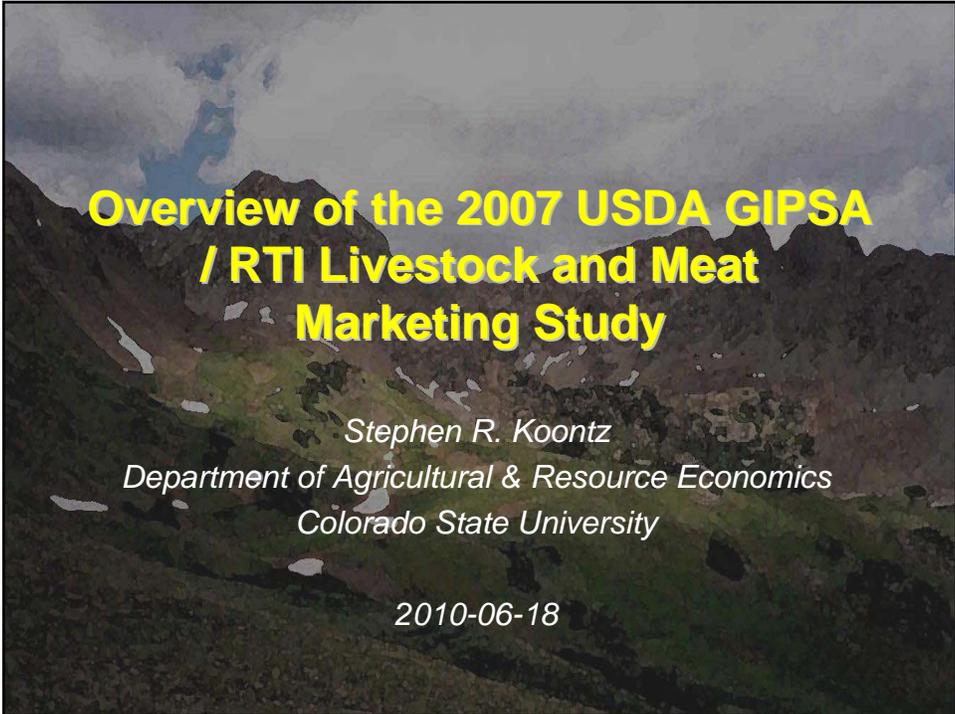
A photograph of a mountain range with green slopes and patches of snow under a cloudy sky. The text is overlaid on this image.

Economic Perspective of Packer Ownership & Captive Supply

*Stephen R. Koontz
Department of Agricultural & Resource Economics
Colorado State University*

2010-06-18

A photograph of a mountain range with green slopes and patches of snow under a cloudy sky. The text is overlaid on this image.

Overview of the 2007 USDA GIPSA / RTI Livestock and Meat Marketing Study

*Stephen R. Koontz
Department of Agricultural & Resource Economics
Colorado State University*

2010-06-18

The Study General Conclusions

- *“Alternative Marketing Agreements” not “Captive Supplies.”*
- *AMA use for 10/02-3/05 was 38% for cattle, 89% for hogs, and 44% for lambs.*
- *Packer-owned <5% for cattle & lamb but 20-30% for hogs.*
- *Little or no increase in AMA use is expected for cattle and hogs.*
- *Cash market is important – outlet for small producers and packers and reported cash prices are used by AMAs.*
- *AMA use is associated with lower cash market prices – larger association for hogs than cattle.*
- *Packers and producers benefit from AMA use – lower costs, risk management, and quality control.*
- *Restrictions on AMA use will have a negative economic impact on producers, packers, and consumers.*

