



# Ranch Tools for Cow/Calf Producers

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**LOW  
COST**  
Producer



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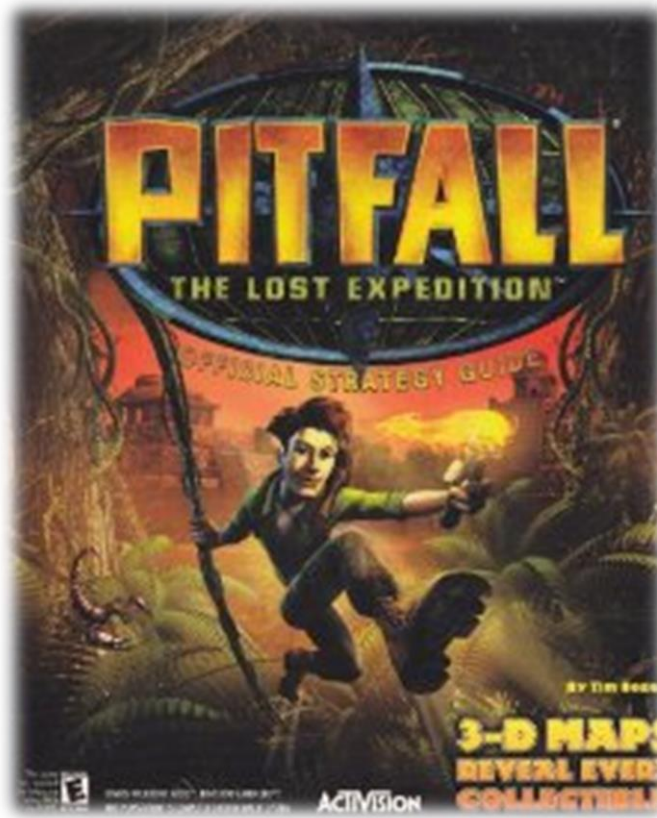
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# Why Economic Analysis?



# Why Economic Analysis?



# Why Economic Analysis?





# Why Economic Analysis?

**GOOD BUSINESS IS  
GOOD BUSINESS**





# Why Economic Analysis?





# What Tools Do You Use?

Table 3. Enterprise Budget for Cow-Calf Ranch in Southeastern Wyoming

Receipts	Number of head	Average weight	Units	Sale price/unit	Value/cow	Total value
Steers	90	550	lbs	\$1.18	\$292.05	\$58,410.00
Heifers	90	500	lbs	\$1.05	\$236.25	\$47,250.00
Cull cows	30	1200	lbs	\$0.43	\$77.40	\$15,480.00
Cull bulls	2	1800	lbs	\$0.60	\$10.80	\$2,160.00
<b>Total receipts</b>					<b>\$616.50</b>	<b>\$123,300.00</b>
Expenses	Units/cow	Total units	Units	Cost per unit	Cost/cow	Total costs
<b>Variable costs</b>						
Feed Expense						
Grass hay	0.75	150	tons	\$106.00	\$79.50	\$15,900.00
Alfalfa hay	0.5	100	tons	\$116.00	\$58.00	\$11,600.00
Salt/mineral (50/50 mix)	0.25	7500	lbs	\$0.61	\$22.88	\$4,575.00
Protein supplement	1	2000	lbs	\$0.41	\$82.00	\$16,400.00



# Ranch Budgeting Tools

- No matter what budgeting decision tool you decide to use start with a partial budget approach
  - Partial Budgeting
  - Sensitivity analysis
  - Break-even

# Partial Budgeting

- Systematically organizes the answers to four questions
  - What new or additional costs will be incurred?
  - What current income will be lost or reduced?
  - What new or additional income will be received?
  - What current costs will be reduced or eliminated?

# Wyoming Ranch Tools



UNIVERSITY OF WYOMING  
EXTENSION

[Ranch Tools](#) [Fact Sheets](#) [Links](#) [Home](#)

The goal of this site is to provide usable tools to help ranchers (both large and small) be able to make better decisions, leading to sustainable operations. Each tool is accompanied with a fact sheet and instructions on utilizing the tool. If you don't see the tool you need here contact me at [bmfeuz@uwyo.edu](mailto:bmfeuz@uwyo.edu) and let me know what you would like to have added.

