Livestock Risk Protection Insurance for Feeder Cattle

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Significantly higher input costs and price volatility have led many producers to find strategies to manage downside price risk in recent years. Livestock Risk Protection (LRP) is another potential strategy that has been recently expanded to cattle producers in Louisiana. This program was developed by USDA's Risk Management Agency (RMA) and available through the private crop insurance industry from licensed agents. LRP is a form of insurance that can be purchased throughout the year at varying coverage prices and periods that align with cattle marketing times. LRP insurance policies are available for feeder and fed cattle as well as swine. This document primarily focuses on use of LRP to protect feeder cattle price levels with some discussion of implications for producers who retain ownership of fed cattle.

LRP is designed to minimize the downside price risk that cattle producers are exposed to while leaving upside potential open. In this respect, it is similar to hedging cattle through purchases of put options. Unlike other price risk management tools such as futures market contracts and options, LRP does not require margin accounts, a broker or a significant number of cattle. In fact, there is no minimum number of cattle that must be included in order to be eligible to purchase an insurance policy. LRP is an insurance policy that protects producers from the single peril of lower prices.

The two components of revenue are the price level and the quantity of items sold. LRP protects revenue potential by insuring against decline of feeder cattle prices, not the quantity of animals sold. If cattle do not reach the desired sale weight for reasons including death, drought or poor feed conversion, this lost production is not covered. The producer will still receive the revenue associated with the sale of cattle even though the cattle do not reach the desired sale weight. If the actual market price level declines below the insured coverage price, an indemnity would be paid on the originally insured weight. As with purchasing put options or other risk management strategies, LRP is not designed to create a profit opportunity where one did not exist previously. Since LRP will not create profit potential for an operation, it can be used to protect the operation's breakeven price level. The cost to insure cattle would then be viewed as another input in the production process, but producers who purchase LRP coverage would be assured of receiving their breakeven selling price.

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Applying for LRP

The application process for LRP is free and relatively simple. Interested producers provide general information such as name, address, Social Security number and type of livestock to be insured. Applying for LRP does not require that the producer purchase a policy. Instead, it only provides the producer the ability to do so. Once the application has been approved, the producer may purchase coverage from that point forward. Although possible, it is not recommended to wait until the day coverage is desired to begin the enrollment process.

Actual price insurance coverage begins when a producer obtains a Specific Coverage Endorsement (SCE) that creates coverage for a particular group of cattle. Full payment for the policy is due at the time the SCE is obtained. Indemnity payments, should they occur, are received at the conclusion of the policy length. LRP coverage is available for purchase from roughly 5 p.m. until 9 a.m. the following day (Monday – Friday) due to LRP being tied to the futures and options market. All insured cattle must be located in a state that is approved for LRP at the time the policy is purchased even though the owner may live in a state not eligible for LRP. Producers purchasing insurance policies must have at least 10 percent ownership in the cattle specified in the policy and can only insure their interest.

LRP Basics

LRP allows for producers to buy price protection insurance at different coverage prices. Once a policy is purchased, if the market price falls below the insured coverage price, an indemnity is paid for the difference between the market price and the insured coverage price. As market prices fall in relation to the insured coverage price, the probability an indemnity being paid to the producer increases.

Protection is provided for feeder cattle expected to weigh less than 600 pounds and those cattle weighing 600 to 900 pounds at the time when cattle are sold (fed cattle must weigh 1,000 to 1,400 pounds). Steer, heifer, Brahman influenced and dairy calves can be protected for both of the feeder cattle weight classes. There is no minimum number of cattle that must be insured, but there is a maximum of 1,000 feeder cattle per SCE (2,000 fed cattle per SCE). USDA RMA also uses a crop year of July 1 through June 30 in which no more than 2,000 feeder cattle may be insured (4,000 fed cattle).

