

University of Nebraska Lincoln Extension Beef Team Annual Beef Heifer Replacement Forecast for 2025-2026 Production Season

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Access the information you seek

This annual report has many pages and probably goes beyond the scope of what most users are looking. Please don't get bogged down in the procedural explanations and methodology and those pages which do not pertain to the information they seek. It is expected that users will focus on the relevant information to their needs, e.g. breakeven replacement cow values relative to their individual operations situation and may even simply use the abbreviated summary report. ([put a link in here](#)). The table of contents is on the following page.

Section 1: The Introduction contains detail and background on how the cow (heifer) value forecast was created with a brief overview of the report's premise, details, data and methods.

Section 2: Relates directly to the development of annual cow/calf costs. This is specified at three levels Low (Lo) cost producers, Middle (Mid) cost producers and High (Hi) cost producers. As a stochastic simulation the methodology incorporates each of these costs over a range of possible values. This makes it possible to determine probable outcomes which are graphically illustrated in Figures 1, 2, and 3 as cumulative distribution functions CDF's (Some might call them probability outcomes as they relate each cost with its expected likelihood).

Section 3: Describes the base FAPRI scenario and the changes made in for the additional eleven scenarios. Each scenario is simulated using the three cost levels and three regimes of cow culling expressed as replacement rate. The FAPRI annual forecasts and information makeup the base or baseline scenario. Five additional scenarios use the price and cost change information from the FAPRI base model. In three of these instances the amount of money borrowed to buy replacement cows is incrementally increased by 25%. The other two FAPRI based scenarios capture the effect of productivity in the form of constant weaning rate, a high level of productivity of 98% and a low level of 88%. The remaining six scenarios use the same annual cost changes as the FAPRI scenarios but follow varying cattle price scenarios. These scenarios are provided by researchers, teachers and extension specialists who work closely with cattle markets in the Midwest and are their best guess of future prices.

Section 4. Contains the predictions and forecasts of cow breakeven values reported for twelve scenarios. This section is the longest and has detailed results for each scenario.

Section 5: Is a summary with some discussion about possible limitations and applications of the report.

Contents

Section 1: Introduction.....	3
Section 2: Development of Annual Production Costs	6
Section 3: Simulation and Scenario Descriptions	9
Section 4: Simulated CBV Outcomes and PB for Operational.....	13
I. Operational Sensitivities (Scenarios 1 through 6, CBVs and PBs)	13
Scenario #1 (Baseline FAPRI):.....	14
Scenario #2 (88% Weaning Rate):.....	15
Scenario #3 (98% Weaning Rate):.....	17
Scenario #4 (25% Borrowed):	18
Scenario #5 (50% Borrowed):	20
Scenario #6 (75% Borrowed):	21
II. Market Price Sensitivities (Scenarios 7 through 12, CBVs and PBs).....	23
Scenario #7 (Price 2):.....	23
Scenario #8 (Price 3):.....	25
Scenario #9 (Price 4):.....	26
Scenario #10 (Price 5):.....	28
Scenario #11 (Price 6):.....	29
Scenario #12 (Price 7):.....	31
Section 5: Marginal Cost Effects of Cull Rate and Production Cost	32
III. Operational Sensitivities (Scenarios 1 through 6, Marginal Changes in CBV).....	32
Scenario #1 (Baseline FAPRI):.....	33
Scenario #2 (Price 1):.....	34
Scenario #3 (Price 1):.....	35
Scenario #4 (Price 1):.....	35
Scenario #5 (Price 1):.....	36
Scenario #6 (Price 1):.....	37
IV. Market Price Sensitivities (Scenarios 7 through 12, Marginal Changes in CBV).....	37
Scenario #7 (Price 2):.....	38
Scenario #8 (Price 3):.....	38
Scenario #9 (Price 4):.....	39
Scenario #10 (Price 5):.....	39
Scenario #11 (Price 6):.....	40
Scenario #12 (Price 7):.....	40

Section 6: Reference Tables (Extrapolation of Individual CBVs by Scenario).....	42
Reference Table 1E.....	43
Section 7: Summary	55
Section 8 Appendix: Part A (Budget/Costs)	57

Section 1: Introduction

This report does not focus on profitability directly but on finding the value of a replacement beef cow under varying production, price and cost conditions, or scenarios. Therefore, there is no reference to changes in profit, loss, or net worth. The results are for the current year only and are limited to the relevant scenario. The baseline uses the Food and Agricultural Policy Research Institute (**FAPRI**) forecasts. FAPRI specializes in building econometric models that are intended to capture the many relationships in the agricultural economy. This report uses the 2026 U.S. Agricultural Market Outlook found at <https://fapri.missouri.edu/publications/2026-us-agricultural-market-outlook/>.

This publication has commodity prices and costs forecasted into the coming decade. There are twelve different projections or scenarios. Two scenarios use the FARPI baseline information to investigate the effects of weaning rate, 88% and 98%, on cow breakeven value (CBV). Three additional scenarios use the same FAPRI baseline but focus on the effects of borrowing 25%, 50%, and 75% of the per-head cow purchase cost. The six remaining scenarios deviate from the baseline price series and investigate the effects of variations in the cattle market for the coming decade. These price forecast series were solicited from extension professionals at four universities: University of Nebraska Lincoln (UNL), North Dakota State University (NDSU), South Dakota State University (SDSU), and the University of Kentucky (UK). There were three classes of cattle prices collected: utility (cull) cows, feeder calves (600 to 650 lbs), and fat (slaughter) cattle. The six series, scenarios 7 through 12, are visually represented for each class as in Figures 4, 5, and 6, respectively. Each scenario is assigned a reference number to make it easily identifiable.

Each of the twelve scenario results are summarized in four tables accompanied by discussion and comprises Section 4. The first table reports cow breakeven values (CBV) for each of the nine conditions (three cost levels and three cull rates). The second table lists the estimated probability for each of the nine conditions that a purchased cow will cover or payback (PB) her purchase cost. The next two tables relate to the marginal change in dollars of CBV as a result of a 1% change in cull rate or a \$1 change in production cost. There is a fifth table for each scenario found in the Appendix Part B. This table acts as a reference source so that users can extrapolate a particular CBV based on the scenario type, relevant cost level, and cull rate.

To reiterate, this report forecasts CBV, the average minimum amount cow buyers can pay and expect to have returned without a loss, for twelve scenarios, each consisting of nine sub-scenarios CBVs. The twelve scenarios are based on seven future cattle price series, including FAPRI and six others created by various experts around the country. Two of the scenarios demonstrate the effects of weaning rate extremes, and three incorporate varying levels of borrowed capital for cow purchase. All scenarios are simulated at three levels of cost and three regimes of cow culling rates. Costs are made native to the State of Nebraska but are applicable in other areas of the country given similar cost and productivity. The cow costs are identified as low (Lo), Middle (Mid), and High (Hi). These costs were specifically modeled to be

representative of those found in the Sandhills of Nebraska using the most common management practices and available resources. The information and snapshot of the Excel workbook used in developing the three budgets is listed in the **Appendix, Part A, Figures 1 and 2**. To facilitate variation (stochastic) simulation, costs are expressed in extreme possibilities, the lowest and highest values expected to be observed. When combined with the appropriate statistical likelihood, the results show the probabilistic outcomes. These are expressed in **Figures 1, 2, and 3** as cumulative distribution functions (**CDF**). Those unfamiliar with statistics may wish to call these CDF's probability curves or measures. The x-axis shows a progression of cost values where the point of intersection, shown as the CDF, with the probability (y value) listed on the y-axis indicates the expected likelihood of having a cost less than or equal to the chosen value. This tool was developed at UNL and is available as the Cow-Calf Cost Cow-Q-Lator (CC-CQL; <https://cap.unl.edu/livestock/tools/>). These forecasts are intended to help individuals create a reference point for their individual situations and expectations of future events and assist them in deriving a reasonable value for a purchased or retained replacement cow.

Data Accessibility: This is the ninth annual beef cow replacement value forecast. Anyone wishing to obtain an electronic copy of the Cow Purchase Cow-Q-Lator (CP-CQL) Excel spreadsheet is welcome to contact the authors. However, be warned that the forecasts developed by using the CP-CQL are derived from a series of complex interrelationships and assumptions which require time, attention, and understanding. If you are interested in your own personalized forecasts and wish help in creating one, you are again welcome to contact the authors, and we will gladly assist you.

The cow budgets (costs) represent a herd of 600 brood cows. The simulated cow and calf physical relationships (productivity) are derived from information collected at the University of Nebraska Lincoln's (UNL's) Gudmundsen Sandhills Beef Laboratory (GSL) using historical data. This includes cow size, calf weaning weights, etc. These data have been statistically quantified using regression methods with errors used as the stochastic component following methods similar to those endorsed by James Richardson, TAMU retired.

While methods used to select replacement heifers/cows differ widely between operations, the dollar value of cow replacements generally depends on the following factors:

- Longevity -- the length of time the replacement animal remains a productive part of the herd
- Productivity – the amount an individual cow is expected to contribute to overall production
- Genetic and phenotypical (type) -- compatibility with herd mates and contribution to herd development
- Operator goals and management regime
- Financial standing, available capital
- Physical conditions of the operations (drought, fire, etc.)
- Expected market conditions
- Expected future costs

These factors are important to the decision process; however, this paper only focuses on four of them: cow longevity, productivity, cattle prices, and production costs. These factors are the primary drivers of the Cow Purchase Cow-Q-Lator, or CP-CQL, due to their utility in forecasting replacement cow value.

1. Annual cost of production per cow is the basis for this analysis, created using producer input, survey information, and known input variables. The reported annual cost of production is designed to be representative of what producers are currently experiencing. The three budgets are dynamic, representing a range of possible costs. This approach is more realistic than singular point estimates and provides wider applicability for the results. Each budget is represented by a (mean/average/expected) value with a limited range or variation expressed as a standard deviation. This makes it possible to create randomly drawn costs repeatedly, with each representing one possible outcome. As mentioned, this information is created using UNL's Excel spreadsheet known as the [Cow Cost Cow-Q-Lator](#) (CC-CQL). This technique reflects the many levels of resources, management, environmental efficiencies, and conditions encountered in the real world. These production costs are identified simply as "costs". Other sources of information include Kansas State University budgets, <https://www.agmanager.info/farm-mgmt-guides/livestock-budgets>, University of Nebraska Lincoln budgets, <https://cap.unl.edu/cattlebudgets>, and pasture rental rates listed in the 2026 Nebraska Farm Land Market Highlights, https://cap.unl.edu/sites/unl.edu.ianr.agecon.center-for-ag-profitability/files/media/file/ne-farm-real-estate_2026_prelim.pdf.
2. Replacement/cull rates vary among producers depending on their circumstances, management functions, and preferences. Three annual replacement rates of 14%, 20%, and 28% provide breadth to include many different production systems and to capture the nature of cow longevity/productive life of average cow value managed in a herd environment. The CP-CQL uses the cull rate as a percentage of new cows introduced annually to the herd, considering both economic and biological effects. Under real circumstances, cull rates are likely to vary annually, making it important to recognize the differences longevity plays in valuing cow replacement costs. Effectively, the cull rate includes death loss in the overall replacement rate.
3. To determine the effect of the cow purchase price, not to be confused with BV, and to assure the results are comparable and provide perspective, cow purchase price was set to vary from \$3,550/hd to \$4,400/hd, averaging approximately \$3,975/hd. As expected, this value varies by individual producers, time of purchase, animal quality, and/or replacement method. By setting this value, a benchmark is established, enabling the simulation to estimate a likelihood of recovering purchase cost
4. Price series and cost changes through time are key drivers of the replacement decision. The value of any particular cow depends on the value of her productivity, which is spread over her lifetime. Productive lifespan varies between individual cows, but is measured on average as annual cull rates. Over this productive period, prices and costs vary, resulting in unstable levels of profit. It is the sum of these annual profits/losses that alter the BV. A longer life with profitable years results in a higher BV. A longer productive life with frequent losses ends with a lower BV. A shorter life span truncates BV. In effect, rising

cattle prices tend to increase BV, while even faster escalation of costs will diminish BV. As is the case in most circumstances, the difference between revenue and costs matter..

5. Cow productivity is needed to properly measure applicable and feasible CBVs. As noted in part 4 above, costs and price are important to determining BV. Productivity affects both costs and returns and as such becomes critical in deciding profit or loss levels. Several key physical factors are simulated in the CP-CQL. Cow profitability is dependent on cow and calf characteristics combined with management practices and economic realities. Cow productivity is both size- and age-related. Cow size increases with age up to about age eight or nine years old. Cow size and age help determine the calf size and growth rate which affects sale weight which alters value due to the inclusion of a price slide variable. CP-CQL simulates both physical and economic factors simultaneously. The interaction of management, environment, and animals determines productivity and costs, which management balances to expected economic conditions.

Section 2: Development of Annual Production Costs

Figures 1, 2, and 3 graphically capture the simulated levels of annual costs for the Nebraska Sandhills created using the CC-CQL. A picture of the CC-CQL excel tool is found in **Appendix, Part A Figures 1 and 2**. Expected costs are on a per cow basis. Costs have increased by about \$300/hd since last year. Costs per calf produced will increase as weaning rate decreases. This is important since the CBV for cows is based on the value they return. The cow costs input into the simulation model does not incorporate replacement cost (purchase costs minus salvage value) and death loss. These costs are accounted for during the CBV simulation of the CP-CQL during and are related to the cull rate. **Figures 1,2, and 3** map each level of cost along with the probability they are observed. Each CC-CQL simulation has 500 individual cow cost outcomes providing data that has an average and range (variation) measured by the standard deviation. The simulation process draws the individual cost outcomes from a normal distribution, standard bell-shaped curve.

The properties of this distribution assure that about 65% of the observations occur within one standard deviation both above and below the average between \$1,295.57/hd to \$1,337.81/hd. In addition, 95% of the observations will be within 2 standard deviations and 99.5% within 3 standard deviations. Figure 1 shows the average cost for the Lo cost sub-scenario is \$1316.69. The respective probabilities are located on the vertical (y-axis). The associated costs/hd makeup the (x-axis). These figures are known as cumulative distribution functions (CDF's). They are cumulative in the sense that the probability increases additively as the x values increase. The probability is cumulative. To illustrate, Figure 1 the Lo cost CDF shows that costs less than or equal to \$1,290.63/hd occur about 10% of the time. Conversely there is 90% probability that cost will exceed the same cost 1,290.63/hd. On average one hundred the simulation iterations the Lo cost will have 10 less than or equal to \$1,290.63/hd with the remaining 90 draws having a greater value. Figures 2 and 3 have similar CDFs shapes, they basically differ in the magnitude of their average. The Mid cost figure (Figure 2) has a cost average of \$1562.51/hd. The high Hi cost (Figure 3), cost averages is even greater with a value of \$1720.39/hd. These CDFs variable nature are

transferred to the CP-CQL in the form of mean (average) and standard deviation (recorded variability).

Figure 1. Nebraska Low-Cost Replacement Outcomes for 2026-2027

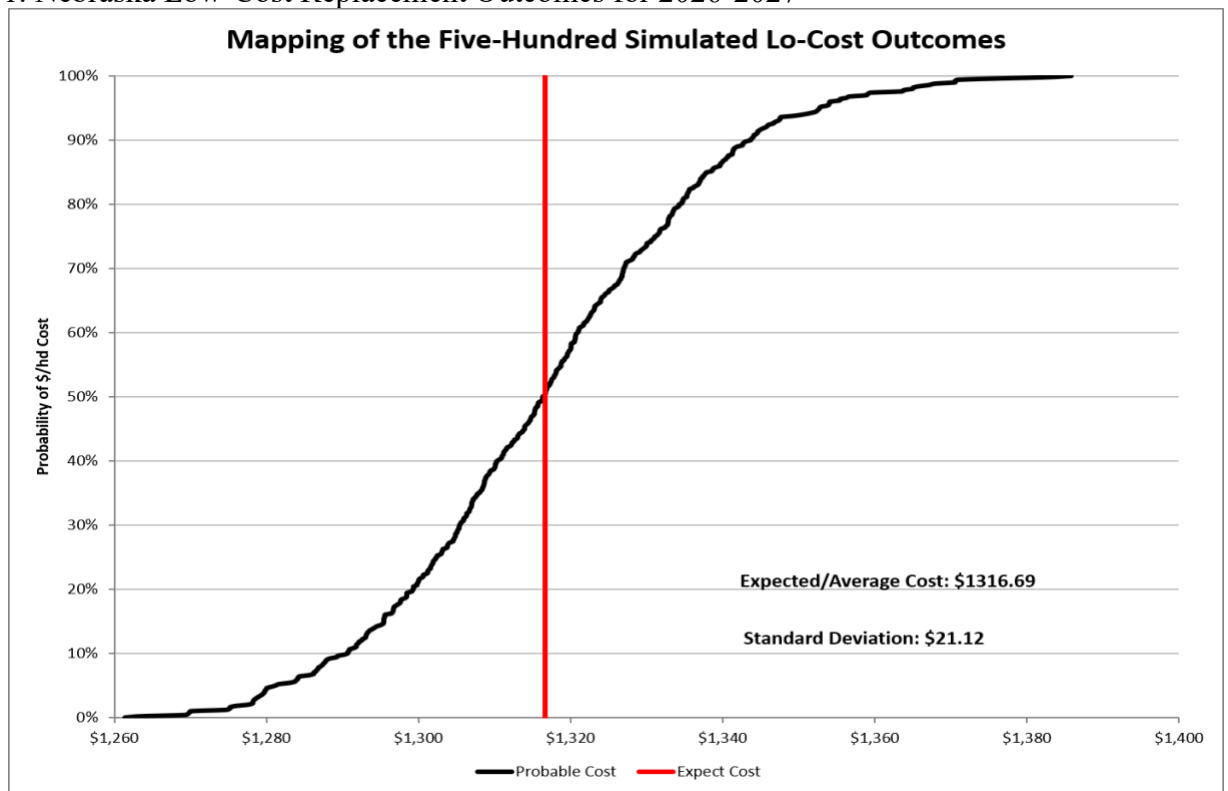
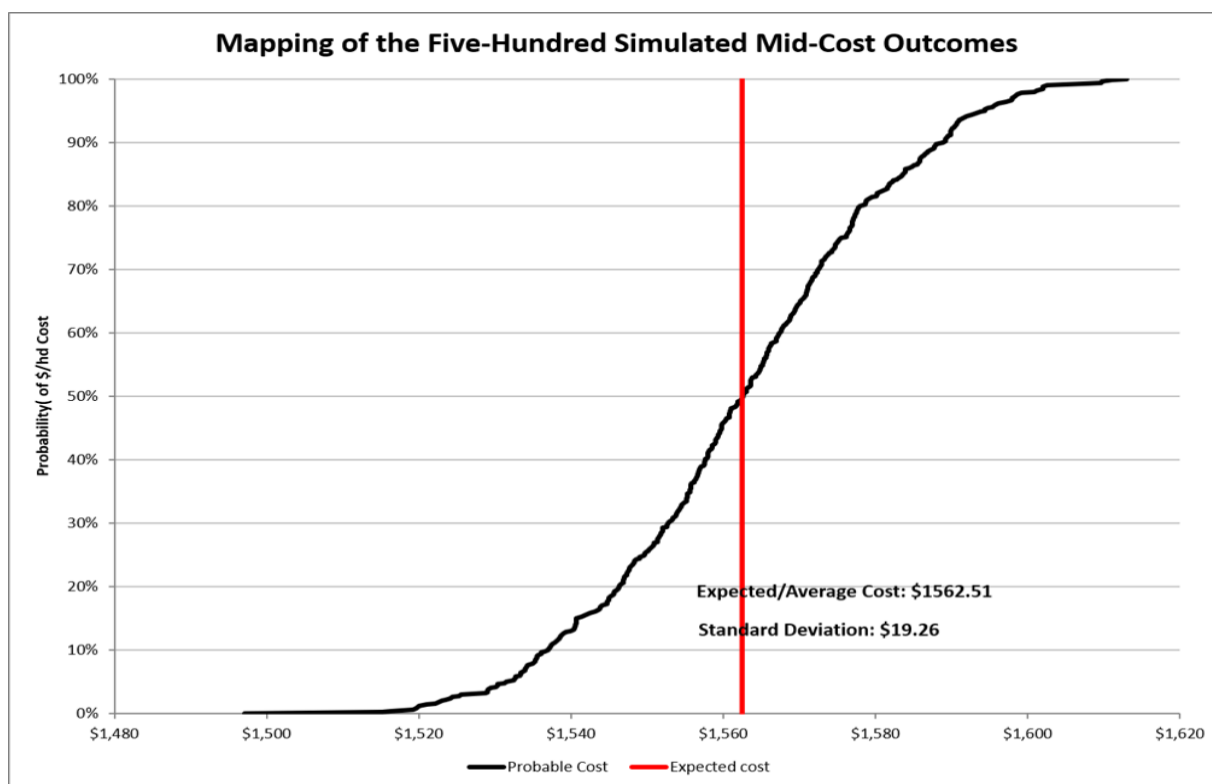


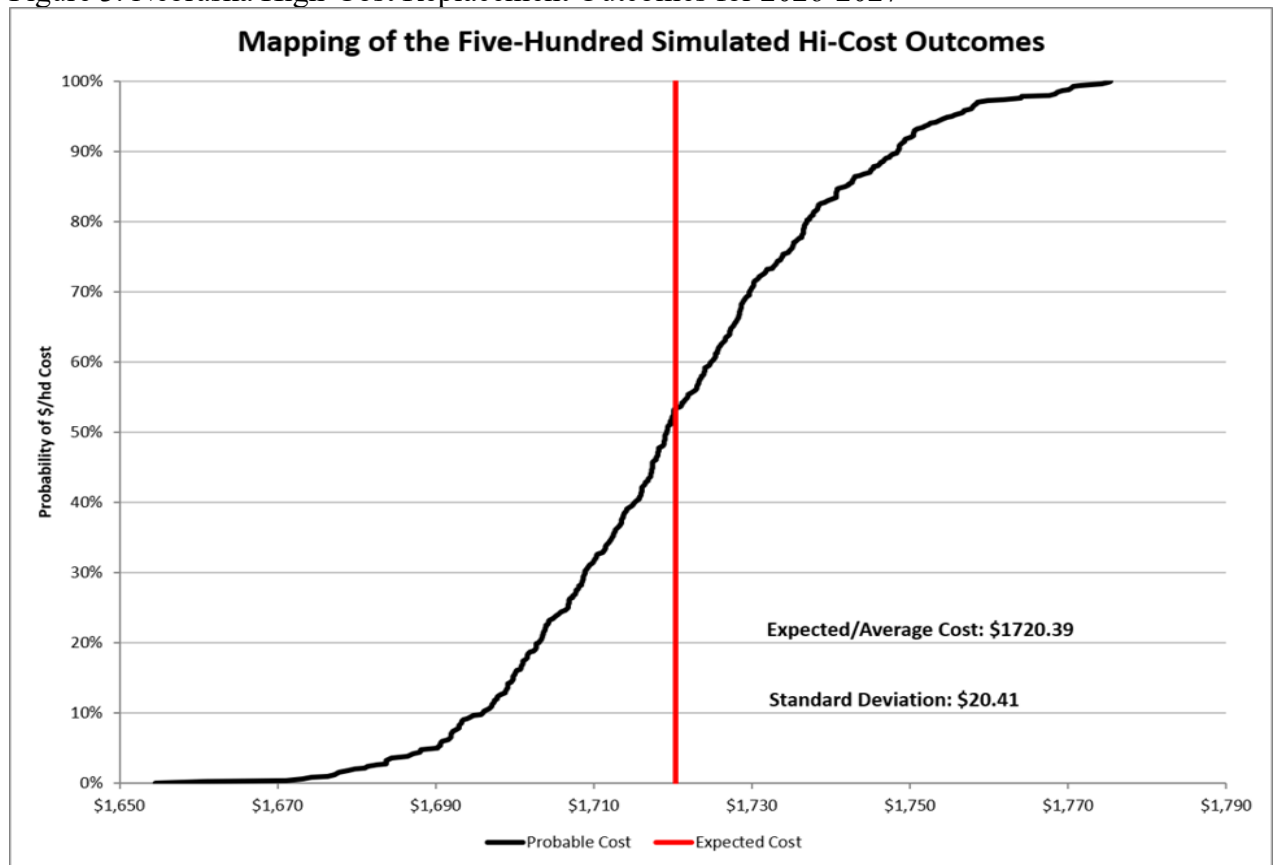
Figure 2. Nebraska Middle-Cost Replacement Outcomes for 2026-2027



The inclusion of this type of variation makes it possible to simulate and understand the associated risk with the forecast CBVs. The three levels of costs relate directly to the 2026 Nebraska State’s average for the low, median, and high pasture rental rates. The area rental rates applied in this report are from USDA’s Nebraska North Statistical Reporting District. These values are collected and calculated as part of UNL’s Agricultural Economics Department Annual Farm Real Estate Report. Rental rates are reported as monthly charges for a cow/calf pair. This year’s low one-third averages \$70.65/cow-calf pair and is used as part of the Lo budget. The high one third of \$92.40/cow-calf pair is used to calculate the Hi cost, while the middle two-thirds average \$81.53/cow-calf pair and applies to the Mid cost budget. The pasture rental rates for the winter season listed as dormant season grazing, are half of the summer rates. The total annual costs of forage (pasture, hay, etc. for both summer and winter combined varied between 42.9% – 49.5% of all cow costs and 96.3% - 96.8% of total feed costs, making them consistent with expectations. Total feed costs ranged from 44.5% to 51.2% of all costs.

The three cost levels are simulated in the CP-CQL for three annual replacement (cull) rates of 14%, 20%, and 28%, respectively. For each of the nine simulations, sub-scenarios, are iterated 1,000 times. To make it easier to identify the individual sub-scenarios the Lo, Mid, and Hi indicators are combined with the replacement rates of 14%, 20%, and 28% giving rise to nine sub-scenario designations of Lo14%, Lo20%, Lo28%, Mid14 %, Mid20%, Mid28%, Hi14%, Hi20% and Hi28%. The higher the replacement rate, the younger the herd is on average and the probability of any particular cow getting older decreases. The sub-scenario most likely to have the highest overall cost considering the higher rate of depreciation is the Hi28%, the lowest is Lo14%.

Figure 3. Nebraska High-Cost Replacement Outcomes for 2026-2027



Section 3: Simulation and Scenario Descriptions

Each individual cow simulation in the CP-CQL follows a simple series of events, much like the process observed in reality, except of course the events are virtual. A single iteration of the CP-CQL randomly selects a cow to purchase. An individual animal is created from a random draw of cow characteristics compiled from a distribution of animals made up of cows historically present at the University of Nebraska Lincoln's Gudmundsen Sandhills Laboratory. Once drawn this cow is run through her complete life, production cycle ranging from as many as 11 additional seasons. As part of the herd, she has an associated probability of having and weaning calves, becoming pregnant, dying or being culled. Animals start off as two-year-olds with some making it to 12 years of age. Productivity is based on cow age, cow weight and calf gender. The economics are based on her purchase costs and future forecast salvage value (cull value), accumulated calf value, production costs and depreciation rate (opportunity costs) Each calf is assigned a birth weight, based on assigned gender, dams age and weight. Upon each weaning the calves are assigned a weaning and sales weight based on gender, dam's size and weight, birth weight, and age at weaning. The gender, birth weight and age at weaning age, weaning weight are all variable based on statistical models of GSL historical calf birth and weaning data. Cows are culled due to non-pregnancy, cull rate constraint, age limit, and death rate. Aged cows are automatically culled after weaning their 11th calf. The calves are sold using a price slide based on their weaned/sales weights and the prices forecast for the year in which they are weaned. Cows' salvage value is based on the cull price of the year they are culled. Cows net returns relate directly to their longevity, productivity, annual costs, and calf prices. These annual returns can be

negative during years when annual production costs exceed annual calf revenue. The CBV is the difference between all revenue/s, (calf sales and cow cull value) minus all production costs except purchase costs. The time value of the tied-up capital of her purchase price is included as an expense. From this brief and simplified explanation of the CP-CQL it is clear that the factors that play a huge role in determining beef cow value relate to her productivity, cost of production, longevity and value changes for her and her calf. Unfortunately, each of these variables are unknown and require forecasts. This may be the reason some may shy away from taking any significant time to develop an estimate of a replacement beef cow's value.

There are 12 scenarios each with nine sub-scenarios using three cost levels and three cull rates. These scenarios and sub-scenarios capture a wide breadth of possible circumstances and add value and understanding to an infinite number of likely CBVs. To facilitate those wishing to have a clearer understanding about some of the basic parameters of the scenarios, they are briefly described in the remainder of this section

There are several common assumptions relevant to each scenario, death loss is set at 2% and when relevant borrowed money for cow purchases is 9%. Cow purchase cost range between \$3,550/hd and \$4,400/hd, with cow weaning rate varying randomly from a low of 88% to a high of 98%.

