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You Said Profits? What Herding and Risk Management Have in Common

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Herding Profits in the Operation

What I want my managing profitability to look like

What the gov't thinks me managing my profitability looks like

What managing my profitability actually looks like

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A Multitude of Uncontrollable Risks

Ransomware Attack Strikes U.S. Meat Operations at JBS

By Jacob Bunge

Meatpacker JBS SA was hit by a ransomware attack that took a big chunk of U.S. beef-and-pork processing offline, sending buyers scrambling for alternatives and raising pressure on meat supplies.

The attack ratcheted up pressure on a food-supply chain already under strain from labor shortages, production constraints and high transportation costs. Late Tuesday, a company executive said JBS was making progress toward restoring its systems, and that the majority of its meat plants would be operational Wednesday.

Brazil-based JBS, the world's biggest meat company by sales, told the Biden administration that it was the victim of a ransomware attack, White House principal deputy press secretary Karine Jean-Pierre said on Tuesday. She said JBS reported that the attack originated from a criminal group likely based in Russia.

"The White House is engaging directly with the Russian government on this matter and delivering the message that responsible states do not harbor ransomware criminals," Ms. Jean-Pierre said.

JBS didn't comment on the White House's description of the attack.

The attack is the latest in a growing number to hit a range of businesses and institutions, including hospitals, the oil industry and local water supplies.

At JBS, the attack halted operations at meat plants that are among the largest in the U.S., according to worker representatives and notices shared with JBS employees. JBS facilities in Colorado, Iowa, Minnesota, Pennsylva-

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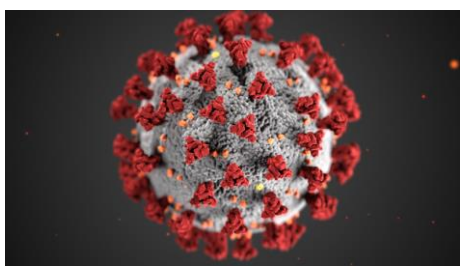

Risk management challenges facing livestock producers

Biological growth processes
- Breeding/Farrowing/Hatching to sale
- Feed/health efficiency conversion to growth
- Infeasible to liquidate in response to adverse market conditions

Increasing price risk
- Processing location
- Increasing market share of exports

If/when markets are shocked, it is too late to respond
- Requires pre-planned risk management
- Extended runs (years) of low profit margins challenges financial recovery

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What is Operational Net Profit?

$$\text{Net Profit} = \underbrace{\left(\text{Production Sold} * \text{Price}\right)}_{A} - \underbrace{\left(\text{Variable Production Costs}\right)}_{B} - \underbrace{\left(\text{Fixed Costs}\right)}_{C}$$

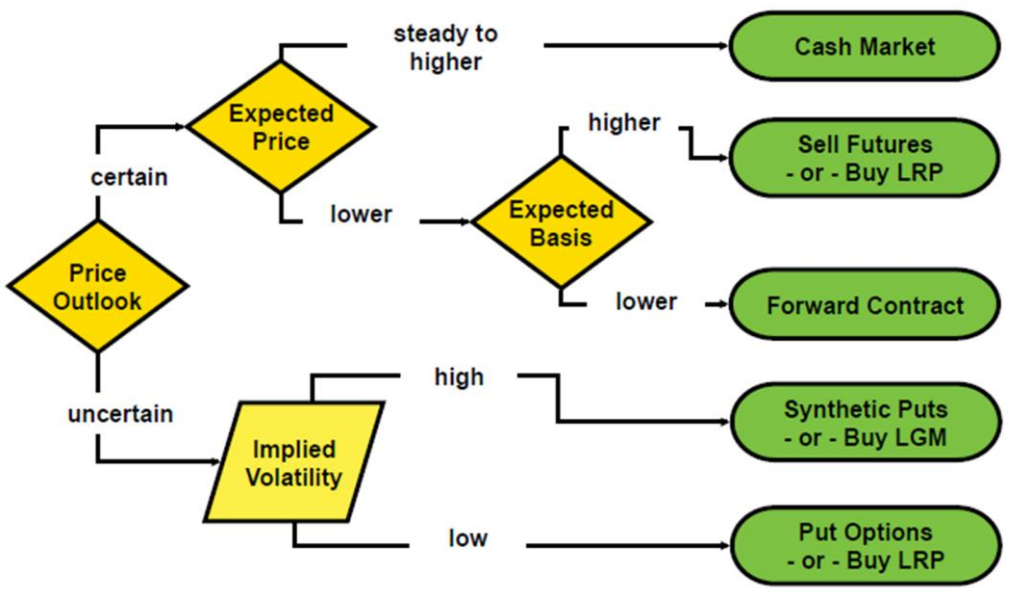
D

Types of Risk Management Tools

A – LRP/Futures/Options
B – Annual Forage or Pasture Range and Forage Insurance
C – Whole Farm Insurance
D – Livestock Gross Margin

