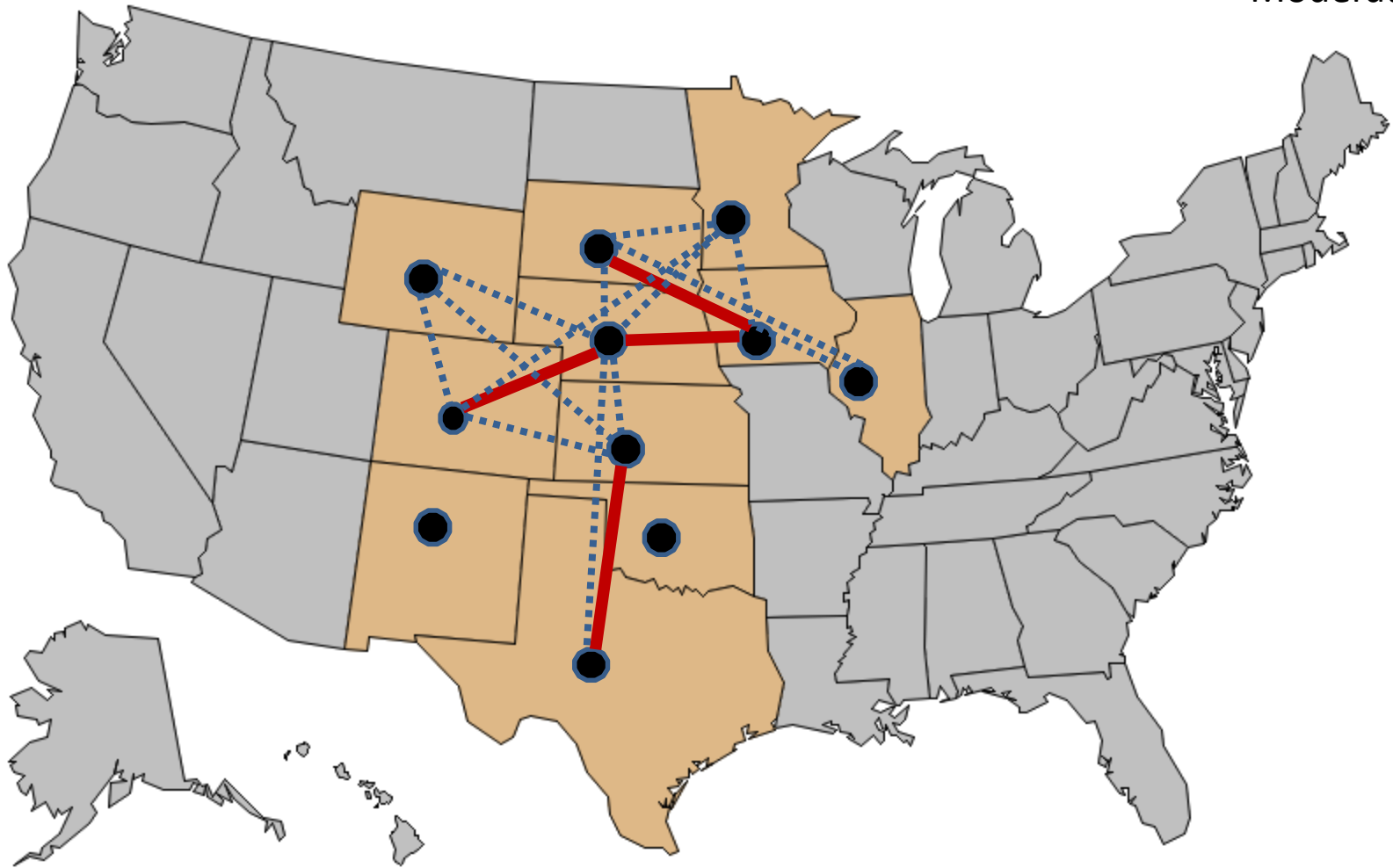
CO		IA		KS		MN		NE		TX	
State	corr	State	corr	State	corr	State	corr	State	corr	State	corr
NE	0.74	SD	0.75	TX	0.77	IA	0.62	CO	0.74	KS	0.77
KS	0.64	NE	0.72	NE	0.67	NE	0.59	IA	0.72	NE	0.54
MN	0.51	IL	0.66	CO	0.64	CO	0.51	KS	0.67	CO	0.49
WY	0.50	MN	0.62	WY	0.60	SD	0.51	MN	0.59	WY	0.48
TX	0.49	KS	0.48	IA	0.48	IL	0.43	SD	0.57	IA	0.43
IA	0.40	TX	0.43	OK	0.40	TX	0.42	TX	0.54	MN	0.42
SD	0.39	CO	0.40	MN	0.40	KS	0.40	WY	0.51	SD	0.36
IL	0.32	WY	0.34	IL	0.38	WY	0.31	IL	0.45	IL	0.33
OK	0.28	OH	0.31	SD	0.38	IN	0.28	IN	0.24	OK	0.28
IN	0.27	IN	0.29	IN	0.19	OH	0.25	OH	0.18	NM	0.19
NM	0.21	OK	0.11	OH	0.13	OK	0.05	OK	0.17	IN	0.15
OH	0.12	NM	-0.06	NM	0.11	NM	-0.09	NM	-0.01	OH	0.12

- Supports combining SD and IL with IA/MN
- Combining WY with KS, NE, or CO supported
- NE and TX; KS and IA; SD and TX; or CO and TX not viable to combine