Extensive Project

- *(1) Interviews, (2) Surveys of producers and packers, (3) Analysis of packer procurement and sales transactions data, (4) Analysis of plant-level packer P&L data, and (5) Modeling and simulation of system-wide economic wellbeing.*
- *(1) Beef, (2) Pork, (3) Lamb, and (4) Downstream.*
- *30 personnel from RTI International, AERC & Econsult, Wharton / Univ of Penn, Colorado State Univ, Iowa State Univ, North Carolina State Univ, Montana State Univ, and Kansas State Univ*
- *Three years from proposal writing to report completion.*
- *\$4.3 million awarded – but it was under budget.*

USDA United States Department of Agriculture
Grain Inspection, Packers & Stockyards Administration

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Livestock, Meat & Poultry

Livestock and Meat Marketing Study

In fiscal year 2003, GIPSA received \$4.5 million in appropriations for a broad study of marketing practices in the entire livestock and red meat industries from farmers to retailers, food service firms, and exporters. In June 2004, at the culmination of a competitive bidding process, GIPSA awarded a \$4.3 million contract to the RTI International (RTI) to conduct the study. RTI delivered an interim report in July 2005 describing alternative marketing arrangements and their terms, and reasons that industry participants give for using alternative arrangements. In February 2007, GIPSA released the final report with the results of the analysis of extent of use, price relationships, and costs and benefits of alternative marketing arrangements.

REPORTS

GIPSA Livestock and Meat Marketing Study Final Reports (February 2007)

- Volume 1: Executive Summary and Overview
- Volume 2: Data Collection Methods and Results
- Volume 2: Appendices (A, B, C - Survey Questionnaires) and (D, E, F - Transactions Data Collection)
- Volume 3: Fed Cattle and Beef Industries
- Volume 4: Hog and Pork Industries
- Volume 5: Lamb and Lamb Meat Industries
- Volume 6: Meat Distribution and Sales
- Glossary of Terms

Interim Report

- Spot and Alternative Marketing Arrangements in the Livestock and Meat Industries: Interim Report (August 2005)

ADDITIONAL INFORMATION

Related Topics

- Overview
- Payment Protection
- Scales and Weighing
- Regulated Entities
- Rights Under the P&S Act
- Industry Research
 - Archive
 - Assessments
 - Meat Marketing Study
 - Statistical Reports

Hot Links

- Summary Paper

<http://www.gipsa.usda.gov/GIPSA/webapp?area=home&subject=imp&topic=ir-nms>

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Interim Report

- Spot and Alternative Marketing Arrangements in the Livestock and Meat Industries: Interim Report (August 2005)

ADDITIONAL INFORMATION

- Frequently Asked Questions
- Review: Peer Reviewers; Data Collection Plans; Interim Report; Final Report
- Overview, including review of Transactions Data Collection (February 2004) and Survey of Alternative Marketing Arrangements in the Livestock and Meat Industries (December 2005)
- Information Collection Notice Comment Extension
- Notice of Request for New Information Collection
- Request for Proposals - As amended through February 4, 2004
- Request for Proposals - Amendment 4 (February 4, 2004)
- Request for Proposals - Amendment 3 (January 16, 2004)
- Request for Proposals - Amendment 2 (December 22, 2003)
- Request for Proposals - Amendment 1 (December 10, 2003)
- Pre-Solicitation Conference Program Announcement
- Request for Proposals
- Comments on Federal Register Notice
- Federal Register Notice and Request for Comments

Related Topics

- Overview
- Payment Protection
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 - Archive
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 - Statistical Reports
 - Enforcement Actions

Hot Links

- Summary Paper

Final Report (February 2007)

Interim Report (August 2005)

The Process:
Peer Reviews
Request for Proposals
Announcement
Comments to Notice
Notice

Last updated 07/13/2007

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Personal Background

- *BS in 1983 & MS 1985 from Virginia Tech.*
- *PhD in 1991 from University of Illinois.*
- *Faculty at Oklahoma State University (1989-1995), Michigan State University (1996-1997), and Colorado State University (1998-present).*
- *100% research emphasis on commodity markets and 90% of that is on cattle & beef markets.*
- *80% of research efforts involve supply and demand modeling – explaining & forecasting – 20% involves agribusiness decision making.*
- *Major research emphasis on concentration issues.*
- *1996 USDA Concentration Study participant.*

