Market Risk of Feeding Cows vs Yearling Steers: An Historical Perspective and a Simulated Future

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SCC-76
Econ & Mgmt of Risk in Ag & Nat Res
Background

- Fed Steer/Corn Price Ratio
  - 32 from 1996-2005
  - 18 at the present time
- 800 lb Yearling Steer/Live Fed Steer Price Ratio
  - 1.20 from 1996-2005
  - 1.11 the last two years
- Impact on Returns and Risk?
Estimated Nebraska Feedlot Returns ($/head)

This wk: -$137.46, Average last 13 wks: -$111.35, Average last 4 yrs: -$5.63
Feedlot Profitability

Estimated Nebraska Feedlot Returns ($/head)

This wk: -$137.46, Average last 13 wks: -$111.35, Average last 4 yrs: -$5.63
Background

- Most cull cows sold in November
  - Historical seasonal low in cow prices
  - Cows typically poorer body condition (thin)
  - Priced in lower market class
- Cows placed on feed for 90 days
  - Gain weight and improve body condition
  - Priced in higher market class
  - Seasonally prices are increasing
- Historically this has been a Profitable enterprise
  - Corn Prices have doubled in last two year
- Is this still a Profitable enterprise?
CULL Cow Price Indices
Sioux Falls, SD

Monthly Seasonal Indices

Lean  Boner  Breaker  White Fat

Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec

80.00  85.00  90.00  95.00  100.00  105.00  110.00
### Cull Cow Slaughter Grades

**Lowest to Highest Quality**

<table>
<thead>
<tr>
<th>USDA Grades</th>
<th>Market Class</th>
<th>% Lean</th>
<th>BCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canner</td>
<td>Lean 85-90%</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>Cutter</td>
<td>Boners 80-85%</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Boning Utility</td>
<td>Breakers 75-80%</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Breaking Utility</td>
<td>Premium White 70-75%</td>
<td>7-8</td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Percentage Price Increase Between Cull Cow Grades

<table>
<thead>
<tr>
<th></th>
<th>Sioux Fall</th>
<th>Boner</th>
<th>Breaker</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean</td>
<td>6.5%</td>
<td>11.0%</td>
<td></td>
<td>19.9%</td>
</tr>
<tr>
<td>Boner</td>
<td></td>
<td>4.2%</td>
<td></td>
<td>12.6%</td>
</tr>
<tr>
<td>Breaker</td>
<td></td>
<td></td>
<td></td>
<td>8.1%</td>
</tr>
</tbody>
</table>
Objectives

- Analyze Prices for 1996-2005 and for 2006-07
  - Cull cows, 800 lb Steers, Fed Steers
  - Corn grain and Alfalfa hay

- Compare historical returns, 1996-2005
  - Cull cows fed 90 days, Nov-Feb
  - Yearling Steers fed 143 days, Oct-Mar

- Simulate historical and future returns
Yearling and Fed Real Prices

Yearling Price

Fed Price

Cull Cow Real Prices

![Cull Cow Real Prices Chart]

- Nov Cull Price
- Feb Cull Price

3/15/2008
Feuz Cattle and Beef Market Analysis
Corn & Alfalfa Real Prices

[Chart showing the price trends of Corn and Alfalfa from 1996-97 to 2007-08.]
Cull Cow Ration & Performance

- **Ration**
  - Corn: 28.00 lbs/day
  - Alfalfa: 7.00 lbs/day
  - Supplement: 0.50 lbs/day

- **Performance**
  - 3.5 lb. ADG for 90 days
  - Increase BCS by 3.5 scores
  - Majority sell as Premium White Market Class
  - Remainder sell as Breakers
Yearling Steer Ration & Performance

- **Ration**
  - Corn 20.00 lbs/day
  - Alfalfa 6.00 lbs/day
  - Supplement 0.50 lbs/day

- **Performance**
  - 3.5 lb. ADG for 143 days
  - 800 lb in weight 1300 lb out weight
  - Sell for Average Live Weight Price
Other Cow Feeding Costs

- Veterinary & Supplies: $6.29
- Yardage: $23.90
- Death Loss .5%: $1.90
- Interest 8%: $8.72

Total: $40.81

These are the real $ averages for 1996-2005
Other Yearling Feeding Costs

- Veterinary & Supplies $11
- Yardage $38
- Death Loss .5% $7
- Interest 8% $24

Total $80

Average Total Cost of Gain $44/cwt

These are the real $ averages for 1996-2005
Cull Cow & Yearling Real Net Returns

Yearling Mean=$45.87  StdDev=$61.83
Cull Cow Mean=$81.19  StdDev=$33.65
Simulation

- Tested all Price series for normality
  - All normal
- Tested for correlation
  - Feeder, Fed, Corn prices correlated
  - Cull cow and Corn prices correlated
- Used Richardson’s Simetar procedure for a Multivariate Normal Distribution
- Used variability for first 10 years for simulation
- Used Mean of first 10 years for historic and used Mean of last 2 years for future simulations
Historic vs Future Cow Feeding Margin

CDF

Prob

0 50 100 150 200 250 300 350 400

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

histcowmrg futcowmrg
Historic vs Future Yearling Feeding Margin

CDF

Prob

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

0 100 200 300 400 500 600

histyrlmrg futyrlgmrg
Historic vs Future
Cow Total Cost of Gain

CDF

Prob

Histcowcog  Futcowcog
Historic vs Future Yearling Total Cost of Gain

CDF

Prob

histyrlcog  futyrlcog
Historic vs Future
Cow Feeding Net Return

CDF

Prob

-100 -50 0 50 100 150 200 250

Histcowret Futcowret
Historic vs Future
Yearling Feeding Net Return

CDF

Prob

Histyrret
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Feuz Cattle and Beef Market Analysis
Cow vs Yealing
Historic vs Future
Net Returns

CDF

Prob

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Feuz Cattle and Beef Market Analysis
Summary

- Current real cattle prices are consistent with past
- Current feeding margins are consistent with past
- Real corn prices are historically high
- Real costs of gain (cow & yearling) are historically high
- Historically feeding cows has been more profitable and less risky than feeding yearlings
- Future simulation predicts cow feeding still more profitable and less risky than yearling feeding