- **Partial Budget** – Use the partial budget tool to help make decisions such as; Should I sell calves or yearlings? Should I retain ownership on my heifers? What should I do with my cull cows? Should I buy hay or put up my own?
- **Break-Even Budget** – Use the Break-Even Budget tool to help make market timing decisions for selling livestock.
- **NPV Tool** – Use the Net Present Value (NPV) tool to make decisions when a significant capital investment is needed. The NPV tool also contains an EconoRange version which helps in making decisions on range and pasture improvement projects.
- **Cow Valuation** – This tool is designed to estimate the current value of a cow based on a projected number of calves. It can be used for all breeding age cows from heifers to short term cows. The tool was adapted from a spreadsheet developed by John Ritten, Steve Paisley and Brian Lee.
- **Genetic Investment** – The Genetic Investment tool provides break-even values to aid in the bull buying decision process.
- **Stocking Tool** – This tool provides two different methods for determining stocking rate. The first tab allows you to calculate a stocking rate from past experience with the pasture. The second tab allows you to calculate a stocking rate using the clip and weigh method.
- **AUM Value Tool** – Use this tool to calculate a base value of an AUM for leasing arrangements.
- **Sprayer Calibration** – Use this tool in combination with the 1/128 method of calibration to accurately adjust your sprayers for ideal weed control.
- **Market Comparison** – This tool calculates an adjusted market price for various auctions, video auctions and order buyers. The adjusted price allows you to see an “apples to apples” comparison of markets.



Partial Budget Tool

Proposed Change

Additional Costs			
Description	Number of Units	Price/ Cost	Total
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Additional Income			
Description	Number of Units	Price/ Cost	Total
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Reduced Income			
Description	Number of Units	Price/ Cost	Total
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Reduced Costs			
Description	Number of Units	Price/ Cost	Total
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Total Additional Costs and Reduced Income \$0.00

Total Additional Income and Reduced Costs \$0.00

Net Income or Loss \$0.00



# Partial Budget Example

- Current
  - Sell 100 steer calves in May
    - 500 pounds
    - Auction Barn
- Proposed Change
  - Keep steer calves, put on grass and sell the next May
    - 800 pounds
    - Auction Barn

# What new or additional costs will be incurred?

- Pasture
- Salt/Mineral
- Hay
- Vet & Medicine
- Fuel
- Repairs
- Transportation
- Miscellaneous



# What current income will be lost or reduced?

- Selling 500 pound calves
- Interest

# What new or additional income will be received?

- Yearling 800 pound steers

# What current costs will be reduced or eliminated?

- Transportation on 5 weight calves



**Proposed Change**

**100 Yearling Steers**

Additional Costs			
Description	Number of Units	Price/ Cost	Total
Pasture - May - Oct.	100	75.00	\$7,500.00
Pasture - Nov. - April	100	100.00	\$10,000.00
Salt/Mineral	100	5.50	\$550.00
Hay	100	6.50	\$650.00
Vet/Medicine	100	20.00	\$2,000.00
Transportation 2 trucks 100	200	4.00	\$800.00
Fuel / Repair	100	5.00	\$500.00
Misc.	100	5.00	\$500.00
			\$0.00
			\$0.00
			\$0.00

Reduced Income			
Description	Number of Units	Price/ Cost	Total
100 Steer calves 500 lbs	50000	1.55	\$77,500.00
Interest 4%	1	3,000.00	\$3,000.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Total Additional Costs and Reduced Income \$103,000.00

Additional Income			
Description	Number of Units	Price/ Cost	Total
98 Yearling Steers 800 lbs	78400	1.35	\$105,840.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Reduced Costs			
Description	Number of Units	Price/ Cost	Total
Transportation 1 truck 100	100	4.00	\$400.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Total Additional Income and Reduced Costs \$106,240.00

Net Income or Loss \$3,240.00







# Wyoming Master Stockman

## Break-even Using a Partial Budget Approach

This break-even tool works for multiple classes and species of livestock.

Proposed Change

Additional Costs			
Description	Number of Units	Price/ Cost	Total
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Reduced Income			
Initial Weight	Number of Head	Market Price/CWT	Total
			\$0.00
Days of Interest		Rate	
			\$0.00

Enter the initial weight of your livestock, number of head and price in dollars per cwt. Also enter the number of days that you are considering holding your livestock. Finally, enter the interest rate using either the rate on a loan if needed, or the rate that could be earned using this capital.

Total Additional Costs and Reduced Income \$0.00

Additional Income			
Final Weight	Number of Head	Breakeven Price	Total
		\$0.00	\$0.00

Enter the projected final weight of your livestock. Enter number of head you project to sell. Often this number is different than the original number due to death loss. The model will calculate the break-even price in \$/cwt.

Reduced Costs (Savings)			
Description	Number of Units	Price/ Cost	Total
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Total Additional Income and Reduced Costs \$0.00



# When is the best time to market steers?



# How about heifers?





# When is the best time to Market Cull Cows?





# Wyoming Master Stockman

## Break-even Using a Partial Budget Approach

This break-even tool works for multiple classes and species of livestock.

