Risk Management in Evolving Live Cattle Markets

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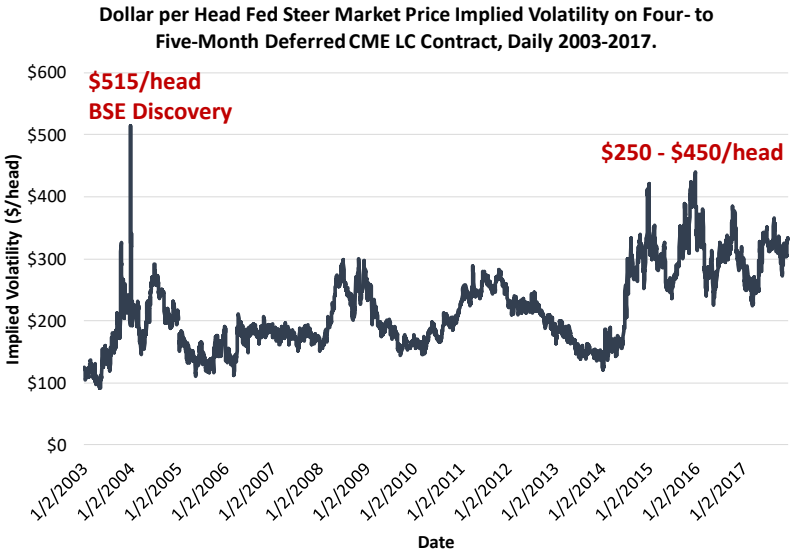
Revenue risk rivals record



Source: Calcuated based upon data obtained from USDA AMS and Bloomberg

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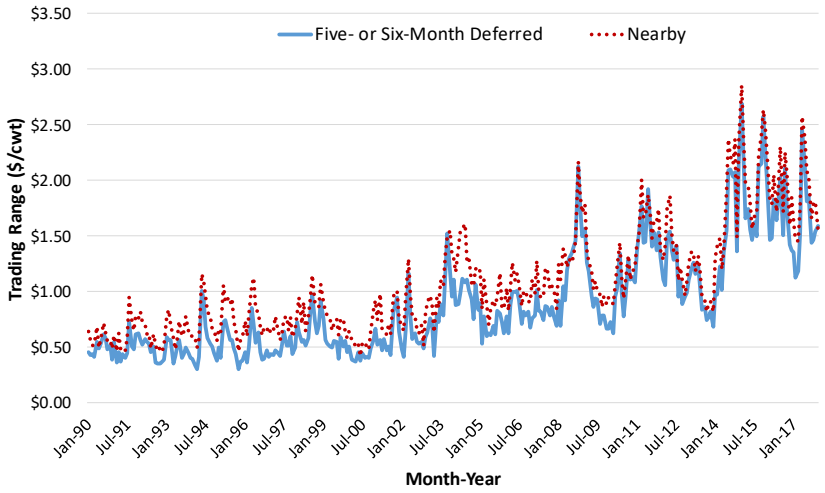
Greater daily futures price volatility:

Increased hedging risk

Monthly Average of Daily Trading Range in Live Cattle Futures Prices January 1990-December 2017

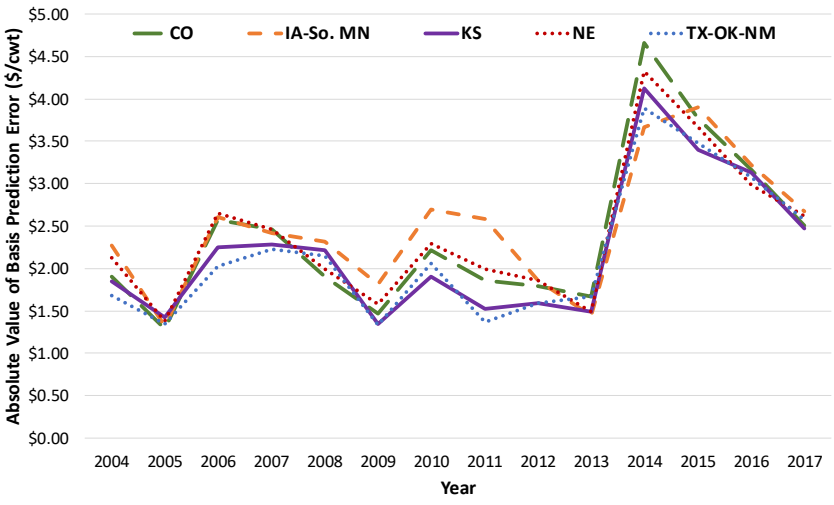


Source: Calculated based on data obtained from CRB PowerGen.

