

2012 ALABAMA
COW-CALF
CONFERENCE

*Meeting Global Beef
Demand One Cow and
Calf at a Time*

Friday, June 15, 2012

Ham Wilson Livestock Arena
on the Auburn University
Campus



Drivers and Implications of Cow-Calf Profitability Differences Across Operations

**Glynn Tonsor &
Kevin Dhuyvetter**

**Dept. of Agricultural Economics
Kansas State University**





Cow-calf profitability drivers...

- Analysis of KFMA cow-calf enterprise analysis returns
 - 1979-2010 all operations (examine time effect)
 - 2006-2010 operations with at least three years of data (examine producer effect)
- Paper available on web (www.agmanager.info)



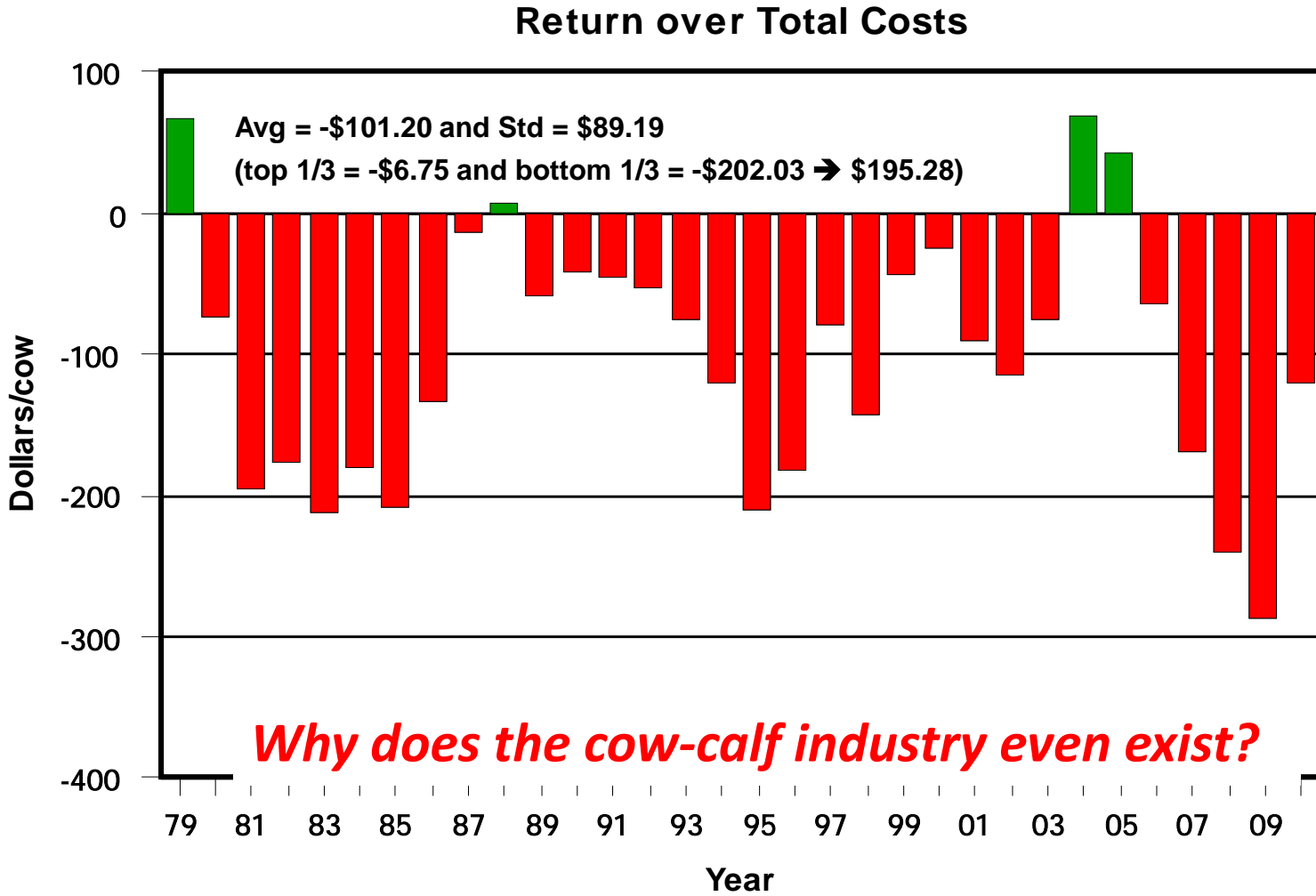
Differences Between High-, Medium-, and Low-Profit Producers:

An Analysis of the Kansas Farm Management Association
Beef Cow-Calf Enterprise

Kevin C. Dhuyvetter
Department of Agricultural Economics, Kansas State University
June 2011



Average returns are highly variable over time...



Source: Kansas Farm Management Association (KFMA) Annual Enterprise Analysis Reports



Financial importance of cow-calf operation...

Contributions to Income and Labor Input

Reason	Percent of Operations				All
	Herd Size (Number of Beef Cows)				
	1-49	50-99	100-199	200+	
Primary source of income	5.3	24.1	42.8	65.0	14.3
Supplemental source of income	78.0	68.3	50.9	31.7	71.9
Other	16.7	7.6	6.3	3.3	13.8

Source: USDA NASS APHIS, Beef 2007-08, NAHMS report.

An important characteristic of the beef cow-calf industry is that many participants are not motivated exclusively by profit from this enterprise ...



... and it shows in their management practices.

Castration					
	Herd Size (Number of Beef Cows)				
	1-49	50-99	100-199	200+	All
Operations that castrated any bull calves before sale					
Percent of operations	50.3	75.0	85.1	95.3	59.2

Implanting Calves with a Growth Promotant Prior to or at Weaning					
Implant Practice	Percent of Operations				
	Herd Size (Number of Beef Cows)				
	1-49	50-99	100-199	200+	All
Any calves	7.0	19.9	27.3	31.1	11.9
Heifers intended for replacement	2.1	6.7	9.7	9.8	3.8
Other calves (nonreplacement)	6.7	19.7	25.2	30.8	11.4

Source: USDA APHIS, Beef 2007-08, Part I: Reference of the Beef Cow-calf Management Practices in the United States, 2007-08



Returns are more variable across producers...

