Livestock Price Risk Management
AGEC 244-2

Tim Petry
Extension Livestock Marketing Economist
www.ndsu.edu/livestockeconomics
April 18, 2019
Price Risk Management Tools

- Cash forward contract
- Video and internet auctions
- CME futures
- CME options
- Livestock Risk Protection (LRP)
- Livestock Gross Margin (LGM)
- Which one or combination fits your marketing plan?
Which Is Best?

Depends on expected price trend

Uptrend: cash market (Bull)

Downtrend: futures (Bear)
          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

JUN LV CAT
2. FEEDER CATTLE

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

MAY FDR CAT
3. LEAN HOGS

- 210 lb. avg. carcass weight (180 – 200 hd)
- 40,000 lb., 400 cwt.
- Feb, Apr, May, Jun, Jul, Aug, Oct, Dec

JUN LEAN HOGS
Options

• Similar to an insurance policy

• PUT: right to a short futures contract

• CALL: right to a long futures contract

• Buyer pays market determined premium

• Seller receives premium
Why use options?

- Minimum price established for bear market, but can receive higher prices if bull market

\[ \text{Price} \uparrow \text{cash} \]
\[ \text{Price} \downarrow \text{futures} \]
\[ \text{Price} \uparrow \text{options} \]

Options will always be 2\textsuperscript{nd} best
When should I pull the trigger?

Most difficult part of using Futures and Options

Is there something easier?
Some Cattle Packers Offer Futures-based Forward Contracts

- No need for broker, margins, etc.
- Price is + or – futures contract price
- Other specifications
NATIONAL WEEKLY DIRECT SLAUGHTER CATTLE - PRIOR WEEK SLAUGHTER AND CONTRACT PURCHASES

For Week Ending Sunday, 04/14/2019

D: BASIS DISTRIBUTION

Delivery Mo./Basis Mo.
Jun '19/Jun

70 head = -20.00
35 head = -12.00
230 head = -1.00
1,321 head = -0.50
1,068 head = 0.00
379 head = +1.00
1,917 head = +2.00

APR 12: JUN LC FUT = $121.50
Livestock Risk Protection (LRP)
A New Price Risk Management Tool for Livestock Producers

Tim Petry
Extension Livestock Marketing Economist
www.ndsu.edu/livestockeconomics
MED. FRAME #1 STEER CALF PRICES
550-600 Pounds, N.D., Weekly
SLAUGHTER LAMB PRICES
Wooled, 110-130 lbs., Sioux Falls, Weekly

$ Per Cwt.
LRP – revenue insurance program that is reinsured and subsidized by the Federal Crop Insurance Corporation (FCIC)

“Looks like Earl and that insurance agent are having a little discussion concerning the settlement of his claim.”

Big Dry Syndicate
LRP

- Insures against price declines
- Similar to put options
- 13% of premium is subsidized
- Sold by livestock (crop) insurance agents but do not have to offer
Beginning Farmer

• 23% premium subsidy
• 5 yr. or less actively farming
• Does not include years when
  • under 18
  • full time military
  • post-secondary education
Premium Subsidy-Lambs

• Producers receive a premium subsidy
  • 13 weeks @ 20%
  • 26 weeks @ 35%
  • 39 weeks @ 38%
  • Additional 10% to beginning farmers

• RMA pays subsidy to insurance agent
LRP Contracts

• Feeder Cattle (beef, dairy, Brahman)
  • Under 600 lbs
    • Steers or heifers (beef)
  • 600 to 900 lbs.
    • Steers or heifers (beef)

• Fed cattle

• Hogs

• Lambs
Policy Size

• One head minimum
• Feeder Cattle
  • Any # up to 1,000 head per contract
  • 2,000 maximum per year (July 1-June 30)
• Fed Cattle
  • 2,000
  • 4,000
• Hogs
  • 10,000
  • 32,000
• Lambs
  • 2,000
  • 28,000
Insurance Period

• Policies may be available for the following weekly lengths:

CATTLE: 13,17,21,26,30,34,39,43,47,52
HOGS: 13,17,21,26
LAMBS: 13,20,26,39
LRP – Feeder Cattle

• Based on Chicago Mercantile Exchange (CME) feeder cattle price index which is available at [www.cmegroup.com](http://www.cmegroup.com)

• 700 to 899 lb., M & L #1, feeder steers at markets reported by USDA-AMS

• Current $143.58
## CME Feeder Cattle Index – Apr 10

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>TTL HEAD</th>
<th>TTL WEIGHT</th>
<th>WTD AVG</th>
<th>TTL PRICE</th>
<th>WTD AVG PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/10/2019</td>
<td>ABERDEEN</td>
<td>SD</td>
<td>418</td>
<td>351837</td>
<td>841.7153</td>
<td>48813106.26</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>ADA</td>
<td>OK</td>
<td>22</td>
<td>16206</td>
<td>736.6364</td>
<td>2281430.8</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>APACHE VIDEO (SC)</td>
<td>S</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>BASSETT</td>
<td>NE</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>BILLINGS PAYS</td>
<td>MT</td>
<td>37</td>
<td>27084</td>
<td>732</td>
<td>4099434.24</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>BLOOMFIELD</td>
<td>IA</td>
<td>609</td>
<td>467695</td>
<td>767.9721</td>
<td>71678544.59</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>cattle country video (nc)</td>
<td>n</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>CLOVIS</td>
<td>NM</td>
<td>390</td>
<td>305745</td>
<td>783.9615</td>
<td>42987901.23</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>DODGE CITY</td>
<td>KS</td>
<td>745</td>
<td>623261</td>
<td>836.5919</td>
<td>87016439.07</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>EL RENO</td>
<td>OK</td>
<td>1553</td>
<td>1250932</td>
<td>805.4939</td>
<td>177539301.6</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>FARMINGTON</td>
<td>MK</td>
<td>10</td>
<td>7450</td>
<td>745</td>
<td>992006.85</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>GREEN CITY</td>
<td>MK</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>KEARNEY HUSS</td>
<td>NE</td>
<td>515</td>
<td>406298</td>
<td>788.9282</td>
<td>60023007.19</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>LAJUNTA LIVESTOCK</td>
<td>CO</td>
<td>22</td>
<td>15444</td>
<td>702</td>
<td>2162160</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>MANDAN</td>
<td>ND</td>
<td>690</td>
<td>543955</td>
<td>788.3406</td>
<td>78927727.2</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>RUSHVILLE-SHERIDAN</td>
<td>NE</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>ST. JOSEPH</td>
<td>MK</td>
<td>215</td>
<td>160330</td>
<td>745.7209</td>
<td>24110054.92</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>SOUTHERN OK VIDEO (SC)</td>
<td>S</td>
<td>57</td>
<td>49875</td>
<td>875</td>
<td>6708187.5</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>SPRINGFIELD</td>
<td>MK</td>
<td>102</td>
<td>81810</td>
<td>802.0588</td>
<td>11636186.41</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>STERLING</td>
<td>CC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>TORRINGTON LIVESTOCK</td>
<td>WY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>VIENNA</td>
<td>MK</td>
<td>25</td>
<td>18923</td>
<td>756.92</td>
<td>2710060.68</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>WEST FARGO</td>
<td>NC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>WINDSOR</td>
<td>IA</td>
<td>108</td>
<td>83536</td>
<td>773.4815</td>
<td>12355668.78</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>DAILY TOTALS</td>
<td></td>
<td>5518</td>
<td>4410381</td>
<td>799.2717</td>
<td>634041217.4</td>
</tr>
<tr>
<td>4/10/2019</td>
<td>SEVEN-DAY TOTALS</td>
<td></td>
<td>33088</td>
<td>26487488</td>
<td>800.5164</td>
<td>3797009085</td>
</tr>
</tbody>
</table>
## CME Index and LRP

<table>
<thead>
<tr>
<th></th>
<th>Beef Steers</th>
<th>Beef Heifers</th>
<th>Brahman</th>
<th>Dairy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 600 lbs</td>
<td>110%</td>
<td>100%</td>
<td>100%</td>
<td>85%</td>
</tr>
<tr>
<td>600-900 lbs</td>
<td>100%</td>
<td>90%</td>
<td>90%</td>
<td>80%</td>
</tr>
</tbody>
</table>
Daily Offers

Coverage prices and rates change daily and are posted on the USDA Risk Management Agency (RMA) web site about 4 pm.


