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Economic Analysis of Beef Cow-calf Operations: Overview of the Beef Cow-calf SPA Program

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San Antonio, Texas

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The Beef/Cattle Industry

- ▶ Beef competes with other proteins
 - Will always be the most expensive
- ▶ Unique because of the phases within the industry
 - Cow-calf
 - Asset Intensive
 - Labor Intensive
 - Stocker
 - Margin Business
 - Feedlots
 - Margin Business
 - Packer
 - Margin Business
 - Retail
- ▶ The Beef Industry players compete within their phases.

“It’s all a big wheel and one broken spoke breaks the wagon down.”



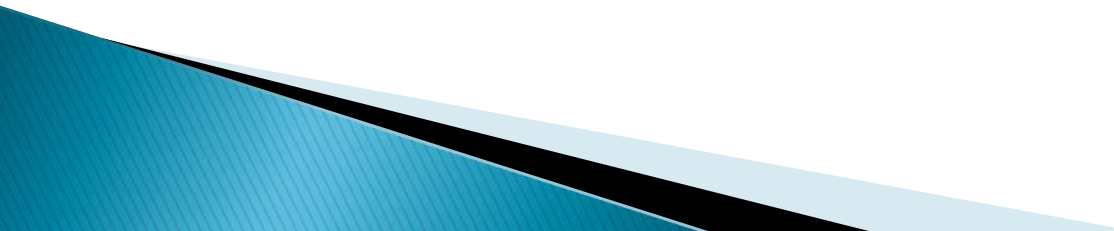
Minnie Lou Bradley
Bradley 3 Ranch
Memphis, Texas

The best tool we have to establish baselines and then analyze cow-calf operations is the IRM Beef Cow-calf Standardized Performance Analysis (SPA)

IRM-SPA Program

- ▶ National Program endorsed by the NCBA in 1991
- ▶ Objectives
 - Identify areas of an operation needing change in order to fulfill owner's objectives.
 - Determine annual COP and ROA for an operation.
 - Develop Regional Databases to establish production and financial benchmarks.

Beef Cattle SPA Program

- ▶ Facilitates the comparison of an operation's performance between years, groups of producers, production regions and production systems.
 - ▶ Texas and the Texas Rolling Plains has led this endeavor.
 - ▶ Completed on an individual basis.
 - ▶ Workshops can be held to assist ranchers with the analysis.
- 

How the SPA Production Side Works – Spring Calving Herd

Turn Bulls Out ->

Female Inventory
 - Cull not intended to breed
 - Exposed intended to breed
 + Exposed intended to breed

Pregnancy Test ->

Opens Out
 Breds Out
 Open In
 Breds In

Turn Bulls Out ->

Pairs Out
 Pairs In

Pregnancy Test ->

Calves Weaned

May 2012

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Jan 2013

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Jan 2014

Cow-calf Production Year
 16-18 months long

Female Inventory
 - Cull not intended to breed
 - Exposed intended to breed
 + Exposed intended to breed

Opens Out
 Breds Out
 Open In
 Breds In

SPA Production Results

- ▶ Rainfall Data
- ▶ Acres/Female
- ▶ Breeding Season Length
- ▶ Pounds Feed Fed
- ▶ Average Prices Rec'd
 - All Calves
 - Steers
 - Heifers
 - Culls
- ▶ Pounds per Acre
- ▶ Pregnancy Percentage
- ▶ Pregnancy Loss
- ▶ Calving Percentage
- ▶ Calving Death Loss
- ▶ Weaning Percentage
- ▶ Calving Distribution
- ▶ Age at Weaning
- ▶ Pounds produced per Female
- ▶ Weaning Weights

How the SPA Financial Side Works – Spring Calving Herd

Turn Bulls Out ->



Pregnancy Test ->

Turn Bulls Out ->

Pregnancy Test ->

May 2012

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Jan 2013

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Jan 2014

<- Beginning Balance Sheet

Twelve Month Income Statement

<- Ending Balance Sheet



SPA Financial Results

- ▶ Investment per Female
 - Cost Basis
 - Market Basis
- ▶ Debt per Female
- ▶ Feed Costs per Female & Cwt.
- ▶ Grazing Costs per Female & Cwt.
- ▶ Finance Costs per Female & Cwt.
- ▶ Total Costs per Female & Cwt.
- ▶ Breakeven Price per pound of weaned calf
- ▶ Rate of Return on Assets
 - Cost Basis
 - Market Basis
- ▶ Percentage Breakdown of each cost item.

Beef Cattle SPA Program Results

▶ Two Primary Comparisons

1. Comparison with a regional database average
 1. What is the ranch's strengths and weakness compared to the regional average.
2. Track the same operation over time.
 1. Where is the ranch going?
 2. Is it getting there?

1. Comparison with a regional database average

West Texas 2009 Example Cow-Calf SPA Report Card Compared to Texas Herds Completed Since 1999

States: TX; Regions: all regions; Years: 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009

Producers: West Texas; Enterprises: all enterprises; Number of Herds: 212; Herd Sizes: from 12 to 12,662; Total Cows: 146,784