Proposed Change Yearling Steers 75

Additional Costs			
Description	Number of Units	Price/ Cost	Total
Background feed Hd/days	21500	0.95	\$20,425.00
Pasture Animal Units	450	20.00	\$9,000.00
Transportation 2 trucks	400	4.00	\$1,600.00
Vet & Medicine	100	2.50	\$250.00
Fuel/repairs	1	1,000.00	\$1,000.00
Misc.	1	1,000.00	\$1,000.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Additional Income			
Final Weight	Number of Head	Breakeven Price	Total
900	97	\$217.37	\$189,762.95

Enter the projected final weight of your livestock. Enter number of head you project to sell. Often this number is different than the original number due to death loss. The model will calculate the break-even price in \$/cwt.

Reduced Income			
Intial Weight	Number of Head	Market Price/CWT	Total
500	100	297.00	\$148,500.00

Days of Interest	Rate	Total
360	6%	\$8,787.95

Reduced Costs (Savings)			
Description	Number of Units	Price/ Cost	Total
Transportation 1 Truck	200	4.00	\$800.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

Enter the initial weight of your livestock, number of head and price in dollars per cwt. Also enter the number of days that you are considering holding your livestock. Finally, enter the interest rate using either the rate on a loan if needed, or the rate that could be earned using this capital.

Total Additional Costs and Reduced Income \$190,562.95

Total Additional Income and Reduced Costs \$190,562.95

Breakeven Price \$217.37





# BEEFBASIS.COM

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## Feeder Cattle Basis Forecast

State: <input type="text" value="Nebraska"/>		Location: <input type="text" value="Ogallala Livestock Auction Market"/>		Expected Sale Date: 10/12/2016																																																			
Sex: <input type="text" value="Steer"/>		Frame: <input type="text" value="Lg &amp; Med/Lg"/>		Grade: <input type="text" value="1"/>																																																			
Weight: <input type="text" value="600"/> lbs/head		Head: <input type="text" value="100"/>																																																					
Feeder Cattle Futures Price: <input type="text" value="153.65"/> \$/cwt				Corn Futures Price: <input type="text" value="3.78"/> \$/bu																																																			
Reference Contract: Oct 2016 Transaction Date: Mar 04, 2016				Reference Contract: Dec 2016 Transaction Date: Mar 04, 2016																																																			
				<input type="text" value="October"/> <input type="text" value="2016"/> <table border="1"> <thead> <tr> <th>Sun</th> <th>Mon</th> <th>Tue</th> <th>Wed</th> <th>Thu</th> <th>Fri</th> <th>Sat</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>26</td> <td>27</td> <td>28</td> <td>29</td> <td>30</td> <td>1</td> </tr> <tr> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> <tr> <td>9</td> <td>10</td> <td>11</td> <td>12</td> <td>13</td> <td>14</td> <td>15</td> </tr> <tr> <td>16</td> <td>17</td> <td>18</td> <td>19</td> <td>20</td> <td>21</td> <td>22</td> </tr> <tr> <td>23</td> <td>24</td> <td>25</td> <td>26</td> <td>27</td> <td>28</td> <td>29</td> </tr> <tr> <td>30</td> <td>31</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </tbody> </table>			Sun	Mon	Tue	Wed	Thu	Fri	Sat	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5
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				<input type="button" value="RUN"/>																																																			

### Instructions:

- 1) Select values from each of the pull-downs, enter values in each of the text boxes.
- 2) Hover cursor over entry labels for explanation of value to be entered.
- 3) When all values have been entered, click the run button.
- 4) Results are displayed here.

# Cow Value = Market Price ?



# Cow Value

- Sum of the returns
  - Calf sales
  - Cull cow sale
- Less the sum of the costs
  - Annual cow costs
- Time Value of Money