Choosing the Correct Tool

Success starts by using the right tool!!!



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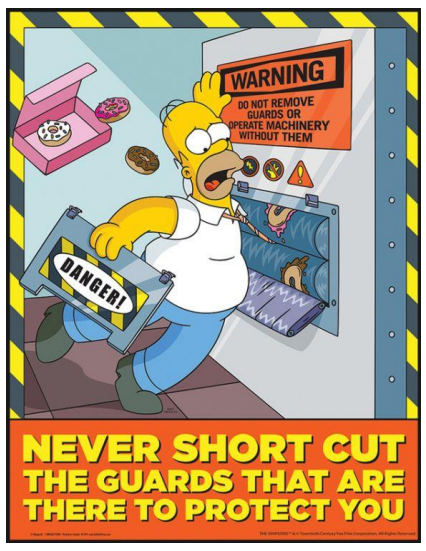
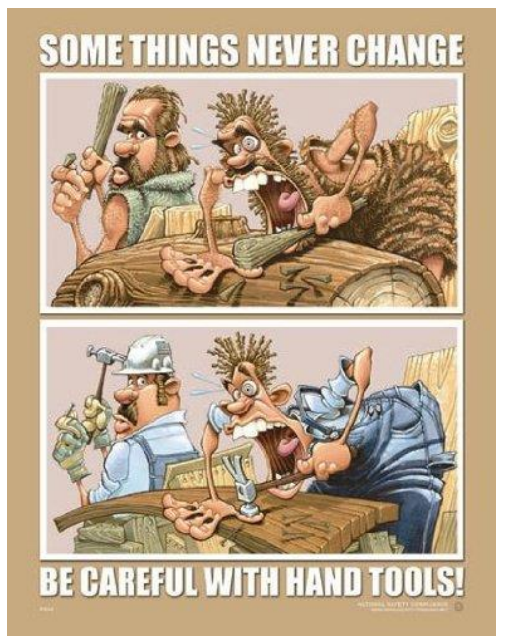
Safety First…

First need to know how a tool works:

- **When** to use a tool
- What is **can do**
- What is **cannot do**
- Potential **hazards**





Tool for Review: Livestock Risk Protection (LRP)

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What Risk Does it Cover?

$$\text{Net Profit} = \underbrace{\left[\text{Production Sold} * \text{Price}\right]}_{\textbf{LRP}} - \left[\text{Variable Production Costs}\right] - \left[\text{Fixed Costs}\right]$$

*** Only covers output price risk!!!**

Why a focus on LRP?

Lots of changes have been recently made that include…

- Increase head limits to:
  - Feeder Cattle – 6,000 head per endorsement/12,000 head annually
  - Fed Cattle – 6,000 head per endorsement/12,000 head annually
  - Swine – 40,000 head per endorsement/150,000 head annually
- Modify the livestock ownership requirement to 60 days
- Able to insure unborn calves
- Pay premium after endorsement period ended
- No A&O cap of $20 million

