What is Price Risk?
Price Risk Management for Cow-Calf Producers: Part 1

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Farmers and ranchers face risk every day. Individual producers have tools to mitigate risk, such vaccination and irrigation, but never have complete control over production outcomes. Price risk is one example of the many types of risk that can influence farm income. "Uncertainty" characterizes a situation where outcomes are unknown, while "risky" characterizes situations where potential outcomes are known or understood, but different outcomes can occur.

For cow-calf producers that are calving now or within the next few months, production (breeding) decisions were made over 9 months ago. However, it will be another 6 months from today, or longer, that most producers receive any income. Predicting market prices at breeding is highly uncertain: it's difficult to know what markets will be like a year and a half in advance. By calving, market predictions or expected prices for feeder cattle have been established through futures markets:[1] this is a risky situation rather than an uncertain situation. While futures prices are not a guarantee of a particular market price, they provide information about likely price outcomes.

Price risk is not about whether expected prices are high or low, but whether market prices are different than expected. What does it mean for a price to be different than expected? Let's say a producer calves in April and plans to sell in October. Today October feeder futures are around $185/cwt. In other words, $185 is the expected market price for October 2022, or $185/cwt is best estimate we have for average national prices in October, based on currently available information. The price risk faced by the producer is that when October arrives, prices may have dropped below $185/cwt. If prices decrease by October, will the producer still be able to make a profit?

In some years, prices decline or stay the same. The largest decline in recent years was in 2015. In April 2015, October feeder cattle futures were around $214/cwt. By October, prices had declined to around $183/cwt. Some producers might have still made money at $183, but this was substantially less than the expected price in April. Prices were similarly high in April 2014: October feeder futures were over $230/cwt. Actual 2014 October prices were a little higher than this. In 2020 expected and actual prices were also similar, around $140/cwt.

Actual prices can be higher than expected. While this is technically a form of price risk, or "upside risk", most producers are more worried about price declines, or "downside risk". In April 2013, the October feeder cattle futures price was

[1] Contracts to buy or sell commodities at a future date can be purchased in futures markets, such as the Chicago Mercantile Exchange or CME. For more information on futures markets, see https://agmanager.info/hedging-using-livestock-futures or https://agmanager.info/livestock-meat/marketing-extension-bulletins/price-risk/introduction-futures-markets. Information on expected prices may be available from other sources, but within a similar time range as futures markets.

around $144/cwt, but the actual price ended up around $160/cwt. Likewise, in 2017, the actual October price was almost $10 higher than expected.

Producers may also face unexpected declines in local prices, that may not be reflected in national or futures markets. This type of risk is often referred to as "basis risk". Basis risk is defined as the different between the current (or nearby) futures price and local cash prices. For example, prices at the local sale barn may experience a larger decline than futures prices.

To summarize, price risk management is not just about getting a high price; it is about protecting yourself from declines in the expected market price. The next article in this series will discuss different price risk management strategies.

This article is the first in an 8-part series on price risk management for cow-calf producers. The first part of the series will focus on price risk and different management alternatives. The later part of the series will focus on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make it more affordable to producers. *Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.*

Price Risk Management Strategies
Price Risk Management for Cow-Calf Producers: Part 2

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Most cow-calf producers face price risk. Likewise, most producers manage price risk, even if they do not have an explicit "price risk management strategy." Three major price risk management strategies are self-insurance, marketing flexibility, and formal price risk management tools. More than one strategy can be used.

The primary price risk management strategy used by most cow-calf producers is self-insurance. While self-insurance might be perceived as "not managing price risk", any producer who continues a cow-calf operation after a low-income year manages price risk. The primary method of self-insurance is income diversification, either through farm income diversification or off-farm income or both. For example, a producer may both produce crops and have a cow herd, with crop income typically being sufficient to absorb losses from low calf prices and (potentially) vice versa. Similarly, a producer and/or their family members may work off farm. In addition to the advantage of access to affordable health insurance, off-farm income can cover family living expenses during low price years. A potential disadvantage is that opportunities for herd expansion and time spent on management may be limited.

A second strategy is marketing flexibility, in terms of both the type of market and the timing of marketing. Niche or value-added markets, such as direct-marketing, as well as marketing arrangements with breeders, processors or a feed yard are examples of types of markets that that can be part of a price risk management strategy. More specifically, a marketing relationship with a feed yard might result in more predictable prices than with a sale barn. Some producers also use the timing of marketing to manage price risk. For example, a producer might feed calves for a few months after weaning in hopes of stronger markets in the late fall or early winter. All of these marketing strategies have the advantage of shielding a producer from price risk in commercial markets. However, these strategies are not failproof or without risk: no market is guaranteed, or prices might not increase enough to cover additional feed or other costs.

The third strategy is using formal price risk management tools: specifically hedging or insurance. Both hedging (future and options) and insurance (Livestock Risk Protection-LRP) allow a producer to protect themselves against *unexpected declines* in the market price. These strategies require some upfront costs and an investment of time into learning about commodity markets. An advantage is they can protect a producer who is expanding or highly leveraged or otherwise would be hurt by a decline in expected prices.

Cow-calf producers use various price risk management strategies that are tailored to their individual situation and needs. The next article in this series will cover hedging basics.

This article is the second in an 9-part series on price risk management for cow-calf producers. The first part of the series will focus on price risk and different management alternatives. The later part of the series will focus on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

Hedging 101
Price Risk Management for Cow-Calf Producers: Part 3

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Cow-calf producers use various strategies to manage price risk. Hedging is a formal price risk management tool that allows a producer to directly manage the risk associated with changes in expected market prices.

Background-Today most agricultural commodities are traded in futures markets—largely under the CME Group (Chicago Mercantile Exchange). Local or cash prices are generally driven by futures prices, plus any differences in transportation costs, nearby markets, etc. Future markets allow for "price discovery" when there are enough potential buyers and sellers that are willing to commit to purchase or sell a specific amount of a specific commodity at a future date. Today very little physical delivery of commodities occurs, but futures markets are widely used by market participants to manage price risk in commodity markets. Better knowledge of current and expected price levels allows a business to make decisions and plan for the future.

Buyers and sellers of commodities use futures markets to "hedge" or protect their anticipated profit margin from unexpected prices changes. This article focuses on hedging feeder cattle. Producers can hedge feeder cattle prices with either futures or options. We will use the example of a producer who is calving in February and plans to sell around mid-August.[1]

A futures contract allows a producer to set a specific price at a future date, subject to changes in basis, or the difference between cash and futures prices. The current August futures price for feeder cattle is around $186 per cwt. A hedge is placed by establishing a short position ("selling") for an August feeder contract at $186 per cwt. If actual August futures and cash prices are *lower* when calves are sold, the producer's loss in the cash value of the calves is balanced by a gain in the value of the futures market position. However, if actual August prices are *higher*, the producer's gain in the cash market is balanced by a loss in the futures market. Further, if futures prices go up, the producer may face a "margin call" or have to put additional money into a "margin account". Margin calls may be a disadvantage of a futures contract for some producers.

An options contract, or a 'put option' in the case when you are selling feeder cattle, gives the producer the right but not the obligation to sell at a specific price in a specific futures contract. For example, a producer selling feeder cattle in August currently can purchase a put option at strike price of $186 per cwt. This put option would cost around $7.50

[1] Typical calving dates vary throughout Kansas. While the numbers may slightly change, this example is applicable for any spring calving date.

per cwt and allow the holder to sell the August contract at $186 any time before expiration. This position sets an effective price floor around $178.50 per cwt plus expected basis. The producer can still benefit from higher actual prices, less the cost of purchasing the option.

There are a few other considerations. A producer must pay a commission to a broker to establish a futures contract or purchase an option. A potential disadvantage of using futures is the necessity of tying up capital, temporarily, in a margin account. The cost of purchasing an option may deter some producers. Another issue for cow-calf producers may be the required minimum contract size of 50,000 pounds, which is equivalent to about 71 700-pound calves.[2]

Livestock Risk Protection (LRP) is an insurance product that is very similar to a put option but has the advantage of no minimum number of animals. The next article in this series will cover the costs of LRP.

This article is the third in an 9-part series on price risk management for cow-calf producers. The first part of the series will focus on price risk and different management alternatives. The later part of the series will focus on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

Hedging Resources

This article provides a basic introduction to hedging. The following resources provide additional information:

https://agmanager.info/livestock-meat/marketing-extension-bulletins/marketing-strategies-and-livestock-pricing/summary

https://www.agmanager.info/livestock-meat/marketing-extension-bulletins/marketing-strategies-and-livestock-pricing/hedging-0

https://www.agmanager.info/events/risk-and-profit-conference/previous-conference-proceedings/2018-risk-and-profit-conference/11

https://www.extension.iastate.edu/agdm/livestock/html/b2-50.html

https://agecon.ca.uky.edu/files/using_futures_markets_to_manage_price_risk_in_feeder_cattle.pdf

[2] Feeder cattle futures contract specifications are for 700-849 lb. feeders. Producers hedging lower-weight calves face the risk that cash prices for calves at different weights may diverge.

https://marketing.uwagec.org/MngTCMkt/FutrMrkt.pdf

https://www.youtube.com/watch?v=PqhV5dmt0Lw&t=2545s

https://www.cmegroup.com/trading/agricultural/files/AC-215_SelfStuy_GuideNYMEX.pdf

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Livestock Risk Protection-Costs
Price Risk Management for Cow-Calf Producers: Part 4

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Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a livestock insurance product that is like a put option. The focus of this article is the cost of LRP.

What is LRP? LRP is price insurance that pays out when market prices for feeder cattle are lower than expected. For example, consider a producer that is calving in April and selling at wean in October. The current LRP expected price for feeder cattle being sold in October is around $194/cwt, similar to the futures price. This producer can purchase an LRP policy (or "endorsement") at "coverage prices" which range from around $174/cwt to $194/cwt. If the actual price in October is less than the *producer-selected* coverage price, the producer will receive a payout (or "indemnity") to make up the difference between the actual and expected price.

Producers pay a "premium" for the effective price floor that LRP provides, with higher coverage prices having higher premiums. The lowest coverage levels have the maximum Federal government cost share of 50%, while the highest coverage levels have a government cost share of 35%. Because of recent increases in the government cost share, LRP is now more affordable for the producer. LRP is also cheaper than purchasing a put option due to this cost share.

The table below shows the estimated cost of current LRP coverage price choices. These producer premium estimates were obtained on February 24 for unborn steers and heifers in Kansas intended for sale in October.

Table 1. Current LRP-feeder cattle costs

Coverage price	Producer Premium
$193.11	$6.57
$188.91	$5.21
$184.71	$4.09
$180.51	$2.93
$176.31	$2.27
$174.21	$1.81

Note: Estimated premiums for selected coverage prices collected on 2/24/2022 from https://public.rma.usda.gov/livestockreports/main.aspx. Official premiums vary daily and can only be provided by an insurance agent.

The highest coverage prices have a higher cost (up to $6.57 per cwt in this example) because it is much more likely that actual prices in October will be below $193 than below $174. The premium cost for the $174 coverage price is less ($1.81/cwt) and reflects the reduced likelihood of a price decline below that point. Further, any indemnities for higher coverage prices will be larger.

Given the inflation and uncertainty in today's economy, many producers are wary of additional expenses. There are many ways for a producer to consider the cost of LRP: below are a few examples.

1. Is the premium worth the revenue guarantee? Is $6.57 per cwt worth guaranteed revenue (or price floor) of $193 per cwt? Or is $1.81 per cwt worth a guarantee of $174 per cwt?
2. A producer may know their breakeven price for calves or have a target price for calves. Are current LRP coverage prices and premiums sufficient to help a producer achieve that price? For example, is your breakeven price less than $186? (or the LRP coverage price less producer premium: $193.11-$6.57=$186.54)
3. How does LRP compare to existing expenses that help lower revenue risk? For example, Bovine Respiratory Syncytial Virus (BRSV) and Bovine Viral Diarrhea (BVD) both cause illness, reduced performance, and even mortality in calves, lowering revenue.[1] One estimate of BVD vaccine costs (not including labor) for pre-weaned calves was equivalent to approximately $2/cwt[2], which is comparable to LRP premiums.

Currently LRP policies have premiums that can range from $1-$7 per cwt. In the next article in this series, we will discuss in more detail the value of the price guarantee provided by LRP.

This article is the fourth in an 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focues on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

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[1] One study estimated that BVD costs the beef cattle industry $1.5-$2.5 billion per year (https://www.beefmagazine.com/blog/how-much-money-have-you-lost-bvd)

[2] One study estimated a cost of $6.25 to vaccinate a preweaned calf for BVD (only), which for a 300-pound calf is equivalent to approximately $2 per cwt. This estimate does not include labor costs. Costs can vary significantly by individual operation. For more information, see https://avmajournals.avma.org/view/journals/javma/253/5/javma.253.5.617.xml

Livestock Risk Protection-Guarantee
Price Risk Management for Cow-Calf Producers: Part 5

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Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a type of livestock price insurance that typically costs less than a put option. The focus of this article is the LRP guarantee (also referred to as "liabilities"), which is the level of revenue (or calf income) that is guaranteed by LRP.

The holder of any insurance product receives compensation for damage (i.e. your roof blows off) or other losses, which is called an indemnity. LRP pays out an indemnity when the actual market price is less than the *producer-selected* coverage price. A LRP indemnity effectively covers the revenue loss that can be attributed to this price decline. In the example below, we show the LRP guarantee for a producer who is calving in April and plans to sell 40 calves in October. If the producer purchased an LRP endorsement for 'unborn steers and heifers' on March 1, they would have selected a coverage price in the range of $172 to $191 per cwt, with producer premiums ranging from $2.46 to $7.28 per cwt. The producer must also select a target weight that, in addition to the coverage price, determines the LRP guarantee: coverage price times the target weight. For this example, we assume a target weight of 550 pounds.

Table 1. LRP guarantee and premium for different coverage prices

	$191.09 (100% coverage level)	$182.69 (96% coverage level)	$172.19 (90% coverage level)
Guarantee per head	$1,051.00	$1,005.00	$947.00
Producer premium per head	$40.00	$26.00	$14.00
Total Guarantee	$42,040.00	$40,192.00	$37,882.00
Total producer premium	$1,602.00	$1,043.00	$542.00

Note: Premiums are estimates only for March 1, 2022; coverage prices and premiums change on a daily basis based on market fluctuations. The LRP expected price for October 2022 feeders (unborn steers and heifers) is $191.30/cwt (the 100% coverage level noted above is based on rounding of the actual 99.89% coverage level).

LRP indemnities are the difference between the actual and coverage price times the producer-selected target weight. Target weights must be within a specific range that is based on the specific type of LRP feeder cattle endorsement selected. For example, 'unborn steers and heifers' must have a target weight less than 600 lbs. The indemnity makes up the difference between the guarantee and actual revenue. In other words, the indemnity is designed to bring the producer's revenue back up to the guaranteed level when prices drop. Table 2 shows how this works in our example.

Table 2. Indemnity and guarantee when actual prices are $175 and coverage price is $191.09

Difference between actual and coverage price	$191.09-$175 = $16.09
Target weight (cwt)	5.5
Indemnity per head	5.5*$16.09 = $88.50
Number of head	40
Total indemnity	40X $88.50 = $3539.80
Actual revenue (assumes target weight is achieved)	$175 X 5.5 X 40 = $38,500
Guarantee (Indemnity + actual revenue)	$3539.80 + 38,500 = $42,040

Table 2 shows how indemnities can bring a producer back to their LRP guarantee when prices are lower than the coverage price. Without LRP, actual revenue is $38,500, and with LRP, actual revenue is at the guaranteed level $42,040.[1] This example assumes in the actual revenue calculation that feeders reach their target weight of 550 pounds. In reality, weight gain might be lower than expected or there could be high mortality rates. Producers could also experience larger drops in their local or cash price than in the futures market (on which LRP prices are based).[2]

Why does a producer need to consider the guarantee, in addition to the coverage price? First, understanding how the guarantee is calculated can help a producer understand sources of risk that LRP does not cover. In addition to the examples in the previous paragraph, prices for feeders that are above or below the target weight might be different from LRP actual prices, such as price divergence between 600 lb and 800 lb feeders. Second, knowing the value of the guarantee can help a producer better understand the amount of income at risk from price declines and the potential value of LRP to their operation. Third, estimates of expected revenue based on the LRP guarantee might be valuable for a lender, potentially leading to additional credit being extended or more favorable terms.

The LRP guarantee is a measure of the income that LRP can protect for a cow-calf operation. In our example, there is a large difference between premiums at the lowest and highest coverage levels, which reflects the frequency and magnitude of indemnities at different coverage levels. In the next article in this series, we will discuss the historic frequency and magnitude of indemnities that LRP would have provided for spring-born calves.

This article is the fifth in an 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focuses on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

[1] With LRP at the coverage price in this example ($191.09), the producer also incurs a total premium of $1,602.
[2] This example was calculated using LRP prices (or national prices), which can vary from local cash prices.

