Livestock Risk Protection (LRP) Insurance for Feeder Cattle

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Risk management strategies and tools that cattle producers can use to protect themselves from downward movement in cattle prices are topics of much research and educational efforts by agricultural economists. By analyzing the volatility in cattle prices it is apparent why risk management strategies are so important. Figure 1 shows the movement in weekly Dodge City, Kansas 700- to 800-pound steer prices from 2000 to 2004. Weekly average prices during this five-year period ranged from lows near $75 to highs of more than $120 per hundredweight.

Another way of characterizing the variability in feeder cattle prices is to examine how much expected feeder cattle sale prices vary during a typical ownership period. For example, in Kansas it is common for cow-calf producers to retain ownership of their spring born calves past weaning through a winter backgrounding program. Producers following this program sell their October-weaned calves as feeders in February or March of the following year. As a result, cattle producers are exposed to price risk and production risk during the wintering program.
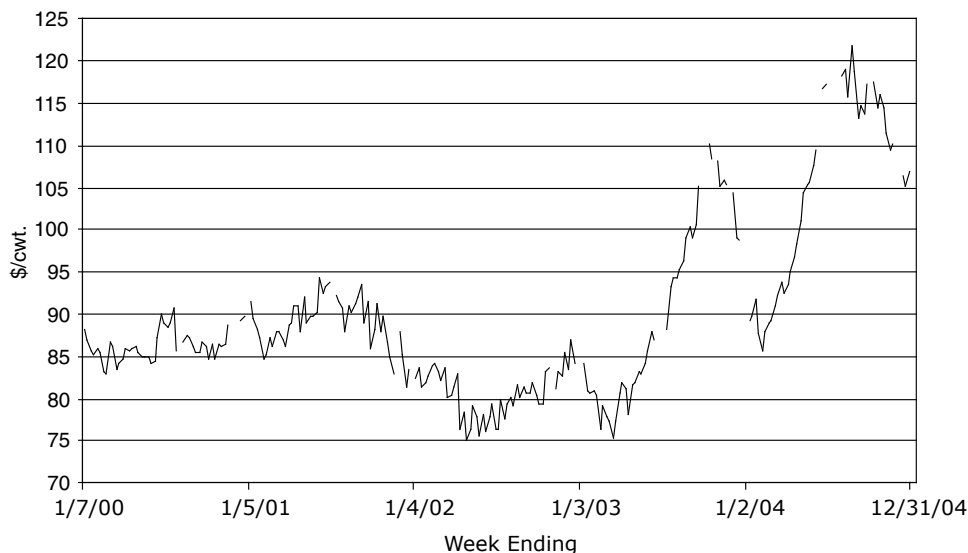
Figure 2 reports the difference between the highest and lowest prices for March feeder cattle futures prices from October through February for each year. The average difference from 2000 to 2004 was $10 per hundredweight. This large variation in

prices during the wintering period is indicative of the price risk faced by feeder-cattle producers. Because calf prices are derived from feeder cattle prices, this variability in feeder cattle prices implies that cow-calf producers will face similar degrees of price risk. *LRP Insurance for Feeder Cattle* is a new risk management tool that offers both cow-calf and feeder-cattle producers another way to manage price risk in their cattle operations.

What is LRP?

Livestock Risk Protection (LRP) is a federal insurance program developed and administered by the Risk Management Agency (RMA) designed to help protect livestock producers from price declines. *LRP for Feeder Cattle* offers cow-calf producers and stocker and backgrounding operators the opportunity to purchase insurance against a decline in the Chicago Mercantile Exchange (CME) *Feeder Cattle Index*. Currently, LRP is a pilot program sold by insurance companies through RMA, a branch of the U.S. Department of Agriculture (USDA), and approved by the Federal Crop Insurance Corporation (FCIC) Board. LRP for feeder cattle is available to producers located in Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Nevada, North Dakota, Oklahoma, Ohio, South Dakota, Texas, Utah, West Virginia, Wisconsin, and Wyoming.

