

6. Analyzing Calf Market Price Incentives at Video Auctions

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As a graduate research assistant for the Department of Agricultural Economics at K-State, Zimmerman is focusing his research and coursework on agricultural marketing, production economics and economic analysis tools. His master's program goals are to better understand how cow-calf producers can be more profitable and use his research and critical thinking skills to benefit the beef industry. Zimmerman came to K-State with five years of experience working for Certified Angus Beef LLC. He graduated with honors from Kansas State University in May 2005, majoring in agricultural communications and journalism with minors in animal sciences and industry, agricultural economics and contemporary citizenship in agriculture.

Ted Schroeder

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Ted Schroeder conducts research and provides information on economic issues of concern to the livestock industry. Current work includes development of the cattle feeding return risk analyzer, benefits and costs of animal identification systems, improving value chain alignment, and consumer demand drivers. He directs the North American Institute for Beef Economics Research (NAIBER.org) and teaches Price Analysis and Forecasting.

Abstract/Summary

Research has identified specific ranch-level management practices to produce calves that meet modern consumer preferences for beef quality. Careful investment in genetics, health, nutrition, and animal management programs are necessary at the ranch to meet evolving buyers' needs and expectations. This study will determine the dollar magnitude of the various aspects of value-added production and prioritize these characteristics based on sale price influence through the Superior Livestock Video Auction. The most influential price determinants will be evaluated based on their tradeoffs and costs of adoption at the ranch using some ranch assumptions on size, location, etc. This approach will provide producers with improved information to enhance calf management decisions based on their own environment and cost structure.

Factors Influencing the Price of Value-Added Calves at Superior Livestock Auctions

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KANSAS STATE UNIVERSITY

Superior Livestock Auction

- Started in 1987 with satellite auction markets
- Largest livestock auction market in the U.S.
- Bi-weekly satellite, weekly Internet, and daily private treaty auctions
- Immediate to future delivery options



Why study video auction markets?

- Avoid uncontrollable marketing risks
- Guaranteed load lots
- Cattle from many locations with various management
- More buyers at auction
- Details about cattle, feed and vaccination history



What are the limitations with video auction studies ?

- Market conditions ... national \neq local
- Quality variation in sale lots
- Transparency about cattle, feed and vaccination history
- Costs vary ranch-to-ranch
- Premiums change over time



Video Auction Studies

- Blank et al. 2009
 - Regional price differences
 - 1997 to 2007 WVM sales
 - 4,116 lots, 571,000 steers 500-625 lbs.
 - 5,147 lots, 874,000 steers 750-925 lbs.
- Blank et al. 2006
 - 1997 to 2003 WVM sales
 - 1,979 lots, 280,000 steers 500-625 lbs.



Video Auction Studies (con't)

- Bailey et al. 1995
 - Buyer concentration
 - 1987 to 1992 SLA sales
 - 3 million cattle
- Bailey et al. 1993
 - 1987-1989 SLA sales
 - 1988-1989 OKC Regional
 - Steers and heifers
- Bailey et al. 1991
 - Video vs. regional market prices
 - 1987 SLA sales
 - 75,855 lots, 600-800 lbs. steers
- Coatney et al. 1996
 - Feeder cattle price differentials
 - 1992 SLA sales
 - 2,441 lots

Superior Livestock Auction Database

- Price
- Sale date
- Delivery date
- Base weight
- Lot size
- Sex
- Weaning
- Vaccination program
- Breed
- Frame
- Flesh
- Origin
- Horned
- Implant

Additions to the SLA Database

- Implant type, spayed, special breed stamp, bangs vaccinated (1996)
- % of black-hided cattle in the lot (2000)
- Natural-market eligible (2004)
- Age-and-source verification and program (2005 & 2006)
- Vaccinated for *Haemophilus somni* and *Moraxella bovis*, test negative for BVD-PI, NHTC-market eligible (2008)
- Superior Progressive Genetics (2009)