Beef Cow-calf Enterprise, 2006-2010 (min of 3 years)*

	All Farms	Profit Category			Difference between High 1/3 and Low 1/3		
		High 1/3 Head / \$	Mid 1/3 Head / \$	Low 1/3 Head / \$	Absolute	%	
Number of Farms	88	29	30	29			
Labor allocated to livestock, %	36.9	47.3	32.0	31.5			
Number of Cows in Herd	134	187	131	85	103	121%	
Number of Calves Sold	122	173	118	77	96	126%	
Weight of Calves Sold	576	587	570	573	14	3%	
Calf Sales Price / Cwt	\$105.99	\$107.19	\$105.07	\$105.73	\$1.46	1%	
Gross Income	\$517.70	\$561.41	\$525.20	\$466.24	\$95.16	20%	
Feed	\$353.91	\$306.48	\$361.24	\$393.76	27.6% -\$87.28	-22%	34.9%
Interest	\$123.81	\$106.20	\$124.66	\$140.53	-\$34.33	-24%	13.7%
Vet Medicine / Drugs	\$18.99	\$18.25	\$17.92	\$20.84	-\$2.60	-12%	1.0%
Livestock Marketing / Breeding	\$13.01	\$10.86	\$13.24	\$14.93	-\$4.07	-27%	1.6%
Depreciation	\$34.39	\$25.53	\$33.96	\$43.71	-\$18.18	-42%	7.3%
Machinery	\$71.05	\$56.93	\$72.72	\$83.46	-\$26.54	-32%	10.6%
Labor	\$107.81	\$86.28	\$91.21	\$146.52	72.4% -\$60.24	-41%	24.1%
Other	\$36.20	\$25.87	\$40.22	\$42.38	-\$16.50	-39%	6.6%
Total Cost	\$759.19	\$636.40	\$755.16	\$886.14	-\$249.74	-28%	
Net Return to Management	-\$241.48	-\$74.99	-\$229.97	-\$419.89	\$344.90		

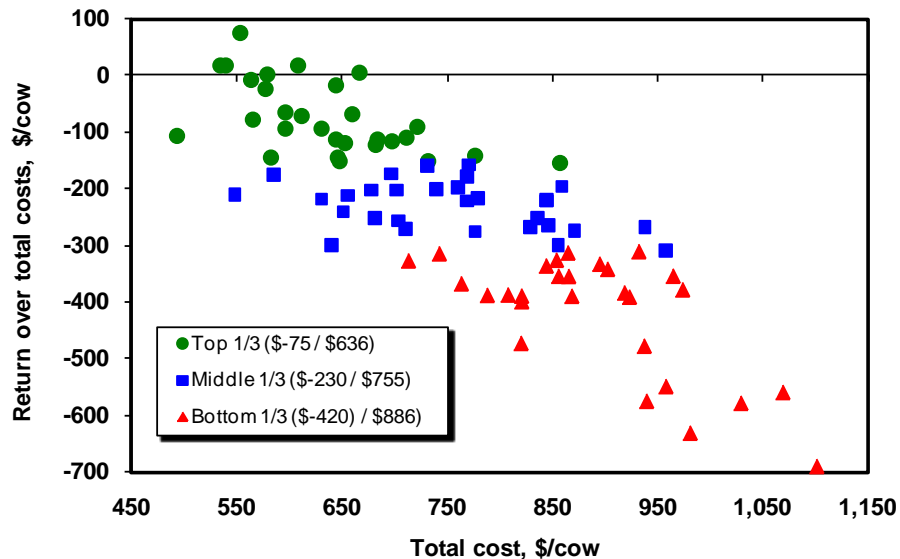
* Sorted by Net Return to Management (Returns over Total Costs) per Cow

Compared to \$195 between top and bottom third years.

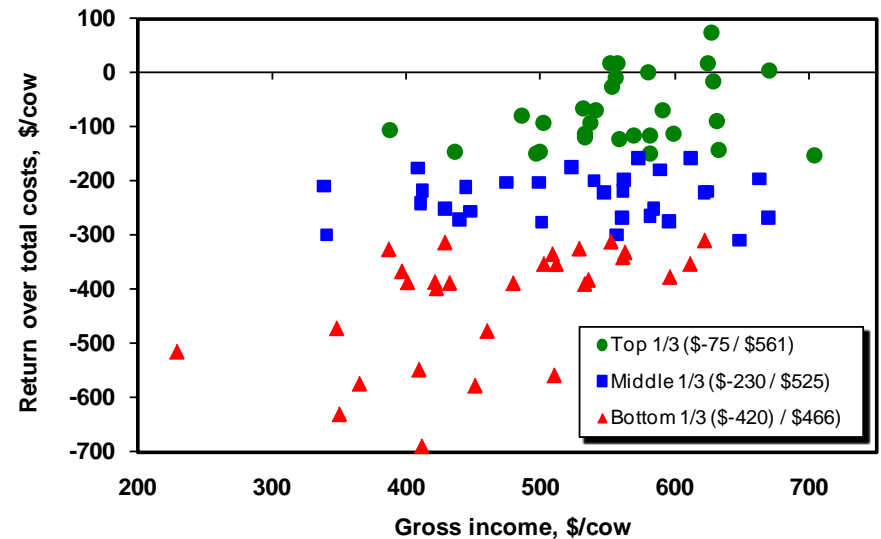
Cow-calf profitability drivers...

- Returns are more variable across producers at a point in time than they are on average over time
 - even in “hard times” some producers are profitable;
 - similarly, in “good times” some producers lose money...
- Cost differences explain a bigger portion of profitability differences across producers than does income differences