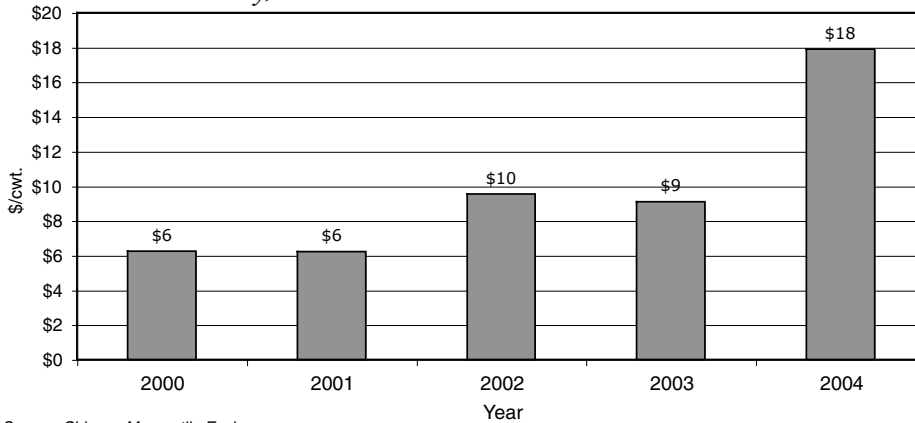*Figure 1. Dodge City, Kansas 700-800 Pound Steer Prices, Weekly Average, 2000-2004.*

Source: Agricultural Marketing Service, USDA

Are there any limitations regarding how many head can be insured via LRP?

Since LRP is still a pilot program, there is a limitation regarding how many head can be insured on an annual basis. A crop year, for LRP insurance purposes, runs from July 1 to June 30 of the following year. A total of up to 2,000 head may be insured per producer per year (July 1 to June 30). Additionally, there is a limi-

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Figure 2. Difference Between Maximum and Minimum March CME Feeder Cattle Futures Prices: October to February, 2000 to 2004.

tation regarding how many head may be insured at any one time. Producers are currently limited to insuring a maximum of 1,000 head under one Specific Coverage Endorsement (SCE), where SCE simply refers to the actual insurance policy on a group (or individual animal) of insured cattle.

Where do producers purchase LRP insurance?

LRP can be purchased from approved livestock insurance agents. Prior to filing an SCE for a particular group of cattle, producers must fill out an application for approval. On the day the insurance attaches, producers must complete an SCE that provides the details regarding the group of cattle that will be insured. No insurance coverage is in effect until an SCE is submitted. A Substantial Beneficial Interest (SBI) form also must be filled out identifying all parties with 10 percent or more ownership interest in the cattle covered under the policy. Each SCE must have an SBI form associated with it. The premium for the insurance must be paid with the SCE submission before coverage will attach.

How far ahead of the intended cattle marketing date can producers purchase LRP insurance?

The time period for the insurance contract, called the endorsement length on RMA's Premium Calculator, can be 21, 26, 30, 34, 39, 43, 47, or 52 weeks prior to the intended marketing date. However, on any given day, the maximum available endorsement length quoted on the RMA Premium Calculator Web site[1] will likely be less than the 52-week maximum. Producers must choose from the endorsement lengths posted on the RMA Premium Calculator Web site on the day they purchase an SCE and coverage attaches.

What kinds of cattle are eligible for coverage?

Calves, steers, and heifers, including predominantly Brahman and dairy cattle are eligible for coverage. Cattle must be classified as expected to weigh less than 600 pounds or 600 to 900 pounds at the end of the insurance period. The RMA Premium Calculator requires users to enter type of cattle and weight. A one (1) behind the category name indicates the cattle will weigh less than 600 pounds on the SCE contract's end date and a two (2) behind the category name indicates the cattle will weigh between 600 and 900 pounds on the SCE contract's end date. For example, if you are insuring steers that will weigh less than 600 pounds near the end of the endorsement period, you would choose the "Steers Weight 1" category. If you are insuring steers that will weigh between 600 and 900 pounds near the end of the endorsement period, you would choose the "Steers Weight 2" category.