# Cow Valuation Tool

- John Ritten
- Steve Paisley
- Brian Lee
- Bridger Feuz



# Before we get to the tool

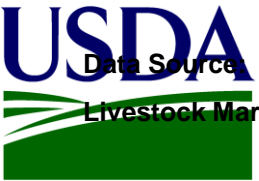
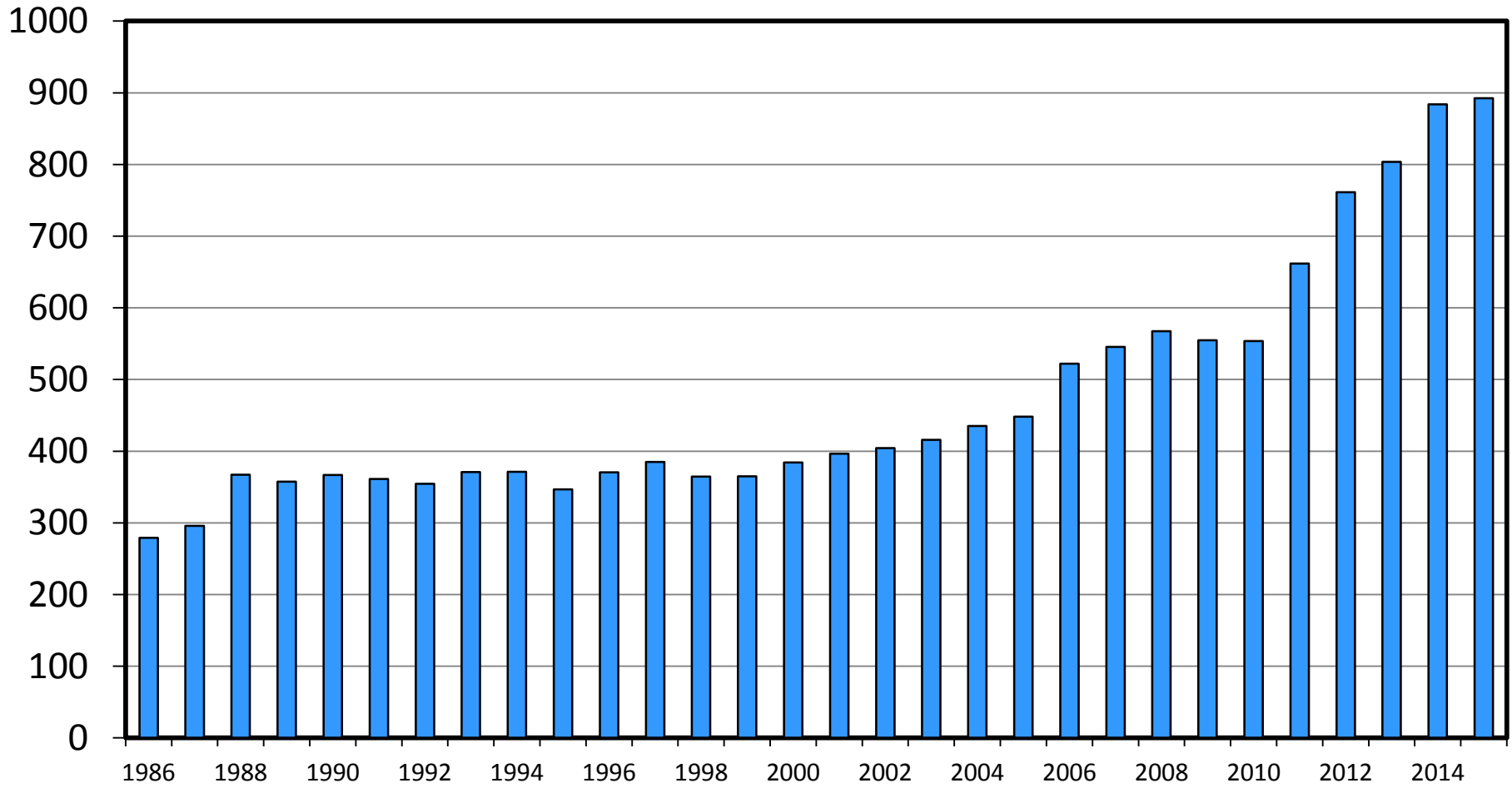
- Annual cow cost
- Expected weaning weights
- Expected calf prices
  - Use 5 year averages
- Expected cull cow weights
- Expected cull cow prices
  - Use 5 year averages



# ESTIMATED AVERAGE COW CALF COSTS

Total Cash Cost Plus Pasture Rent, Annual

\$ Per Cow



Data Source: USDA & LMIC, Compiled by LMIC

Livestock Marketing Information Center







## Wyoming Master Stockman

### Cow Valuation Tool

by Dr. John Ritten, S. Paisley, B. Lee, B. Feuz - University of Wyoming Extension

Individual Herd Information		Estimated Cow Value			
		Number of Calves	Prices Decreasing 5% per Year	Constant Cattle Prices	Prices Increasing 5% per Year
Annual costs per cow:	500	1	\$1,056	\$1,056	\$1,056
Sale weight of calves:	525	2	\$1,097	\$1,170	\$1,243
Calf price (per cwt):	135	3	\$1,110	\$1,280	\$1,449
Cull cow weight:	1100	4	\$1,097	\$1,384	\$1,671
Cull cow price (per cwt):	85	5	\$1,059	\$1,483	\$1,907
Discount Rate:	5	6	\$1,000	\$1,577	\$2,155
Weaning percentag:	95	7	\$922	\$1,667	\$2,413
		8	\$826	\$1,753	\$2,680
		9	\$714	\$1,835	\$2,955
		10	\$588	\$1,912	\$3,236

Bridger Feuz

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[www.uwyoextension.org/ranchtools](http://www.uwyoextension.org/ranchtools)