When purchasing LRP, producers can choose from different coverage prices. The costs associated with purchasing LRP on any given day will differ depending on the level of protection chosen with the higher price protection levels having higher costs. Also, the costs of purchasing LRP can vary from day to day as market prices change. Much like the premium costs of purchasing put options, the costs of purchasing LRP can change as the market price moves. As market prices move lower, the costs associated with purchasing LRP will increase the probability of an indemnity payment increases.

Available coverage prices are a reflection of the Expected Ending Value (EEV) which is calculated by USDA RMA. The EEV is the estimated cash market price on the date the insurance policy expires. On the date a policy is enacted, producers select a coverage price level that will insure between 70 and 100 percent of the EEV on the date the insurance policy expires. The coverage price level is multiplied by the EEV to determine the insured coverage price. Premium cost of the insurance policy on a per hundredweight basis is determined by multiplying the rate by the insured coverage price.

Due to the differences in weight and types of cattle available to be insured relative to a national cash price index that influences EEV, the EEV will automatically be adjusted by USDA RMA to reflect the weight and type of cattle that will be insured. These adjustment factors are shown in Table 1. In other words, a producer that insures Brahman cattle weighing 600 to 900 pounds will have their EEV, coverage price and actual cash price ending value automatically adjusted to be 90 percent of the price level for steers weighing 600 to 900 pounds (the base value).

Table 1. Price Adjustment Factors

Weight	Steers	Heifers	Brahman	Dairy
< 600 pounds (Weight I)	110%	100%	100%	85%
600 – 900 pounds (Weight II)	100%	90%	90%	80%

Coverage should be selected that will have an endorsement length closest to the anticipated marketing date of the cattle. The length of policies (endorsement lengths) offered by LRP allows for producers to purchase a policy in advance to protect against unexpected price declines. USDA RMA offers endorsement lengths of 13, 17, 21, 26, 30, 34, 39, 43, 47 and 52 weeks for feeder and fed cattle. Available coverage levels will vary by day and by endorsement length. Producers should be aware that ownership of the cattle must be maintained until at least 30 days prior to the end date of the coverage. Sale of the livestock prior to that 30-day window will result in voiding the policy. Livestock may be sold after the policy's end date, but an indemnity is only paid if the insured price level exceeds the market price on the date the policy expires.

The feeder cattle market price that determines if an indemnity will be paid to the producer is determined by the CME Feeder Cattle Cash Price Index[1]. The CME Feeder Cattle Cash Price Index is a national seven-day weighted average cash price of 650-849 pound feeder steers. It is important to note that this reported weight average cash price will be different than prices reported in Louisiana as cattle sold in Louisiana are not included in formulating the index. One market may show a fluctuation that is not reflected in the other, but the same factors that influence one market will impact the other, especially corn, transportation costs and for feeder cattle, the fed cattle market price. As LRP covers different weight and breed classifications than is represented by the CME Feeder Cattle Cash Price Index, the adjustment factors shown in Table 1 are used to calculate the actual ending value (AEV) of the insurance policy based on the type of cattle insured. For example, a producer that insures Brahman cattle weighing 600 to 900 pounds will have the AEV associated with his/her policy automatically adjusted to be 90 percent of the reported CME Feeder Cattle Cash Price Index. An indemnity is paid if the AEV falls

[1]Fed cattle market price is the 5-Area Weekly Weighted Average Direct Steer Slaughter Price, 35-65% Choice, FOB Basis, USDA AMS report LM_CT150.

below the insured coverage price on the policy's ending date with the amount of the indemnity paid being equal to the difference between the insured coverage price and the AEV.

LRP premium rates are established by RMA after the futures and options markets close as these markets help determine the rates used by RMA. The program benefits producers who are not able to closely monitor day trading as rates are guaranteed overnight and will not change. LRP is less flexible than options as there is only one date that the policy may be exercised and that is the ending date. Determination of whether or not an indemnity is paid is based on if the AEV is less than the insured coverage price on the date the LRP insurance policy expires as opposed to a put option which may be exercised at any time the option holder chooses prior to expiration of the option. A producer has the ability to sell the cattle in the cash markets within 30 days of the policy expiring without voiding the insurance policy, but determination of whether an indemnity is paid is solely determined if the CME Feeder Cattle Cash Price Index is below the insured coverage price on the date the policy expires. Producers who sell prior to or after the expiration of the policy face the risk of selling in the cash markets for a lower cash price than desired with no indemnity paid because the CME Feeder Cattle Cash Price Index was at least equal to the insured coverage price when the policy expired. Payment in the event of an indemnity occurring is made within 60 days of filing the necessary paperwork.