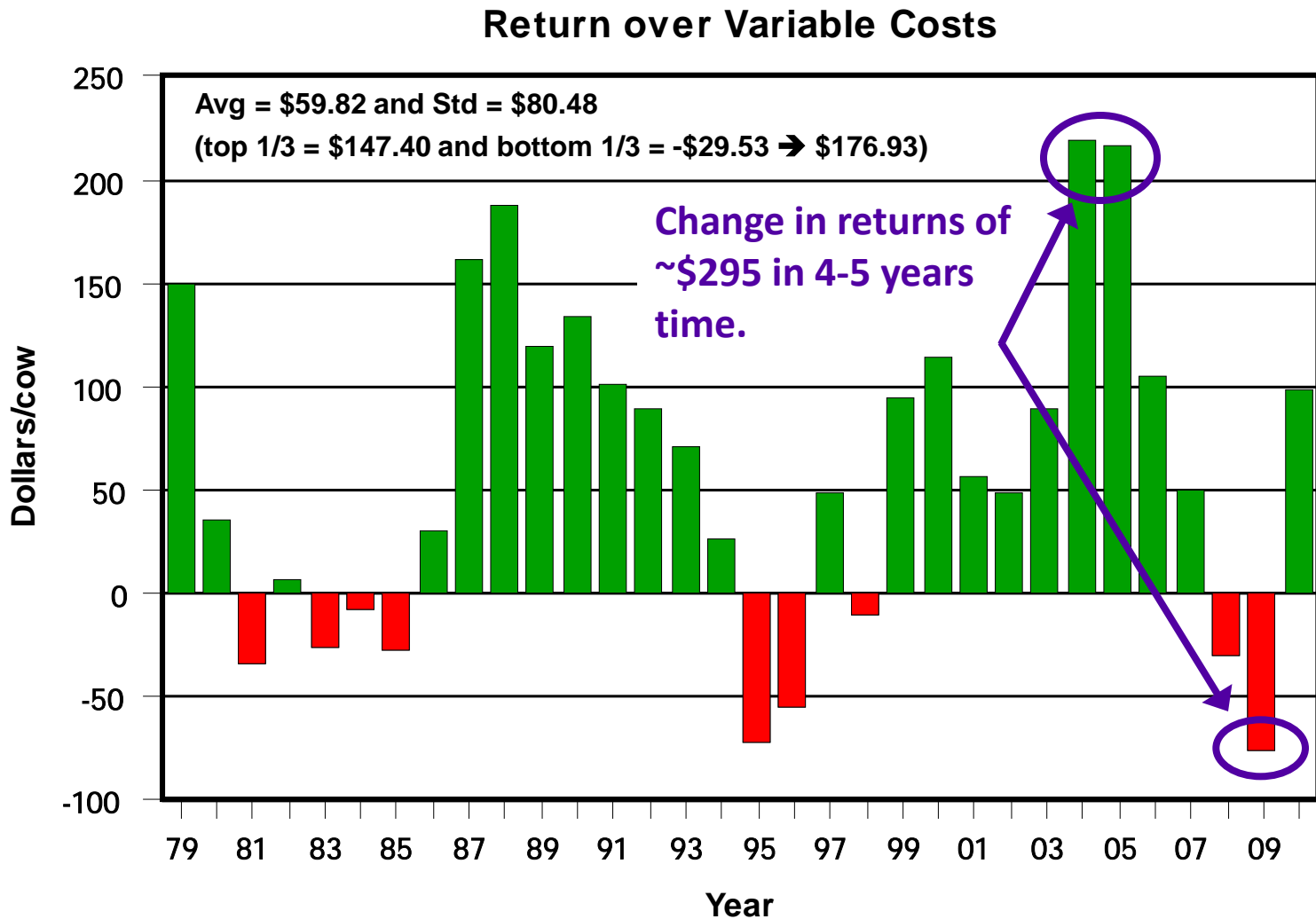
Profitability vs. total cost ($r=-0.82$)



Profitability vs. gross income ($r=0.52$)



Similar variability with returns over VC...



Returns over VC are slightly less variable...

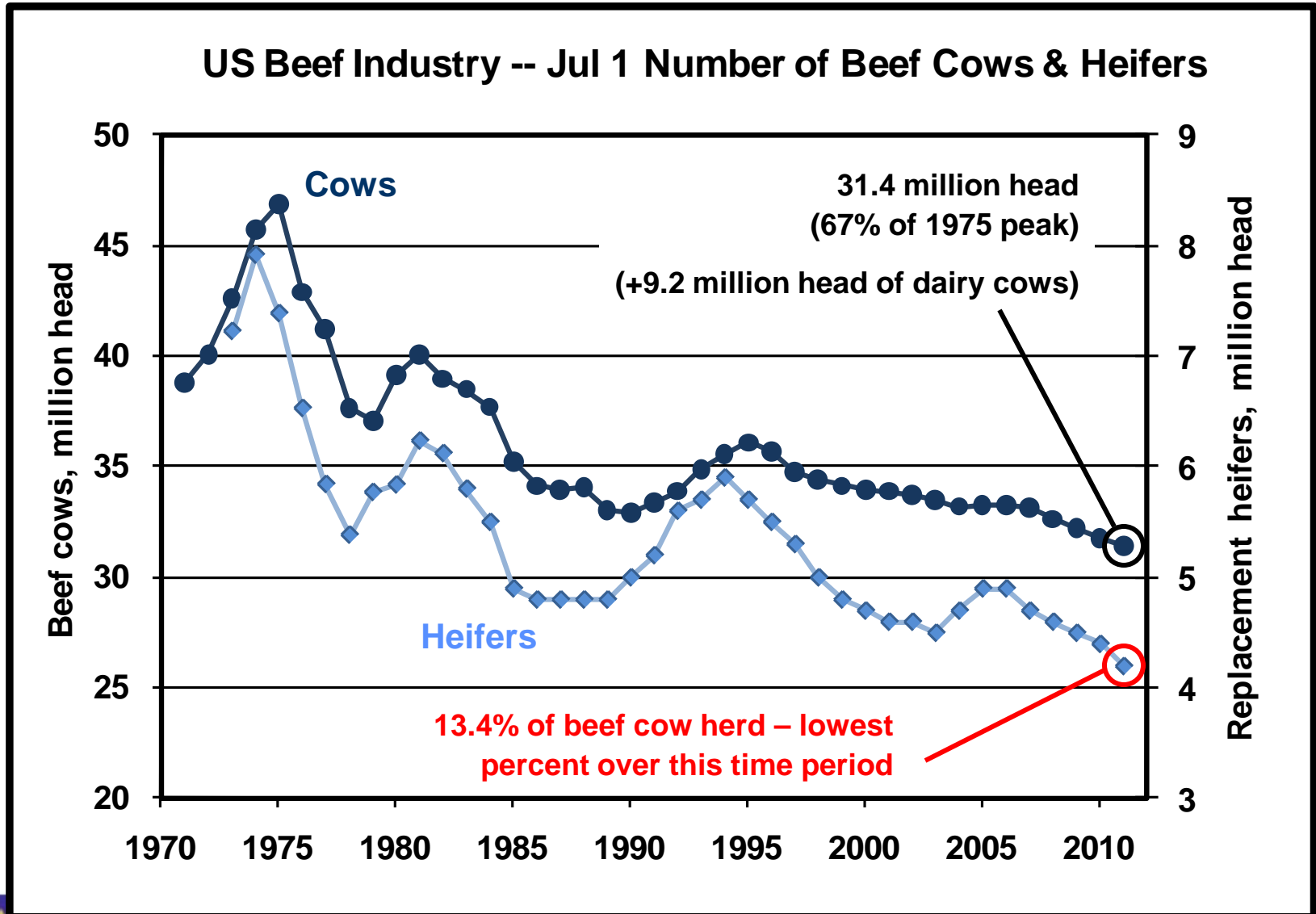
Beef Cow-calf Enterprise, 2006-2010 (min of 3 years)*