Summary of Cattle Volume of RTI – GIPSA LMMS Study

(1) Interviews –

- *Producers including cow/calf, stocker, and cattle feeding, trade associations and groups, alliances, packers, wholesalers/distributors, retailers, and food service*
- *Small number of interviews permitted but major players and “interesting” players within each segment*
- *Mostly very cooperative contacts*

- *Description of Company/Organization?*
- *Description of Procurement Methods Used?*
- *Characteristics of Procurement Methods?*
- *Description of Sales Methods Used?*
- *Characteristics of Sales Methods?*
- *Effect of Restrictions on Alternative Marketing Methods?*

Beef Producers and Packers Communicated

- ***AMAs helped them manage their operations more efficiently, reduced risk, and improved beef quality.***
 - *Cow/calf & stocker producers used for risk management – forward contracts to spread sales.*
 - *Feedlots identified cost savings of \$1 to \$17 per head from improved capacity utilization (>90% v <80%), personnel utilization, standardized feeding programs, and reduced financial requirements.*
 - *Packers identified, for example, a cost savings of \$0.40 per head in reduced procurement costs.*
 - *All agreed that without AMAs, higher returns would be needed to attract other investors and that beef quality would suffer in an all-commodity market place.*

(2) Surveys –

- *Cow/Calf Producers, Stocker Producers, Cattle Feeders, Packers, Wholesalers/Distributors/Exporters, Retailers & Food Service*
- *Number of surveys? 10% of each segment within the industry stratified into large & small – careful to represent small producers, packers, etc.*
- *Response rate? 8-40% with 25-33% being average. Large more responsive than small.*
- *Time period? 2004 base and 2005-06 administered.*
- *What are you doing? In the past, now, and in the future.*
- *Why are you doing it? What are the perceived benefits and costs to you and to the industry?*

Surveys – Reasons for AMA Use

- *Producers surveyed*
 - *The ability to buy/sell higher quality cattle,*
 - *Improve supply management, and*
 - *Obtain better prices.*
- *Packers surveyed*
 - *Improve week-to-week supply management,*
 - *Secure higher quality cattle, and*
 - *Allow for product branding in retail stores.*
- *No one was using AMAs because they had to...*

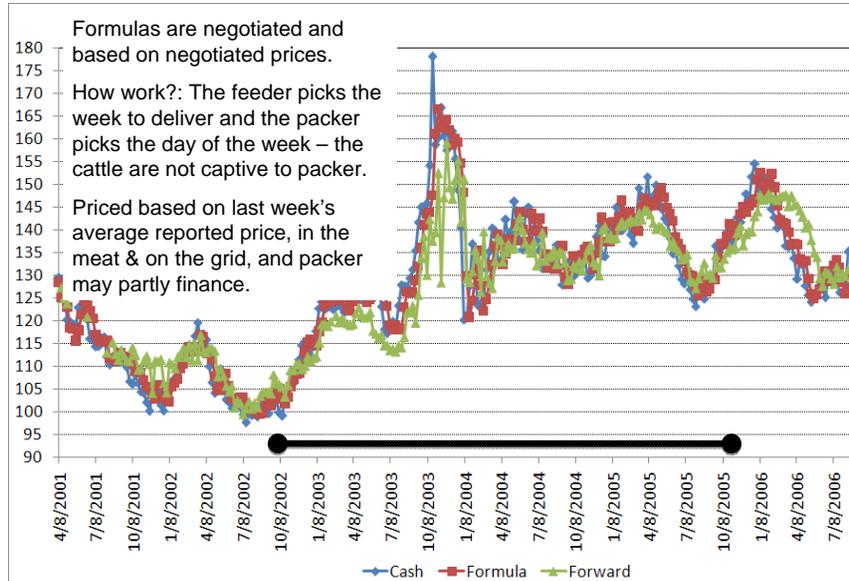
Surveys – Reasons for Cash Market Only

- *Producers surveyed*
 - *Independence and flexibility,*
 - *Quick response to changing market conditions, and*
 - *Ability to buy at lower prices and sell at higher prices.*
- *Packers surveyed*
 - *Independence and flexibility,*
 - *Quick response to changing market conditions, and*
 - *Securing higher quality cattle.*
- *It was not a finding that people wanted into an AMA but could not get in...*