The basis is used if the producer wishes to calculate his minimum expected selling price. A producer's minimum expected selling price (MESP), or floor price, is calculated as:

Minimum Expected Selling Price =
LRP Coverage Price – LRP Premium ± LRP Basis.

The term "LRP basis" is used because for those enrolled in LRP, the LRP basis (the difference between the local Louisiana cash price and CME Feeder Cash Price Index) is used instead of the difference between local cash markets and the futures market as in traditional futures hedging. For Louisiana, the futures basis is about $10/cwt greater than the LRP basis for steers weighing less than 600 pounds. There is very little difference between the futures and LRP basis for steers weighing greater than 600 pounds in Louisiana, but the Louisiana cash price history for feeder steers greater than 600 pounds has only been reported since April 2008 and should be viewed with caution due to its short time span.

For example, if the coverage price is $101.57/cwt at a rate of $0.668/cwt with an LRP basis of $2/cwt, the minimum selling price would be $102.90/cwt. The actual selling price reflects the cash price received for selling the cattle and any earned LRP indemnity is calculated as:

Actual Selling Price =
Cash Price + (Indemnity – Premium).

There could be situations in which the level of the indemnity paid to the producer is less than the premium paid by the producer for the insurance policy. So, the net effect of the insurance policy is negative. This may lead to questioning of the value of LRP, but purchasing LRP coverage still protected the producer's breakeven price level and limited the exposure of downside risk the producer faces.

An Example of LRP Coverage

A Louisiana cattle producer typically markets his steer calf crop when the calves reach 550 pounds in January. After consulting with his insurance agent on Sept. 2, the closest endorsement length corresponding to his anticipated early February marketing date is the 21- week policy which expires on Jan. 27. Information gathered from this example came from USDA RMA LRP website[2]. The EEV for the policy expiring on Jan. 27, 2010, for less than 600 pound steer calves is $110.44/cwt. The producer can select coverage levels that are from 99.6 percent to 87.7 percent of that EEV level. The available coverage levels are shown in table 2. USDA RMA automatically adjusts the EEV, coverage price, rate and AEV depending on the weight and type of cattle marketed.

The coverage prices shown in table 2 are calculated by multiplying the EEV by the available coverage levels. The EEV for Jan. 27, 2010, is $110.44/cwt. In order to receive the highest available coverage price, the producer pays a higher premium than with lower coverage prices. In this regard, the producer is balancing the tradeoff between increased cost of price risk management strategies and the certainty of a higher, guaranteed price. Reduction in price risk exposure leads to increases in the insurance rate due to their inverse relationship. Producers that can accept more price risk will pay a lower policy premium since they do not seek as a high a coverage price. Knowledge of the breakeven price level is also useful in order to ensure that a producer does not pay for more insurance coverage than is necessary to ensure that production costs are covered.

The fifth column in Table 2 is included since USDA currently pays for 13 percent of the insurance premium. Quoted premiums from the USDA RMA LRP website do not reflect this adjustment. Producers'

[2]http://www3.rma.usda.gov/apps/livestock_reports/main.aspx

Table 2. USDA RMA Quoted Coverage Prices and Insurance Rates for Weight I Steers (Lighter Weight Category) on September 2, 2009