# Levels of Market Integration, 2014-18

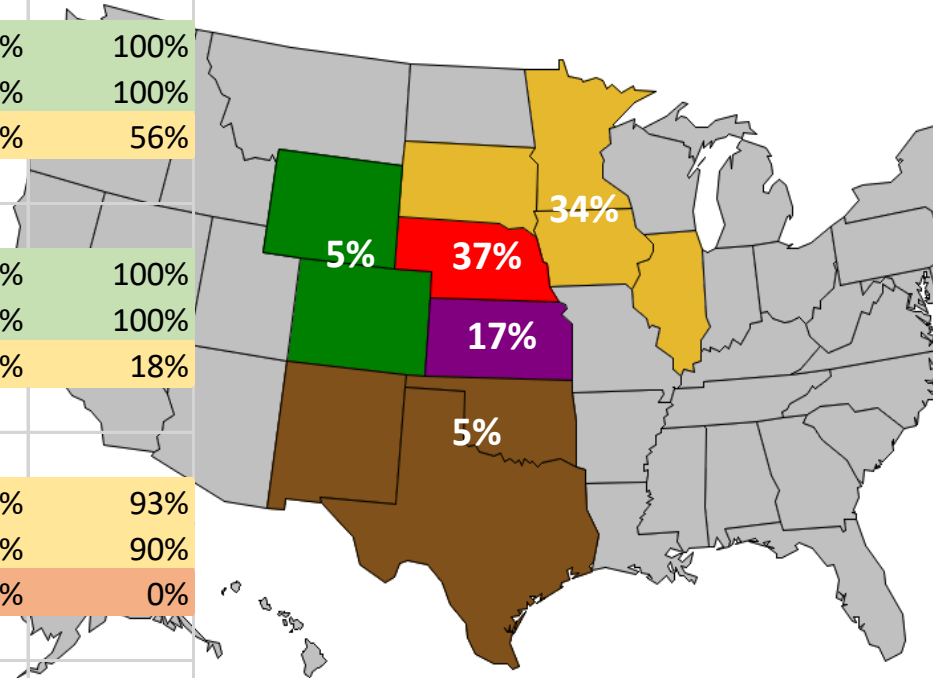
— High  
- - - Moderate



## Recommended Alignment

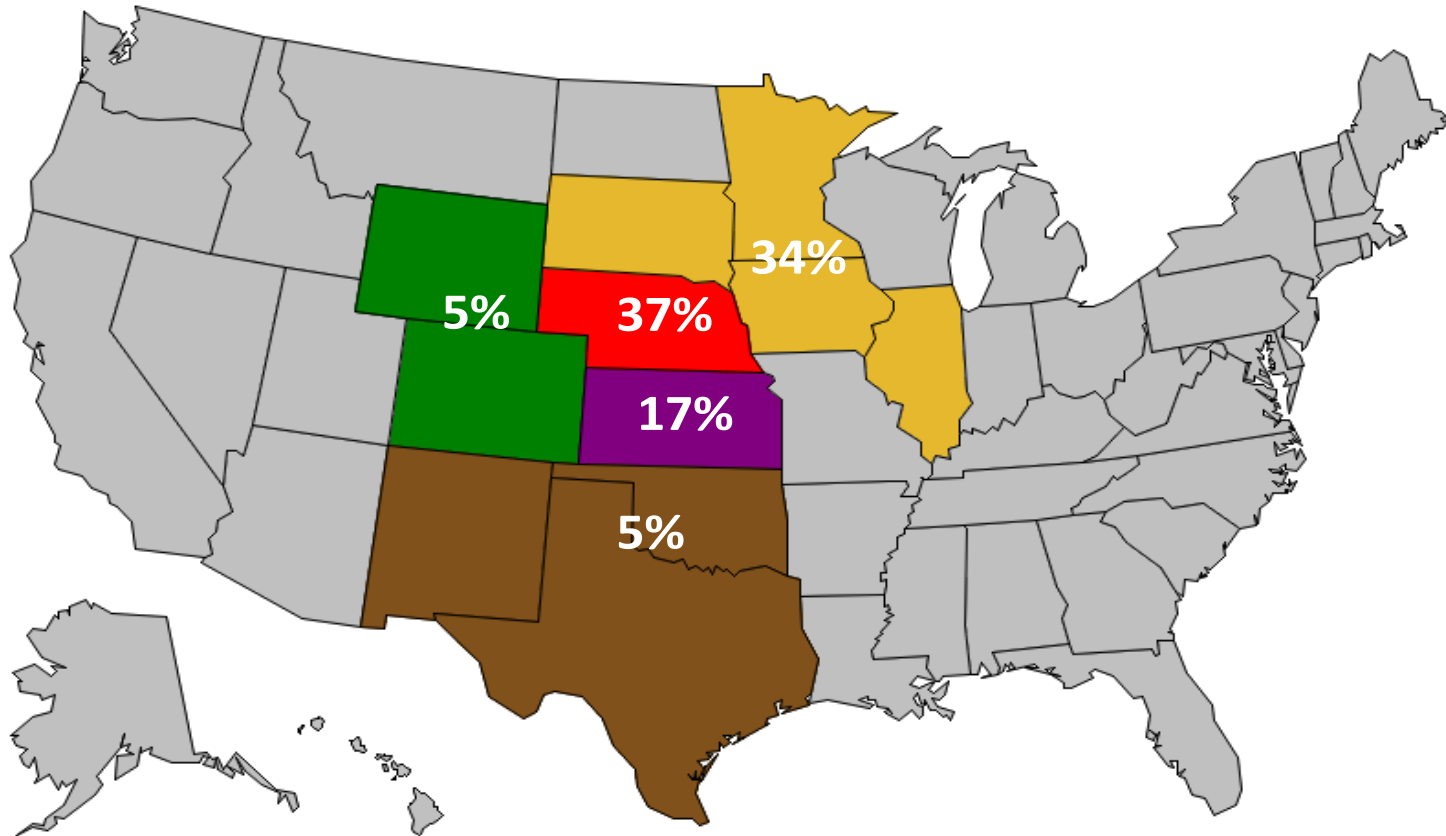
## Recommended Alignment

Region / Delivery Window	2014	2015	2016	2017	2018	2014-18
% of Weeks Trade Reportable						
<b><u>IA/MN/SD/IL</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	73%	57%	0%	63%	90%	56%
<b><u>NE</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	0%	36%	43%	18%
<b><u>CO/WY</u></b>						
0-30 Day	98%	90%	90%	100%	87%	93%
0-14 Day	83%	90%	90%	100%	87%	90%
15-30 Day	0%	0%	0%	0%	0%	0%
<b><u>KS</u></b>						
0-30 Day	100%	100%	100%	100%	100%	100%
0-14 Day	100%	100%	100%	100%	100%	100%
15-30 Day	0%	0%	0%	0%	0%	0%
<b><u>TX/OK/NM</u></b>						
0-30 Day	90%	47%	90%	100%	100%	85%
0-14 Day	85%	40%	90%	100%	100%	83%
15-30 Day	0%	0%	0%	0%	0%	0%