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Livestock Risk Protection-Payouts
Price Risk Management for Cow-Calf Producers: Part 6

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Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a type of livestock price insurance that typically costs less than a put option. LRP makes payouts (indemnities) that replace the income that is lost due to a price decline. An LRP indemnity is calculated by taking (1) the producer-selected target weight (for example, 550 lbs for a feeder) times (2) the difference between the actual price and the producer-selected coverage price.[1] The larger the price decline, the larger an indemnity a producer receives. This article discusses the frequency and magnitude of LRP indemnities.

How often do indemnities occur? For the highest coverage levels, indemnities occur much more frequently than lower coverage levels. In table 1, we report the historic frequency of indemnities for LRP for feeder cattle from 2007-2021.[2] For the highest range of coverage levels, or coverage prices that were 97.5-100% of expected price, indemnities occurred about half of the time. Indemnities were higher than premiums about 40% of the time. Indemnities are frequent for these high coverage levels because only a small decline in prices is necessary to trigger an indemnity. For the lowest range of coverage levels considered (90-92.49%), indemnities only occurred 21% of the time. Indemnities occurred less often at lower coverage levels because actual prices only occasionally declined more than 10% below expected (futures) prices.

Table 1. Frequency of LRP indemnities for feeder cattle from 2007-2021

	Share of LRP endorsements with	
Coverage level	Any indemnity	Indemnity that is greater than the premium
97.5-100%	50%	40%
95-97.49%	40%	36%
92.5-94.99%	31%	28%
90-92.49%	21%	19%

Note: Estimates are based on the *Understanding Data and Markets* tool developed by Bozic, LLC, for 30-week endorsements for steers with a target weight of 550bs

There are two important notes of caution about the frequency of indemnities. First, historic experience does not perfectly predict the future. Second, indemnities occurring about half of the time for high coverage policies does not

[1] For a detailed example of indemnity calculation, see the previous article in this series at https://agmanager.info/crop-insurance/livestock-insurance-papers-and-information/livestock-risk-protection-guarantee-price

[2] The specific endorsement used for this example is for 30 weeks for steers up to 600 lbs; results do not vary substantially for heifers/other categories or higher weights or similar endorsement lengths.

mean that a producer can expect an indemnity every other year. A few years of significant price volatility or increasing prices could lead to multiple years without indemnities; there can also be years with back-to-back indemnities.

How large are LRP indemnities? The largest indemnities for feeder cattle were paid in 2015, going over $20 per cwt for endorsements with the highest coverage levels (or coverage prices). Otherwise, indemnities over $10 per cwt occurred relatively rarely, including in 2012 and briefly in 2020. In table 2, we report average long-term net indemnities, which are indemnities minus the premium cost, from 2007-12. This calculation includes years when no indemnities were paid, or when net indemnities would be negative. Average net indemnities for the highest coverage policies (97.5-100% coverage level) were $2.39 per cwt or $13.12 per head for a 550 lb feeder. Average net indemnities were negative for the lowest coverage, but very small.[3]

Table 2. Frequency of LRP indemnities for feeder cattle from 2007-2021

	Average Net LRP Indemnity	
Coverage level	Per cwt	Per head (550 lb feeder)
97.5-100%	$2.39	$13.12
95-97.49%	$1.22	$6.73
92.5-94.99%	$0.16	$0.90
90-92.49%	-$0.27	-$1.49

Note: Estimates are based on the *Understanding Data and Markets* tool developed by Bozic, LLC, for 30-week endorsements for steers with a target weight of 550bs. Net indemnities are calculate as the LRP indemnity minus the LRP producer premium.

We conclude with three points. First, indemnities are much more frequent for higher levels of LRP coverage. Second, since 2007, net indemnities have been larger for higher coverage levels. Third, even for the highest coverage policies, a few years can pass without an indemnity and the largest indemnities (i.e. indemnities greater than $20/cwt) are relatively rare. LRP has both risk management and income benefits, consistent with both historic experience and the design of LRP. In the next article, we will discuss important policy details that any producer considering LRP should know.

This article is the sixth in an 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focuses on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make

[3] Like other policies that are part of the Federal Crop Insurance Program, the LRP premium subsidies make purchasing a policy more affordable and *typically lead* to the producer coming out ahead or receiving more in indemnities than premiums in the long term. While it may seem surprising to see negative net indemnities for the lower coverage policies, it is important to remember the following. (1) The premiums are small under the low coverage policies, as are the net indemnities. (2) Historic experience for a specific policy will not always reflect the *expected long-run outcome,* especially over a relatively short time period. (3) Low coverage policies are of most benefit during periods of catastrophic loss or very large price declines. These events happen relatively infrequently, thus any estimate of net benefits for low coverage policies will be very sensitive to the specific time range that is used.

it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

Livestock Risk Protection-Important Policy Details
Price Risk Management for Cow-Calf Producers: Part 7

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Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a type of livestock price insurance that typically costs less than a put option. LRP makes payouts (indemnities) that replace the income that is lost due to a price decline. For cow-calf producers interested in the price risk management and income benefits of LRP, this article discusses a few key policy details.

Some preparation is necessary before purchasing an LRP policy. A producer first must sign up for LRP with an insurance agent, before committing to purchasing an LRP "endorsement" (the formal term for an LRP policy). LRP costs (premiums) and coverage prices can change on a daily basis, based on futures markets. LRP endorsements are only available for purchase from around 3:30pm (when RMA posts updated coverage information online) to 9:00 am central time. LRP endorsements may not be available for purchase on federal holidays or days when futures markets are closed. Having a trusted and knowledgeable insurance agent is especially important given the limited time frames available for LRP purchase. Making a LRP purchase decision requires that a producer must be able to assess the daily costs and coverage prices and actually purchase an endorsement within a short period of time. An insurance agent can work with producers to determine acceptable levels of LRP costs and coverage prices in advance. The insurance agent must also be committed to help a producer purchase an LRP endorsement outside of typical business hours and on short notice.

The length of time between when an LRP endorsement begins (the purchase date) and ends (or the intended sale date) is called the "endorsement length". The minimum endorsement length is 13 weeks or approximately 3 months. The maximum endorsement length currently available[1] for feeder cattle is 34 weeks, or about 8 months. Current LRP endorsements available for purchase for feeder cattle vary from ending in June (13 weeks) to ending in November (34 weeks). Because expected or futures prices are less likely to change over a short period, short endorsements have both lower premiums and expected payouts. Likewise, long endorsements have higher premiums and expected payouts. For example, the October futures price in July is likely to be closer to the actual October price than the October futures price in March. In other words, an unexpected decline in October prices is more likely to occur in March than July.

Flexibility is important for many cow-calf producers: for example, selling earlier than planned or feeding calves longer than planned, based on local corn and forage prices and availability. LRP allows producers to maintain some of this type of flexibility. Producers cannot sell their livestock earlier than 60 days before the end of their LRP endorsement and still

[1] The maximum LRP endorsement length is 52 weeks, including endorsements for swine and fed cattle. Current endorsements available (as of March 16, 2022) for feeder cattle only go up to 34 weeks.

be eligible for an indemnity.[2] However, producers are not required to sell their livestock at the end of the endorsement period. Before purchasing an LRP endorsement, a producer should understand and be comfortable with this restriction.

Like any insurance policy, LRP has many policy details or characteristics that a producer needs to consider and discuss with their insurance agent. The next and final article in this series will discuss how LRP as a price risk management tool might be relevant to different cow-calf production management objectives.

This article is the seventh in an 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focuses on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recent policy changes make it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

[2] An exception may be available with explicit written permission from the RMA or the Risk Management Agency of U.S. Department of Agriculture; a livestock insurance agent should be able to provide more information.

Livestock Risk Protection-Management Considerations Price Risk Management for Cow-Calf Producers: Part 8

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March 2022

Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a type of livestock price insurance that typically costs less than a put option. LRP makes payouts (indemnities) that replace the income that is lost due to a price decline. For cow-calf producers interested in the price risk management and income benefits of LRP, some preparation is necessary before purchase. This article discusses how LRP might fit with typical cow-calf management strategies.

Cost-focused management- Many cow-calf producers focus on minimizing costs and self-insure against price declines. These operations can survive low price years because they are able to rely on other income sources. For this group, LRP may not seem attractive because it (1) an additional expense is incurred (for example, the most expensive LRP feeder cattle endorsements currently available have premiums over $7.00 per cwt) and (2) requires a substantial investment of time, especially initially. One consideration for producers in this group is that the LRP premium is not paid until after the end of the endorsement period. Further, producers in this group may want to consider using LRP for catastrophic-type coverage. While large declines in expected market price are rare, they can be substantial in some years. For example, in 2015, feeder cattle prices dropped over $50 per cwt within a few months. The lowest LRP coverage levels[1] will pay out for this magnitude of large price decline (which happens infrequently but causes a large drop in calf income) and cost around $1-$2 per cwt.

Active management- Larger operations and operations that are more reliant on cow-calf production for income are most likely to fall into this category. These operations know their cost of production, have a marketing plan, and have some experience with hedging or other types of price risk management. For these operations, assessing the value of LRP should be a straightforward exercise. LRP might be a cost-effective form of risk management, although the flexibility relative to more complicated hedging strategies may be a concern for some producers. While LRP limits on head enrolled per year[2] may be a limitation for some feedlots covering fed cattle, most cow-calf operations should not be affected.

Moderate Management- Some cow-calf producers fall in between cost-focused management and active management. For example, operations with "moderate management" might track some production expenses and have considered using futures or LRP in years with high prices. While calf income may not be "make or break" for this type of operation,

[1] While LRP coverage levels can be as low as 70%, the lowest coverage levels currently available for LRP feeder cattle endorsements are around 90%

[2] LRP endorsements have a maximum size of 6,000 head for feeder or fed cattle and the total annual maximum is 12,000 head.

lower prices are a serious concern. For this group, LRP provides the opportunity for more predictable calf income, at a cost favorable to producers. In other words, LRP makes payments in years when prices drop and is designed so that in the long run the producer pays less in premiums than they receive in indemnities. Recommendations from previous articles in this series may be helpful for this group of producers when considering LRP:

1. If price risk management is an unfamiliar concept, it might be useful to consider comparable expenses such as vaccines that are already common for cow-calf operations. Is the cost and benefit of LRP comparable to existing use of vaccines or other investments that decrease risk?
2. Find a trusted and knowledgeable livestock insurance agent. This is generally important but is especially critical for a producer that is unfamiliar with hedging and is considering LRP for the first time.
3. LRP requires an investment of time in understanding futures markets and selecting acceptable LRP coverage price. Further, LRP can be complementary to efforts to improve financial management and record keeping or develop a marketing plan. Many resources are available for cow-calf producers to aid in these processes, including contacting your local extension agent.

For all types of producers, it is important to keep a realistic perspective on price risk management and LRP. Research has shown that many producers adopt crop insurance only *after* they experience a drought. Focusing on recent events can bias insurance decisions and lead to disappointment. Some years will have no payouts because prices do not decrease, while large payouts occur infrequently. A long-term perspective, combined with understanding of how LRP works, will make price risk management decisions easier. The purpose of this series has been to inform cow-calf producers about how LRP works and how it might fit into different management strategies. The series will conclude with a final article that describes a decision aid on historic payouts for LRP under different coverage levels and typical Kansas scenarios.

This article is the 8th article in a 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focuses on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recent policy changes make it more affordable to producers. Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

Livestock Risk Protection-Historic Performance
Price Risk Management for Cow-Calf Producers: Part 9

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Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a type of livestock price insurance that typically costs less than a put option. LRP may make payouts (indemnities) that would replace the income that is lost due to a price decline. For cow-calf producers interested in the price risk management and income benefits of LRP, some preparation is necessary before purchase. Before purchasing LRP, producers may want to consider their current market conditions, management priorities, and historic LRP performance. In this final article, we discuss LRP historic performance for producers with typical Kansas calving dates, which is available through a recently released decision aid.

For this analysis, we looked at LRP endorsements purchased in January, February, March, and April, to correspond to with typical calving dates.[1] We considered endorsement lengths of 26 and 34 weeks, to correspond with selling at wean and selling after approximately 2 months of backgrounding, respectively. Outcomes considered were gross (total) indemnities, premiums (LRP cost), and net indemnities (total indemnities less premiums). Producers and others interested in specific results can find the decision aid here; in this article we summarize 3 key findings. First, LRP had more frequent and larger payouts for endorsements ending in September to November, which corresponds to the months when the most calves are being marketed. Second, LRP made payouts, or provided risk management benefits in all scenarios considered, but these benefits were not consistent across time. Third, LRP provided income benefits in most of the scenarios considered, but not all.

LRP payouts historically have been higher for endorsements ending in September to November, when more calves are coming to market and prices are more volatile. LRP net indemnities were observed at their highest level for the April to October endorsement, at the highest coverage level of 97.5-100%, averaging over $5/cwt from 2007-20. Net indemnities were also frequent and relatively high in September and November. The lowest net indemnities were for endorsements ending in August and December (all less than $1.50/cwt). The supply of feeder cattle is most inelastic from September to November, or less responsive to price. In other words, many calves are being weaned during the fall and will be sold regardless of current market price. This makes declines in market price more likely when other

[1] Endorsements do not have to be purchased at calving, but when available from RMA can be purchased for 13-52 weeks before the intended marketing date. Endorsements are currently available for unborn steers and heifers as well those that are born.

shocks occur, such as severe drought. Likewise, the supply of feeder cattle is lower during the other periods considered, with more stable marketing arrangements, which makes price declines less likely.

LRP made payments in at least 2 out of 14 years in all scenarios considered, but payouts were not consistent across time. Indemnities were least frequent for low coverage levels selected for the March to November endorsement (2 payouts) and the April to December endorsement (3 payouts). Indemnities occurred in at least half of all years for many of the endorsements with high coverage levels, with the highest frequency for the February to October and April to October endorsements (8 payouts). However, high coverage policies could still experience several years without payouts. For example, no payouts were made on the high coverage April-October endorsements from 2009-11. Likewise, the January to July endorsements with high coverage levels paid indemnities in 6 years, but had no payouts from 2017-20.

LRP had positive net indemnities in most scenarios considered, but not all. Positive net indemnities means that gross indemnities were higher than premiums paid. This outcome is expected in the long run due to the premium subsidy. In the scenarios we considered, net indemnities were higher for the highest coverage policies, and occasionally negative for lower coverage policies. This outcome may reflect that the 14 years used for our analysis is not "the long run"; in other words, LRP premiums reflect catastrophic risk that may not have occurred within this relatively short period. These results do suggest that a producer that prioritizes the income benefits of LRP should selected high coverage policies.

While there is no single "correct" way to manage price risk, aligning price risk management with management objectives is beneficial for any cow-calf operation. This series has introduced risk management concepts, explained key LRP characteristics, discussed LRP in the context of different management objectives, and analyzed historic LRP performance.

This article is the final article in a 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focuses on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recent policy changes make it more affordable to producers. *Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.*

Livestock Risk Protection: Decision Aid for Cow-Calf Producers

Historic Performance of January Endorsements

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April 13, 2022

LRP purchase decisions should use information on current market conditions, management priorities, and historic LRP performance. Tables 1 and 2 show average performance of LRP between 2007-2020 for 26 and 34-week feeder cattle endorsements purchased in January, which was selected to correspond to January calving.[1] Figures 1-6 provide a visual guide of year-to-year performance of LRP during that period. These estimates of historic performance were calculated using the *Understanding Markets Tool* developed by Bozic LLC.

The green bar on the graphs (Figures 1-6) represents the gross indemnity (payout) received on average during those years. The red bar represents the premium (cost) incurred for purchasing those endorsements. Finally, the black bar is the net indemnity average (gross indemnity minus premium) for those years. The results represent hypothetical historical outcomes, with the current government premium subsidy of 35% and 40%.[2]

The first set of graphs (Figures 1-3) represent a producer that calves in January and sells weaned calves in July (Class 1, <600lb steer calves). We assume that an LRP endorsement is purchased in January, with an endorsement length of 26 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 1, 95-97.49% (medium coverage) in Figure 2, and 90-92.49% (low coverage) in Figure 3. The data presented is an average of all endorsements available within that time period for each coverage range. Table 1 shows average performance for each coverage level, from 2007-2020.

[1] LRP endorsements do not have to be purchased around calving; endorsements can be purchased up to 13 weeks before the intended marketing date. Longer LRP endorsements provide more risk protection, are more likely to have payouts, and typically have higher premiums.

[2] The premium subsidy at the highest levels of LRP coverage was 13% until mid-2019, when it increased to 25%. In late 2020 the subsidy rate increased to 35% at the highest level. Currently premium subsides range from 35% at the 100% coverage level to 55% at the 70% coverage level.

Table 1. LRP average outcomes for 26-week feeder cattle endorsements purchased in January

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$7.00	$4.52	$2.48
Medium coverage: 95%-97.49%	$5.11	$3.29	$1.82
Low coverage 90-92.49%	$2.53	$1.64	$0.88

Figures 4-6 represent a producer that calves in January and sells feeders in September after two months of backgrounding[3] (Class 2, >600lb steer calves). We assume that an LRP endorsement is purchased in January, with an endorsement length of 34 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 4, 95-97.49% (medium coverage) in Figure 5, and 90-92.49% (low coverage) in Figure 6. The data presented is an average of all endorsements available within that time period for each coverage range. Table 2 shows the average performance for each coverage level, from 2007-2020.