Predicting basis more difficult:

Increased hedging risk

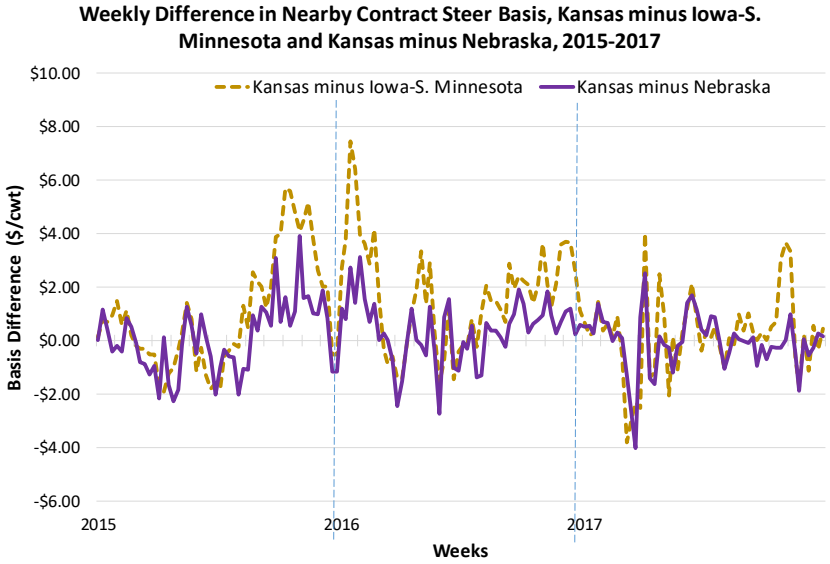
Annual Average Absolute Value Nearby Basis Prediction Error Five Major Markets, 2004-2017.



Source: Calculated from data obtained from USDA AMS and Livestock Marketing Information Center

Regional price variation:

Segmented markets?



Source: Calculated from data obtained from USDA AMS and Livestock Marketing Information Center

Current Live Cattle Futures Situation

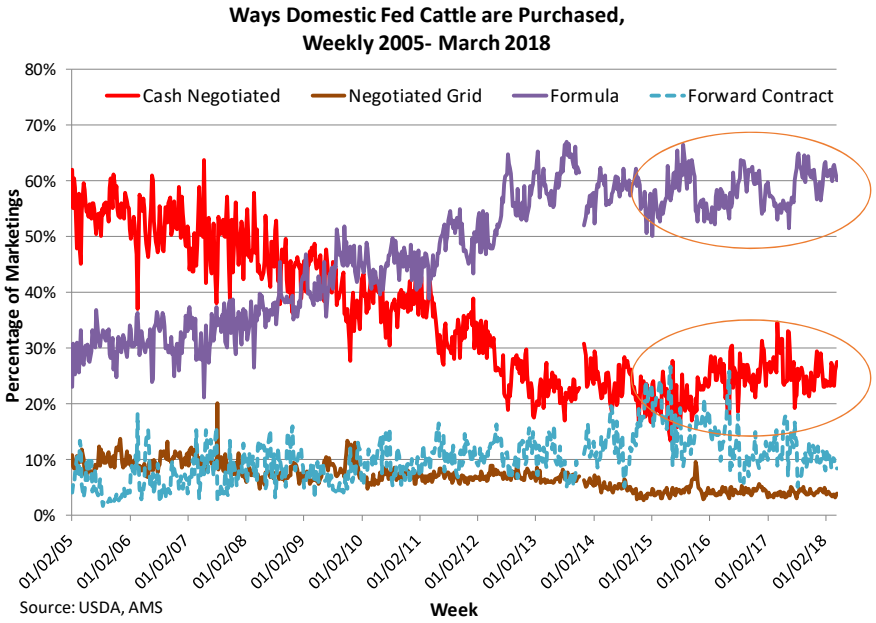
- Historic levels of revenue risk in deferred contracts
- Daily trading range increasing
- Increased Hedging
- Regional basis variation

Seems to indicate effective hedging is becoming more difficult and varies by region

Changing Nature of Live Cattle Markets and Marketing

- Live cattle markets and marketing methods have changed dramatically over the past 20 years
- Negotiated sales have declined
- Formula sales have increased
- Changes have not been consistent across regions
- Why?