Scenario #1, the FAPRI baseline uses cattle values and cost level changes based on their future price and cost projections. However, the costs levels are based on Nebraska cow/calf budgets and then adjusted using FAPRI annual percentage changes for the forecast period. The price series and cost are identified as Price1, Scenario 1. The Budget information found in Appendix A provides the detail of costs and quantity ranges used to establish the three cow cost levels. For further understanding of the FAPRI forecast go to the appropriate document found on their website. The FAPRI link is in the above text. The 600 to 650 lb calf prices are adjusted for calf gender and weaning weight sale (price slide) based on the GSL historical information.

Scenarios #2 and #3 address changes in weaning rate. Using the same economic and biological parameters as Scenario #1 with the exception that the randomly drawn weaning rate is replaced by a constant rate of 88% for Scenario #2 and 98% for Scenario #3. These scenarios capture the changes in cost per unit created by productivity changes which are expected to directly influence CBV. Logically the more cost efficient a cow is in producing a calf, given that producing calves is profitable, operations of like costs and resources are expected to experience a cost per unit produced decline and an increase in revenue, resulting in higher profits and larger CBV values. These two scenarios show the relationship of productivity changes and its effect on profit and reinvestment, making it possible to see the response of incremental % changes in weaned calves' effect on business viability.

Scenarios #4, #5, and #6 represent three levels of borrowing money for cow purchases. It is expected that increase borrowing will reduce CBV amounts. This information is about the practicality of borrowing money. This will likely be the case for those new businesses or for those wanting to expand their operation. Scenario's #4, #5, and #6 have borrowing levels of 25%, 50%, and 75% of the purchase costs. This equates to approximately borrowing \$1,000, \$2,000 or \$3,000/hd per cow purchased at the 9% rate of interest.

Scenario's #7 through #12 demonstrate the effects of 6 alternate cattle price series. These scenarios are included as expert opinion of what might occur and explore prices based on past observation and expected future conditions. Price series 2, 3 and 4, scenarios 7, 8, and 9 respectively all show the three beef prices series rebounding more quickly than FAPRI forecast suggests. The remaining three scenarios, 10, 11, and 12 are more optimistic overall with less

variation and a tendency to be resilient to any sharp declines. Each These forecasts were solicited at four Universities and were generously given with the recognition that they are subjective and rely on speculation. Those that participated are extension, teaching and research faculty who focus on the production and/or marketing of beef cattle. Table 1 list here respective scenario and price numbers along with the affiliated institution.

Table 1. Scenario number, series designation and source of origin

Scenario #1/ Price Series 1	FAPRI 2026 Beef Cattle Price Projections
Scenario #7/ Price Series 2	University of Nebraska Lincoln, Ag Econ, Research/Extension/Teaching (Campus)
Scenario #8/ Price Series 3	University of Nebraska Lincoln, Ag Econ, Research/Extension (WREEC)
Scenario #9/ Price Series 4	University of Kentucky, Ag Econ, Research/Extension/Teaching
Scenario #10/ Price Series 5	University of Nebraska Lincoln, Animal Science, Research/Extension/Teaching
Scenario #11/ Price Series 6	North Dakota State University, Ag Econ, Extension
Scenario #12/ Price Series 7	South Dakota State University, Ag Econ, Research/Extension/Teaching

Table 2. Price series with each scenarios average CBV of their nine sub-scenarios along with their rankings

Price series	Average CBV	Rank	Scenario #
Price1	\$2,417.73	6 th	1
Price2	\$3,330.12	2 nd	7
Price3	\$2,839.00	4 th	8
Price4	\$2,369.77	7 th	9
Price5	\$3,301.02	3 rd	10
Price6	\$2,751.37	5 th	11
Price7	\$4,771.78	1 st	12

From Table 2 above the FAPRI outcomes have the 2nd lowest CBV about half of the top ranked Scenario 12, Price7. Price4 had the lowest average very close to the Price1 result. Each of the seven series are graphically represented in the three following figures, Figures 4, 5 and 6 for further study. Figure 4 captures utility cow price Sioux Falls South Dakota, Figure 5, represents feeder calves 600 to 650 lb from the five-state area and Figure 6, slaughter or fed cattle. The two series critical in making the CPCQL operational are utility cow prices and 600 to 650 calf prices. These two series drive the revenue portion of the program. The fat cattle prices are included as bonus and illustrate the cointegrated nature of the three markets. This market is the ultimate driver in the beef cattle market, as the primary output.

Figure 4. Utility cow price projection series 1, 2, 3, 4, 5, 6 and 7 for the coming decade

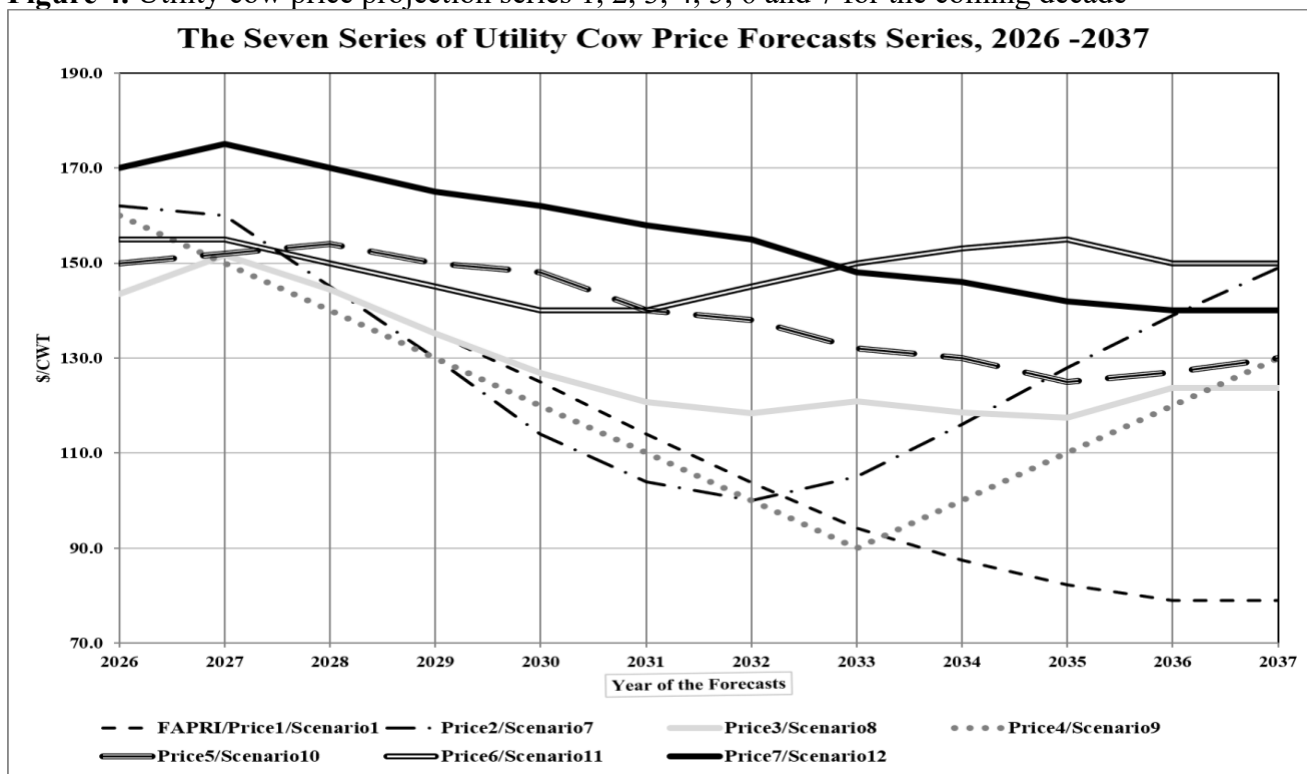


Figure 5. The 600-to-650-pound feeder calves' price projection series 1, 2, 3, 4, 5, 6 and 7 for the coming decade

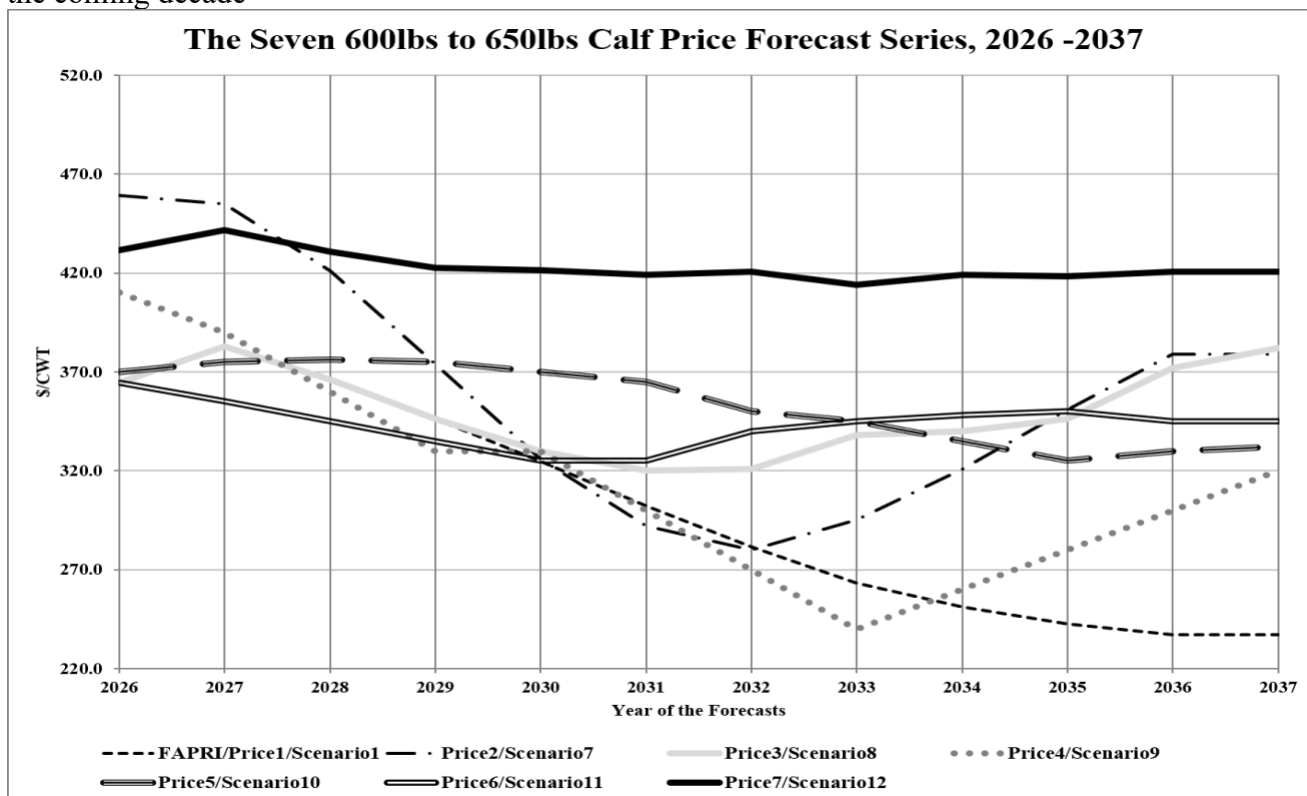
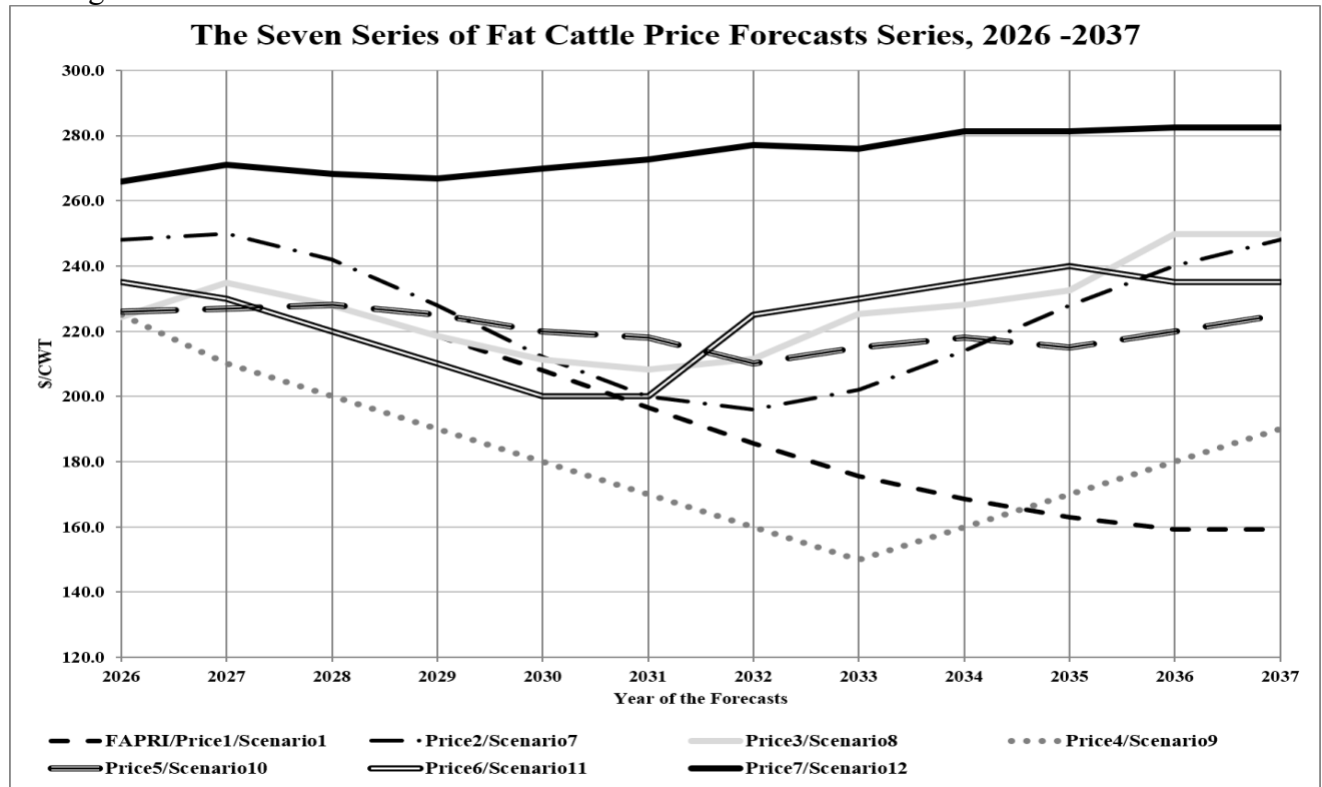


Figure 6. The fat cattle price projection series 1, 2, 3, 4, 5, 6, and 7 price projections for the coming decade



As already described the twelve scenarios are divided into two sensitivity groups. The first includes the Baseline scenario with five other scenarios, two with modifications in productivity (weaning rate) and three with changes in debt level (borrowed purchase funds). These scenarios are “Operational” in nature. The second group has six additional scenarios where the Baseline (FAPRI) price series are replaced by those provided by various experts in the beef industry. The results for all scenarios are divided into three sections: Section 4 reports the simulated average nine CBVs and PBs for each scenario, Section 5 dives deeper into the dollar effect of cull rates and varying production costs by reporting value changes or “marginal” changes in the CBVs. Section 6 uses the marginal changes from section 5 and creates twelve tables where varying levels of cost and cull rates can be extrapolated for those who are interested in cull rates and production costs found but not found in the A tables. The tables designated as “A” report the simulated CBVs in dollars per head (\$/hd) for the nine sub-scenarios. Tables designated as “B” relate the probability (PB) that replacement cows will return their purchase value. These two tables report scenarios in ascending order. The average purchase price per cow for all scenarios is \$3,975/hd and is randomly assigned to individual animals via a uniform distribution. The random draws range in value from \$3,550/hd to \$4,400/hd.

Section 4: Simulated CBV Outcomes and PB for Operational

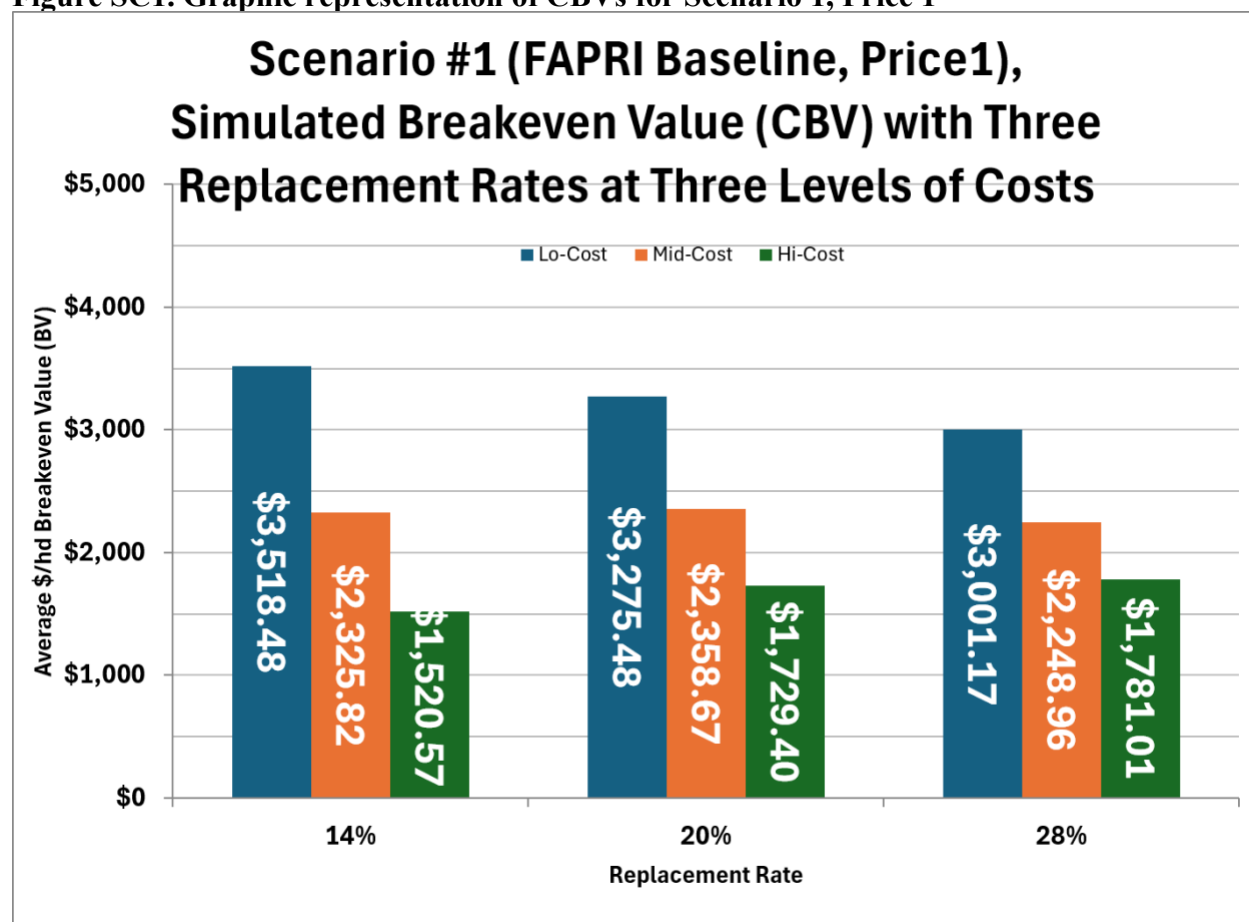
I. Operational Sensitivities (Scenarios 1 through 6, CBVs and PBs)

Scenario #1 (Baseline FAPRI): Price1, Random 88%-98% Weaning Rate, No Borrowing with a \$3,975/hd Cow Purchase Price

The CBV simulated values are reported in **Scenario Table 1A**. This scenario's average CBV of \$2,417.73/hd is ranked 6th highest of the seven price scenarios, scenarios 1, 7, 8, 9, 10, 11, and 12. The top ranked average CBV is Scenario #12 with \$4,771.78/hd, 2nd, Scenario 7, with \$3,330.12, 3rd, Scenario #10, average CBV of \$3,301.02/hd, 4th, Scenario #8, average CBV of \$2,839.00/hd, 6th, Scenario #11, with an average CBV of \$2,751.73/hd and finally 7th, Scenario# 9, with an average CBV of \$2,369.77. As expected, the increasing costs of production negatively affect the CBV. In the presence of consistent annual profit, cow longevity increases CBV. The opposite is true when annual losses occur. This is illustrated in the Hi-Cost column of the table. In the presence of annual losses which occur during periods of lower cattle prices shorter lived cattle have a higher CBV. From Figures 4, 5 and 6 the FAPRI (Price1) series show a sharp decline which inverts CBV values. This is very apparent for the Hi-Cost level and to some extent the Mid-Cost level. CBVs range from a maximum of \$3518.48/hd for the Lo14% sub-scenario to the least CBV of \$1,520.57 for the Hi28% sub-scenario.

Figure SC1 presents the CBVs from the scenario table in a visual form, helping to reinforce the magnitude and interrelationships among the nine sub-scenarios.

Figure SC1. Graphic representation of CBVs for Scenario 1, Price 1



Scenario Table 1A. Cow Breakeven values (CBVs) for Scenario #1

Scenario# 1 Cull Rate	Lo-Cost	Mid-Cost	Hi-Cost
	\$1,315.31	\$1,561.98	\$1,719.86
14%	\$3,518.48	\$2,325.82	\$1,520.57
20%	\$3,275.48	\$2,358.67	\$1,729.40
28%	\$3,001.17	\$2,248.96	\$1,781.01

Scenario Table 1B indicates PB, the probability that the average purchase price of \$3,975/hd for replacement cows will be recovered. The results indicate that PB is greater than zero for Lo-Cost sub-scenarios and at levels less than 50%. The PBs are 36%, 27% and 16% for Lo14%, Lo20% and Lo28%. The Price1 Baseline scenario with an average cow cost of \$3,975/hd are not likely to be repaid no matter the cow's longevity. This highlights the role production and sales value play in determining the CBVs.

Scenario Table 1B. The probability of successfully paying back (PB) the \$3,975/hd cow purchase cost under Scenario #1 conditions

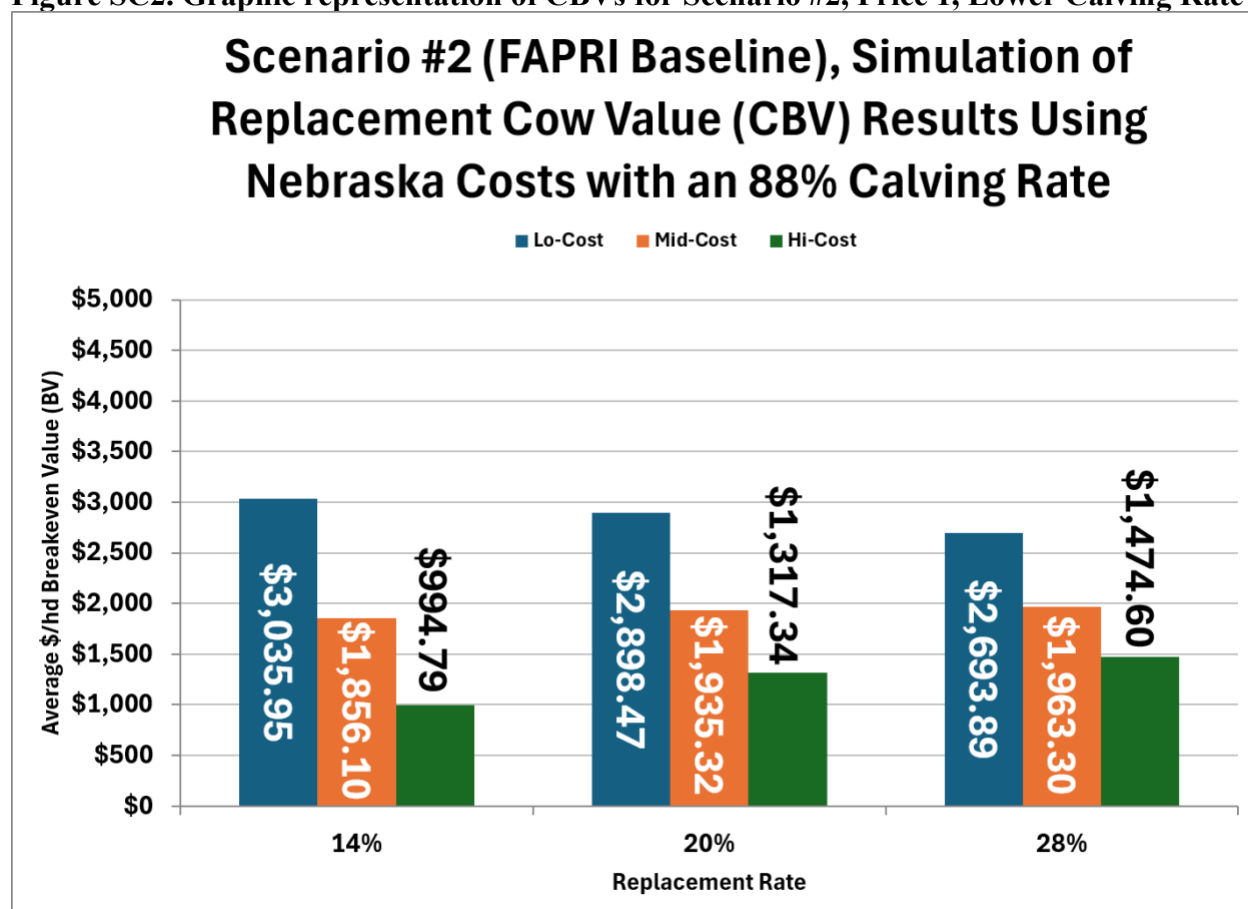
Scenario# 1 Cull Rate	Lo-Cost	Mid-Cost	Hi-Cost
	\$1,316.69	\$1,562.51	\$1,720.39
14%	36%	0%	0%
20%	27%	0%	0%
28%	16%	0%	0%

Scenario #2 (88% Weaning Rate): Price1, Fixed 88% Weaning Rate, No Borrowing with a \$3,975/hd Cow Purchase Price

The nine simulated CBVs reported in **Figure SC2** and **Scenario Table 2A** shave the same basic pattern as Scenario #1, with increasing production costs the rate at which cows are replaced negatively affect the CBVs when profits are positive but are reversed when losses occur. The CBVs listed in **Scenario Table 2A** show the lower weaning rate of 88% has negative effect on CBVs with an overall average CBV of \$2,018.86/hd, nearly \$400/hd less. The maximum replacement cow value is \$3,035.95/hd for the Lo14% sub-scenario which is \$483/hd less than the same sub-scenario of the baselines with a 93% average weaning rate. This translates into average loss of about \$80/hd in CBV for every 1% loss in the average weaning rate. The minimum CBV is \$994.79/hd again for the Hi14% sub-scenario. As noted in the Scenario 1 results this violates the expected relationship where cow longevity increases CBVs. The explanation is simple, cost in later years of the ten-year cost and price projections are years when costs exceed revenue and enough animals reach an age, have longevity, where they experience this loss, thereby dragging the average CBV down for long lived animals which are more numerous for herds with lower annual cull rates. The likelihood of loss increases as production costs increase, and cattle prices are declining.

Figure SC1 presents the CBVs from the Scenario 2 in a visual form, helping to reinforce the magnitude and interrelationships among the nine sub-scenarios. The orange bars (Mid-Cost) and green bars (Hi-Cost) distinctly show the effect of decreasing productivity and therefore increasing per unit cost and its reversing cow longevity effects.

Figure SC2. Graphic representation of CBVs for Scenario #2, Price 1, Lower Calving Rate



Scenario Table 2A. Breakeven values (CBVs) for Scenario #2

Scenario #2	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$3,035.95	\$1,856.10	\$994.79
20%	\$2,898.47	\$1,935.32	\$1,317.34
28%	\$2,693.89	\$1,963.30	\$1,474.60

Scenario Table 2B as expected shows that PB with an average purchase price of \$3,975/hd is much more unlikely than Scenario 1. The only PB's greater than zero are again for Lo-Cost sub-scenarios but are much smaller with probabilities of 2%, 2% and 1% for Lo14%, Lo20% and Lo28% sub-scenarios. Compared to the 93% average weaning rate of Scenario #1 there is a 34%, 25% and 15% decline in the PB compared to the same sub-scenarios respectively.