Table 2. LRP average outcomes for 34-week feeder cattle endorsements purchased in January

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$8.21	$4.67	$3.55
Medium coverage: 95%-97.49%	$5.55	$3.31	$2.24
Low coverage 90-92.49%	$2.73	$1.87	$0.85

Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

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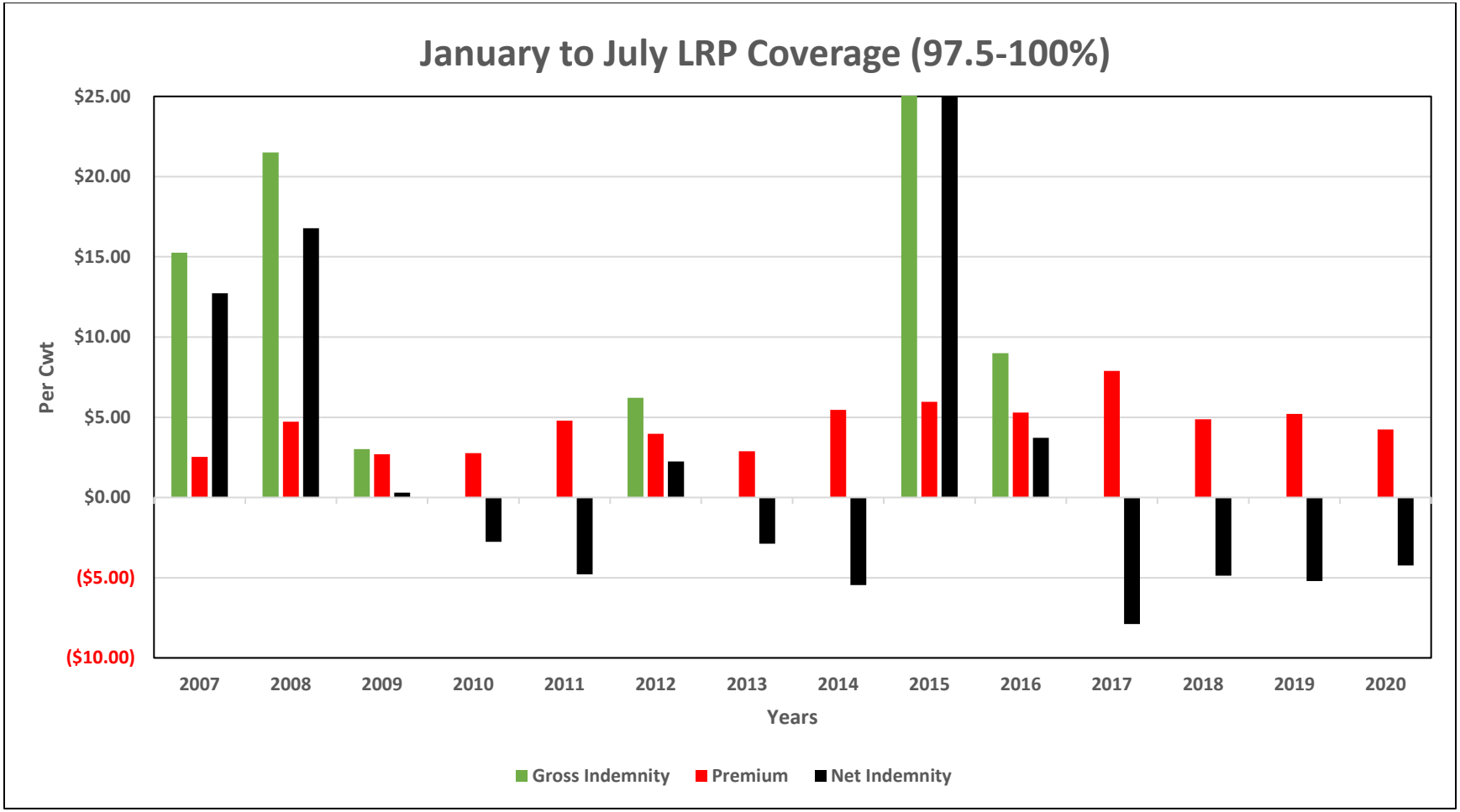
[3] The costs associated with backgrounding are not considered.

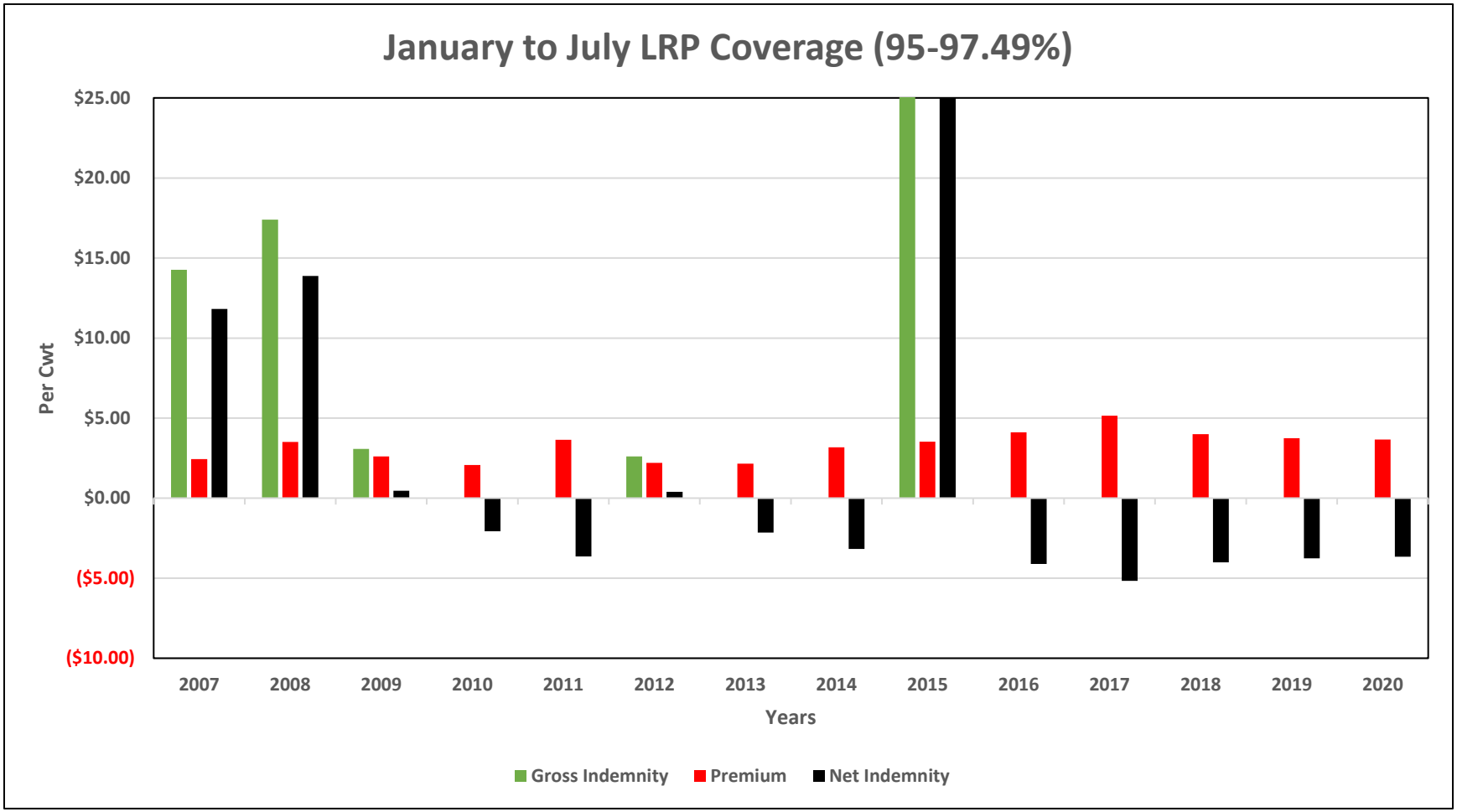
Figure 1: LRP Outcomes: sell feeders in July, high coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in January and sells in July at wean. This data is the average of all endorsements available at the 97.5 to 100% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

***2015 net indemnities were 43.93 $ per CWT, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios.**

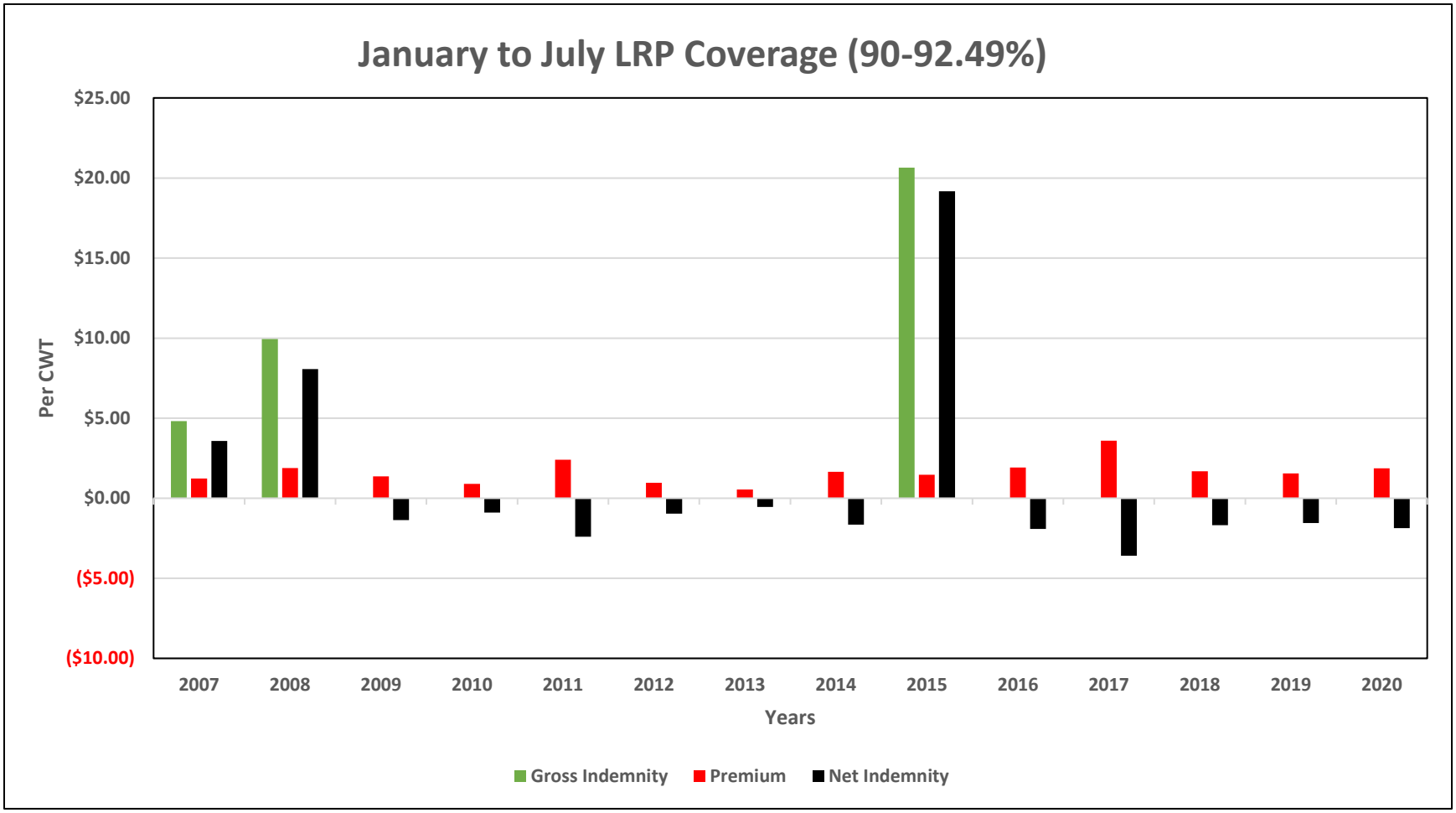
Figure 2: LRP Outcomes: sell feeders in July, medium coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in January and sells in July at wean. This data is the average of all endorsements available at the 95% to 97.49% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

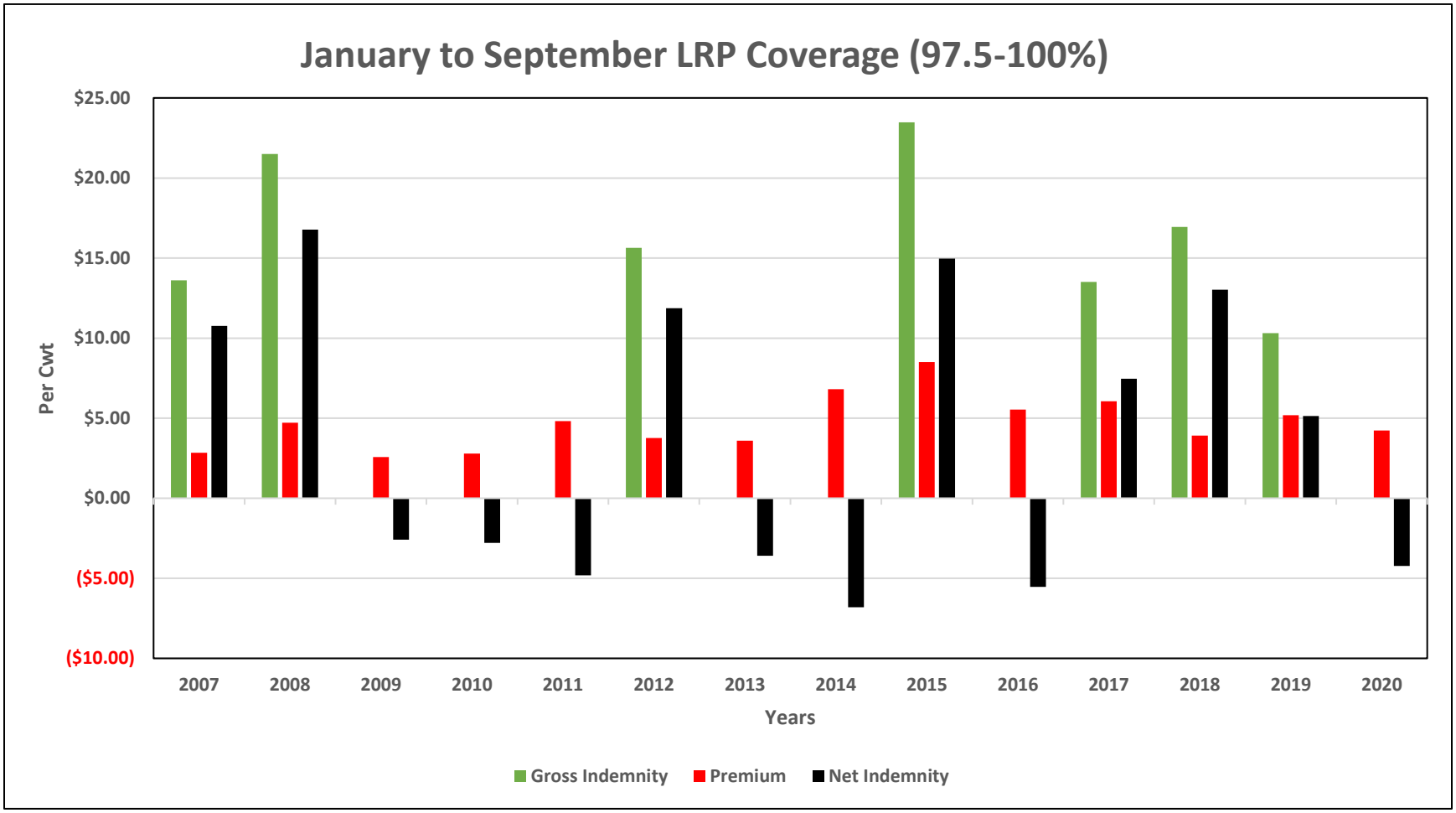
***2015 net indemnities were 34.22 $ per CWT, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios.**