	All Farms	Profit Category			Difference between High 1/3 and Low 1/3		
		High 1/3 Head / \$	Mid 1/3 Head / \$	Low 1/3 Head / \$	Absolute	%	
Number of Farms	88	29	30	30			
Labor allocated to livestock, %	36.9	46.2	39.0	25.3			
Number of Cows in Herd	134	165	124	114	51	45%	
Number of Calves Sold	122	153	114	101	51	51%	
Weight of Calves Sold	576	595	570	565	29	5%	
Calf Sales Price / Cwt	\$105.99	\$106.24	\$106.95	\$104.74	\$1.51	1%	
Gross Income	\$517.70	\$567.55	\$532.72	\$452.31	\$115.24	25%	
Feed	\$353.91	\$307.04	\$367.32	\$386.91	43.8% -\$79.87	-21%	54.0%
Interest	\$28.12	\$20.39	\$27.77	\$36.20	-\$15.81	-44%	10.7%
Vet Medicine / Drugs	\$18.99	\$16.93	\$18.53	\$21.53	-\$4.60	-21%	3.1%
Livestock Marketing / Breeding	\$13.01	\$11.18	\$11.78	\$16.13	-\$4.95	-31%	3.3%
Depreciation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a	0.0%
Machinery	\$71.05	\$56.61	\$74.54	\$81.89	-\$25.27	-31%	17.1%
Labor	\$10.72	\$11.73	\$5.71	\$14.91	56.2% -\$3.18	-21%	2.2%
Other	\$36.20	\$27.06	\$40.19	\$41.22	-\$14.16	-34%	9.6%
Total Variable Cost	\$532.02	\$450.94	\$545.85	\$598.78	-\$147.85	-25%	
Return over Variable Costs	-\$14.31	\$116.61	-\$13.12	-\$146.47	\$263.08		

* Sorted by Net Return to Management (Returns over Variable Costs) per Cow

Compared to \$175 between top and bottom third years.

U.S. beef cow inventory is at lowest level in 40+ years, is now the time to be expanding?



Outlook for cow-calf sector...

Food and Agricultural
Policy Research Institute

University of Missouri

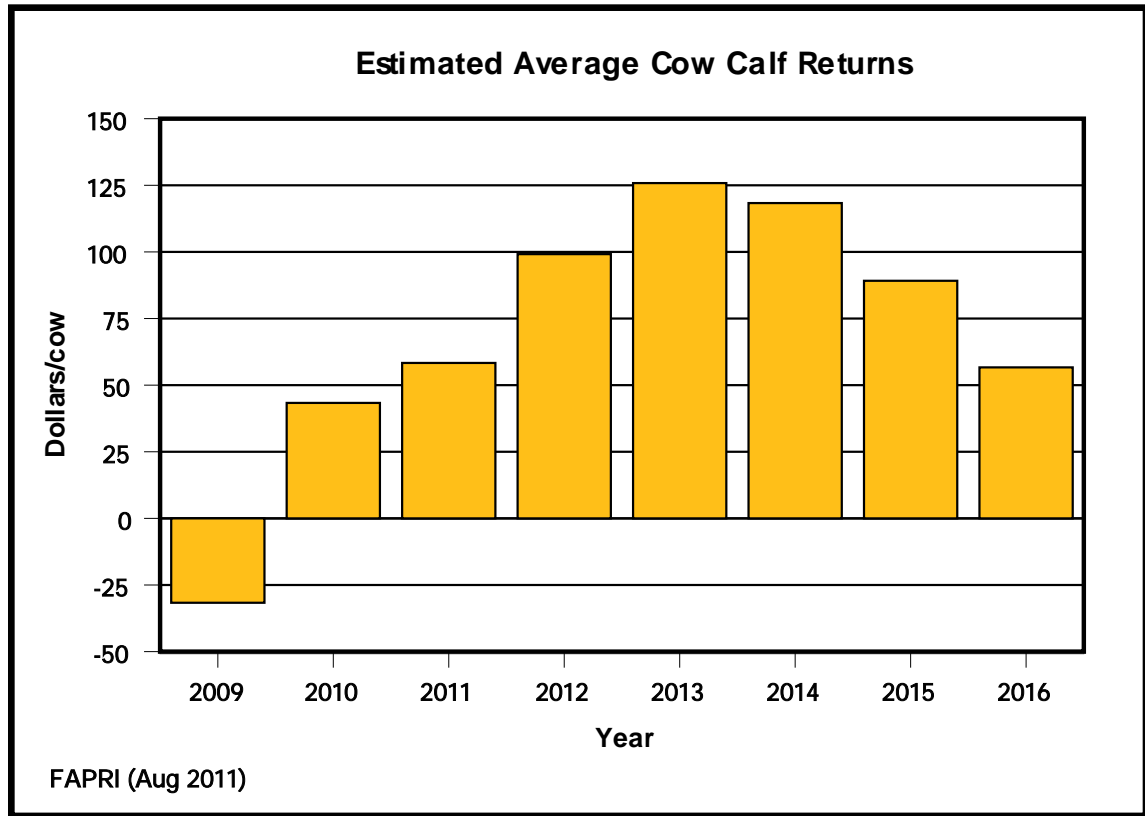
August 2011

FAPRI-MU August 2011 Baseline Update for US Agricultural Markets

FAPRI-MU Report #10-11

Providing objective analysis for more than 25 years
www.fapri.missouri.edu

**Things look quite positive for the
cow-calf sector in coming years ...**



So the question is, how much can I pay for a replacement?



Build herd -- How much can I pay for a heifer/cow?

KSU-Beef Replacements.xls --- A spreadsheet program to evaluate the economic value of purchasing beef replacements females.
Version 1-16-12

INPUTS vs CALCULATED VALUES
In the Price and weights and Net Present Value tabs all blue numbers are inputs and all black numbers are calculated from these inputs.

DESCRIPTION OF INPUTS:
Several input cells (i.e., blue number) have a red diamond in the upper right hand corner of the cell. By moving your mouse cursor over this diamond, a brief description of the input will be displayed on the screen.

MACROS
This spreadsheet uses macros to print the three different pages, however printing can also be done manually by highlighting the desired range and using the menu print commands.

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Introduction | Prices and weights | Net present value | Prices and weights (2)

KSU-Beef Replacements.xls

developed to help producers consider how much they can pay for replacement females given various assumptions.

(Excel spreadsheet available on www.AgManager.info)

Build herd -- How much can I pay for a heifer/cow?