Production Measures

Quartiles

<i>Herd Related Measures</i>	<i>Average</i>	<i>Weighted Average**</i>	<i>West Texas</i>	<i>Quartiles</i>			
				<i>top 25%</i>	<i>2nd 25%</i>	<i>3rd 25%</i>	<i>low 25%</i>
Pregnancy percentage*	88.5	88.2	88.4			X	
Calving percentage	83.4	79.0	85.9		X		
Calving death loss based on exposed females	3.1	2.0	2.2				X
Calf crop or weaning percentage	80.9	77.5	83.8		X		
Actual weaning weight, steers and bulls	539.1	547.5	556.0		X		
Actual weaning weight, heifers	511.3	516.1	528.0		X		
Average weaning weight	527.3	531.2	542.0		X		
Pounds weaned per exposed female	428.3	412.8	454.0		X		
<i>Other Physical Performance Measures</i>							
Raised feed acres per exposed female	0.3	0.1	0.0				X
Grazing feed acres per exposed female	17.5	27.6	29.7				X
Pounds weaned per acre utilized by cow-calf enterprise	56.2	38.6	15.3				X
<i>Pay Weight Prices Per Cwt.</i>							
Weaned calf pay weight price - steers/bulls	\$98.69	\$97.80	\$105.25				X
Weaned calf pay weight price - heifers	92.46	91.42	103.87				X
Weaned calf pay weight price - weighted average	95.58	94.85	104.58				X

*Financial Measures****

				<i>top</i>	<i>2nd</i>	<i>3rd</i>	<i>low</i>
				<i>25%</i>	<i>25%</i>	<i>25%</i>	<i>25%</i>
<i>Investment and Returns (ROA)</i>							
Total Investment Per Breeding Cow - cost basis	\$3,194.87	\$2,246.77	\$3,852.82				X
Percent Return on Assets - cost basis	-0.95 %	0.86 %	0.95 %		X		
Total Investment Per Breeding Cow - market value	4,982.78	4,501.23	14,915.65				X
Percent Return on Assets - market value	-0.73 %	0.31 %	0.24 %		X		
<i>Financial Performance</i>							
Raised/Purchased Feed Cost per cow	95.11	63.77	74.91				X
Grazing Cost per cow	101.94	89.66	20.35	X			
Total Cost Before Noncalf Revenue Adjustment per cow	523.96	425.94	462.02				X
Total Cost Before Noncalf Revenue Adjustment per cwt	125.88	105.53	100.76				X
Total Cost Noncalf Revenue Adjusted per cow	478.21	386.40	464.20				X
Total Cost Noncalf Revenue Adjusted per cwt - Unit Cost	114.90	95.12	101.24				X
Net Income After Withdrawals per cow	-61.66	0.97	15.32				X
Net Income After Withdrawals per cwt	-18.34	-0.02	3.34				X
<i>Economic Performance</i>							
Total Cost Noncalf Revenue Adjusted per cow	563.39	455.14	576.78				X
Total Cost Noncalf Revenue Adjusted per cwt - Unit Cost	134.41	111.17	125.79				X
Net Income After Withdrawals per cow	-146.85	-67.77	-97.26				X
Net Income After Withdrawals per cwt	-37.85	-16.07	-21.21				X

* Based on pregnancy tested herds. **Weighted average values are calculated on number of breeding cows.

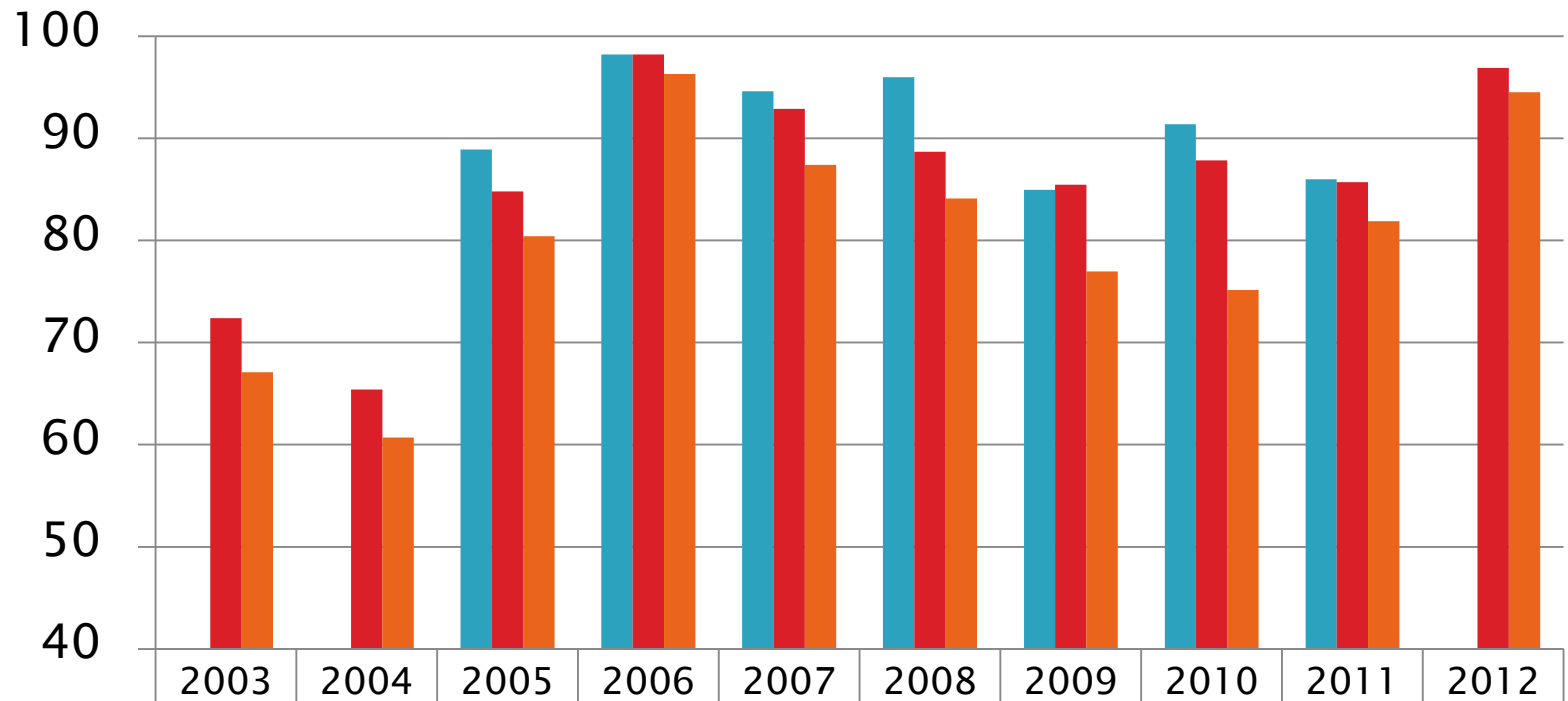
*** Measures are calculated on a pretax basis.