Expected Ending Value (per cwt)	Coverage Price Level	Coverage Price (per cwt)	Premium Rate Without Subsidy (per cwt)	Final Rate With Subsidy (per cwt)	Expected LRP Basis (per cwt)	MESP (per cwt)
$110.44	99.6%	$110.00	$4.12	$3.58	-$6.34	$100.08
$110.44	97.6%	$107.80	$3.19	$2.78	-$6.34	$98.68
$110.44	95.6%	$105.60	$2.43	$2.11	-$6.34	$97.15
$110.44	93.6%	$103.40	$1.90	$1.65	-$6.34	$95.41
$110.44	87.7%	$96.80	$0.87	$0.76	-$6.34	$89.70

Source: LRP Website

actual premium rate is calculated by multiplying the quoted rate on the RMA LRP website by 0.87. The producer knows that his breakeven cost is approximately $97.00/cwt and decides to pick the $105.60/cwt price level. This coverage level is chosen as it will be above the producer's breakeven price once the LRP basis of -$6.34/cwt is accounted for. Insuring the entire calf crop of 75 steers would cost the producer $870.38 or $11.61/head. The MESP is calculated as

MESP = $105.60/cwt - $2.11/cwt - $6.34/cwt
= $97.15/cwt.

The LRP basis (-$6.34/cwt) used in this example assumes that cattle are marketed in the same week that the LRP policy expires and reflects the 2007-09 average LRP basis for that week. Consideration of the LRP basis and its impact on whether the coverage would be above the breakeven price level should not be ignored.

On January 27, the AEV adjusted for the Weight I steers being marketed is determined by USDA RMA to be $106.50/cwt which is above the insured covered price of $105.60/cwt. The probability an indemnity is paid out is not always 100 percent nor will the insurance coverage always pay for itself, that is the indemnity payment will not always exceed the insurance premium.

Final Considerations

In the example from the previous section, for the highest two available coverage price levels, an indemnity would be paid. However, the indemnity payment would have been less than the insurance premium. For a coverage price of $110/cwt, net indemnity payment would be -$0.08/cwt ($3.50/cwt - $3.58/cwt) compared to -$1.48/cwt ($1.30/cwt - $2.78/cwt) at a coverage price of $107.80/cwt. Furthermore, the result would be a lower actual selling price which further illustrates the tradeoff between increased costs resulting from price risk management and lower returns to producers for increased price certainty.

Regardless of whether or not an indemnity is paid, the producer still receives the income from the cash sale of the cattle. The cash price is then combined with the net LRP payment to determine the actual selling price. In the week the insurance policy expired, the cash price in Louisiana for 550 pound steers was $99.17/cwt. As a result, the actual LRP basis is more negative than expected. The actual LRP basis is then -$7.33/cwt ($106.50/cwt - $99.17/cwt) as opposed to the expected -$6.34/cwt.

The cash price is needed to calculate the actual selling price as well as the net returns from the LRP policy and the LRP basis for the week the cattle are sold. If the LRP basis had been more positive than what occurred, the actual selling price would have been higher. As shown in table 3, the producer was able to lock in a price that was above his breakeven cost of production even though the AEV reflects the CME Feeder Cattle Index and not local Louisiana prices.

As shown in table 3, the MESP differs from the actual selling price from both the AEV exceeding the coverage price and a LRP basis that was different than expected. The actual selling price would have been $0.90/cwt higher ($106.50/cwt - $105.60/cwt) than the MESP if expected LRP basis equaled the actual LRP basis. Since the LRP basis was $0.99/cwt less than expected, this leads to the actual selling price only being $0.09/cwt less ($0.90/cwt - $0.99/cwt) than the MESP. Actual selling price may be greater than MESP if the LRP basis becomes substantially more positive (stronger) than the expected level.

