

Chapter 1

What is Livestock Gross Margin Insurance?

In this chapter, you will learn:

- what Livestock Gross Margin (LGM) Insurance is;
- the length of insurance coverage available with LGM;
- which livestock can be insured with LGM;
- where and when LGM is available;
- how to purchase LGM;
- how many head of livestock are insurable under LGM; and
- how LGM is useful as a risk management tool.

1.1 Introduction

Livestock Gross Margin (LGM) Insurance is an insurance policy offered for both cattle and swine through USDA's Risk Management Agency (RMA). Livestock Gross Margin (LGM) Insurance for Cattle was first offered in January 2006. Livestock Gross Margin (LGM) Insurance for Swine was first available in all 20 states where LGM for Cattle was offered beginning in July 2007. Prior to the release of LGM, Livestock Risk Protection (LRP) Insurance was offered to producers (beginning in 2001) as a livestock insurance product. LRP provides single-peril price risk protection for the future selling price of the insured livestock. For more information on LRP, see EC839. As a separate and distinct policy, LGM provides protection against a decline in the cattle feeding or swine finishing margins by simultaneously hedging the corn and feeder cattle input costs and the fed cattle selling price (LGM for Cattle) or the corn and soybean meal input costs and the swine selling price (LGM for Swine) as a bundled option. While LGM is based on futures market prices and provides protection similar to a bundled option on futures contracts, producers using LGM take no futures or option positions themselves and therefore do not need a brokerage account. They must, however, purchase the policy through a licensed crop insurance agent (see *Section 1.6*). The LGM for Cattle insurance policy is available for both calf finishing and yearling finishing operations, while LGM for Swine is offered for farrow to finish, feeder pig finishing, and segregated early weaned (SEW) pig finishing operations.

Essentially, LGM pays insured producers an indemnity when the spread between the fed cattle sales price and feeder cattle and corn input prices (applicable to LGM for Cattle) or the swine sales price and soybean meal and corn input prices (applicable to LGM for Swine) narrows beyond their insured coverage level due

to changing market conditions. As this feeding margin narrows, the corresponding indemnity payment becomes larger to offset lower revenues and/or increased costs. Indemnity payments are based on a gross margin guarantee (GMG) and a total actual gross margin (AGM). The GMG is the livestock feeding margin producers insure when they purchase the policy. It is based on expected fed cattle, feeder cattle, and corn prices in the cattle policy and expected swine prices, soybean meal prices, and corn prices in the swine policy. The total AGM is the livestock feeding margin that occurs due to realized, actual prices observed in the market after the 11-month coverage period for cattle or 6-month coverage period for swine. At the end of the insurance period (11 months for cattle and 6 months for swine), an indemnity is paid to the producer if the insured GMG for the period exceeds the total AGM. The fed cattle, feeder cattle, and corn prices used to compute the GMG and AGM for cattle are based on futures prices adjusted for state- and month-specific basis levels. The swine and corn prices used to compute the GMG and AGM for swine also are based on futures prices adjusted for state- and month-specific basis levels. However, soybean meal prices used in computing the GMG and AGM for swine are based only on futures prices with no basis adjustment.

1.2 Insurance Period

LGM for Cattle can be purchased only on the last business day of each month, while LGM for Swine is available for purchase on the second to last business day of the month, so there are 12 LGM sales periods per year. Each of these has an insurance period of 11 months (6 months for swine), so cattle to be marketed up to 11 months (or swine to be marketed up to 6 months) from the sales closing date can be insured. Coverage begins one full month after the sales closing date, provided the premium for the policy has been paid in full at the time of purchase. No livestock sales are insurable during the first month of any insurance period. For example, if a producer purchased a policy on the sales closing date of Jan. 31, no target marketings will be insurable until March 1 (see *Figure 1.1*). This restriction is to prevent adverse selection. Because the first month of the insurance period is so near, producers could have an idea of whether an indemnity would be due based on prices for those months. Producers can purchase one policy to cover the entire insurance period or obtain multiple policies with sales closing dates in different months for cattle or