Scenario Table 2B. The probability of successfully paying back (PB) \$3,975/hd of cow purchase cost under Scenario #2 conditions

Scenario #2	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	2%	0%	0%

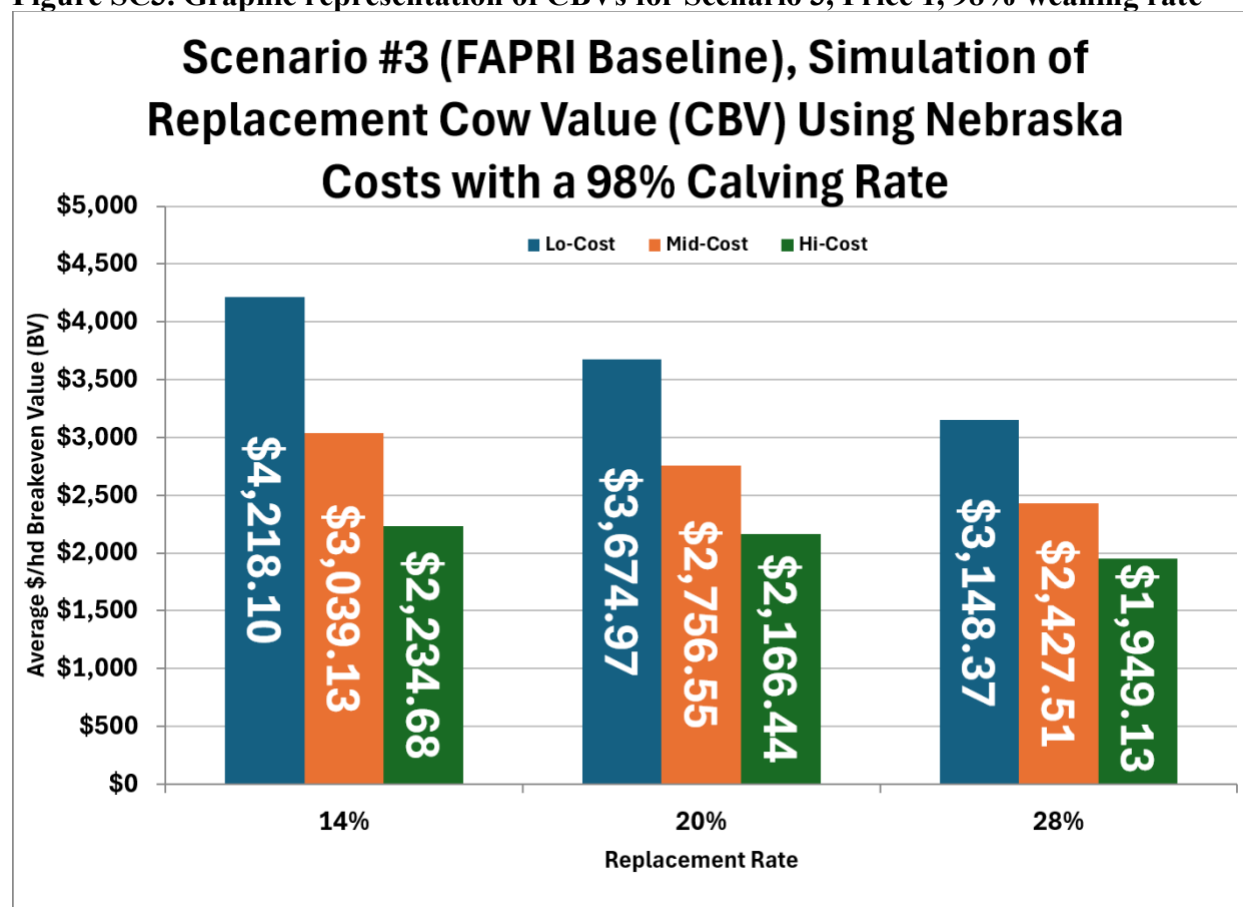
20%	2%	0%	0%
28%	1%	0%	0%

Scenario #3 (98% Weaning Rate): Price1, 98% Weaning Rate, No Borrowing of the \$3,975/h Cow Purchase Price

The nine simulated CBV sub-scenarios are reported in **Scenario Table 3A**. Unlike Scenarios 1 and 2 all cost groups show an increase in CBV when cull rates decline. Increasing costs of production and the cow replacement rate negatively impacts CBVs. As expected with any costless productivity increase the CBVs increase. The maximum replacement CBV is \$4,218.10/hd for the Lo14% sub-scenario. This amount is about \$700/hd more than the 93% rate. The increase productivity translates into an additional average of more than \$85/hd in CBV for every 1% increase in the weaning rate. Interestingly the lower cull rates have a greater boost in CBV value for every 1% decrease in cull rate. The minimum CBV is \$1,949.13 for the Hi28% sub-scenario, more than \$2,268/hd less than the maximum.

Figure SC3 presents the CBVs from Scenario 3 in a visual form, helping to reinforce the magnitude and interrelationships among the nine sub-scenarios.

Figure SC3. Graphic representation of CBVs for Scenario 3, Price 1, 98% weaning rate



Scenario Table 3A. Breakeven values (CBVs) for Scenario #3

Scenario #3	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69/hd	\$1,562.51/hd	\$1,720.39/hd
14%	\$4,218.10	\$3,039.13	\$2,234.68
20%	\$3,674.97	\$2,756.55	\$2,166.44
28%	\$3,148.37	\$2,427.51	\$1,949.13

As expected, the **Scenario Table 3B** has PBs greater than the baseline results and the lower weaning rate in Scenario 2. The productivity increase in the form of a higher weaning rate raises the average baseline PB by more than 8%. Compared to Scenario #1 and #2 the PB's for the Lo14% cows in Scenario 3 increased to 58% compared to 36% and 2%, 45% compared to 27% and 2%, for the Lo20% cows and 24% versus 16% and 1% for the Lo28% group. This is even more noticeable for Mid-Cost group where the PB for the 88% and 93% average weaning rate cows are zero but is 13%, 9% and 3% for the 98% weaning rate for the Mid14%, Mid20% and Mid28% levels respectively. The Hi-Cost group of cows for all three weaning rates never achieve a positive PB.

Scenario Table 3B. The probability of successfully paying back (PB) \$3,975/hd of cow purchase cost under Scenario #3 conditions

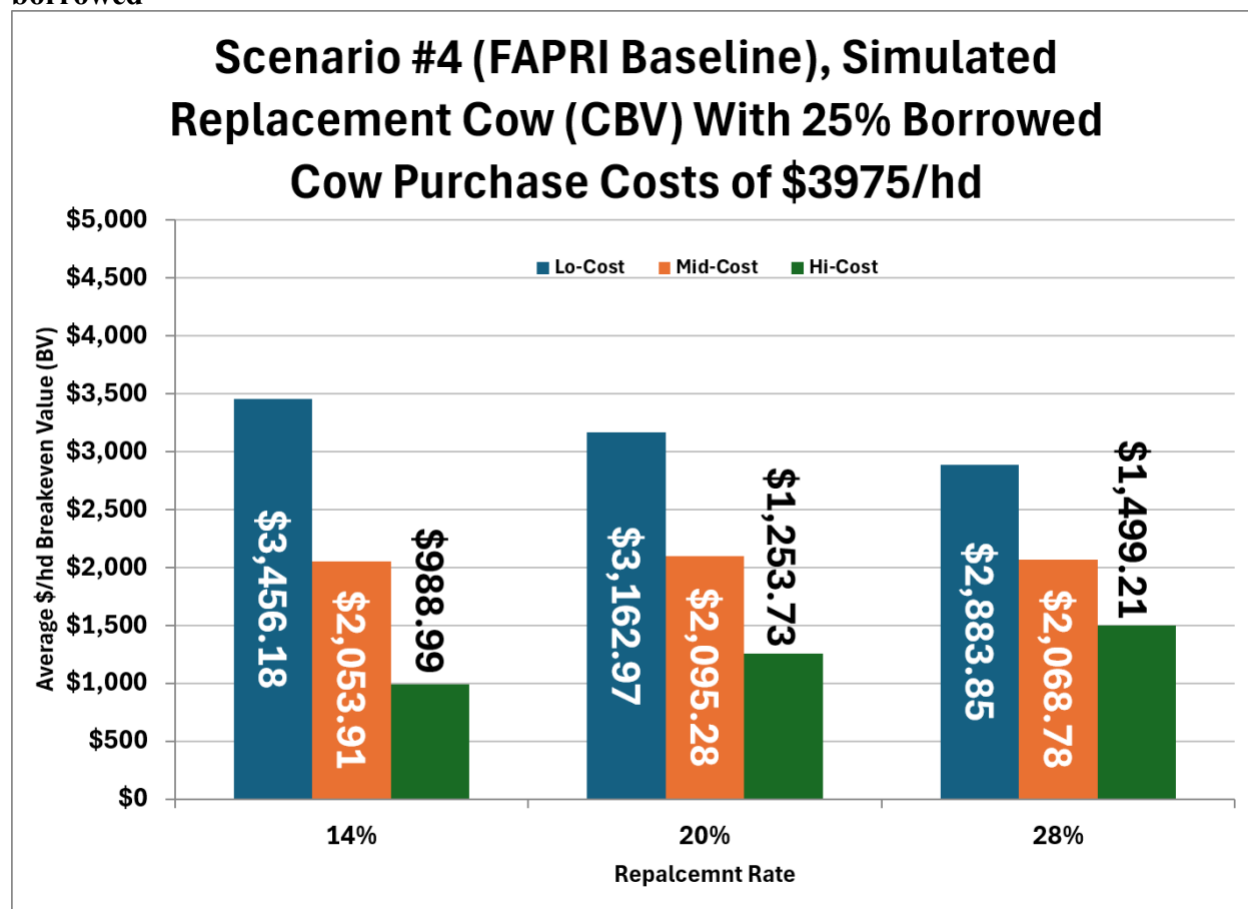
Scenario #3	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	58%	13%	0%
20%	45%	9%	0%
28%	24%	3%	0%

Scenario #4 (25% Borrowed): Price1, Random 88% - 98% Weaning Rate, 25% Borrowed Money for the \$3,975/hd Cow Purchase Price (\$1,000)

The nine simulated CBV sub-scenarios are reported in **Scenario Table 4A**. Similar to Scenarios #2, the burden of added costs per unit alters the CBV rankings of Hi-cost cull rates, where the lowest cull rate has the smallest BV. Each of the CBVs is negatively affected by increasing cost levels compared to the baseline, Scenario 1. The CBVs are all diminished by borrowing nearly \$1,000/hd compared to the Baseline Scenario. The Hi-Cost group however, was impacted most. The average drop in CBV for the two scenarios for the Hi-Cost group is more than \$429/hd, whereas the drop in CBV for the Lo-Cost group is less than \$98/hd. Not surprisingly the least CBV is \$988.99/hd for the Hi14%, sub-scenario. As in previous scenarios the general trend where cow longevity increases CBV is violated for the Hi-Cost group and the drop between the Mid20% and Mid 28% sub-scenarios. The explanation for this is simple and can be found in Scenario #2 results above. As explained in Scenario 2 the sub-scenarios with higher costs in the later years of the ten-years of cow life and in the presents of declining prices, as projected by FAPRI, produce at a loss. Sub-scenarios where enough animals reach an older age, have longevity, experience these losses, thereby dragging the average CBV down for longer lived animals, which are more numerous in herds with lower annual cull rates.

Figure SC4 presents the CBVs from Scenario 4 in visual form. This is intended to provide clarity by showing relative differences in a side-by-side arrangement.

Figure SC4. Graphic representation of CBVs for Scenario 4, Price 1, 25% Purchase Price borrowed



Scenario Table 4A. Breakeven values (CBVs) for Scenario #4

Scenario #4	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$3,456.18	\$2,053.91	\$988.99
20%	\$3,162.97	\$2,095.28	\$1,253.73
28%	\$2,883.85	\$2,068.78	\$1,499.21

The information in **Scenario Table 4B** indicates the \$3,975/hd is recovered or paid back PB, with the caveat that ~\$1,000/hd (25%) of the purchase price is borrowed is on average about 6%. This is 3% lower than the Baseline scenario. The PB's are 28%, 18% and 12% for Lo14%, Lo20% and Lo28% with no other sub-scenario's PB greater than zero. Compared to Scenario #1 borrowing \$1,000/hd drops the PB by 8%, 9% and 4% relative to the Lo14%, Lo20% and Lo28% sub-scenarios.

Scenario Table 4B. The probability of successfully paying back (PB) the \$3,975/hd cow purchase cost under Scenario #4 conditions

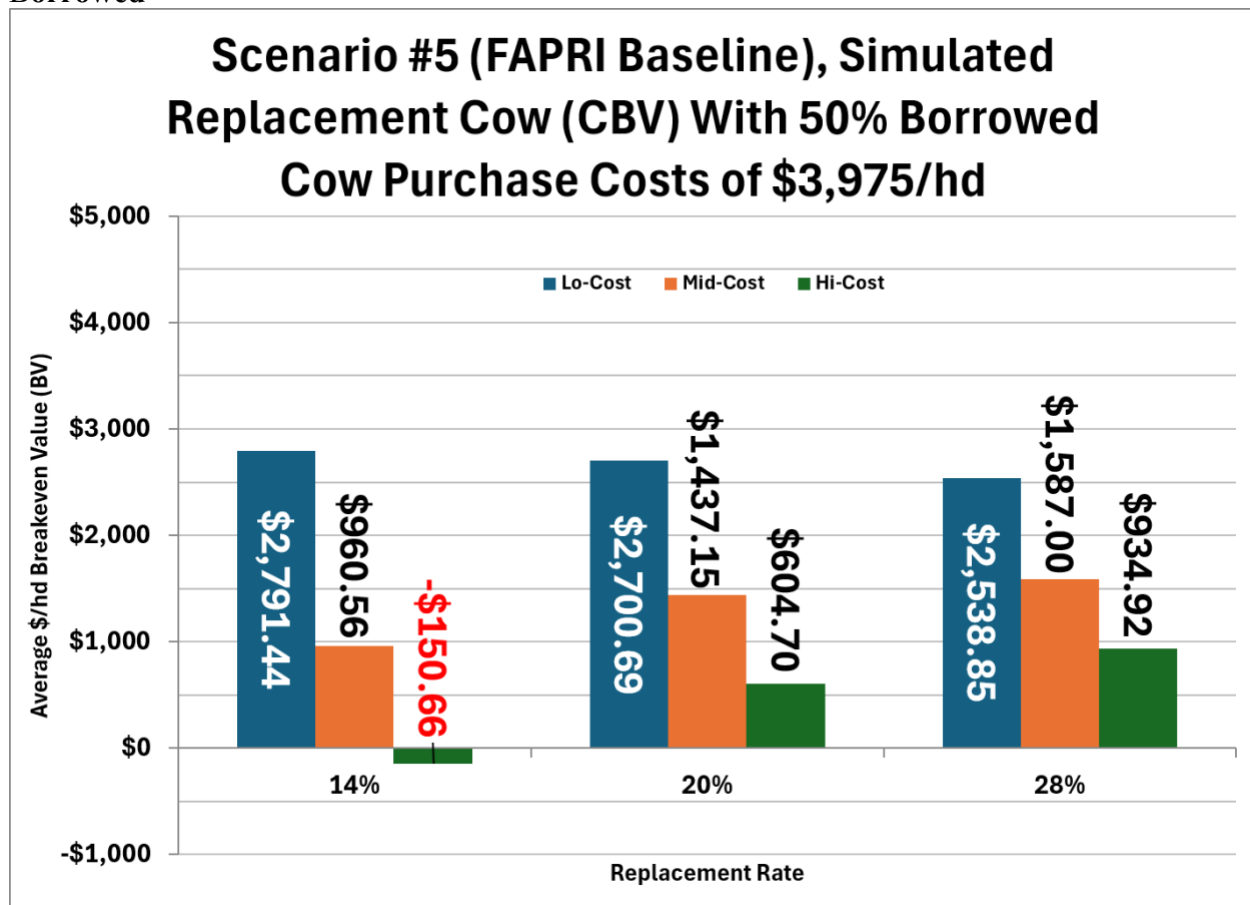
Scenario #4	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	28%	0%	0%
20%	18%	0%	0%
28%	12%	0%	0%

Scenario #5 (50% Borrowed): Price1, Random 88%-98% Weaning Rate, 50% Borrowed Money (\$2,000) of the \$3,975/hd Cow Purchase Price

The nine simulated CBV sub-scenarios are reported in **Scenario Table 5A**. Like Scenario 4 added interest expense reduces CBVs significantly. With double the amount borrowed, cow cost increases and further amplifies the reversal effect of cow longevity and cost. These reversals are caused for the same reasons as described in Scenarios #2 and #4. In the later years of the ten-year price series and escalating cost forecast by FAPRI, at the higher costs, expenses exceed

Figure SC5 presents the CBVs from Scenario 5 in visual form. This is intended to provide clarity by showing relative differences in a side-by-side arrangement.

Figure SC5. Graphic representation of CBVs for Scenario 5, Price 1, 50% Purchase Price Borrowed



revenues ensuring that the longer the productive life of the cow the greater the loss making the CBV for these cows lower rather than higher. In this application the lower the cull rate group during the period of financial loss the larger the loss. As the amount of borrowing increases costs escalate increasing the number of sub-scenarios that decline with increasing cow longevity. In addition, all CBVs are further diminished by borrowing nearly ~\$2,000/hd for cow purchase compared to previous scenarios. The maximin replacement cow value is \$2791.44/hd for the Lo14% sub-scenario. This amount is \$727.23/hd less than Scenario # 1 (Baseline) and \$664.73/hd less than Scenario #4 (~\$1,000/hd borrowed) for the same sub-scenario, Lo14%. The least CBV is -\$150.66 for Hi14% sub-scenario. This negative CBV implies that to breakeven, get your \$3,975/hd investment back requires that the buyer would need to be reimbursed \$150.66/hd rather than have to pay for them. Not a money-making proposition for anyone.

Scenario Table 5A. Breakeven values (CBVs) for Scenario #5

Scenario #5	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$2,791.44	\$960.56	-\$150.66
20%	\$2,700.69	\$1,437.15	\$604.70
28%	\$2,538.85	\$1,587.00	\$934.92

Scenario Table 5B indicates the probability that the purchase price of \$3,975/hd for replacement cows in this scenario will be recovered, paid back (PB) 10%, 5% and 2% for Lo14%, Lo20% and Lo28% scenarios. For all other sub-scenarios PB is zero, indicating no chance of reimbursement. Compared to Scenario #1 and #4, borrowing the added \$1,000/hd results in a large downward shift in PB. The PB drops 40% and 36% for Lo14%, 27% and 24% for Lo20%, and 16% and 14% for Lo28%, for Scenario's #1 and #4 respectively. This implies that borrowing the extra \$1,000/hd is going to be a difficult task and highly unlikely if the conditions of Scenario #1 are reflective of reality.

Scenario Table 5B. The probability of success in paying back (PB) the \$3,975 cow purchase cost under Scenario #5 conditions

Scenario #5	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	3%	0%	0%
20%	2%	0%	0%
28%	2%	0%	0%

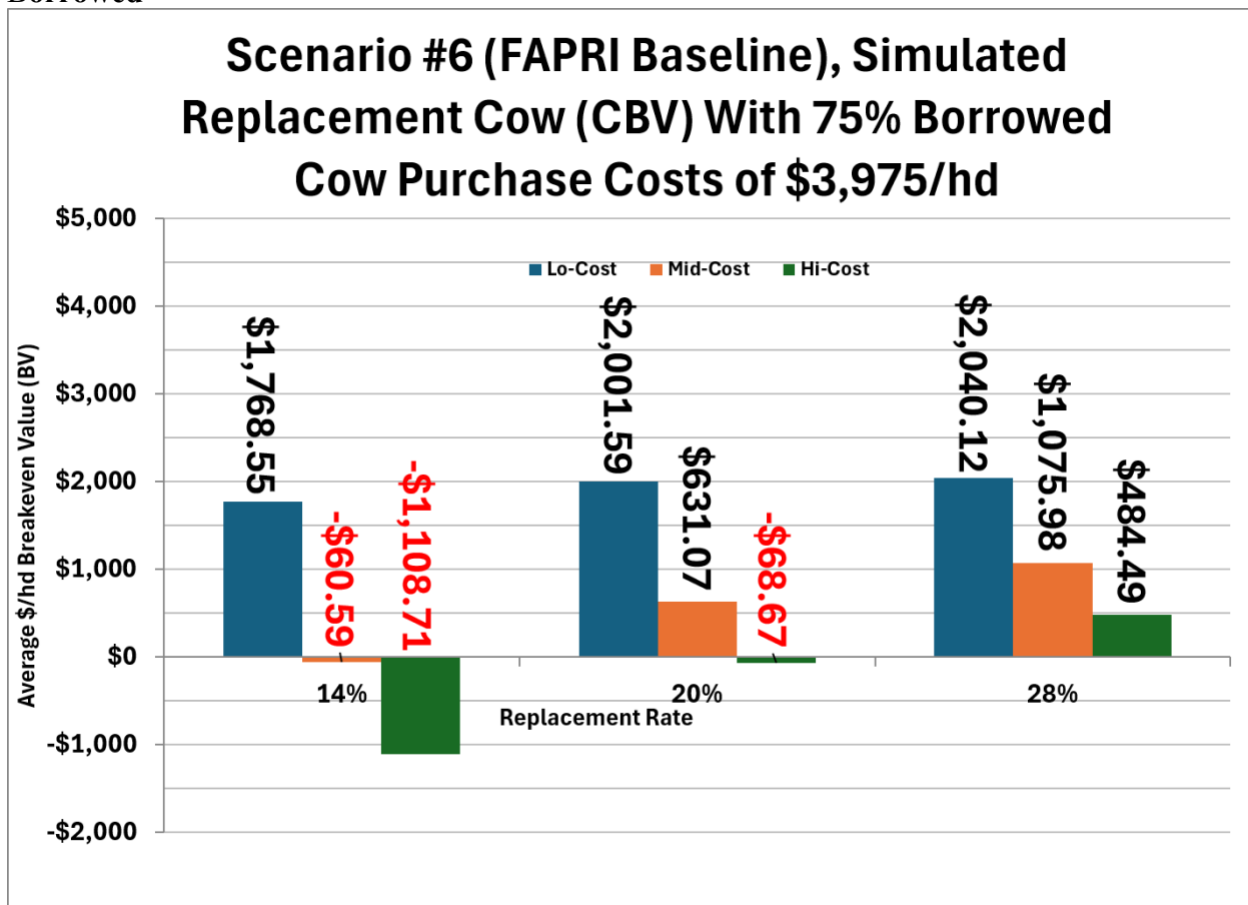
Scenario #6 (75% Borrowed): Price1, Random 88%-98% Weaning Rate, 75% Borrowed Money (\$3,000) of the \$3,975/hd Cow Purchase Price

The nine simulated CBVs are reported in **Scenario Table 6A and Figure SC6**. Just like the previous two scenarios, when annual cow costs increase CBVs decline. The three levels of cow replacement show a greater amount of cost reversal with increasing longevity compared to the 25% and 50% borrowed scenarios. As already mentioned, typically, it is expected that increased cow longevity is associated with cost savings leading to a larger lifetime net return. This is still true when revenues exceed costs, but when those additional years of productivity come with a loss, those losses reduce lifetime value making the lower cull rates result in a lower

CBV. Remember that CBVs are only a comparison of cows purchased in the current year and do not consider the financial impact of future cow purchased to replace culled cows. This does not mean these cows are less profitable than herd mates, but only that future returns are predicted to be less than ideal. In this application the lower the cull rate groups during the period of financial loss the larger the loss. As the amount of borrowing increases costs the amplification of the longevity effect, making the CBV even smaller for those sub-scenarios that are declining due to this effect. The maximin replacement cow value is \$2,040.12/hd versus \$2,789.41/hd for previous 50% borrowing scenario. The maximum values occur at the Lo28% sub-scenario for Scenario 6 and the Lo14% sub-scenario for Scenario 5. For sub-scenario Lo14% Scenario 6 (75% borrowed) has a CBV of \$1,768.55/hd, \$1,022.99/hd less than that of Scenario #5's (50% borrowed) CBV of \$2,791.44/hd, which is \$664.73/hd less than Scenario #4s (25% borrowed) CBV of \$3,456.18/hd which is \$62.30/hd less than the Baseline (0% borrowed) CBV value of \$3,518.48/hd. The CBV in this Scenario with the least value is the Hi14% sub-scenario with a negative \$1,108.71/hd. In order to breakeven the cow buyer would have to be paid on average \$1,108.71/hd. This is not a money-making proposition.

Figure SC6 presents the CBVs from Scenario Table 6 in visual form. This is intended to provide clarity by showing relative differences in a side-by-side arrangement.

Figure SC6. Graphic representation of CBVs for Scenario 4, Price 1, 75% Purchase Price Borrowed



Scenario Table 6A. Breakeven values (CBVs) for Scenario #6

Scenario #6	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$1,768.55	-\$60.59	-\$1,108.71
20%	\$2,001.59	\$631.07	-\$68.67
28%	\$2,040.12	\$1,075.98	\$484.49

Scenario Table 6B indicates that there is no sub-scenario where PB is likely to occur. To provide some prospective it can be stated that under the circumstances of borrowing 75% of the \$3,975/hd average purchase price given the conditions specified for production, price and costs in the Baseline (FAPRI) scenario there are no cows in the 1,000 simulations that returned enough value to cover her purchase price for any of the nine sub-scenarios.

Scenario Table 6B. The probability of success in paying back (PB) the \$3,975 cow purchase cost under Scenario #6 conditions

Scenario #6	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	0%	0%	0%
20%	0%	0%	0%
28%	0%	0%	0%

II. Market Price Sensitivities (Scenarios 7 through 12, CBVs and PBs)

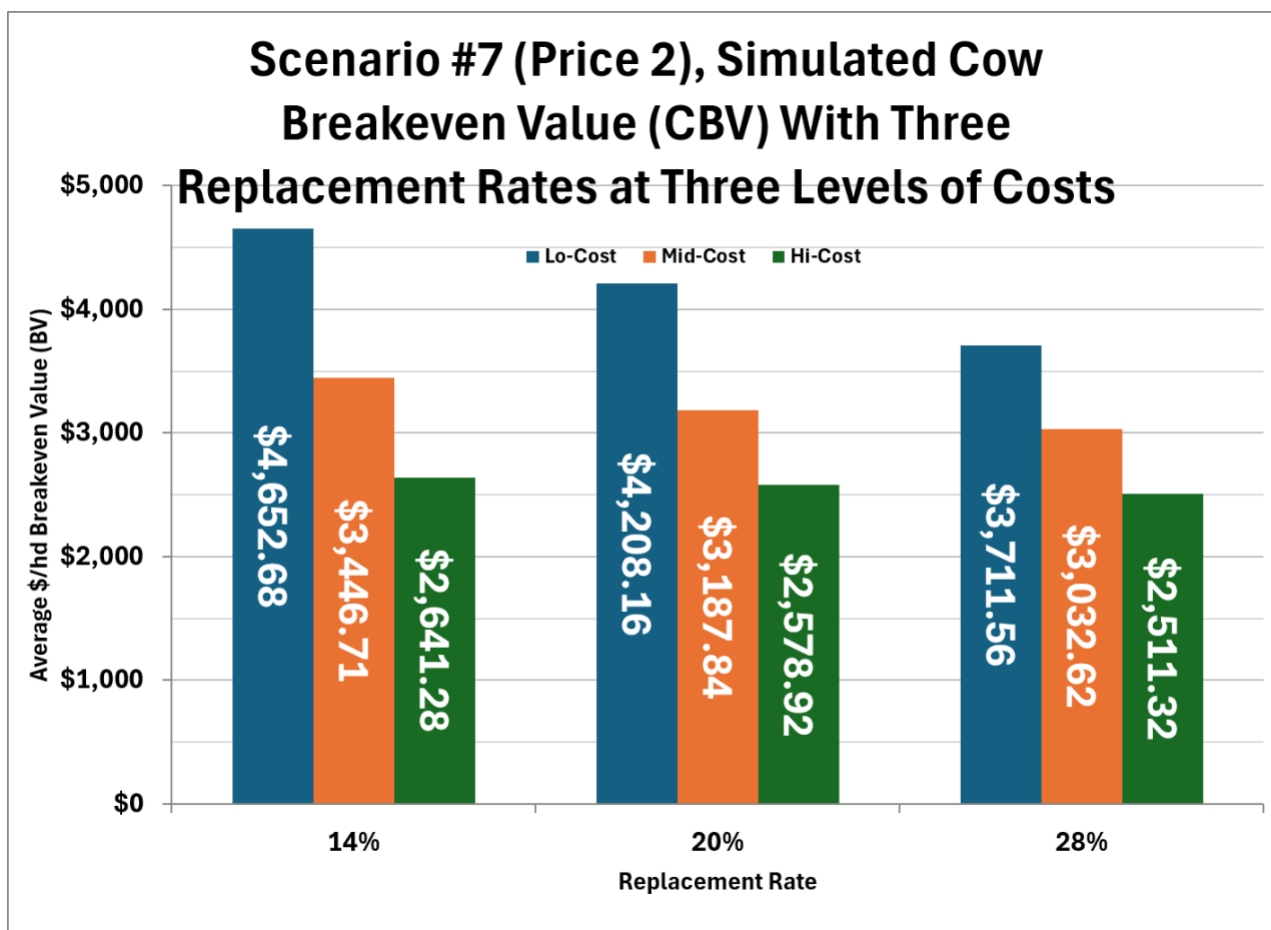
Scenario #7 (Price 2): Price2, Random 88%-98% Weaning Rate, No Borrowing, \$3,975/hd Cow Purchase Price

The nine simulated CBVs are reported in **Scenario Table 7A**. Of the seven price driven scenarios (1, 7, 8, 9, 10, 11 and 12) this scenario is ranked 2nd with an average CBV value of \$3,330.12/hd. The top ranked average CBV is Scenario 12 with an average of \$4,771.78/hd, 2nd is this scenario, 3rd Scenario 10, with an average CBV of \$3301.02/hd, 4th, Scenario 8, average CBV of \$2,839.00/hd, 5th, Scenario 11, average CBV of \$2,751.37/hd, 6th, Scenario 1, with an average CBV of \$2,417.73/hd and lastly, 7th place is Scenario 9 with an average CBV of \$2,369.77/hd.