Figure 3: LRP Outcomes: sell feeders in July, low coverage



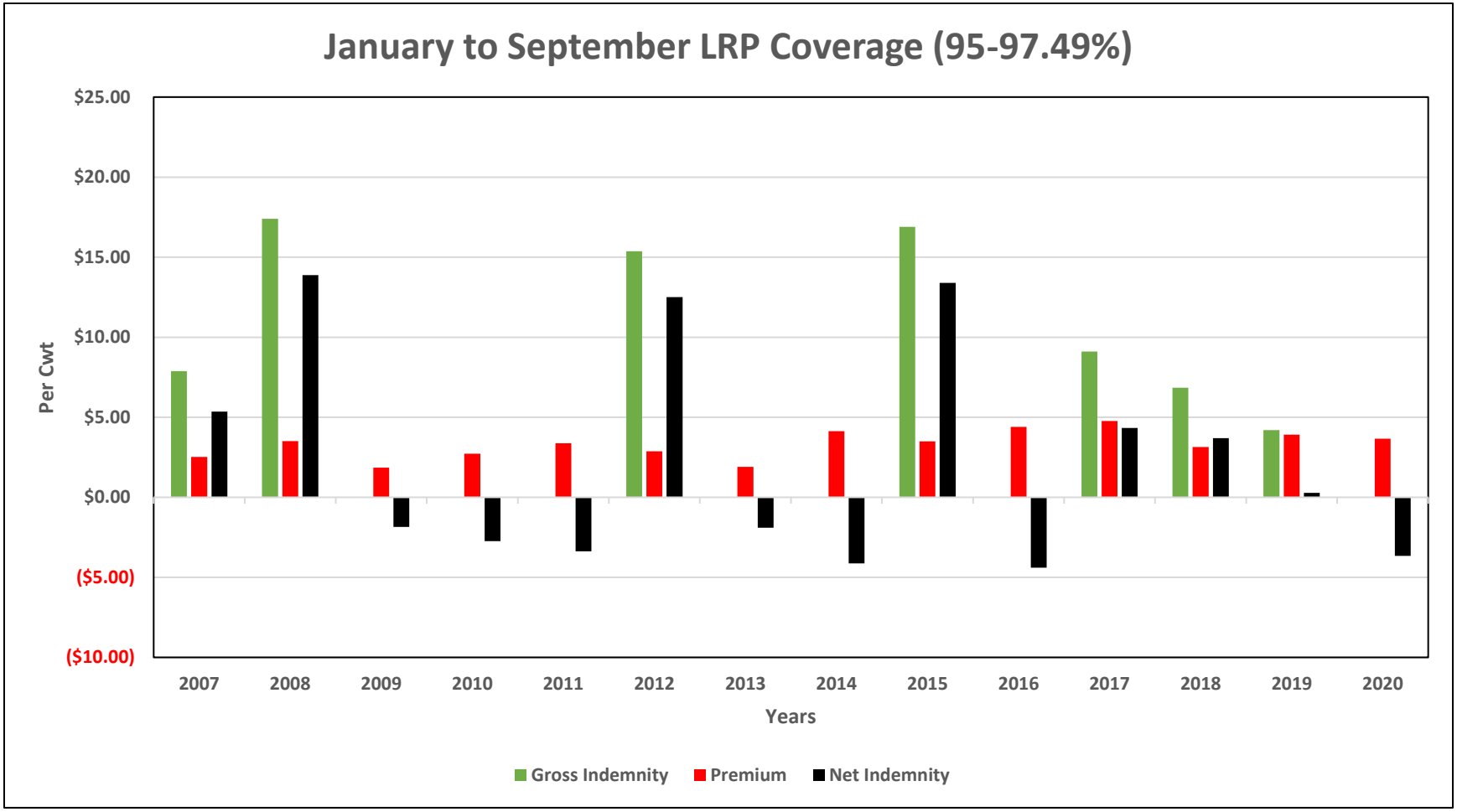
Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in January and sells in July at wean. This data is the average of all endorsements available at the 90% to 92.49% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 4: LRP Outcomes: sell feeders in September, high coverage



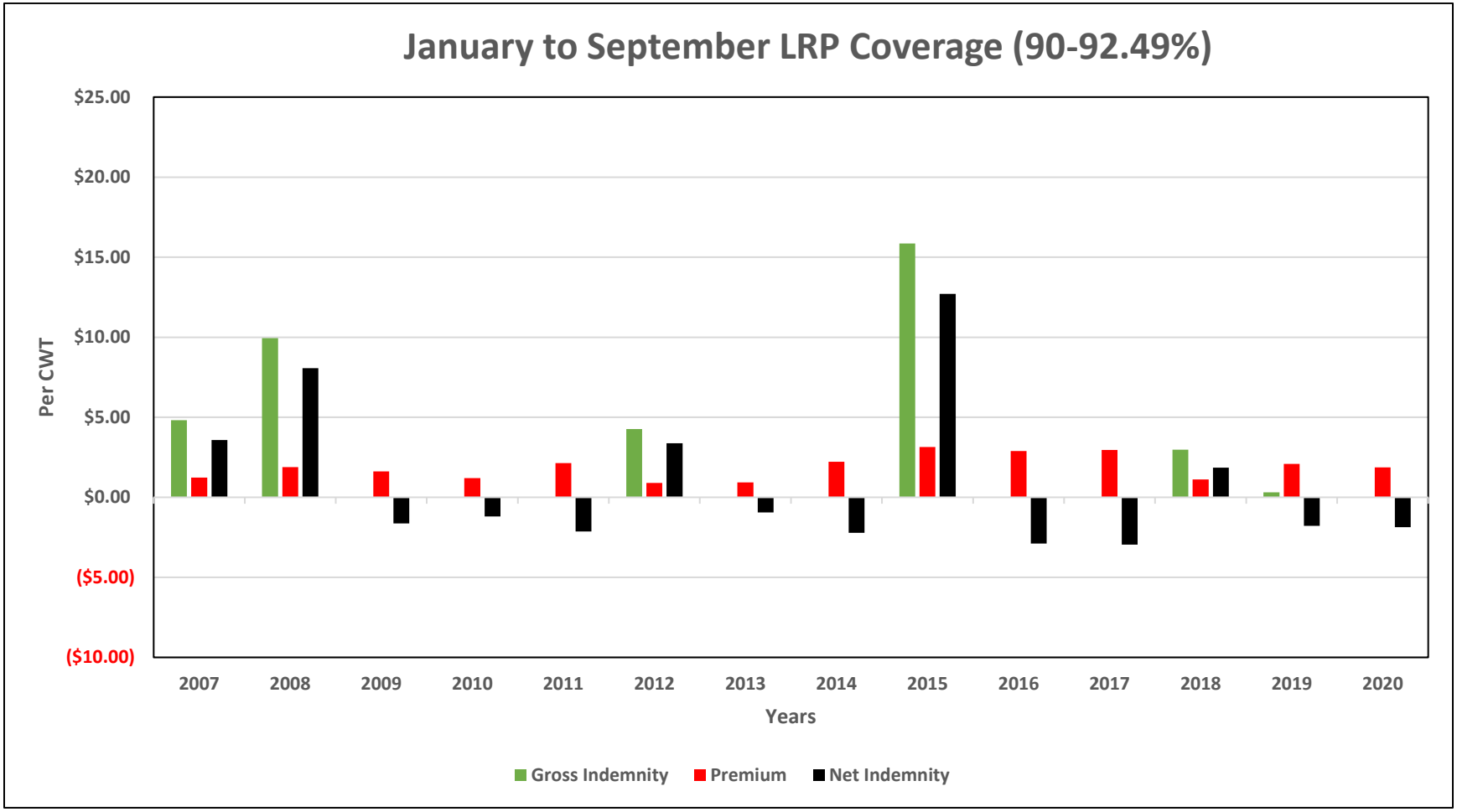
Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in January and sells in September after backgrounding. This data is the average of all endorsements available at the 97.5 to 100% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 5: LRP Outcomes: sell feeders in September, medium coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in January and sells in September after backgrounding. This data is the average of all endorsements available at the 95% to 97.49% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 6. LRP Outcomes: sell feeders in September, low coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in January and sells in September after backgrounding. This data is the average of all endorsements available at the 90 to 92.49% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Livestock Risk Protection: Decision Aid for Cow-Calf Producers

Historic Performance of February Endorsements

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April 13, 2022

LRP purchase decisions should use information on current market conditions, management priorities, and historic LRP performance. Tables 1 and 2 show average performance of LRP between 2007-2020 for 26 and 34-week feeder cattle endorsements purchased in February, which was selected to correspond to February calving.[1] Figures 1-6 provide a visual guide of year-to-year performance of LRP during that period. These estimates of historic performance were calculated using the *Understanding Markets Tool* developed by Bozic LLC.

The green bar on the graphs (Figures 1-6) represents the gross indemnity (payout) received during those years. The red bar represents the premium (cost) incurred for purchasing those endorsements. Finally, the black bar is the net indemnity average (gross indemnity minus premium) for those years. The results represent hypothetical historical outcomes, with the current government premium subsidy of 35% and 40%.[2]

The first set of graphs (Figures 1-3) represent a producer that calves in February and sells weaned calves in August (Class 1, <600lb steer calves). We assume that an LRP endorsement is purchased in February, with an endorsement length of 26 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 1, 95-97.49% (medium coverage) in Figure 2, and 90-92.49% (low coverage) in Figure 3. The data presented is an average of all endorsements available within that time period for each year for each coverage range. Table 1 shows average performance for each coverage level, from 2007-2020.

[1] LRP endorsements do not have to be purchased around calving; endorsements can be purchased up to 13 weeks before the intended marketing date. Longer LRP endorsements provide more risk protection, are more likely to have payouts, and typically have higher premiums.

[2] The premium subsidy at the highest levels of LRP coverage was 13% until mid-2019, when it increased to 25%. In late 2020 the subsidy rate increased to 35% at the highest level. Currently premium subsides range from 35% at the 100% coverage level to 55% at the 70% coverage level.

Table 1. LRP average outcomes for 26-week feeder cattle endorsements purchased in February

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$5.91	$4.52	$1.39
Medium coverage: 95%-97.49%	$4.67	$3.37	$1.30
Low coverage 90-92.49%	$2.98	$2.00	$1.18

Figures 4-6 represent a producer that calves in February and sells feeders in October after two months of backgrounding[3] (Class 2, >600lb steer calves). We assume that an LRP endorsement is purchased in February, with an endorsement length of 34 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 4, 95-97.49% (medium coverage) in Figure 5, and 90-92.49% (low coverage) in Figure 6. The data presented is an average of all endorsements available within that time period for each coverage range. Table 2 shows the average performance for each coverage level, from 2007-2020.

Table 2. LRP average outcomes for 34-week feeder cattle endorsements purchased in February

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$8.13	$4.60	$3.53
Medium coverage: 95%-97.49%	$6.47	$3.73	$2.74
Low coverage 90-92.49%	$2.67	$2.05	$0.61

Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

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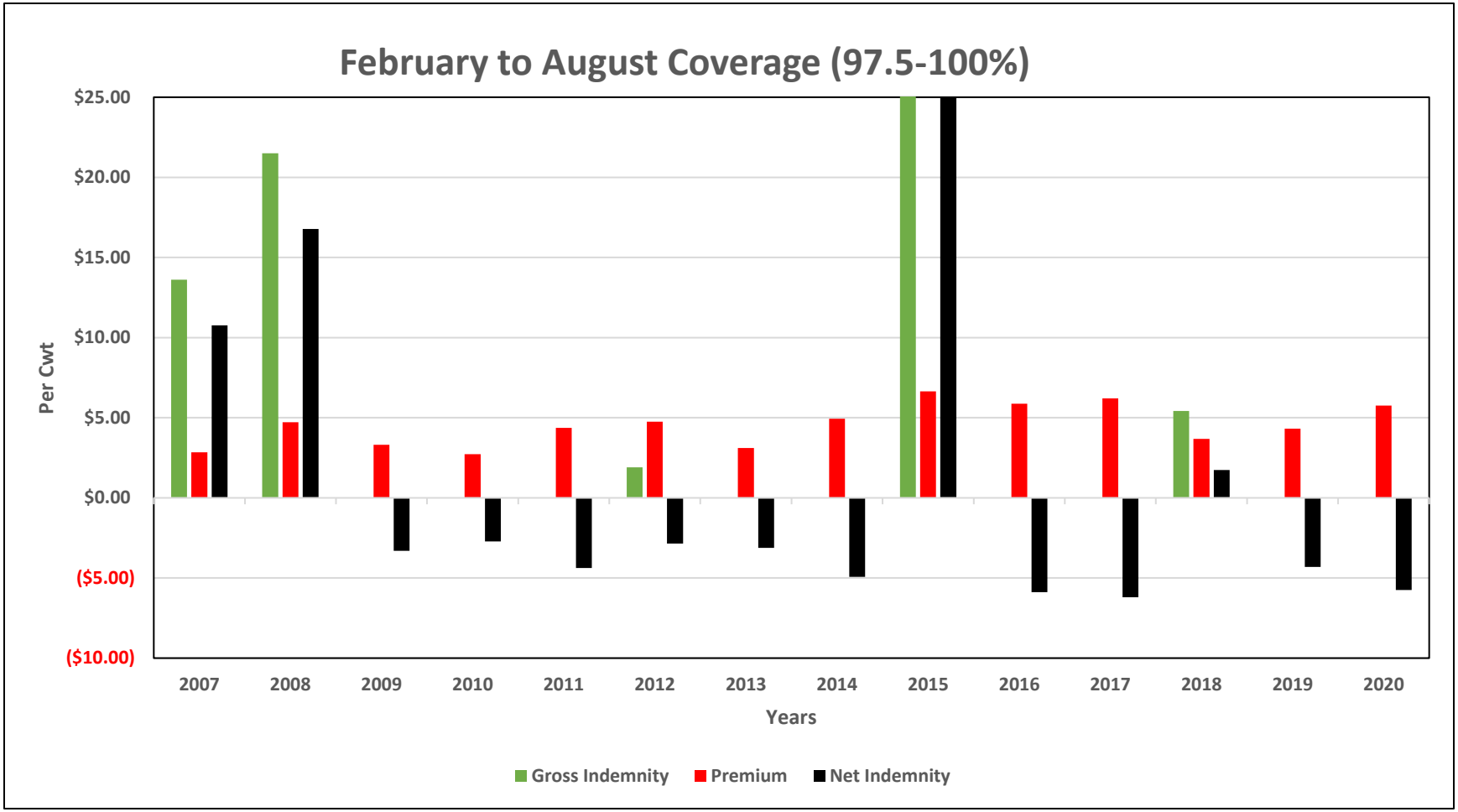
[3] The costs associated with backgrounding are not considered.

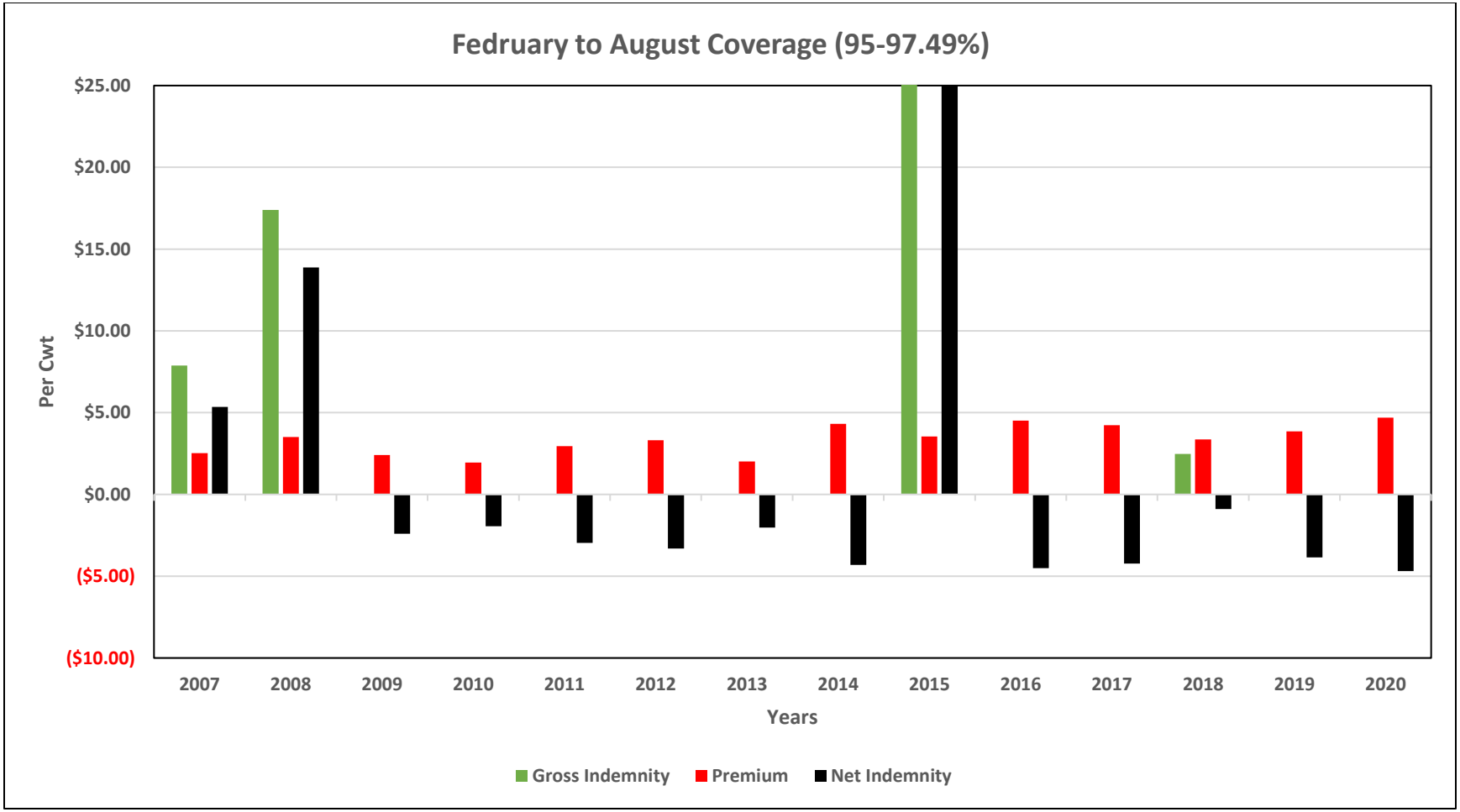
Figure 1: LRP Outcomes: sell feeders in August, high coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in February and sells in August at wean. This data is the average of all endorsements available at the 97.5 to 100% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