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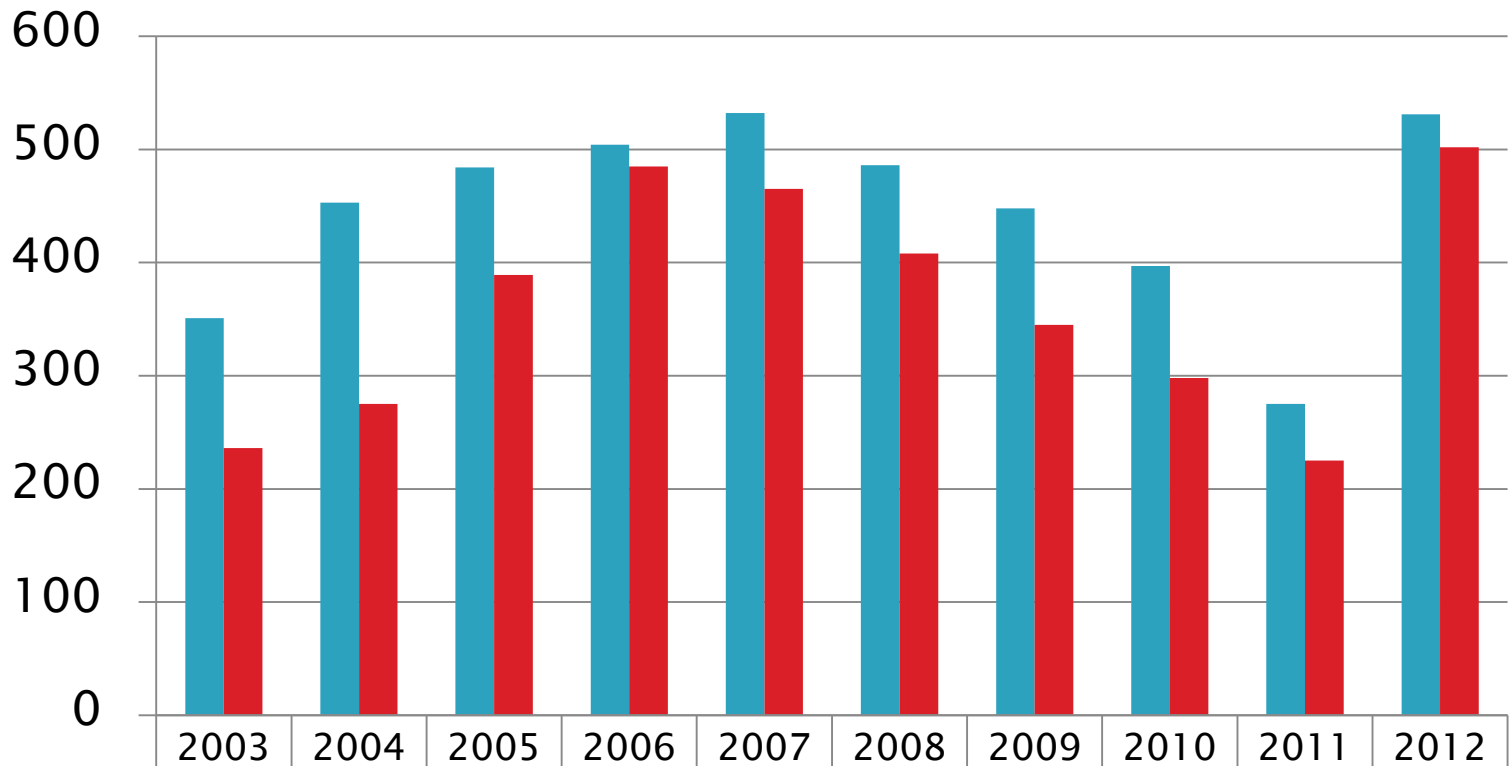
2. Track the Same Operation Over Time

Chart 1. Reproduction Performance Measures



■ Pregnancy			88.9	98.2	94.6	96.0	85.0	91.4	86.0	
■ Calving	72.4	65.4	84.8	98.2	92.9	88.7	85.5	87.9	85.7	96.9
■ Weaning	67.1	60.7	80.4	96.3	87.4	84.1	77.0	75.1	81.9	94.5

Chart 2. Average Weaning Weights per Calf and Pounds per Female



■ Weaning Wts.	351	453	484	504	532	486	448	397	275	531
■ Lbs/Female	236	275	389	485	465	408	345	298	225	502