As expected, increasing cost of production and cull rate negatively impact the CBVs. For this scenario the CBVs range from \$4,652.68/hd for the Lo14% sub-scenario to \$2,511.32/hd for the Hi28% sub-scenario. The average CBVs of this scenario exceed those of Scenario #1 by about \$912/hd. This difference directly relates to its optimistic projected cattle prices compared to Scenario 1. This reinforces the importance of projecting realistic future revenues and the role they play in establishing CBV and the associated PB.

Figure SC7 presents the CBVs from Scenario Table 7 in visual form. This is intended to provide clarity by showing relative differences in a side-by-side arrangement.

Figure SC7. Graphic representation of CBVs for Scenario 7, Price 2



Scenario Table 7A. Breakeven values (CBVs) for Scenario #7

Scenario #7	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$4,652.68	\$3,446.71	\$2,641.28
20%	\$4,208.16	\$3,187.84	\$2,578.92
28%	\$3,711.56	\$3,032.62	\$2,511.32

The information in **Scenario Table 7B**, the PB provide context to amount of risk associated with cow replacement costs. Unlike the previous five scenarios PBs greater than zero are observed for all cost levels. This is due to increased revenues. The PB for Lo14%, Lo20% and Lo28% are 70%, 58% and 40%. The Mid-Cost sub-scenarios have a 19%, 10% and 5% chance of PB for the 14%, 20% and 28% levels of culling. Only one simulated sub-scenario at the Hi level, Hi15% resulted in a chance greater than zero of getting a net return greater than or equal to the cow purchase cost. This suggests that even under these more optimistic market conditions, operations with high costs are not likely to return their investment in \$3,975/hd cows.

Scenario Table 7B. The probability of success in paying back (PB) the \$3,975 cow purchase cost under Scenario #7 conditions

Scenario #7	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39

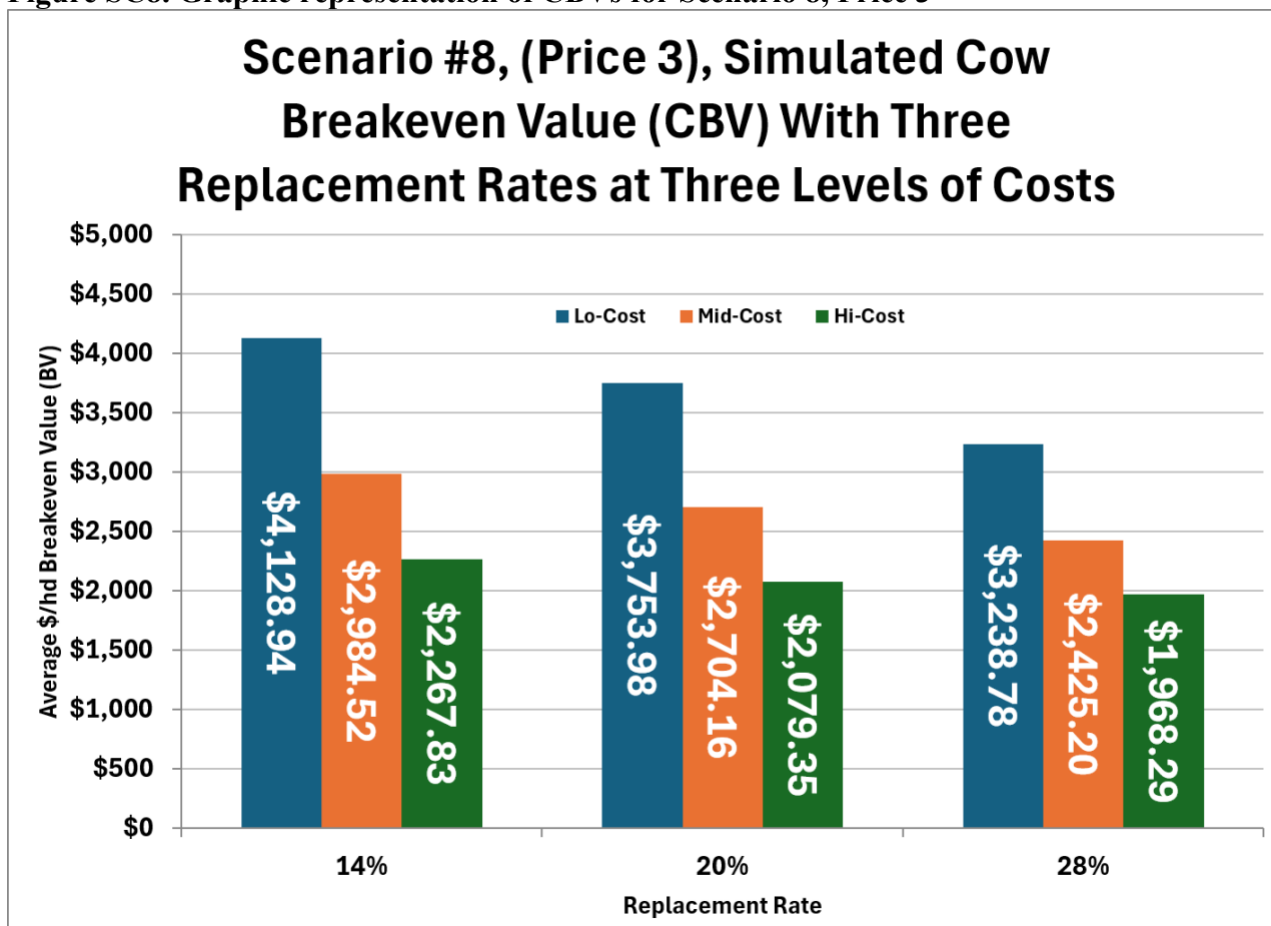
14%	70%	19%	1%
20%	58%	10%	0%
28%	40%	5%	0%

Scenario #8 (Price 3): Price3, Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

The nine simulated CBVs are reported in **Scenario Table 8A**. This scenario's CBV rank 4th of the seven price scenarios with an average of \$2,839.00/hd. The top ranked average CBV is Scenario 12 with an average CBV of \$4,771.78/hd, 2nd is Scenario 7, average CBV of \$3,330.12, 3rd Scenario 10, average CBV of \$3301.02/hd, 4th this scenario, 5th, Scenario 11, average CBV of \$2,751.37/hd, 6th, Scenario 1, with an average CBV of \$2,417.73/hd and lastly, 7th place, Scenario 9 with an average CBV of \$2,369.77/hd.

Figure SC8 presents the CBVs from Scenario Table 8 in visual form. This is intended to provide clarity by showing relative differences in a side-by-side arrangement.

Figure SC8. Graphic representation of CBVs for Scenario 8, Price 3



As expected, increasing costs of production and the rate at which cows are replaced negatively affect the CBVs. This is clearly visible in Figure SC8 above. CBVs range from the maximum of \$4,128.94/hd for the Lo14% sub-scenario to the minimum CBV of \$1,968.29/hd for sub-scenario Hi28%. All nine CBVs exceed those of Scenario #1 by an average of about \$421/hd. Like the

previous scenario this directly relates to the superior projected cattle prices over the baseline series. For confirmation see Figures 1, 2, and 3. Scenario 8 mimics the FAPRI price in the first few years and then fails to decline as quickly for the remaining years.

Scenario Table 8A. Breakeven values (CBVs) for Scenario #8

Scenario #8 Cull Rate	Lo-Cost \$1,316.69	Mid-Cost \$1,562.51	Hi-Cost \$1,720.39
14%	\$4,128.94	\$2,984.52	\$2,267.83
20%	\$3,753.98	\$2,704.16	\$2,079.35
28%	\$3,238.78	\$2,425.20	\$1,968.29

The **Scenario Table 8B** has PB probabilities greater than zero for six of the nine sub-scenarios. The three cull rates in the Hi-Cost sub-scenarios are simulated as having no chance of any purchased replacement cow bought at the average cost of \$3,975/hd breaking even. The PB for Lo14%, Lo20% and Lo28% are 51%, 38% and 22%. The Mid-Cost sub-scenarios have PB's of 16%, 6% and 3% of, for the 14%, 20% and 28% cull rates respectively. This suggests that under this expectation of future cattle prices operations with high costs face cow replacement cost that exceed any likelihood of returning their costs.

Scenario Table 8B. The probability of success in paying back (PB) the \$3,975 cow purchase cost under Scenario #8 conditions

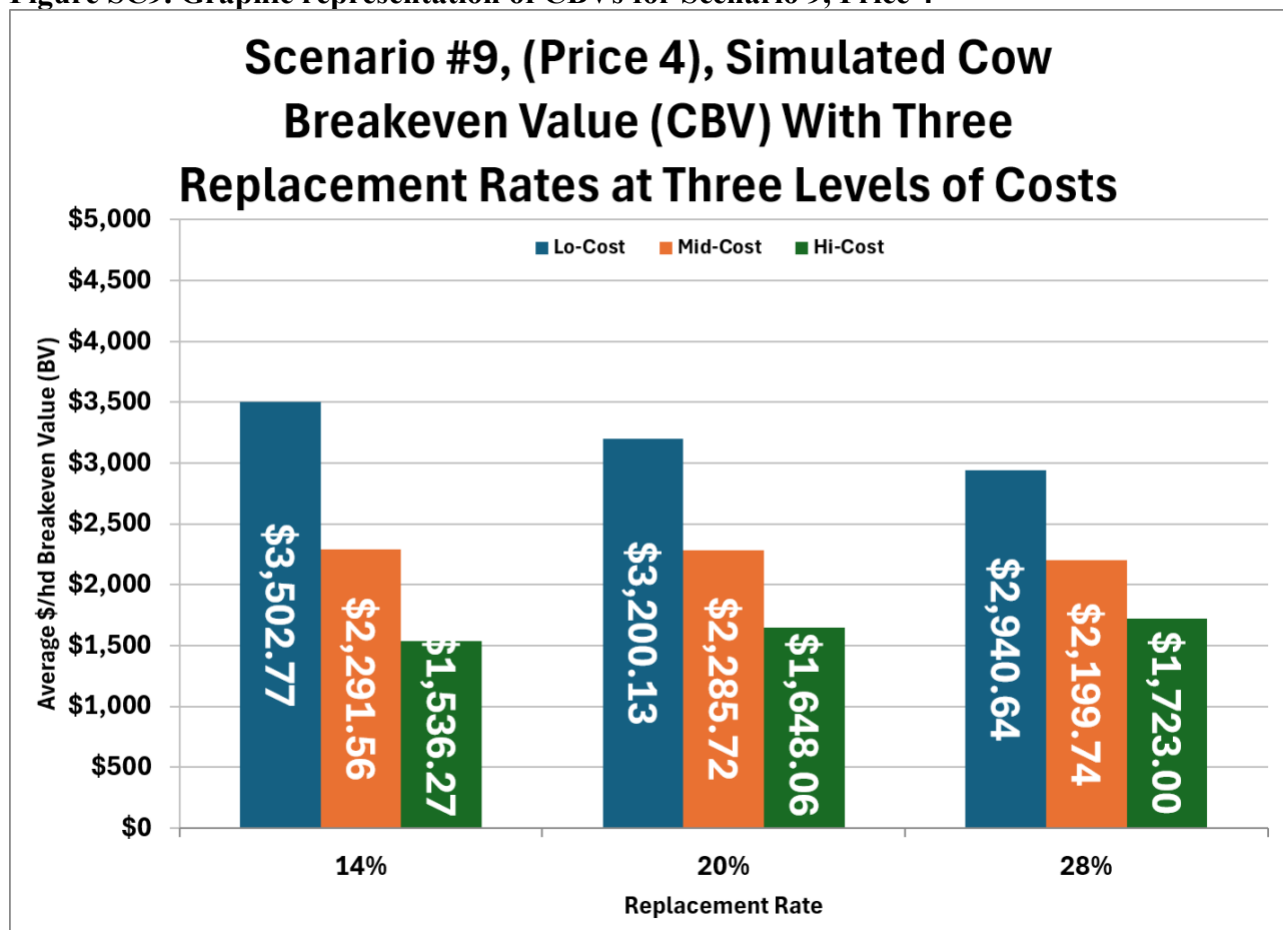
Scenario #8 Cull Rate	Lo-Cost \$1,316.69	Mid-Cost \$1,562.51	Hi-Cost \$1,720.39
14%	51%	16%	0%
20%	38%	6%	0%
28%	22%	3%	0%

Scenario #9 (Price 4): Price4, Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

The nine CBVs are reported in **Scenario Table 9A**. This scenario's CBV average is \$2,369.77/hd is ranked 7th of the seven price scenarios. The top ranked average CBV is Scenario 12 with an average CBV of \$4,771.78/hd, 2nd is Scenario 7, average CBV of \$3,330.12, 3rd Scenario 10, average CBV of \$3301.02/hd, 4th Scenario 8, average CBV of \$2,839.00/hd, 5th, Scenario 11, average CBV of \$2,751.37/hd, 6th, Scenario 1, with an average CBV of \$2,417.73/hd and lastly this one with an average CBV of \$2,369.77/hd. This scenario's CBVs ranges from a maximum of \$3,502.77/hd for Lo14% sub-scenario to a minimum of \$1,536.27/hd for the Hi14% sub-scenario. Like some of the other scenarios where in the later years of the decade annual returns become negative causing cow longevity to have a negative effect on CBV. This is present in the three Hi-Cost sub-scenarios and easily observed in Figure SC9. The CBVs of Scenario #1 exceed those of this scenario by an average of nearly \$48/hd. This result is not a surprise From Figure 4 and 5 many of the cattle prices, calves and utility cows, are predicted to be close to or lower than those of Scenario 1.

Figure SC9 presents the CBVs from Scenario Table 9 in visual form. This is intended to provide clarity by showing relative differences in a side-by-side arrangement.

Figure SC9. Graphic representation of CBVs for Scenario 9, Price 4



Scenario Table 9A. Breakeven values (CBVs) for Scenario #9

Scenario #9	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$3,502.77	\$2,291.56	\$1,536.27
20%	\$3,200.13	\$2,285.72	\$1,648.06
28%	\$2,940.64	\$2,199.74	\$1,723.00

Scenario Table 9B shows that the Mid-Cost and Hi-Cost sub-scenario simulations have zero PB's. The average cow purchase price of \$3,975/hd is expected to be unrecoverable. PBs for Lo14%, Lo20% and Lo28% show slightly more positive outcomes of 31%, 17% and 12% respectively for all the capital to be returned. The 4th price series does have a stronger finish than the FAPRI series but being further into the future suffers from being discounted and having a much smaller number of cows living long enough to take advantage of those increasing prices.

Scenario Table 9B. The probability of success in paying back (PB) the \$3,975 cow purchase cost under Scenario #9 conditions

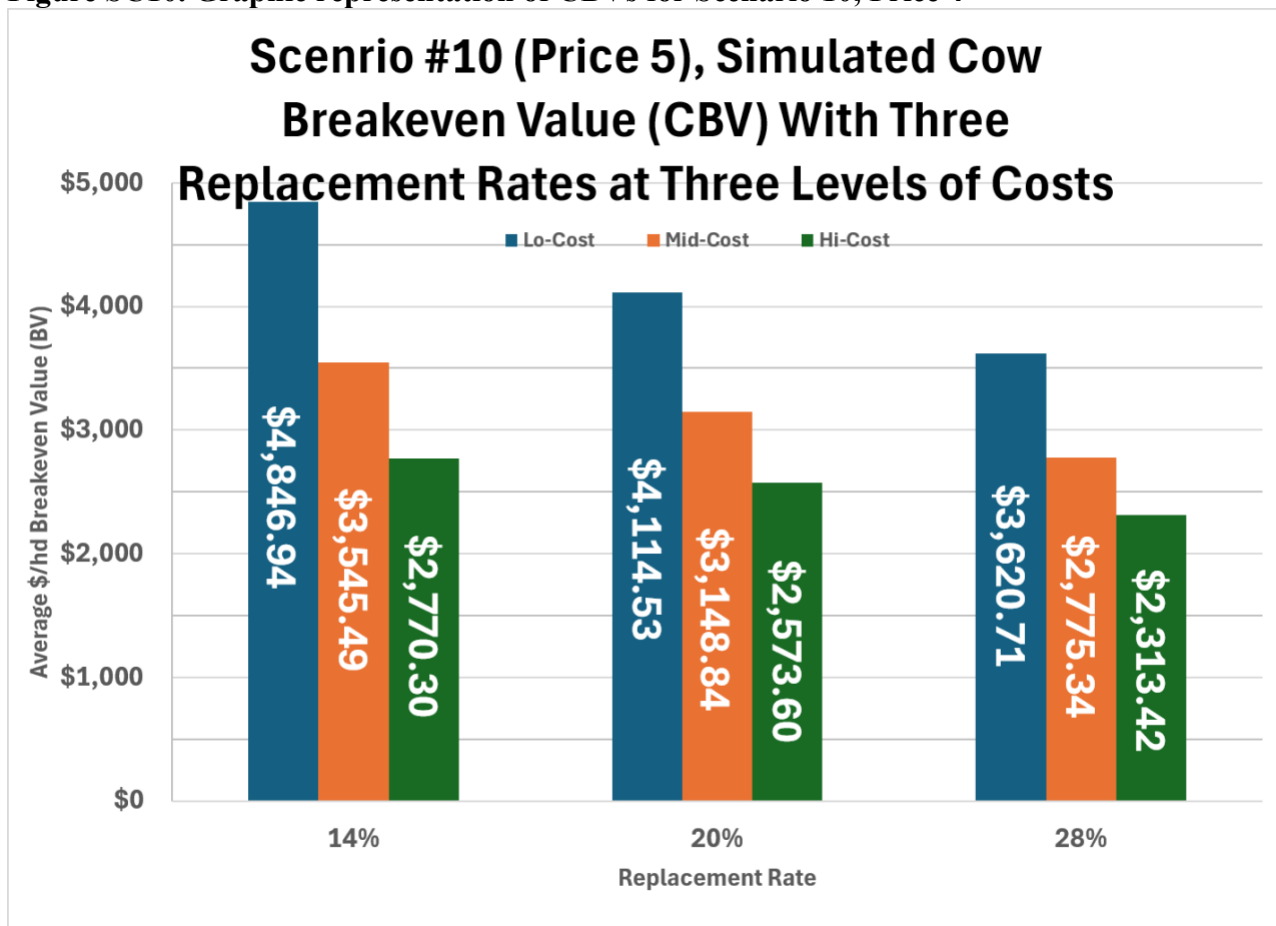
Scenario #9	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39

14%	31%	0%	0%
20%	17%	0%	0%
28%	12%	0%	0%

Scenario #10 (Price 5): Price5, Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

The nine CBVs are reported in **Scenario Table 10A**. This scenario's CBV average is \$3,301.02/hd is ranked 3rd of the seven-price series. The top ranked average CBV is Scenario 12 with an average CBV of \$4,771.78/hd, 2nd is Scenario 7, average CBV of \$3,330.12, 3rd this scenario, 4th Scenario 8, average CBV of \$2,839.00/hd, 5th, Scenario 11, average CBV of \$2,751.37/hd, 6th, Scenario 1, with an average CBV of \$2,417.73/hd and lastly, Scenario 9, with \$2,369.77/hd which CBV averages \$2,369.77/hd. This scenario's CBVs (Figure SC10 and Scenario Table 10A) range from a maximum of \$4,846.94/hd for Lo14% sub-scenario to a minimum of \$2,313.42/hd for the Hi28% sub-scenario. The CBVs show the expected pattern of decline as cull rate and production cost increase. CBVs of this scenario exceed those of the Baseline scenario by an average of nearly \$883.29/hd. This price series could be considered a medium steady forecast that has a slow decline over the decade. See Figures 4, 5, and 6).

Figure SC10. Graphic representation of CBVs for Scenario 10, Price 4



Scenario Table 10A. Breakeven values (CBVs) for Scenario #10

Scenario #10	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$4,846.94	\$3,545.49	\$2,770.30
20%	\$4,114.53	\$3,148.84	\$2,573.60
28%	\$3,620.71	\$2,775.34	\$2,313.42

Scenario Table 10B lists the probabilities that the cow purchase price of \$3,975/hd will be recovered (PB) for each of the nine sub-scenarios. This scenario has positive PBs for each sub-scenario. This directly relates to both the cattle price level and persistence in the coming decade. Only two scenarios have higher PB's for the Lo-Cost sub-scenarios, Scenarios 7 and 12.

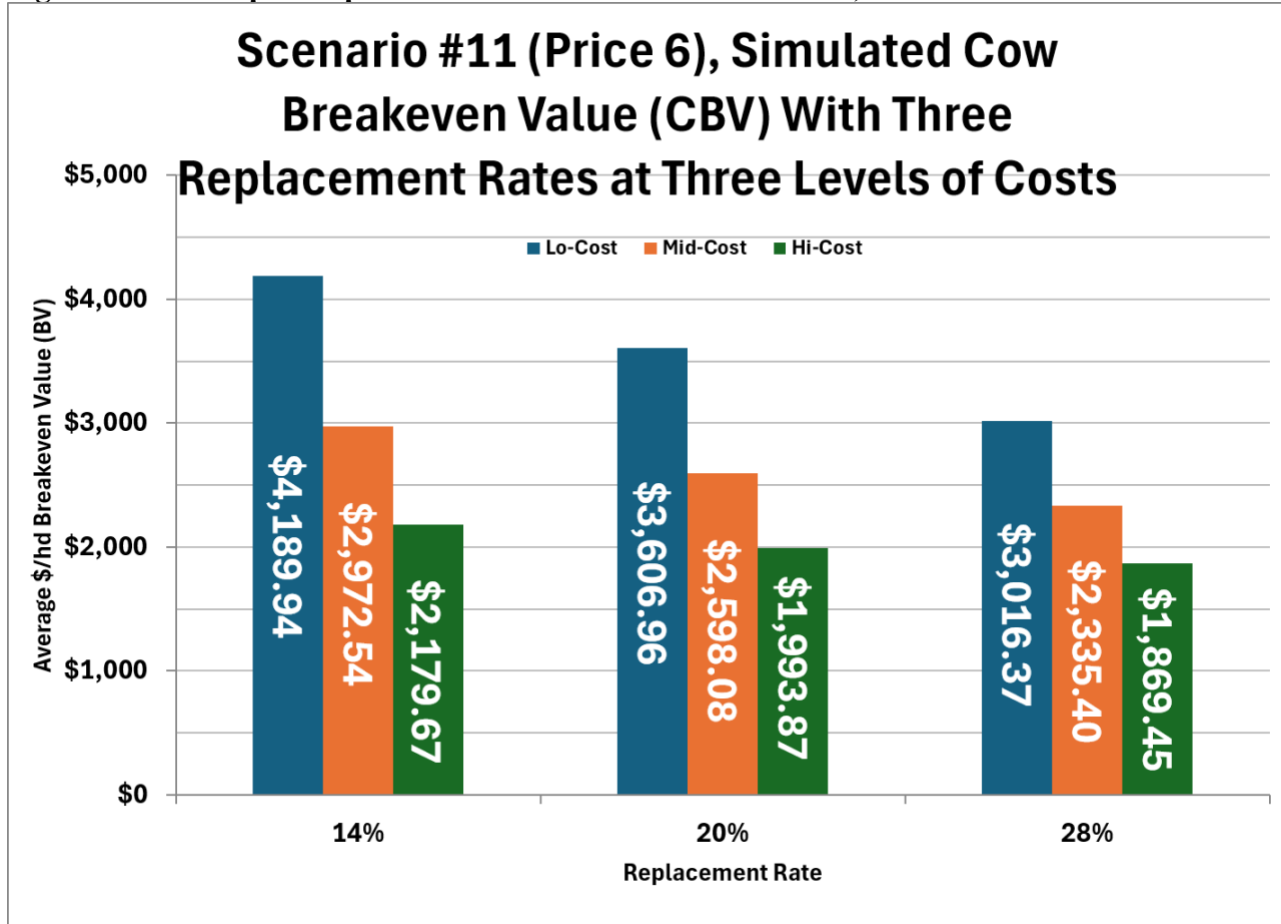
Scenario Table 10B. PBs for the \$3,975 cow purchase cost under Scenario #10 conditions

Scenario #10	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	64%	42%	5%
20%	50%	24%	2%
28%	33%	15%	1%

Scenario #11 (Price 6): Price6, Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

The nine simulated sub-scenario CBVs are reported in **Scenario Table 11A**. This scenario CBV average rank 5th of the seven-price scenarios with a value of \$2,751.37/hd. The top ranked average CBV is Scenario 12 with an average of \$4,771.78/hd, 2nd is Scenario 7, at \$3,330.12/hd, ranked 3rd is Scenario 10, average of \$3,330.02/hd, 4th is Scenario 8, average of \$2,839.00/hd, 5th, this scenario, 6th, Scenario 1, with an average CBV of \$2,417.73/hd and lastly Scenario 9 with an average CBV of \$2,369.77/hd. This scenario's CBVs (Figure SC11 and Scenario Table 11) range from a maximum of \$4,189.94/hd for Lo14% sub-scenario to a minimum of \$1,869.45/hd for the Hi28% sub-scenario. Like many of the other scenarios the CBVs show the expected pattern of decline as cull rate and production cost increase. CBVs of this scenario exceed those of the Baseline scenario by an average of nearly \$333.64/hd. This price series could be classified as medium steady forecast compared to the six other prices. See Figures 4, 5, and 6). All three cost levels show a steady decline in CBVs as cull rate increases. The CBVs range from a maximum of \$4,189.94/hd for the Lo14% sub-scenario to the smallest of \$1,869.45/hd for the Hi14% sub-scenario. The overall average CBV for this scenario is about \$491/hd less than that of baseline Scenario #1.

Figure SC11. Graphic representation of CBVs for Scenario 11, Price 6



Scenario Table 11A. Breakeven values (CBVs) for Scenario #11

Scenario #11	Lo-Cost	Mid-Cost	Hi-Cost
Cull Rate	\$1,316.69	\$1,562.51	\$1,720.39
14%	\$4,189.94	\$2,972.54	\$2,179.67
20%	\$3,606.96	\$2,598.08	\$1,993.87
28%	\$3,016.37	\$2,335.40	\$1,869.45

Scenario Table 11B captures the PBs of cow purchase price of \$3,975/hd for replacement cows by sub-scenario. The Lo-Cost and Mid-Cost sub-scenarios have PBs that are positive, indicating there are times when cows return their value at purchase. The PBs for Lo14%, Lo20% and Lo28% are 49%, 34% and 17% while those of Mid14%, Mid20%, and Mid28% are 21%, 8% and 6% respectively. The Hi sub-scenario are all zero.