How are LRP coverage prices determined?

LRP coverage prices are a percentage (between 70 percent and 95 percent) of the expected end value of the cattle at the end of the coverage period. The online LRP Premium Calculator Web site allows producers to examine available LRP coverage prices. The coverage prices and the expected end value change daily. Producers must check the RMA Premium Calculator Web site daily to determine the coverage levels and coverage prices that are available to be purchased for an SCE.

How is the expected end value determined?

The expected end value is a daily forecast of the *Chicago Mercantile Exchange (CME) Feeder Cattle Index* for the date the LRP contract terminates. The forecast is based upon each day's CME feeder cattle futures settlement prices. Thus, the expected ending value changes daily, reflecting changes in feeder cattle futures settlement prices.

The *CME Feeder Cattle Index* is a moving seven-day weighted average of feeder cattle prices reported daily by USDA in a 12-state region: Colorado, Iowa, Kansas, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and

Wyoming. The CME makes historical index values available via their Web site.[2]

Because the *CME Feeder Cattle Index* is based on steers weighing 650 to 849 pounds, price adjustment factors are used to calculate expected end value and actual end value for heifers, light-weight cattle, Brahman, and dairy cattle. Table 1 shows the price adjustment factors. The price adjustments are made automatically on the RMA Premium Calculator Web site when the user selects the appropriate feeder cattle weight class.

How is the total insured value determined?

The expected end value is expressed per hundredweight. For example, if a producer insures 150 head that are expected to weigh 800 pounds at the end of the coverage period the expected end value would be based on 120,000 pounds (150 × 800) or 1,200 hundredweight. The total value insured is the coverage price times the number of hundredweight insured. In the example above, if the producer chooses a coverage price of $104 from the available options on the RMA Premium Calculator Web site, the total insured value would be $104 multiplied by 1,200 hundredweight or $124,800. LRP expected end values, coverage prices, rates and cost of insurance per hundredweight are available on the RMA Premium Calculator Web site.

Do producers have the opportunity to select the level of coverage?

Yes, producers can select the level of coverage by choosing the percentage of that day's expected end value. Coverage prices range from 70 percent to 95 percent of the expected end value. However, on any given day, producers must choose from available coverage levels posted on the RMA's Premium Calculator Web site. For example, for a policy starting on February 7, 2005, with a 17-week endorsement length, the highest available coverage price was $101.87 per hundredweight with a corresponding coverage level of 93 percent. For the same starting date and endorsement length, the lowest available coverage price was $88.67 per hundredweight with a corresponding coverage level of 81 percent. There were also five other coverage prices and corresponding coverage levels to choose from on that particular day.

How is the LRP insurance premium calculated?

The total LRP insurance premium is calculated by multiplying the total insured value by the premium rate. After the total premium has been calculated, USDA subtracts a 13 percent subsidy from the total premium to calculate the premium the producer is responsible for (i.e., the portion of the premium the producer pays). Daily premium rates can be found on the RMA Premium Calculator Web site. The premium rate fluctuates daily based on changes in coverage prices, coverage levels, and market volatility. The higher the coverage level and the longer the endorsement length the higher the rate will be. It is important to check the RMA Premium Calculator Web site to find the premium rates for the day the LRP insurance will be purchased. The following example illustrates how premiums are calculated.

