- ✓ LRP insurance is useful for cattle producers who want to protect against a decline in market prices.
- ✓ Feeder cattle contracts are available in CO, IA, KS, NE, NV, OK, SD, TX, UT, and WY.
- ✓ Fed cattle contracts are available in IL, IA, and NE.
- ✓ LRP insurance sets a coverage price, but basis risk is still a factor in the final price level received by the producer.

Livestock Risk Protection (LRP) Insurance Pilot Program: Potential Risk Management Opportunities for Cattle Producers

By: Wendy J. Umberger and Dennis A. Kaan

What is the LRP Insurance Pilot Program?

Like most of agriculture, price risk is an inherent risk faced by cattle producers. Producers have used futures, options, and forward contracting to protect against declining cattle prices for several years. Despite the potential advantages for managing risk, many cattle producers have not participated in these available private risk management programs. In June 2003, the U.S. government began offering an additional price risk management program to cattle producers, Livestock Risk Protection (LRP). The LRP insurance program originated from the Agricultural Risk Protection Act of 2000, and was first offered to swine producers in 2001. The LRP feeder and fed cattle pilot programs provide subsidized price insurance to feeder and fed cattle producers in select states. The current program is being administered and subsidized by the Federal Crop Insurance Corporation (FCIC).

The purpose of this fact sheet is to provide information on the details of the LRP fed and feeder cattle programs and to present an analysis of the LRP insurance versus other price risk management programs available for cattle producers.

How Does the LRP Insurance Program Work for Cattle Producers?

Feeder cattle LRP insurance can be purchased for steers with an expected market weight of 650 to 900 pounds. The feeder cattle LRP is currently being piloted, and thus, is only available to producers in Colorado, Iowa, Kansas, Nebraska, Nevada, Oklahoma, South Dakota, Texas, Utah and Wyoming. For heavier weight cattle, LRP fed cattle coverage is currently available for cattle that are expected to grade select or higher, to have a yield grade of 1 to 3, and to weigh between 1000 to 1400 pounds (live) when marketed. Pilot states for the fed cattle LRP program are Illinois, Iowa, and Nebraska. Producers living in a non-pilot state, but who own cattle in a pilot state are allowed to insure the LRP insurance on the cattle residing in the pilot state. For example, a producer living in Colorado may purchase fed cattle LRP insurance for cattle that are on feed in Nebraska that he/she owns.

To obtain LRP coverage, a producer must complete two steps. First, the producer must submit an application to an FCIC-approved livestock insurance agent. Producers can find an approved agent in their area by entering the appropriate information on the RMA's agent locator website at: www3.rma.usda.gov/apps/agentslpi. The producer must have substantial beneficial interest (ownership) in the cattle before they are authorized to purchase LRP insurance. Once the application is filed and approved, a policy number is assigned to the producer and he/she is eligible to purchase the LRP insurance contract. Producers can activate their LRP coverage at any time by filling out a Specific Coverage Endorsement (SCE) and paying their insurance premium. The RMA will confirm acceptance of the SCE and coverage will begin on the same day. The SCE may be rejected if the available underwriting capacity of the program has been reached.

The LRP Decision Process and Steps

Before filling out the SCE, the producer must make several decisions: the number of cattle they will insure, the length of coverage, the price they want to purchase insurance for, and the percentage of their cattle they want insured. After entering this information on the SCE form, producers can then calculate their total insured value and the total premium they will owe. When making each of these decisions, producers must take into account their individual risk preferences and the RMA guidelines outlined and discussed below.

Step 1: Choose a Coverage Level

First, producers need to select the number of cattle they will insure for each SCE. The maximum number of feeder cattle that can be insured using one SCE is 1,000 head and the minimum number is 1 head. No more than 2,000 head of feeder cattle can be insured by any one entity in a given crop year. A crop year is defined as July 1 to June 30. No more than 2,000 head of fed cattle can be insured per SCE and a maximum of 4,000 head per entity can be insured per year.