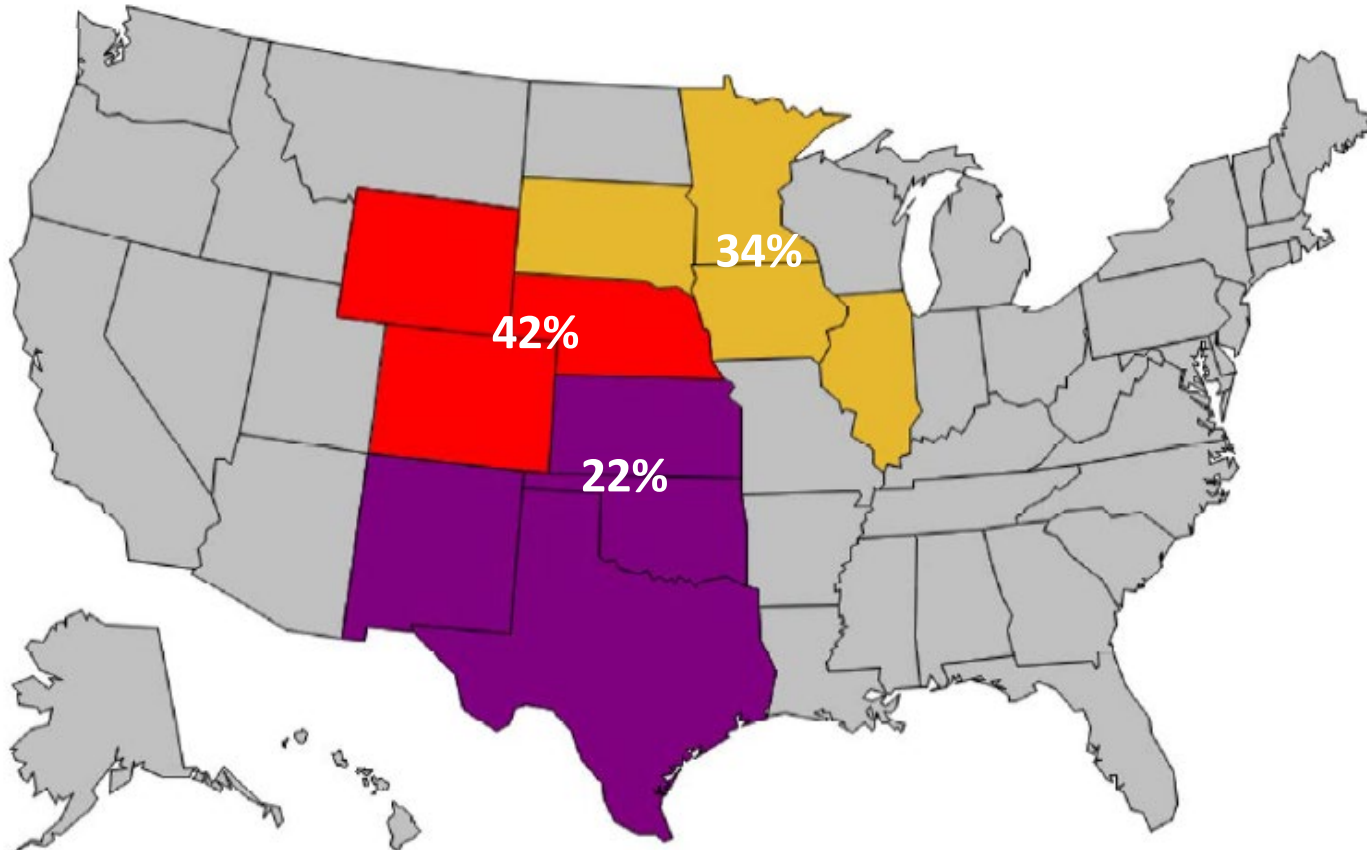
# Recommended Alignment

Recommended Alignment



# Alternative Alignment

Alignment 2



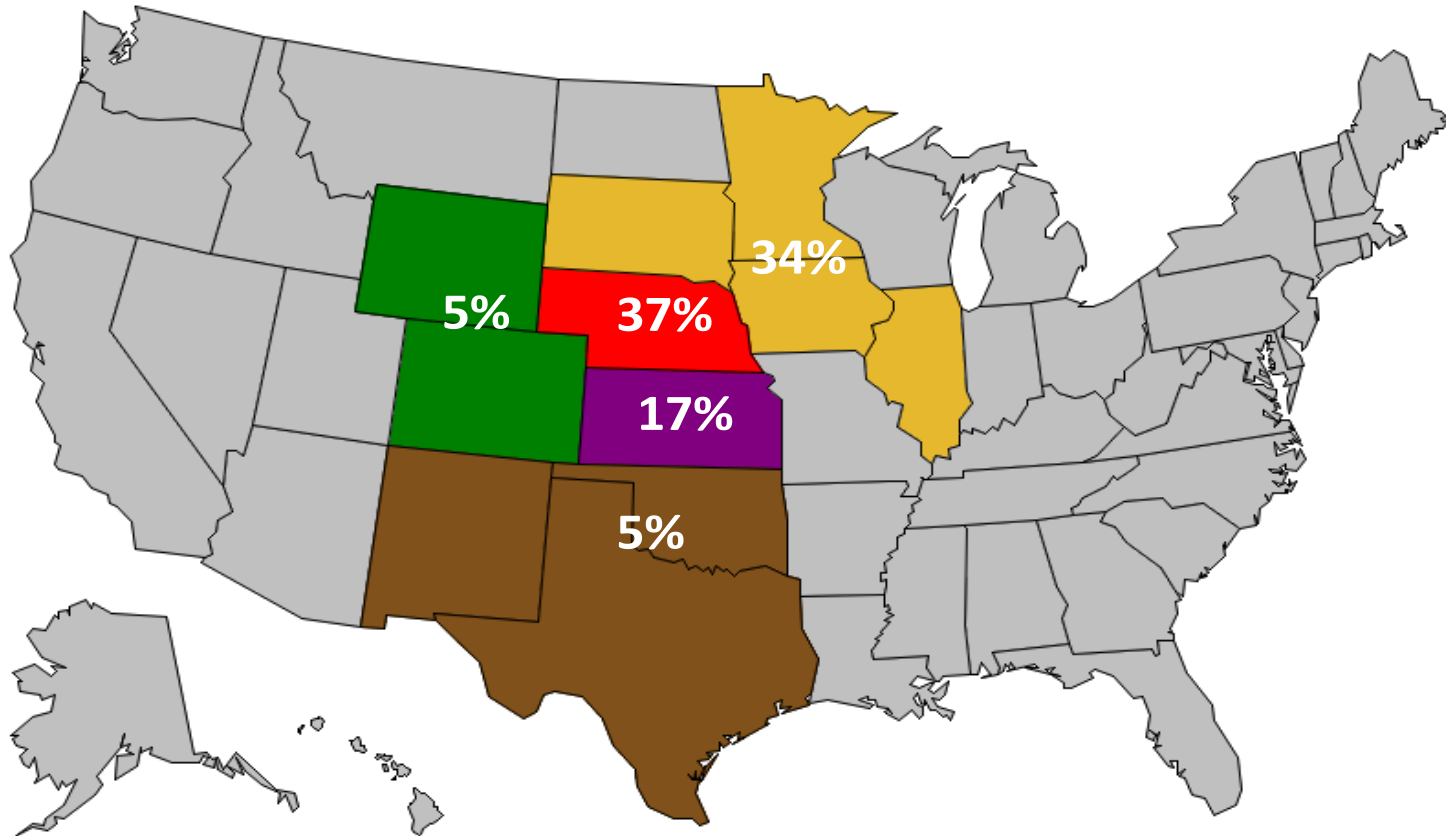
# Conclusions

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- **Regional reporting challenged by confidentiality & thinning negotiated trade  
Market reporting alignment cannot resolve**
- **Reporting 0-14 & 15-30 day separately only feasible nationally**
- **Realignment of regional markets recommended for reasons other than 0-14 & 15-30 day issues**