(3) Transactions – procurement data analysis

- *2½ year time period: October 2002 through March 2005.*
- *From the 29 largest plants and included 58 million animals and 590,000 transactions.*
 - *61.7% cash*
 - *28.8% marketing agreement*
 - *4.5% forward contracts*
 - *5.0% packer-owned, other, or missing*
- *Important points:*
 - *Available in electronic format (MPR database),*
 - *Longest time period allowable by law,*
 - *Population versus sample, and*
 - *Plant-by-plant analysis.*

Cash, Formula, and Forward Prices – Dressed Beef



What did the analysis of procurement transactions data show?

- *Transactions prices can be well-explained by market-level supply and demand and characteristics associated with the pens in the transaction.*
- *AMAs measured at the plant level – as % plant capacity.*
- *Different types of AMAs examined separately.*
- *Cash, marketing agreement, and packer-owned prices similar.*
- *Auction higher and forward contract lower than cash prices.*
- *AMA cattle are **higher quality**. Direct trade cash cattle are the lowest quality. Auction cattle are the highest.*
- *AMA cattle have **equal or less risk** than cash cattle.*

What did the analysis of procurement transactions data show?

- *When AMA use increases cash prices decrease:*
 - 10% increase in AMA use (as % of plant capacity) is associated with a **\$0.40/cwt** of carcass weight decrease.
 - 10% increase in AMA use is associated with a **0.3%** decrease in cash price.
- *Impacts are economically small but statistically significant. Average transactions price of \$138/cwt.*
- *AMA use is not strategic – packers pull more from AMAs when more AMA cattle are available and when AMA cattle are cheaper.*
- *If AMAs were restricted to zero then cattle prices would have been higher by ½% or \$0.68/cwt of carcass weight for this time period with the model estimated...*

OCM newsletter Page 1 of 1




Honesty. Prosperity. Economic Liberty.

October 2007 Newsletter 1 | 2 | 1 | 1 | 2



Captive Supplies Caused Nearly 10% Decline In U.S. Net Farm Income
From OCM's General Council Michael Stumo

USDA numbers reveal the significant price hit you are taking on hogs and cattle because of captive supplies. In January, USDA released a report by the Research Triangle Institute on captive supplies.

This was a \$4 million study mandated by the 2002 Farm Bill, when the packer lobby blocked captive supply reform. USDA is hostile to making markets work well, and picked RTI and other academics to write a report saying things were just fine. RTI tried hard, even coining a new feel good term for captive supplies – "Alternative Marketing Arrangements" or AMAs. Who could be against marketing alternatives?

But the report itself shows a stunning decrease in prices caused by packer ownership and contracts. The study shows a \$69 per head price decrease for cattle and at least \$32 per head for hogs.

The USDA-commissioned report finds that 9% of hogs and 62% of cattle were sold on the open market from 2002 to 2005. The cattle number is almost certainly too high, but I will use those number for now.

Most cattle studies have found that each one percent increase in captive supplies is correlated with – or causes – a 140% to a 25% decrease in cattle prices. Using the USDA report numbers of 62% captive supplies (probably too low) and a low end .15% negative price impact, the price decline today is \$5.75 per hundred weight. In other words, you are receiving **\$69 per head less** (on a 1200 pound animal) than you would be in a free market.