Step 2: Determine the Policy Length

Next the producer must determine the expected number of weeks the cattle will be insured for. For feeder cattle, insurance periods range from 21 to 52-week periods in 30-day increments. For fed cattle, insurance is offered for 13 to 52-week periods in 30-day increments. Producers should choose an insurance period that is closest to the date their cattle will be marketed. The chosen insurance period will then determine the ending date of the policy. The end date is the same day of the week as the start or "effective" date and can be calculated by adding on the number of weeks to the effective date.

Step 3: Choose a "Coverage Price"

The next step is to choose a "coverage price," which is the price level that the producer can insure. The LRP coverage price is market-based, meaning that the coverage prices and their respective premiums are priced off of the previous day's Chicago Mercantile (CME) put options. For feeder cattle, the coverage price is based off of the CME Feeder Cattle Price Index. The fed cattle coverage price is based of the USDA's Agricultural Marketing Service's (USDA-AMS) five-area weighted average steer price report. These prices change daily and are available online at http://www3.rma.usda.gov/apps/livestock_reports/main_menu.cfm. The coverage price and the policy length are used to determine the policy premium.

Step 4: Choose a "Coverage Level"

Finally, the producer chooses a coverage level ranging from 70% to 95% of the chosen coverage price. The number of cattle to insure, the policy length, coverage price, and coverage level can then be entered on the SCE form.

Step 5: Calculating the "Total Insured Value"

The total insured value can be calculated by the following:

1) Multiplying the total number of head insured times the target end weight (cwt/head) to calculate total pounds insured (in cwt).
2) Multiply the total pounds (in cwt) insured times the coverage price ($/cwt) times the insured share.

Step 6: Calculating the "Total Premium Paid"

The total premium paid by the producer can be calculated by:

1) Multiplying the total insured value by the LRP rate associated with the coverage price to obtain the total premium.
2) Multiplying the total premium times the producer premium subsidy of 13% and subtracting the subsidy from the total premium. This can also be calculated by multiplying the total premium times 0.87.

On the ending date of the policy, producers receive an indemnity payment if for feeder cattle, the CME Feeder Cattle Price Index (www.cme.com) or for fed cattle, the 5 Area Weekly Weighted Average Direct Slaughter Cattle Report (www.ams.usda.gov/mnreports/lm_ct150.txt) is below the contracted coverage price. No indemnity is paid if at the end of the contracted coverage period the price is higher than the coverage price.

Consider the following example:

On Friday, September 12, 2003 a Colorado cow-calf producer purchases an LRP for all 100 head of feeder calves he/she is planning on selling 21 weeks later (Friday, January 30, 2004) as 650-pound calves. The producer insures 95% of the value. On September 12, the CME Feeder Cattle Futures Contract is trading at $94.00/cwt. The expected basis based on previous year's information (local cash price minus futures price) for this time period is projected to be $2.00, thus the expected cash price at the end of January is $96.00/cwt. The producer selects a coverage price of $93.00/cwt at a rate of 1.399%.[1]

Insured Value = 100 head * 6.5 cwt/head * $93.00/cwt * 0.95 = $57,427.50 or $88.35/cwt.

The total premium paid by the producer = $57,428 * .01399 * 0.87 = $698.97.

The producer would be insuring $57,428 for a premium of $698.97. The cost of insurance was about $1.08/cwt.

The price the producer can expect to receive if he/she purchases LRP coverage (based on the projected basis) is the LRP coverage price of $93.00/cwt, multiplied times the insured share of 95%, plus the

[1] 1.399% is the LRP rate associated with the coverage price of $93.00/cwt. This LRP rate and coverage prices can be found at http://www3.rma.usda.gov/apps/livestock_reports/lrp_select_date.cfm.

expected basis of $2.00/cwt, minus the cost of insurance of $1.08/cwt. ((($93.00/cwt*0.95) + $2.00/cwt – $1.08/cwt) = $89.27/cwt)

The producer sells calves during the week of January 30, 2004 in the cash market and receives a cash price of $90.00/cwt for his/her cattle, which weigh an average of 650 pounds per animal. The CME Feeder Cattle Price Index is $88.00/cwt, which is $0.35/cwt below the coverage price. The producer receives an indemnity payment of $227.50 or $0.35/cwt (($88.35/cwt – $88.00/cwt) * (100*6.5) = $227.50). If the price index had been above $88.35/cwt on January 30, 2004, then the producer would not have received an indemnity payment.