# Recommended Alignment

Recommended Alignment



# Appendix

***Negotiated purchase***

a cash or spot market purchase by a packer of livestock from a producer under which the base price for the livestock is determined by seller-buyer interaction and agreement on a delivery day. The livestock are scheduled for delivery to the packer not more than 14 days after the date on which the livestock are committed to the packer.

LPGMN Guidance: (May 2015) Cattle purchased at a flat negotiated price for delivery within 1-30 days will be reported with the purchase type of Negotiated Cash. Packers will then supply the specific delivery period on the LS113 as either 1-14 day, or 15-30 day for the expected delivery period from the time of initial purchase

***Negotiated grid purchase***

the negotiation of a base price, from which premiums are added and discounts are subtracted, determined by seller-buyer interaction and agreement on a delivery day. The livestock are scheduled for delivery to the packer not more than 14 days after the date on which the livestock are committed to the packer.

***Formula marketing arrangement***

the advance commitment of cattle for slaughter by any means other than through a negotiated purchase or a forward contract, using a method for calculating price in which the price is determined at a future date.

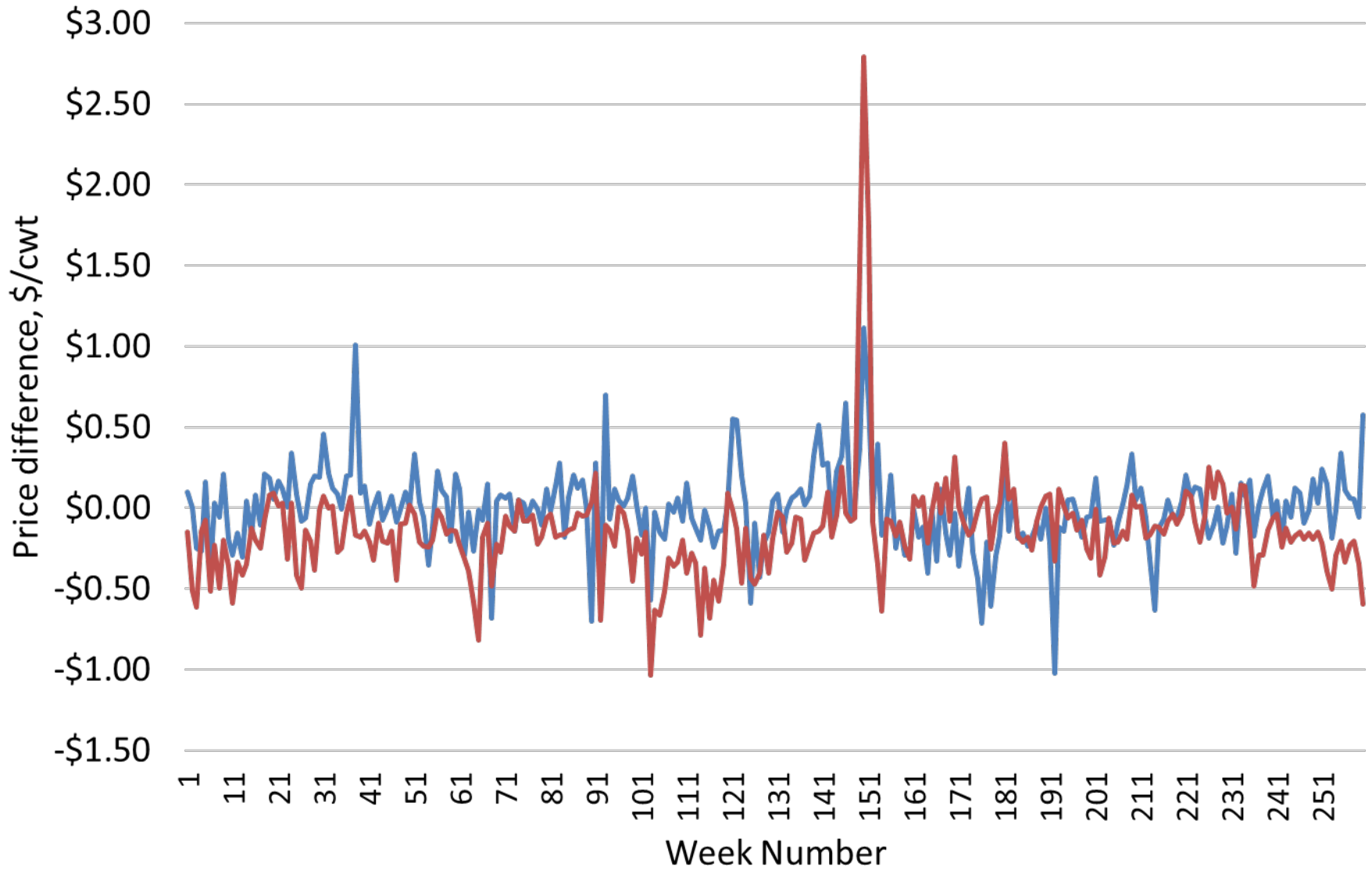
***Forward contract***

an agreement for the purchase of cattle, executed in advance of slaughter, under which the base price is established by reference to prices quoted on the Chicago Mercantile Exchange, or other comparable publicly available prices.