The hog picture is worse. The USDA report found that each one percent increase in contract hogs causes – yes, causes – a spot price decline of .75%. The authors also said a one percent increase in packer owned hogs causes a spot price decline of .24%.

Assuming 20% of hogs marketed are packer owned, the negative price impact is \$4.80/cwt live, or \$13.44 per hog. Then adding the contracted hog effect, we get another \$43.28/cwt price depression (38% x .75) for a total of **\$48.30/cwt**. This is a tremendous price decline.

But let's assume the price effect is more like cattle, at about .15% for every 1% of captive supply. The price depression effect is \$11.63/cwt or **\$32.62 per head** for a 280 pound hog.

Commercial hog slaughter numbers for 2006 were 104.7 million head annual hog slaughter in 2006. Hog producer received **\$3.4 billion** less than they should have in a free market (at \$32.62/head price decline).

Commercial cattle slaughter numbers for 2006 were 33.7 million head. Cattle feeders received **\$2.3 billion** less than they should have in a free market (at \$69/head price decline).

To put this in perspective, net farm income for all commodities for the United States in 2006 was \$60.6 billion. Net farm income would have been nearly 10% higher if we had fair, open and competitive markets in livestock agriculture.MS

"But the report itself (the RTI-Livestock & Meat Marketing Study) shows a stunning decrease in prices caused by packer ownership and contracts."

"... \$5.75/cwt less..."

"... \$69 per head less..."

These calculations are not correct and the RTI project leader wrote Mr. Stumo and detailed the errors.

**It's not \$5.75/cwt.
It is 68¢/cwt.**

2007 study results very similar to the 1996 study and all other captive supply research.

http://www.competitivemarkets.com/news_and_events/newsletters/2007/oct/5StumoCaptiveSuppl... 11/6/2007

(4) Packer Plant-Level P&L Data

- *Data were requested from all packers.*
- *Data request limited to electronic format.*
- *Provided by 4 largest packers for all 21 plants.*
- *Provided by 5 small packers – but most were unusable.*
- *Monthly plant-level P&Ls.*
- *There were no problems securing the data.*
- *4 large packers were 83% of industry volume.*

What did the packer P&L data show?

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Average total cost per head (ATC)</i>	<i>\$138.61</i>	<i>10.7476</i>	<i>\$120.32</i>	<i>\$164.21</i>
<i>Average gross margin per head (AGM)</i>	<i>\$140.72</i>	<i>38.8241</i>	<i>\$22.62</i>	<i>\$211.98</i>
<i>Average profit per head (PPH)</i>	<i>-\$2.40</i>	<i>43.8242</i>	<i>-\$137.36</i>	<i>\$73.34</i>

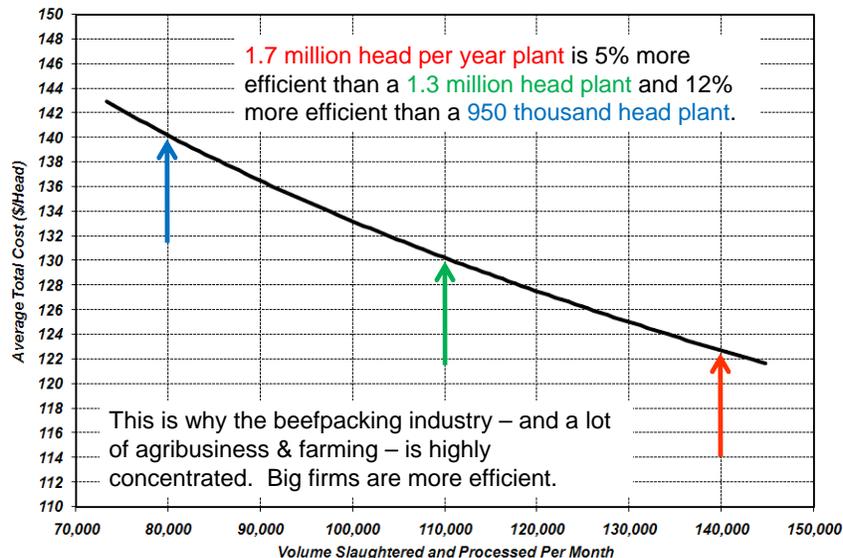
Loss because of irregular expenses relative to irregular revenues. There are very large losses during this 2½ year time period (10/02-3/05).