The net price the producer actually received can be calculated by adding the price achieved when the calves were sold in the cash market ($90.00/cwt) to the indemnity payment of $0.35/cwt and subtracting the insurance premium of $1.08/cwt. Since the producer in this example received a cash price of $90.00/cwt, he/she would have a net price of $89.27/cwt ($90.00/cwt + $0.35/cwt – $1.08/cwt = $89.27/cwt). This net price received is equal to the expected price that was calculated above, because the basis was $2.00/cwt as expected.

Basis Risk is a Factor in the Final Price Level

There are several important points the producer needs to be aware of when using LRP and forecasting a minimum price. The LRP insurance program is single-peril price risk protection. It protects producers against declining cash prices. LRP does not protect against basis risk. Because basis fluctuations are not addressed, LRP insurance ***does not guarantee the producer a specific cash price***. However, LRP insurance does create an expected price. The expected cash price at the time cattle are to be sold is the LRP coverage price multiplied times the coverage share, plus the expected basis (at the time the cattle are sold), minus the insurance premium. The actual cash price received when cattle are sold may be different than expected due to basis variability. Thus, if the basis (for feeder cattle basis is the actual local cash price minus the CME Feeder Cattle Price Index; and for fed cattle basis is the local cash price minus the USDA-AMS five-area weighted average steer price) declines considerably, the minimum sale price can be substantially lower than forecasted. In order to forecast a minimum sale price, producers must have some knowledge of their local basis and basis variability. In addition to basis risk, producers are also subject to yield and input cost risk such as health or death loss, weather and costs.

The effects of a downward movement in basis can be demonstrated using the example above. The producer in the example selected a coverage price of $93.00/cwt; however, because only 95% of this price was insured, the actual coverage price was only $88.35/cwt. At the close of the contract, the CME Feeder Cattle Price Index was $88.00/cwt. The LRP contract was paid based on that price change. If the local cash price level had remained at the same level with the CME Feeder Cattle Price Index throughout the life of the contract as it did in the example above, then basis risk is not a problem. If however, the local cash price had declined in comparison to the CME Feeder Cattle Price Index, basis risk becomes a factor. The producer would have received less in the cash market, reducing the price level for the feeder cattle.

Consider for example if the producer only had been able to sell calves in the cash market for $87.50/cwt (versus $90.00/cwt) due to some perceived quality defects in the cattle. Then, in this case, the basis would have been a negative $0.50/cwt ($87.50/cwt – $88.00/cwt = -$0.50). The final price the producer would have received for his/her cattle would have been $86.77/cwt. This difference in basis causes the final price to be $2.50/cwt less than what the producer expected based on the expected basis of $2.00/cwt.

Should I Use LRP Insurance?

The LRP insurance program is most similar to the CME put options; however, there are pros and cons of both risk management tools. LRP insurance contracts may be more flexible than futures and/or options for feeder cattle because you can insure as few as one head of cattle per contract. Alternatively, the CME futures and options contracts are for 50,000 pounds of 700 to 849 pound, Medium and Large Frame #1 feeder steers. Currently, neither CME feeder cattle contracts, nor the LRP allow insuring of feeder heifers. LRP also excludes feeder cattle that are over 50% Brahma breed. The adaptable contract size is another advantage of the fed cattle LRP contract over the CME live cattle futures/options contracts, which are for 40,000 pounds. Additionally, the fed cattle LRP covers both fed heifers and steers, versus the CME contract which only covers 55% choice, 45% select grade live steers. Moreover, because put options are traded in the current market, orders to purchase puts at a specific strike price and premium may not always get filled due to thin trading. Producers purchasing an LRP contract will know with certainty the coverage price and premium at the time they submit their SCE. Other advantages of the LRP cattle contracts over CME futures and options are that they have no brokerage fees, no margin calls, and premiums are subsidized by 13%.