Formula replaces Cash Negotiated



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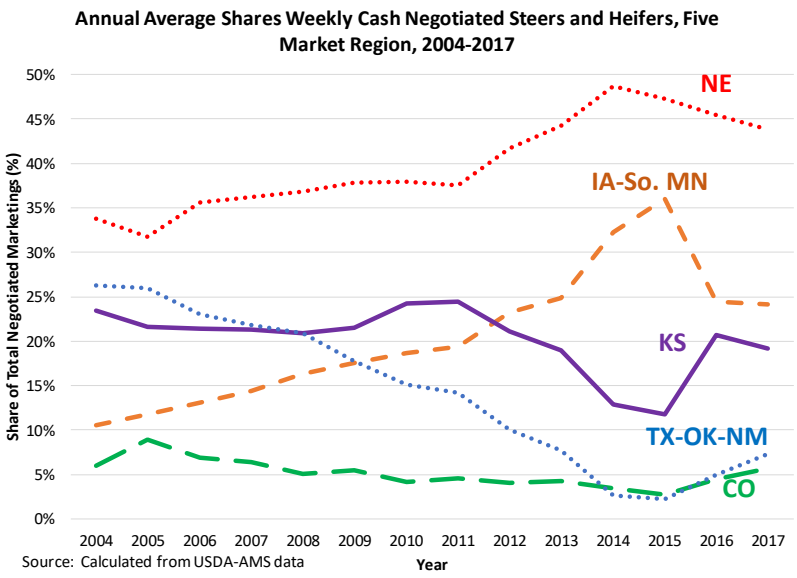
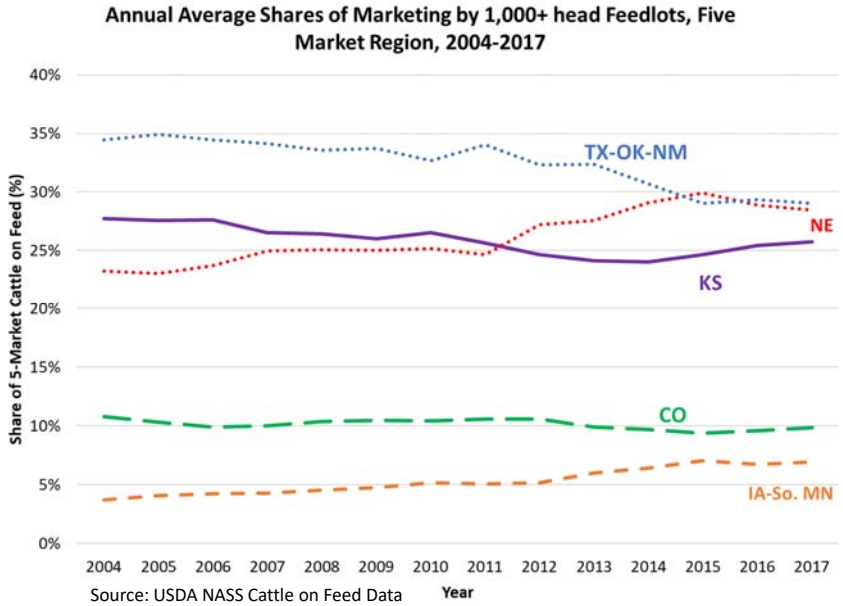


Source: Calculated from USDA-AMS data

NE, IA-S. MN 68% TX-OK-NM 7% of 5-Region Negotiated Trade



Source: USDA NASS Cattle on Feed Data

NE, IA-S. MN 35% TX-OK-NM 29% of 5-Region Fed Cattle Marketings by 1,000+ head feedlots

Changing Nature of Live Cattle Markets and Marketing

- Noticeable trends in regional shares of negotiated trade
- Regional shares of total marketings relatively stable
- Negotiated prices are likely used for base formula prices
- Small (perhaps not nationally representative) sample of cattle driving the negotiated market and, by extension, formula priced market
- Is this a problem?

Implications for Live Cattle Futures Contract and Basis

- Futures contracts must be relatively static
- Hard to change them quickly
- Cash markets can change at a faster pace
- To be useful and viable a futures contract must be applicable to many users…aiming at average or representative cattle

Contracts "work well" in homogeneous, underlying physical industry

CME Group

?

CME Group

Fed cattle industry becoming more diverse:

CME LC becomes a cross-hedge

Implications for Live Cattle Futures Contract and Basis

- Economic signals have encouraged differentiation
- Hedging differentiated cattle can be challenging

Beef Differentiation:

Increased hedging risk

Average Absolute Value of Weekly Predicted Basis Error Negotiated Cash NE Steer and Choice Grid Steer, 2008-2017.

Year	Negotiated NE Steer Absolute Value Basis Error ($/cwt)	Grid Choice NE Steer Absolute Value Basis Error ($/cwt)[a]	Percentage Difference (%)
2008	1.99	2.84	42.8%
2009	1.57	1.77	12.8%
2010	2.29	2.45	7.0%
2011	2.00	2.52	26.3%
2012	1.86	2.07	11.3%
2013	1.49	1.53	2.7%
2014	4.32	4.13	-4.5%
2015	3.67	4.15	13.1%
2016	2.98	3.34	12.0%
2017	2.61	3.23	23.7%
Average	2.48	2.80	13.1%

Cash Market Price Information

- MPR has greatly advanced the quality and availability of cash price data
- Can be sporadic day-to-day and regionally
- How do futures markets digest and respond to this kind of information?

Unclear how Cash market information flows to Futures trade

Questions for the Industry

- Is the increased revenue volatility and hedging risk the new normal?
- What is driving the change (and divergence in) roles of regions in negotiated trade versus total trade? Is this a problem or not?
- Are cash price data currently supplying futures markets with sufficiently useful data for price discovery?
- For any of the above that are problems…
  - What should/can industry do?
  - What should/can futures exchanges do?
  - What should/can government do?