

Livestock Price Risk Management AGEC 244-2



Tim Petry

Extension Livestock Marketing Economist

www.ndsu.edu/livestockeconomics

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Agribusiness and
Applied Economics

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EXTENSION

HINDSIGHT IS 2020 BUT 2021?



African Swine Fever

Record Meat Production



Exports



Trade Agreements



Drought/Blizzards/Floods

Corn Prices

Consumer Demand

COMPETING MEATS

Volatile Prices Will Continue

MAY CORN FUTURES



MAY FDR CAT FUT



Price Risk Management Tools

- Cash forward contract
- Video and internet auctions
- CME futures
- CME options
- Livestock Risk Protection (LRP)
- Which one or combination fits your marketing plan?
- **“If you don’t manage risk, risk will manage you”**

PICK YOUR POISON

Cash

Forward Contract/
Video Auction

LRP

Futures/Options

Easy



Difficult

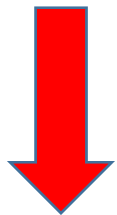


Which Is Best?

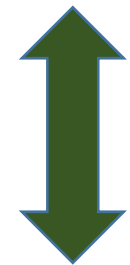
Depends on expected price trend



Uptrend: cash market



Downtrend: futures
cash forward contract
video and internet auction



?: options or LRP
(will always be 2nd best)



CME LIVESTOCK FUTURES CONTRACTS

1. LIVE CATTLE

- 1050 – 1500 lb. (27-38) steers and heifers (1050-1350)
- 40,000 lbs., 400 cwt.
- Feb, Apr, Jun, **Aug**, Oct, Dec

LEQ21 - Live Cattle - Daily OHLC Chart



FEEDER CATTLE FUTURES

- 700 – 899 lb.- ave. 800 lb. (72-56 hd) steers
- 50,000 lbs., 500 cwt.
- Jan, Mar, Apr, May, **Aug**, Sep, Oct, Nov

GFQ21 - Feeder Cattle - Daily OHLC Chart



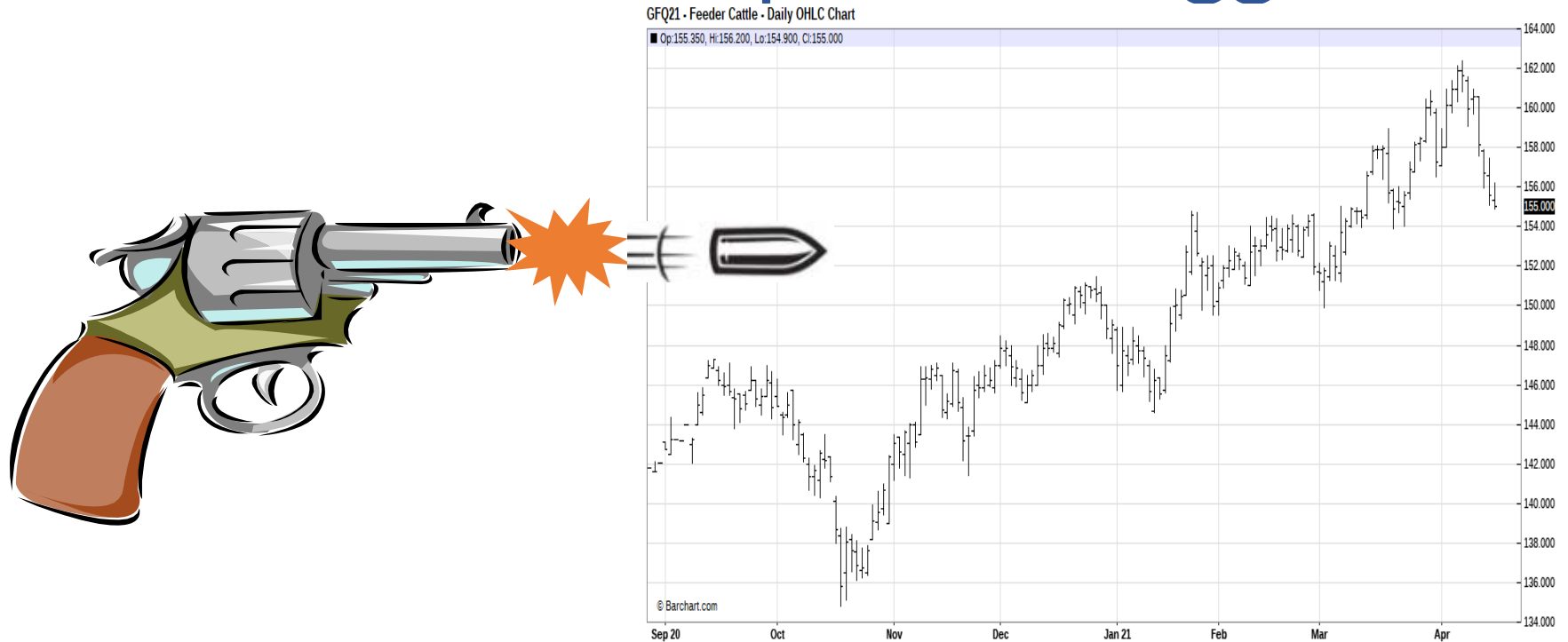
LEAN HOG FUTURES

- Hog carcasses in packer base weight range
- 40,000 lbs., 400 cwt.
- Feb, Apr, May, Jun, Jul, **Aug**, Oct, Dec

HEQ21 - Lean Hogs - Daily OHLC Chart



When should I pull the trigger?



Most difficult part of using Futures and Options

Is there something easier?