Average cow costs of middle 1/3 = \$756

Input Assumptions				Print Information
Number of replacements purchased	100	Percent marketable calves (1 - death loss)	97.0%	
Year of purchase	2012	Annual cow death loss	0.5%	
First year for calf sales	2012	Annual cull rate	12.0%	
Cull cow weight, lbs/hd	1,250	Annual inflation rate on costs	1.0%	
Annual cow costs, \$/year	\$756	Annual increase in average weaning weight	0.0%	
Price scenario to use (1-3) (KCD Adj FAPRI)	1	Discount rate (interest rate)	6.5%	
Weaning weight scenario to use (1-3)	1			

Net Present Value Analysis

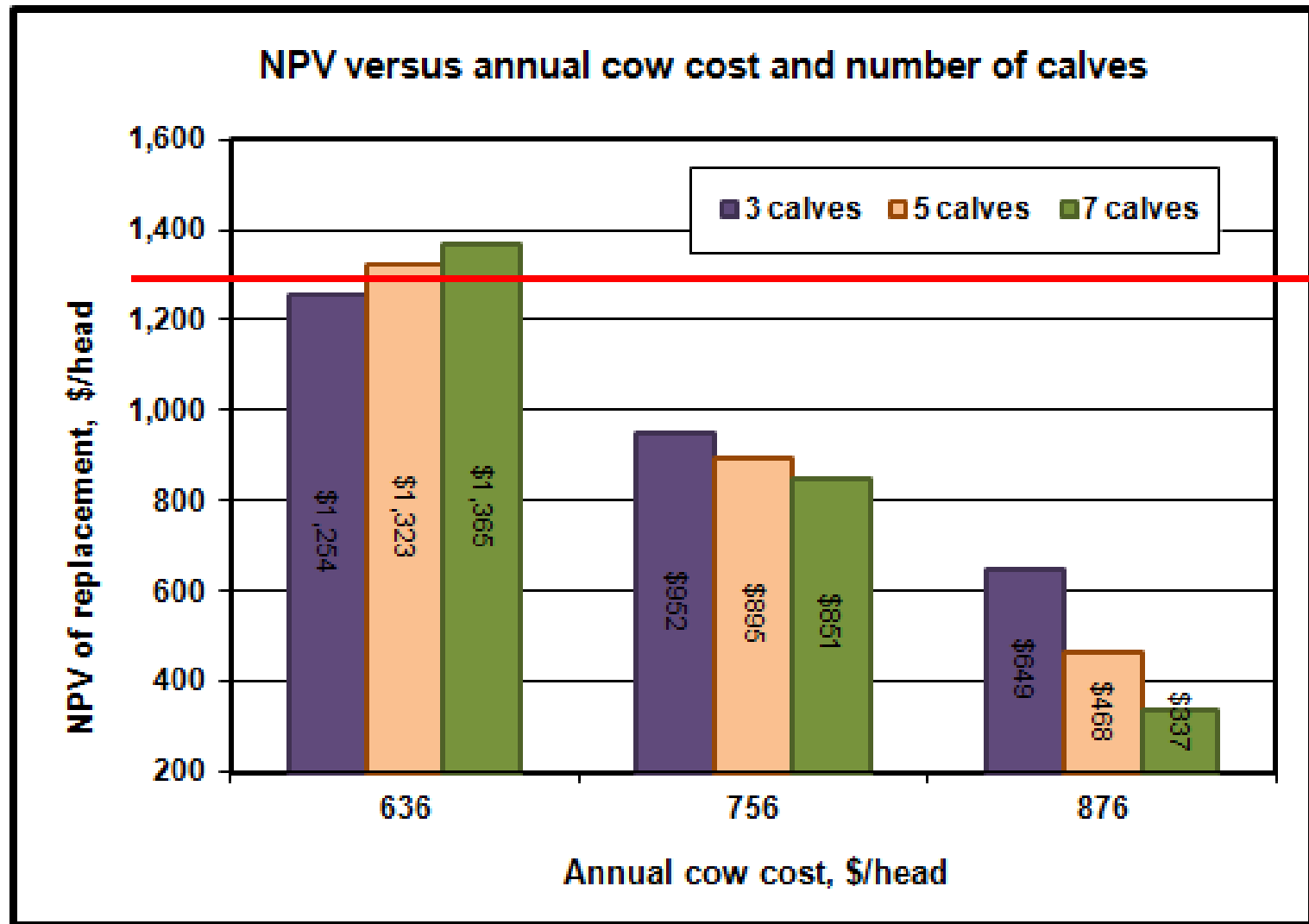
Year	Cows at		Prices, \$/cwt		Calf Income	Cull Income		Cost	Cost Adj.	Net Income	Discount factor	NPV**	
	BOY*	Calf	Calf wt	Calf		Cull	Annual						Age
2012	100.0	1	542	\$147.85	\$72.16	\$777	\$108.24	\$794	\$756	\$0	\$130	1.0000	\$923
2013	87.5	2	552	\$156.83	\$72.99	\$735	\$95.80	\$703	\$668	\$0	\$162	0.9390	\$942
2014	76.6	3	562	\$156.72	\$73.04	\$654	\$83.88	\$612	\$590	\$0	\$148	0.8817	\$952
2015	67.0	4	567	\$153.27	\$69.95	\$565	\$70.29	\$516	\$522	\$0	\$113	0.8278	\$933
2016	58.6	5	572	\$147.13	\$66.68	\$479	\$58.63	\$425	\$461	\$0	\$76	0.7773	\$895
2017	51.3	6	572	\$146.68	\$64.84	\$417	\$49.88	\$365	\$408	\$0	\$60	0.7299	\$875
2018	44.9	7	567	\$145.72	\$63.90	\$360	\$43.02	\$312	\$360	\$0	\$43	0.6853	\$851
2019	39.3	8	565	\$145.12	\$62.95	\$312	\$37.08	\$268	\$318	\$0	\$31	0.6435	\$830
2020	34.4	9	562	\$147.98	\$63.46	\$277	\$32.71	\$238	\$281	\$0	\$29	0.6042	\$819
2021	30.1	10	559	\$151.16	\$64.73	\$246	\$29.19	\$210	\$249	\$0	\$27	0.5674	\$810