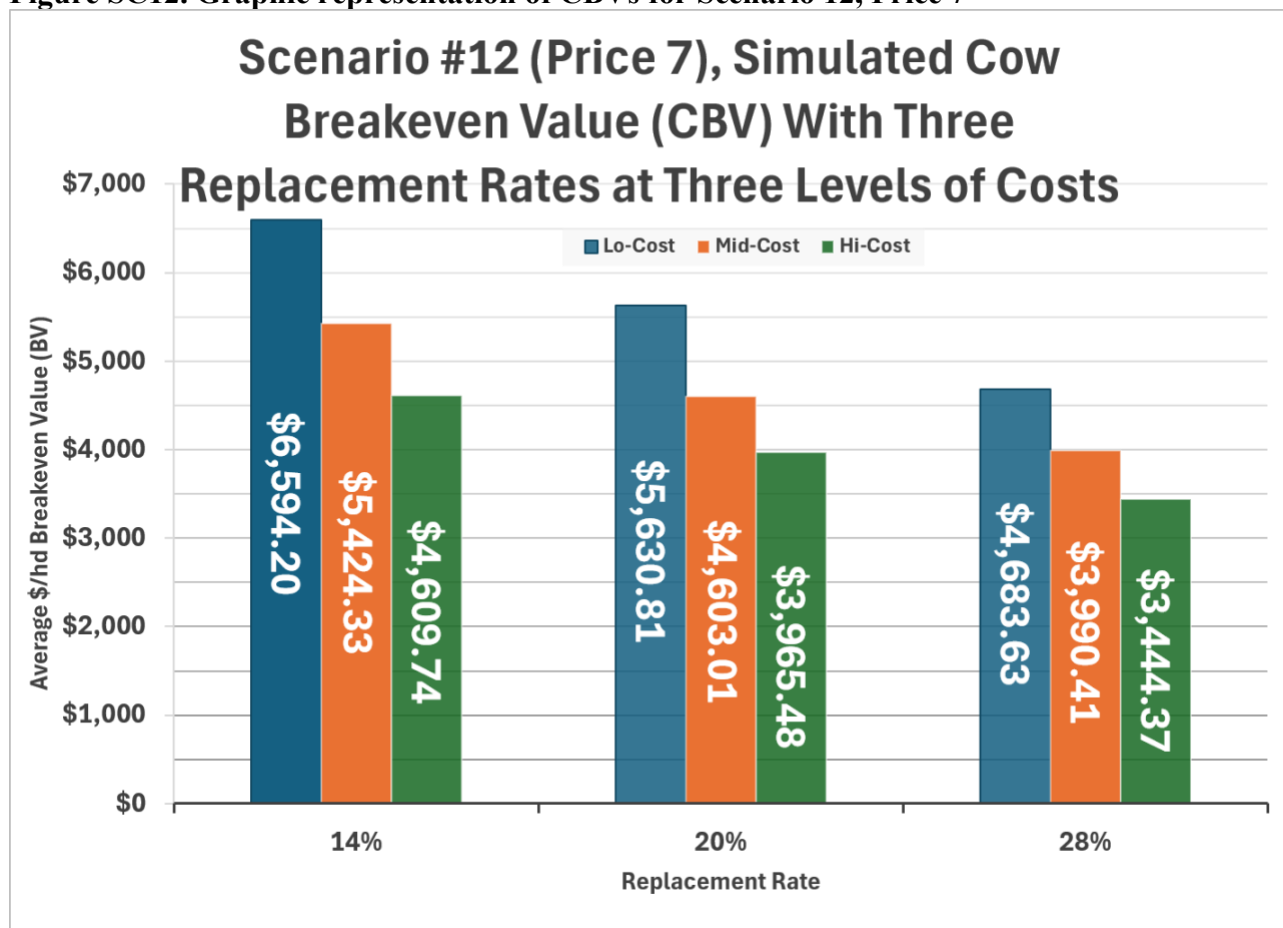
Scenario Table 11B The probability of success in paying back (PB) the \$3,975 cow purchase cost under Scenario #11 conditions

Scenario #11 Cull Rate	Lo-Cost \$1,316.69	Mid-Cost \$1,562.51	Hi-Cost \$1,720.39
14%	49%	21%	0%
20%	34%	8%	0%
28%	17%	6%	0%

Scenario #12 (Price 7): Price7, Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

The nine simulated sub-scenario CBVs are reported in **Scenario Table 12A**. This scenario has the largest average CBV of the seven-price scenarios with a value of \$4,771.78/hd. The 2nd largest is Scenario 7, at \$3,330.12/hd, ranked 3rd is Scenario 10, average of \$3,330.02/hd, 4th is Scenario 8, average of \$2,839.00/hd, 5th, Scenario 11, average CBV of \$2,751.37hd, 6th, Scenario 1, average CBV of \$2,417.73/hd and 7th, Scenario 9 with an average CBV of \$2,369.77/hd. This scenario's CBVs (Figure SC12 and Scenario Table 12) range from a maximum of \$6,594.20/hd for Lo14% sub-scenario to a minimum found in the Hi28% sub-scenario with a CBV of 3,444.37/hd. Like many of the other scenarios where revenues are likely

Figure SC12. Graphic representation of CBVs for Scenario 12, Price 7



to have a positive average the CBV declines as cull rate and production cost increase. CBVs of this scenario exceed those of the Baseline scenario by an average of nearly \$2,354.05/hd. This difference is more than double that of the next highest average CBV scenario, Scenario 7. This isn't surprising since the forecast price series 7 as recorded in Figures 4, 5, and 6 are the greatest.

Scenario Table 12A. Breakeven values (CBVs) for Scenario #12

Scenario #12 Cull Rate	Lo-Cost \$1,316.69	Mid-Cost \$1,562.51	Hi-Cost \$1,720.39
14%	\$6,594.20	\$5,424.33	\$4,609.74
20%	\$5,630.81	\$4,603.01	\$3,965.48
28%	\$4,683.63	\$3,990.41	\$3,444.37

Scenario Table 12B lists the PBs of Scenario #12. This is by far the scenario where the \$3,975/hd purchase price for cows is most likely to be reimbursed. As expected, the Lo14% has largest chance of repaying the capital used for cows. The 14% cull rates exceeded the other two cull rates of 20% and 28% for their respective cost levels in terms of being more likely for replacement cows to be a successful investment. This scenarios price series is the most optimistic of the seven forecast and as such should be treated accordingly.

Scenario Table 12B. The PBs for Scenario #12, Price 7 and a cow purchase costs of \$3,975/hd

Scenario #12 & 1 Cull Rate	Lo-Cost \$1,316.69	Mid-Cost \$1,562.51	Hi-Cost \$1,720.39
14%	75%	70%	61%
20%	67%	56%	45%
28%	50%	40%	28%

Section 5: Marginal Cost Effects of Cull Rate and Production Cost

The second set of tables are included to capture the marginal values and provide reference tables to allow individuals to apply those values in estimating various costs and cull rates found within the range of those considered here. These values are extrapolations of the CBVs that lie within the three budget levels and the three cull rates. Tables with the "C" designation measure the value of the cull rate. The D tables isolate the marginal production costs in incremental dollars. The information from these two tables are used to create a third reference table E. The E tables use these two marginal dollar changes in CBV to the base level cull rate and costs level and result in a dollar value CBV extrapolation. Each of these tables is presented for each scenario making it possible for those interested to derive a prediction/forecast of a specific CBV based on a unique cost level and cull rate. The listed production costs in the tables **do not** include cow depreciation AKA, replacement costs or death loss. However, the resulting CBVs do account for these costs since they are part of the CP-CQL simulation. Individuals wanting to apply these forecasts to their situation should use cost estimates that do not include the replacement and death loss of cows.

III. Operational Sensitivities (Scenarios 1 through 6, Marginal Changes in CBV)

Scenario #1 (Baseline FAPRI): Price1, Random 88%-98% Weaning Rate, No Borrowing with a \$3,975/hd Cow Purchase Price

Scenario Table 1C shows the calculated differences in dollars change in the CBV for two cull groups, 14% - 20% (G1) and 20% - 28% (G2), in two ways. Columns 2 and 3 show the dollar change from the lower cull rate to the higher cull rate by group. This amount changes by cost level for the three cost levels of Lo, Mid, and Hi See Scenario Table 1C below. G1 has a 6% span in cull rates while G2 has an 8% span. The Marginal CBVs for G1 are \$243.00/hd for the Lo-Cost level, a **negative** (32.85)/hd for the Mid-Cost and a **negative** (\$208.83)/hd for the Hi-Cost level. The G2 marginal CBV's are higher in magnitude than G1, Column 3, Lo-Cost is \$274.31/hd, Mid-Cost is \$109.71/hd and the Hi-Cost is a **negative** \$51.61. Columns 4 and 5 of the table convert each groups CBV dollars changes into 1% dollars change for a 1% cull rate change. This is done by dividing the group change in CBV by the number of percent changes for G1 or G2 cull group. The Lo-Cost \$243.00/hd G1 change in CBV becomes a \$40.50/hd decrease in CBV for for every 1% increase in cull rate from the low 14% rate. Conversely it could be a \$40.50 increase in CBV for the cost level and cull group, such as a shift of 20% dropping to 19%. To operationally demonstrate this a 1% increase in cull rate from 14% at the Lo-Cost level reduces CBV from the \$3,518.48/hd, (Scenario Table 1A) to \$3,477.98/hd. Contrarily a 1% decrease in cull rate, Lo20% dropping to Lo19%, would have a CBV of \$3,275.48/hd increase to \$3,315.98/hd due to the decline in cull rate. There are six total CBV changes among the two cull rate groups and three cost levels (Lo, Mid, and Hi).

Scenario Table 1C. CBV dollar value change due to the change in cull rate group and CBV dollar change for a 1% change in cull rates within cull rate groups for Scenario #1(FAPRI Baseline)

Scenario# 1	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Rates	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$243.00	\$274.31	\$40.50	\$34.29
Mid-Cost	(\$32.85)	\$109.71	(\$5.48)	\$13.71
Hi-Cost	(\$208.83)	(\$51.61)	(\$34.81)	(\$6.45)

Scenario Table 1D inverts the calculation of the previous table and shows the effect changes in production cost levels change by cull rate. Columns 2 and 3 show the total differences in dollars among cost levels, C1, Lo-Mid and C2, Mid-Hi for each replacement rate, 14%, 20% and 28%. The C1 difference for the 14% cull rate 14%(C1) is \$1,192.66/hd, Column 2. The per unit effect in Column 4 for that same cull rate and C1 group is \$4.85/hd /\$1 in cost. Operationally speaking every \$1/hd costs increase at the C1 level for the 14% cull rate results in a CBV decline of \$4.85/hd. A \$100/hd increase being \$485.17/hd would diminish the CBV, from \$3518.48/hd (Lo14% CBV, Scenario Table 1A) to \$3,033.31/hd. A cost decline would result in the opposite effect. Each C1, C2 level at the three cull rates can be used in similar manner.

Scenario Table 1D. CBV changes due to dollar changes in production costs for Scenario #1

Scenario# 1	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi (C2)
14%	\$1,192.66	\$805.26	\$4.85	\$5.10

20%	\$916.81	\$629.27	\$3.73	\$3.99
28%	\$752.21	\$467.95	\$3.06	\$2.96

The foregoing discussion has shown how to extrapolate cull rates and production cost that reside with the range established by the cost levels (C's) and cull groups (G's). In Section 6, there is a table of extrapolations for each scenario. These tables are assigned by scenario number, "Scenario #1" and letter "E", **Reference Table 1E**. Each reference table has sixteen columns and thirty-two rows. The sixteen columns include one index column and fifteen columns for each of the 1% changes in cull rate. The thirty-two rows have a reference row and the remaining thirty-one levels listing production costs levels. To make it manageable the cost levels are incrementally increased. This increase was calculated to be \$16.39/hd for L1, and \$10.39/hd for L2. The top row list cull rates and the first column the cost levels. To use the tables, First select the table number that corresponds with desired scenario number. Second, decide on the appropriate cull rate (must be between 14% to 28%). Third find the identified cull rate located in the top row. Fourth move down the column until you are in the row with the value in the first column that most closely match the production costs you are interested (The range is limited to costs between \$1,317/hd to \$1,720/hd which do not include cow death loss or replacement/depreciation costs). It is at the intersection of production cost and cull rate where extrapolated CBV is located. To demonstrate using **Reference Table 1E** (Section 6) Scenario #1's CBV for a 17% cull rate (5th column) estimated production cost of \$1,400/hd, (6th row) has a forecast CBV value of \$3,045/hd.

Each of the following Scenario Tables can be read in the same way as described for those of Scenario 1. In addition, each Scenario has a corresponding Reference Table found in Section 6.

Scenario #2 (88% Weaning Rate): Price1 Fixed 88% Weaning Rate, No Borrowing with a \$3,975/hd Cow Purchase Price

Scenario Table 2C. CBV value changes due to percentage changes in cull rates

Scenario# 2	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$354.48	\$353.30	\$59.08	\$44.16
Mid-Cost	\$102.14	\$177.54	\$17.02	\$22.19
Hi-Cost	(\$64.61)	\$40.74	(\$10.77)	\$5.09

Scenario Table 2D. CBV value changes due to dollar changes in production costs

Scenario# 2	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Mid-Hi
14%	\$1,188.59	\$812.16	\$5.11	\$5.18
20%	\$936.25	\$645.41	\$4.02	\$4.12
28%	\$760.49	\$508.61	\$3.27	\$3.25

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 2E**. Using this table where the expected cull rate is 22% and the estimated annual production cost is \$1,479/hd, the forecast CBV value, found in the 10th column, 20th row, shows a CBV value of \$2,264/hd.

Scenario #3 (98% Weaning Rate): Price1, 98% Weaning Rate, No Borrowing of the \$3,975/h Cow Purchase Price

Scenario Table 3C. CBV value changes due to percentage changes in cull rates

Scenario# 3	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$543.13	\$526.60	\$90.52	\$65.83
Mid-Cost	\$282.59	\$329.04	\$47.10	\$41.13
Hi-Cost	\$68.25	\$217.31	\$11.37	\$27.16

Scenario Table 3D. CBV value changes due to dollar changes in production costs

Scenario# 3	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1%)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi (C2)
14%	\$1,178.97	\$804.45	\$5.07	\$5.14
20%	\$918.43	\$590.11	\$3.95	\$3.77
28%	\$720.86	\$478.38	\$3.10	\$3.05

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 3E**. Using this table where the expected cull rate is 23% and the estimated annual production cost is \$1,670/hd, the forecast CBV value, found in the 11th column, 27th row, shows a CBV forecast of \$2,268/hd.

Scenario #4 (25% Borrowing): Price1, Random 88% - 98% Weaning Rate, 25% Borrowed Money for the \$3,975/hd Average Cow Purchase Price (~\$1,000)

Scenario Table 4C. CBV value changes due to percentage changes in cull rates

Scenario# 4	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$482.90	\$418.49	\$80.48	\$52.31
Mid-Cost	\$128.28	\$175.72	\$21.38	\$21.97
Hi-Cost	(\$212.90)	\$11.14	(\$35.48)	\$1.39

Scenario Table 4D. CBV value changes due to dollar changes in production costs

Scenario# 4	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi (C2)
14%	\$1,399.06	\$1,140.37	\$6.01	\$7.28
20%	\$1,044.44	\$799.19	\$4.49	\$5.10
28%	\$801.67	\$634.60	\$3.45	\$4.05

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 4E**. Using this table with the expected cull rate of 26% and an estimated annual production cost of \$1,710/hd, the forecast CBV value, found in the 30th column, 31th row, shows a CBV forecast of \$1,480/hd.

Scenario #5 (50% Borrowing): Price1, Random 88%-98% Weaning Rate, 25% Borrowed Money (~\$2,000) the \$3,975/hd Average Cow Purchase Price

Scenario Table 5C. CBV value changes due to percentage changes in cull rates, Scenario #5

Scenario# 5	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28%
Lo-Cost	\$251.72	\$273.01	\$41.95	\$34.13
Mid-Cost	(\$203.87)	(\$19.85)	(\$33.98)	(\$2.48)
Hi-Cost	(\$587.75)	(\$268.94)	(\$97.96)	(\$33.62)

Scenario Table 5D. CBV value changes due to dollar changes in production costs, Scenario #5

Scenario# 5	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi (C2)
14%	\$1,706.21	\$1,194.37	\$7.33	\$7.62
20%	\$1,250.62	\$810.49	\$5.38	\$5.17
28%	\$957.76	\$561.40	\$4.12	\$3.58

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 5E**. Using this table with the expected cull rate of 16% and an estimated annual production cost of \$1,545/hd, the forecast CBV value, found in the 4th column, 16th row, shows a CBV forecast of \$1,229/hd.

Scenario #6 (75% Borrowing): Price1, Random 88%-98% Weaning Rate, 75% Borrowed Money (\$3,000) of the \$3,975/hd Cow Purchase Price

Scenario Table 6C. CBV value changes due to percentage changes in cull rates, Scenario #6

Scenario# 6	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	(\$100.12)	\$87.10	(\$16.69)	\$10.89
Mid-Cost	(\$570.07)	(\$255.48)	(\$95.01)	(\$31.93)
Hi-Cost	(\$801.31)	(\$657.35)	(\$133.55)	(\$82.17)

Scenario Table 6D. CBV value changes due to dollar changes in production costs, Scenario #6

Scenario# 6	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Mid-Hi
14%	\$1,712.53	\$1,171.51	\$7.36	\$7.48
20%	\$1,242.58	\$940.27	\$5.34	\$6.00
28%	\$900.00	\$538.39	\$3.87	\$3.44

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 6E**. Using this table with the expected cull rate of 18% and an estimated annual production cost of \$1,350/hd, the forecast CBV value, found in the 6th column, 4th row, shows a CBV forecast of \$1,721/hd.

IV. Market Price Sensitivities (Scenarios 7 through 12, Marginal Changes in CBV)

Scenario #7 (Price 2): Random 88%-98% Weaning Rate, No Borrowing, \$3,975/hd Cow Purchase Price

Scenario Table 7C. CBV value changes due to percentage changes in cull rates, Scenario #7

Scenario# 7	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28%
Lo-Cost	\$575.70	\$463.61	\$95.95	\$57.95
Mid-Cost	\$262.36	\$263.33	\$43.73	\$32.92
Hi-Cost	\$140.41	\$113.91	\$23.40	\$14.24

Scenario Table 7D. CBV value changes due to dollar changes in production costs, Scenario #7

Scenario# 7	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi (C2)
14%	\$1,207.97	\$738.21	\$5.19	\$4.71
20%	\$894.62	\$616.27	\$3.85	\$3.93
28%	\$694.33	\$466.85	\$2.98	\$2.98

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 7E**. Using this table with the expected cull rate of 21% and an estimated annual production cost of \$1,646/hd, the forecast CBV value, found in the 9th column, 25th row, shows a CBV forecast of \$2,850/hd.

Scenario #8 (Price 3): Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

Scenario Table 8C. CBV value changes due to percentage changes in cull rates, Scenario #8

Scenario# 8	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$652.43	\$412.03	\$108.74	\$51.50
Mid-Cost	\$360.72	\$262.56	\$60.12	\$32.82
Hi-Cost	\$232.73	\$111.56	\$38.79	\$13.94

Scenario Table 8D. CBV value changes due to dollar changes in production costs, Scenario #8

Scenario# 8	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Mid-Hi
14%	\$1,177.16	\$761.36	\$5.06	\$4.86
20%	\$885.45	\$633.38	\$3.81	\$4.04
28%	\$735.99	\$482.37	\$3.16	\$3.08

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 8E**. Using this table with the expected cull rate of 15% and an estimated annual production cost

of \$1,574/hd, the forecast CBV value, found in the 3rd column, 18th row, shows a CBV forecast of \$2,891/hd.

Scenario #9 (Price 4): Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

Scenario Table 9C. CBV value changes due to percentage changes in cull rates, Scenario #9

Scenario# 9	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$712.99	\$448.70	\$118.83	\$56.09
Mid-Cost	\$240.95	\$252.53	\$40.16	\$31.57
Hi-Cost	\$157.68	\$136.22	\$26.28	\$17.03

Scenario Table 9D. CBV value changes due to dollar changes in production costs, Scenario #9

Scenario# 9	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi
14%	\$1,277.27	\$722.41	\$5.49	\$4.61
20%	\$805.23	\$639.14	\$3.46	\$4.08
28%	\$609.07	\$522.83	\$2.62	\$3.34

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 9E**. Using this table with the expected cull rate of 24% and an estimated annual production cost of \$1,370/hd, the forecast CBV value, found in the 12th column, 5th row, shows a CBV forecast of \$3,310/hd.

Scenario #10 (Price 5): Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

Scenario Table 10C. CBV value changes due to percentage changes in cull rates, Scenario #10

Scenario# 10	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28% (G2)
Lo-Cost	\$388.07	\$342.40	\$64.68	\$42.80
Mid-Cost	\$133.48	\$128.92	\$22.25	\$16.11
Hi-Cost	(\$3.28)	(\$18.91)	(\$0.55)	(\$2.36)

Scenario Table 10D. CBV value changes due to dollar changes in production costs, Scenario #10

Scenario# 10	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi
14%	\$1,232.75	\$769.50	\$5.30	\$4.91
20%	\$978.15	\$632.74	\$4.20	\$4.04
28%	\$764.66	\$484.92	\$3.29	\$3.10

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 10E**. Using this table with the expected cull rate of 19% and an estimated annual production cost of \$1,700/hd, the forecast CBV value, found in the 7th column, 30th row, shows a CBV forecast of \$2,196/hd.

Scenario #11(Price 6): Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

Scenario Table 11C. CBV value changes due to percentage changes in cull rates, Scenario #11

Scenario# 11	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull Group	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28%
Lo-Cost	\$758.94	\$775.85	\$126.49	\$96.98
Mid-Cost	\$503.29	\$477.90	\$83.88	\$59.74
Hi-Cost	\$401.03	\$286.77	\$66.84	\$35.85

Scenario Table 11D. CBV value changes due to dollar changes in production costs, Scenario #11

Scenario# 11	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/\$1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Med-Hi (C2)
14%	\$1,209.74	\$730.36	\$5.20	\$4.66
20%	\$954.09	\$628.09	\$4.10	\$4.01
28%	\$656.14	\$436.97	\$2.82	\$2.79

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 11E**. Using this table with the expected cull rate of 25% and an estimated annual production cost of \$1,562/hd, the forecast CBV value, found in the 13th column, 17th row, shows a CBV forecast of \$2,390/hd.

Scenario #12 (Price 7): Random 88%-98% Weaning Rate, No Borrowing of the \$3,975/hd Cow Purchase Price

Scenario Table 12C. CBV value changes due to percentage changes in cull rates, Scenario #12

Scenario# 12	Change in CBV by Group (\$/hd/Grp)		Per Unit Change in CBV (\$/1%)	
Cull rates	14%-20% (G1)	20%-28% (G2)	14%-20% (G1)	20%-28%
Lo-Cost	\$395.46	\$465.04	\$65.91	\$58.13
Mid-Cost	\$215.28	\$273.55	\$35.88	\$34.19
Hi-Cost	\$48.57	\$90.86	\$8.09	\$11.36

Scenario Table 12D. CBV value changes due to dollar changes in production costs, Scenario #12

Scenario# 12	Group Change in CBV (\$/hd)		Per Unit Change in CBV (\$/1)	
Costs	Lo-Med (C1)	Med-Hi (C2)	Lo-Med (C1)	Mid-Hi
14%	\$1,088.96	\$788.17	\$4.68	\$5.03
20%	\$908.78	\$621.46	\$3.91	\$3.97
28%	\$717.29	\$438.77	\$3.08	\$2.80

The extrapolations for this scenario can be made in Section 6 applying **Reference Table 12E**. Using this table with the expected cull rate of 20% and an estimated annual production cost of \$1,500/hd, the forecast CBV value, found in the 8th column, 13th row, shows a CBV forecast of \$4,877/hd.

Section 6: Reference Tables (Extrapolation of Individual CBVs by Scenario)

The following series of twelve tables have been created from the forecast marginal values found in Section 5, Tables C and D for each of the twelve simulated scenarios. Each reference table shows 485 CBVs. The individual value for each of the CBVs in and of itself is a forecast of CBV for the related scenario, production cost and cull rate. Each of the Scenario Tables in Section 5 is followed by an example of how use the Reference “E” Tables to find the appropriate CBV by scenario, cull rate and cost of production.

Reference Table 1E. CBVs for Scenario 1, Baseline FAPRI Prices Random Weaning 88% - 98%, \$0 Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$3,518	\$3,478	\$3,437	\$3,397	\$3,356	\$3,316	\$3,275	\$3,241	\$3,207	\$3,173	\$3,138	\$3,104	\$3,070	\$3,035	\$3,001
\$1,333	\$3,439	\$3,402	\$3,364	\$3,327	\$3,289	\$3,252	\$3,214	\$3,181	\$3,149	\$3,116	\$3,083	\$3,050	\$3,017	\$2,984	\$2,951
\$1,349	\$3,359	\$3,325	\$3,291	\$3,256	\$3,222	\$3,188	\$3,153	\$3,122	\$3,090	\$3,059	\$3,027	\$2,996	\$2,964	\$2,932	\$2,901
\$1,366	\$3,280	\$3,249	\$3,217	\$3,186	\$3,155	\$3,123	\$3,092	\$3,062	\$3,032	\$3,002	\$2,971	\$2,941	\$2,911	\$2,881	\$2,851
\$1,382	\$3,200	\$3,172	\$3,144	\$3,116	\$3,087	\$3,059	\$3,031	\$3,002	\$2,973	\$2,945	\$2,916	\$2,887	\$2,858	\$2,829	\$2,801
\$1,399	\$3,121	\$3,096	\$3,071	\$3,045	\$3,020	\$2,995	\$2,970	\$2,942	\$2,915	\$2,888	\$2,860	\$2,833	\$2,805	\$2,778	\$2,750
\$1,415	\$3,041	\$3,019	\$2,997	\$2,975	\$2,953	\$2,931	\$2,909	\$2,883	\$2,857	\$2,831	\$2,805	\$2,778	\$2,752	\$2,726	\$2,700
\$1,431	\$2,962	\$2,943	\$2,924	\$2,905	\$2,886	\$2,867	\$2,848	\$2,823	\$2,798	\$2,774	\$2,749	\$2,724	\$2,700	\$2,675	\$2,650
\$1,448	\$2,882	\$2,866	\$2,850	\$2,834	\$2,818	\$2,802	\$2,787	\$2,763	\$2,740	\$2,717	\$2,693	\$2,670	\$2,647	\$2,623	\$2,600
\$1,464	\$2,803	\$2,790	\$2,777	\$2,764	\$2,751	\$2,738	\$2,725	\$2,703	\$2,682	\$2,660	\$2,638	\$2,616	\$2,594	\$2,572	\$2,550
\$1,481	\$2,723	\$2,714	\$2,704	\$2,694	\$2,684	\$2,674	\$2,664	\$2,644	\$2,623	\$2,603	\$2,582	\$2,561	\$2,541	\$2,520	\$2,500
\$1,497	\$2,644	\$2,637	\$2,630	\$2,624	\$2,617	\$2,610	\$2,603	\$2,584	\$2,565	\$2,546	\$2,526	\$2,507	\$2,488	\$2,469	\$2,450
\$1,513	\$2,564	\$2,561	\$2,557	\$2,553	\$2,549	\$2,546	\$2,542	\$2,524	\$2,506	\$2,489	\$2,471	\$2,453	\$2,435	\$2,417	\$2,399
\$1,530	\$2,485	\$2,484	\$2,484	\$2,483	\$2,482	\$2,482	\$2,481	\$2,464	\$2,448	\$2,432	\$2,415	\$2,399	\$2,382	\$2,366	\$2,349
\$1,546	\$2,405	\$2,408	\$2,410	\$2,413	\$2,415	\$2,417	\$2,420	\$2,405	\$2,390	\$2,375	\$2,359	\$2,344	\$2,329	\$2,314	\$2,299
\$1,563	\$2,326	\$2,331	\$2,337	\$2,342	\$2,348	\$2,353	\$2,359	\$2,345	\$2,331	\$2,318	\$2,304	\$2,290	\$2,276	\$2,263	\$2,249
\$1,573	\$2,272	\$2,280	\$2,287	\$2,294	\$2,302	\$2,309	\$2,317	\$2,304	\$2,292	\$2,280	\$2,267	\$2,255	\$2,243	\$2,230	\$2,218
\$1,584	\$2,218	\$2,228	\$2,237	\$2,247	\$2,256	\$2,265	\$2,275	\$2,264	\$2,253	\$2,242	\$2,231	\$2,220	\$2,209	\$2,198	\$2,187
\$1,594	\$2,165	\$2,176	\$2,187	\$2,199	\$2,210	\$2,221	\$2,233	\$2,223	\$2,213	\$2,204	\$2,194	\$2,184	\$2,175	\$2,165	\$2,155
\$1,605	\$2,111	\$2,124	\$2,138	\$2,151	\$2,164	\$2,178	\$2,191	\$2,183	\$2,174	\$2,166	\$2,158	\$2,149	\$2,141	\$2,133	\$2,124
\$1,615	\$2,057	\$2,073	\$2,088	\$2,103	\$2,118	\$2,134	\$2,149	\$2,142	\$2,135	\$2,128	\$2,121	\$2,114	\$2,107	\$2,100	\$2,093
\$1,626	\$2,004	\$2,021	\$2,038	\$2,055	\$2,073	\$2,090	\$2,107	\$2,101	\$2,096	\$2,090	\$2,084	\$2,079	\$2,073	\$2,067	\$2,062
\$1,636	\$1,950	\$1,969	\$1,988	\$2,008	\$2,027	\$2,046	\$2,065	\$2,061	\$2,056	\$2,052	\$2,048	\$2,043	\$2,039	\$2,035	\$2,031
\$1,647	\$1,896	\$1,917	\$1,939	\$1,960	\$1,981	\$2,002	\$2,023	\$2,020	\$2,017	\$2,014	\$2,011	\$2,008	\$2,005	\$2,002	\$1,999
\$1,657	\$1,843	\$1,866	\$1,889	\$1,912	\$1,935	\$1,958	\$1,981	\$1,979	\$1,978	\$1,976	\$1,975	\$1,973	\$1,971	\$1,970	\$1,968
\$1,668	\$1,789	\$1,814	\$1,839	\$1,864	\$1,889	\$1,914	\$1,939	\$1,939	\$1,939	\$1,938	\$1,938	\$1,938	\$1,938	\$1,937	\$1,937
\$1,678	\$1,735	\$1,762	\$1,789	\$1,816	\$1,843	\$1,870	\$1,897	\$1,898	\$1,899	\$1,900	\$1,901	\$1,903	\$1,904	\$1,905	\$1,906
\$1,689	\$1,682	\$1,711	\$1,739	\$1,768	\$1,797	\$1,826	\$1,855	\$1,858	\$1,860	\$1,863	\$1,865	\$1,867	\$1,870	\$1,872	\$1,875
\$1,699	\$1,628	\$1,659	\$1,690	\$1,721	\$1,752	\$1,782	\$1,813	\$1,817	\$1,821	\$1,825	\$1,828	\$1,832	\$1,836	\$1,840	\$1,843
\$1,710	\$1,574	\$1,607	\$1,640	\$1,673	\$1,706	\$1,739	\$1,771	\$1,776	\$1,782	\$1,787	\$1,792	\$1,797	\$1,802	\$1,807	\$1,812
\$1,720	\$1,521	\$1,555	\$1,590	\$1,625	\$1,660	\$1,695	\$1,729	\$1,736	\$1,742	\$1,749	\$1,755	\$1,762	\$1,768	\$1,775	\$1,781