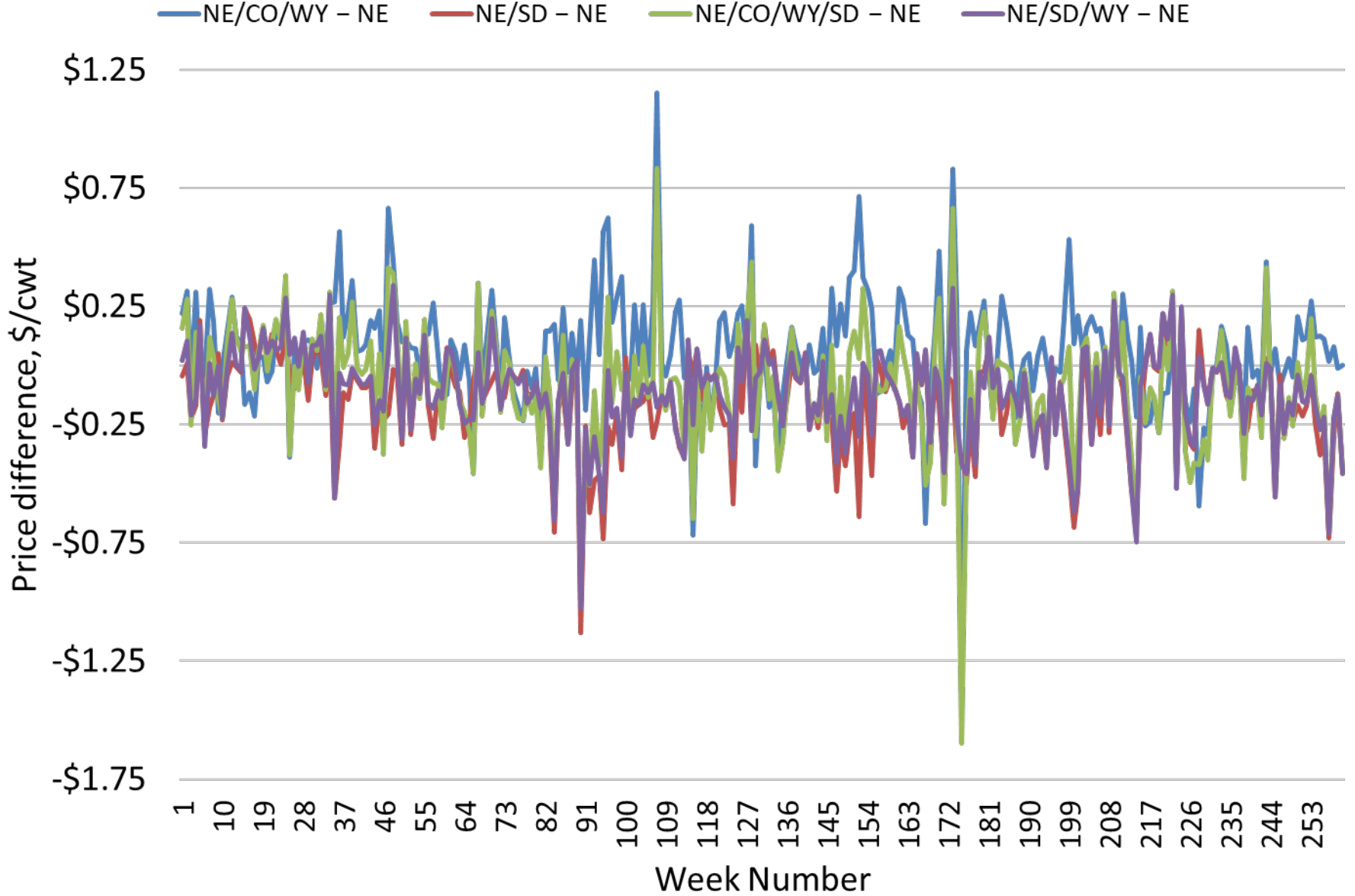


# Weekly Weighted Average Dressed Price Differences

— IA/MN/SD/IL - IA/MN    — IA/MN/IL/IN/OH - IA/MN

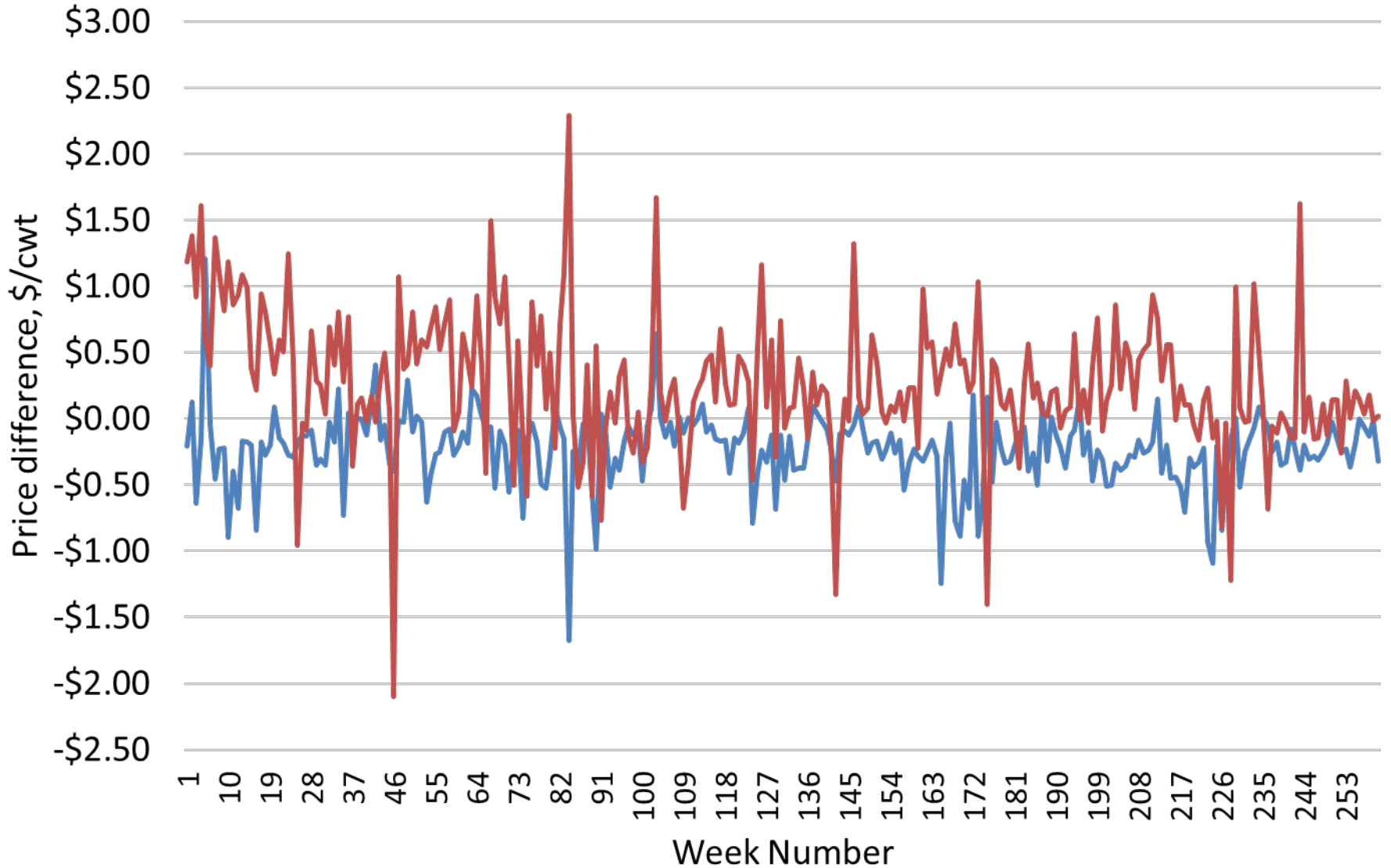