***2015 net indemnities was $40.27 per CWT, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios**

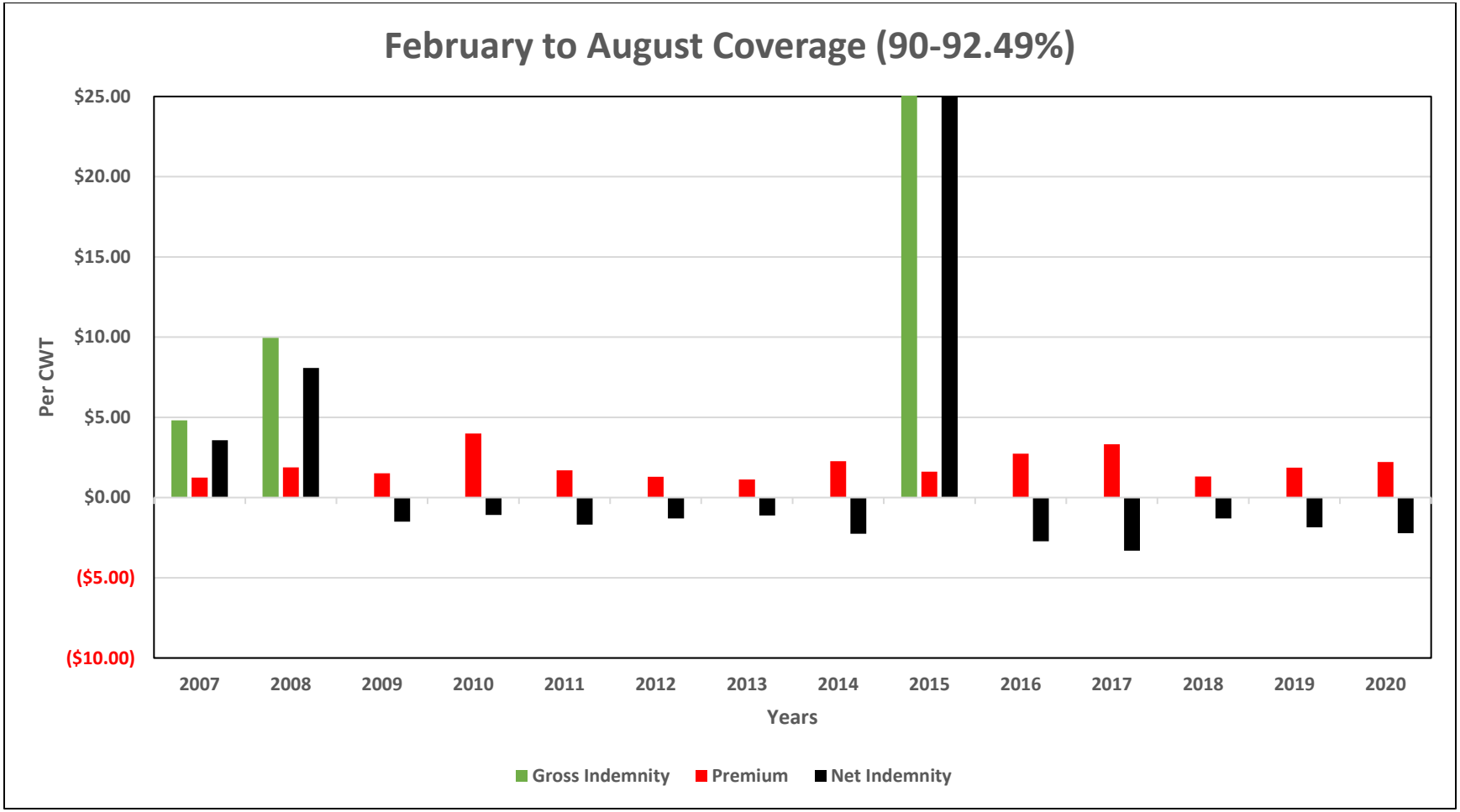
Figure 2: LRP Outcomes: sell feeders in August, medium coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in February and sells in August at wean. This data is the average of all endorsements available at the 95 to 97.49% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

***2015 net indemnities was $37.69 per CWT, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios**

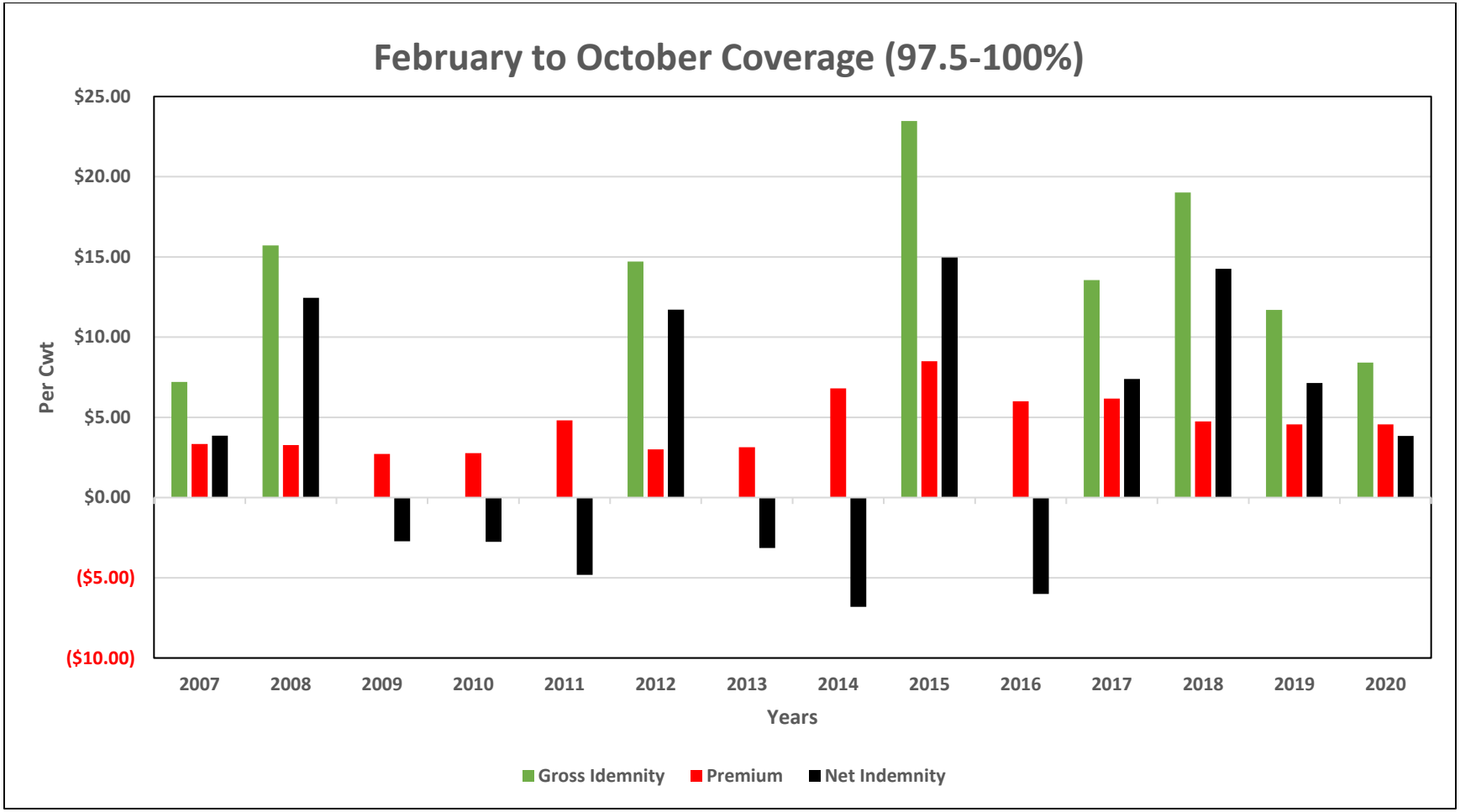
Figure 3: LRP Outcomes: sell feeders in August, low coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in February and sells in August at wean. This data is the average of all endorsements available at the 90 to 92.49% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

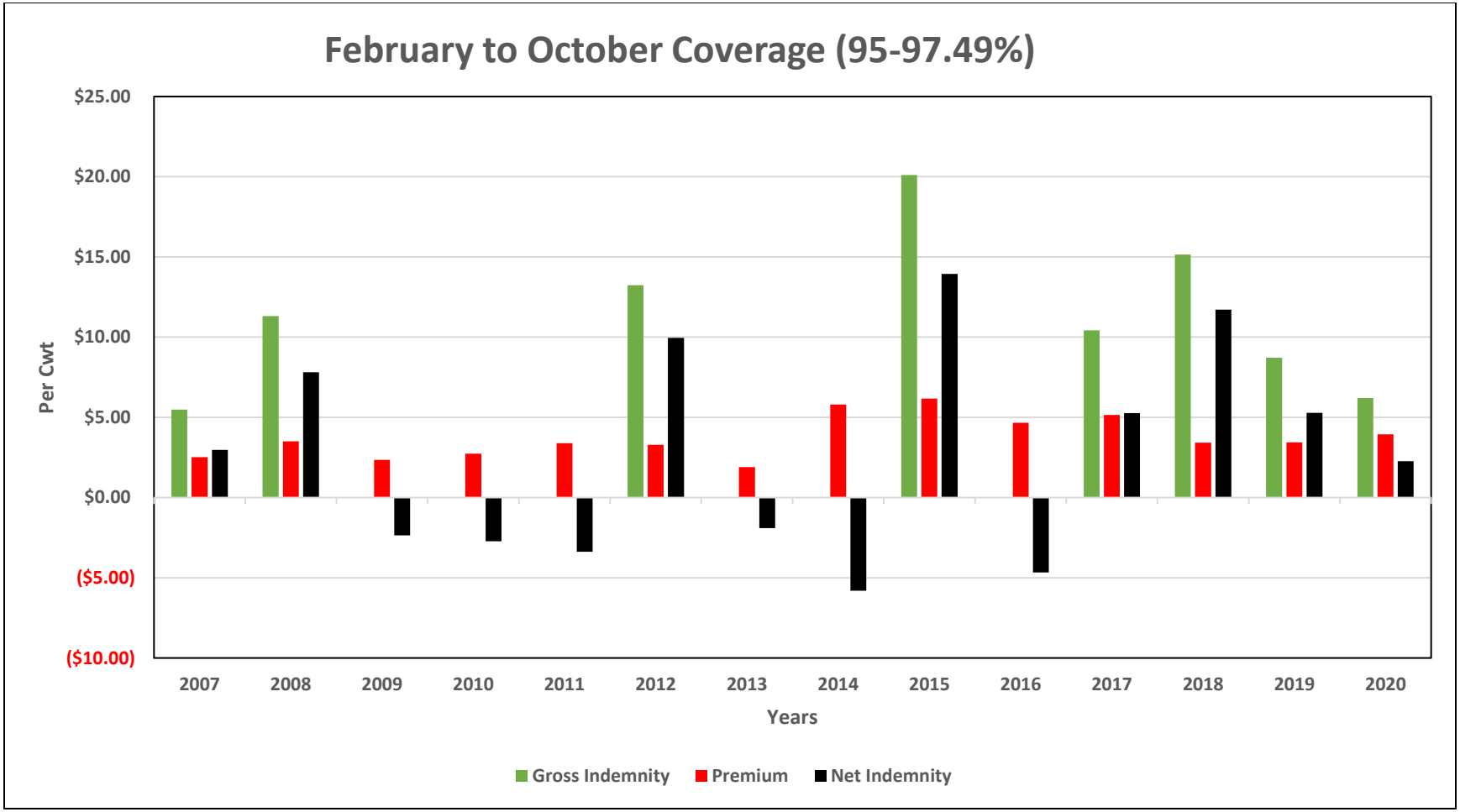
***2015 net indemnities was $26.96 per CWT, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios**

Figure 4: LRP Outcomes: sell feeders in October, high coverage



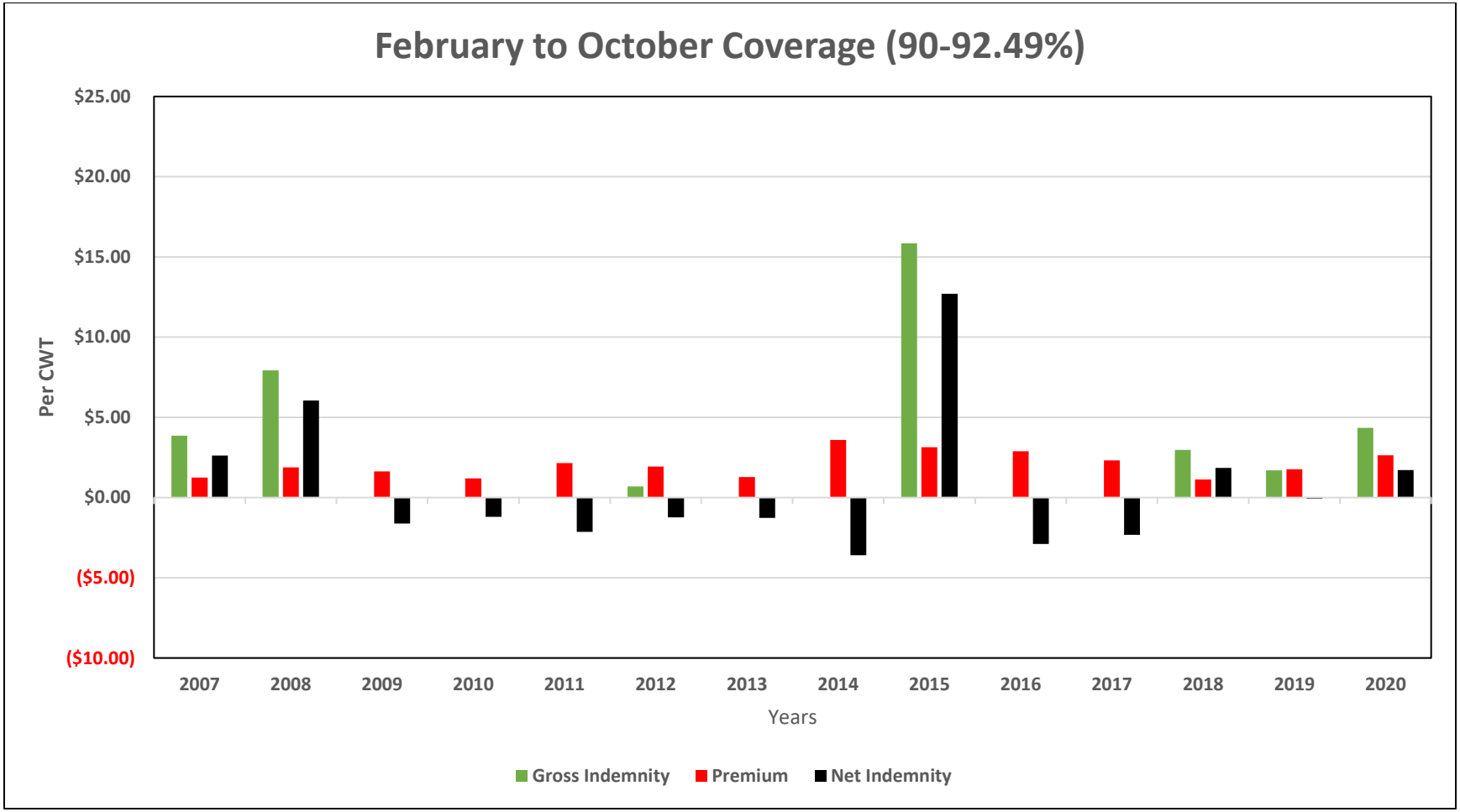
Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in February and sells in October after backgrounding. This data is the average of all endorsements available at the 97.5 to 100% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 5: LRP Outcomes: sell feeders in October, medium coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in February and sells in October after backgrounding. This data is the average of all endorsements available at the 95 to 97.49% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 6. LRP Outcomes: sell feeders in October, low coverage



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Livestock Risk Protection: Decision Aid for Cow-Calf Producers

Historic Performance of March Endorsements

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April 5, 2022

LRP purchase decisions should use information on current market conditions, management priorities, and historic LRP performance. Tables 1 and 2 show average performance of LRP between 2007-2020 for 26 and 34-week feeder cattle endorsements purchased in March, which was selected to correspond to March calving.[1] Figures 1-6 provide a visual guide of year-to-year performance of LRP during that period. These estimates of historic performance were calculated using the *Understanding Markets Tool* developed by Bozic LLC.

The green bar on the graphs (Figures 1-6) represents the gross indemnity (payout) received during those years. The red bar represents the premium (cost) incurred for purchasing those endorsements. Finally, the black bar is the net indemnity average (gross indemnity minus premium) for those years. The results represent hypothetical historical outcomes, with the current government premium subsidy of 35% and 40%.[2]

The first set of graphs (Figures 1-3) represent a producer that calves in March and sells weaned calves in September (Class 1, <600lb steer calves). We assume that an LRP endorsement is purchased in March, with an endorsement length of 26 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 1, 95-97.49% (medium coverage) in Figure 2, and 90-92.49% (low coverage) in Figure 3. The data presented is an average of all endorsements available within that time period for each year for each coverage range. Table 1 shows average performance for each coverage level, from 2007-2020.

