July 6, 2023

Cattle Markets and Marketing Strategies Homework

Today, you are thinking about protecting price on the following calves:

293 head of 580 lb. Steers
195 head of 540 lb. Heifers

You expect to market these animals in mid-October at the local auction market.

Market Information:

- Current Nebraska Weekly Feeder Cattle Averages Auction Summary

500-600 lb.	Steers	$267.00
500-600 lb.	Heifers	$239.00

- Current October 2023 CME Feeder Cattle Futures Price $245.975
- Current LRP Feeder Cattle Insurance Expected Ending Values

Oct 25, 2023	Steers Weight 1	$270.570
Oct 25, 2023	Heifers Weight 1	$245.973

- Current put option price for October 2023 CME Feeder Cattle Futures

Strike Price: $246.00 Premium: $8.275

- Video auctions are offering for on ranch load out in mid-October (assume ending weight is certain)

Steers	$260.00
Heifers	$235.00

September 6, 2023

Addition Marketing Action(s) Taken:

A. Sell _____ 50,000-pound feeder cattle futures contract(s) at $254 per cwt.

B. Purchase _____ 50,000 pound put option contract(s) at $254 for $3.80 per cwt.

D. Sell on the video auction for October delivery.

a. Sell _____ steers at $290.00 per cwt.

b. Sell _____ heifers at $265.00 per cwt.

Marketing Homework Ending Values

Cash Prices

Mid-October	Nebraska Weekly Feeder Cattle Averages Auction Summary	
500-600 lb.	Steers	Heifers
	$301.02	$267.46

LRP Ending Values

	Steers	Heifers
10/25/2023	$264.68	$240.62

Mid-October	October 2023 CME Feeder Cattle Futures Price	$248.32

Results

Name	TOTAL REVENUE	AVERAGE PRICE PER CWT.
High	$793,180.27	$288.18
Median	$771,141.46	$280.17
Average	$759,083.66	$275.79
Low	$654,302.75	$237.72

Player	TOTAL REVENUE	AVERAGE PRICE PER CWT.	Auction (Cash) Sales	Sell to Cattle Buyer	Sell Futures Contract	Purchase Put Option	Purchase LRP
2	$793,180.27	$288.18	$793,180.27	$0.00	$0.00	$0.00	$0.00
4	$793,180.27	$288.18	$793,180.27	$0.00	$0.00	$0.00	$0.00
5	$793,180.27	$288.18	$793,180.27	$0.00	$0.00	$0.00	$0.00
17	$793,180.27	$288.18	$793,180.27	$0.00	$0.00	$0.00	$0.00
12	$786,953.16	$285.92	$793,180.27	$0.00	$0.00	$0.00	($6,227.11)
8	$784,277.95	$284.94	$247,915.95	$533,027.00	$3,335.00	$0.00	$0.00
20	$780,104.74	$283.43	$793,180.27	$0.00	$0.00	($4,137.50)	($8,938.03)
9	$771,871.00	$280.44	$0.00	$771,871.00	$0.00	$0.00	$0.00
10	$771,871.00	$280.44	$0.00	$771,871.00	$0.00	$0.00	$0.00
16	$771,871.00	$280.44	$0.00	$771,871.00	$0.00	$0.00	$0.00
18	$771,141.46	$280.17	$674,459.96	$102,544.00	($5,862.50)	$0.00	$0.00
1	$765,643.89	$278.17	$0.00	$771,871.00	$0.00	$0.00	($6,227.11)
7	$763,894.49	$277.54	$643,033.99	$129,688.00	($4,690.00)	($4,137.50)	$0.00
14	$763,894.49	$277.54	$643,033.99	$129,688.00	($4,690.00)	($4,137.50)	$0.00
13	$762,927.11	$277.19	$0.00	$771,871.00	$0.00	$0.00	($8,943.89)
11	$760,640.52	$276.36	$0.00	$771,871.00	$0.00	$0.00	($11,230.48)
3	$757,686.38	$275.28	$793,180.27	$0.00	($5,862.50)	($20,687.50)	($8,943.89)
19	$722,357.93	$262.45	$342,741.43	$389,064.00	($1,172.50)	($8,275.00)	$0.00
6	$689,299.00	$250.44	$0.00	$689,299.00	$0.00	$0.00	$0.00
15	$689,299.00	$250.44	$0.00	$689,299.00	$0.00	$0.00	$0.00
21	$654,302.75	$237.72	$0.00	$689,299.00	($5,862.50)	($20,687.50)	($8,446.25)