# Weekly Weighted Average Dressed Price Differences



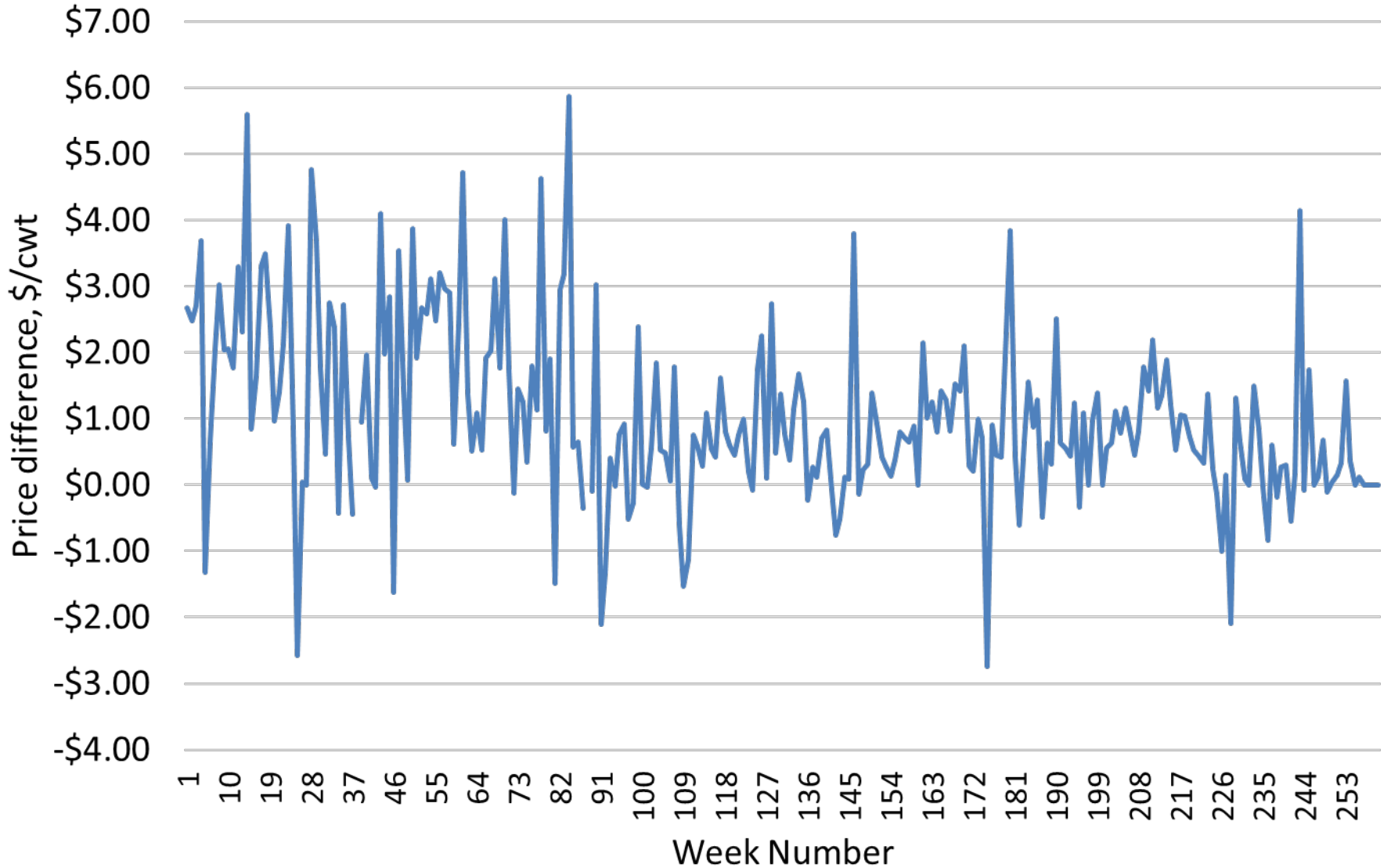
# Weekly Weighted Average Dressed Price Differences