Table 4 provides a comparison of the minimum expected selling price and actual selling price at the available coverage prices offered on Sept. 2, 2009. This provides an example of the hedging opportunities that are present with LRP. For all available coverage prices, the producer was able to protect their breakeven cost of production of $97/cwt. In the instances where an indemnity was paid, the cost to purchase the policy

Table 3. Actual Selling Price with a Weaker Basis Than Expected

MESP = $105.60/cwt - $2.11/cwt - $6.34/cwt = $97.15/cwt				
Date	**Cash**	**Ending Value**	**LRP Insurance**	**LRP Basis**
9/2/09	N/A	EEV = $110.44/cwt	Buy LRP with Coverage Price = $105.60/cwt for $2.11/cwt.	Exp 1/27 basis to be -$6.34/cwt
1/27/10	Sell Cattle @ $99.17/ cwt (Cash Price)	AEV = $106.50/cwt	No Indemnity (AEV > Coverage Price) Net on LRP = -$2.11/cwt	Actual 1/27 basis is -$7.33/cwt Difference in Basis is -$0.99/cwt
Actual Selling Price = $99.17/cwt - $2.11/cwt = $97.06/cwt				

Table 4. Comparisons of Minimum Expected Selling Price and Actual Selling Price Based on Enrollment in LRP on September 2, 2009

Coverage Price (per cwt)	Final Rate With Subsidy (per cwt)	Expected LRP Basis (per cwt)	MESP (per cwt)	AEV (per cwt)	Actual LRP Basis (per cwt)	Louisiana Cash Price (per cwt)	Net LRP Payment (per cwt)	Actual Selling Price (per cwt)
$110.00	***$3.58***	***-$6.34***	***$100.08***	***$106.50***	***-$7.33***	***$99.17***	***-$0.08***	***$99.09***
$107.80	***$2.78***	***-$6.34***	***$98.68***	***$106.50***	***-$7.33***	***$99.17***	***-$1.48***	***$97.69***
$105.60	$2.11	-$6.34	$97.15	$106.50	-$7.33	$99.17	-$2.11	$97.06
$103.40	$1.65	-$6.34	$95.41	$106.50	-$7.33	$99.17	-$1.65	$97.52
$96.80	$0.76	-$6.34	$89.70	$106.50	-$7.33	$99.17	-$0.76	$98.41

Note: Rows with bold italic type represent an indemnity is paid to producers as coverage price is greater than AEV.

exceeded the indemnity payment. However, remember that LRP is an insurance product designed to protect against downside price risk.

Finally, this example assumes that the entire calf crop of the producer is insured and none of the calves die prior to the expiration of the insurance policy. This is an acceptable practice if the producer reports any mortality that occurs to his insurance agent within 72 hours of the death. By reporting any deaths that do occur within the 72-hour time frame, the dead calves will still be eligible for an indemnity if one is paid. Producers may want to use historical death loss percentages to determine how many calves should be insured, but will need to keep accurate records on the number of calves and report those losses to ensure that the insurance policy will not be reduced by the number of deceased animals as policy premiums will not be refunded for those deceased animals. Other insurance products may be purchased to protect against perils other than decreases in market prices.

Summary

Livestock Risk Protection can be an important tool for cattle producers to use to ensure minimum price levels. Its advantages include being more flexible as producers can specify the exact number of head to be insured under LRP as opposed to options which have inflexible size requirements. There are also different insurance policy lengths which producers can purchase that will match their expected marketing dates. LRP protects the downside price risk that producers face while there is no cap on the upside potential that producers can capture, although producers should not expect LRP to be a profit enhancer. Unlike options which can be exercised at any time prior to the option expiring, LRP can only be exercised on the day the policy expires. Producers should be aware that all prices quoted by LRP reflect CME Feeder Cattle Cash Price Index prices and not Louisiana prices. This leads to there being some basis risk present in using LRP which may impact the actual selling prices that cattle producers will receive. Finally, all coverage levels and policy lengths may not always be available for Louisiana.

Additional LRP Resources:

Livestock Risk Protection (LRP) Website (provides quotes for CME Feeder Cattle Index):
http://www3.rma.usda.gov/apps/livestock_reports/main.aspx

Premium Calculator:
http://www.rma.usda.gov/tools/premcalc.html

Approved Livestock Agents and Insurance Companies:
http://www.rma.usda.gov/tools/agent.html

Livestock Risk Protection Insurance: A Self-Study Guide:
http://www.livestockinsurance.unl.edu

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