Calf Retention Decisions

Nebraska Ranch Practicum
Gudmundsen Sandhills Laboratory
November 2, 2022

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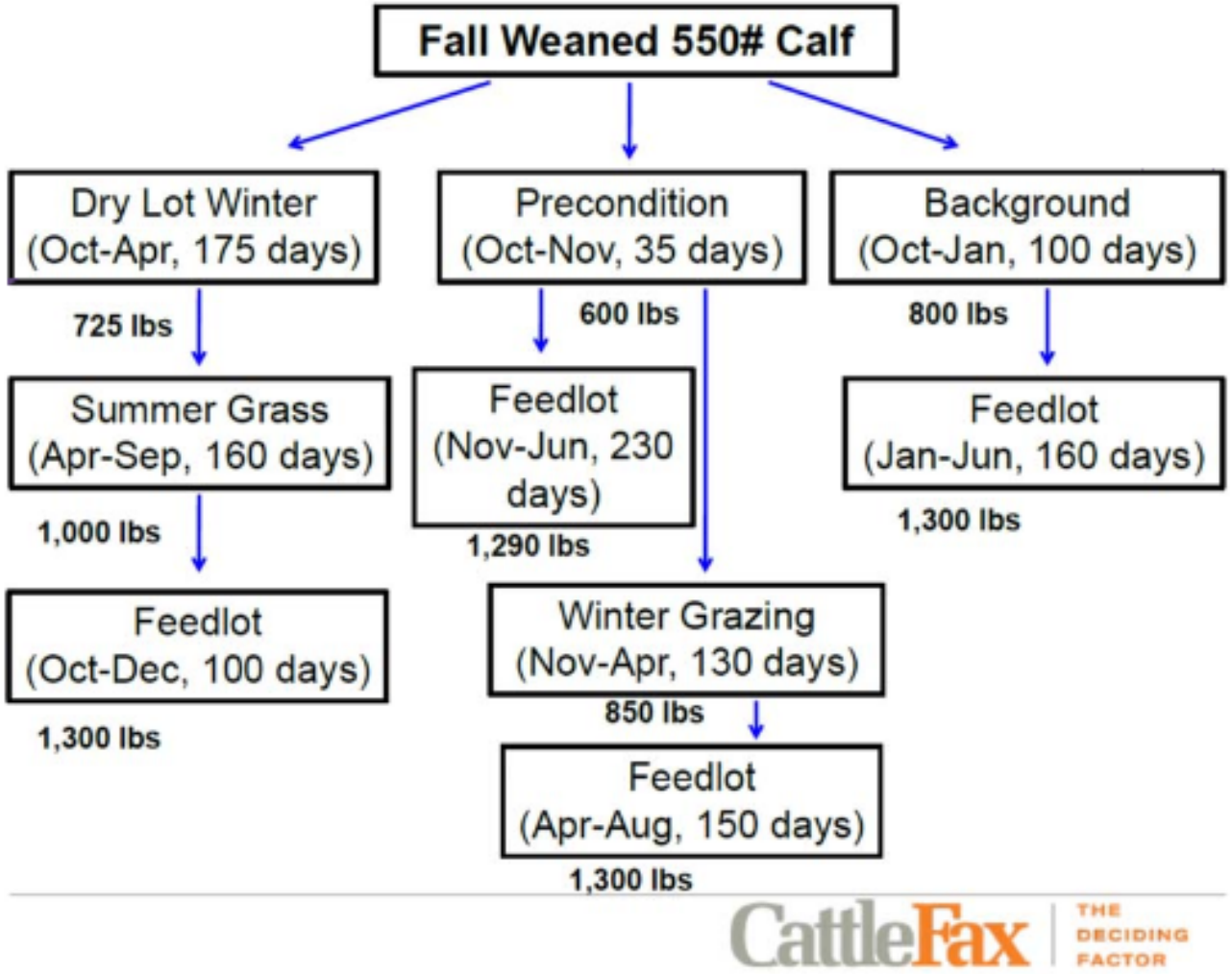
NORTH CENTRAL EXTENSION RISK MANAGEMENT EDUCATION