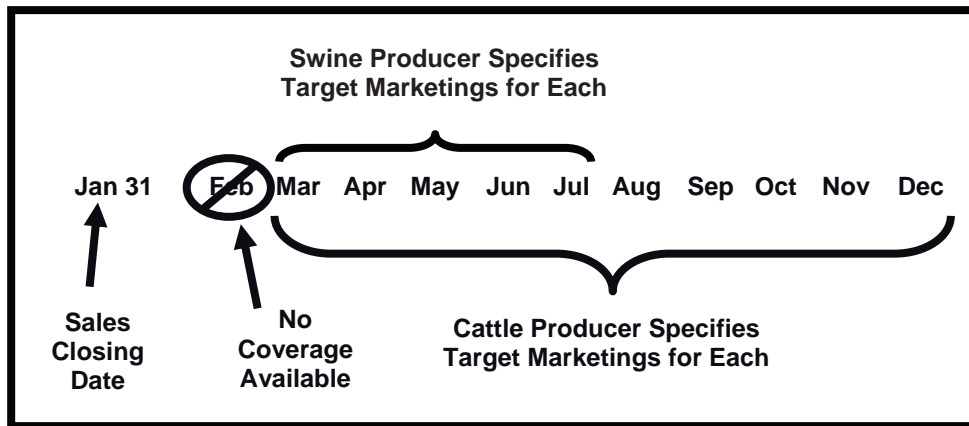


Figure 1.1. LGM Insurance Period, Jan. 31 Sales Closing Date.

swine. For example, producers wanting to insure cattle from March to December could insure all 10 months with one policy (purchased at the end of January). Alternatively, they could purchase coverage for each month separately, buying March coverage in January or before, April coverage in February or before, and so on. Any combination of these two transactions could occur. Insurance that is purchased on more deferred months generally receives the most protection against changing margins because future input prices are hedged in addition to cattle or swine sales (see *Section 3.4*).

1.3 Qualifying Livestock

Livestock eligible to be insured with a LGM policy must be expected to have certain weight specifications and be on feed for a certain amount of time before they are marketed. It is important to note that the livestock must be *expected* to meet certain weight, time, and feed requirements. However, if livestock do not exactly meet these expectations as outlined in the policy, LGM coverage is not affected nor is the right to an indemnity. The livestock specifications in the policy allow inclusion of livestock under many common feeding situations.

Two types of cattle feeding operations are insurable with LGM. A yearling finishing operation assumes a cattle placement weight of 750 lbs and a finished weight of 1,250 lbs. Yearling cattle are assumed to be on feed for five months and consume 57.5 bushels of corn during that time. A calf finishing operation assumes a placement weight of 550 lbs and a finished weight of 1,150 lbs. This type of operation is assumed to feed calves for eight months and assumes they will consume 54.5 bushels of corn. So, a typical calf finishing operation that places weaned calves on feed in the fall after weaning can insure cattle with LGM.

Three different types of operations are insurable with LGM for Swine. A farrow to finish operation assumes that pigs will be marketed at 250 lbs (live weight

basis) and consume 13.86 bushels of corn and 196.16 lbs of soybean meal (9.808 percent of one ton of soybean meal) per head. Feeder pig finishing and SEW pig finishing operations also are assumed to finish swine to 250 lbs (live weight basis). In the feeder pig finishing operation, hogs are assumed to eat 9.6 bushels of corn and 132 lbs of soybean meal (6.6 percent of one ton of soybean meal) per head. The SEW pig finishing operation assumes that each hog consumes 9.7 bushels of corn and 142 lbs of soybean meal (7.1 percent of one ton of soybean meal).

The weights and quantities used to establish the type of operation are based on industry averages. Iowa State University's optimal feed ration was used in determining feed quantities for each type of swine operation. Similarly, the amount of corn in the ration used for both calves and yearlings was calculated from the 2005 Livestock Enterprise Budgets for Iowa (Ellis, Edwards, and Lawrence). The bushels of corn required for two types of cattle rations were averaged to find the number of bushels of corn each type of animal normally consumed in each respective ration. The two types of rations used included a hay and corn ration as well as a silage and corn ration. For yearlings, 63 bushels (hay ration) and 52 bushels (silage ration) of corn were consumed respectively. These amounts were averaged to equal 57.5 bushels of corn for a yearling finishing operation. For calves, 61 bushels (hay ration) and 48 bushels (silage ration) of corn were consumed respectively. These amounts were averaged to equal 54.5 bushels of corn for a calf finishing operation. It is important to note that hay, silage, and other feed costs are not insured with LGM for Cattle. Corn is the only feedstuff included in LGM coverage. Additionally, no other feeding costs of gain, including yardage, interest, medications, vaccinations, etc., are insured with LGM. Furthermore, feeding more dried distillers grains with solubles (DDGS) or wet distillers grains with solubles (WDGS) will change the amount of corn consumed by cattle or hogs. It is possible for producers to over or