Chart 3. Acres Utilized Per Exposed Female

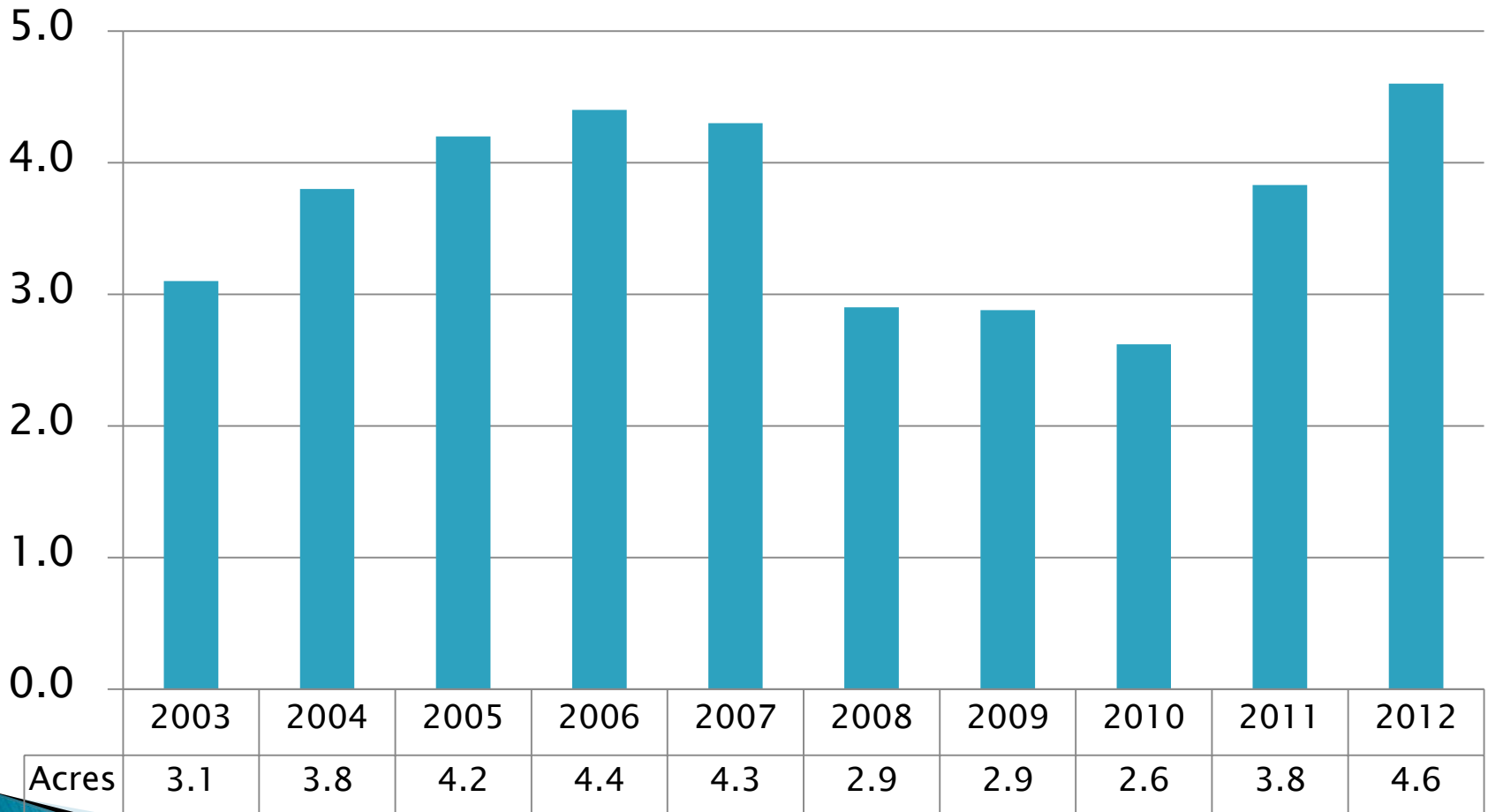


Chart 4. Pounds Weaned per Acre Utilized

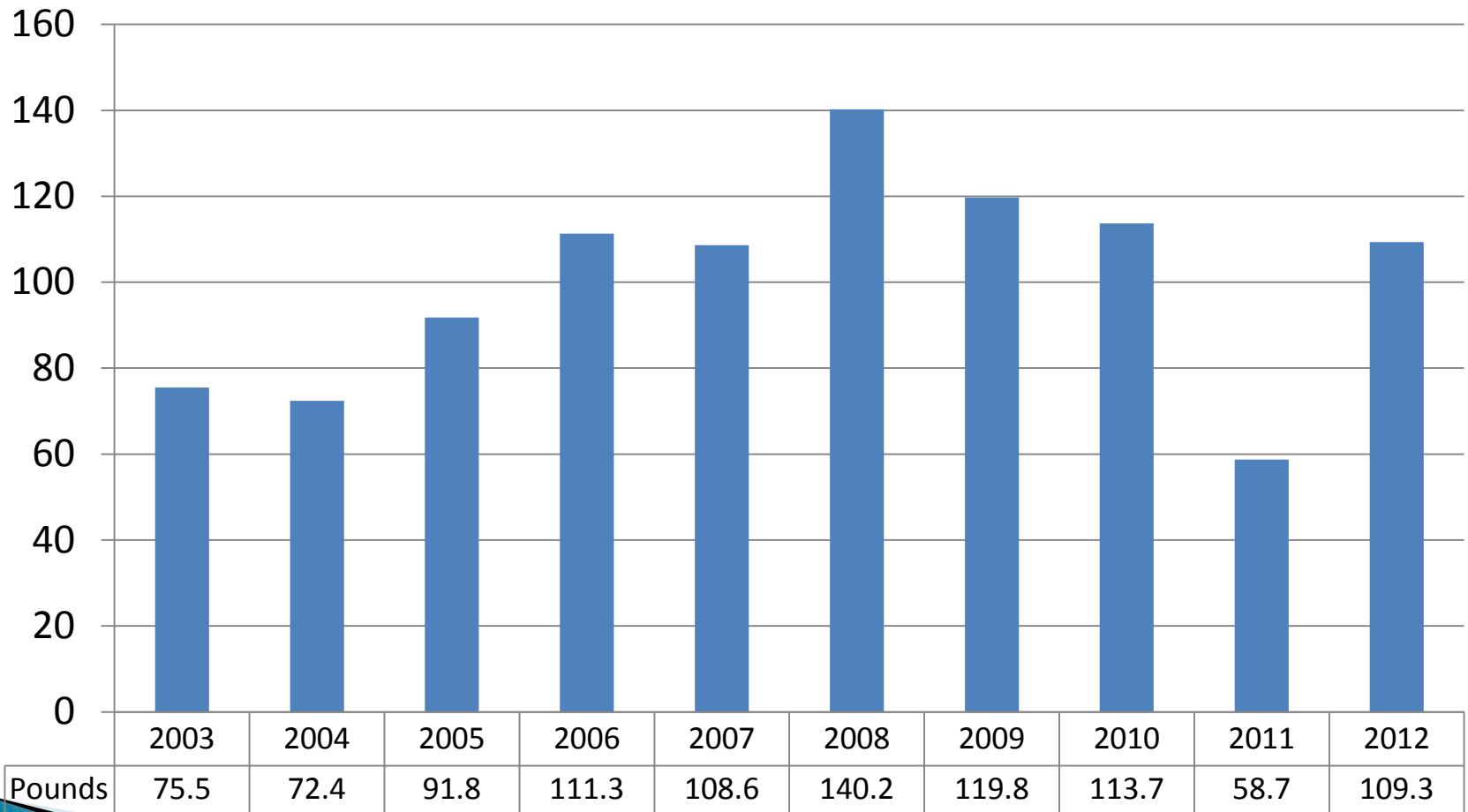