Research Objectives



- Quantify the effect of lot characteristics and value-added management on calf sale price
- Evaluate how outside market dynamics influence prices
 - Futures prices
 - Export markets
 - Choice/Select spread

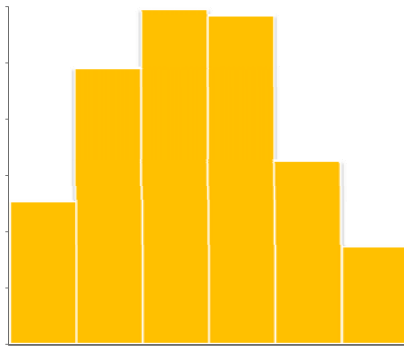
2008-2009 SLA Price Model

- Lot size
- Base weight
- Frame size
- Condition
- Weight variation
- Horns
- Implants
- NHTC-market eligibility
- Natural-market eligibility
- Vaccinations and weaning
- Breed influence
- Age-and-source verification
- Area of country
- Diff. b/w sale and delivery
- Nearby feeder calf futures

2008-2009 SLA Price Models

1. 450 to 750 lbs. steers

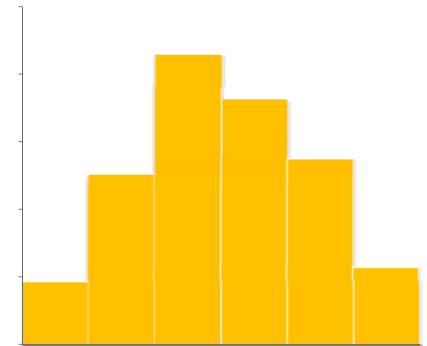
- 4,836 lots
- 601,604 head
- 583 lb. avg. weight
- 124 head avg. lot size
- 33.0% weaned calves
- $0.7847 = R^2$



2008-2009 SLA Price Models

2. 400 to 700 lbs. heifers

- 3,045 lots
- 353,235 head
- 545 lb. avg. weight
- 116 head avg. lot size
- 34.0% weaned calves
- $0.7309 = R^2$



Implants & Related Markets

Variable	Steers	Heifers
Natural-market eligible	\$0.26	\$0.50*
NHTC-market eligible	\$1.51*	\$1.54*
Unknown or some implants	(\$1.27)*	(\$0.92)*
Implanted	\$0.24	\$0.27

** Statistically different than zero at the 5% confidence level or better*

Vaccinations & Weaning

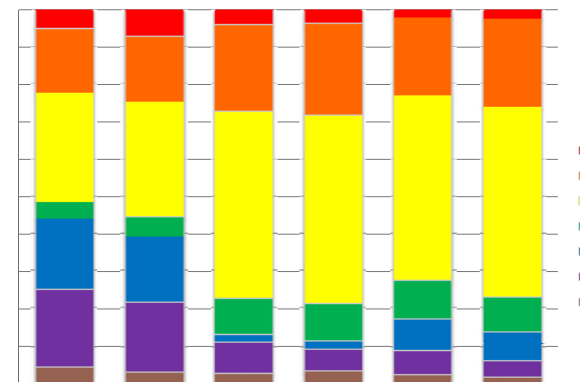
Variable	Weaned	Steers	Heifers
VAC 24	No	\$1.71*	\$1.31*
VAC 34	No	\$3.63*	\$2.45*
VAC 34+	No	\$3.63*	\$2.75*
VAC 45	Yes	\$7.66*	\$6.72*
VAC PreCon	Yes	\$8.94*	\$5.75*
One respiratory vaccination	No	\$1.34*	\$0.56
Multiple respiratory vaccinations	No	\$2.20*	\$1.84*
Weaning for non-program vaccination	Yes	\$4.96*	\$4.52*