Some Cattle, Lamb, and Hog Packers Offer Futures-based Forward Contracts

- No need for broker, margins, etc.
- Price is + or – futures contract price
- Other specifications

USDA National Weekly Direct Slaughter Cattle
Contract Purchases
May '21/June +0.50



Livestock Risk Protection (LRP)

A Price Risk Management Tool
for Livestock Producers

Tim Petry

Extension Livestock Marketing Economist

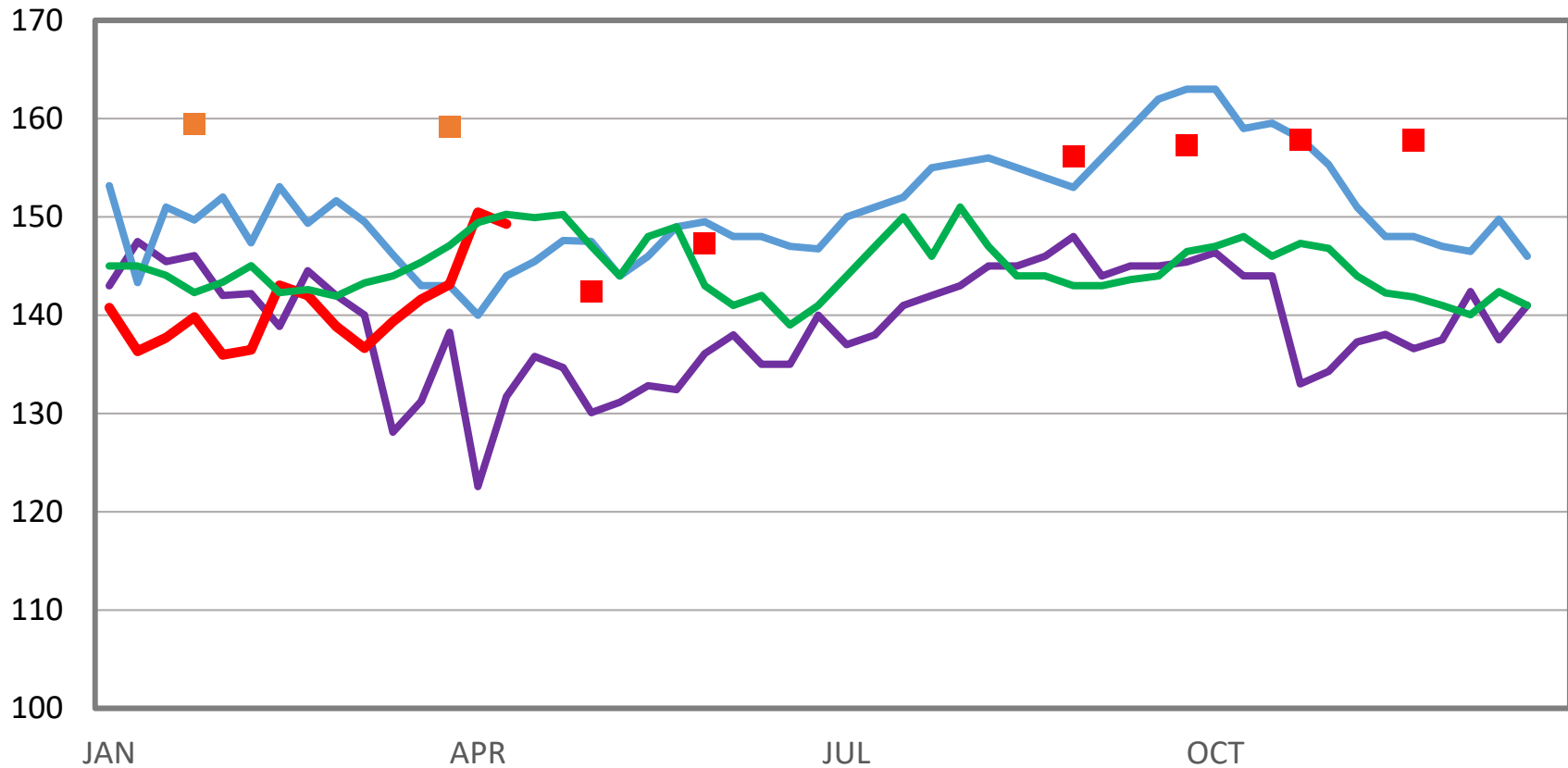
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MED. & LRG. #1 FEEDER STEER PRICES