— KS/TX/OK/NM – KS    — KS/CO/WY – KS



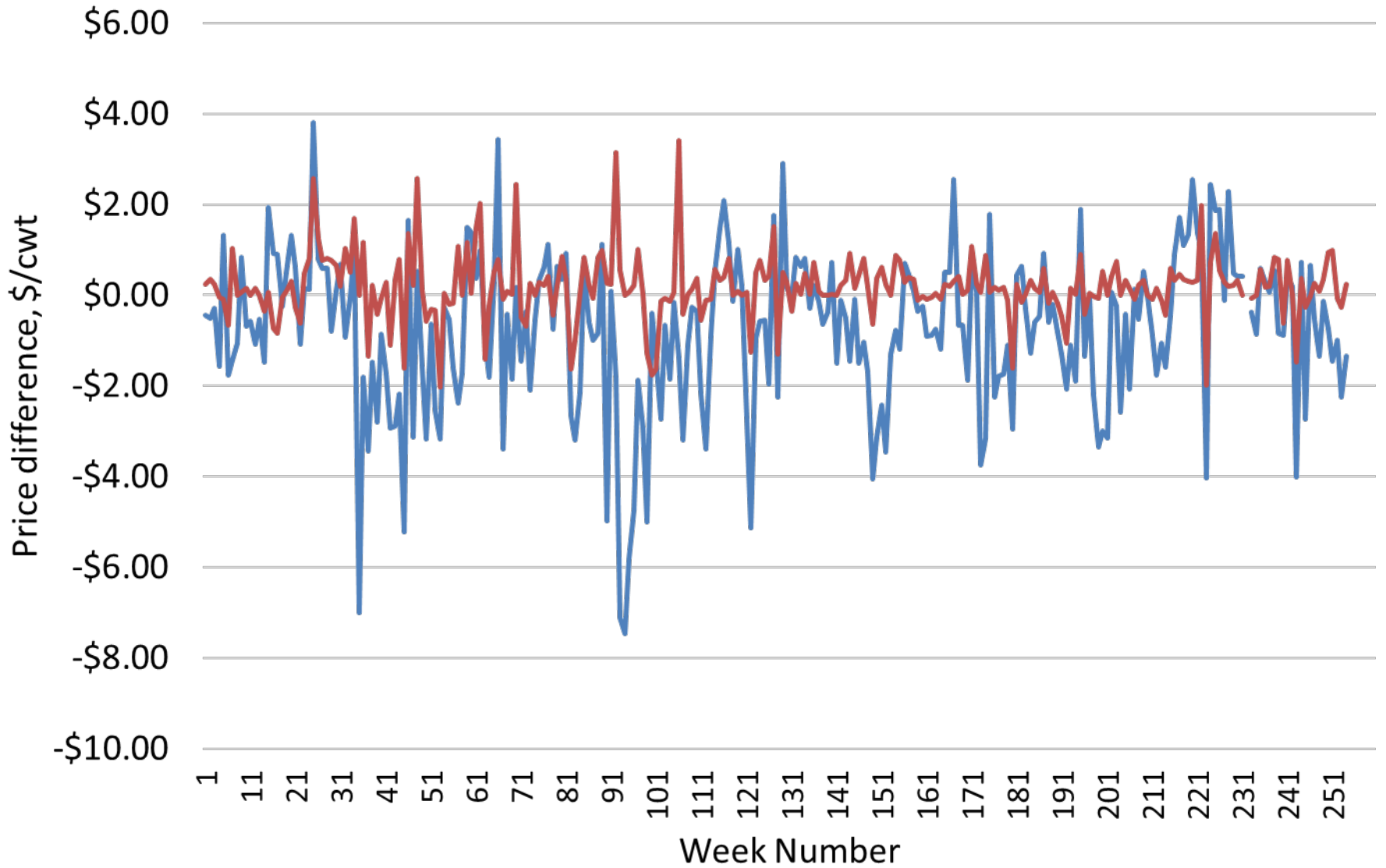
# Weekly Weighted Average Dressed Price Differences

— TX/OK/NM/CO - TX/OK/NM



# Weekly Weighted Average Dressed Price Differences

CO/WY/SD - CO    CO/WY - CO



# Change in Mean Price as Percentage of Base Mean by Region and Alignment, 2014-2018

		Percentage of weeks the mean price change falls in the interval							
Region/ Alignment	Weeks	< -1.00	-0.51 to -1.00	-0.01 to -0.50	0.00 to 0.49	0.50 to 0.99	1.00 to 1.49	1.50 to 1.99	>= 2.00
<u>Region 1 (Base = IA/MN vs. Alternative Alignment)</u>									
IA/MN/SD/IL	260	0.0%	0.4%	50.4%	48.8%	0.4%	0.0%	0.0%	0.0%
IA/MN/IL/IN/OH	260	0.0%	0.4%	80.4%	18.1%	0.4%	0.4%	0.4%	0.0%
5 Area	260	1.9%	6.5%	20.4%	38.1%	15.8%	11.5%	5.0%	0.8%
National	260	1.5%	5.8%	21.9%	41.2%	16.5%	8.8%	3.8%	0.4%
<u>Region 2 (Base = NE vs. Alternative Alignment)</u>									
NE/CO/WY	260	0.0%	0.4%	39.6%	59.6%	0.4%	0.0%	0.0%	0.0%
NE/SD	260	0.0%	0.4%	80.4%	19.2%	0.0%	0.0%	0.0%	0.0%
NE/CO/WY/SD	260	0.0%	0.4%	65.4%	34.2%	0.0%	0.0%	0.0%	0.0%
NE/SD/WY	260	0.0%	0.4%	74.2%	25.4%	0.0%	0.0%	0.0%	0.0%
5 Area	260	1.9%	20.8%	63.8%	12.7%	0.8%	0.0%	0.0%	0.0%
National	260	2.3%	23.8%	60.8%	12.3%	0.8%	0.0%	0.0%	0.0%
<u>Region 3 (Base = KS vs. Alternative Alignment)</u>									
KS/TX/OK/NM	260	0.0%	1.2%	84.6%	13.8%	0.4%	0.0%	0.0%	0.0%
KS/CO/WY	260	0.0%	1.5%	24.2%	68.5%	5.8%	0.0%	0.0%	0.0%
5 Area	260	11.9%	15.8%	19.6%	26.5%	16.5%	6.9%	1.5%	1.2%
National	260	15.4%	15.0%	17.3%	26.5%	16.5%	6.9%	1.2%	1.2%
<u>Region 4 (Base = TX/OK/NM vs. Alternative Alignment)</u>									
TX/OK/NM/CO	258	1.6%	2.7%	11.2%	42.6%	25.6%	10.1%	4.7%	1.6%
5 Area	258	5.4%	7.4%	14.0%	20.9%	20.2%	15.9%	10.1%	6.2%
National	258	7.0%	9.7%	13.2%	19.4%	20.5%	14.0%	10.1%	6.2%
<u>Region 5 (Base = CO vs. Alternative Alignment)</u>									
CO/WY/SD	254	18.9%	18.9%	28.0%	23.2%	7.9%	2.4%	0.8%	0.0%
CO/WY	254	0.4%	5.1%	24.0%	62.6%	6.3%	0.8%	0.8%	0.0%
5 Area	254	26.4%	21.3%	22.0%	17.7%	8.7%	1.6%	1.2%	1.2%
National	254	29.9%	21.7%	19.3%	16.9%	7.9%	2.0%	1.2%	1.2%

Example calculation  
 ((IA/MN/SD/IL price  
 – IA/MN price) ÷  
 IA/MN price) × 100