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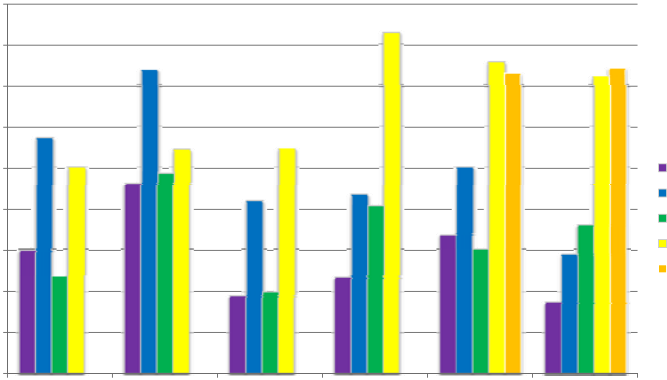
Steer Vaccination and Weaning Program Value



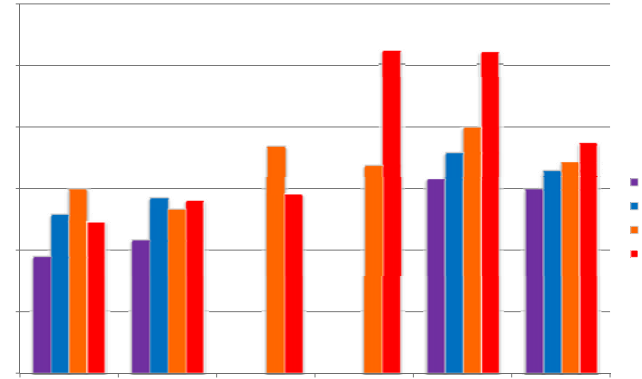
Steer Vaccination Programs by Percent of SLA Lot Sales



Program Premiums



Premiums

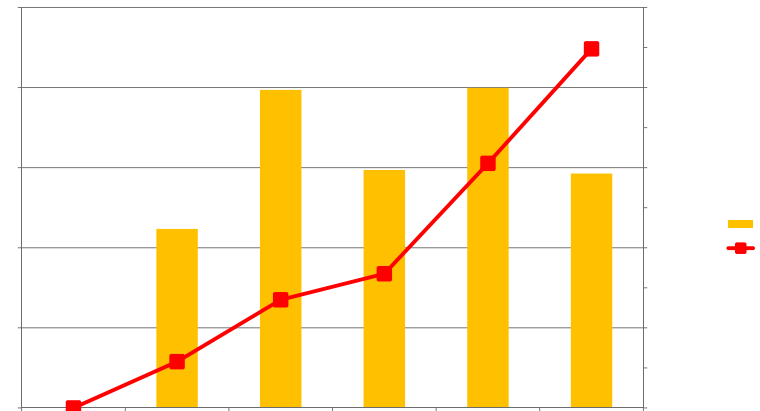


Specialty Vaccinations & Programs

Variable	Steers	Heifers
Pinkeye vaccinated	\$1.16*	\$1.03*
<i>Haemophilus somni</i> vaccinated	\$0.36*	\$0.13
Bangs vaccinated	N/A	(\$0.47)*
Tested BVD-PI Negative	(\$0.12)	\$0.10
Age-and-Source Verification	\$1.60*	\$1.65*