under hedge corn consumption if rations vary from the corn averages stated previously due to larger amounts of distillers grains being fed. Distillers grain prices and corn prices are still tied to one another, even though a one-to-one relationship does not exist between the two commodities. Nonetheless, it generally does not affect the insurability of the cattle if actual placement weights, days on feed, and feed consumption for particular pens of insured cattle differ from the averages. However, producers may over or under hedge if placement weights, days on feed, and feed consumption for their operations differ from the averages established by RMA. To the extent these factors can change marketing dates, consideration should be given to whether actual cattle marketings for an insurance period would drop below the allowable levels (see *Section 3.2*). This also is true for swine insured with LGM. Because the amount of feed fed and market weight of the animal is used in determining the EGM and AGM, protection will vary if swine are not marketed at the specified weight or if feed consumption varies from the amount outlined in the policy. However, this is not as large an issue as it is with cattle, because feeding hogs has become more standardized.

1.4 Eligible States

LGM for Cattle and Swine is available in 20 states in the 2008 policies: Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, South Dakota, Texas, Utah, West Virginia, Wisconsin, and Wyoming (see *Figure 1.2*). As of 2007, 87.7 percent of the cattle on feed and approximately 77 percent of market hogs in the United States were located in these 20 states. To be eligible for this policy, the insured livestock

must be located in one of these 20 states and be specifically intended for commercial or private slaughter. The livestock owner does not necessarily have to reside in one of the specified 20 states. Therefore it is unnecessary for the owners of the livestock to reside in the eligible state or the state where the livestock are located — only the insured livestock must be located in an eligible state. For example, a feedyard in Nebraska may custom feed cattle owned by a person living in Tennessee. Even though Tennessee is an ineligible state, the owner could purchase LGM for Cattle coverage because the cattle are in Nebraska.

1.5 Substantial Beneficial Interest

To be eligible for LGM insurance, applicants must have substantial beneficial interest (SBI) in the insured livestock. SBI is tracked in the LGM program because there are limits to the number of livestock any one producer can insure with LGM insurance during specific time periods. An example of this form can be seen in *Appendix 1*. To have SBI, the producer must have at least 10 percent ownership of the insured livestock. If the applicant has a spouse, the spouse typically is considered to have SBI in the applicant's livestock unless specific conditions, as outlined by the Federal Crop Insurance Corporation (FCIC) procedures and provisions, can be proven. For instance, the spouse of an insured automatically has the same substantial beneficial interest as the insured, unless the spouse proves the livestock insured are in a completely separate farming operation or the spouse derives no benefit from the insured farming operation. To be considered individual farming entities, spouses typically must prove separate ownership of land and capital as well as accounting of equipment and/or labor

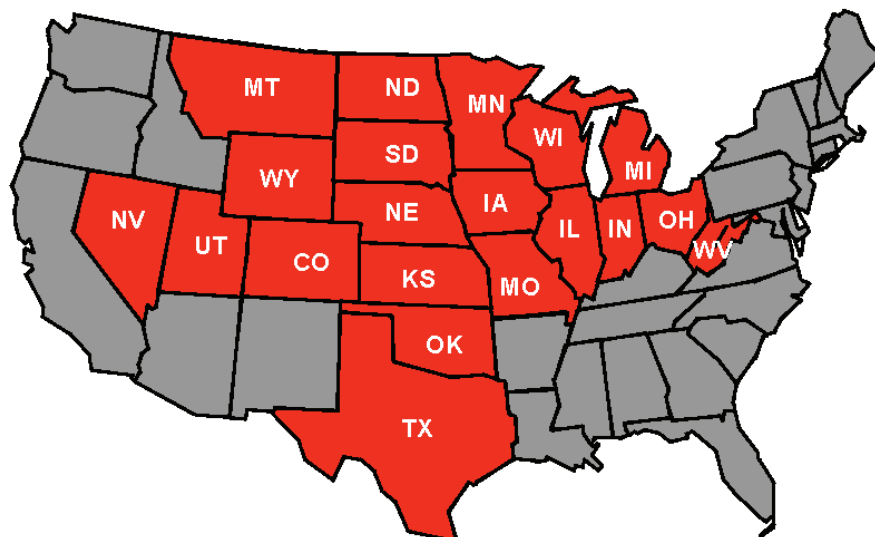


Figure 1.2. States with LGM Insurance, 2008.