Marketing flexibility is one possible advantage of options on futures contracts to LRP insurance. Options can be resold or exercised up until their expiration date, which is the first Friday of the delivery month. LRP cattle insurance cannot be canceled once purchased. Also, LRP contracts are for a fixed number of weeks – the contract is settled regardless of whether cattle have or have not been sold.

Dr. Art Barnaby, Extension Specialist, Risk Management at Kansas State University analyzed and compared LRP contract premiums with the CME put option premiums for similar coverage prices (http://www.agmanager.info/crops/insurance/price_risk/pr_pdf03/sipmod04LRP.pdf). He found that when the market price increases from the previous day, a producer should not purchase an LRP, because the next day the LRP contract price will be either higher or the premium will decrease. When prices are up from the previous day, a producer wishing to insure a price floor would be better off purchasing a put option. This is because the LRP is based off of the previous day's prices, whereas the put option is based on current prices – therefore, the put option would likely provide a better value for the premium paid. For similar reasons, an LRP contract should only be purchased (versus a put option) on a day where the market is lower than the previous day, because yesterday's "higher" prices can be contracted. This advantage of the LRP was brought to light when a single cow from Washington State was diagnosed with BSE (Mad Cow Disease) on December 23, 2003. Some producers were able to purchase an LRP contract on December 23 at December 22, 2003 prices, which were substantially higher than before the BSE news broke.

Summary

LRP insurance provides an additional risk management tool for avoiding downward price movements. However, LRP does not protect against non-price risks such as basis risk and production risk. When comparing LRP to other price risk management tools such as options on futures, one must consider minimum price objectives, brokerage fees, margin calls, strike prices, coverage prices, and premiums. LRP insurance may be particularly useful for protecting against catastrophic drops in prices that may occur in situations similar to the December 2003 case of BSE in the United States.

Additional Information

- Link to the USDA Risk Management Association's (RMA) LRP website containing links to the LRP handbook, underwriting forms, coverage prices and premium calculators: http://www.rma.usda.gov/policies/2004LRP.html
- Link to Art Barnaby's risk management website: http://www.agmanager.info/crops/insurance/risk_mgt/default.asp

Table 1. A Comparison of the Features of Cattle LRP Insurance versus Futures Put Options.

	Feeder Cattle Comparison		Fed/Live Cattle Comparison	
	Feeder Cattle LRP	**Put Options on the Feeder Cattle Futures**	**Fed Cattle LRP**	**Put Options on the Live Cattle Futures**
Contract Specifications	650 to 900 pound feeder steers	700 to 848 pound feeder steers	Fed cattle grading ≥ USDA Select, yield grade of 1 - 3, market weight between 1000 to 1400 pounds (live)	55% choice and 45% select grade live steers
Heifer or Breed Exclusions	No Heifers, no cattle with more than 50% Brahma Breed Influence	No heifers	Allows Heifers Allows cattle with more than 50% Brahma influence	No Heifers
Contract Size	Any # of head ≤ 1,000 head/SCE and ≤ 2,000 head/year	50,000 pounds of 700 to 848 pound feeder steers per contract	Any # of head ≤ 2,000 head/SCE and ≤ 4,000 head/year	40,000 pounds of 55% choice and 45% select grade live steers
Length of Contract	21, 26, 30, 34, 39, 43, 47, or 52 week periods	Options can be bought or sold any time before their expiration date (the first Friday of the delivery month)	13, 17, 21, 26, 30, 34, 39, 43, 47, 04 52 week periods	Options can be bought or sold any time before their expiration date (the first Friday of the delivery month)
Able to Offset Position or Cancel the Contract?	No	Can be resold or exercised before the put options expires	No	Can be resold or exercised before the put options expires
Subsidized	Yes	No	Yes	No
Brokerage Fee	No	Possible	No	Possible
Basis Risk	Yes	Yes	Yes	Yes