Almost every packer has a problem plant or plants. There is excess capacity in the packing industry – it's about 15-17%...

What did the packer P&L data show?

- Substantial economies of size (declining average total costs (ATC) of slaughter and processing per head)
 - Large plants have lower ATCs than small when both are operating close to capacity.
 - For all sized plants, ATCs decline over the whole range of volumes.
 - The representative plant operating at 95% of max observed capacity is 5% more efficient than when operating in the middle of the observed range of volumes and 12% more efficient than when operating at the low end of observed volumes.

Average Slaughter and Fabrication Costs Per Head for the “Representative Plant”



What did the packer P&L data show?

- *Plant costs are statistically significantly lower for those that procure through AMAs.*
 - *Costs are lower – all else constant – 0.9%.*
 - *Costs are lower because of higher volumes – 2.6%.*
 - *Costs are lower because of predictable supplies – 1.2%.*
- *Cost savings are approx 4.7% or \$6.50 per animal.*
- *Related to fixed costs and much less to variable costs.*
- *If AMAs were restricted to zero then cattle prices would decrease \$6.50/head.*

So we have...

1. *Interview results about benefits, costs, quality/demand, risk, etc – producers, packers, downstream.*
2. *Survey results about benefits, costs, quality/demand, risk, etc – producers, packers, downstream.*
3. *Statistical models describing prices and quality – and impacts specific to AMAs. (Market power)*
4. *Models describing packer cost changes – and specific to AMAs.*
 - *Costs and Benefits in different pieces...*
5. *We also have an economic model of the whole cattle and beef marketing system...*

(5) Market Impacts

- *Benefits of efficiency and quality improvements outweigh the costs associated with market power that AMAs provide packers.*
 - *Even if the complete elimination of AMAs would eliminate market power, the net effect would be reductions in prices, quantities, and producer and consumer surplus in almost all sectors of the industry because of additional costs and reductions in beef quality.*
 - *Collectively, this demonstrates that reducing the use of AMAs would result in economic losses for beef consumers and the beef industry.*

Market Impacts

- | <i>Impacts (Billion \$2003)</i> | <i>Short-run</i> | <i>Long-run</i> |
|---------------------------------|------------------|------------------------|
| – <i>Consumers</i> | -\$1.9 | -\$10.5 (4.4%) |
| – <i>Retail</i> | -\$0.5 | -\$6.1 (1.9%) |
| – <i>Wholesale</i> | -\$0.8 | -\$7.0 (5.0%) |
| – <i>Fed Cattle Producer</i> | -\$2.8 | -\$15.3 (6.8%) |
| – <i>Feeder Cattle Producer</i> | -\$5.4 | -\$21.2 (13.8%) |
| – <i>Total of All Producers</i> | -\$9.5 | -\$49.5 (5.9%) |
- *Long-run impacts are cumulative discounted 10-year impacts.*
 - *Feeder Cattle (Cow-Calf) Producers are “residual claimants...”*

Summary, Conclusions, and Questions

- *The most comprehensive study of the cattle & beef industry to date.*
- *The biggest study in terms of application of perspective, expertise and skills.*
- *There are costs and benefits to use of AMAs – but the benefits far outweigh costs.*
 - *Market power is present.*
 - *AMAs reduce costs and increase efficiency, manage and reduce risk, and improve quality.*
- *What is good science? Does the 2007 LMMS measure up? It does and that's not just opinion.*
- *I am grateful to be asked to speak at this meeting.*