* Statistically different than zero at the 5% confidence level or better

Steer Age and Source Verified Sale Lot and Premium Trend

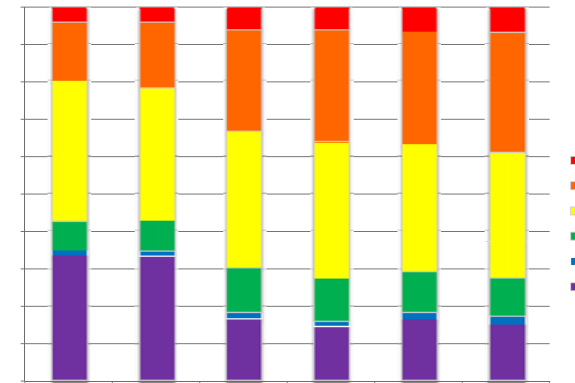


Aggregate Breed Influence

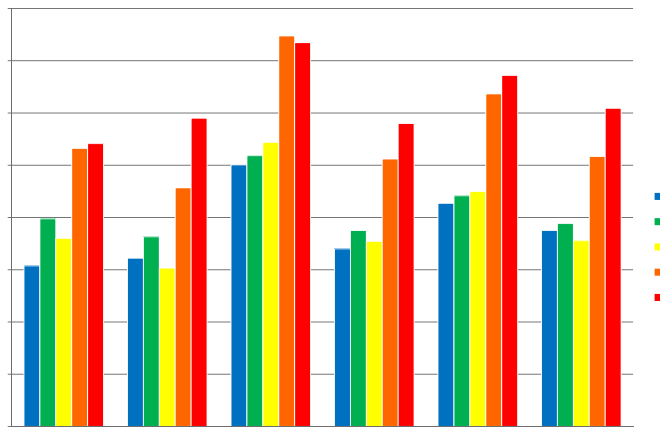
Variable	Steers	Heifers
English & English-Cross	\$3.49*	\$3.25*
Continental & Continental-Cross	\$4.05*	\$2.73*
English-Continental-Cross	\$4.09*	\$3.90*
Black & Black-White-Faced	\$5.80*	\$5.37*
Predominantly Angus	\$6.51*	\$5.97*
Predominantly Red Angus	\$6.61*	\$13.02*

** Statistically different than zero at the 5% confidence level or better*

Steer Breed by Percent of SLA Lot Sales



Steer Breed Influence Premiums



Region of Sale Lot

Variable	Steers	Heifers
West	(\$3.98)**	(\$3.31)**
Rocky Mountain / North Central	\$0.87**	\$0.86**
Southeast	(\$8.45)**	(\$7.98)**

**** Statistically different than zero at the 1% confidence level or better**
*** Statistically different than zero at the 5% confidence level or better**

Market Characteristics

Variable	Steers	Heifers
Difference between sale and delivery date	(\$0.02)**	(\$0.03)**
Feeder calf futures contract#	\$0.80**	\$0.77**

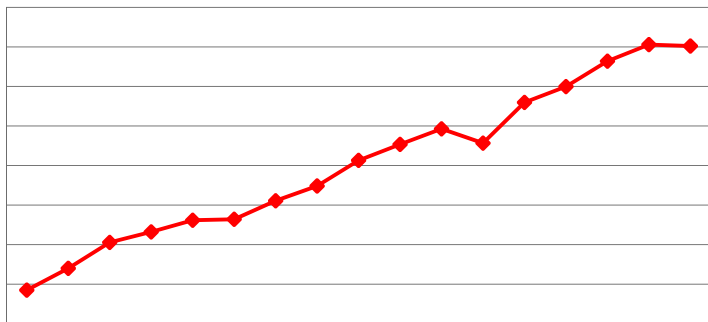
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Where are the price differences coming from?

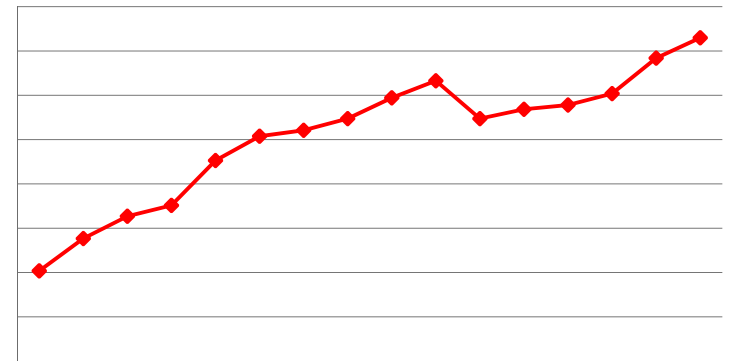
- Trends in high-quality beef production
- Biological changes in the U.S. cowherd
- Beef trade demands
- The trickle down effect of fluctuating in beef demand