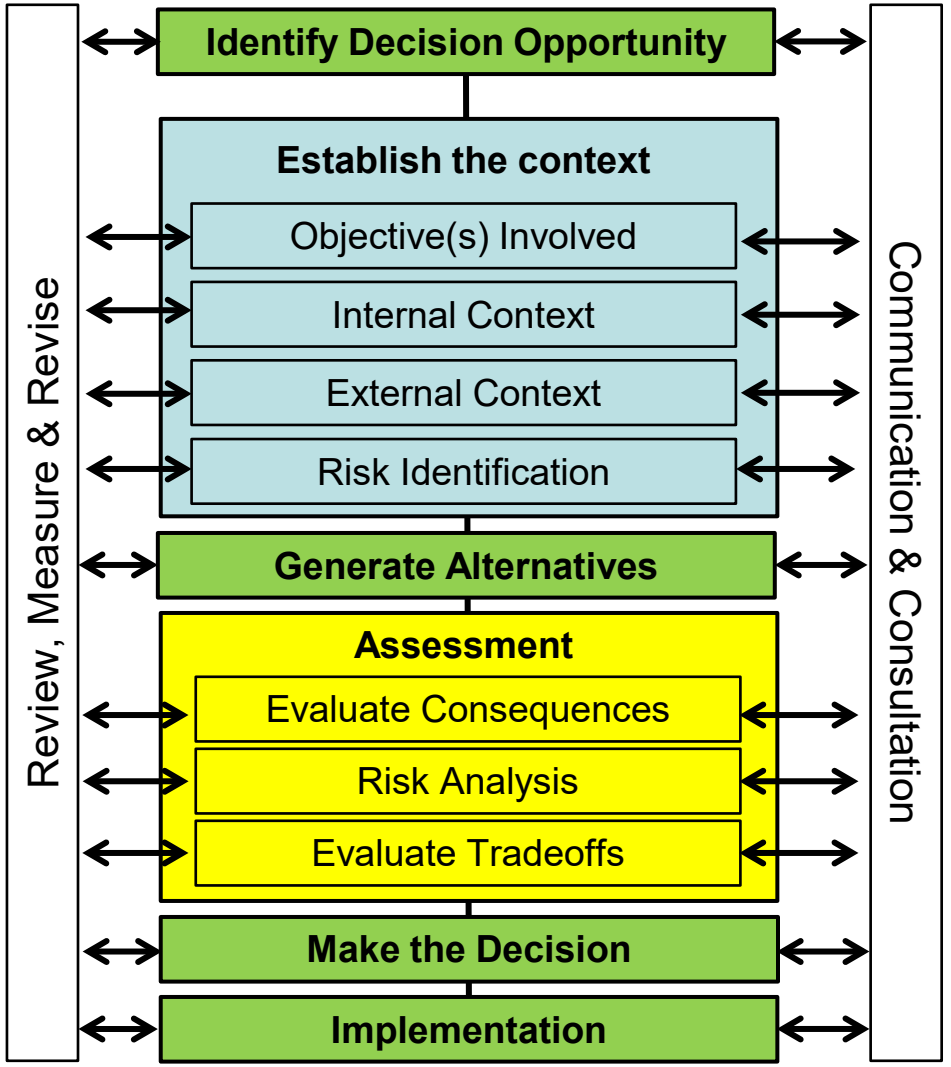
USDA United States Department of Agriculture National Institute of Food and Agriculture

