



IN THE CATTLE MARKETS



December 9, 2024

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**SOUTH DAKOTA STATE
UNIVERSITY EXTENSION**

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Insurance Observations

Recently a producer asked if Livestock Risk Protection (LRP) premiums adjusted with volatility in the market like options do. The quick response was yes; as futures prices and options premiums change, so do LRP premiums. Like options, LRP has several moving parts. However, expected (or implied) volatility is the only aspect that is not known. A comparison of LRP and options when volatility is both low and high would provide some empirical evidence that both respond to volatility in a similar way. The implied volatility can be backed out of premiums. The CME Group provides LEVL, which is an index of volatility levels for nearby live cattle contract. Recently the volatility in that market has been about 12 percent or a relatively low level for live cattle. Back in late August the volatility was higher, above 16 percent.

How do the premiums compare under different volatility levels? An at-the-money put option on the April Live Cattle contract settled last Friday at \$5.05 per cwt. Similar LRP coverage had a full cost of \$6.37 per cwt., as LRP is generally more expensive before its subsidy is applied. A put with a \$160 strike price settled at \$0.35 per cwt. and the \$160 LRP coverage was \$0.42 per cwt. The full cost is similar at low volatility levels across strike prices for both options and LRP. What about when the volatility was higher? An at-the-money on the December Live Cattle contract settled at \$6.10 cwt. on August 20. Similar LRP coverage was also higher at \$8.26 per cwt. or more expensive before its subsidy. The driver behind the premium differences can be reduced to differences in the volatility across the different dates.

Since the start of this insurance year, LRP (and Livestock Gross Margin insurance) have not been available for sale on days with *Cattle on Feed* reports. The NASS publication *Price Reactions After USDA Livestock Reports* tracks the changes in cash prices before and after *Cattle on Feed* reports. When tasked, our students have trouble finding consistent biases or differences in magnitude around the reports. We use it as a prelude for seeking patterns in futures prices around reports too. Is there some consistent bias that is, not yet, common knowledge in the market?

The *Cattle on Feed* report is released on Fridays after trading has closed for futures and options markets. Predicting price responses is complicated by the nature of reports. Sometimes surprises move nearby live or feeder futures. Sometimes surprises move deferred months. Maybe the implied volatility is high on report dates and falls the next trading day. However, the shortest duration for LRP is 13 weeks out and premiums which mutes volatility changes. That aspect should not concern hedgers anyway. If the volatility is irrationally high on report dates, then not buying coverage on those dates would make hedgers better off.

The Markets

The cash market was higher for fed cattle but lower for boxed beef last week. The futures for live cattle were mostly steady while feeder cattle futures were down slightly across contract months. Cash prices for feeders were mixed across locations and weight classes. Cash corn was higher for the week as were distillers.

		Week of 12/6/24	Week of 11/29/24	Week of 12/8/23
5-Area Fed Steer	all grades, live weight, \$/cwt	\$190.90	\$189.97	\$169.94
	all grades, dressed weight, \$/cwt	\$297.21	\$296.64	\$269.63
Boxed Beef	Choice Value, 600-900 lb., \$/cwt	\$310.41	\$310.77	\$291.43
	Choice-Select Spread, \$/cwt	\$33.64	\$36.31	\$31.71
700-800 lb. Feeder Steer	Montana 3-market, \$/cwt	\$267.58	--	\$223.95
	Nebraska 7-market, \$/cwt	\$281.76	\$293.78	\$235.74
	Oklahoma 8-market, \$/cwt	\$268.84	\$257.50	\$219.36
500-600 lb. Feeder Steer	Montana 3-market, \$/cwt	\$340.29	\$338.73	\$275.47
	Nebraska 7-market, \$/cwt	\$343.28	\$347.75	\$290.24
	Oklahoma 8-market, \$/cwt	\$334.21	\$319.01	\$277.32
Feed Grains	Corn, Omaha, NE, \$/bu (Thursday)	\$4.32	\$4.20	\$4.86
	DDGS, Nebraska, \$/ton	\$158.86	--	\$225.00

Data Source: USDA-AMS Market News as compiled by LMIC

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