[1] LRP endorsements do not have to be purchased around calving; endorsements can be purchased up to 13 weeks before the intended marketing date. Longer LRP endorsements provide more risk protection, are more likely to have payouts, and typically have higher premiums.

[2] The premium subsidy at the highest levels of LRP coverage was 13% until mid-2019, when it increased to 25%. In late 2020 the subsidy rate increased to 35% at the highest level. Currently premium subsides range from 35% at the 100% coverage level to 55% at the 70% coverage level.

Table 1. LRP average outcomes for 26-week feeder cattle endorsements purchased in March

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$6.19	$4.35	$1.84
Medium coverage: 95%-97.49%	$4.13	$3.10	$1.03
Low coverage 90-92.49%	$1.80	$1.63	$0.16

Figures 4-6 represent a producer that calves in March and sells feeders in November after two months of backgrounding[3] (Class 2, >600lb steer calves). We assume that an LRP endorsement is purchased in March, with an endorsement length of 34 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 4, 95-97.49% (medium coverage) in Figure 5, and 90-92.49% (low coverage) in Figure 6. The data presented is an average of all endorsements available within that time period for each coverage range. Table 2 shows the average performance for each coverage level, from 2007-2020.

Table 2. LRP average outcomes for 34-week feeder cattle endorsements purchased in March

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$7.15	$4.61	$2.54
Medium coverage: 95%-97.49%	$3.95	$3.59	$0.36
Low coverage 90-92.49%	$1.28	$1.97	$-0.69

Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

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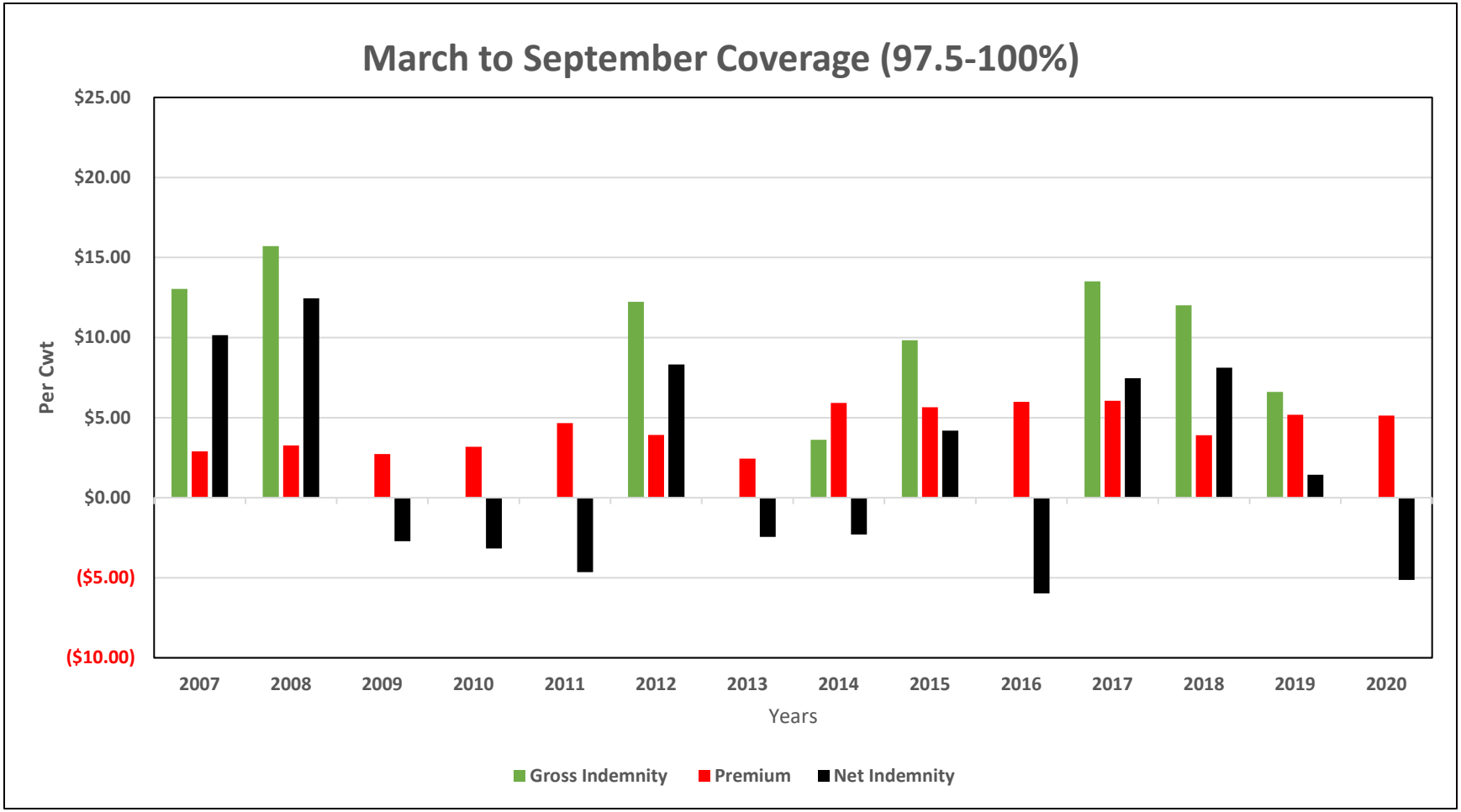
[3] The costs associated with backgrounding are not considered.

Figure 1: LRP Outcomes: sell feeders in September, high coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in March and sells in September at wean. This data is the average of all endorsements available at the 97.5 to 100% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 2: LRP Outcomes: sell feeders in September, medium coverage

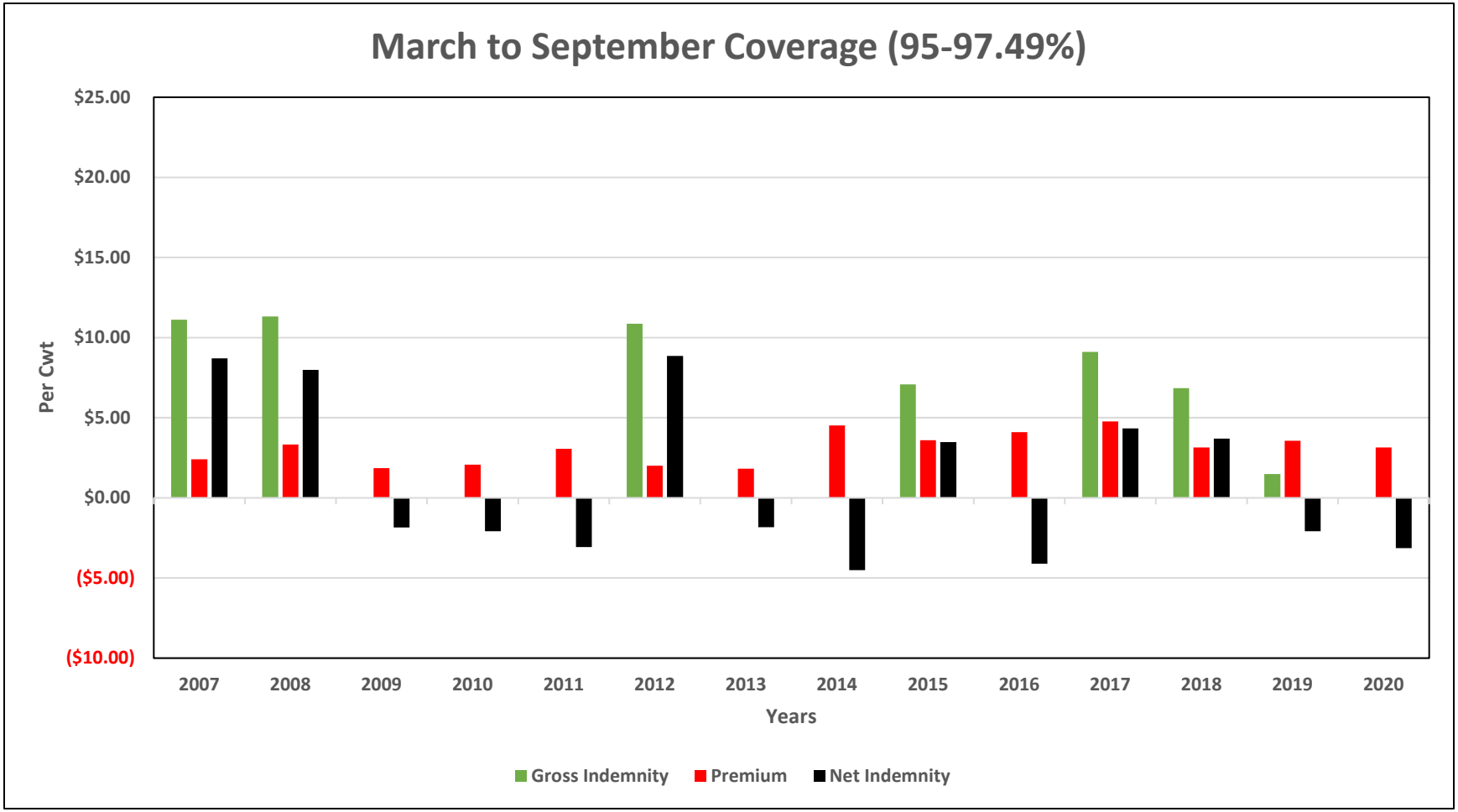


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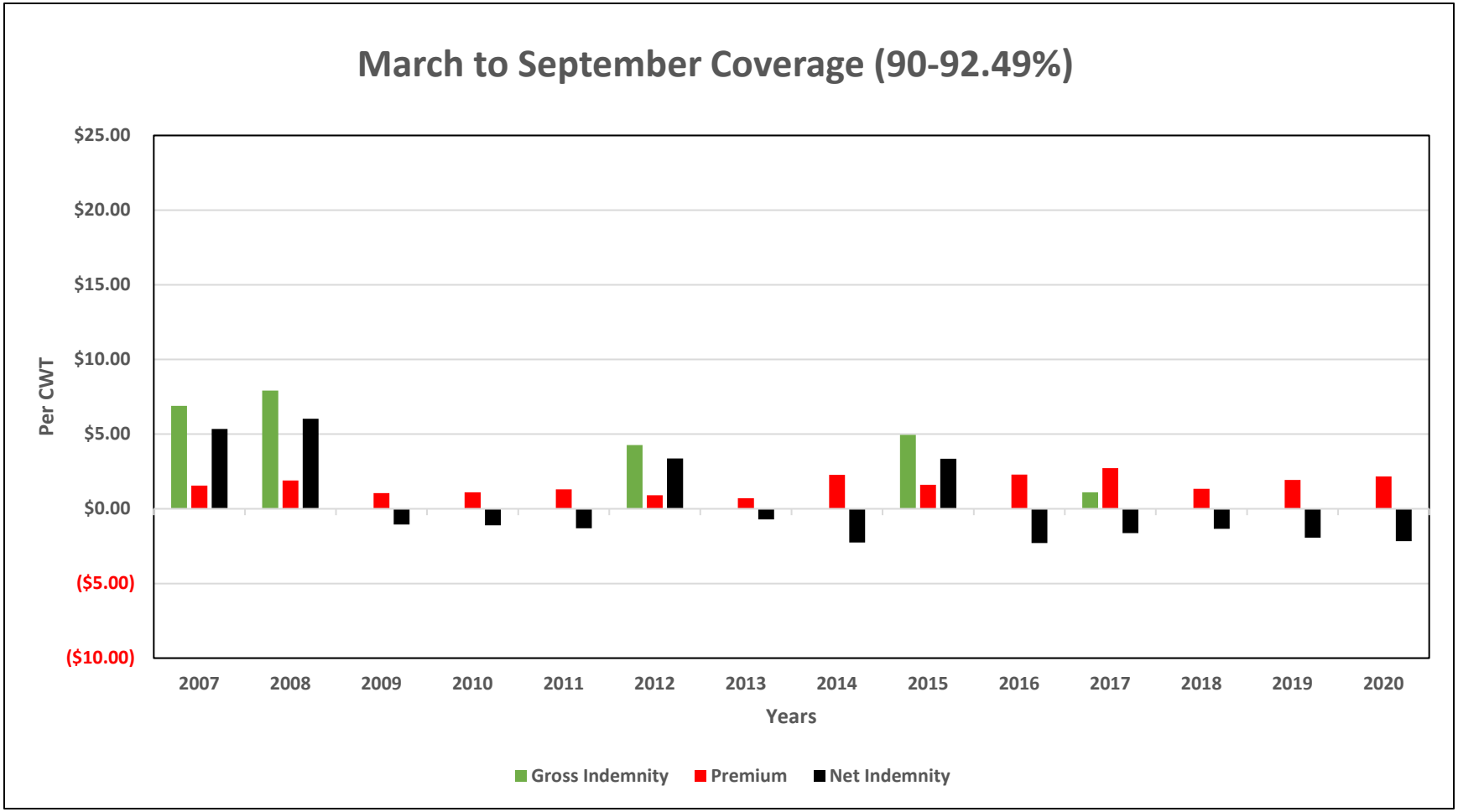
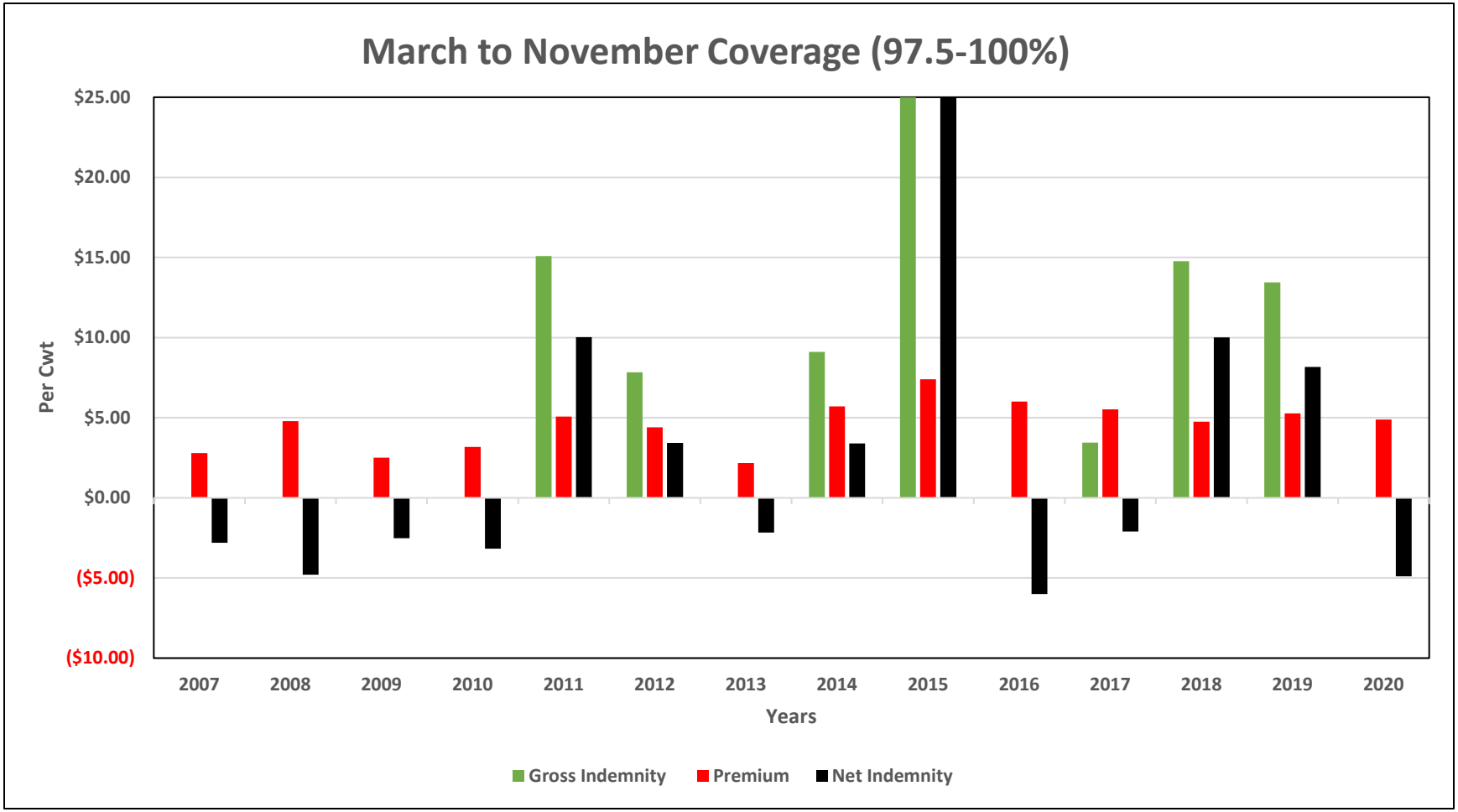
Figure 3: LRP Outcomes: sell feeders in September, low coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in March and sells in September at wean. This data is the average of all endorsements available at the 90 to 92.49% coverage level, with an endorsement length 26 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