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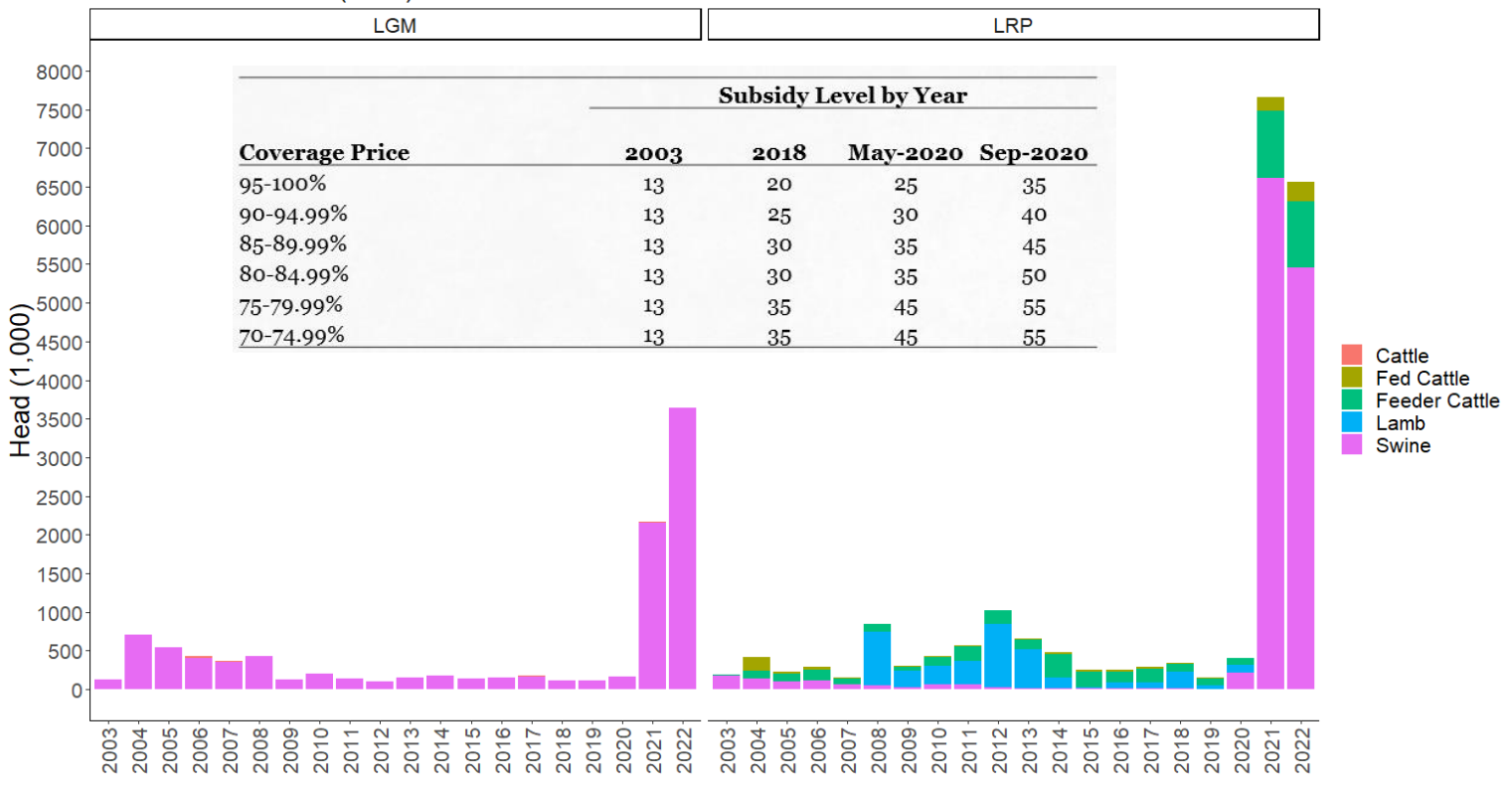
Subsidy Driving Use

No. of Head Covered in LRP & LGM Excluding Dairy, 2003-2022
Source: USDA-RMA (2022)



	Subsidy Level by Year			
Coverage Price	**2003**	**2018**	**May-2020**	**Sep-2020**
95-100%	13	20	25	35
90-94.99%	13	25	30	40
85-89.99%	13	30	35	45
80-84.99%	13	30	35	50
75-79.99%	13	35	45	55
70-74.99%	13	35	45	55