750-800 Pounds, N.D., Weekly



■ 2022 Futures
 — 2020
 — 2018
 — 2021
 — 2019
 ■ 2021 Futures

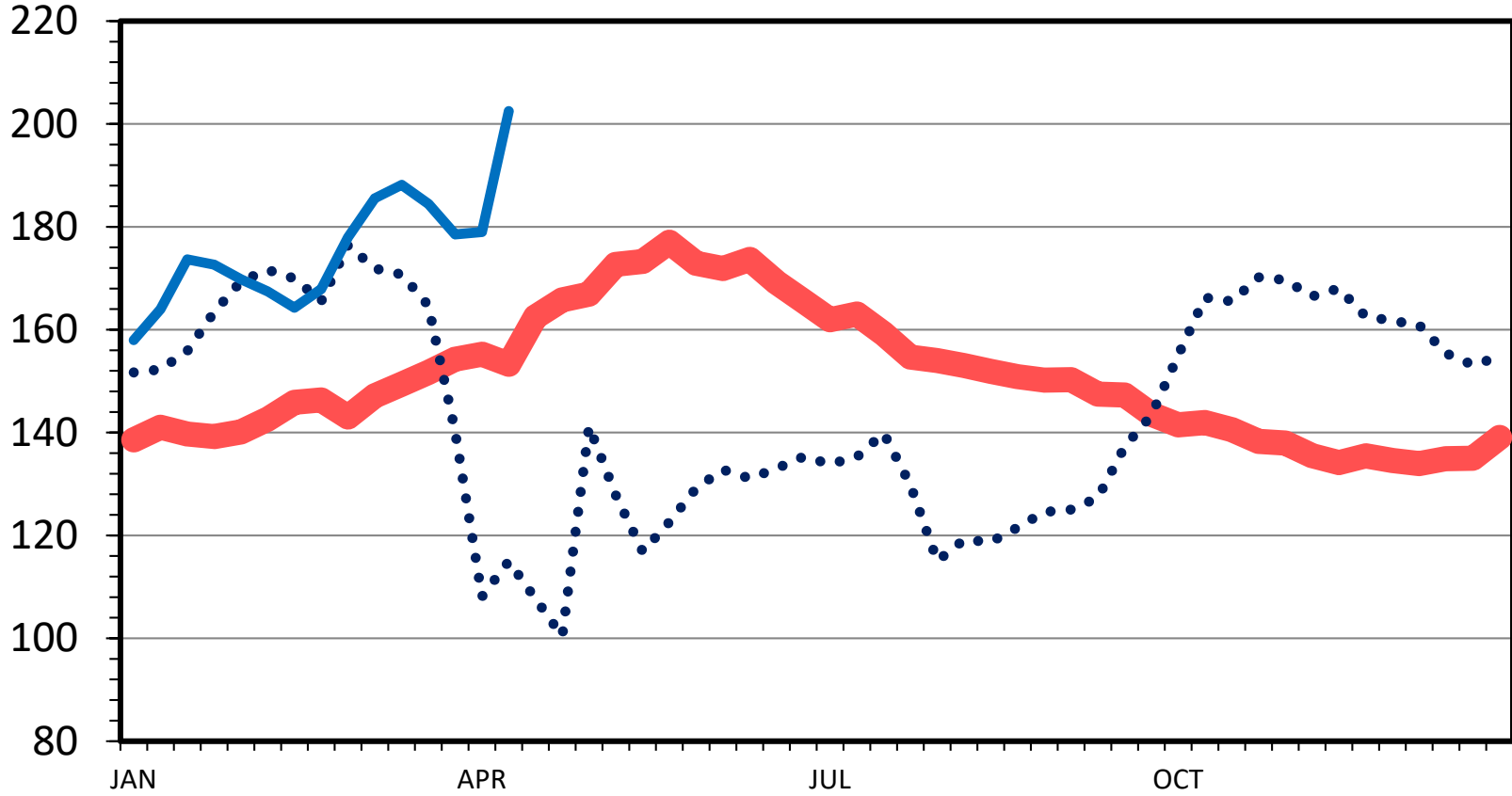


EXTENSION AGRIBUSINESS
 EXTENDING KNOWLEDGE >> CHANGING LIVES

SLAUGHTER LAMB PRICES

Northern Plains, Weekly

\$ Per Cwt.