costs, management, records maintained, and that neither spouse receives a benefit from the other's farming operation. The spouse of an applicant generally is considered to have SBI in the livestock to prevent a single household from insuring double the maximum number of head for a given crop year (see *Section 1.7*).

1.6 Purchasing Coverage

Once producers have been approved for coverage and substantial beneficial interest has been proven, target marketings are established. Target marketings represent the number of slaughter-ready cattle or swine that are expected to be marketed during the insurance period and that the producer wants to insure with LGM. A specific number of cattle (swine) are insured for each target month in the 11-month (6-month) insurance period. Producers are not required to insure all livestock they plan to feed and sell, and can insure any number of livestock up to program limits. Target marketings insured cannot exceed a producer's approved target marketings. Approved target marketings are the maximum number of livestock that can be stated as target marketings on the insurance application and are based on the lesser of farm capacity or underwriting capacity for the insurance period as determined by the insurance company.

LGM is available for purchase from any authorized crop insurance agent licensed to sell LGM. A list of authorized agents is available through the Agent Locator Tool found on the USDA-RMA Web site (<http://www3.rma.usda.gov/apps/agents>). If producers own livestock in two different LGM eligible states, a separate LGM policy must be obtained in each state. As long as an insurance agent is licensed in both of the applicable states, the same agent can handle both policies. Note if producers own both cattle and swine, a different policy must be obtained to insure each type of livestock.

LGM for Cattle is sold on the last business day of every month, while LGM for Swine is sold on the second to last business day of each month. The sales period commences once RMA validates the price data that is used to calculate the Expected Gross Margin (EGM). This verification of data occurs after the futures market closes on the last day of the price discovery period, which is simply the last three days of prices in the corresponding commodity months (cattle: fed cattle, feeder cattle, corn; and swine: lean hogs, soybean meal, corn) that are used to calculate EGMs for each of the target marketing months. (This process is described in *Section 2.4*.) The LGM sales period ends at 9 a.m. CST on the next business day. RMA reserves the right to refuse the sale of LGM at any time. If EGMs are not posted on the RMA Web site on the last business day (for cattle) or the second to last business day (for swine) of a particular month, LGM for that insurance period is unavailable for purchase. The EGMs

and the premium rates posted are based on futures prices, and once set, are fixed for the remainder of the sales period (see *Section 3.4*).

1.7 Contract Size

Target marketings represent the number of slaughter-ready livestock that are expected to be marketed during the insurance period and that the producer wants to insure with LGM. A specific number of livestock are specified for each target marketing month in the insurance period. Producers are not required to insure all livestock they plan to own and sell. They can insure any amount of cattle they own up to a program limit of 5,000 head for any 11-month insurance period and a limit of 10,000 head per crop year, which begins July 1 and ends June 30. Swine producers can insure any amount of swine up to a program limit of 15,000 head for any 6-month insurance period and a limit of 30,000 head per crop year. There is no limit to the number of LGM policies producers can purchase; only the maximum number of head insured is limited (see *Table 1.1*). Livestock could be insured using multiple policies during one crop year as long as a producer does not exceed the 10,000 head policy limit for cattle or 30,000 head policy limit for swine. Because only the maximum number of head insured is limited and producers can insure any amount of livestock up to the program limits, LGM is useful to producers with smaller feeding or finishing operations who may lack enough livestock to effectively use futures and options contracts to hedge price risk.