Matching Linked Decisions with Resources



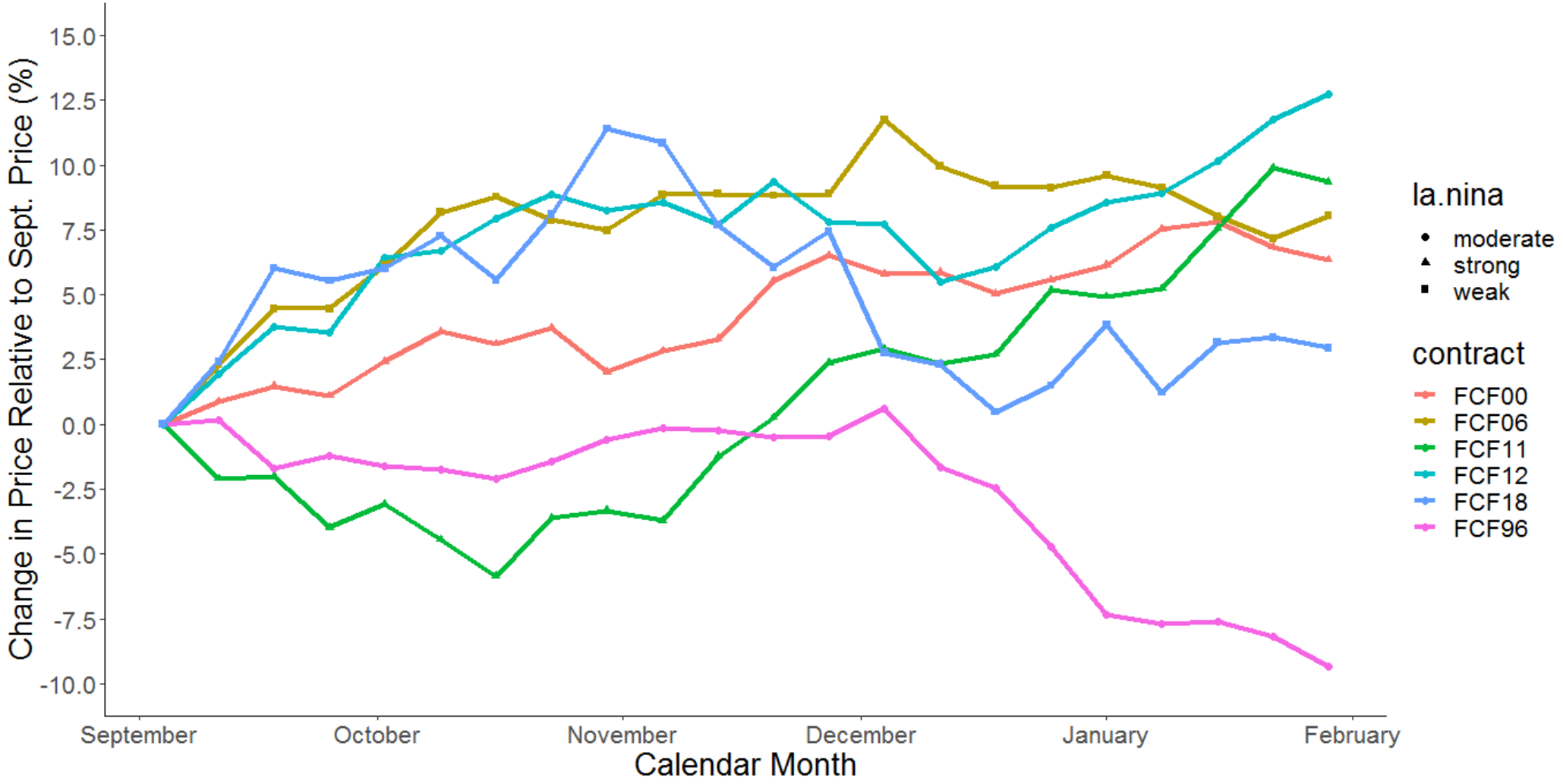
Decisions to be Made

- What do you want to accomplish?
- What is your situation?
- What is the situation around you?
- What are the major uncertainties?