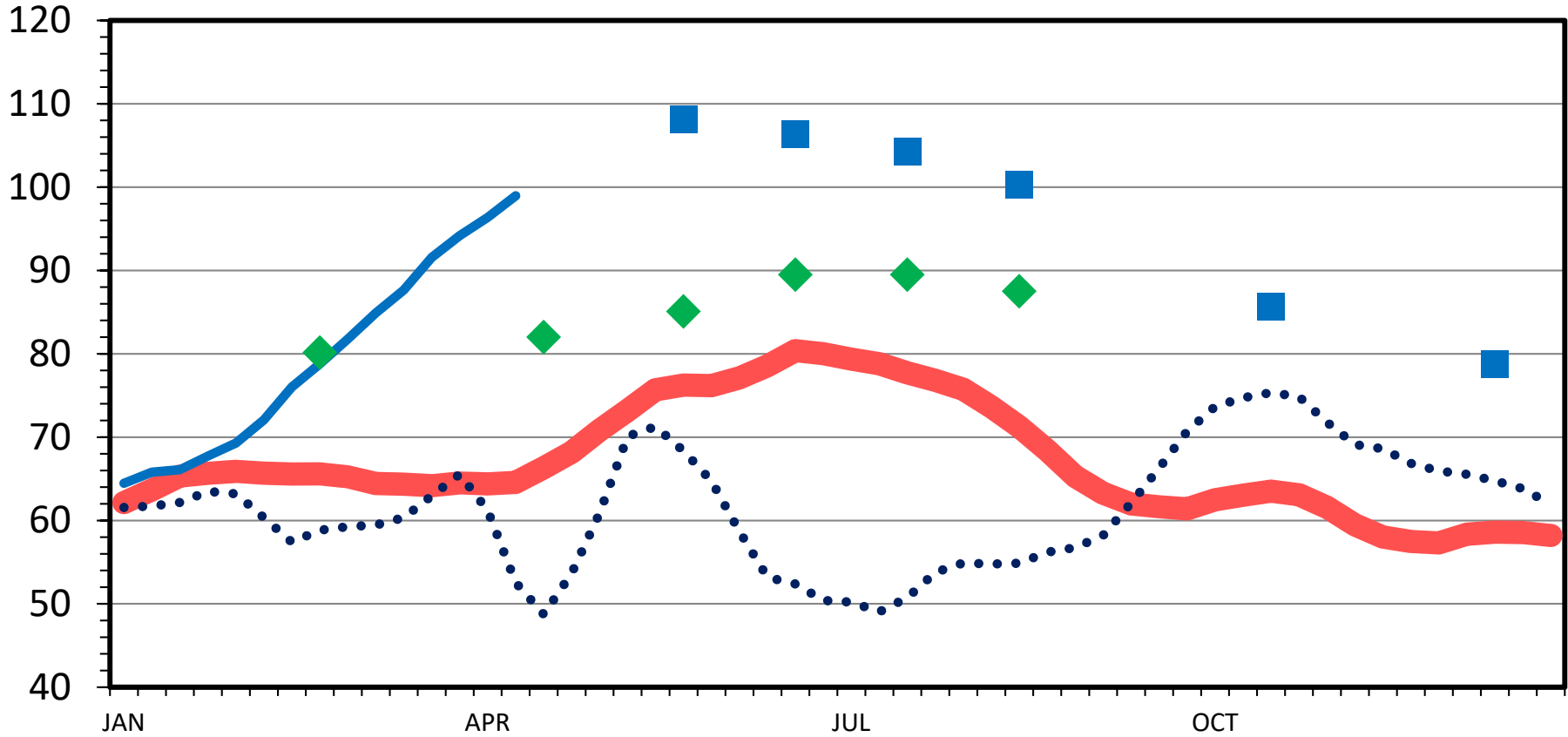


— Avg. 2015-19 ••• 2020 — 2021

BASE SLAUGHTER HOG PRICES

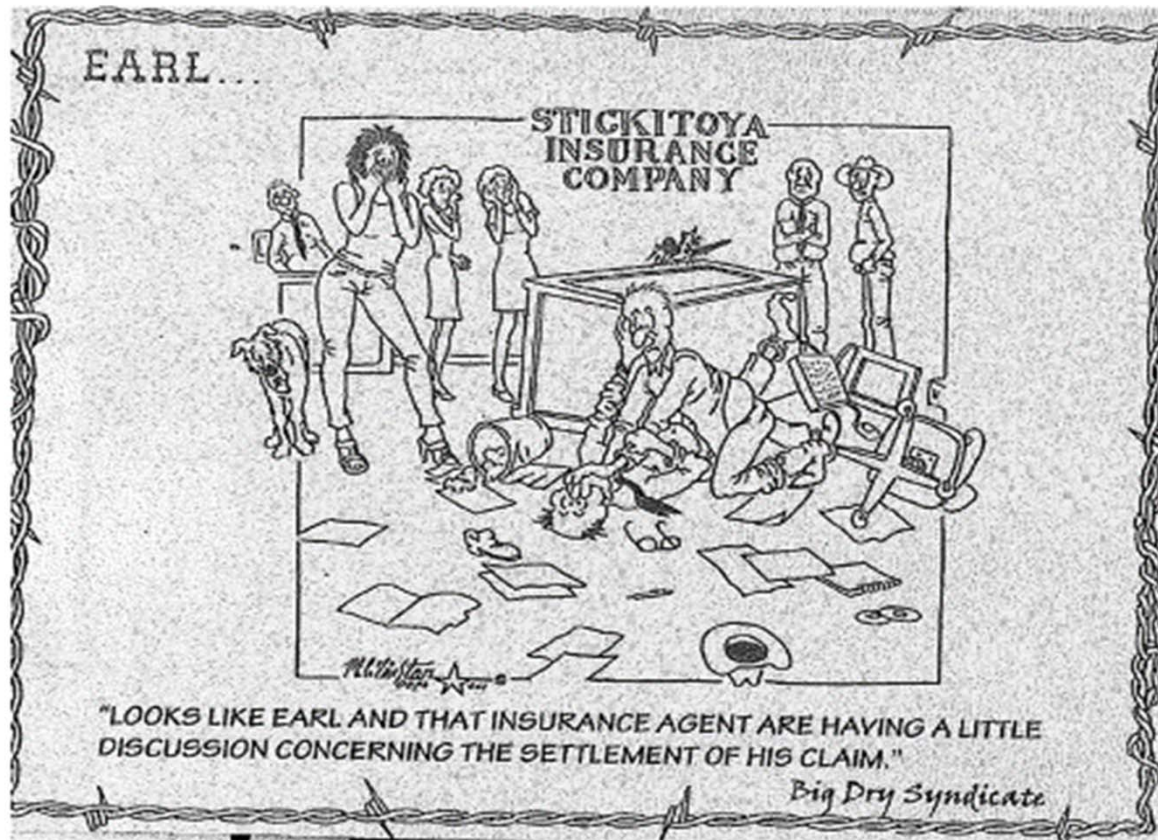
National, Weighted Average Carcass Price, Weekly

\$ Per Cwt.



— Avg. 2015-19 2020 — 2021 ■ 2021 FUT ◆ 2022 FUT

LRP – revenue insurance program that is reinsured and subsidized by the USDA Federal Crop Insurance Corporation (FCIC)



LRP

- Insures against price declines with floor price
- Similar to put options
- Premium is subsidized
- Sold by livestock (crop) insurance agents who do not have to offer
- List of approved agents at:

www.rma.usda.gov/en/Information-Tools/Agent-Locator-Page

CLICKER

Do you understand the futures market well enough to actually use it for hedging ag commodities?

1. Yes
2. No

What will feeder cattle prices do from now until Aug?