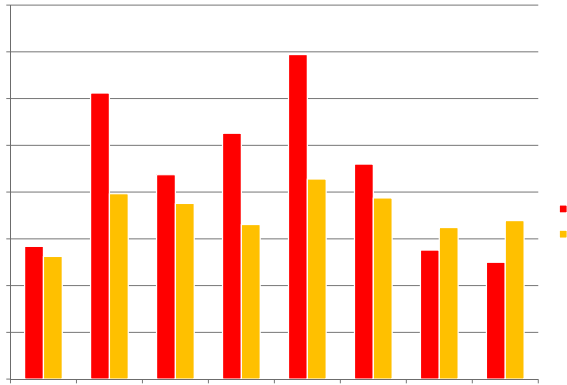
Total Carcasses



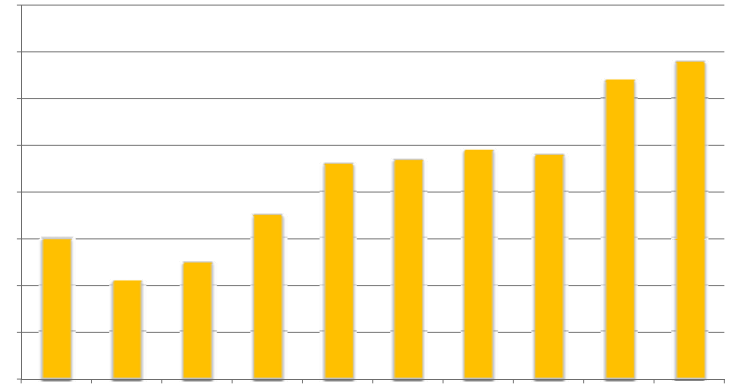
Total Upper 2/3 Choice Carcasses



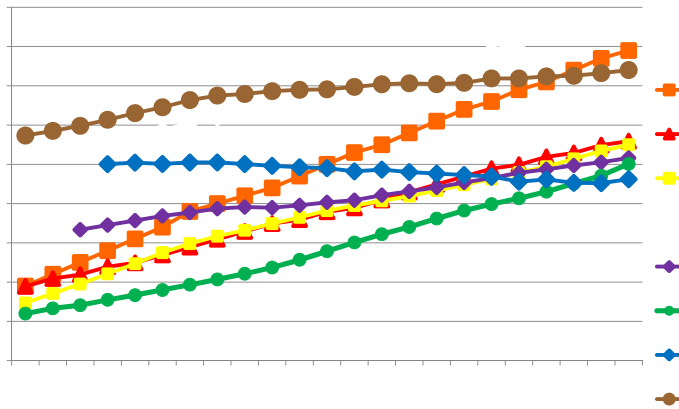
Annual Boxed Beef Price Spreads



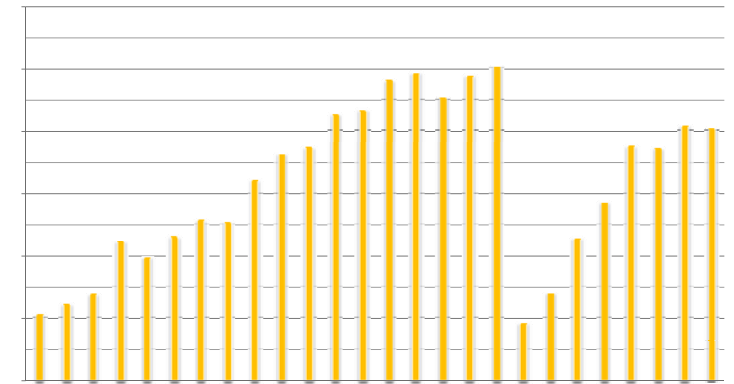
Number of Angus Beef Brands



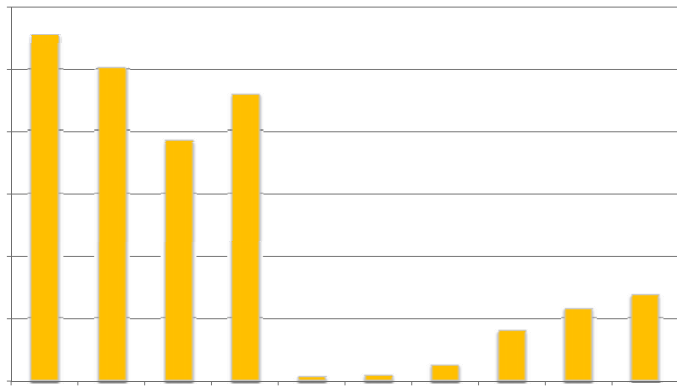
Across Breed Yearling Weight LPDS



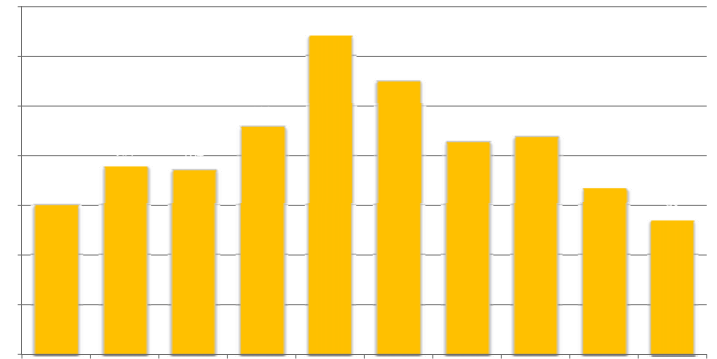
Total U.S. Beef and Veal Exports



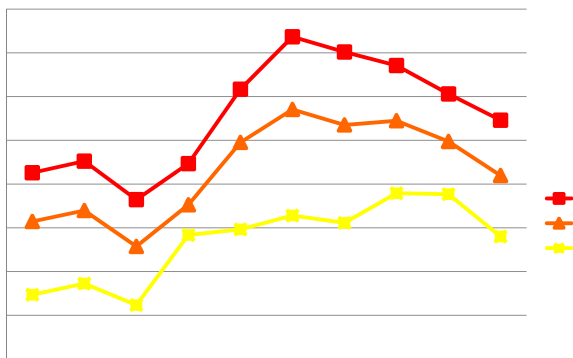
U.S. Beef and Veal Exports to Japan



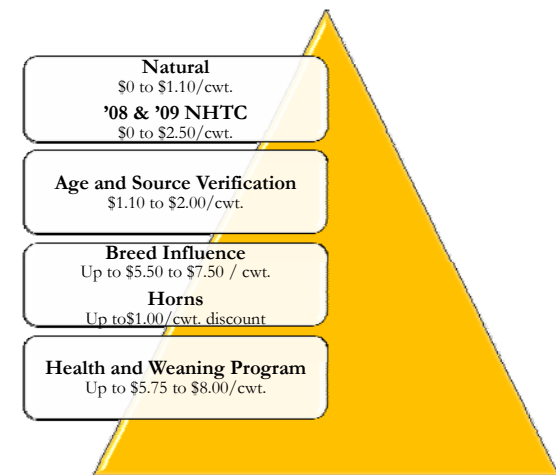
U.S. Beef Demand Index



Annual Average Cattle Prices



Profit Opportunities?



Marketing the Details

Lot #1



Lot #2



Marketing the Details

Lot #1

Variable	Value (\$/cwt.)
Natural-eligible	\$0.47
VAC 45	\$6.71
Predominantly Angus	\$5.97
TOTAL	\$13.15

Lot #2

Variable	Value (\$/cwt.)
Not implanted	\$0
Complete vaccination	\$1.92
Weaned	\$4.40
Black & Black-White Faced	\$5.37
TOTAL	\$11.69

The value difference b/w Lots #1 and #2

\$8.03 per head

What do we know?

- Age and weight distinctions are blurred
- Value-added practices are bundled in nature
 - Weaned vs. VAC Program
- Details make a significant price difference
 - Blacks vs. Angus
 - Not implanted vs. Natural



Questions?

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