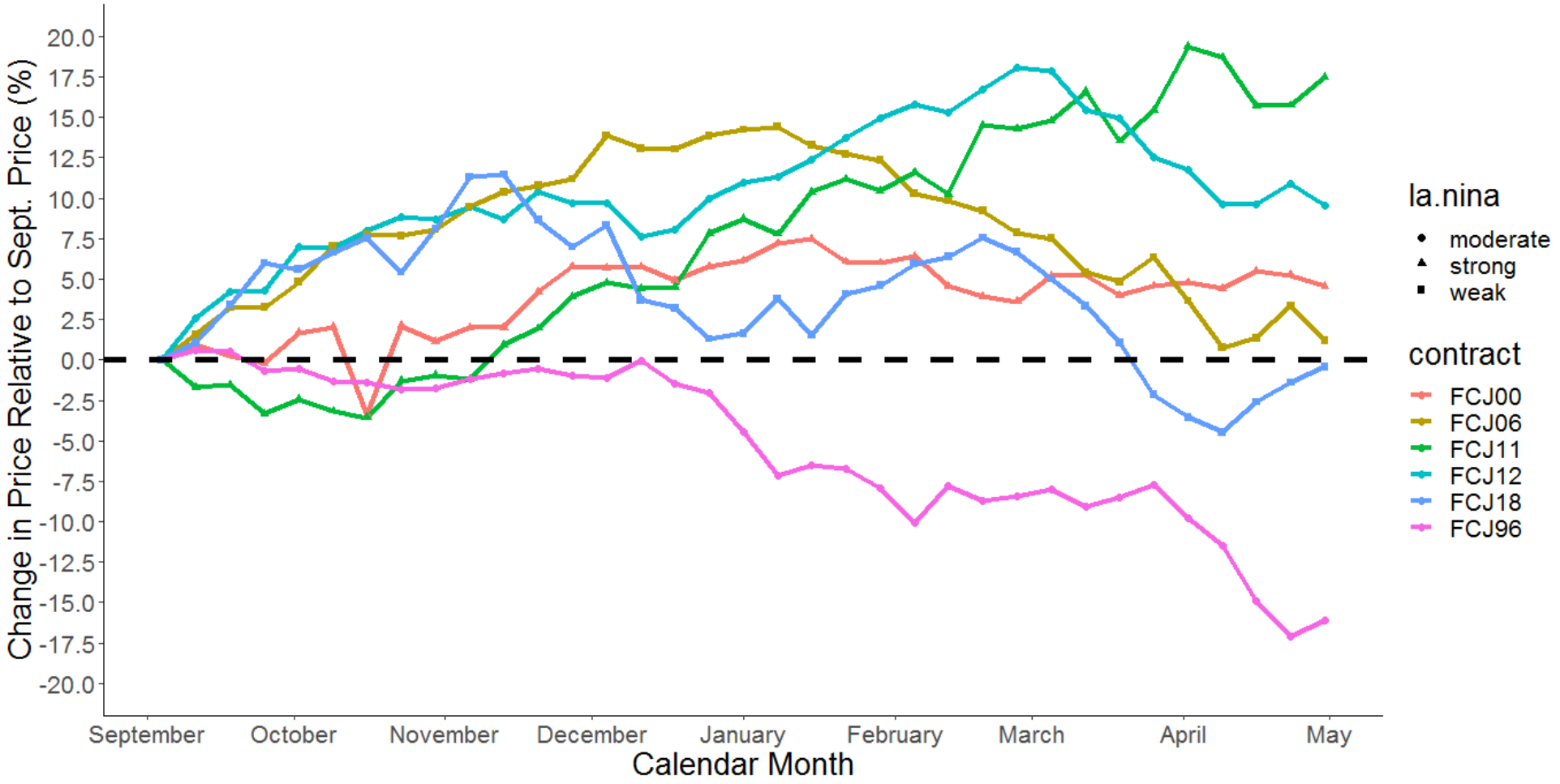


Market Trends & Conditions

Backgrounding – Futures Response



Wintering – Futures Response



Value of Gain (VOG) versus Cost of Gain (COG)

Wintering Situation

- 10/15/2021 situation:
  - Local Auction Prices: Steers $180.75/cwt.
- Sell or Retain 580 lb. steer on 10/15/2021
- Sell 725 lb. steer on 04/14/2022 (Projected price: $168/cwt.)
  - 145 lbs., 181 days, 0.8 lb. ADG
- COG = Total Cost/Weight Gained
- COG = $153/1.45 = $105.52/cwt.

- Good? Depends on VOG & "attitude towards risk"
- *Assuming VOG > COG,* assess Feeder Cattle Risk Management Strategies

Value of Gain (VOG) versus Cost of Gain (COG)

Wintering Situation

- 10/15/2021 situation:
  - Retain 580 lb. steer (Local Auction Price: $180.75/cwt.)
- Sell 725 lb. steer on 04/14/2022 (Projected price: $168/cwt.)
- COG = Total Cost/Weight Gained = $105.52/cwt.
- VOG = (Ending Value – Beginning Value)/Weight Gained
- Example
- VOG = ($168 * 7.25 - $180.75 * 5.8)/1.45 = $169.65/1.45 = $117
- ACTUAL

  VOG = ($166.71 * 7.25 - $180.75*5.8)/1.45 = $160.30/1.45 = $110.55

Value of Gain (VOG) versus Cost of Gain (COG)

Wintering Situation

- 10/14/2022 situation:
  - Retain 580 lb. steer (Local Auction Price: $208/cwt.)
- Sell 725 lb. steer on 04/15/2023 (Projected price: $193/cwt.)
- COG = Total Cost/Weight Gained = $121.35/cwt.
- VOG = (Ending Value – Beginning Value)/Weight Gained
- Example
- VOG = ($193 * 7.25 - $208 * 5.8)/1.45 = $192.85/1.45 = $133/cwt.
- ACTUAL

  VOG = ($230.47 * 7.25 - $208*5.8)/1.45 = $268.76/1.45 = $185.35

Value of Gain (VOG) versus Cost of Gain (COG)

Backgrounding Situation

- 10/14/2022 situation:
  - Retain 580 lb. steer (Local Auction Price: $208/cwt.)
- Sell 800 lb. steer on 01/31/2023 (Projected price: $186/cwt.)
- COG = Total Cost/Weight Gained = 233/2.20 = $106.11/cwt.
- VOG = (Ending Value – Beginning Value)/Weight Gained
- Example
- VOG = ($186 * 8 - $208 * 5.8)/2.2 = $281.60/2.2 = $128/cwt.
- ACTUAL

  VOG = ($183.90 * 8 - $208*5.8)/1.45 = $264.80/2.2 = $120.36

Value of Gain (VOG) versus Cost of Gain (COG)

Backgrounding Situation

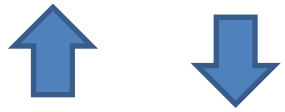
- 10/14/2022 situation:
  - Retain 580 lb. steer (Local Auction Price: $208/cwt.)
- Sell 800 lb. steer on 01/31/2023 (Projected price: $186/cwt.)
- COG = Total Cost/Weight Gained = 233/2.20 = $106.11/cwt.
- VOG = (Ending Value – Beginning Value)/Weight Gained
- Example
- VOG = ($186 * 8 - $208 * 5.8)/2.2 = $281.60/2.2 = $128/cwt.
- ACTUAL

  VOG = ($183.90 * 8 - $208*5.8)/1.45 = $264.80/2.2 = $120.36

Risk Tolerance

A combination of risk attitude and financial situation

- Attitude toward risk
  - How risk loving are you?



- Financial situation
  - What is your margin for error?

How "Unusual/Rare" are major changes in price expectations?