1. Increase
2. Decrease
3. Uncertain

LRP CONTRACTS

- Feeder Cattle (beef, dairy, Brahman)
 - Under 600 lbs
 - Beef steers or heifers
 - 600 to 900 lbs.
 - Beef steers or heifers
- Fed cattle
- Hogs
- Lambs (temporarily unavailable)

Policy Size

- One head minimum
- Feeder Cattle
 - Any # up to 6,000 head per contract
 - 12,000 maximum per year (July 1-June 30)
- Fed Cattle
 - 6,000
 - 12,000
- Hogs
 - 40,000
 - 150,000
- Lambs
 - 2,000 ??
 - 28,000



NEW Premium Subsidy Rates

Coverage Level %

Subsidy Rate %

95-100

35

90-94.99

40

85-89.99

45

80-84.99

50

70-79.99

55

Effective 9-14-2020/Retroactive to 7-1-2020



(13% Subsidy for many years)

Beginning Farmer

- 10% additional premium subsidy
- 5 yr. or less actively raising livestock
- Does not include years when
 - under 18
 - full time military
 - post-secondary education

Insurance Period

- Policies **may** be available for the following weekly lengths:

CATTLE: 13, 17, 21, 26, 30, 34, 39, 43, 47, 52


7/21/2021

HOGS: same

3/16/2022

LAMBS: 13, ~~20~~, 26, 39 ?

Steps to LRP

1. Submit eligibility application form with insurance agent
2. Select a policy (coverage prices and premiums are available **after 3:30 p.m.** (CST) except holidays)
 1. Number of head
 2. Policy length closest to marketing date
 3. Estimated average market weight
 4. Choose coverage price
3. Pay premium ~~to agent~~ - **Pay at maturity** 
4. Agent submits form electronically (hours are between **4 p.m. and 9 a.m.** (CST), Tues-Sat only)

LRP – Feeder Cattle

- Based on Chicago Mercantile Exchange (CME) feeder cattle price index which is available at www.cmegroup.com
- 700-899 lb, M & L # 1 and #2, feeder steers at markets reported by USDA-AMS
- Current Index - **\$138.33**

CME FC Cash Index SPREADSHEET

4/15/2021

www.cmegroup.com/ftp/cash_settled_commodity_index_prices/daily_data/feeder_cattle/

DATE	LOCATION	TTL HEAD	TTL WEIGHT	WTD AVG WEIGHT	TTL PRICE	WTD AVG PRICE
4/15/2021	APACHE	298	245610	824	32980680.44	134.28
4/15/2021	AVA	16	11880	743	1618078.16	136.20
4/15/2021	BILLINGS	26	18568	714	2797320.24	150.65
4/15/2021	BRUSH	15	12326	822	1626962.00	131.99
4/15/2021	BUTLER	17	12560	739	1787324.48	142.30
4/15/2021	CENTERVILLE	92	69361	754	10327468.70	148.89
4/15/2021	CLARINDA	443	357231.001	806	50164271.29	140.43
4/15/2021	CLOVIS	86	68155	793	8993507.36	131.96
4/15/2021	DALHART	174	139599	802	18767657.30	134.44
4/15/2021	DICKINSON	34	27599	812	3881985.25	140.66
4/15/2021	MITCHELL	466	372276.999	799	53222266.81	142.96
4/15/2021	NAPOLEON	517	389264	753	57818546.38	148.53
4/15/2021	NEW CAMBRIA	147	108610	739	16755888.88	154.28
4/15/2021	OGALLALA	549	455927	830	66631233.86	146.14
4/15/2021	PRATT	1002	817858.025	816	115486926.50	141.21
4/15/2021	SALINA	1180	950935	806	133802652.93	140.71
4/15/2021	SAN ANGELO	15	11480	765	1570200.00	136.78
4/15/2021	TULIA	434	349317.003	805	46688978.80	133.66
4/15/2021	WOODWARD	614	486655	793	67693520.14	139.10
4/15/2021	WESTERN VID WEBSITE (SC)	130	110500	850	15414750.00	139.50
4/15/2021	DAILY TOTALS	6255	5015712.03	802	708030219.52	141.16
4/15/2021	SEVEN-DAY TOTALS	33530	27088339.2	808	3837767979.27	141.68

APR FDR CAT and CME Cash Index

GFJ21 - Feeder Cattle - Daily OHLC Chart



CME Index and LRP

	Beef Steers	Beef Heifers	Brahman	Dairy
Under 600 lbs	110%	100%	100%	50%
600-900 lbs	100%	90%	90%	50%

Current CME Index- \$138.33

Coverage Prices and Rates

Change daily and are posted on the USDA Risk Management Agency (RMA) web site

<https://public.rma.usda.gov/livestockreports/main.aspx>

Coverage levels will range from 70-100% of expected price

State	County	Endorsement Length	Commodity	Type	Practice	Crop Year	Exp. End Value	Coverage Price	Coverage Level	Rate	Cost Per CWT	End Date	Actual End Value
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$151.800	0.996400	0.038722	5.878	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$149.800	0.983200	0.032583	4.881	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$147.800	0.970100	0.027152	4.013	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$145.800	0.957000	0.022524	3.284	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$143.800	0.943900	0.018373	2.642	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$141.800	0.930700	0.014972	2.123	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$139.800	0.917600	0.012060	1.686	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$137.800	0.904500	0.009877	1.361	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$135.800	0.891400	0.008085	1.098	07/16/2021	
38 North Dakota	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	207 Endorsement Ending in July Yr1	2021	152.353	\$133.800	0.878200	0.006652	0.890	07/16/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$153.780	0.996400	0.041793	6.427	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$151.780	0.983500	0.036217	5.497	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$149.780	0.970500	0.031066	4.653	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$147.780	0.957500	0.026594	3.930	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$145.780	0.944600	0.022486	3.278	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$143.780	0.931600	0.019043	2.738	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$141.780	0.918700	0.015975	2.265	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$139.780	0.905700	0.013600	1.901	08/13/2021	
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	154.333	\$137.780	0.892700	0.011591	1.597	08/13/2021	