* BOY = Beginning of year

** Net present value if replacement is sold in this year



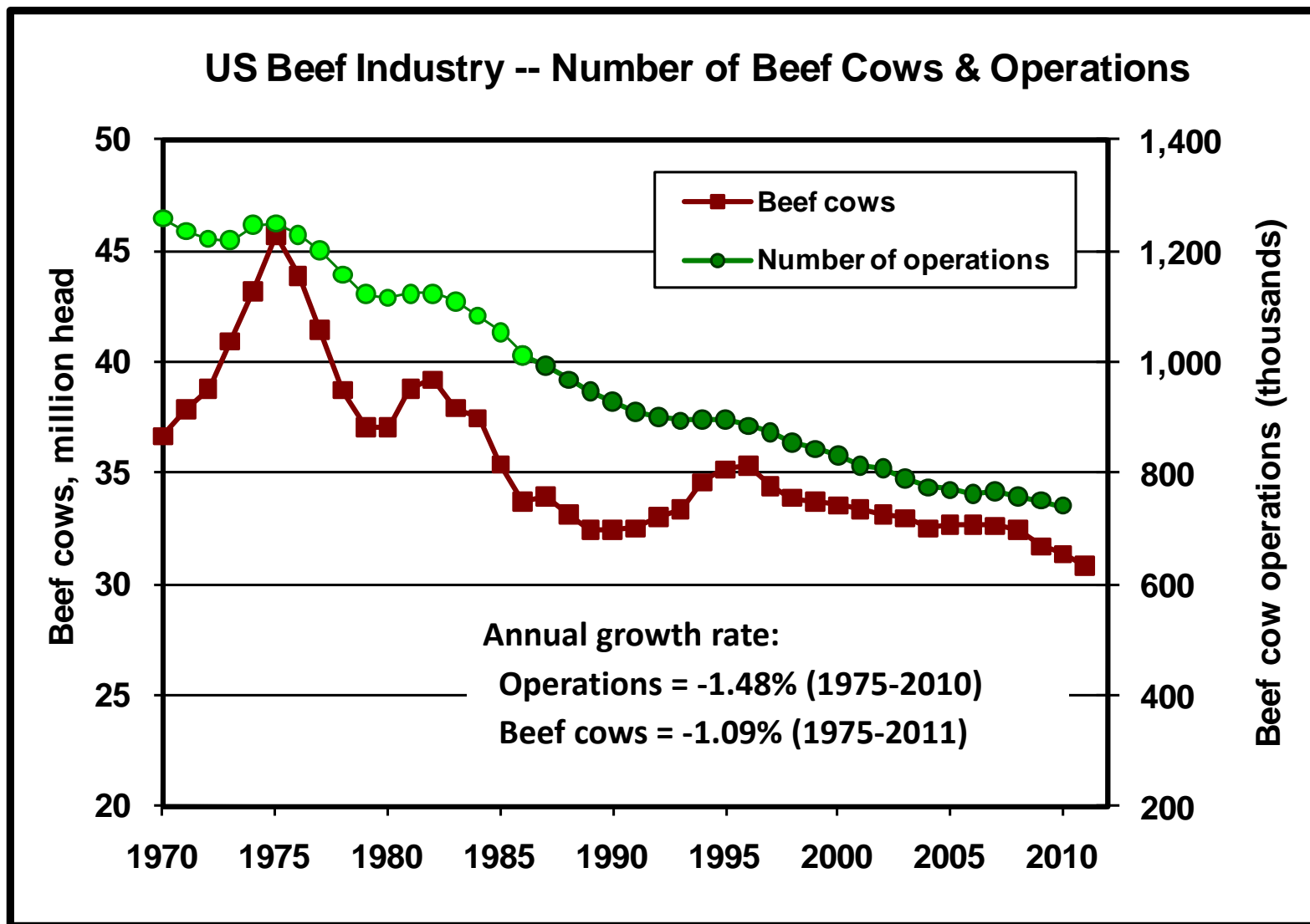
Build herd -- How much can I pay for a heifer/cow?



Total costs of bottom, middle, and top 1/3 operations (in profit \$/head)

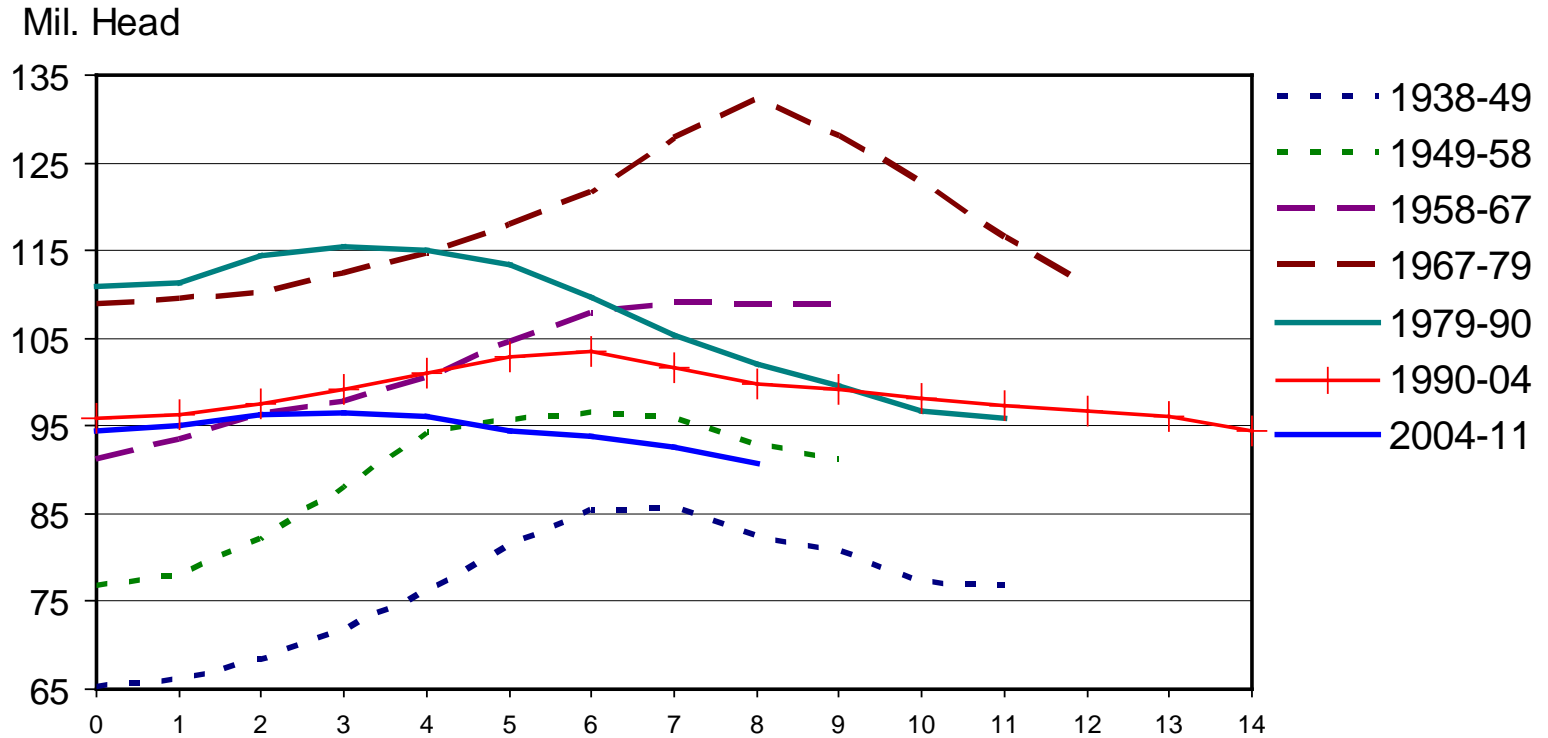


Industry has been downsizing for a long time...