Chart 5. Pounds of Feed Fed per Female

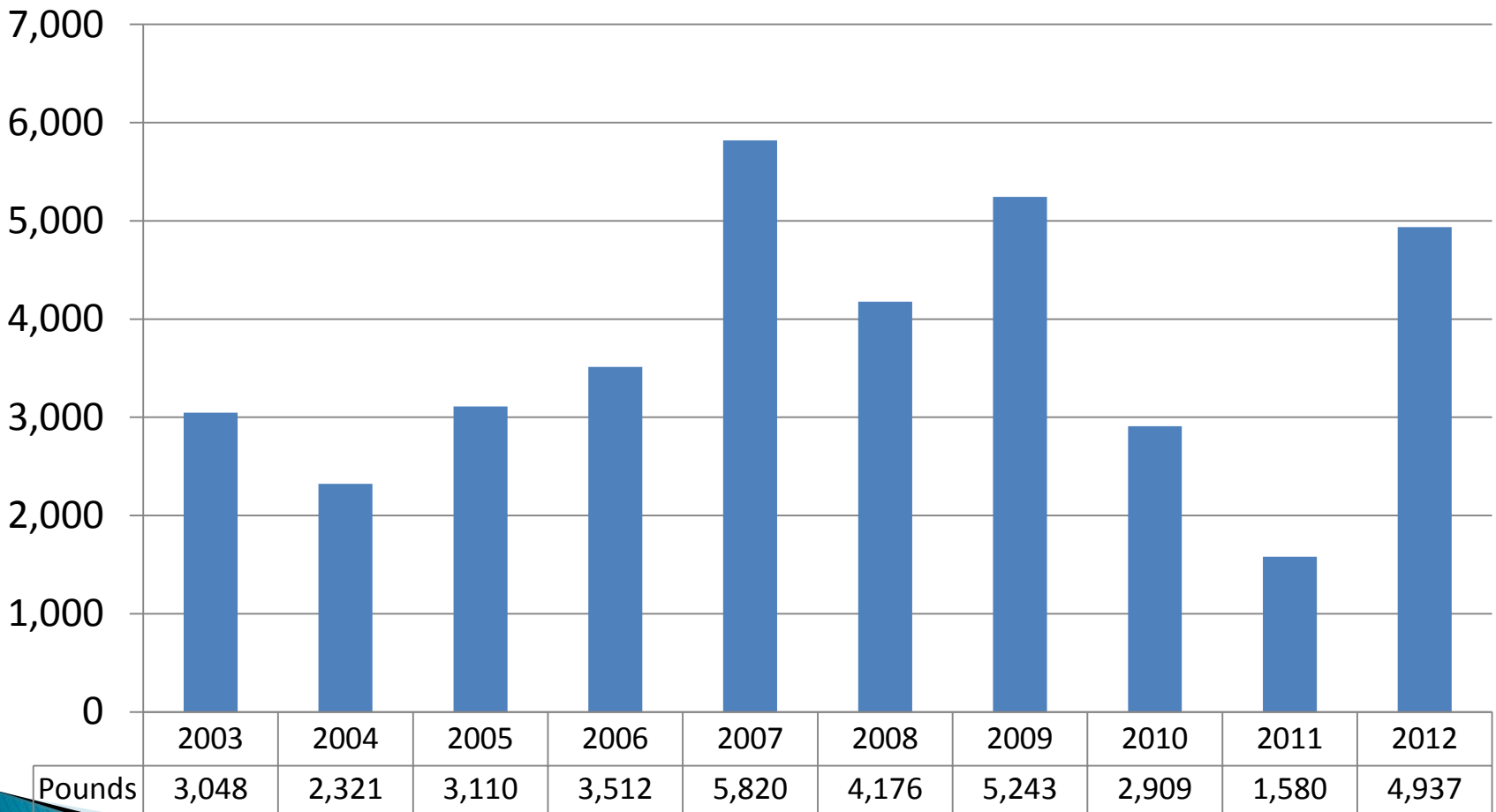


Chart 6. Costs and Net Income per Cow



Chart 7. Unit Cost of Weaned Calf Production (Breakeven Price)