Need to Make Choices

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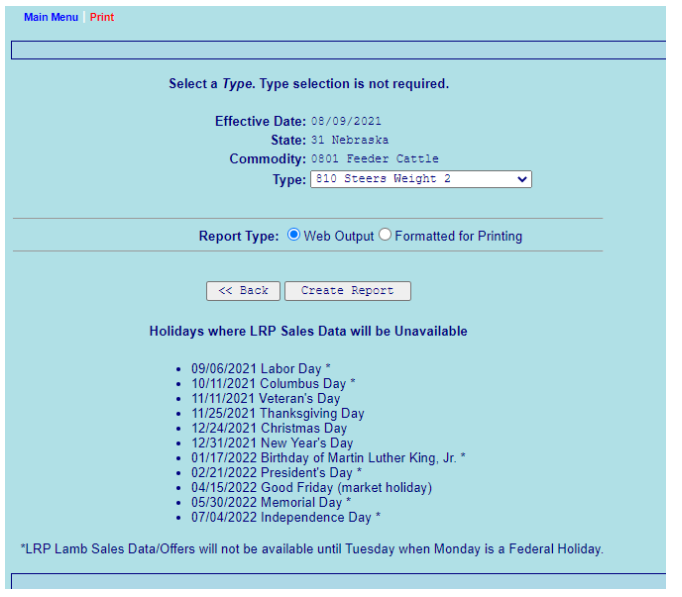
Livestock Risk Protection (LRP)

- LRP is commonly referred to as “price insurance” for cattle
- Available in all counties across all states for:
  - Feeder Cattle: steers, heifers, brahman, and dairy cattle
  - 150-600 lbs. OR 600-900 lbs.
- Sets a price floor
  - Offered at 13, 17, 21, 26, 30, 34, 39, 43, 47 or 52-week intervals
- Producers remain subject to basis price risk



Follow the Website Link or QR Code
https://www.rma.usda.gov/en/Information-Tools/Livestock-Reports

Coverage Prices, Rates, Actual Ending Values

State	County	Endorsement Length	Commodity	Type	Practice	Crop Year	Exp. End Value	Coverage Price	Coverage Level	Rate	Cost Per CWT	Producer Premium Per CWT	End Date	Actual End Value
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$183.220	1.000000	0.035738	6.548	4.26	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$181.220	0.989100	0.029710	5.384	3.50	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$179.220	0.978200	0.024367	4.367	2.84	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$177.220	0.967300	0.019727	3.496	2.27	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$175.220	0.956300	0.015769	2.763	1.80	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$173.220	0.945400	0.012418	2.151	1.29	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$171.220	0.934500	0.009736	1.667	1.00	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$169.220	0.923600	0.007464	1.263	0.76	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$167.220	0.912700	0.005681	0.950	0.57	11/28/2022	
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	211 Endorsement Ending in November Yr1	2023	183.219	$165.220	0.901800	0.004249	0.702	0.42	11/28/2022	

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Documentation from Insurance

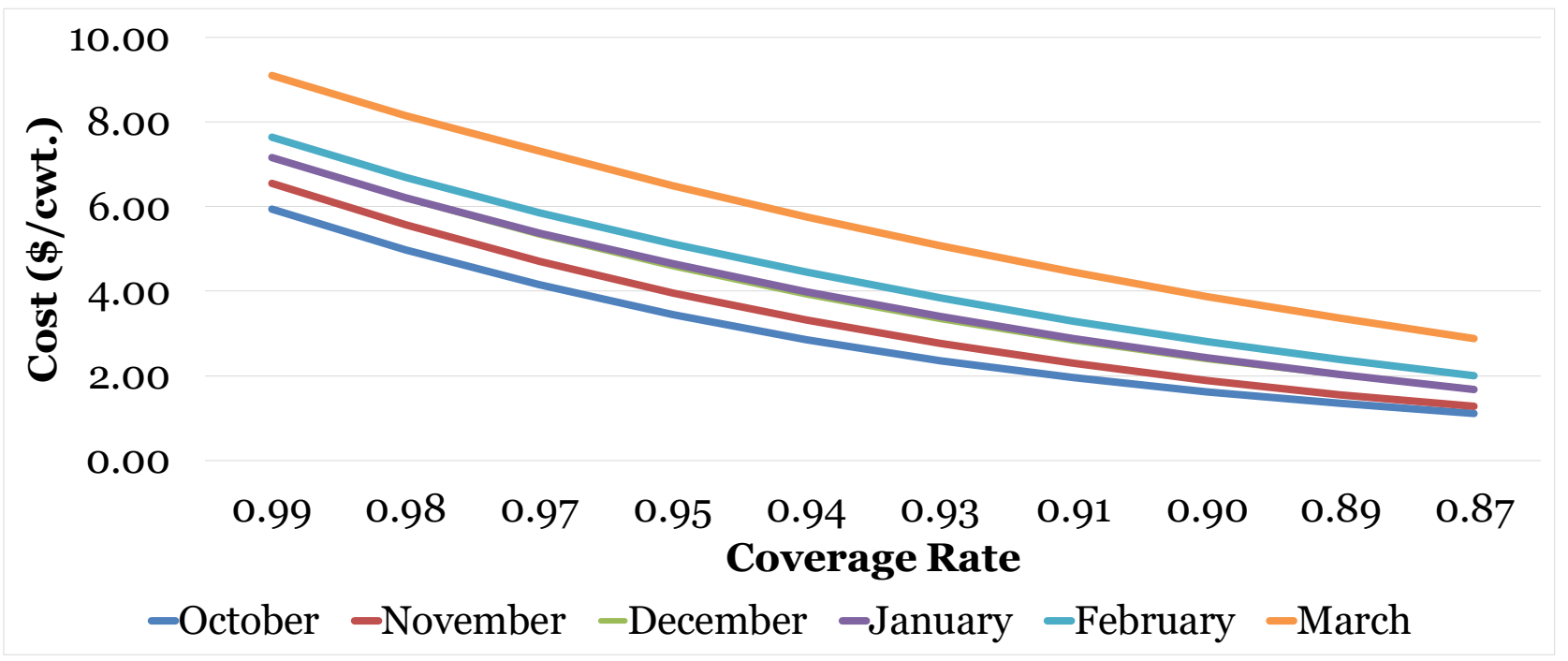
End #	Commodity	Type	Effective Date	End Date	No. of Head Covered	County	Insured Share (%)	Target Weight (cwt/head)	Coverage Price	Insured Value	Rate	Total Premium	Subsidy	Producer Premium
1	Feeder Cattle	SW1	07/29/201	10/28/2021	18	Lancaster	1	5.99	$180.40	$19,451	0.035524	$691.00	$242.00	$449.00
2	Feeder Cattle	HW1	07/29/2021	10/28/20201	17	Lancaster	1	5.99	$164.00	$16,700	0.035524	$593.00	$208.00	$385.00
…														
…														