Over 600 lb. Feeder Steers



LRP Coverage Prices, Rates, and Actual Ending Values - Report for 04/21/2021



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
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	151.826	\$149.900	0.987300	0.038472	5.767	3.75	08/18/2021
									35% Subsidy				
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	151.826	\$147.900	0.974100	0.032948	4.873	3.17	08/18/2021
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	151.826	\$145.900	0.961000	0.028136	4.105	2.67	08/18/2021
38 North Dakota	998 All Counties	17	0801 Feeder Cattle	810 Steers Weight 2	208 Endorsement Ending in August Yr1	2021	151.826	\$139.900	0.921400	0.016934	2.369	1.42	08/18/2021
									40%				

AUG FDR CAT Futures - \$151.93/CME FC INDEX-\$138.33

<https://public.rma.usda.gov/livestockreports/main.aspx>

Summer 2021 Grazing Budget (costs - \$/head)

	Example	Your #s
1. Pasture (<u>4</u> A @ \$ <u>20.00</u>)	80.00	(<u> </u> A @ \$ <u> </u>) 0.00
2. Minerals, salt	0.50	
3. Purchased Feed and Supplement	_____	<input style="width: 100px; height: 20px;" type="text"/>
4. Veterinary, drugs, implants	12.00	
5. Marketing (brand inspection, commission, check off, hauling)	20.00	
6. Shrink	2.00	
7. Utilities, fuel, oil	5.00	
8. Hired Labor	_____	
9. Repairs (fencing, waterers, etc.)	3.00	
10. Interest on calf and operating	15.00	
11. Death loss (1%)	9.52	
12. Miscellaneous	1.00	
13. Fixed Costs (insurance, taxes, depreciation)	3.00	
A. Total Production Costs (sum 1 thru 13)	151.02	0.00
B. Operator Labor and Management	_____	
C. Total Costs (A + B)	151.02	0.00
D. Hundredweight produced	2.5	
E. Feed Cost / cwt gain (1 + 2 + 3 / D)	32.20	#DIV/0!
F. Total Cost / cwt gain (C / D)	60.41	#DIV/0!
G. Beginning calf value (<u>550</u> lbs @ \$ <u>1.73</u>)	951.50	(<u> </u> lbs @ \$ <u> </u>) 0.00
H. Sale Weight (cwt)	8	
J. Breakeven Price / cwt (C + G / H)	137.82	#DIV/0!
K. Expected Selling Price / cwt (\$ <u>153.00</u>) Projected profit/hd	121.48	(\$ <u> </u>) #DIV/0!
L. 10% Higher Selling Price (\$ <u>168.30</u>) Projected profit/hd	243.88	(\$ <u>0.00</u>) #DIV/0!
M. 10% Lower Selling Price (\$ <u>137.70</u>) Projected profit/hd	-0.92	(\$ <u>0.00</u>) #DIV/0!
N. Breakeven Purchase Price at Expected Sales Price (\$/lb)	1.95	#DIV/0!

Indemnity

- Payment based on difference between **COVERAGE PRICE (CP)** & actual **CME INDEX** price (AP)

$$CP = \$150/\text{cwt}$$

$$AP = \$140$$

$$\$10/\text{cwt payment}$$

- Producers must submit 04-LRP-Claim Form within 60 days of end of contract

LRP

Advantages

- Small numbers can be contracted
- Beef feeder steers and heifers ↑600, ↓600 lb.
- Premium subsidized 35-55%
- No brokerage or margin
- Receive higher prices in bull market
- Available in months where no futures/options
- All coverage prices available daily
- **Good way to learn about risk management**

Disadvantages

- Not “flexible” like futures and options
- **Must own the livestock**

2021 Calf Marketing Plan

100 Cow Spring Calving Herd
46-575 lb. steer calves
26-550 lb. heifer calves (20 replacement)
Expected Market Date Nov. 15