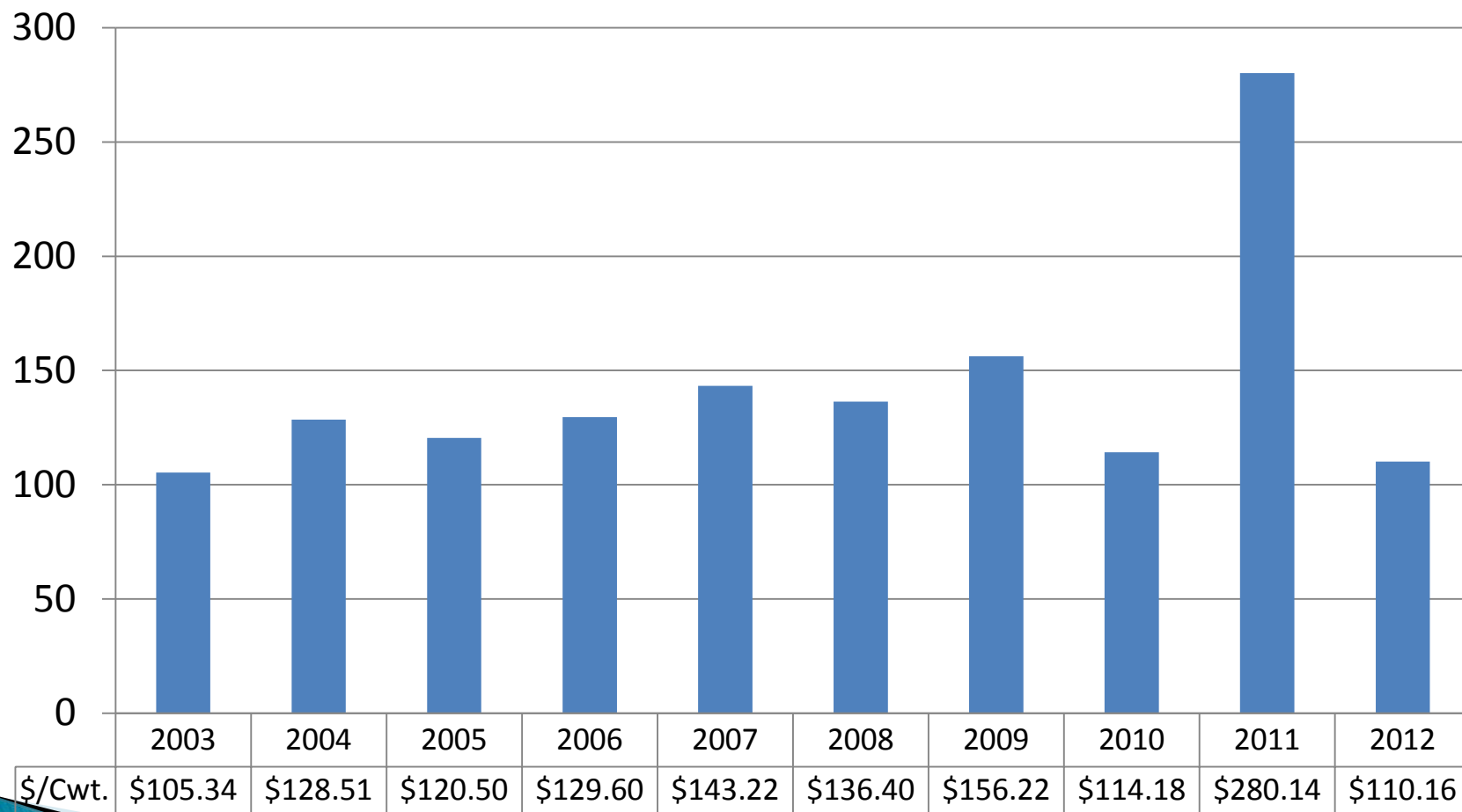
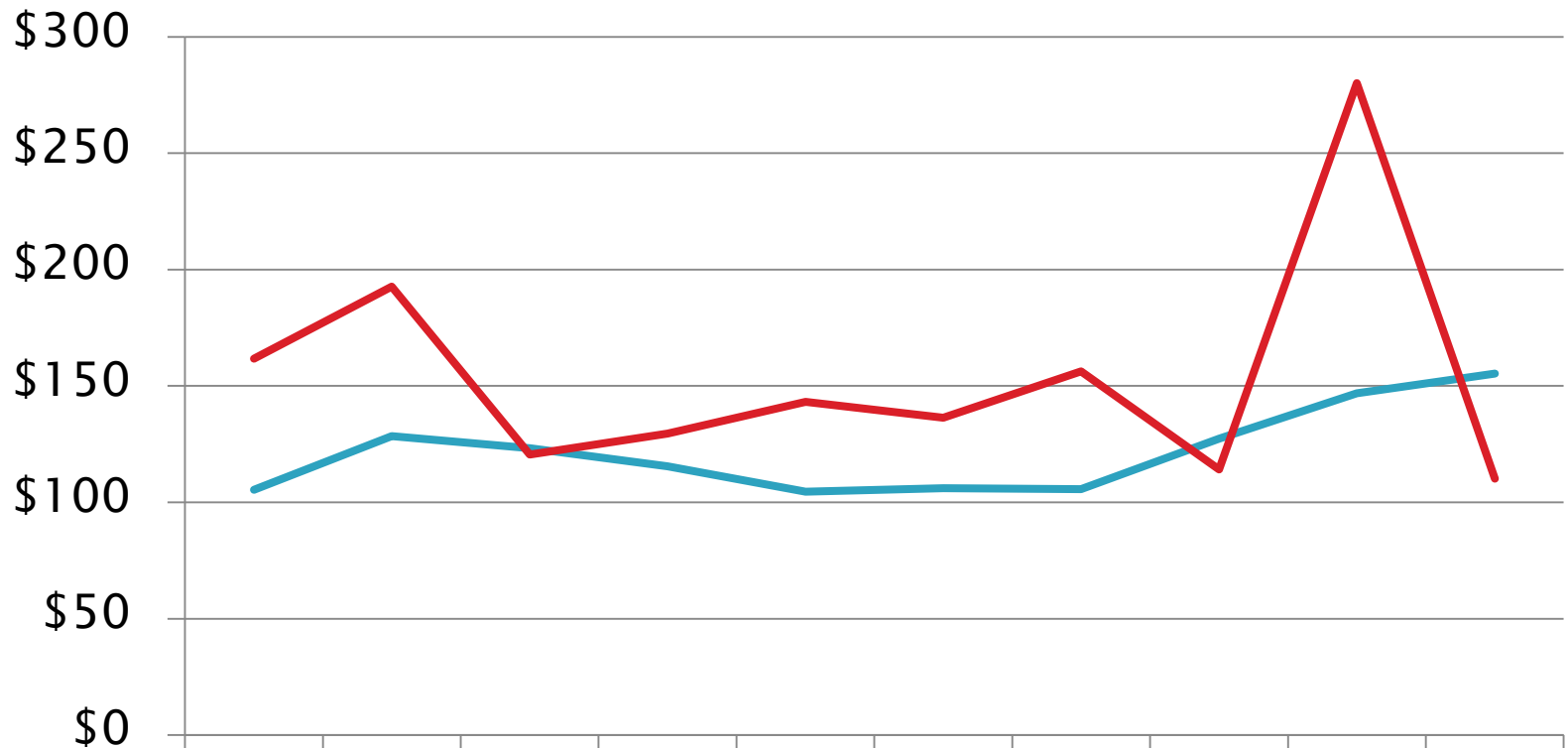