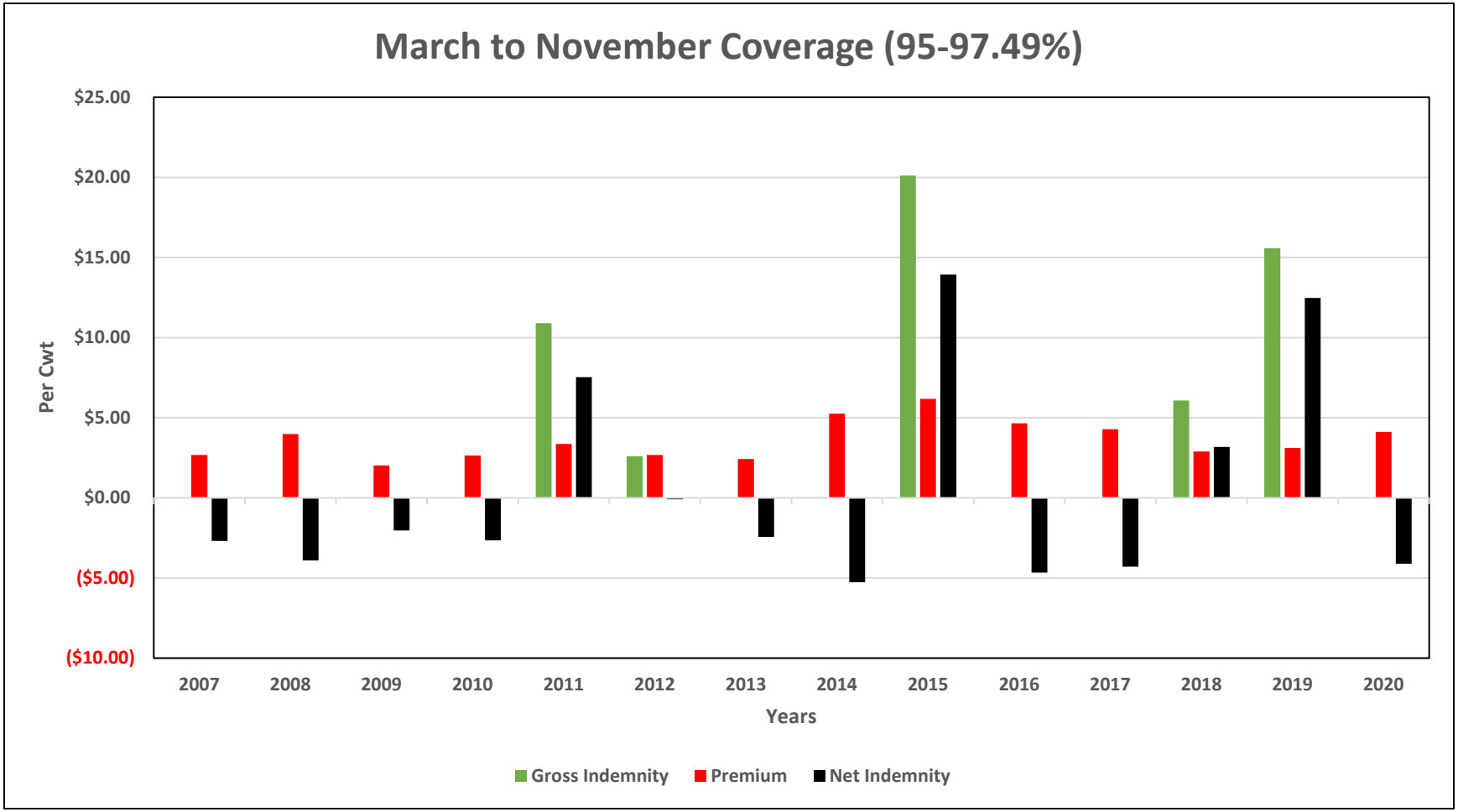
Figure 4: LRP Outcomes: sell feeders in November, high coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in March and sells in November at wean. This data is the average of all endorsements available at the 97.5 to 100% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

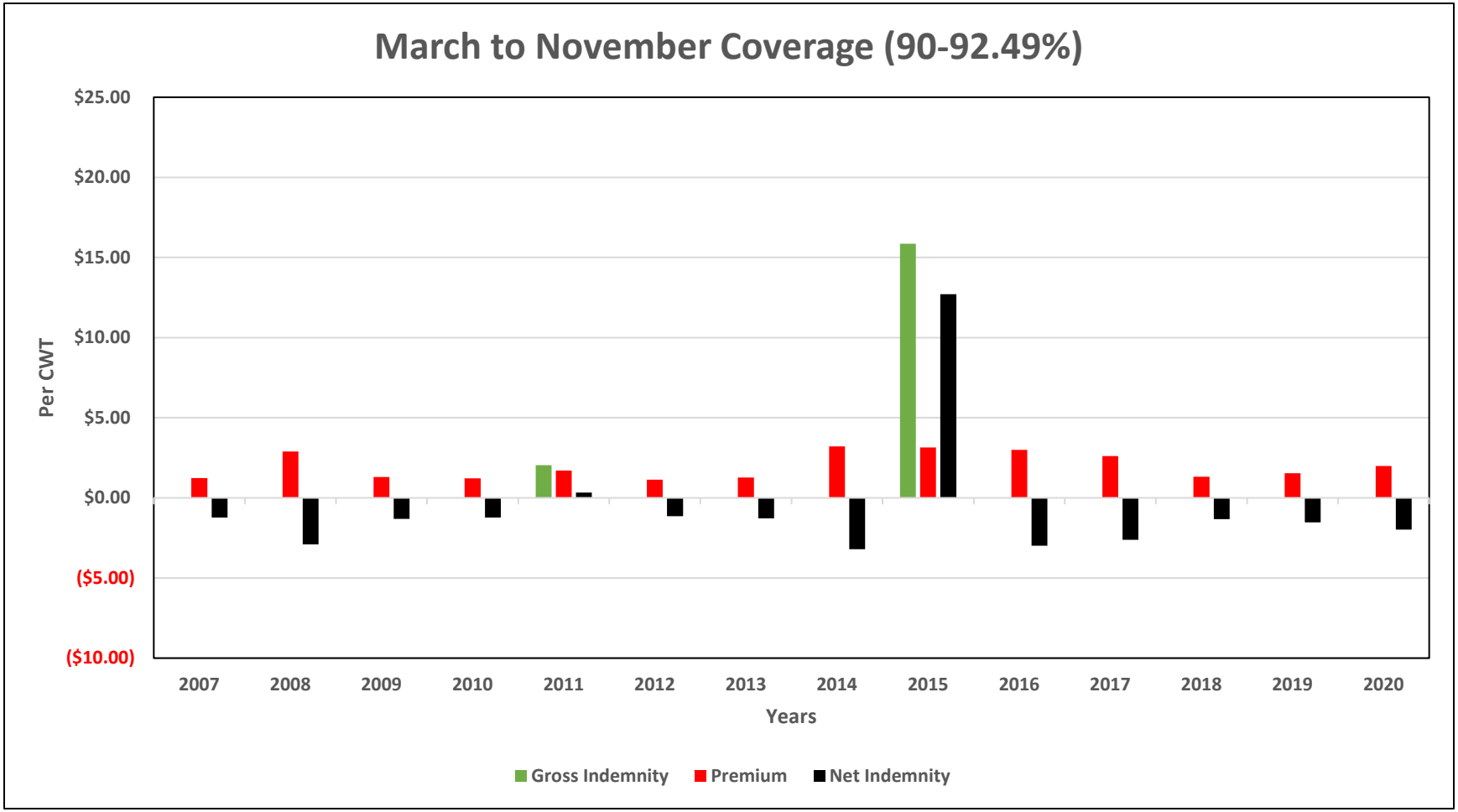
***2015 net indemnities were $36.41 per CWT, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios.**

Figure 5: LRP Outcomes: sell feeders in November, medium coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in March and sells in November at wean. This data is the average of all endorsements available at the 95 to 97.49% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Figure 6. LRP Outcomes: sell feeders in November, low coverage



Note: This graph shows LRP gross indemnities, premiums, and net indemnities (gross indemnity minus premium) for LRP endorsements purchased for a producer that calves in March and sells in November at wean. This data is the average of all endorsements available at the 90 to 92.49% coverage level, with an endorsement length 34 weeks. Gross indemnity is the LRP payment per cwt, calculated using the difference between coverage price (expected/futures price times coverage level) and the actual price, when actual price is less than the coverage price. Premium is cost for purchasing the LRP endorsement.

Livestock Risk Protection: Decision Aid for Cow-Calf Producers

Historic Performance of April Endorsements

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Cordon Rowley, K-State Department of Agricultural Economics

April 7, 2022

LRP purchase decisions should use information on current market conditions, management priorities, and historic LRP performance. Tables 1 and 2 show average performance of LRP between 2007-2020 for 26 and 34-week feeder cattle endorsements purchased in April, which was selected to correspond to April calving.[1] Figures 1-6 provide a visual guide of year-to-year performance of LRP during that period. These estimates of historic performance were calculated using the *Understanding Markets Tool* developed by Bozic LLC.

The green bar on the graphs (Figures 1-6) represents the gross indemnity (payout) received during those years. The red bar represents the premium (cost) incurred for purchasing those endorsements. Finally, the black bar is the net indemnity average (gross indemnity minus premium). The results represent hypothetical historical outcomes, with the current government premium subsidy of 35% and 40%.[2]

The first set of graphs (Figures 1-3) represent a producer that calves in April and sells weaned calves in October (Class 1, <600lb steer calves). We assume that an LRP endorsement is purchased in April, with an endorsement length of 26 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 1, 95-97.49% (medium coverage) in Figure 2, and 90-92.49% (low coverage) in Figure 3. The data presented is an average of all endorsements available within that time period for each year for each coverage range. Table 1 shows average performance for each coverage level, from 2007-2020.

[1] LRP endorsements do not have to be purchased around calving; endorsements can be purchased up to 13 weeks before the intended marketing date. Longer LRP endorsements provide more risk protection, are more likely to have payouts, and typically have higher premiums.

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Table 1. LRP average outcomes for 26-week feeder cattle endorsements purchased in April

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$9.62	$4.57	$5.05
Medium coverage: 95%-97.49%	$6.59	$3.36	$3.23
Low coverage 90-92.49%	$3.48	$1.80	$1.68

Figures 4-6 represent a producer that calves in April and sells feeders in December after two months of backgrounding[3] (Class 2, >600lb steer calves). We assume that an LRP endorsement is purchased in April, with an endorsement length of 34 weeks. The coverage level varies from a range of 97.5%-100% (high coverage) in Figure 4, 95-97.49% (medium coverage) in Figure 5, and 90-92.49% (low coverage) in Figure 6. The data presented is an average of all endorsements available within that time period for each coverage range. Table 2 shows the average performance for each coverage level, from 2007-2020.

Table 2. LRP average outcomes for 34-week feeder cattle endorsements purchased in April

Coverage level	Gross Indemnity	Premium	Net Indemnity
Higher Coverage: 97.5-100%	$4.74	$4.45	$0.29
Medium coverage: 95%-97.49%	$2.45	$3.46	$-1.01
Low coverage 90-92.49%	$0.36	$2.00	$-1.64

Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.

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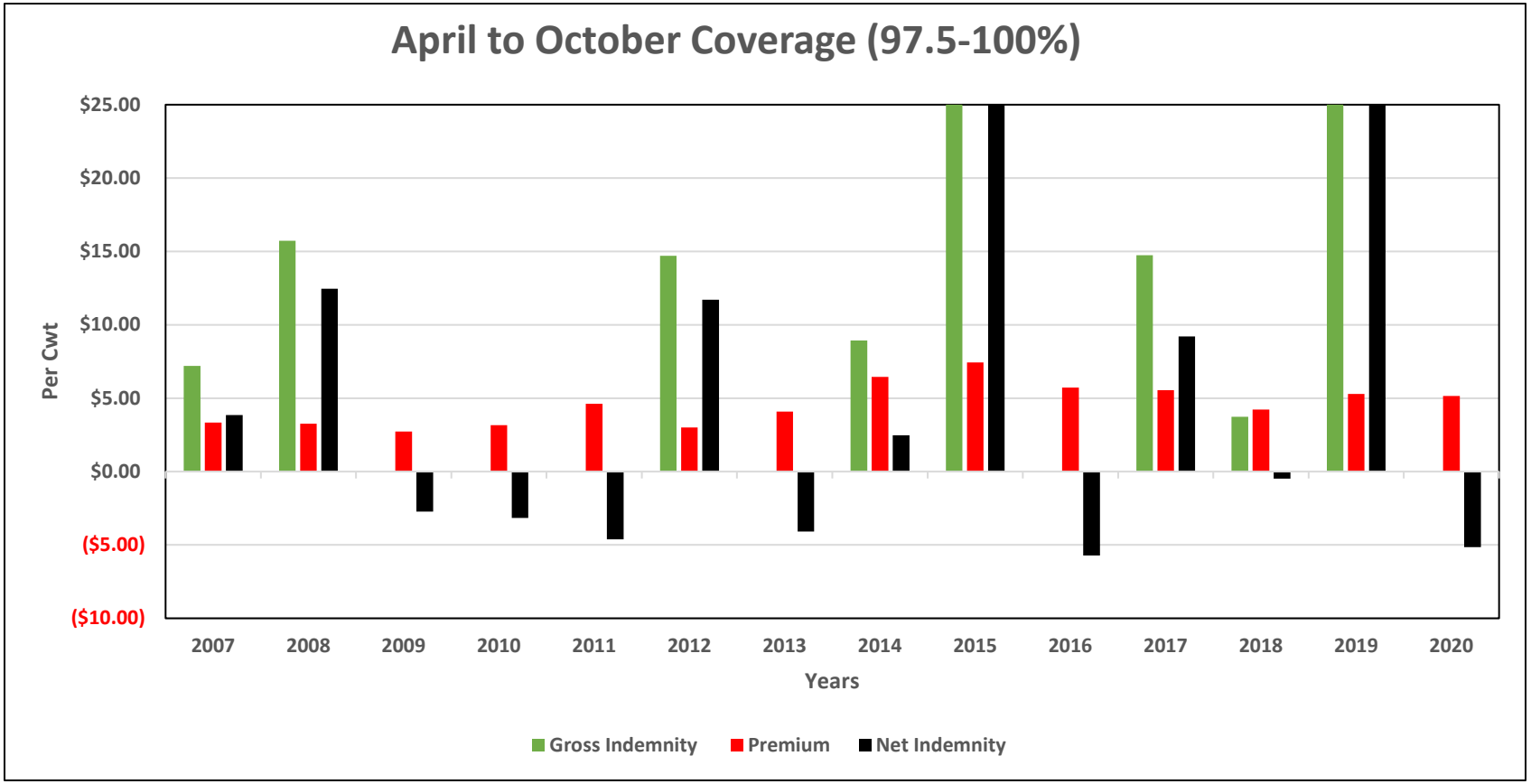
Figure 1: LRP Outcomes: sell feeders in October, high coverage



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***2015 net indemnities were $39.27 per cwt and 2019 net indemnities were $30.28 per cwt, the y-axis maximum is set to $25/cwt for easier comparison across years and scenarios.**