Reference Table 2E. CBVs for Scenario 2, Baseline FAPRI Prices, (Low) Weaning Rate 88%, \$0 Borrowed money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$3,036	\$3,013	\$2,990	\$2,967	\$2,944	\$2,921	\$2,898	\$2,864	\$2,830	\$2,796	\$2,761	\$2,727	\$2,693	\$2,658	\$2,694
\$1,333	\$2,957	\$2,937	\$2,917	\$2,897	\$2,877	\$2,857	\$2,837	\$2,813	\$2,789	\$2,765	\$2,741	\$2,716	\$2,692	\$2,668	\$2,644
\$1,349	\$2,879	\$2,862	\$2,844	\$2,827	\$2,810	\$2,793	\$2,776	\$2,753	\$2,731	\$2,708	\$2,685	\$2,662	\$2,639	\$2,616	\$2,594
\$1,366	\$2,800	\$2,786	\$2,772	\$2,758	\$2,743	\$2,729	\$2,715	\$2,694	\$2,672	\$2,651	\$2,629	\$2,608	\$2,586	\$2,565	\$2,543
\$1,382	\$2,721	\$2,710	\$2,699	\$2,688	\$2,676	\$2,665	\$2,654	\$2,634	\$2,614	\$2,594	\$2,574	\$2,554	\$2,533	\$2,513	\$2,493
\$1,399	\$2,643	\$2,634	\$2,626	\$2,618	\$2,609	\$2,601	\$2,593	\$2,574	\$2,555	\$2,537	\$2,518	\$2,499	\$2,481	\$2,462	\$2,443
\$1,415	\$2,564	\$2,559	\$2,553	\$2,548	\$2,542	\$2,537	\$2,532	\$2,514	\$2,497	\$2,480	\$2,462	\$2,445	\$2,428	\$2,410	\$2,393
\$1,431	\$2,485	\$2,483	\$2,480	\$2,478	\$2,476	\$2,473	\$2,471	\$2,455	\$2,439	\$2,423	\$2,407	\$2,391	\$2,375	\$2,359	\$2,343
\$1,448	\$2,407	\$2,407	\$2,408	\$2,408	\$2,409	\$2,409	\$2,410	\$2,395	\$2,380	\$2,366	\$2,351	\$2,337	\$2,322	\$2,307	\$2,293
\$1,464	\$2,328	\$2,331	\$2,335	\$2,338	\$2,342	\$2,345	\$2,348	\$2,335	\$2,322	\$2,309	\$2,295	\$2,282	\$2,269	\$2,256	\$2,243
\$1,481	\$2,249	\$2,256	\$2,262	\$2,268	\$2,275	\$2,281	\$2,287	\$2,275	\$2,264	\$2,252	\$2,240	\$2,228	\$2,216	\$2,204	\$2,192
\$1,497	\$2,171	\$2,180	\$2,189	\$2,198	\$2,208	\$2,217	\$2,226	\$2,216	\$2,205	\$2,195	\$2,184	\$2,174	\$2,163	\$2,153	\$2,142
\$1,513	\$2,092	\$2,104	\$2,116	\$2,129	\$2,141	\$2,153	\$2,165	\$2,156	\$2,147	\$2,138	\$2,129	\$2,119	\$2,110	\$2,101	\$2,092
\$1,530	\$2,013	\$2,028	\$2,044	\$2,059	\$2,074	\$2,089	\$2,104	\$2,096	\$2,088	\$2,081	\$2,073	\$2,065	\$2,057	\$2,050	\$2,042
\$1,546	\$1,935	\$1,953	\$1,971	\$1,989	\$2,007	\$2,025	\$2,043	\$2,036	\$2,030	\$2,024	\$2,017	\$2,011	\$2,005	\$1,998	\$1,992
\$1,563	\$1,856	\$1,869	\$1,883	\$1,896	\$1,909	\$1,922	\$1,935	\$1,922	\$1,908	\$1,894	\$1,880	\$1,867	\$1,853	\$1,857	\$1,963
\$1,573	\$1,799	\$1,814	\$1,830	\$1,846	\$1,862	\$1,878	\$1,893	\$1,898	\$1,903	\$1,908	\$1,913	\$1,918	\$1,922	\$1,927	\$1,932
\$1,584	\$1,741	\$1,760	\$1,778	\$1,796	\$1,815	\$1,833	\$1,851	\$1,858	\$1,864	\$1,870	\$1,876	\$1,882	\$1,889	\$1,895	\$1,901
\$1,594	\$1,684	\$1,705	\$1,726	\$1,747	\$1,768	\$1,789	\$1,809	\$1,817	\$1,825	\$1,832	\$1,840	\$1,847	\$1,855	\$1,862	\$1,870
\$1,605	\$1,626	\$1,650	\$1,673	\$1,697	\$1,720	\$1,744	\$1,768	\$1,776	\$1,785	\$1,794	\$1,803	\$1,812	\$1,821	\$1,830	\$1,839
\$1,615	\$1,569	\$1,595	\$1,621	\$1,647	\$1,673	\$1,699	\$1,726	\$1,736	\$1,746	\$1,756	\$1,766	\$1,777	\$1,787	\$1,797	\$1,807
\$1,626	\$1,512	\$1,540	\$1,569	\$1,598	\$1,626	\$1,655	\$1,684	\$1,695	\$1,707	\$1,718	\$1,730	\$1,741	\$1,753	\$1,765	\$1,776
\$1,636	\$1,454	\$1,485	\$1,517	\$1,548	\$1,579	\$1,610	\$1,642	\$1,655	\$1,667	\$1,680	\$1,693	\$1,706	\$1,719	\$1,732	\$1,745
\$1,647	\$1,397	\$1,431	\$1,464	\$1,498	\$1,532	\$1,566	\$1,600	\$1,614	\$1,628	\$1,642	\$1,657	\$1,671	\$1,685	\$1,699	\$1,714
\$1,657	\$1,339	\$1,376	\$1,412	\$1,449	\$1,485	\$1,521	\$1,558	\$1,573	\$1,589	\$1,605	\$1,620	\$1,636	\$1,651	\$1,667	\$1,683
\$1,668	\$1,282	\$1,321	\$1,360	\$1,399	\$1,438	\$1,477	\$1,516	\$1,533	\$1,550	\$1,567	\$1,584	\$1,601	\$1,617	\$1,634	\$1,651
\$1,678	\$1,224	\$1,266	\$1,308	\$1,349	\$1,391	\$1,432	\$1,474	\$1,492	\$1,510	\$1,529	\$1,547	\$1,565	\$1,584	\$1,602	\$1,620
\$1,689	\$1,167	\$1,211	\$1,255	\$1,299	\$1,344	\$1,388	\$1,432	\$1,452	\$1,471	\$1,491	\$1,510	\$1,530	\$1,550	\$1,569	\$1,589
\$1,699	\$1,110	\$1,156	\$1,203	\$1,250	\$1,297	\$1,343	\$1,390	\$1,411	\$1,432	\$1,453	\$1,474	\$1,495	\$1,516	\$1,537	\$1,558
\$1,710	\$1,052	\$1,102	\$1,151	\$1,200	\$1,249	\$1,299	\$1,348	\$1,370	\$1,393	\$1,415	\$1,437	\$1,460	\$1,482	\$1,504	\$1,527
\$1,720	\$995	\$1,049	\$1,102	\$1,156	\$1,210	\$1,264	\$1,317	\$1,337	\$1,357	\$1,376	\$1,396	\$1,416	\$1,435	\$1,455	\$1,475

Reference Table 3E. CBVs for Scenario 3, Baseline FAPRI Prices, (High) Weaning Rate 98%, \$0 Borrowed money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$4,218	\$4,128	\$4,037	\$3,947	\$3,856	\$3,765	\$3,675	\$3,609	\$3,543	\$3,477	\$3,412	\$3,346	\$3,280	\$3,214	\$3,148
\$1,333	\$4,140	\$4,052	\$3,964	\$3,877	\$3,789	\$3,701	\$3,614	\$3,550	\$3,485	\$3,421	\$3,357	\$3,293	\$3,229	\$3,164	\$3,100
\$1,349	\$4,061	\$3,976	\$3,891	\$3,807	\$3,722	\$3,637	\$3,553	\$3,490	\$3,427	\$3,365	\$3,302	\$3,240	\$3,177	\$3,115	\$3,052
\$1,366	\$3,982	\$3,900	\$3,819	\$3,737	\$3,655	\$3,573	\$3,491	\$3,430	\$3,370	\$3,309	\$3,248	\$3,187	\$3,126	\$3,065	\$3,004
\$1,382	\$3,904	\$3,825	\$3,746	\$3,667	\$3,588	\$3,509	\$3,430	\$3,371	\$3,312	\$3,252	\$3,193	\$3,134	\$3,075	\$3,015	\$2,956
\$1,399	\$3,825	\$3,749	\$3,673	\$3,597	\$3,521	\$3,445	\$3,369	\$3,311	\$3,254	\$3,196	\$3,138	\$3,081	\$3,023	\$2,966	\$2,908
\$1,415	\$3,747	\$3,673	\$3,600	\$3,527	\$3,454	\$3,381	\$3,308	\$3,252	\$3,196	\$3,140	\$3,084	\$3,028	\$2,972	\$2,916	\$2,860
\$1,431	\$3,668	\$3,598	\$3,527	\$3,457	\$3,387	\$3,317	\$3,246	\$3,192	\$3,138	\$3,083	\$3,029	\$2,975	\$2,921	\$2,866	\$2,812
\$1,448	\$3,589	\$3,522	\$3,455	\$3,387	\$3,320	\$3,253	\$3,185	\$3,132	\$3,080	\$3,027	\$2,975	\$2,922	\$2,869	\$2,817	\$2,764
\$1,464	\$3,511	\$3,446	\$3,382	\$3,317	\$3,253	\$3,188	\$3,124	\$3,073	\$3,022	\$2,971	\$2,920	\$2,869	\$2,818	\$2,767	\$2,716
\$1,481	\$3,432	\$3,371	\$3,309	\$3,247	\$3,186	\$3,124	\$3,063	\$3,013	\$2,964	\$2,915	\$2,865	\$2,816	\$2,767	\$2,717	\$2,668
\$1,497	\$3,354	\$3,295	\$3,236	\$3,177	\$3,119	\$3,060	\$3,001	\$2,954	\$2,906	\$2,858	\$2,811	\$2,763	\$2,715	\$2,667	\$2,620
\$1,513	\$3,275	\$3,219	\$3,163	\$3,108	\$3,052	\$2,996	\$2,940	\$2,894	\$2,848	\$2,802	\$2,756	\$2,710	\$2,664	\$2,618	\$2,572
\$1,530	\$3,196	\$3,143	\$3,091	\$3,038	\$2,985	\$2,932	\$2,879	\$2,835	\$2,790	\$2,746	\$2,701	\$2,657	\$2,612	\$2,568	\$2,524
\$1,546	\$3,118	\$3,068	\$3,018	\$2,968	\$2,918	\$2,868	\$2,818	\$2,775	\$2,732	\$2,689	\$2,647	\$2,604	\$2,561	\$2,518	\$2,476
\$1,563	\$3,039	\$2,992	\$2,945	\$2,898	\$2,851	\$2,804	\$2,757	\$2,715	\$2,674	\$2,633	\$2,592	\$2,551	\$2,510	\$2,469	\$2,428
\$1,573	\$2,986	\$2,941	\$2,896	\$2,851	\$2,807	\$2,762	\$2,717	\$2,677	\$2,637	\$2,597	\$2,556	\$2,516	\$2,476	\$2,436	\$2,396
\$1,584	\$2,932	\$2,890	\$2,847	\$2,805	\$2,763	\$2,720	\$2,678	\$2,639	\$2,599	\$2,560	\$2,521	\$2,482	\$2,442	\$2,403	\$2,364
\$1,594	\$2,878	\$2,838	\$2,798	\$2,758	\$2,718	\$2,678	\$2,639	\$2,600	\$2,562	\$2,524	\$2,485	\$2,447	\$2,409	\$2,370	\$2,332
\$1,605	\$2,825	\$2,787	\$2,749	\$2,712	\$2,674	\$2,637	\$2,599	\$2,562	\$2,524	\$2,487	\$2,450	\$2,412	\$2,375	\$2,337	\$2,300
\$1,615	\$2,771	\$2,736	\$2,701	\$2,665	\$2,630	\$2,595	\$2,560	\$2,523	\$2,487	\$2,450	\$2,414	\$2,377	\$2,341	\$2,305	\$2,268
\$1,626	\$2,717	\$2,685	\$2,652	\$2,619	\$2,586	\$2,553	\$2,521	\$2,485	\$2,449	\$2,414	\$2,378	\$2,343	\$2,307	\$2,272	\$2,236
\$1,636	\$2,664	\$2,633	\$2,603	\$2,572	\$2,542	\$2,512	\$2,481	\$2,447	\$2,412	\$2,377	\$2,343	\$2,308	\$2,273	\$2,239	\$2,204
\$1,647	\$2,610	\$2,582	\$2,554	\$2,526	\$2,498	\$2,470	\$2,442	\$2,408	\$2,374	\$2,341	\$2,307	\$2,273	\$2,240	\$2,206	\$2,172
\$1,657	\$2,556	\$2,531	\$2,505	\$2,479	\$2,454	\$2,428	\$2,402	\$2,370	\$2,337	\$2,304	\$2,271	\$2,239	\$2,206	\$2,173	\$2,140
\$1,668	\$2,503	\$2,480	\$2,456	\$2,433	\$2,410	\$2,386	\$2,363	\$2,331	\$2,300	\$2,268	\$2,236	\$2,204	\$2,172	\$2,140	\$2,109
\$1,678	\$2,449	\$2,428	\$2,407	\$2,387	\$2,366	\$2,345	\$2,324	\$2,293	\$2,262	\$2,231	\$2,200	\$2,169	\$2,138	\$2,108	\$2,077
\$1,689	\$2,396	\$2,377	\$2,359	\$2,340	\$2,321	\$2,303	\$2,284	\$2,255	\$2,225	\$2,195	\$2,165	\$2,135	\$2,105	\$2,075	\$2,045
\$1,699	\$2,342	\$2,326	\$2,310	\$2,294	\$2,277	\$2,261	\$2,245	\$2,216	\$2,187	\$2,158	\$2,129	\$2,100	\$2,071	\$2,042	\$2,013
\$1,710	\$2,288	\$2,275	\$2,261	\$2,247	\$2,233	\$2,220	\$2,206	\$2,178	\$2,150	\$2,121	\$2,093	\$2,065	\$2,037	\$2,009	\$1,981
\$1,720	\$2,235	\$2,269	\$2,304	\$2,339	\$2,374	\$2,363	\$2,166	\$2,139	\$2,112	\$2,085	\$2,058	\$2,031	\$2,003	\$1,976	\$1,949

Reference Table 4E. CBVs for Scenario 4, Baseline FAPRI Prices, Random Weaning 88% - 98%, 25% Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$3,456	\$3,407	\$3,358	\$3,310	\$3,261	\$3,212	\$3,163	\$3,128	\$3,093	\$3,058	\$3,023	\$2,989	\$2,954	\$2,919	\$2,884
\$1,333	\$3,363	\$3,318	\$3,272	\$3,227	\$3,182	\$3,137	\$3,092	\$3,059	\$3,026	\$2,993	\$2,961	\$2,928	\$2,895	\$2,862	\$2,830
\$1,349	\$3,269	\$3,228	\$3,186	\$3,145	\$3,103	\$3,062	\$3,021	\$2,990	\$2,959	\$2,929	\$2,898	\$2,867	\$2,837	\$2,806	\$2,775
\$1,366	\$3,176	\$3,138	\$3,100	\$3,063	\$3,025	\$2,987	\$2,949	\$2,921	\$2,892	\$2,864	\$2,835	\$2,807	\$2,778	\$2,749	\$2,721
\$1,382	\$3,082	\$3,048	\$3,014	\$2,980	\$2,946	\$2,912	\$2,878	\$2,852	\$2,825	\$2,799	\$2,772	\$2,746	\$2,719	\$2,693	\$2,667
\$1,399	\$2,989	\$2,958	\$2,928	\$2,898	\$2,868	\$2,837	\$2,807	\$2,783	\$2,758	\$2,734	\$2,710	\$2,685	\$2,661	\$2,637	\$2,612
\$1,415	\$2,895	\$2,869	\$2,842	\$2,816	\$2,789	\$2,762	\$2,736	\$2,714	\$2,691	\$2,669	\$2,647	\$2,625	\$2,602	\$2,580	\$2,558
\$1,431	\$2,802	\$2,779	\$2,756	\$2,733	\$2,710	\$2,688	\$2,665	\$2,645	\$2,624	\$2,604	\$2,584	\$2,564	\$2,544	\$2,524	\$2,503
\$1,448	\$2,708	\$2,689	\$2,670	\$2,651	\$2,632	\$2,613	\$2,594	\$2,575	\$2,557	\$2,539	\$2,521	\$2,503	\$2,485	\$2,467	\$2,449
\$1,464	\$2,615	\$2,599	\$2,584	\$2,569	\$2,553	\$2,538	\$2,522	\$2,506	\$2,490	\$2,475	\$2,459	\$2,443	\$2,427	\$2,411	\$2,395
\$1,481	\$2,521	\$2,510	\$2,498	\$2,486	\$2,475	\$2,463	\$2,451	\$2,437	\$2,424	\$2,410	\$2,396	\$2,382	\$2,368	\$2,354	\$2,340
\$1,497	\$2,428	\$2,420	\$2,412	\$2,404	\$2,396	\$2,388	\$2,380	\$2,368	\$2,357	\$2,345	\$2,333	\$2,321	\$2,310	\$2,298	\$2,286
\$1,513	\$2,334	\$2,330	\$2,326	\$2,322	\$2,317	\$2,313	\$2,309	\$2,299	\$2,290	\$2,280	\$2,270	\$2,261	\$2,251	\$2,241	\$2,232
\$1,530	\$2,241	\$2,240	\$2,240	\$2,239	\$2,239	\$2,238	\$2,238	\$2,230	\$2,223	\$2,215	\$2,208	\$2,200	\$2,193	\$2,185	\$2,177
\$1,546	\$2,147	\$2,151	\$2,154	\$2,157	\$2,160	\$2,163	\$2,166	\$2,161	\$2,156	\$2,150	\$2,145	\$2,139	\$2,134	\$2,129	\$2,123
\$1,563	\$2,054	\$2,061	\$2,068	\$2,075	\$2,081	\$2,088	\$2,095	\$2,151	\$2,148	\$2,144	\$2,141	\$2,138	\$2,134	\$2,131	\$2,069
\$1,573	\$1,983	\$1,992	\$2,002	\$2,011	\$2,020	\$2,030	\$2,039	\$2,038	\$2,037	\$2,036	\$2,035	\$2,034	\$2,033	\$2,032	\$2,031
\$1,584	\$1,912	\$1,924	\$1,936	\$1,947	\$1,959	\$1,971	\$1,983	\$1,984	\$1,986	\$1,987	\$1,988	\$1,989	\$1,990	\$1,992	\$1,993
\$1,594	\$1,841	\$1,855	\$1,870	\$1,884	\$1,898	\$1,913	\$1,927	\$1,930	\$1,934	\$1,937	\$1,941	\$1,944	\$1,948	\$1,951	\$1,955
\$1,605	\$1,770	\$1,787	\$1,804	\$1,820	\$1,837	\$1,854	\$1,871	\$1,877	\$1,882	\$1,888	\$1,894	\$1,900	\$1,905	\$1,911	\$1,917
\$1,615	\$1,699	\$1,718	\$1,738	\$1,757	\$1,776	\$1,795	\$1,815	\$1,823	\$1,831	\$1,839	\$1,847	\$1,855	\$1,863	\$1,871	\$1,879
\$1,626	\$1,628	\$1,650	\$1,672	\$1,693	\$1,715	\$1,737	\$1,759	\$1,769	\$1,779	\$1,790	\$1,800	\$1,810	\$1,820	\$1,831	\$1,841
\$1,636	\$1,557	\$1,581	\$1,605	\$1,630	\$1,654	\$1,678	\$1,703	\$1,715	\$1,728	\$1,740	\$1,753	\$1,765	\$1,778	\$1,790	\$1,803
\$1,647	\$1,486	\$1,513	\$1,539	\$1,566	\$1,593	\$1,620	\$1,646	\$1,661	\$1,676	\$1,691	\$1,706	\$1,721	\$1,735	\$1,750	\$1,765
\$1,657	\$1,415	\$1,444	\$1,473	\$1,503	\$1,532	\$1,561	\$1,590	\$1,607	\$1,625	\$1,642	\$1,659	\$1,676	\$1,693	\$1,710	\$1,727
\$1,668	\$1,344	\$1,376	\$1,407	\$1,439	\$1,471	\$1,503	\$1,534	\$1,554	\$1,573	\$1,592	\$1,612	\$1,631	\$1,650	\$1,670	\$1,689
\$1,678	\$1,273	\$1,307	\$1,341	\$1,376	\$1,410	\$1,444	\$1,478	\$1,500	\$1,521	\$1,543	\$1,565	\$1,586	\$1,608	\$1,629	\$1,651
\$1,689	\$1,202	\$1,239	\$1,275	\$1,312	\$1,349	\$1,385	\$1,422	\$1,446	\$1,470	\$1,494	\$1,518	\$1,541	\$1,565	\$1,589	\$1,613
\$1,699	\$1,131	\$1,170	\$1,209	\$1,248	\$1,288	\$1,327	\$1,366	\$1,392	\$1,418	\$1,444	\$1,471	\$1,497	\$1,523	\$1,549	\$1,575
\$1,710	\$1,060	\$1,102	\$1,143	\$1,185	\$1,227	\$1,268	\$1,310	\$1,338	\$1,367	\$1,395	\$1,424	\$1,452	\$1,480	\$1,509	\$1,537
\$1,720	\$989	\$1,033	\$1,077	\$1,121	\$1,165	\$1,210	\$1,254	\$1,284	\$1,315	\$1,346	\$1,376	\$1,407	\$1,438	\$1,469	\$1,499

Reference Table 5E. CBVs for Scenario 5, Baseline FAPRI Prices, Random Weaning 88% - 98%, 50% Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$2,791	\$2,776	\$2,761	\$2,746	\$2,731	\$2,716	\$2,701	\$2,680	\$2,660	\$2,640	\$2,620	\$2,600	\$2,579	\$2,559	\$2,539
\$1,333	\$2,669	\$2,661	\$2,652	\$2,643	\$2,634	\$2,625	\$2,616	\$2,599	\$2,581	\$2,564	\$2,546	\$2,528	\$2,511	\$2,493	\$2,475
\$1,349	\$2,547	\$2,545	\$2,542	\$2,540	\$2,537	\$2,535	\$2,532	\$2,517	\$2,502	\$2,487	\$2,472	\$2,457	\$2,442	\$2,427	\$2,412
\$1,366	\$2,425	\$2,429	\$2,433	\$2,437	\$2,440	\$2,444	\$2,448	\$2,436	\$2,423	\$2,411	\$2,398	\$2,386	\$2,373	\$2,361	\$2,348
\$1,382	\$2,303	\$2,313	\$2,323	\$2,333	\$2,344	\$2,354	\$2,364	\$2,354	\$2,344	\$2,334	\$2,324	\$2,315	\$2,305	\$2,295	\$2,285
\$1,399	\$2,181	\$2,198	\$2,214	\$2,230	\$2,247	\$2,263	\$2,280	\$2,272	\$2,265	\$2,258	\$2,251	\$2,243	\$2,236	\$2,229	\$2,222
\$1,415	\$2,059	\$2,082	\$2,104	\$2,127	\$2,150	\$2,173	\$2,195	\$2,191	\$2,186	\$2,181	\$2,177	\$2,172	\$2,167	\$2,163	\$2,158
\$1,431	\$1,937	\$1,966	\$1,995	\$2,024	\$2,053	\$2,082	\$2,111	\$2,109	\$2,107	\$2,105	\$2,103	\$2,101	\$2,099	\$2,097	\$2,095
\$1,448	\$1,815	\$1,850	\$1,886	\$1,921	\$1,956	\$1,991	\$2,027	\$2,027	\$2,028	\$2,028	\$2,029	\$2,030	\$2,030	\$2,031	\$2,031
\$1,464	\$1,693	\$1,735	\$1,776	\$1,818	\$1,859	\$1,901	\$1,943	\$1,946	\$1,949	\$1,952	\$1,955	\$1,958	\$1,961	\$1,965	\$1,968
\$1,481	\$1,571	\$1,619	\$1,667	\$1,715	\$1,763	\$1,810	\$1,858	\$1,864	\$1,870	\$1,876	\$1,881	\$1,887	\$1,893	\$1,899	\$1,904
\$1,497	\$1,449	\$1,503	\$1,557	\$1,611	\$1,666	\$1,720	\$1,774	\$1,782	\$1,791	\$1,799	\$1,807	\$1,816	\$1,824	\$1,832	\$1,841
\$1,513	\$1,327	\$1,387	\$1,448	\$1,508	\$1,569	\$1,629	\$1,690	\$1,701	\$1,712	\$1,723	\$1,734	\$1,745	\$1,755	\$1,766	\$1,777
\$1,530	\$1,205	\$1,272	\$1,338	\$1,405	\$1,472	\$1,539	\$1,606	\$1,619	\$1,633	\$1,646	\$1,660	\$1,673	\$1,687	\$1,700	\$1,714
\$1,546	\$1,083	\$1,156	\$1,229	\$1,302	\$1,375	\$1,448	\$1,521	\$1,538	\$1,554	\$1,570	\$1,586	\$1,602	\$1,618	\$1,634	\$1,650
\$1,563	\$961	\$1,040	\$1,119	\$1,199	\$1,278	\$1,358	\$1,437	\$1,493	\$1,511	\$1,530	\$1,549	\$1,568	\$1,586	\$1,605	\$1,587
\$1,573	\$886	\$969	\$1,052	\$1,134	\$1,217	\$1,299	\$1,382	\$1,402	\$1,422	\$1,442	\$1,463	\$1,483	\$1,503	\$1,523	\$1,544
\$1,584	\$812	\$898	\$984	\$1,069	\$1,155	\$1,241	\$1,326	\$1,348	\$1,370	\$1,391	\$1,413	\$1,435	\$1,457	\$1,478	\$1,500
\$1,594	\$738	\$827	\$916	\$1,004	\$1,093	\$1,182	\$1,271	\$1,294	\$1,317	\$1,340	\$1,364	\$1,387	\$1,410	\$1,433	\$1,457
\$1,605	\$664	\$756	\$848	\$940	\$1,032	\$1,123	\$1,215	\$1,240	\$1,265	\$1,289	\$1,314	\$1,339	\$1,364	\$1,388	\$1,413
\$1,615	\$590	\$685	\$780	\$875	\$970	\$1,065	\$1,160	\$1,186	\$1,212	\$1,238	\$1,265	\$1,291	\$1,317	\$1,343	\$1,370
\$1,626	\$516	\$614	\$712	\$810	\$908	\$1,006	\$1,104	\$1,132	\$1,160	\$1,187	\$1,215	\$1,243	\$1,271	\$1,298	\$1,326
\$1,636	\$442	\$543	\$644	\$745	\$846	\$948	\$1,049	\$1,078	\$1,107	\$1,136	\$1,166	\$1,195	\$1,224	\$1,253	\$1,283
\$1,647	\$368	\$472	\$576	\$681	\$785	\$889	\$993	\$1,024	\$1,055	\$1,085	\$1,116	\$1,147	\$1,178	\$1,208	\$1,239
\$1,657	\$294	\$401	\$508	\$616	\$723	\$830	\$938	\$970	\$1,002	\$1,034	\$1,067	\$1,099	\$1,131	\$1,163	\$1,196
\$1,668	\$220	\$330	\$441	\$551	\$661	\$772	\$882	\$916	\$950	\$983	\$1,017	\$1,051	\$1,085	\$1,119	\$1,152
\$1,678	\$146	\$259	\$373	\$486	\$600	\$713	\$827	\$862	\$897	\$932	\$968	\$1,003	\$1,038	\$1,074	\$1,109
\$1,689	\$72	\$188	\$305	\$421	\$538	\$655	\$771	\$808	\$845	\$881	\$918	\$955	\$992	\$1,029	\$1,065
\$1,699	(\$2)	\$117	\$237	\$357	\$476	\$596	\$716	\$754	\$792	\$831	\$869	\$907	\$945	\$984	\$1,022
\$1,710	(\$77)	\$46	\$169	\$292	\$415	\$537	\$660	\$700	\$740	\$780	\$819	\$859	\$899	\$939	\$978
\$1,720	(\$151)	(\$25)	\$101	\$227	\$353	\$479	\$605	\$646	\$687	\$729	\$770	\$811	\$852	\$894	\$935