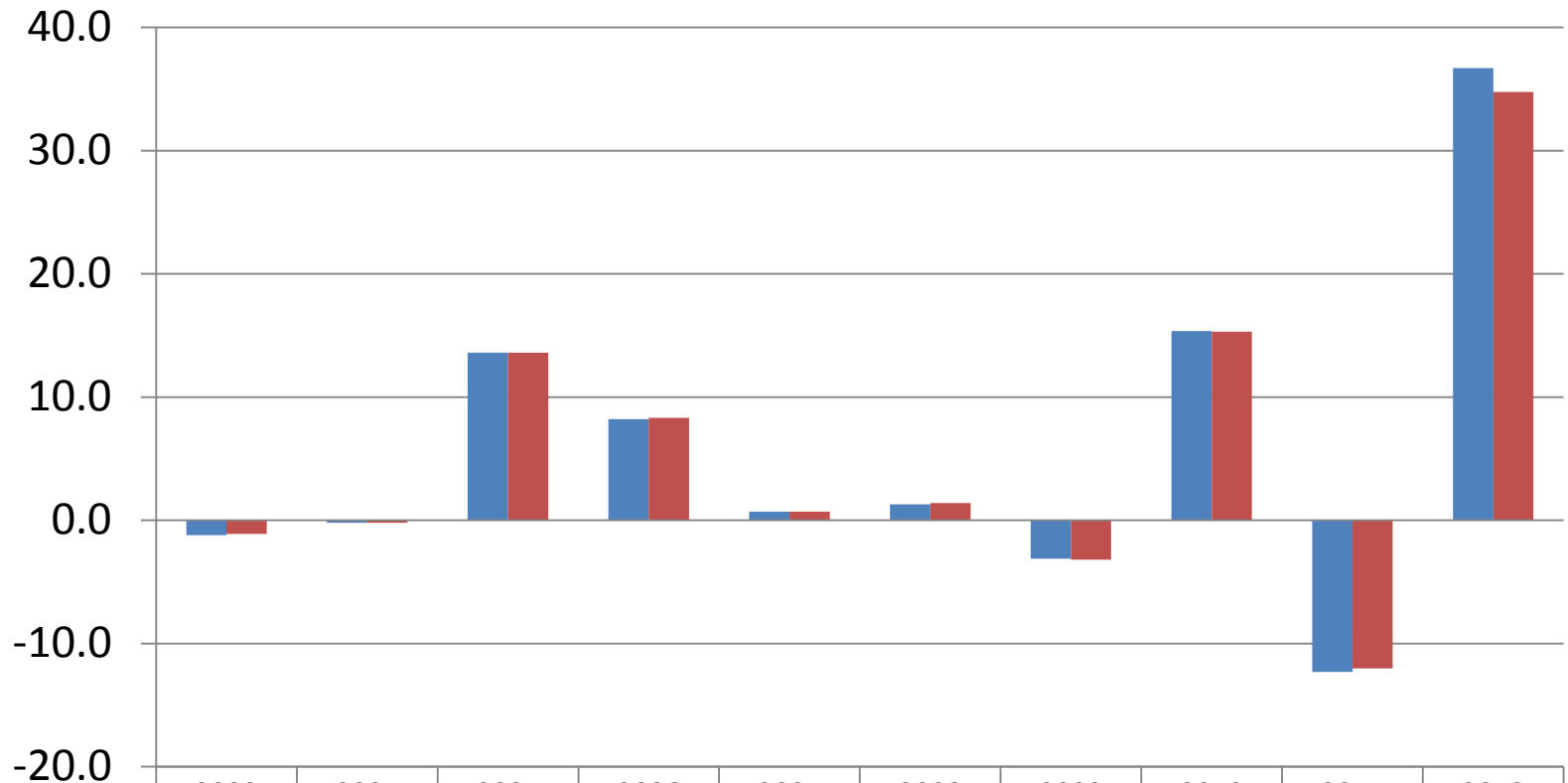