Futures and options contracts cover fixed amounts of commodities. For example, one feeder cattle contract covers 50,000 pounds, one fed cattle or swine contract is 40,000 pounds, one corn contract represents 5,000 bushels, and one soybean meal contract equals 100 tons. Many times these amounts are too large to be used effectively in the risk management portfolios of smaller feeding operations. Cattle producers, for instance, may not purchase enough feeder cattle to cover one feeder cattle futures contract or enough corn to represent 5,000 bushels for a particular target marketing month. This, in turn, leaves the producer exposed to more risk because the producer is hedging more than is actually being purchased in the cash market. In addition, the difficulty in using options or futures is compounded by the ratio producers would need to equalize live cattle, feeder cattle, and corn contracts for a cattle operation (lean hogs, soybean meal, and corn contracts for a swine operation) according to production practices so as to not over or under hedge one or more commodities in this three-way spread. The LGM policy combines the three commodities in an equivalent fashion for producers, so they do not have to purchase multiple contracts to be hedged in each commodity. Because there is no minimum number

of head to insure with LGM, producers with smaller-sized operations can use LGM without hedging more cattle or swine than they plan to sell.

Table 1.1. LGM Coverage Limits.

	<i>Cattle (head)</i>	<i>Swine (head)</i>
Per Insurance Period	5,000	15,000
Per Crop Year July 1-June 30	10,000	30,000

1.8 Risk Protection

LGM is a price risk management tool; it is not designed to be a price capture mechanism or profit enhancer. Although LGM does not create a marketing opportunity or a positive margin other than what the market actually offers, LGM does offer useful protection by protecting the gross feeding margin. The program is more useful in preventing large, potentially devastating losses to an operation in the event of a narrowing feeding or finishing margin caused by lower revenues and/or increased input costs. A narrowing cattle feeding (swine finishing) margin, as defined by this policy, could be the result of decreasing live cattle prices (swine prices) and/or increasing feeder cattle or corn prices (soybean meal or corn prices). Movements in one, two, or even all three of these markets could cause the feeding or finishing margin to narrow. On the other hand, a large adverse price move in one of the markets (for example, feeder cattle or soybean meal) may not trigger a decreased margin and subsequent indemnity if another market (for example, fed cattle or lean hogs) moves favorably (see *Section 5.2*). LGM for Cattle acts as a bundled set of options protecting live (fed) cattle, feeder cattle, and corn price changes. LGM for Swine does the same, protecting lean hogs, soybean meal, and corn price changes. Even though price risk is reduced with this coverage, it still has its limitations as it does not protect against basis risk or performance or production risk, including death loss. The risk of changes between actual basis levels and the fixed basis in LGM leaves producers partially exposed to cash margin price risk and therefore not completely protected from detrimental price moves (see *Section 4.2*).

An important factor when considering purchasing

LGM is the time period in which to buy coverage. Premiums for a given level of gross margin protection are generally less expensive when gross margins are high and/or increasing (high live cattle prices and low feeder cattle and/or corn prices or high lean hogs prices and low soybean meal and/or corn prices). In this situation, it is less likely that the coverage level selected will pay an indemnity; therefore, insurance coverage may be less expensive. This situation may offer an opportunity to lock in a gross margin near a producer's break-even gross margin for a relatively inexpensive premium. On the other hand, if gross margins are narrow and/or decreasing, premiums may be more expensive for the same level of coverage. As gross margins for cattle continue to narrow because of lower live cattle prices or increased feeder cattle and/or corn prices, it is more likely that an indemnity will be paid; therefore, coverage becomes more expensive. The same is true for gross margins in swine. Margins will narrow as lean hog prices decrease or soybean meal and/or corn prices increase, thus increasing the chance of receiving an indemnity and paying a higher premium. Waiting until gross margins narrow (and the insurance is in greater demand) may not be the best time to purchase LGM coverage. Rather, periods with higher live cattle prices and lower feeder cattle and/or corn prices may provide the best opportunity to protect a break-even cattle gross margin of production simply because premiums may be relatively inexpensive (this is also true with swine).

1.9 Summary

This chapter provided an overview of LGM for Cattle and Swine insurance, what livestock and states are eligible for LGM insurance, and SBI requirements. It also explained how to purchase coverage, contract size limitations, the length of the insurance period for both types of livestock, as well as insuring a breakeven margin with LGM. *Chapter 2* provides an in-depth example of how LGM works.

References

- Ellis S., W. Edwards, J. Lawrence. 2005. Livestock Enterprise Budgets for Iowa — 2005. Iowa State University, University Extension, Ames, IA, FM 1815. www.i-farmtools.org/ref/Ellis_et_al_2005.pdf.