Risk Management for Cattle and Hog Producers

Market Risk and Price and Margin Insurance

Average Hog Price Forecast Error, 1995-2004

<table>
<thead>
<tr>
<th>Quarters</th>
<th>Forecast Source</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Out</td>
<td>ISU</td>
</tr>
<tr>
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<td>0.07</td>
<td>-0.67</td>
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<tr>
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<td>0.01</td>
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<tr>
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<td>0.63</td>
<td>0.75</td>
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<tr>
<td>4</td>
<td>0.41</td>
<td>0.63</td>
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</tbody>
</table>

Standard Deviation of Hog Price Forecast Error, 1995-2004

<table>
<thead>
<tr>
<th>Quarters</th>
<th>Forecast Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Out</td>
<td>ISU</td>
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<tr>
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<td>4.86</td>
<td>3.64</td>
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<tr>
<td>2</td>
<td>7.06</td>
<td>6.36</td>
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<tr>
<td>3</td>
<td>7.96</td>
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<tr>
<td>4</td>
<td>9.29</td>
<td>9.28</td>
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Actual price expected at the forecast price +/- the standard deviation 68% of the time.
### Fed Cattle Price Forecast Error, 1995-2004: Seasonal Index and Basis Adjusted Futures

<table>
<thead>
<tr>
<th>Quarters</th>
<th>Index Out Average</th>
<th>Index Std Dev</th>
<th>Futures Average</th>
<th>Futures Std Dev</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>5.24</td>
<td>0.05</td>
<td>3.86</td>
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<tr>
<td>2</td>
<td>-0.37</td>
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<td>0.59</td>
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<td>3</td>
<td>-0.11</td>
<td>6.29</td>
<td>0.95</td>
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<td>4</td>
<td>0.56</td>
<td>5.89</td>
<td>0.80</td>
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</table>

http://www.econ.iastate.edu/faculty/lawrence/

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William M. Edwards, Iowa State University
Insuring Iowa's Agriculture

Analyzing Livestock Risk Protection
Livestock Risk Protection (LRP)

- Coverage for hogs, fed cattle and feeder cattle
- 70% to 95% guarantees available, based on CME futures prices.
- Coverage is available for up to 26 weeks out for hogs and 52 for cattle.

Livestock Risk Protection

- Guarantees available are posted at: www.rma.usda.gov/tools/
- Posted after the CME closes each day until 9:00 am central time the next working day.
- Assures that guarantees reflect the most recent market movements.

Size of Coverage

Futures and options have fixed contract sizes
- Hogs: 400 cwt. or about 150 head
- Fed cattle: 400 cwt. or about 32 head
- Feeder cattle: 500 cwt., 60-100 head
- LRP can be purchased for any number of head or weight
Some Risks Remain

- LRP, LGM do not insure against production risks
- Futures prices and cash index prices may differ from local cash prices (basis risk)
- Selling weights and dates may differ from the guarantees

Expiration Date of Coverage

- LRP ending date is fixed. Price may change after date of sale.
- Hedge or options can be lifted at any time before the contract expires.

Who can benefit from LGM/ LRP?

- Producers who depend on the daily cash market or a formula related to it.
- Producers with low cash reserves.
- Smaller producers who do not have the volume to use futures contracts or put options.
- Producers who prefer insurance to the futures market. No margin account.
LRP Analyzer
- Covers swine, fed cattle, feeders
- Compares net revenue distribution
  - No risk protection
  - LRP
  - Hedge
  - Put options

Case Example
- Small cow herd producer will have 62 head of 650 pound steer calves to sell in 4 months.
- What price will LRP lock in?
- How much will it cost?
- How does LRP compare to futures?

Projected Net Revenue per Head

- LRP highest level
- PUT Options
- Hedge
- No Risk Protection
Projected Net Revenue per Head

Livestock Gross Margin
- Cattle
  - Calves
  - Yearlings
- Hogs
  - Farrow to finish
  - Finishing feeder pig
  - Finishing SEW pig

Livestock Gross Margin
Insures a "margin" between revenue and cost of major inputs
- Hogs
  - Value of hog - corn and SBM costs
- Cattle
  - Value of cattle - feeder cattle and corn
Protects against decreases in cattle/hog prices increases in input costs
LGM Hogs

- Farrow to Finish option
- Gross margin per hog, $g = 2.5 \times 0.74 \times \text{Lean Hog Price} - 13.22 \text{ bu.} \times \text{Corn Price} - 3 - (188.52 \text{ lb./2000 lb.}) \times \text{SoyMeal Price} - 3$

- Finish Only option
- Gross margin per hog, $g = 2.5 \times 0.74 \times \text{Lean Hog Price} - 10.19 \text{ bu.} \times \text{Corn Price} - 2 - (147.31 \text{ lb./2000 lb.}) \times \text{SoyMeal Price} - 2$

LGM-Cattle

- Uses futures markets to lock in the average expected gross margin for fed cattle to be sold in each of the next ten months
- Protects against decreases in live cattle prices and increases in feeder cattle prices and increases in feed costs

Yearling GM = 12.5 \times \text{Basis adjusted LC futures} - 7.5 \times \text{Basis adjusted FC futures} - 57.5 \times \text{Basis adjusted Corn futures}$

Calf GM = 11.5 \times \text{Basis adjusted LC futures} - 5.5 \times \text{Basis adjusted FC futures} - 55.5 \times \text{Basis adjusted Corn futures}$
Learn More About Risk Tools

- Livestock Revenue Protection
- Livestock Gross Margin
  - Factsheets
  - Premium calculator
- Livestock Futures and Options
- Historic basis patterns

For more information visit:
ISU Ag Decision Maker website
[www.extension.iastate.edu/agdm](http://www.extension.iastate.edu/agdm)
Decision file B1-50