Chart 8. Market Price versus Breakeven Price



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Market Price	\$105.34	\$128.51	\$123.32	\$115.50	\$104.54	\$106.11	\$105.62	\$127.41	\$146.82	\$155.33
Breakeven	\$161.76	\$192.66	\$120.50	\$129.60	\$143.22	\$136.40	\$156.22	\$114.18	\$280.14	\$110.16

Chart 9. Percent Return on Assets at Cost and Market Valuation of Assets



■ ROA at Cost

■ ROA at Market

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

-1.1

-0.2

13.6

8.3

0.7

1.4

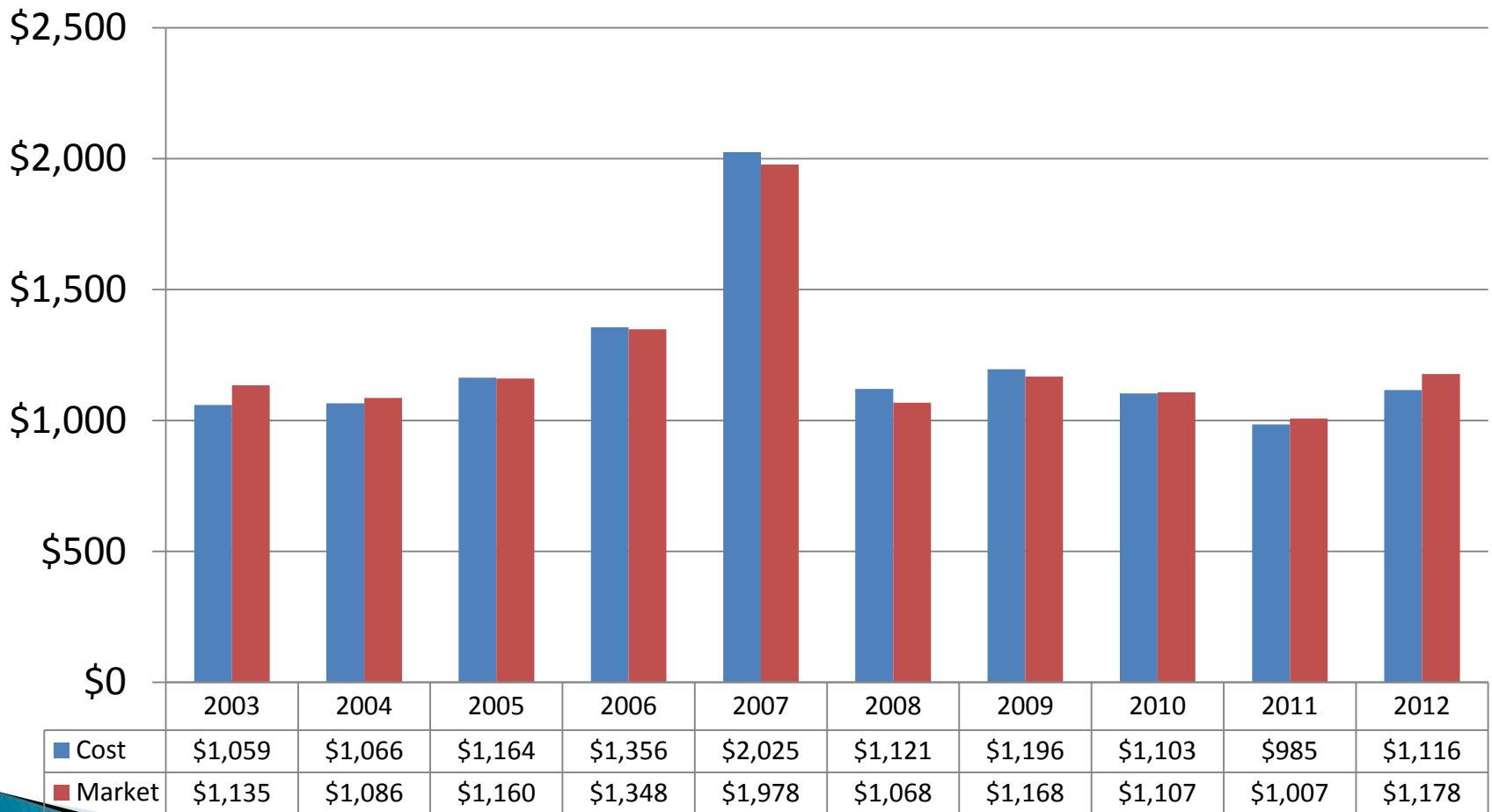
-3.2

15.3

-12.0

34.8

Chart 10. Total Investment per Female at Cost and Market Valuation



Questions / Comments



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