Summary For Current Crop Year

County	Commodity	No. Head Covered	Total Insured Value	Total Premium	Premium Subsidy	A & O Subsidy	BFR/VFR Subsidy	Producer Premium
Lancaster	Feeder Cattle	35	$36,151	$1,284.00	$450.00	$285.05	$0.00	$834.00
Policy Total		**35**	**$36,151**	**$1,284.00**	**$450.00**	**$285.05**	**$0.00**	**$834.00**

Comparing LRP Premium Costs

*Reported RMA **Unsubsidized** Premium Costs*



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Indemnity "Payout" Calculations

actual ending value>COVERAGE price⇒NO indemnity payout
indemnity=0

actual ending value<COVERAGE price⇒indemnity payout
total production= head × target weight
price loss= coverage price – actual ending value≥0
indemnity=total production × price loss × insured share

Indemnity "Payout" Example

Operation (Example 1)
- 66 head heifer feeder cattle => target weight 7.5 cwt.
- Insured 100%
- Insured ending value of cattle is $140 / cwt.
- Premium cost
- Actual ending value $120

total insured production: $66 \times 7.5 = 495$ cwt.
price loss: $140 - 120 = \$20$ per cwt.
indemnity: $495 \times 20 \times 1 = 9900$
total payment: $9900 - 495 \times 5 = +\$7{,}405$
operation revenue: $495 \times 120 + 7{,}405$
$= 66{,}805$

Operation (Example 2)
- 66 head heifer feeder cattle => target weight 7.5 cwt.
- Insured 100%
- Insured ending value of cattle is $140 / cwt.
- Premium cost
- Actual ending value $160

total insured production: $66 \times 7.5 = 495$ cwt.
price loss: $140 - 160 < 0$
indemnity: no payout
total payment: $495 \times -5 = -2495$
operation revenue: $495 \times 160 - 2{,}495$
$= 81{,}695$