Goal: Pre-price 50 % of production

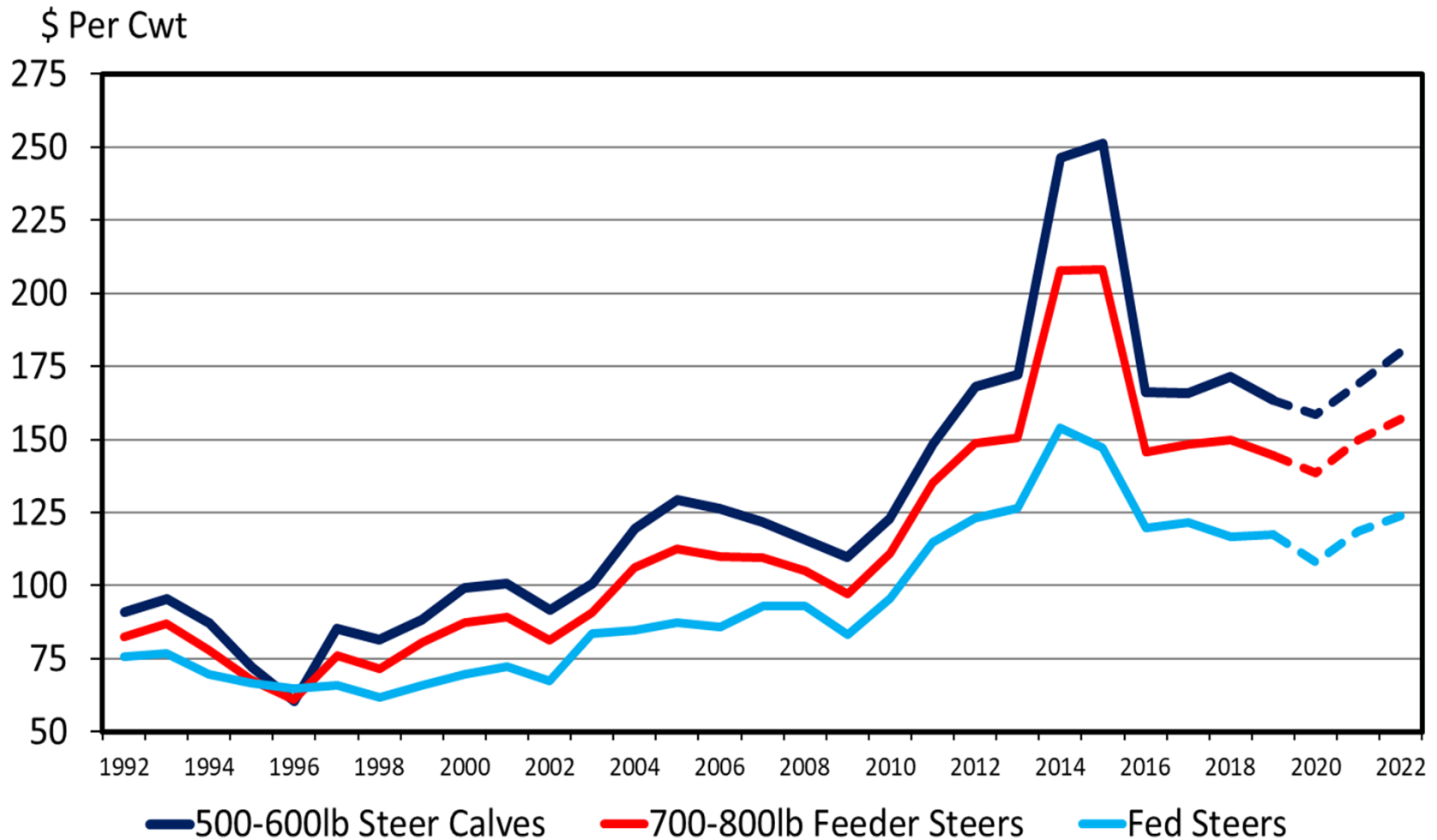
Expected price trend Up BUT?

Best Strategy: LRP-Under 600 lbs.

<u>Strategy</u>	<u># of Head</u>	<u>Price Objective</u>	<u>Time Deadline</u>
LRP-26 wk.	12 steers 7 heifers	\$170 \$153	May 15
LRP-13 wk.	11 steers 6 heifers	\$180 \$162	Aug. 15
Market	46 steers 26 heifers		Nov. 15