CME March Feeder Futures Prices from 1990 to 2021

- **P(Price March 15 – Price October 15)**
- 60.6% of the time price expectations are higher in October
- Largest price difference (-$32.43 in 2019 (-23%), +19.48 in 2017 (+18%))
- 2020 was +$5.52 (+4.2%)
- 2021 was -$5.97 (-3.7%)
- 2022 was $11.55 (+6.5%)
- Minimum differences (-$1.23, -1.5% in 1993) and (+$2.00, +1.9% in 2004)
- Average Difference (-$1.45, -0.9%)

Profit Equation

What don't you know?

- Ending Value – Beginning Value – Cost – Death Loss = PROFIT
  - Known – Beginning Value
  - Unknown
    - Ending Value = Ending Weight * Ending Price
    - Cost = Feed Cost + Other Operating Cost + Interest + Overhead
    - Death Loss
  - Adjustment
    - Ending Value = (Ending Weight * Ending Price)*(1 – Death Loss %)

Backgrounding Situation

- 10/14/2022 situation:
  - Retain 580 lb. steer (Local Auction Price: $208/cwt.)
- Sell 800 lb. steer on 01/31/2023 (Projected price: $186/cwt.)
- COG = Total Cost/Weight Gained = 233/2.20 = $106.11/cwt.
- VOG = (Ending Value – Beginning Value)/Weight Gained
- Breakeven = ($208*5.8 + $233)/8 = $1,439.40/8 = $179.93/cwt.
- (est.) VOG = ($186 * 8 - $208 * 5.8)/2.2 = $281.60/2.2 = $128/cwt.
- ACTUAL

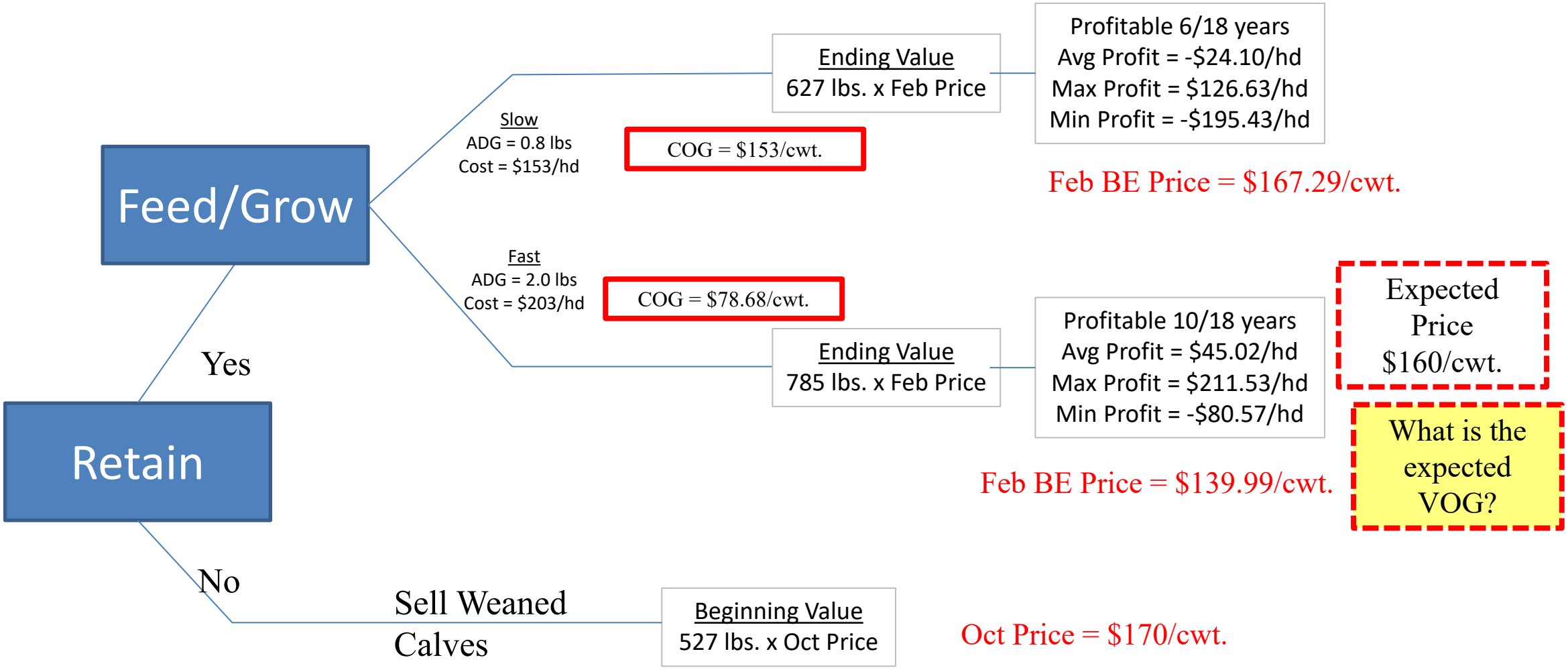
  VOG = ($183.90 * 8 - $208*5.8)/1.45 = $264.80/2.2 = $120.36