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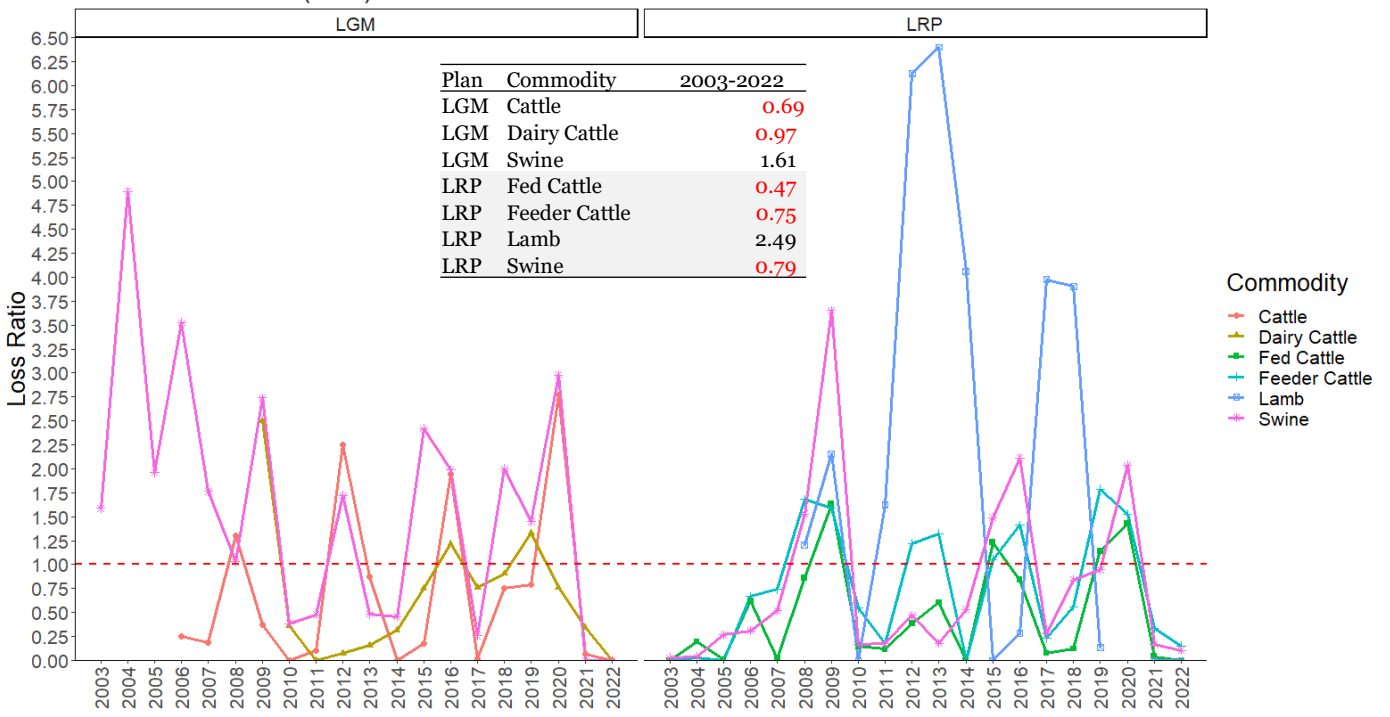
Loss Ratio Performance Through Time

Livestock Insurance Plans Loss Ratios, 2003-2022
Source: USDA-RMA (2022)



Plan	Commodity	2003-2022
LGM	Cattle	0.69
LGM	Dairy Cattle	0.97
LGM	Swine	1.61
LRP	Fed Cattle	0.47
LRP	Feeder Cattle	0.75
LRP	Lamb	2.49
LRP	Swine	0.79

Note: Loss ratios = (indemnities/premiums)

Options vs. LRP?