“Cycles” are flattening...

TOTAL CATTLE INVENTORY BY CYCLE U.S., January 1



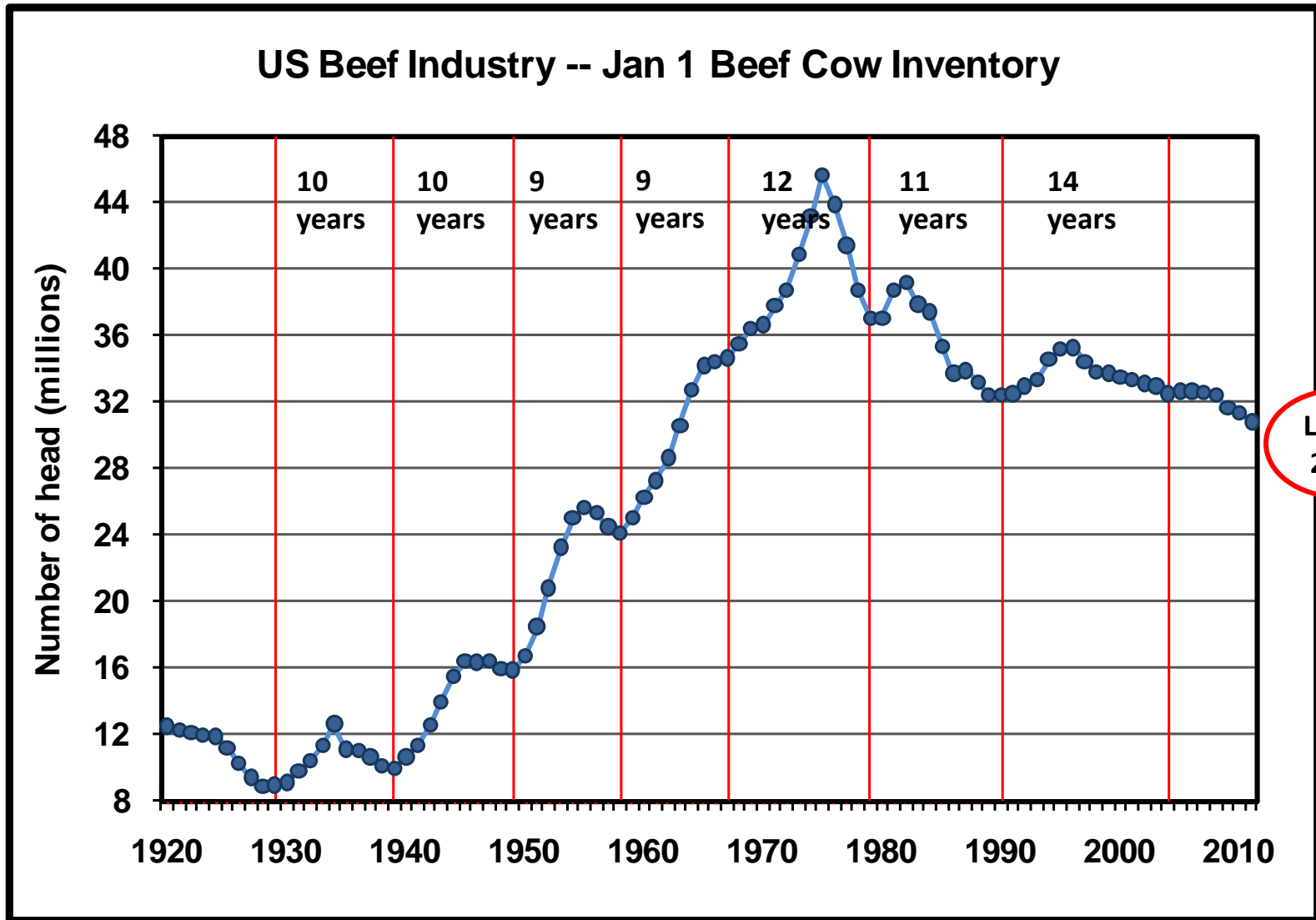
Livestock Marketing Information Center

Data Source: USDA-NASS, Compiled & Analysis by LMIC

C-N-40
01/29/12



Is assessing today's "cattle cycle" even relevant?



Source: USDA-NASS, LMIC and K-State



Summary of profitability and prices...

- **More variability in returns between producers at a point in time than on average for an industry over time**
 - ➔ **management is more important than “cycles”**
- **Most of the variability in returns is explained by cost differences as opposed to revenue differences**
 - ➔ **Feed is big driver – important to know why they are low**
 - ➔ **Fixed costs are important – driven by economies of size**
- **Knowing where one stands relative to average regarding costs is important to make sound management and investment decisions.**
- **Marketing – focus should be on delivering what the market wants rather than trying to out-guess market**



Current U.S. Cow-Calf Industry

(March '11 ERS Report: <http://www.ers.usda.gov/publications/eib73/>)

- 35% of 2.2. million farms have a beef cow
 - 50% have fewer than 20 cows (accounting for ~10% of cows)
- Cow-calf only, CC/Stocker, & CC/Feedlot comprise 36%, 53%, and 10% of cows
- Internet use, NAIS familiarity, and host of other issues vary notably across op. sizes



U.S. Cow-Calf Industry: Size Differences

(March '11 ERS Report: <http://www.ers.usda.gov/publications/eib73/>)