Add a 1% death loss to these calculations

Backgrounding Situation w/ 1% Death Loss

- Breakeven = ($208*5.8 + $233)/8 = $1,439.40/8 = $179.93/cwt.
- Breakeven w/ 1% death loss
  = ($208*5.8 + $233)/(8*0.99) = $1,439.40/7.92 = $181.74/cwt.
- (est.) VOG = ($186 * 8 - $208 * 5.8)/2.2 = $281.60/2.2 = $128/cwt.
- (est.) VOG w/ 1% death loss
  = ($186 * 8 * 0.99 - $208 * 5.8)/2.2 = $266.72/2.2 = $121.24/cwt.
- ACTUAL
  VOG = ($183.90 * 8 * 0.99 - $208*5.8)/1.45 = $250.09/2.2 = $113.68

Klopfenstein et al. (2020 Nebraska Beef Report); Merical, et al. (2021 Nebraska Beef Report)



Value of Gain (VOG) versus Cost of Gain (COG)

- VOG = (Ending Value – Beginning Value)/Weight Gained

- Example
- VOG = ($160 * 7.85 - $170 * 5.27)/2.58 = $360.1/2.58 = $139.57

- COG = Total Cost/Weight Gained
- COG = $203/2.58 = $78.68

Livestock Risk Protection (LRP) Insurance

http://rma.usda.gov

- LRP is a single peril price protection insurance for livestock producers

- Does not cover sickness, death, feed cost, or performance.

- Cattle
  - Feeder Cattle (CME Feeder Cattle Price Index)
    - Weight 1 < 600 lbs. & 600 lbs. < Weight 2 < 900 lbs.
    - Steers & Heifers

- Fed Cattle (> 900 lbs.)

Livestock Risk Protection (LRP) Insurance

http://rma.usda.gov

- LRP is purchased through RMA-approved livestock insurance agents
  - Application followed by Specific Coverage Endorsement
  - Premium due at the end of the endorsement period
  - Premium subsidized

Coverage Level	Subsidy
> 95%	35%
90-95%	40%
85-90%	45%
80-85%	50%
70-80%	55%

Livestock Risk Protection (LRP) Insurance

LRP – Feeder Cattle Use in Nebraska 2011 – 2019

	Policies Earning Premium	Head Covered per Policy	Policies Indemnified	Producer Loss Ratio	Premium Subsidy
Average	158	119	38%	0.81	13%
Range	69 - 313		1% - 89%	0.00 – 2.18	

LRP – Feeder Cattle Use in Nebraska 2020 – 2023*

	Policies Earning Premium	Head Covered per Policy	Policies Indemnified	Producer Loss Ratio	Premium Subsidy
Average	578	331	40%	0.60	35%
Range	46 - 1376		16% - 79%	0.28 – 1.53	