Assume a producer owns 150 head of feeder steers that she expects will weigh 800 pounds per head (8 hundredweight per head or a total of 1,200 hundred-

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Premium calculations:

Number of head		150
Expected End Target Weight	×	8 cwt
		1,200 cwt
Coverage Price	×	$104
Insured Value		$124,800
Premium Rate	×	0.020616
Total Premium		$2573
Subsidy Percentage	×	13 percent
Premium Subsidy		$334

$2,573 (Total Premium) - $334 (Premium Subsidy) = $2,239 Producer Premium

$2,239 (Total producer premium) ÷ 1,200 (total cwt.) = $1.87 Producer premium per hundredweight

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Table 1. *Adjustments to Base Prices based on Weight, Sex, and Breed*

Weight Range (pounds)	Steers	Heifers	Predominately Brahman	Predominately Dairy
	Adjustment to Base Price			
Less than 600	110 percent	100 percent	100 percent	100 percent
600 to 900	100 percent	90 percent	90 percent	80 percent

weight) near the end of the coverage period, and she chooses a coverage price of $104 per hundredweight. Further assume that the premium rate for that coverage price on that date was 2.0616 percent. The total premium would be $2,577 ($124,800 × 0.020616). RMA provides a 13 percent premium subsidy for each LRP policy, which must be subtracted to compute the amount producers actually pay. Multiplying the total premium of $2,577 by 13 percent yields the subsidy of $334. Subtracting the subsidy ($334) from the total premium ($2,577) yields a producer paid premium of $2,239. Dividing the producer paid premium ($2,239) by 1,200 hundredweight provides an estimate of the producer paid premium per hundredweight (see page 3 for calculations).

How does RMA determine indemnity payments on LRP contracts?

Purchasers of LRP Feeder Cattle insurance are insuring against a decline in the *CME Feeder Cattle Index*. Indemnity payments are made to cover the difference between the coverage price and the actual end value, which is the *CME Feeder Cattle Index* price on the day the LRP policy expires. CME reports feeder cattle index values on their Web site.

For example, if a producer has insured 150 head of cattle, which she expects will weigh 800 pounds at the end of the coverage period, she has insured 120,000 pounds or 1,200 hundredweight. Assume the *CME Feeder Cattle Index* price during the ending week is $100 per hundredweight. The difference between the coverage price ($104) and the actual end value ($100) is $4 ($104-$100). The indemnity payment is calculated by multiplying 1,200 hundredweight by the difference between the coverage price and the actual end value, in this case $4. So, the indemnity payment will be $4,800. To receive an indemnity payment, a claim form must be submitted within 60 days of the policy's ending date.

Does LRP guarantee the actual cash sale price for the cattle?

No, the actual cash price producers receive for their cattle has no effect on any indemnity they receive (or fail to receive) from their LRP policy. The actual end value is specified on the RMA Premium Calculator Web site and is the *CME Feeder Cattle Index* on the

Indemnity payment calculation:		
Number of head		150
Expected ending target weight	×	8 cwt
		1,200 cwt
Difference between Actual End Value and Coverage Price	×	$4
Indemnity payment		$4,800

insurance contract's ending date. Therefore, the actual price producers receive for their cattle (and any premiums or discounts they might receive relative to the CME index) are not used to calculate their LRP policy's indemnity payment. For example, consider a producer who sells 1,200 hundredweight of LRP insured cattle on the cash market for $102 per hundredweight and the actual end value reported by CME at the end of the endorsement period is $100 per hundredweight. To calculate the indemnity payment due (if any) to the producer under the LRP policy, the actual end value of $100 will be used, not the $102 per hundredweight that the producer received for the cattle. Likewise, if the cattle were sold in the cast market for $98 per hundredweight, the $100 actual end value would still be used to determine if an indemnity payment is due. The key point to recognize is that when producers purchase LRP they still have basis risk (difference between the *CME Feeder Cattle Index* and their local cash market). Thus, LRP insures against price risk, but not against basis risk (this is similar to using CME feeder cattle futures or put options for price risk management).

When is LRP insurance available for purchase?