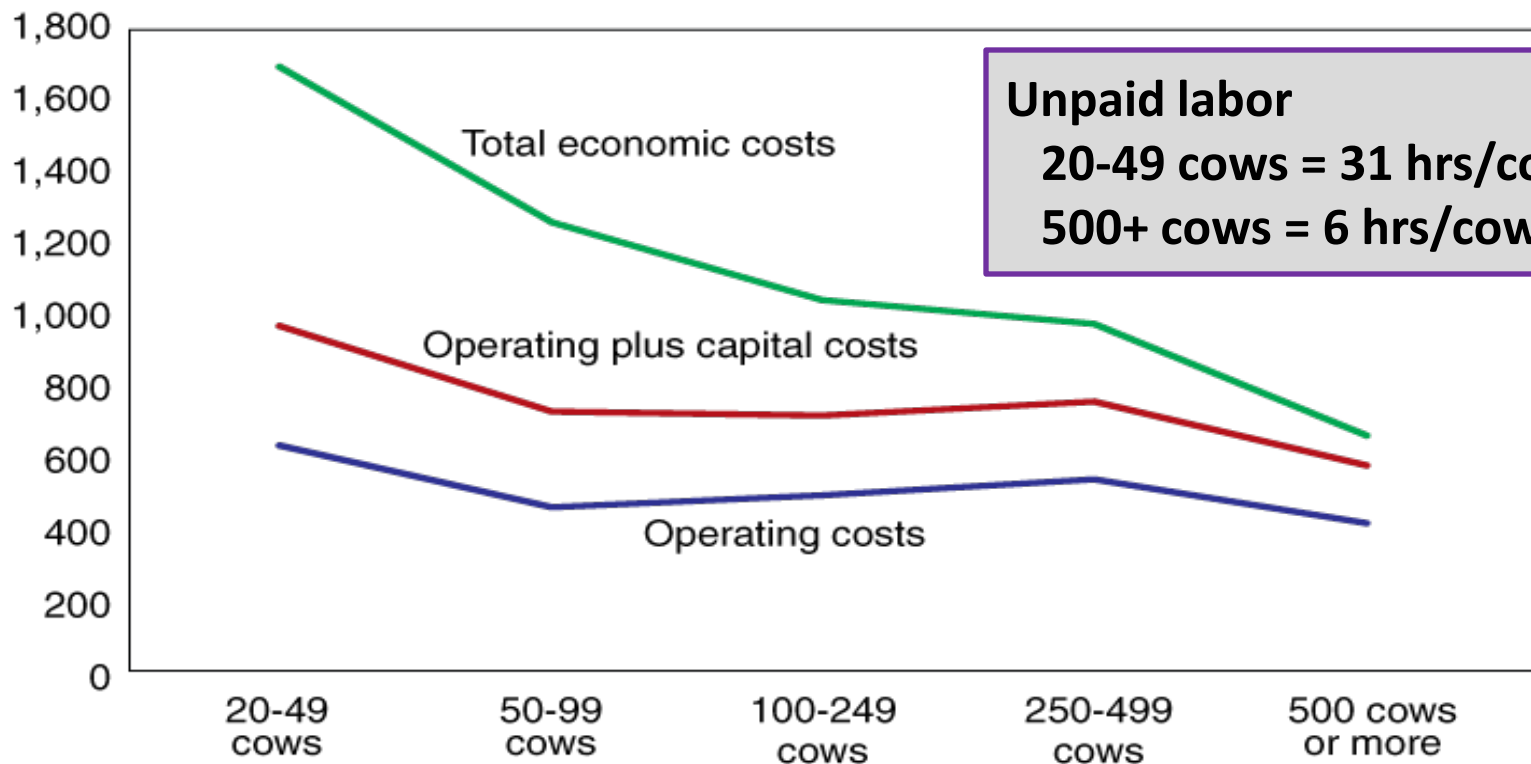
	20-49 cows	50-99 cows	100-249 cows	250-499 cows	500+ cows
Percent of farms/beef cows	41/13	32/21	21/31	5/15	2/20
Beef cows—average per farm	29	54	116	260	640
Weaning weight (lbs)	494	493	523	538	522
Sold at weaning (%)	63	62	51	49	39
Backgrounded then sold (%)	31	35	43	45	55
Retained until slaughter (%)	6	3	6	6	6
Percent using public grazing land	1	3	8	24	29
Operator:					
Age (percent greater than age 65)	38	40	32	30	22
Completed college (percent)	23	26	27	37	42
Off-farm occupation (percent)	47	37	21	18	10
Exit within 5 years (percent)	26	26	17	10	7



Beef cow-calf cost of production per cow by size, 2008

Economies of size are apparent in beef cow-calf production, particularly for total economic costs.

Dollars per cow



Notes: Production cost estimates for operations with less than 20 beef cows are not available because the ARMS sample is limited to operations with 20 or more beef cows. The number of cows refers to the peak number on the operation at any time during 2008.

Source: USDA, Economic Research Service using USDA's 2008 Agricultural Resource Management Survey (ARMS).



List of Volatility Factors

- Feed Costs (weather, farm policy, etc.)
- Shrinking herd; over-capacity in segments
- Domestic demand (relative prices, non-price factors)
- Export demand (exchange rates, politics)
- Policy uncertainty (GIPSA, MCOOL, AW?)
- Interest rates (expansion capital)
- Industry fragmentation (bimodal dist'n???)



What To Do?

- Does “on average higher returns are associated with higher risk” resonate w/ you?
- What is your comparative advantage?
 - Being in top 1/3 of cost structure is imperative...
 - Increase herd?; Exit?
 - Switch to stocker focus?;
- Recognize (but don't just complain) this “isn't your father's world” anymore...



More information available at:



This presentation is available in PDF format at:

<http://www.agmanager.info/about/contributors/individual/tonsor.asp>

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About AgManager.info

AgManager.info website is a comprehensive source of information, analysis, and decision-making tools for agricultural producers, agribusinesses, and others. The site serves as a clearinghouse for applied outreach information emanating from the Department of Agricultural Economics at Kansas State University. It was created by combining departmental and faculty sites as well as creating new features exclusive to the AgManager.info site. The goal of this coordination is to improve the organization of web-based material and allow greater access for agricultural producers and other clientele.



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K-State Decision Aides: Cattle Price Oriented

(<http://www.agmanager.info/Tools/default.asp>)

- Expectations on Future Cash Prices
 - <http://www.beefbasis.com/>
- Examine Feeder Cattle Risk Management Alternatives
 - *“K-State Feeder Cattle Risk Management Tool”*
- Project Premium/Discount of Calf/Steer Attributes
 - *“K-State Feeder Cattle Price Analyzer”*
- Stocker Breakeven Selling/Purchasing Prices
 - *“Cattle Breakeven Selling and Purchase Prices”*



Other K-State Decision Aides

(<http://www.agmanager.info/Tools/default.asp>)

- NPV of Beef Replacements
 - *“KSU-Beef Replacements”*
- Beef Cow Lease Agreements
 - *“KSU-CowLease”*
- Determining Flint Hills Pasture Rents
 - *“KSU-Graze.xls”*





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