Reference Table 6E. CBVs for Scenario 6, Baseline FAPRI Prices, Random Weaning 88% - 98%, 75% Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$1,769	\$1,807	\$1,846	\$1,885	\$1,924	\$1,963	\$2,002	\$2,006	\$2,011	\$2,016	\$2,021	\$2,026	\$2,030	\$2,035	\$2,040
\$1,333	\$1,647	\$1,691	\$1,734	\$1,778	\$1,822	\$1,866	\$1,910	\$1,918	\$1,927	\$1,935	\$1,943	\$1,951	\$1,959	\$1,968	\$1,976
\$1,349	\$1,525	\$1,574	\$1,623	\$1,672	\$1,721	\$1,770	\$1,819	\$1,830	\$1,842	\$1,854	\$1,865	\$1,877	\$1,888	\$1,900	\$1,912
\$1,366	\$1,403	\$1,457	\$1,511	\$1,565	\$1,619	\$1,673	\$1,727	\$1,742	\$1,757	\$1,772	\$1,787	\$1,802	\$1,817	\$1,832	\$1,847
\$1,382	\$1,281	\$1,340	\$1,399	\$1,458	\$1,518	\$1,577	\$1,636	\$1,654	\$1,673	\$1,691	\$1,710	\$1,728	\$1,746	\$1,765	\$1,783
\$1,399	\$1,159	\$1,223	\$1,287	\$1,352	\$1,416	\$1,480	\$1,545	\$1,567	\$1,588	\$1,610	\$1,632	\$1,653	\$1,675	\$1,697	\$1,719
\$1,415	\$1,037	\$1,106	\$1,176	\$1,245	\$1,315	\$1,384	\$1,453	\$1,479	\$1,504	\$1,529	\$1,554	\$1,579	\$1,604	\$1,629	\$1,654
\$1,431	\$915	\$989	\$1,064	\$1,138	\$1,213	\$1,288	\$1,362	\$1,391	\$1,419	\$1,448	\$1,476	\$1,505	\$1,533	\$1,562	\$1,590
\$1,448	\$793	\$873	\$952	\$1,032	\$1,111	\$1,191	\$1,271	\$1,303	\$1,334	\$1,366	\$1,398	\$1,430	\$1,462	\$1,494	\$1,526
\$1,464	\$671	\$756	\$840	\$925	\$1,010	\$1,095	\$1,179	\$1,215	\$1,250	\$1,285	\$1,320	\$1,356	\$1,391	\$1,426	\$1,462
\$1,481	\$549	\$639	\$729	\$819	\$908	\$998	\$1,088	\$1,127	\$1,165	\$1,204	\$1,243	\$1,281	\$1,320	\$1,359	\$1,397
\$1,497	\$427	\$522	\$617	\$712	\$807	\$902	\$997	\$1,039	\$1,081	\$1,123	\$1,165	\$1,207	\$1,249	\$1,291	\$1,333
\$1,513	\$305	\$405	\$505	\$605	\$705	\$805	\$905	\$951	\$996	\$1,042	\$1,087	\$1,132	\$1,178	\$1,223	\$1,269
\$1,530	\$183	\$288	\$393	\$499	\$604	\$709	\$814	\$863	\$911	\$960	\$1,009	\$1,058	\$1,107	\$1,156	\$1,205
\$1,546	\$61	\$172	\$282	\$392	\$502	\$612	\$722	\$775	\$827	\$879	\$931	\$984	\$1,036	\$1,088	\$1,140
\$1,563	(\$61)	\$55	\$170	\$285	\$401	\$516	\$631	\$687	\$742	\$798	\$854	\$909	\$965	\$1,020	\$1,076
\$1,573	(\$130)	(\$11)	\$108	\$227	\$346	\$465	\$584	\$641	\$697	\$754	\$810	\$867	\$924	\$980	\$1,037
\$1,584	(\$200)	(\$77)	\$46	\$169	\$292	\$415	\$538	\$595	\$653	\$710	\$767	\$825	\$882	\$940	\$997
\$1,594	(\$270)	(\$143)	(\$16)	\$110	\$237	\$364	\$491	\$549	\$608	\$666	\$724	\$783	\$841	\$899	\$958
\$1,605	(\$340)	(\$209)	(\$79)	\$52	\$183	\$314	\$444	\$504	\$563	\$622	\$681	\$741	\$800	\$859	\$918
\$1,615	(\$410)	(\$275)	(\$141)	(\$6)	\$129	\$263	\$398	\$458	\$518	\$578	\$638	\$698	\$759	\$819	\$879
\$1,626	(\$480)	(\$341)	(\$203)	(\$64)	\$74	\$213	\$351	\$412	\$473	\$534	\$595	\$656	\$717	\$778	\$839
\$1,636	(\$550)	(\$407)	(\$265)	(\$123)	\$20	\$162	\$305	\$366	\$428	\$490	\$552	\$614	\$676	\$738	\$800
\$1,647	(\$620)	(\$473)	(\$327)	(\$181)	(\$35)	\$112	\$258	\$321	\$384	\$446	\$509	\$572	\$635	\$698	\$761
\$1,657	(\$689)	(\$539)	(\$389)	(\$239)	(\$89)	\$61	\$211	\$275	\$339	\$402	\$466	\$530	\$594	\$657	\$721
\$1,668	(\$759)	(\$605)	(\$451)	(\$297)	(\$143)	\$11	\$165	\$229	\$294	\$358	\$423	\$488	\$552	\$617	\$682
\$1,678	(\$829)	(\$671)	(\$513)	(\$356)	(\$198)	(\$40)	\$118	\$183	\$249	\$315	\$380	\$446	\$511	\$577	\$642
\$1,689	(\$899)	(\$737)	(\$576)	(\$414)	(\$252)	(\$90)	\$71	\$138	\$204	\$271	\$337	\$403	\$470	\$536	\$603
\$1,699	(\$969)	(\$803)	(\$638)	(\$472)	(\$307)	(\$141)	\$25	\$92	\$159	\$227	\$294	\$361	\$429	\$496	\$563
\$1,710	(\$1,039)	(\$869)	(\$700)	(\$530)	(\$361)	(\$191)	(\$22)	\$46	\$114	\$183	\$251	\$319	\$387	\$456	\$524
\$1,720	(\$1,109)	(\$935)	(\$762)	(\$589)	(\$415)	(\$242)	(\$69)	\$0	\$70	\$139	\$208	\$277	\$346	\$415	\$484

Reference Table 7E. CBVs for Scenario 7, Price 2, Random Weaning 88% - 98%, \$0 Borrowed Money,\$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$4,653	\$4,579	\$4,505	\$4,430	\$4,356	\$4,282	\$4,208	\$4,146	\$4,084	\$4,022	\$3,960	\$3,898	\$3,836	\$3,774	\$3,712
\$1,333	\$4,572	\$4,500	\$4,428	\$4,356	\$4,284	\$4,212	\$4,140	\$4,081	\$4,022	\$3,962	\$3,903	\$3,844	\$3,785	\$3,726	\$3,666
\$1,349	\$4,492	\$4,422	\$4,352	\$4,282	\$4,212	\$4,142	\$4,072	\$4,016	\$3,959	\$3,903	\$3,847	\$3,790	\$3,734	\$3,677	\$3,621
\$1,366	\$4,411	\$4,344	\$4,276	\$4,208	\$4,140	\$4,072	\$4,004	\$3,951	\$3,897	\$3,843	\$3,790	\$3,736	\$3,683	\$3,629	\$3,576
\$1,382	\$4,331	\$4,265	\$4,199	\$4,134	\$4,068	\$4,002	\$3,936	\$3,885	\$3,835	\$3,784	\$3,733	\$3,683	\$3,632	\$3,581	\$3,531
\$1,399	\$4,251	\$4,187	\$4,123	\$4,059	\$3,996	\$3,932	\$3,868	\$3,820	\$3,772	\$3,724	\$3,677	\$3,629	\$3,581	\$3,533	\$3,485
\$1,415	\$4,170	\$4,109	\$4,047	\$3,985	\$3,923	\$3,862	\$3,800	\$3,755	\$3,710	\$3,665	\$3,620	\$3,575	\$3,530	\$3,485	\$3,440
\$1,431	\$4,090	\$4,030	\$3,971	\$3,911	\$3,851	\$3,792	\$3,732	\$3,690	\$3,648	\$3,606	\$3,563	\$3,521	\$3,479	\$3,437	\$3,395
\$1,448	\$4,009	\$3,952	\$3,894	\$3,837	\$3,779	\$3,722	\$3,664	\$3,625	\$3,585	\$3,546	\$3,507	\$3,467	\$3,428	\$3,389	\$3,349
\$1,464	\$3,929	\$3,874	\$3,818	\$3,763	\$3,707	\$3,651	\$3,596	\$3,559	\$3,523	\$3,487	\$3,450	\$3,414	\$3,377	\$3,341	\$3,304
\$1,481	\$3,849	\$3,795	\$3,742	\$3,688	\$3,635	\$3,581	\$3,528	\$3,494	\$3,461	\$3,427	\$3,393	\$3,360	\$3,326	\$3,293	\$3,259
\$1,497	\$3,768	\$3,717	\$3,666	\$3,614	\$3,563	\$3,511	\$3,460	\$3,429	\$3,398	\$3,368	\$3,337	\$3,306	\$3,275	\$3,244	\$3,214
\$1,513	\$3,688	\$3,639	\$3,589	\$3,540	\$3,491	\$3,441	\$3,392	\$3,364	\$3,336	\$3,308	\$3,280	\$3,252	\$3,224	\$3,196	\$3,168
\$1,530	\$3,608	\$3,560	\$3,513	\$3,466	\$3,418	\$3,371	\$3,324	\$3,299	\$3,274	\$3,249	\$3,224	\$3,198	\$3,173	\$3,148	\$3,123
\$1,546	\$3,527	\$3,482	\$3,437	\$3,391	\$3,346	\$3,301	\$3,256	\$3,234	\$3,211	\$3,189	\$3,167	\$3,145	\$3,122	\$3,100	\$3,078
\$1,563	\$3,447	\$3,404	\$3,360	\$3,317	\$3,274	\$3,231	\$3,188	\$3,177	\$3,158	\$3,138	\$3,119	\$3,099	\$3,080	\$3,061	\$3,033
\$1,573	\$3,393	\$3,352	\$3,311	\$3,270	\$3,229	\$3,188	\$3,147	\$3,129	\$3,110	\$3,091	\$3,073	\$3,054	\$3,035	\$3,017	\$2,998
\$1,584	\$3,339	\$3,301	\$3,262	\$3,223	\$3,184	\$3,145	\$3,107	\$3,089	\$3,071	\$3,053	\$3,035	\$3,017	\$2,999	\$2,981	\$2,963
\$1,594	\$3,286	\$3,249	\$3,212	\$3,176	\$3,139	\$3,103	\$3,066	\$3,049	\$3,032	\$3,014	\$2,997	\$2,980	\$2,963	\$2,946	\$2,928
\$1,605	\$3,232	\$3,198	\$3,163	\$3,129	\$3,094	\$3,060	\$3,025	\$3,009	\$2,992	\$2,976	\$2,960	\$2,943	\$2,927	\$2,910	\$2,894
\$1,615	\$3,178	\$3,146	\$3,114	\$3,082	\$3,049	\$3,017	\$2,985	\$2,969	\$2,953	\$2,938	\$2,922	\$2,906	\$2,890	\$2,875	\$2,859
\$1,626	\$3,125	\$3,094	\$3,064	\$3,034	\$3,004	\$2,974	\$2,944	\$2,929	\$2,914	\$2,899	\$2,884	\$2,869	\$2,854	\$2,839	\$2,824
\$1,636	\$3,071	\$3,043	\$3,015	\$2,987	\$2,959	\$2,932	\$2,904	\$2,889	\$2,875	\$2,861	\$2,847	\$2,832	\$2,818	\$2,804	\$2,789
\$1,647	\$3,017	\$2,991	\$2,966	\$2,940	\$2,914	\$2,889	\$2,863	\$2,850	\$2,836	\$2,822	\$2,809	\$2,795	\$2,782	\$2,768	\$2,755
\$1,657	\$2,963	\$2,940	\$2,916	\$2,893	\$2,869	\$2,846	\$2,822	\$2,810	\$2,797	\$2,784	\$2,771	\$2,758	\$2,746	\$2,733	\$2,720
\$1,668	\$2,910	\$2,888	\$2,867	\$2,846	\$2,825	\$2,803	\$2,782	\$2,770	\$2,758	\$2,746	\$2,733	\$2,721	\$2,709	\$2,697	\$2,685
\$1,678	\$2,856	\$2,837	\$2,818	\$2,799	\$2,780	\$2,760	\$2,741	\$2,730	\$2,719	\$2,707	\$2,696	\$2,684	\$2,673	\$2,662	\$2,650
\$1,689	\$2,802	\$2,785	\$2,768	\$2,752	\$2,735	\$2,718	\$2,701	\$2,690	\$2,679	\$2,669	\$2,658	\$2,648	\$2,637	\$2,626	\$2,616
\$1,699	\$2,749	\$2,734	\$2,719	\$2,704	\$2,690	\$2,675	\$2,660	\$2,650	\$2,640	\$2,630	\$2,620	\$2,611	\$2,601	\$2,591	\$2,581
\$1,710	\$2,695	\$2,682	\$2,670	\$2,657	\$2,645	\$2,632	\$2,620	\$2,610	\$2,601	\$2,592	\$2,583	\$2,574	\$2,564	\$2,555	\$2,546
\$1,720	\$2,641	\$2,631	\$2,620	\$2,610	\$2,600	\$2,589	\$2,579	\$2,570	\$2,562	\$2,554	\$2,545	\$2,537	\$2,528	\$2,520	\$2,511

Reference Table 8E. CBVs for Scenario 8 Price 3, Random Weaning 88% - 98%, \$0 Borrowed Money, \$3,975/hd Cow Cost

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$4,129	\$4,066	\$4,004	\$3,941	\$3,879	\$3,816	\$3,754	\$3,690	\$3,625	\$3,561	\$3,496	\$3,432	\$3,368	\$3,303	\$3,239
\$1,333	\$4,053	\$3,991	\$3,930	\$3,868	\$3,807	\$3,745	\$3,684	\$3,622	\$3,559	\$3,497	\$3,434	\$3,372	\$3,309	\$3,247	\$3,185
\$1,349	\$3,976	\$3,916	\$3,856	\$3,795	\$3,735	\$3,674	\$3,614	\$3,554	\$3,493	\$3,433	\$3,372	\$3,312	\$3,251	\$3,191	\$3,130
\$1,366	\$3,900	\$3,841	\$3,781	\$3,722	\$3,663	\$3,603	\$3,544	\$3,486	\$3,427	\$3,369	\$3,310	\$3,252	\$3,193	\$3,135	\$3,076
\$1,382	\$3,824	\$3,765	\$3,707	\$3,649	\$3,591	\$3,532	\$3,474	\$3,417	\$3,361	\$3,304	\$3,248	\$3,191	\$3,135	\$3,078	\$3,022
\$1,399	\$3,747	\$3,690	\$3,633	\$3,576	\$3,519	\$3,461	\$3,404	\$3,349	\$3,295	\$3,240	\$3,186	\$3,131	\$3,077	\$3,022	\$2,968
\$1,415	\$3,671	\$3,615	\$3,559	\$3,503	\$3,446	\$3,390	\$3,334	\$3,281	\$3,229	\$3,176	\$3,124	\$3,071	\$3,019	\$2,966	\$2,913
\$1,431	\$3,595	\$3,540	\$3,485	\$3,429	\$3,374	\$3,319	\$3,264	\$3,213	\$3,163	\$3,112	\$3,062	\$3,011	\$2,960	\$2,910	\$2,859
\$1,448	\$3,519	\$3,464	\$3,410	\$3,356	\$3,302	\$3,248	\$3,194	\$3,145	\$3,097	\$3,048	\$2,999	\$2,951	\$2,902	\$2,854	\$2,805
\$1,464	\$3,442	\$3,389	\$3,336	\$3,283	\$3,230	\$3,177	\$3,124	\$3,077	\$3,031	\$2,984	\$2,937	\$2,891	\$2,844	\$2,797	\$2,751
\$1,481	\$3,366	\$3,314	\$3,262	\$3,210	\$3,158	\$3,106	\$3,054	\$3,009	\$2,965	\$2,920	\$2,875	\$2,831	\$2,786	\$2,741	\$2,696
\$1,497	\$3,290	\$3,239	\$3,188	\$3,137	\$3,086	\$3,035	\$2,984	\$2,941	\$2,899	\$2,856	\$2,813	\$2,770	\$2,728	\$2,685	\$2,642
\$1,513	\$3,213	\$3,164	\$3,114	\$3,064	\$3,014	\$2,964	\$2,914	\$2,873	\$2,833	\$2,792	\$2,751	\$2,710	\$2,669	\$2,629	\$2,588
\$1,530	\$3,137	\$3,088	\$3,039	\$2,991	\$2,942	\$2,893	\$2,844	\$2,805	\$2,767	\$2,728	\$2,689	\$2,650	\$2,611	\$2,572	\$2,534
\$1,546	\$3,061	\$3,013	\$2,965	\$2,917	\$2,870	\$2,822	\$2,774	\$2,737	\$2,700	\$2,664	\$2,627	\$2,590	\$2,553	\$2,516	\$2,479
\$1,563	\$2,985	\$2,938	\$2,891	\$2,844	\$2,798	\$2,751	\$2,704	\$2,693	\$2,659	\$2,624	\$2,589	\$2,554	\$2,519	\$2,484	\$2,425
\$1,573	\$2,937	\$2,891	\$2,845	\$2,800	\$2,754	\$2,708	\$2,663	\$2,629	\$2,596	\$2,562	\$2,529	\$2,495	\$2,462	\$2,428	\$2,395
\$1,584	\$2,889	\$2,844	\$2,800	\$2,755	\$2,710	\$2,666	\$2,621	\$2,589	\$2,557	\$2,525	\$2,493	\$2,460	\$2,428	\$2,396	\$2,364
\$1,594	\$2,841	\$2,798	\$2,754	\$2,710	\$2,667	\$2,623	\$2,579	\$2,549	\$2,518	\$2,487	\$2,457	\$2,426	\$2,395	\$2,364	\$2,334
\$1,605	\$2,793	\$2,751	\$2,708	\$2,665	\$2,623	\$2,580	\$2,538	\$2,508	\$2,479	\$2,450	\$2,420	\$2,391	\$2,362	\$2,333	\$2,303
\$1,615	\$2,746	\$2,704	\$2,662	\$2,621	\$2,579	\$2,538	\$2,496	\$2,468	\$2,440	\$2,412	\$2,384	\$2,357	\$2,329	\$2,301	\$2,273
\$1,626	\$2,698	\$2,657	\$2,617	\$2,576	\$2,535	\$2,495	\$2,454	\$2,428	\$2,401	\$2,375	\$2,348	\$2,322	\$2,295	\$2,269	\$2,242
\$1,636	\$2,650	\$2,610	\$2,571	\$2,531	\$2,492	\$2,452	\$2,413	\$2,388	\$2,362	\$2,337	\$2,312	\$2,287	\$2,262	\$2,237	\$2,212
\$1,647	\$2,602	\$2,564	\$2,525	\$2,487	\$2,448	\$2,409	\$2,371	\$2,347	\$2,324	\$2,300	\$2,276	\$2,253	\$2,229	\$2,205	\$2,182
\$1,657	\$2,555	\$2,517	\$2,479	\$2,442	\$2,404	\$2,367	\$2,329	\$2,307	\$2,285	\$2,262	\$2,240	\$2,218	\$2,196	\$2,173	\$2,151
\$1,668	\$2,507	\$2,470	\$2,434	\$2,397	\$2,361	\$2,324	\$2,288	\$2,267	\$2,246	\$2,225	\$2,204	\$2,183	\$2,162	\$2,141	\$2,121
\$1,678	\$2,459	\$2,423	\$2,388	\$2,352	\$2,317	\$2,281	\$2,246	\$2,226	\$2,207	\$2,188	\$2,168	\$2,149	\$2,129	\$2,110	\$2,090
\$1,689	\$2,411	\$2,377	\$2,342	\$2,308	\$2,273	\$2,239	\$2,204	\$2,186	\$2,168	\$2,150	\$2,132	\$2,114	\$2,096	\$2,078	\$2,060
\$1,699	\$2,363	\$2,330	\$2,296	\$2,263	\$2,230	\$2,196	\$2,163	\$2,146	\$2,129	\$2,113	\$2,096	\$2,079	\$2,063	\$2,046	\$2,029
\$1,710	\$2,316	\$2,283	\$2,251	\$2,218	\$2,186	\$2,153	\$2,121	\$2,106	\$2,090	\$2,075	\$2,060	\$2,045	\$2,029	\$2,014	\$1,999
\$1,720	\$2,268	\$2,236	\$2,205	\$2,174	\$2,142	\$2,111	\$2,079	\$2,065	\$2,052	\$2,038	\$2,024	\$2,010	\$1,996	\$1,982	\$1,968

Reference Table 9E. CBVs for Scenario 9, Price 4, Random Weaning 88% - 98%, \$0 Borrowed money,\$3,975/hd Cow Cost

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$3,503	\$3,452	\$3,402	\$3,351	\$3,301	\$3,251	\$3,200	\$3,168	\$3,135	\$3,103	\$3,070	\$3,038	\$3,006	\$2,973	\$2,941
\$1,333	\$3,422	\$3,375	\$3,328	\$3,281	\$3,233	\$3,186	\$3,139	\$3,108	\$3,077	\$3,046	\$3,015	\$2,984	\$2,953	\$2,922	\$2,891
\$1,349	\$3,341	\$3,297	\$3,254	\$3,210	\$3,166	\$3,122	\$3,078	\$3,049	\$3,019	\$2,990	\$2,960	\$2,930	\$2,901	\$2,871	\$2,842
\$1,366	\$3,261	\$3,220	\$3,179	\$3,139	\$3,098	\$3,058	\$3,017	\$2,989	\$2,961	\$2,933	\$2,905	\$2,877	\$2,849	\$2,821	\$2,792
\$1,382	\$3,180	\$3,143	\$3,105	\$3,068	\$3,031	\$2,994	\$2,956	\$2,930	\$2,903	\$2,876	\$2,850	\$2,823	\$2,796	\$2,770	\$2,743
\$1,399	\$3,099	\$3,065	\$3,031	\$2,997	\$2,963	\$2,929	\$2,895	\$2,870	\$2,845	\$2,820	\$2,795	\$2,769	\$2,744	\$2,719	\$2,694
\$1,415	\$3,018	\$2,988	\$2,957	\$2,926	\$2,896	\$2,865	\$2,834	\$2,811	\$2,787	\$2,763	\$2,739	\$2,716	\$2,692	\$2,668	\$2,644
\$1,431	\$2,938	\$2,910	\$2,883	\$2,855	\$2,828	\$2,801	\$2,773	\$2,751	\$2,729	\$2,706	\$2,684	\$2,662	\$2,640	\$2,617	\$2,595
\$1,448	\$2,857	\$2,833	\$2,809	\$2,785	\$2,761	\$2,737	\$2,712	\$2,692	\$2,671	\$2,650	\$2,629	\$2,608	\$2,587	\$2,566	\$2,545
\$1,464	\$2,776	\$2,755	\$2,735	\$2,714	\$2,693	\$2,672	\$2,651	\$2,632	\$2,613	\$2,593	\$2,574	\$2,554	\$2,535	\$2,516	\$2,496
\$1,481	\$2,695	\$2,678	\$2,660	\$2,643	\$2,625	\$2,608	\$2,591	\$2,573	\$2,555	\$2,537	\$2,519	\$2,501	\$2,483	\$2,465	\$2,447
\$1,497	\$2,615	\$2,600	\$2,586	\$2,572	\$2,558	\$2,544	\$2,530	\$2,513	\$2,497	\$2,480	\$2,463	\$2,447	\$2,430	\$2,414	\$2,397
\$1,513	\$2,534	\$2,523	\$2,512	\$2,501	\$2,490	\$2,479	\$2,469	\$2,454	\$2,438	\$2,423	\$2,408	\$2,393	\$2,378	\$2,363	\$2,348
\$1,530	\$2,453	\$2,445	\$2,438	\$2,430	\$2,423	\$2,415	\$2,408	\$2,394	\$2,380	\$2,367	\$2,353	\$2,339	\$2,326	\$2,312	\$2,299
\$1,546	\$2,372	\$2,368	\$2,364	\$2,359	\$2,355	\$2,351	\$2,347	\$2,334	\$2,322	\$2,310	\$2,298	\$2,286	\$2,274	\$2,261	\$2,249
\$1,563	\$2,292	\$2,291	\$2,290	\$2,289	\$2,288	\$2,287	\$2,286	\$2,275	\$2,264	\$2,253	\$2,243	\$2,232	\$2,221	\$2,210	\$2,200
\$1,573	\$2,241	\$2,242	\$2,242	\$2,242	\$2,243	\$2,243	\$2,243	\$2,234	\$2,224	\$2,215	\$2,206	\$2,196	\$2,187	\$2,177	\$2,168
\$1,584	\$2,191	\$2,192	\$2,194	\$2,196	\$2,197	\$2,199	\$2,201	\$2,193	\$2,185	\$2,177	\$2,168	\$2,160	\$2,152	\$2,144	\$2,136
\$1,594	\$2,140	\$2,143	\$2,146	\$2,149	\$2,152	\$2,155	\$2,158	\$2,151	\$2,145	\$2,138	\$2,131	\$2,125	\$2,118	\$2,111	\$2,104
\$1,605	\$2,090	\$2,094	\$2,099	\$2,103	\$2,107	\$2,111	\$2,116	\$2,110	\$2,105	\$2,100	\$2,094	\$2,089	\$2,083	\$2,078	\$2,073
\$1,615	\$2,040	\$2,045	\$2,051	\$2,056	\$2,062	\$2,068	\$2,073	\$2,069	\$2,065	\$2,061	\$2,057	\$2,053	\$2,049	\$2,045	\$2,041
\$1,626	\$1,989	\$1,996	\$2,003	\$2,010	\$2,017	\$2,024	\$2,031	\$2,028	\$2,025	\$2,023	\$2,020	\$2,017	\$2,014	\$2,012	\$2,009
\$1,636	\$1,939	\$1,947	\$1,955	\$1,964	\$1,972	\$1,980	\$1,988	\$1,987	\$1,985	\$1,984	\$1,983	\$1,981	\$1,980	\$1,979	\$1,977
\$1,647	\$1,889	\$1,898	\$1,908	\$1,917	\$1,927	\$1,936	\$1,946	\$1,946	\$1,946	\$1,946	\$1,946	\$1,946	\$1,946	\$1,946	\$1,945
\$1,657	\$1,838	\$1,849	\$1,860	\$1,871	\$1,882	\$1,892	\$1,903	\$1,904	\$1,906	\$1,907	\$1,908	\$1,910	\$1,911	\$1,912	\$1,914
\$1,668	\$1,788	\$1,800	\$1,812	\$1,824	\$1,836	\$1,849	\$1,861	\$1,863	\$1,866	\$1,869	\$1,871	\$1,874	\$1,877	\$1,879	\$1,882
\$1,678	\$1,738	\$1,751	\$1,764	\$1,778	\$1,791	\$1,805	\$1,818	\$1,822	\$1,826	\$1,830	\$1,834	\$1,838	\$1,842	\$1,846	\$1,850
\$1,689	\$1,687	\$1,702	\$1,717	\$1,731	\$1,746	\$1,761	\$1,776	\$1,781	\$1,786	\$1,792	\$1,797	\$1,802	\$1,808	\$1,813	\$1,818
\$1,699	\$1,637	\$1,653	\$1,669	\$1,685	\$1,701	\$1,717	\$1,733	\$1,740	\$1,746	\$1,753	\$1,760	\$1,767	\$1,773	\$1,780	\$1,787
\$1,710	\$1,587	\$1,604	\$1,621	\$1,639	\$1,656	\$1,673	\$1,691	\$1,699	\$1,707	\$1,715	\$1,723	\$1,731	\$1,739	\$1,747	\$1,755
\$1,720	\$1,536	\$1,555	\$1,574	\$1,592	\$1,611	\$1,629	\$1,648	\$1,657	\$1,667	\$1,676	\$1,686	\$1,695	\$1,704	\$1,714	\$1,723