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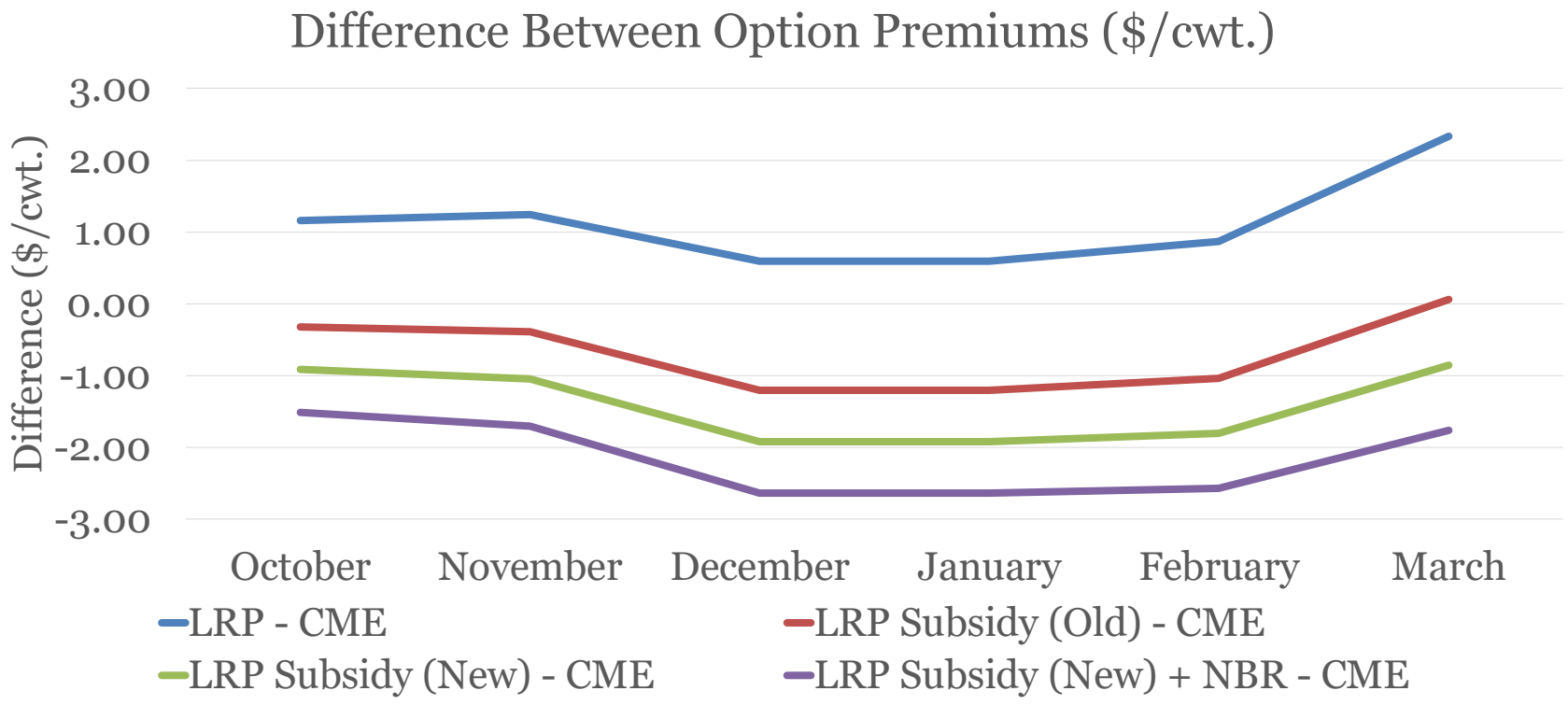
"Premium Gap": LRP and CME Options

At-the-money put



Which Coverage Paid Out?

Type	Coverage Price	Coverage Level	Producer Premium Per CWT	End Date	Actual End Value	Net Payout ($ per cwt.)
Steers Weight 2	$142.43	0.9941	5.11	11/9/	125.99	11.33
Steers Weight 2	$140.43	0.9801	4.29	11/9/	125.99	10.15
Steers Weight 2	$138.43	0.9661	3.61	11/9/	125.99	8.83
Steers Weight 2	$136.43	0.9522	3.02	11/9/	125.99	7.42
Steers Weight 2	$134.43	0.9382	2.51	12/7/	125.99	5.93
Steers Weight 2	$132.43	0.9243	2.07	12/7/	125.99	4.37
Steers Weight 2	$130.43	0.9103	1.72	12/7/	125.99	2.72
Steers Weight 2	$139.99	0.9933	5.99	12/7/	131.07	2.93
Steers Weight 2	$135.99	0.9649	4.39	12/7/	131.07	0.53
Steers Weight 2	$133.99	0.9507	3.72	12/7/	131.07	-0.8
Steers Weight 2	$123.99	0.8797	1.48	12/7/	131.07	-1.48
Steers Weight 2	$138.39	0.9932	6.48	1/4/	133.07	-1.16
Steers Weight 2	$134.39	0.9645	4.9	1/4/	133.07	-3.58
Steers Weight 2	$132.39	0.9501	4.22	1/4/	133.07	-4.22
Steers Weight 2	$122.39	0.8784	1.86	1/4/	133.07	-1.86

Who received a payout?

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