*2023 still in progress

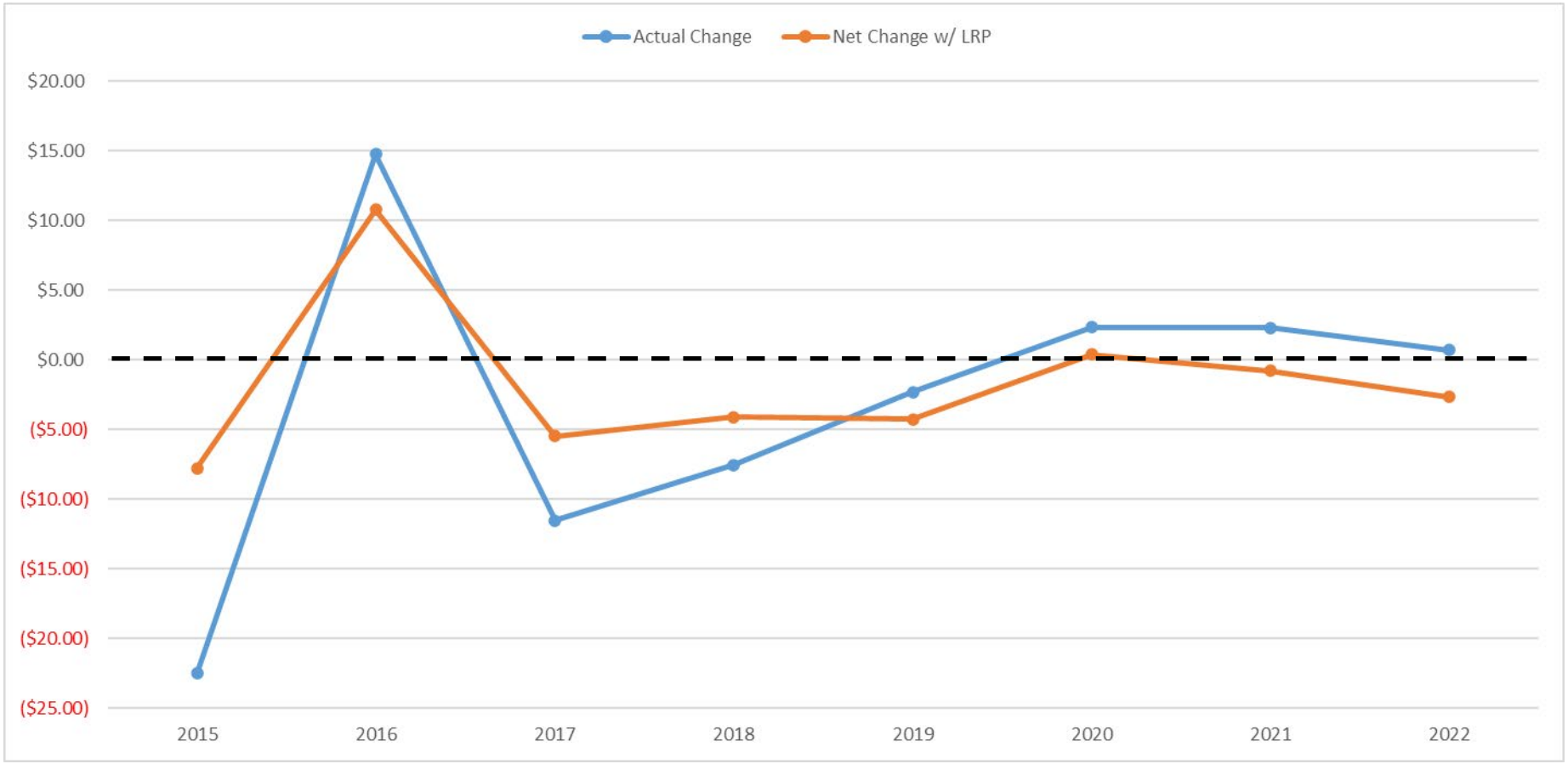
Livestock Risk Protection (LRP) Insurance

LRP – Feeder Cattle Example: Retention from Late Oct. to Late Jan. 2015-2022 (Steers Weight 2)

Purchase Date	10/30/2015	10/31/2016	10/31/2017	10/31/2018	10/31/2019	10/30/2020	10/29/2021	10/31/2022	Average	Loss Ratio
Expected Ending Value (Jan 29-30)	183.075	115.542	159.043	150.125	144.675	134.104	156.165	179.711	152.81	
Coverage Price	181.9	111.27	158.97	150	144	126.58	154.77	178.14	150.70	
Actual Ending Value (Jan 29-30)	160.58	130.29	147.51	142.57	142.38	136.43	158.44	180.42	149.83	
Indemnity	21.32	0	11.46	7.43	1.62	0	0	0	5.23	
Producer Premium	6.59	3.99	5.42	3.98	3.59	1.94	3.05	3.37	3.99	
Net Effect	**$14.73**	**($3.99)**	**$6.04**	**$3.45**	**($1.97)**	**($1.94)**	**($3.05)**	**($3.37)**	**$1.24**	**1.31**
Net Effective Price	*$175.31*	*$126.30*	*$153.55*	*$146.02*	*$140.41*	*$134.49*	*$155.39*	*$177.05*	*$151.07*	

Livestock Risk Protection (LRP) Insurance

LRP – Feeder Cattle Example: Retention from Late Oct. to Late Jan. 2015-2022 (Steers Weight 2)



LRP In 2023???

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
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$235.840	0.992600	0.030512	7.196	4.68	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$233.840	0.984200	0.026108	6.105	3.97	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$231.840	0.975800	0.022214	5.150	3.35	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$229.840	0.967400	0.018648	4.286	2.79	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$227.840	0.959000	0.015599	3.554	2.31	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$225.840	0.950600	0.012868	2.906	1.89	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$223.840	0.942100	0.010610	2.375	1.43	01/30/2024
31 Nebraska	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2024	237.588	$221.840	0.933700	0.008682	1.926	1.16	01/30/2024

Summary

- Retention decisions involve multiple linked decisions
  - What are you trying to accomplish?
  - Consider resources (feed, people, capital, etc.)
  - Consider sales trigger dates Jan/Feb/Mar/Apr or longer
  - Cattle prices can trend up or down but don't forget about the slide
  - Compare cost of gain to value of gain
  - How much risk are you willing to accept?
- In general, taking on risk with retention of calves gains more profit but returns are not guaranteed.

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Center for Agricultural Profitability

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THANK YOU!