LRP rates are set at about 5 p.m. each day based on that day's CME feeder cattle futures and options settlement price. The LRP rates remain available until the markets open the next morning at 9 a.m. LRP coverage is not available for purchase from Saturday at 9 a.m. until Monday at 5 p.m. or on federal holidays. Remember, to initiate LRP insurance coverage on a given day, producers must have an approved policy, and then they must make contact with their insurance agent, complete an SCE, and submit payment for the insurance coverage.

Example

A producer owns a 100 percent interest in 150 head of feeder steers that she expects will weigh 800 pounds (8 hundredweight) per head near the end of the endorsement period. Assume an endorsement length of 17 weeks is chosen from the available options on the RMA Premium Calculator Web site and the expected end value is $101 per hundred-

weight. A coverage price of $84 per hundredweight is chosen, which corresponds to a coverage level of 84 percent. At this coverage price the premium rate is 1.0857 percent per hundredweight. There is a premium subsidy of 13 percent per hundredweight. RMA provides a premium subsidy of 13 percent, which must be subtracted to compute the producer paid premium.

Assume that at the end of the policy's endorsement period, the cattle are sold on the cash market for $88 per hundredweight. The actual end value reported by RMA (which is equal to the *CME Feeder Cattle Index* value) at the end of the endorsement period is $80 per hundredweight, which is less than the $84 per hundredweight coverage price. Therefore, an indemnity payment is due.

Notice that the actual cash price of $88 received by the producer has no effect on the indemnity payment calculations. The actual end value, which is the *CME Feeder Cattle Index* at the end of the endorsement period, is used to calculate the indemnity payment.

Summary of LRP Insurance

Purchasing LRP insurance for feeder cattle (or calves) provides price protection in the event that the *CME Feeder Cattle Index* declines below the coverage price listed in the buyer's SCE. Thus, buyers can protect themselves from significant price declines during the feeding period. LRP insurance is particularly attractive for smaller producers since coverage is pur-

chased per head and is not restricted to fixed contract sizes, as is the case with Chicago Mercantile Exchange (CME) options on feeder cattle futures. Similarly, even larger producers that desire to incrementally price cattle might find LRP attractive because coverage is purchased per head, instead of in fixed contract increments.

There are limitations to LRP insurance for feeder cattle. Specifically, compared to CME options on feeder cattle futures, LRP buyers give up some flexibility. Once LRP insurance for feeder cattle is purchased, producers cannot offset the contract prior to the end of the endorsement period. Additionally, users of LRP are potentially exposed to additional basis risk because contracts are only offered in endorsement lengths that vary by four- or five-week increments. This means that, in some cases, producers might sell cattle several weeks before or after the policy's end date, exposing them to additional basis risk over that time period. In contrast, purchasers of CME options can typically offset their option position on the same day as cash market sales are made, potentially reducing their exposure to basis risk.

Example

Premium calculations:

Number of Head		150
Expected Ending Target Weight	×	8 cwt
		1,200 cwt
Coverage Price	×	$84
Insured Value		$100,800
Premium Rate	×	0.010857
Total Premium		$1094
Premium Subsidy	×	13 percent
		$142

$1,094 (Total Premium) - $142 (Premium Subsidy) = $952 Producer Premium

$952 (Total Producer Premium) ÷ 1,200 (total cwt.) = $0.79 Producer Premium per cwt

Indemnity payment calculation:

Number of head		150
Expected ending target weight	×	8 cwt
Total weight (cwt.)		1,200 cwt
Difference between Actual End Value and Coverage Price	×	$4/cwt
Indemnity payment		$4,800

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indemnity payment calculations. The actual end value, which is the *CME Feeder Cattle Index* at the end of the endorsement period, is used to calculate the indemnity payment.

Footnotes

[1] RMA Premium Calculator can be found at *http://www3.rma.usda.gov/apps/premcalc/*
[2] Historical CME feeder cattle index values can be found at *http://www.cme.com/trading/dta/hist/cash_settled_commodity_prices.html*

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