

# Factors Influencing Marketing Margins in Cattle and Beef Markets

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*Funded by USDA AFRI Prosperity for Small and Medium-Sized Farms and Rural Communities Program*

# Justification

- Lack of research on marketing margins in backgrounding and feeding phases of cattle production
- Estimating marketing margins in the presence of long production lags
- Homogeneous product – tight margins
- Economies of scale – small and medium-sized farms
- Examine relationships among margins and volatility of input prices

# Objectives

- Define the factors that influence marketing margins in the beef industry
  - Develop a conceptual model of marketing margins for backgrounding and feeding operations that explicitly incorporates realistic production lags
  - Quantify the impact of key variables on beef industry marketing margins

# Preliminary Results: Feeding Margin

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| <b>Variable Description</b>  | <b>Parameter Estimate</b> |
|------------------------------|---------------------------|
| Constant                     | 4.264                     |
| Supply of fed cattle         | -0.020**                  |
| Price of corn                | 18.399***                 |
| Wage rate index              | -23.158***                |
| Energy price index           | -0.590***                 |
| Live Cattle price volatility | 0.005                     |
| Corn price volatility        | 0.015***                  |

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\*\*\*, \*\*, \* Denote significance at 1, 5, and 10 percent respectively.

# Backgrounding Margin

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| <b>Variable Description</b>    | <b>Parameter Estimate</b> |
|--------------------------------|---------------------------|
| Constant                       | 0.142                     |
| Supply of feeder cattle        | 0.001                     |
| Price of corn                  | 7.232***                  |
| Wage rate index                | -0.007                    |
| Feeder Cattle price volatility | -0.008***                 |
| Corn price volatility          | 0.004                     |

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\*\*\*, \*\*, \* Denote significance at 1, 5, and 10 percent respectively.

# Estimates of Short-run Elasticities

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| <b>Variable</b>                 | <b>Feeding Margin</b> | <b>Backgrounding Margin</b> |
|---------------------------------|-----------------------|-----------------------------|
| Fed cattle supply               | -0.146                |                             |
| Feeder cattle supply            |                       | 0.082                       |
| Price of corn                   | 0.200                 | 0.185                       |
| Price volatility: Live Cattle   | 0.015                 |                             |
| Price volatility: Feeder Cattle |                       | -0.078                      |
| Price volatility: Corn          | 0.134                 | 0.087                       |

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# Summary of Key Results

- Behavior of supply/demand equations and marketing margins generally conforms to theoretical foundations established in the literature
- Estimates related to corn price suggest a larger impact on feeder cattle than on other levels of the market
- Impact of input and output price volatility on margins also appears greatest on feeder cattle sector

# Future Directions

- Further examine relationships among variables in the models developed here
  - Possible non-linearity in key variables such as corn price
  - Stability of the estimated parameters, especially in light of commodity market volatility since 2007
- Effect of assumptions related to length of production lags
  - Lags are not as determinate as modeled here. Is it possible to model variable production lags?



# Extending the Research

- This research will provide the foundation for education materials and training modules
- Making small and medium sized producers aware of the factors that influence their margins is key
- Integration of results into solutions producers can employ on their own operations is a priority
- Hands-on training, computer based tools and other Extension related output will provide the platform to achieve these goals

# Disseminating the Results

- Phase I:
- Build an online tool that incorporates study results into a more broad scope of risk management offerings, farm management concepts and financial analysis
  - Previous work on a decision aid for stocker/backgrounder operators proved fruitful and could be incorporated into the current studies offerings
  - <http://www.new.aaec.ttu.edu/stocker2/>

# Disseminating the Results

- Phase II:
- Provide comprehensive educational modules related to the study findings
  - Mississippi Cattlemen’s Association is planning “Cattlemen Colleges” to coincide with these events
  - Book-end modules with risk and financial management training
- Use video ‘webcast’ to broaden the reach
  - Archive videos on the web

# Disseminating the Results

- Phase III:
- Take modules to other states
- Utilize the growth of mobile technology by building a smartphone application that incorporates study results
  - Experience gained in recent application development