Coverage levels will range from 80 to 100 percent of expected price

Lambs: 80 -95%
# Over 600 lb. Feeder Steers

### LRP Coverage Prices, Rates, and Actual Ending Values - Report for 04/17/2019

<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>Endorsement Length</th>
<th>Commodity</th>
<th>Type</th>
<th>Practice</th>
<th>Crop Year</th>
<th>Exp. End Value</th>
<th>Coverage Price</th>
<th>Coverage Level</th>
<th>Rate</th>
<th>Cost Per CWT</th>
<th>End Date</th>
<th>Actual End Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$156.100</td>
<td>0.997200</td>
<td>0.030163</td>
<td>4.772</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$156.100</td>
<td>0.964500</td>
<td>0.023555</td>
<td>3.577</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$154.100</td>
<td>0.971300</td>
<td>0.017867</td>
<td>2.758</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$150.100</td>
<td>0.946700</td>
<td>0.009714</td>
<td>1.458</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$148.100</td>
<td>0.934100</td>
<td>0.006703</td>
<td>1.006</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$146.100</td>
<td>0.921500</td>
<td>0.004641</td>
<td>0.678</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$142.100</td>
<td>0.896300</td>
<td>0.002125</td>
<td>0.302</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>13</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>156.549</td>
<td>$140.100</td>
<td>0.863500</td>
<td>0.001378</td>
<td>0.193</td>
<td>07/17/2019</td>
<td></td>
</tr>
<tr>
<td>38 North Dakota</td>
<td>968 All Counties</td>
<td>17</td>
<td>0301 Feeder Cattle</td>
<td>810 Steers Weight 2</td>
<td>997 No Practice Specified</td>
<td>2019</td>
<td>160.223</td>
<td>$159.770</td>
<td>0.997200</td>
<td>0.032240</td>
<td>5.151</td>
<td>08/14/2019</td>
<td></td>
</tr>
</tbody>
</table>

13% Prem. Subsidy X .87
# Current LRP Coverage 4/17/2019

<table>
<thead>
<tr>
<th>LIVESTOCK</th>
<th>COVERAGE PRICE</th>
<th>COST/CWT</th>
<th>END DATE</th>
<th>CURRENT ACTUAL PRICE</th>
<th>FUTURES PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 600 steer</td>
<td>175.96</td>
<td>5.48</td>
<td>10/16</td>
<td>157.94</td>
<td></td>
</tr>
<tr>
<td>Over 600 steer</td>
<td>159.97</td>
<td>4.98</td>
<td>10/16</td>
<td>143.58</td>
<td>162.02</td>
</tr>
<tr>
<td>Fed cattle</td>
<td>117.76</td>
<td>4.91</td>
<td>10/16</td>
<td>124.12</td>
<td>120.20</td>
</tr>
<tr>
<td>Hogs</td>
<td>92.23</td>
<td>11.11</td>
<td>10/16</td>
<td>79.84</td>
<td>94.57</td>
</tr>
<tr>
<td>Lambs</td>
<td>143.29</td>
<td>5.23</td>
<td>10/14</td>
<td>142.03</td>
<td></td>
</tr>
</tbody>
</table>
BARROW AND GILT PRICES
Iowa – So. Minnesota, Carcass Base Price, Weekly

$ Per Cwt.
Indemnity Payment

• Payment based on difference between COVERAGE PRICE (CP) and CME CASH SETTLEMENT PRICE (CS)