# Price Spreads as Percentage of Mean by Region and Alignment, 2014-2018

		Percentage of weeks the $\{P_{15} - P_{85}\}/P_{\text{Mean}}$ spread falls in the range							
Region/ Alignment	Weeks	0.00 to 0.99	1.00 to 1.99	2.00 to 2.99	3.00 to 3.99	4.00 to 4.99	5.00 to 5.99	6.00 to 6.99	>= 7.00
IA/MN	260	3.8%	61.2%	25.8%	5.8%	2.3%	0.4%	0.8%	0.0%
IA/MN/SD/IL	260	0.4%	58.1%	31.5%	6.2%	2.7%	0.0%	1.2%	0.0%
IA/MN/IL/IN/OH	260	0.4%	47.3%	36.2%	11.9%	2.7%	0.4%	1.2%	0.0%
5 Area	260	0.0%	40.4%	41.9%	12.7%	3.5%	1.2%	0.4%	0.0%
National	260	0.0%	32.3%	46.2%	15.0%	5.0%	1.2%	0.4%	0.0%
NE	260	10.4%	52.7%	25.0%	7.7%	3.5%	0.8%	0.0%	0.0%
NE/CO/WY	260	5.4%	50.4%	30.0%	9.2%	3.5%	1.5%	0.0%	0.0%
NE/SD	260	11.5%	53.5%	24.2%	7.3%	3.1%	0.4%	0.0%	0.0%
NE/CO/WY/SD	260	6.2%	55.0%	26.2%	8.1%	3.5%	1.2%	0.0%	0.0%
NE/SD/WY	260	8.8%	55.4%	24.6%	7.3%	3.1%	0.8%	0.0%	0.0%
5 Area	260	0.0%	40.4%	41.9%	12.7%	3.5%	1.2%	0.4%	0.0%
National	260	0.0%	32.3%	46.2%	15.0%	5.0%	1.2%	0.4%	0.0%
KS	260	2.3%	61.9%	31.5%	2.3%	0.8%	0.8%	0.4%	0.0%
KS/TX/OK/NM	260	1.5%	62.3%	31.2%	3.5%	1.5%	0.0%	0.0%	0.0%
KS/CO/WY	260	0.0%	47.7%	45.8%	5.0%	0.4%	0.8%	0.4%	0.0%
5 Area	260	0.0%	40.4%	41.9%	12.7%	3.5%	1.2%	0.4%	0.0%
National	260	0.0%	32.3%	46.2%	15.0%	5.0%	1.2%	0.4%	0.0%
TX/OK/MN	258	14.3%	58.9%	19.8%	4.3%	2.7%	0.0%	0.0%	0.0%
TX/OK/NM/CO	260	2.3%	33.1%	40.4%	16.9%	5.0%	1.5%	0.8%	0.0%
5 Area	260	0.0%	40.4%	41.9%	12.7%	3.5%	1.2%	0.4%	0.0%
National	260	0.0%	32.3%	46.2%	15.0%	5.0%	1.2%	0.4%	0.0%
CO	254	5.9%	31.5%	39.4%	12.6%	5.1%	1.6%	1.2%	2.8%
CO/WY/SD	260	2.7%	47.3%	31.5%	13.1%	2.7%	1.9%	0.4%	0.4%
CO/WY	260	5.0%	30.8%	43.8%	12.7%	3.5%	2.3%	1.2%	0.8%
5 Area	260	0.0%	40.4%	41.9%	12.7%	3.5%	1.2%	0.4%	0.0%
National	260	0.0%	32.3%	46.2%	15.0%	5.0%	1.2%	0.4%	0.0%

## Example calculation

$$\left( \frac{\text{NE Price}_{85\text{th percentile}} - \text{NE Price}_{15\text{th percentile}}}{\text{NE Price}_{\text{Mean}}} \right) \times 100$$



UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

LIVE CATTLE DAILY REPORT  
(Current Established Prices)

# Packer Form

1. IDENTIFICATION NUMBER	PURCHASE TYPE CODE	CLASS CODE	CLASSIFICATION CODE
2. COMPANY NAME	1 = NEGOTIATED CASH 2 = FORMULA NET 3 = FORWARD CONTRACT NET 4 = NEGOTIATED GRID NET 5 = FORMULA BASE 6 = FORWARD CONTRACT BASE 7 = NEGOTIATED GRID BASE	1 = MIXED STEER/HEIFER 2 = STEER 3 = HEIFER 4 = DAIRYBRED STR/HFR 5 = MIXED STR/HFR/COW	1 = PRIME 2 = CHOICE 3 = SELECT 4 = STANDARD
3. PLANT STREET ADDRESS	<p><b>NOTE:</b> According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0186. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.</p> <p>USDA's Nondiscrimination Statement: In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident. Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English. To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at <a href="http://www.ascr.usda.gov/complaint_filing_cust.html">http://www.ascr.usda.gov/complaint_filing_cust.html</a> and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9952. Submit your completed form or letter to USDA by Mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights 1400 Independence Avenue, SW Washington, D.C. 20250-9410; Fax: (202) 690-7442; or email: <a href="mailto:program.intake@usda.gov">program.intake@usda.gov</a>. USDA is an equal opportunity provider, employer, and lender.</p>		
4. PLANT CITY			
5. PLANT STATE			
6. PLANT ZIP CODE			
7. CONTACT NAME			
8. PHONE NUMBER (include area code)	23a. PREMIUM PAID - WEIGHT (\$/cwt.)		
9. REPORTING DATE (mm/dd/yyyy)	23b. PREMIUM PAID - QUALITY (\$/cwt.)		
10. REPORTING TIME (1 = 10:00 a.m.; 2 = 2:00 p.m.)	23c. PREMIUM PAID - YIELD (\$/cwt.)		
	23d. DISCOUNT PAID - WEIGHT (\$/cwt.)		
11. LOT IDENTIFICATION	23e. DISCOUNT PAID - QUALITY (\$/cwt.)		
12. SOURCE (1 = Domestic; 2 = Imported)	23f. DISCOUNT PAID - YIELD (\$/cwt.)		
13. PURCHASE TYPE CODE	23g. PREMIUM PAID - OTHER (\$/cwt.)		
14. CLASS CODE	23h. DISCOUNT PAID - OTHER (\$/cwt.)		
15a. SELLING BASIS (1 = Live; 2 = Dressed)	24a. PACKER FINANCING (1 = yes; 2 = no)		
15b. SELLING BASIS - Shipment (1 = FOB; 2 = Delivered)	24b. DELIVERY LOCATION (1 = producer; 2 = packer)		
16. HEAD COUNT	24c. DELIVERY DATE (1 = producer; 2 = packer)		
17. ESTIMATED AVERAGE WEIGHT (pounds)	24d. DELIVERED (1 = 1-14; 2 = 15-30)		
18. AVERAGE PRICE (\$/cwt)			
19. % CHOICE OR BETTER			
20. CLASSIFICATION CODE			
21. DRESSING PERCENTAGE			
22. ORIGIN (2-Letter State postal abbr.)			