CATTLE PRICE CYCLE

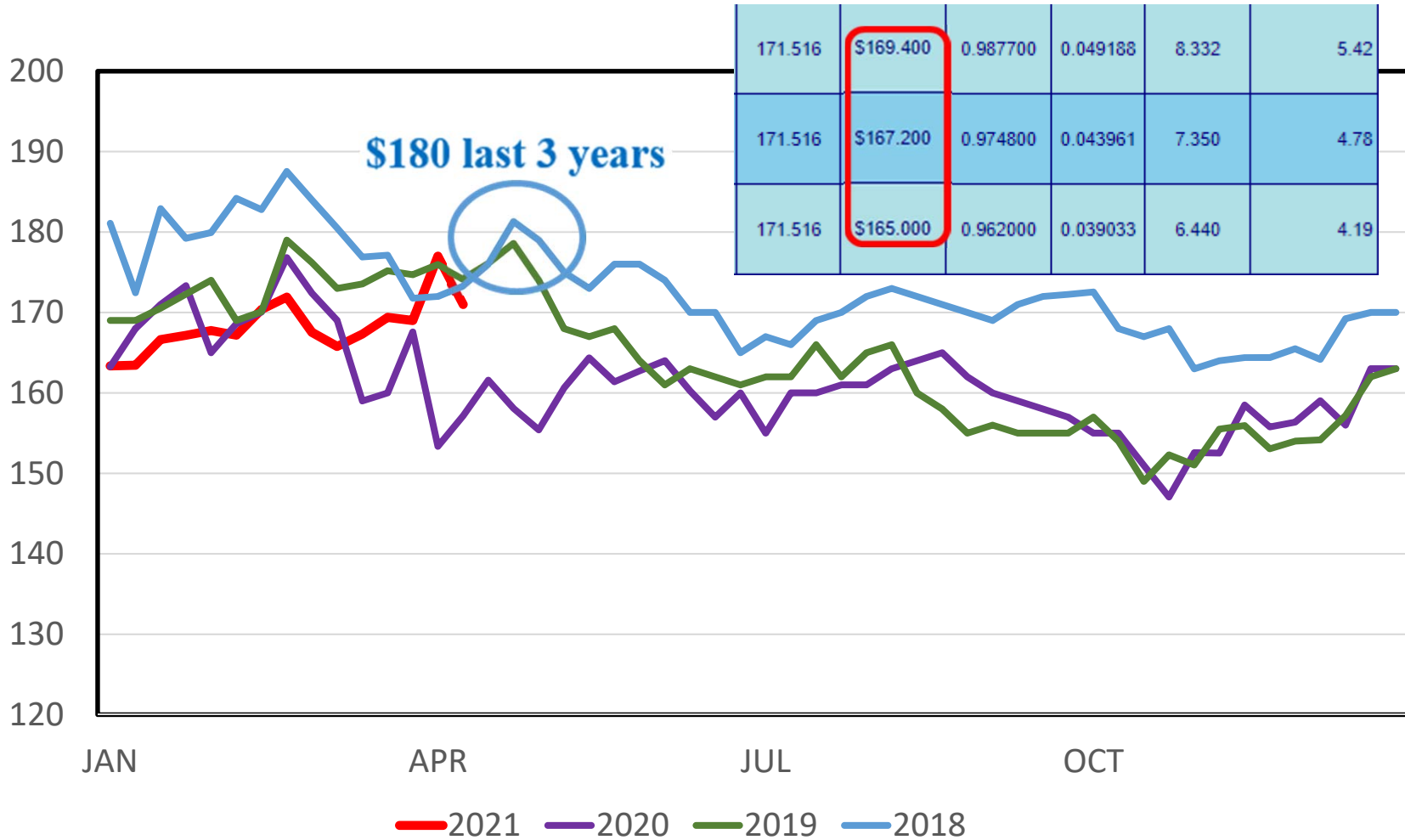
AVERAGE ANNUAL CATTLE PRICES



Data Source: USDA-AMS Forecasts by LMIC

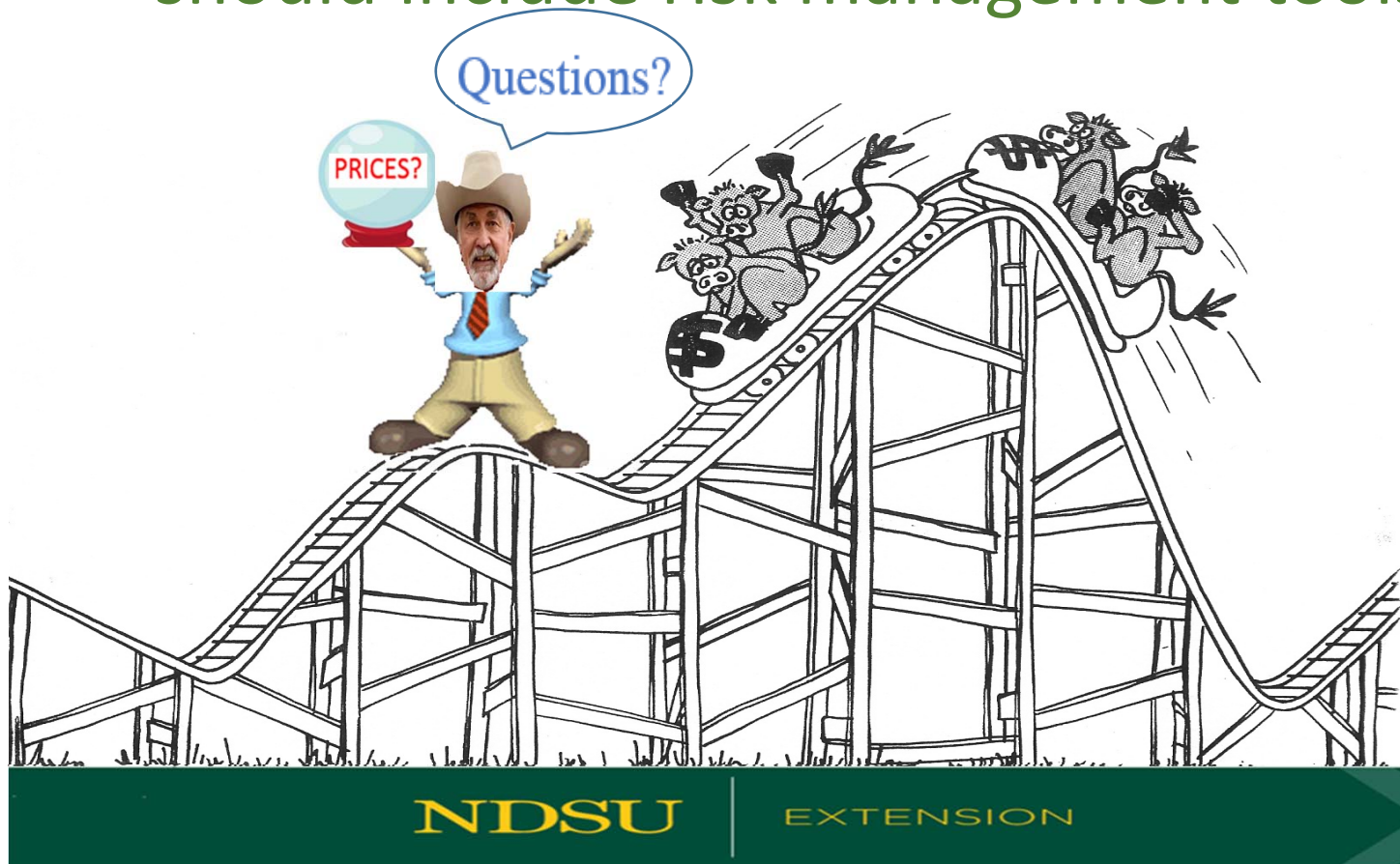
MED. FRAME #1 STEER CALF PRICES

550-600 Pounds, N.D., Weekly



?

2021: **COVID**, Weather, Corn, and Economy?
Causing **Volatility** and **Risk**, especially on
seasonal basis. Flexible marketing plans
should include risk management tools



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