CP = $160/cwt
CS = $155

$ 5/cwt payment
## Fall Steer Calf LRP Results

*July 15 to Nov 15 (17 wk)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Coverage Price</th>
<th>Premium</th>
<th>Actual Price</th>
<th>LRP Payment</th>
<th>LRP Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>105.78</td>
<td>1.67</td>
<td>127.75</td>
<td>--</td>
<td>-1.67</td>
</tr>
<tr>
<td>2006</td>
<td>114.42</td>
<td>1.49</td>
<td>107.55</td>
<td>6.87</td>
<td>5.38</td>
</tr>
<tr>
<td>2007</td>
<td>123.20</td>
<td>2.58</td>
<td>119.27</td>
<td>3.93</td>
<td>1.35</td>
</tr>
<tr>
<td>2008</td>
<td>127.38</td>
<td>5.46</td>
<td>107.37</td>
<td>20.01</td>
<td>14.55</td>
</tr>
<tr>
<td>2009</td>
<td>112.18</td>
<td>3.73</td>
<td>102.94</td>
<td>9.24</td>
<td>5.51</td>
</tr>
<tr>
<td>2010</td>
<td>121.02</td>
<td>2.88</td>
<td>122.61</td>
<td>--</td>
<td>-2.88</td>
</tr>
<tr>
<td>2011</td>
<td>149.57</td>
<td>5.00</td>
<td>156.92</td>
<td>--</td>
<td>-5.00</td>
</tr>
<tr>
<td>2012</td>
<td>155.75</td>
<td>4.00</td>
<td>158.33</td>
<td>--</td>
<td>-4.00</td>
</tr>
<tr>
<td>2013</td>
<td>171.29</td>
<td>3.13</td>
<td>181.97</td>
<td>--</td>
<td>-3.13</td>
</tr>
<tr>
<td>2014</td>
<td>231.16</td>
<td>7.25</td>
<td>264.95</td>
<td>--</td>
<td>-7.25</td>
</tr>
<tr>
<td>2015</td>
<td>229</td>
<td>7.17</td>
<td>199.41</td>
<td>29.59</td>
<td>22.42</td>
</tr>
<tr>
<td>2016</td>
<td>145.46</td>
<td>4.97</td>
<td>137.92</td>
<td>7.54</td>
<td>2.57</td>
</tr>
<tr>
<td>2017</td>
<td>165.04</td>
<td>8.20</td>
<td>175.42</td>
<td>--</td>
<td>-8.20</td>
</tr>
<tr>
<td>2018</td>
<td>165.03</td>
<td>6.21</td>
<td>165.65</td>
<td>.62</td>
<td>-5.59</td>
</tr>
</tbody>
</table>

**Sum:**

- LRP Profit: 63.74
- LRP Payment: 77.80
- LRP Premium: 14.06
# Cattle LRP Timetable

<table>
<thead>
<tr>
<th>MARKET CLASS</th>
<th>MARKET DATE</th>
<th>LRP CONTRACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 600</td>
<td>Nov 15</td>
<td>AUG, JUL, JUN, MAY</td>
</tr>
<tr>
<td>Over 600</td>
<td>Feb 15</td>
<td>NOV, OCT, SEP, AUG</td>
</tr>
<tr>
<td>Fed</td>
<td>May 15</td>
<td>FEB, JAN, DEC, NOV</td>
</tr>
</tbody>
</table>
LRP

**Advantages**
- Small numbers can be hedged
- ↑600, ↓600, heifers, dairy
- Premium subsidized 13 percent (or more)
- No brokerage or margin
- Receive higher prices in bull market
- Available in months where no futures/options
- All coverage prices available daily

**Disadvantages**
- Not “flexible” like futures and options
- Must own the livestock
Steps to LRP

1. Submit eligibility application form with insurance agent

2. Select a SCE (coverage prices and premiums are available after 4 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

4. Agent submits SCE form electronically (hours are between 4 p.m. and 9 a.m. (CST), Tues-Sat only)

5. Lamb: 10 a.m. – 7 p.m. Monday only
Volatile Prices – Price Risk Management Necessary!
Questions!