Figure 2: LRP Outcomes: sell feeders in October, medium coverage

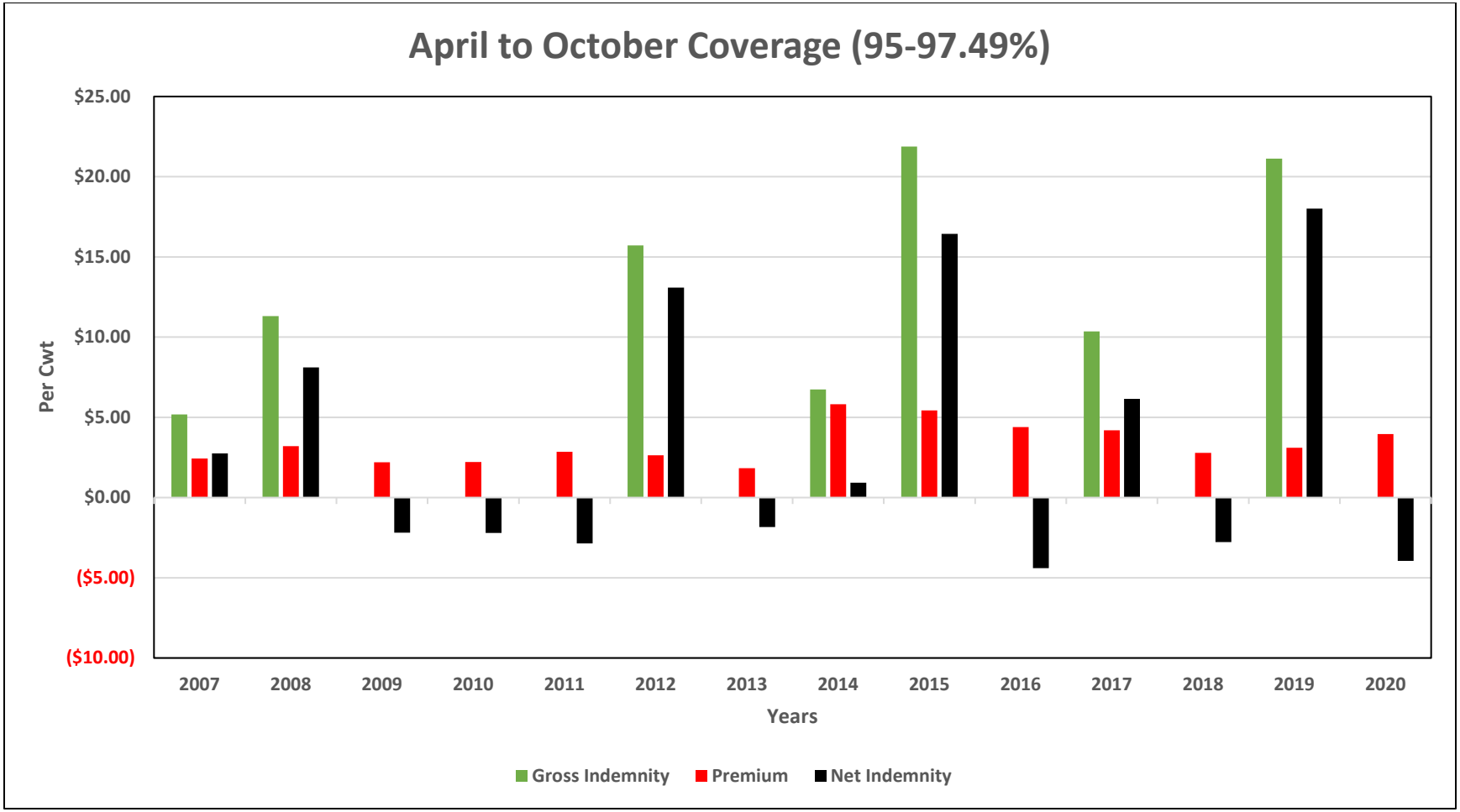

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Figure 3: LRP Outcomes: sell feeders in October, low coverage

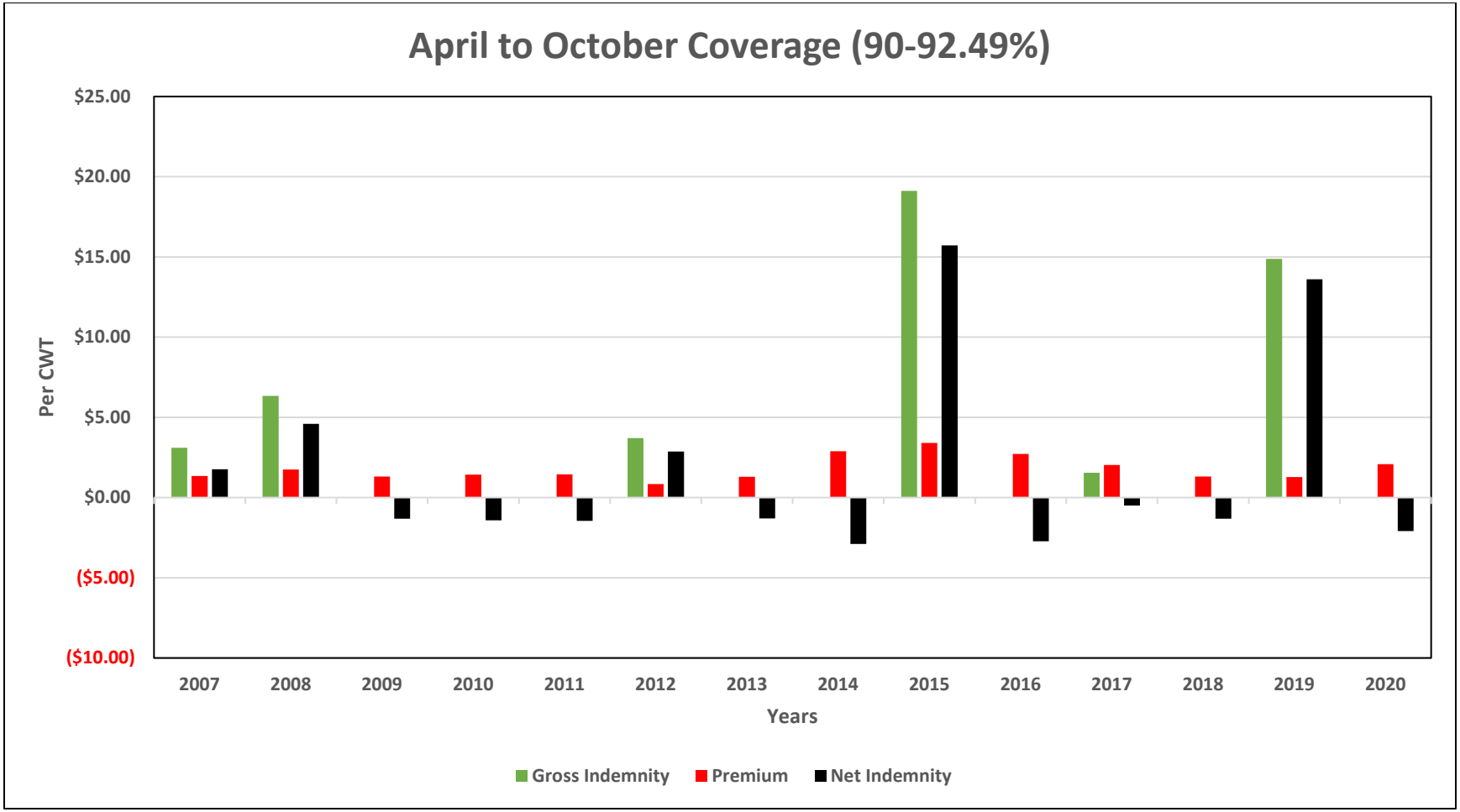

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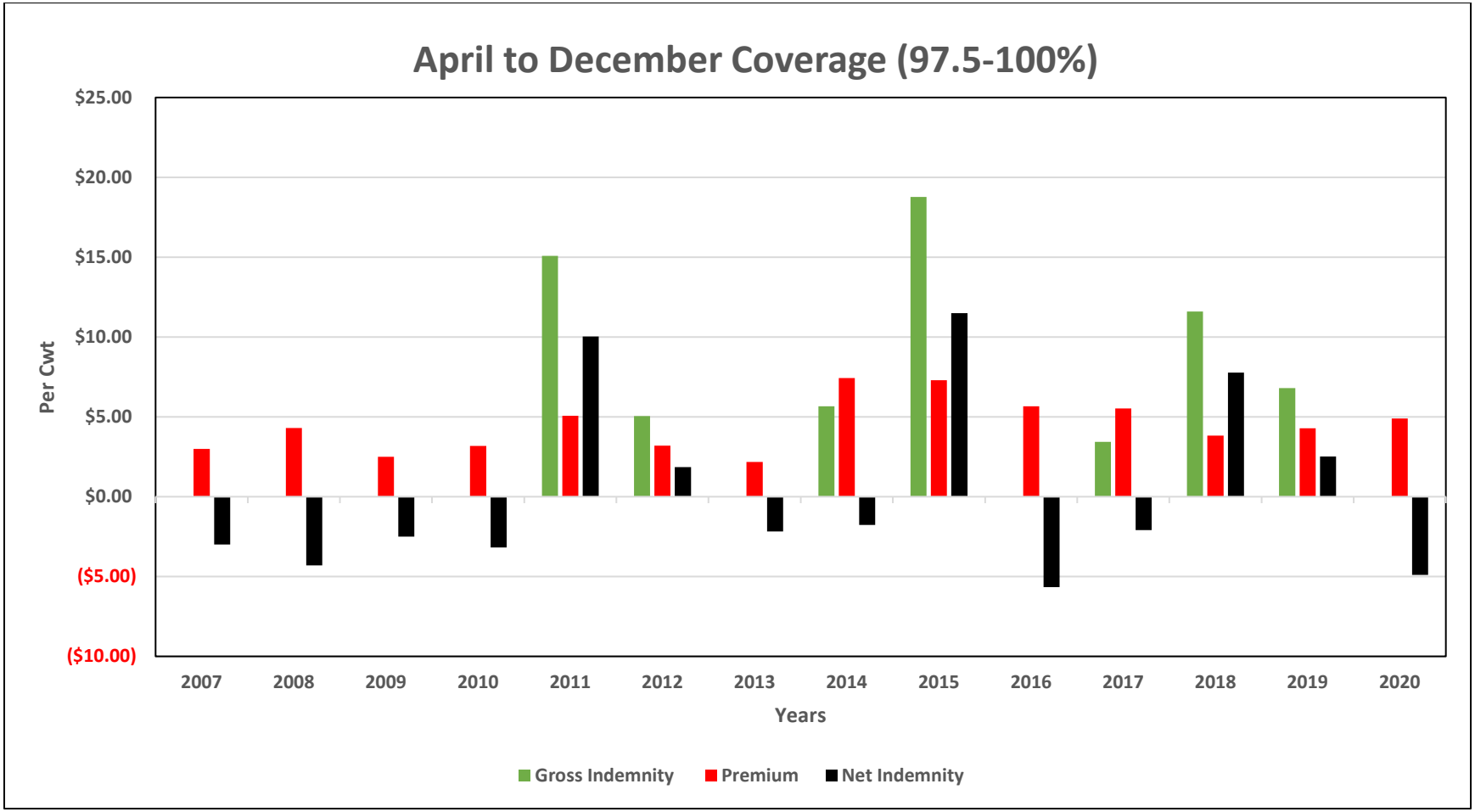
Figure 4: LRP Outcomes: sell feeders in December, high coverage



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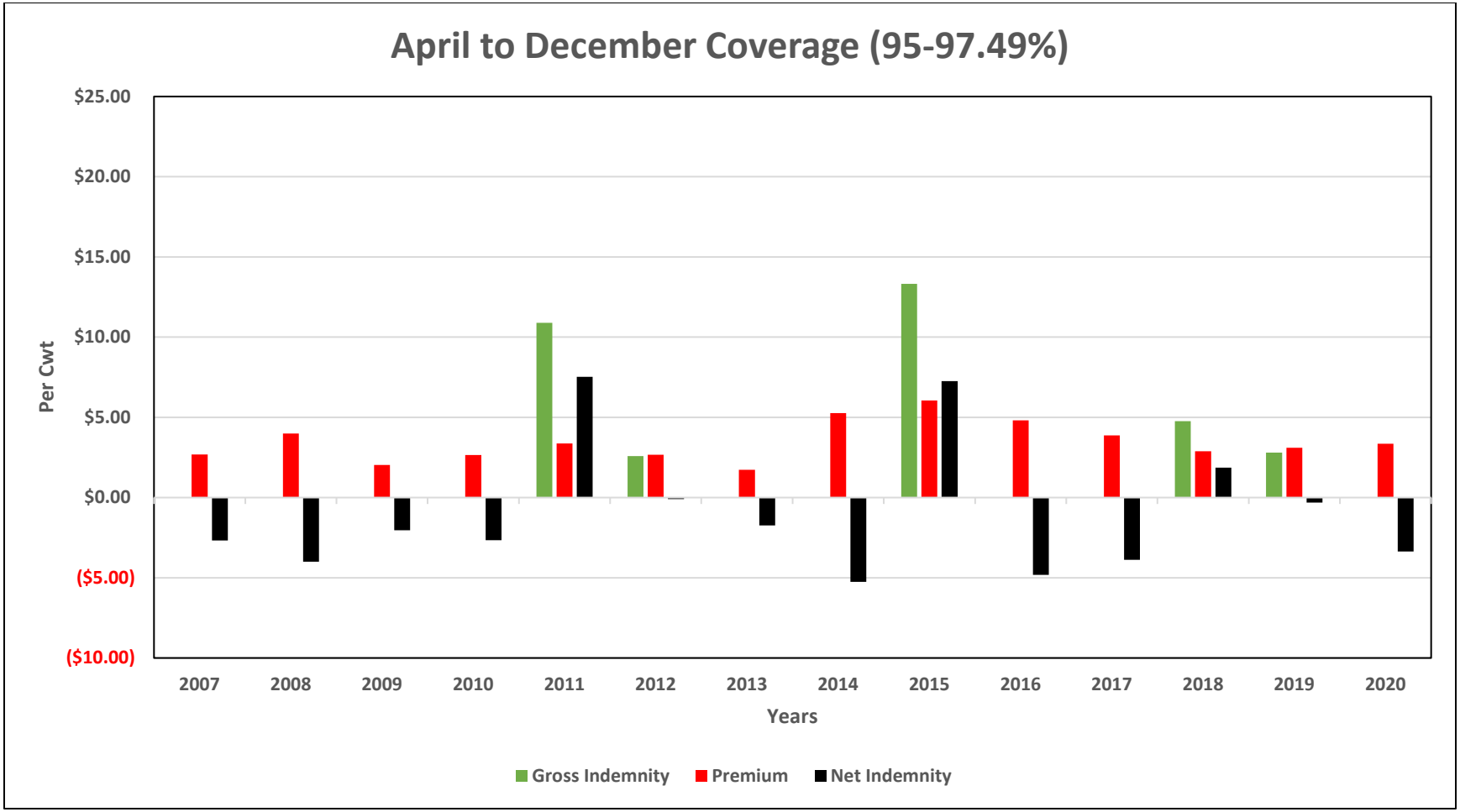

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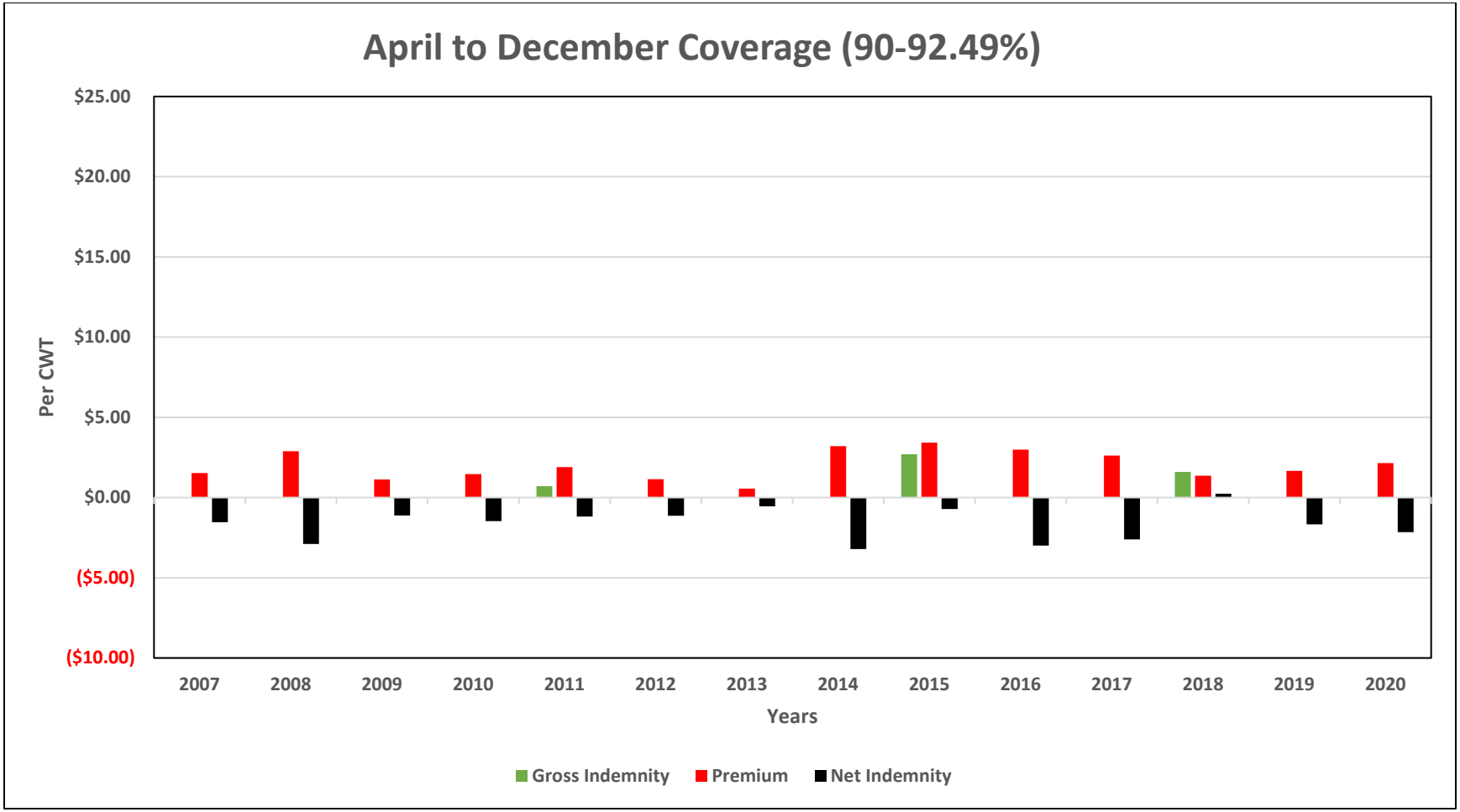

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