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Livestock Gross Margin: A Risk Management Tool for Cattle Feeders

A new risk management tool was made available to cattle feeders starting January 31, 2006. Livestock Gross Margin (LGM) is a livestock insurance product that protects an expected gross margin (EGM) rather than a selling price, as is the case with Livestock Risk Protection (LRP). Both products allow small and medium sized operations to manage risk even if they do not have the volume or expertise necessary to use Chicago Mercantile Exchange (CME) futures and options contracts. LGM and LRP allow for numbers of cattle to be protected that do not match the specifications of the CME contracts, thus eliminating over or under coverage. Coverage can be purchased from 5:00 pm on the last business day of each month until 9:00 am the next morning, when the CME opens.

Two types of enterprises can be insured under LGM—calf finishing and yearling finishing. In the calf finishing operation, the cattle are assumed to weigh 550 pounds when they enter the feedlot, to weigh 1,150 pounds at slaughter, and to consume 54.5 bushels of corn. In the yearling finishing operation, the cattle are assumed to weigh 750 pounds when they enter the feedlot, to weigh 1,250 pounds at slaughter, and to consume 57.5 bushels of corn.

Gross margin is the difference between gross revenue and variable costs. Gross revenue is the revenue from selling finished cattle. Variable costs include feed and other costs that occur when finishing cattle. Live cattle futures represent the price used to calculate expected gross revenue for the finishing weights prescribed above. Feeder cattle futures represent the price used to determine the expected cost of the feeder animal, and corn futures represent the price used to determine the expected cost of feed needed to finish the animal. The EGM per head is then calculated using the appropriate contract month prices for live cattle futures, feeder cattle futures, and corn futures.

The EGM formula for yearling finishing is:
12.5 x (Expected Live Cattle Price + Live Cattle Basis)
– 7.5 x (Expected Feeder Cattle Price + Feeder Cattle Basis)
– 57.5 x (Expected Corn Price + Corn Basis)

The LGM policy provides insurance for the difference between the Gross Margin Guarantee and the Actual Total Gross Margin based on the producer's target marketings. Although LGM can only be purchased during the short window allowed each month, it is possible to get an estimate of the premiums at the Iowa Agricultural Insurance Innovations (http://www.iaii.us/).

The EGM varies from month to month in an insurance period due to the varying prices in the futures contracts and thus the potential gross margin. EGM ranged from $132 to $270 per head for calf finishers and $14 to $202 per head for yearling finishers, according to the RMA website on 3/28/06. A producer can choose a $0 to $150 deductible amount, in $10 increments. The deductible value is the portion of the EGM not insured, similar to the deductible value on car insurance. It is important to remember that the EGM has to cover the non-feed variable costs and provide some profit!

Each insurance period for LGM is eleven months long. No cattle can be insured during the first month of any insurance period. A producer must prepare a Target Marketing Report showing the number of cattle to be covered in each month of the insurance period, i.e., expected sales. The maximum number of cattle that can be covered is 5,000 head in any one insurance period and 10,000 head in any insurance year (July 1 through June 30).

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Let's look at an example of a yearling finisher who wants to purchase LGM coverage on cattle finished during the insurance period beginning on April 1, which runs from April through February. LGM does not allow any cattle to be insured in the first month of an insurance period, so no cattle could be insured in April in this case. If there were cattle to be insured in April the producer would have had to purchase insurance prior to March 1 in order for coverage to be in place.

In our example, the first month that we could insure finished cattle is May. Since there is no May Live Cattle (LC) futures contract, the Expected Live Cattle Price would be calculated by adding one half of the simple average of April LC futures for the last three business days of March to one half of the simple average of June LC futures for the last three business days of March, plus May Live Cattle Basis.

The Expected Feeder Cattle Price is the simple average of the Feeder Cattle (FC) futures contract during the last three business days five months prior to the month cattle are to be marketed. For cattle to be marketed in May, December feeder cattle futures would be used. However, as with the May LC futures there is no December (FC) futures contract. The Expected Feeder Cattle Price would be calculated by adding one half of the simple average of November FC futures for the last three business days of November to one half of the simple average of January FC futures for the last three business days of November, plus the December Feeder Cattle Basis.

The expected Corn Price is the corn price two months prior to sale, or the March corn price for cattle finished in May. Since there is a March CBOT corn contract the expected corn price for May is the simple average of daily settlement prices for the CBOT corn futures contract for March on the last three trading days of March, plus the March Corn Basis. The CARD website on March 28 estimated the EGM per head insured for May by Yearling Finishers to be $51.45.

Now let's consider a calf finisher who wants to purchase LGM coverage on cattle finished during the April-February insurance period. Because no cattle can be insured in April, the first month we could insure finished cattle is May. The EGM formula for calf finishing is:

11.5 x (Expected Live Cattle Price + Live Cattle Basis)
– 5.5 x (Expected Feeder Cattle Price + Feeder Cattle Basis)
– 54.5 x (Expected Corn Price + Corn Basis)

The Expected Live Cattle Price would be calculated the same as it was for finishing yearlings.

For calf finishers the Expected Feeder Cattle Price is the simple average of the last three business days of the Feeder Cattle (FC) futures contract eight months prior to the month cattle are to be marketed. For cattle to be marketed in May, September feeder cattle futures would be used. The Expected Feeder Cattle Price would be the simple average of September FC futures for the last three business days of September plus the September Feeder Cattle Basis.

For calf finishers the expected Corn Price for cattle finished in May is the corn price four months prior, or the January corn price. Since there is no January CBOT corn contract, the January Corn price is calculated by adding one half of the simple average of December Corn futures for the last three trading days of December plus one half of the simple average of March Corn futures for the last three trading days of March, plus the January Corn Basis. The CARD website on March 28 estimate the EGM per head insured for May by Calf Finishers to be $183.05.

At the end of March the premium estimate for calf finishing for an average EGM of $198.20 for April-February was $25.19 per head. The premium estimate for yearling finishing was $21.36, which insured an average EGM of $105.84 per head. It was assumed that the same number of cattle were marketed each month and that $0 deductible was chosen.

The Actual Gross Margin (AGM) is calculated for each month in the insurance period using the actual prices that occur on the futures markets for live cattle, feeder cattle and corn. The differences between the Gross Margin Guarantees and the Actual Total Gross Margins for each month will be totaled and if the actual margin is less than the insured amount for the entire insurance period an indemnity will be paid. It is possible that within an insurance period there will be months where positive differences will offset negative differences when the indemnity for the whole period is calculated. The EGM and AGM for each month are available at the following website: http://www3.rma.usda.gov/apps/livestock_reports/.

Livestock Gross Margin insurance is sold by many crop insurance agents; check with yours for more details. More information is also available at: http://www.rma.usda.gov/livestock/.