Reference Table 10E. CBVs for Scenario 10, Price 5, Random Weaning 88% - 98%, \$0.00 Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$4,847	\$4,725	\$4,603	\$4,481	\$4,359	\$4,237	\$4,115	\$4,053	\$3,991	\$3,929	\$3,868	\$3,806	\$3,744	\$3,682	\$3,621
\$1,333	\$4,760	\$4,642	\$4,523	\$4,405	\$4,287	\$4,168	\$4,050	\$3,989	\$3,929	\$3,868	\$3,807	\$3,747	\$3,686	\$3,625	\$3,564
\$1,349	\$4,673	\$4,559	\$4,444	\$4,330	\$4,215	\$4,100	\$3,986	\$3,926	\$3,866	\$3,807	\$3,747	\$3,687	\$3,627	\$3,568	\$3,508
\$1,366	\$4,587	\$4,476	\$4,365	\$4,254	\$4,143	\$4,032	\$3,921	\$3,863	\$3,804	\$3,745	\$3,687	\$3,628	\$3,569	\$3,510	\$3,452
\$1,382	\$4,500	\$4,393	\$4,286	\$4,178	\$4,071	\$3,964	\$3,857	\$3,799	\$3,742	\$3,684	\$3,626	\$3,568	\$3,511	\$3,453	\$3,395
\$1,399	\$4,413	\$4,310	\$4,206	\$4,103	\$3,999	\$3,896	\$3,793	\$3,736	\$3,679	\$3,622	\$3,566	\$3,509	\$3,452	\$3,396	\$3,339
\$1,415	\$4,326	\$4,227	\$4,127	\$4,027	\$3,928	\$3,828	\$3,728	\$3,673	\$3,617	\$3,561	\$3,505	\$3,450	\$3,394	\$3,338	\$3,283
\$1,431	\$4,240	\$4,144	\$4,048	\$3,952	\$3,856	\$3,760	\$3,664	\$3,609	\$3,554	\$3,500	\$3,445	\$3,390	\$3,336	\$3,281	\$3,226
\$1,448	\$4,153	\$4,061	\$3,968	\$3,876	\$3,784	\$3,692	\$3,599	\$3,546	\$3,492	\$3,438	\$3,385	\$3,331	\$3,277	\$3,224	\$3,170
\$1,464	\$4,066	\$3,978	\$3,889	\$3,801	\$3,712	\$3,624	\$3,535	\$3,482	\$3,430	\$3,377	\$3,324	\$3,272	\$3,219	\$3,166	\$3,113
\$1,481	\$3,979	\$3,895	\$3,810	\$3,725	\$3,640	\$3,555	\$3,471	\$3,419	\$3,367	\$3,316	\$3,264	\$3,212	\$3,161	\$3,109	\$3,057
\$1,497	\$3,893	\$3,812	\$3,730	\$3,649	\$3,568	\$3,487	\$3,406	\$3,356	\$3,305	\$3,254	\$3,204	\$3,153	\$3,102	\$3,051	\$3,001
\$1,513	\$3,806	\$3,728	\$3,651	\$3,574	\$3,497	\$3,419	\$3,342	\$3,292	\$3,243	\$3,193	\$3,143	\$3,093	\$3,044	\$2,994	\$2,944
\$1,530	\$3,719	\$3,645	\$3,572	\$3,498	\$3,425	\$3,351	\$3,278	\$3,229	\$3,180	\$3,132	\$3,083	\$3,034	\$2,985	\$2,937	\$2,888
\$1,546	\$3,632	\$3,562	\$3,493	\$3,423	\$3,353	\$3,283	\$3,213	\$3,166	\$3,118	\$3,070	\$3,022	\$2,975	\$2,927	\$2,879	\$2,832
\$1,563	\$3,545	\$3,479	\$3,413	\$3,347	\$3,281	\$3,215	\$3,149	\$3,072	\$3,026	\$2,979	\$2,932	\$2,886	\$2,839	\$2,792	\$2,775
\$1,573	\$3,494	\$3,430	\$3,366	\$3,302	\$3,238	\$3,174	\$3,110	\$3,065	\$3,019	\$2,973	\$2,928	\$2,882	\$2,836	\$2,790	\$2,745
\$1,584	\$3,442	\$3,380	\$3,319	\$3,257	\$3,195	\$3,134	\$3,072	\$3,027	\$2,983	\$2,938	\$2,893	\$2,848	\$2,803	\$2,759	\$2,714
\$1,594	\$3,390	\$3,331	\$3,272	\$3,212	\$3,153	\$3,093	\$3,034	\$2,990	\$2,946	\$2,902	\$2,858	\$2,815	\$2,771	\$2,727	\$2,683
\$1,605	\$3,339	\$3,282	\$3,224	\$3,167	\$3,110	\$3,053	\$2,995	\$2,953	\$2,910	\$2,867	\$2,824	\$2,781	\$2,738	\$2,695	\$2,652
\$1,615	\$3,287	\$3,232	\$3,177	\$3,122	\$3,067	\$3,012	\$2,957	\$2,915	\$2,873	\$2,831	\$2,789	\$2,747	\$2,705	\$2,663	\$2,621
\$1,626	\$3,235	\$3,183	\$3,130	\$3,077	\$3,024	\$2,972	\$2,919	\$2,878	\$2,837	\$2,796	\$2,755	\$2,714	\$2,673	\$2,632	\$2,591
\$1,636	\$3,184	\$3,133	\$3,083	\$3,032	\$2,982	\$2,931	\$2,880	\$2,840	\$2,800	\$2,760	\$2,720	\$2,680	\$2,640	\$2,600	\$2,560
\$1,647	\$3,132	\$3,084	\$3,035	\$2,987	\$2,939	\$2,890	\$2,842	\$2,803	\$2,764	\$2,725	\$2,686	\$2,646	\$2,607	\$2,568	\$2,529
\$1,657	\$3,080	\$3,034	\$2,988	\$2,942	\$2,896	\$2,850	\$2,804	\$2,766	\$2,727	\$2,689	\$2,651	\$2,613	\$2,575	\$2,536	\$2,498
\$1,668	\$3,029	\$2,985	\$2,941	\$2,897	\$2,853	\$2,809	\$2,765	\$2,728	\$2,691	\$2,654	\$2,616	\$2,579	\$2,542	\$2,505	\$2,467
\$1,678	\$2,977	\$2,935	\$2,894	\$2,852	\$2,810	\$2,769	\$2,727	\$2,691	\$2,654	\$2,618	\$2,582	\$2,545	\$2,509	\$2,473	\$2,437
\$1,689	\$2,925	\$2,886	\$2,846	\$2,807	\$2,768	\$2,728	\$2,689	\$2,653	\$2,618	\$2,583	\$2,547	\$2,512	\$2,477	\$2,441	\$2,406
\$1,699	\$2,874	\$2,836	\$2,799	\$2,762	\$2,725	\$2,688	\$2,650	\$2,616	\$2,581	\$2,547	\$2,513	\$2,478	\$2,444	\$2,409	\$2,375
\$1,710	\$2,822	\$2,787	\$2,752	\$2,717	\$2,682	\$2,647	\$2,612	\$2,578	\$2,545	\$2,512	\$2,478	\$2,445	\$2,411	\$2,378	\$2,344
\$1,720	\$2,770	\$2,738	\$2,705	\$2,672	\$2,639	\$2,606	\$2,574	\$2,541	\$2,509	\$2,476	\$2,444	\$2,411	\$2,378	\$2,346	\$2,313

Reference Table 11E. CBVs for Scenario 11 (Price 6, Random Weaning Rates 88% - 98%, \$0.00 Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$4,190	\$4,093	\$3,996	\$3,898	\$3,801	\$3,704	\$3,607	\$3,533	\$3,459	\$3,385	\$3,312	\$3,238	\$3,164	\$3,090	\$3,016
\$1,333	\$4,109	\$4,014	\$3,919	\$3,824	\$3,729	\$3,635	\$3,540	\$3,469	\$3,398	\$3,326	\$3,255	\$3,184	\$3,113	\$3,042	\$2,971
\$1,349	\$4,028	\$3,935	\$3,843	\$3,750	\$3,658	\$3,565	\$3,472	\$3,404	\$3,336	\$3,267	\$3,199	\$3,131	\$3,062	\$2,994	\$2,926
\$1,366	\$3,946	\$3,856	\$3,766	\$3,676	\$3,586	\$3,495	\$3,405	\$3,340	\$3,274	\$3,208	\$3,143	\$3,077	\$3,011	\$2,946	\$2,880
\$1,382	\$3,865	\$3,777	\$3,690	\$3,602	\$3,514	\$3,426	\$3,338	\$3,275	\$3,212	\$3,149	\$3,086	\$3,023	\$2,961	\$2,898	\$2,835
\$1,399	\$3,784	\$3,699	\$3,613	\$3,527	\$3,442	\$3,356	\$3,271	\$3,211	\$3,150	\$3,090	\$3,030	\$2,970	\$2,910	\$2,850	\$2,789
\$1,415	\$3,703	\$3,620	\$3,536	\$3,453	\$3,370	\$3,287	\$3,203	\$3,146	\$3,089	\$3,031	\$2,974	\$2,916	\$2,859	\$2,801	\$2,744
\$1,431	\$3,622	\$3,541	\$3,460	\$3,379	\$3,298	\$3,217	\$3,136	\$3,081	\$3,027	\$2,972	\$2,917	\$2,863	\$2,808	\$2,753	\$2,699
\$1,448	\$3,541	\$3,462	\$3,383	\$3,305	\$3,226	\$3,148	\$3,069	\$3,017	\$2,965	\$2,913	\$2,861	\$2,809	\$2,757	\$2,705	\$2,653
\$1,464	\$3,459	\$3,383	\$3,307	\$3,231	\$3,154	\$3,078	\$3,002	\$2,952	\$2,903	\$2,854	\$2,805	\$2,755	\$2,706	\$2,657	\$2,608
\$1,481	\$3,378	\$3,304	\$3,230	\$3,156	\$3,082	\$3,008	\$2,934	\$2,888	\$2,841	\$2,795	\$2,748	\$2,702	\$2,655	\$2,609	\$2,562
\$1,497	\$3,297	\$3,225	\$3,154	\$3,082	\$3,010	\$2,939	\$2,867	\$2,823	\$2,780	\$2,736	\$2,692	\$2,648	\$2,605	\$2,561	\$2,517
\$1,513	\$3,216	\$3,147	\$3,077	\$3,008	\$2,939	\$2,869	\$2,800	\$2,759	\$2,718	\$2,677	\$2,636	\$2,595	\$2,554	\$2,513	\$2,472
\$1,530	\$3,135	\$3,068	\$3,001	\$2,934	\$2,867	\$2,800	\$2,733	\$2,694	\$2,656	\$2,618	\$2,579	\$2,541	\$2,503	\$2,464	\$2,426
\$1,546	\$3,054	\$2,989	\$2,924	\$2,860	\$2,795	\$2,730	\$2,665	\$2,630	\$2,594	\$2,559	\$2,523	\$2,488	\$2,452	\$2,416	\$2,381
\$1,563	\$2,973	\$2,910	\$2,848	\$2,785	\$2,723	\$2,660	\$2,598	\$2,522	\$2,489	\$2,456	\$2,423	\$2,390	\$2,357	\$2,324	\$2,335
\$1,573	\$2,920	\$2,859	\$2,799	\$2,739	\$2,678	\$2,618	\$2,558	\$2,526	\$2,494	\$2,463	\$2,431	\$2,399	\$2,368	\$2,336	\$2,304
\$1,584	\$2,867	\$2,809	\$2,750	\$2,692	\$2,634	\$2,576	\$2,518	\$2,487	\$2,456	\$2,426	\$2,395	\$2,365	\$2,334	\$2,304	\$2,273
\$1,594	\$2,814	\$2,758	\$2,702	\$2,646	\$2,589	\$2,533	\$2,477	\$2,448	\$2,418	\$2,389	\$2,360	\$2,330	\$2,301	\$2,272	\$2,242
\$1,605	\$2,761	\$2,707	\$2,653	\$2,599	\$2,545	\$2,491	\$2,437	\$2,409	\$2,381	\$2,352	\$2,324	\$2,296	\$2,268	\$2,239	\$2,211
\$1,615	\$2,708	\$2,656	\$2,604	\$2,552	\$2,501	\$2,449	\$2,397	\$2,370	\$2,343	\$2,315	\$2,288	\$2,261	\$2,234	\$2,207	\$2,180
\$1,626	\$2,655	\$2,606	\$2,556	\$2,506	\$2,456	\$2,406	\$2,356	\$2,330	\$2,305	\$2,279	\$2,253	\$2,227	\$2,201	\$2,175	\$2,149
\$1,636	\$2,603	\$2,555	\$2,507	\$2,459	\$2,412	\$2,364	\$2,316	\$2,291	\$2,267	\$2,242	\$2,217	\$2,192	\$2,167	\$2,143	\$2,118
\$1,647	\$2,550	\$2,504	\$2,458	\$2,413	\$2,367	\$2,321	\$2,276	\$2,252	\$2,229	\$2,205	\$2,181	\$2,158	\$2,134	\$2,111	\$2,087
\$1,657	\$2,497	\$2,453	\$2,410	\$2,366	\$2,323	\$2,279	\$2,236	\$2,213	\$2,191	\$2,168	\$2,146	\$2,123	\$2,101	\$2,078	\$2,056
\$1,668	\$2,444	\$2,403	\$2,361	\$2,320	\$2,278	\$2,237	\$2,195	\$2,174	\$2,153	\$2,131	\$2,110	\$2,089	\$2,067	\$2,046	\$2,025
\$1,678	\$2,391	\$2,352	\$2,312	\$2,273	\$2,234	\$2,194	\$2,155	\$2,135	\$2,115	\$2,095	\$2,074	\$2,054	\$2,034	\$2,014	\$1,994
\$1,689	\$2,338	\$2,301	\$2,264	\$2,226	\$2,189	\$2,152	\$2,115	\$2,096	\$2,077	\$2,058	\$2,039	\$2,020	\$2,001	\$1,982	\$1,963
\$1,699	\$2,285	\$2,250	\$2,215	\$2,180	\$2,145	\$2,110	\$2,074	\$2,057	\$2,039	\$2,021	\$2,003	\$1,985	\$1,967	\$1,949	\$1,932
\$1,710	\$2,233	\$2,199	\$2,166	\$2,133	\$2,100	\$2,067	\$2,034	\$2,017	\$2,001	\$1,984	\$1,967	\$1,951	\$1,934	\$1,917	\$1,901
\$1,720	\$2,180	\$2,149	\$2,118	\$2,087	\$2,056	\$2,025	\$1,994	\$1,978	\$1,963	\$1,947	\$1,932	\$1,916	\$1,901	\$1,885	\$1,869

Reference Table 12E. CBVs for Scenario 12, Price7, Random Weaning Rates 88% - 98%, \$0 Borrowed Money, \$3,975/hd Cow Costs

Cost	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
\$1,317	\$6,594	\$6,434	\$6,273	\$6,113	\$5,952	\$5,791	\$5,631	\$5,512	\$5,394	\$5,276	\$5,157	\$5,039	\$4,920	\$4,802	\$4,684
\$1,333	\$6,516	\$6,357	\$6,198	\$6,039	\$5,880	\$5,721	\$5,562	\$5,447	\$5,331	\$5,215	\$5,100	\$4,984	\$4,869	\$4,753	\$4,637
\$1,349	\$6,438	\$6,281	\$6,123	\$5,966	\$5,809	\$5,651	\$5,494	\$5,381	\$5,268	\$5,155	\$5,042	\$4,930	\$4,817	\$4,704	\$4,591
\$1,366	\$6,360	\$6,204	\$6,049	\$5,893	\$5,737	\$5,581	\$5,425	\$5,315	\$5,205	\$5,095	\$4,985	\$4,875	\$4,765	\$4,655	\$4,545
\$1,382	\$6,282	\$6,128	\$5,974	\$5,819	\$5,665	\$5,511	\$5,357	\$5,249	\$5,142	\$5,035	\$4,928	\$4,821	\$4,713	\$4,606	\$4,499
\$1,399	\$6,204	\$6,052	\$5,899	\$5,746	\$5,594	\$5,441	\$5,288	\$5,184	\$5,079	\$4,975	\$4,870	\$4,766	\$4,661	\$4,557	\$4,453
\$1,415	\$6,126	\$5,975	\$5,824	\$5,673	\$5,522	\$5,371	\$5,220	\$5,118	\$5,016	\$4,915	\$4,813	\$4,711	\$4,610	\$4,508	\$4,406
\$1,431	\$6,048	\$5,899	\$5,749	\$5,600	\$5,450	\$5,301	\$5,151	\$5,052	\$4,953	\$4,855	\$4,756	\$4,657	\$4,558	\$4,459	\$4,360
\$1,448	\$5,970	\$5,822	\$5,674	\$5,526	\$5,379	\$5,231	\$5,083	\$4,987	\$4,890	\$4,794	\$4,698	\$4,602	\$4,506	\$4,410	\$4,314
\$1,464	\$5,892	\$5,746	\$5,600	\$5,453	\$5,307	\$5,160	\$5,014	\$4,921	\$4,828	\$4,734	\$4,641	\$4,548	\$4,454	\$4,361	\$4,268
\$1,481	\$5,814	\$5,670	\$5,525	\$5,380	\$5,235	\$5,090	\$4,946	\$4,855	\$4,765	\$4,674	\$4,584	\$4,493	\$4,403	\$4,312	\$4,221
\$1,497	\$5,736	\$5,593	\$5,450	\$5,307	\$5,163	\$5,020	\$4,877	\$4,789	\$4,702	\$4,614	\$4,526	\$4,438	\$4,351	\$4,263	\$4,175
\$1,513	\$5,658	\$5,517	\$5,375	\$5,233	\$5,092	\$4,950	\$4,809	\$4,724	\$4,639	\$4,554	\$4,469	\$4,384	\$4,299	\$4,214	\$4,129
\$1,530	\$5,580	\$5,440	\$5,300	\$5,160	\$5,020	\$4,880	\$4,740	\$4,658	\$4,576	\$4,494	\$4,411	\$4,329	\$4,247	\$4,165	\$4,083
\$1,546	\$5,502	\$5,364	\$5,225	\$5,087	\$4,948	\$4,810	\$4,672	\$4,592	\$4,513	\$4,433	\$4,354	\$4,275	\$4,195	\$4,116	\$4,037
\$1,563	\$5,424	\$5,287	\$5,151	\$5,014	\$4,877	\$4,740	\$4,603	\$4,526	\$4,450	\$4,373	\$4,297	\$4,220	\$4,144	\$4,067	\$3,990
\$1,573	\$5,370	\$5,235	\$5,100	\$4,965	\$4,830	\$4,695	\$4,561	\$4,485	\$4,409	\$4,333	\$4,257	\$4,181	\$4,106	\$4,030	\$3,954
\$1,584	\$5,316	\$5,183	\$5,050	\$4,917	\$4,784	\$4,651	\$4,518	\$4,443	\$4,368	\$4,293	\$4,218	\$4,143	\$4,068	\$3,993	\$3,918
\$1,594	\$5,261	\$5,130	\$4,999	\$4,868	\$4,737	\$4,606	\$4,476	\$4,401	\$4,327	\$4,253	\$4,178	\$4,104	\$4,030	\$3,955	\$3,881
\$1,605	\$5,207	\$5,078	\$4,949	\$4,820	\$4,691	\$4,562	\$4,433	\$4,359	\$4,286	\$4,212	\$4,139	\$4,065	\$3,992	\$3,918	\$3,845
\$1,615	\$5,153	\$5,026	\$4,899	\$4,772	\$4,645	\$4,518	\$4,390	\$4,318	\$4,245	\$4,172	\$4,099	\$4,027	\$3,954	\$3,881	\$3,808
\$1,626	\$5,098	\$4,973	\$4,848	\$4,723	\$4,598	\$4,473	\$4,348	\$4,276	\$4,204	\$4,132	\$4,060	\$3,988	\$3,916	\$3,844	\$3,772
\$1,636	\$5,044	\$4,921	\$4,798	\$4,675	\$4,552	\$4,429	\$4,305	\$4,234	\$4,163	\$4,092	\$4,021	\$3,949	\$3,878	\$3,807	\$3,736
\$1,647	\$4,990	\$4,869	\$4,748	\$4,626	\$4,505	\$4,384	\$4,263	\$4,193	\$4,122	\$4,052	\$3,981	\$3,911	\$3,840	\$3,770	\$3,699
\$1,657	\$4,936	\$4,816	\$4,697	\$4,578	\$4,459	\$4,340	\$4,220	\$4,151	\$4,081	\$4,011	\$3,942	\$3,872	\$3,802	\$3,732	\$3,663
\$1,668	\$4,881	\$4,764	\$4,647	\$4,530	\$4,412	\$4,295	\$4,178	\$4,109	\$4,040	\$3,971	\$3,902	\$3,833	\$3,764	\$3,695	\$3,626
\$1,678	\$4,827	\$4,712	\$4,596	\$4,481	\$4,366	\$4,251	\$4,135	\$4,067	\$3,999	\$3,931	\$3,863	\$3,795	\$3,726	\$3,658	\$3,590
\$1,689	\$4,773	\$4,659	\$4,546	\$4,433	\$4,320	\$4,206	\$4,093	\$4,026	\$3,958	\$3,891	\$3,823	\$3,756	\$3,688	\$3,621	\$3,554
\$1,699	\$4,718	\$4,607	\$4,496	\$4,384	\$4,273	\$4,162	\$4,050	\$3,984	\$3,917	\$3,850	\$3,784	\$3,717	\$3,651	\$3,584	\$3,517
\$1,710	\$4,664	\$4,555	\$4,445	\$4,336	\$4,227	\$4,117	\$4,008	\$3,942	\$3,876	\$3,810	\$3,744	\$3,678	\$3,613	\$3,547	\$3,481
\$1,720	\$4,610	\$4,502	\$4,395	\$4,288	\$4,180	\$4,073	\$3,965	\$3,900	\$3,835	\$3,770	\$3,705	\$3,640	\$3,575	\$3,510	\$3,444

Section 7: Summary

Common sense tells us that Increasing productivity without altering costs results in greater revenue, which is accounted for in scenarios #2 and #3, the low and high weaning rates. The accuracy and applicability of each forecast is dependent on how closely the conditions of the scenario match those of reality. It is important to match the individual operation's productivity and revenue expectation to get relevant CBV forecast. Productivity changes which vary from year to year and ranch to ranch that are model here include weaning rates and calf growth rates as well as pregnancy rates as suggested by culling rates. The biological simulation is built using a March calving herd with an average weaning rate averaging ~93%. Revenue changes play a key role in altering breakeven value, making both biological and economic factors critical in establishing the CBV. This means factors other than productivity such as Demand and supply shifts, that alter cattle prices, have huge impact on replacement heifer breakeven value either positive or negative depending on the shift. Currently we live in a higher priced environment. This could mean that the future could mean lower prices. Lower or higher calf prices lead to lower or higher breakeven values. This last point may seem obvious but remember it is not the only thing that matters. One of the biggest effects is a cow's productive life, which can span as much as a decade or less than a full season. Accurately forecasting these values leads to better forecasting cow replacement values. An economically successful producer, through time and on average, buys or raises replacement heifers for no more than what is needed in net returns over the lifetime of their cows, otherwise they are eventually out of business or wish they were. The whole point is that the CBV, purchase value of any particular replacement heifer is unknown without knowing her future longevity, productivity, costs, and future cattle prices. The purchase of any single animal has some very real risk associated with it, nothing new or earth shattering, but worthy of recognition and thoughtful actions and the one of the main ideas behind this work.

A positive outcome in purchasing replacements over time comes down to the purchase or raised animal's ability to return as much or more value than was paid and this is only accomplished if an operation selects the right type of animals, at the right price and the right time. One can always find the instance where an overpriced replacement animal broke even or made lots of money, as well as where an inexpensive purchased cow ended with a loss or perhaps the opposite case. The important thing is that on average the good choices outperform those do not turn out as well as expected. Raising replacements doesn't make them free, in fact it is important to know what they cost to raise and how they rate in value relative to purchased animals. This, however, is a topic for another day. As longevity of a replacement cow increases, average herd age increases, and breakeven values increase, except when cost exceeds revenue, which results in losses as demonstrated in several of the scenarios. What is true is that Lower costs and low replacement herds can afford higher valued replacement heifers and replace capital faster in their operations compared with those that with higher cost and higher replacement rates. This assumes similar cow productivity. When raising or purchasing replacement heifers, each heifer's value is based on her ability to stay in the herd and the producer's ability to manage that productivity, control costs, and use the market to their advantage. Commercial ranching in a nutshell. Applying these principles is key to making an operation more profitable and resilient.

Like any forecast there are things to be aware of concerning its limitations and implications. While this report is intended to provide some discussion about positive net returns it does not focus on profitability directly but on finding the value of a replacement cow given unseen and unknowable future events and circumstances. This is an impossible task but one with

merit. There is no reference in this report to changes in profit, loss or net worth. The results are for the current year only and for cows bought this season. Rephrased as a question, “If I were to buy a cow today, believing what is suggested as future costs, prices, productivity and cow longevity what would she cost for her to breakeven?”.

The unknown makes it a wise choice to consider alternatives, thus are twelve different scenarios. Scenario 1 is based on cost and price projections made by FAPRI. FAPRI is a group of economists that work at Missouri State University that specialize in collecting analyzing, projecting and publishing the U. S. agriculture’s situation and outlook into the next decade. They apply established mathematical and statistical models for many of the factors that influence their projections. Two of the scenarios, Scenario 2 and 3, investigate lower and higher levels of cow productivity directly in the form of weaning percentages, 88% and 98% using the Baseline/FAPRI data. The next three scenarios focus on the effects of borrowing capital as a percentage of cow purchase price (\$3,975/hd), 25%, 50% and 75% again using the Baseline information. The remaining six scenarios use the Baseline cost information combined with various expert developed price series for the coming decade. There are of course an infinite number of possible cattle price series in the future it is hoped that the seven series, six plus FAPRI, reflect a wide enough range to provide solid information helpful in making the best possible decision in purchasing or raising replacement cows. While cattle prices have remained higher than last years projections, and with current cow numbers and herd building information with strong economy, cattle prices are seen by many to have a stable near future (several years). This may or may not be true, it is important to consider many factors while making this decision about how much you can or will pay for replacement cows.

Section 8 Appendix: Part A (Budget/Costs)

Primary factors that created differences in the three levels of costs. These costs are the primary drivers of costs in the CC-CQL.

Interest on borrowed money

Lo(6% to 8%), Mid(7% to 9%) and Hi(8 to 11%)

Bull Cost/hd

Lo(\$6,000 to \$7,500)/hd, Mid(\$7,500 to \$9,000)/hd and Hi(\$9,000 to \$10,500)/hd

Growing Season Grazing (Pairs) per month

Lo(\$70.15 to \$71.15)/pr, Mid(\$81.60 to \$82.60)/pr and Hi(\$91.90 to \$92.90)/pr

Dormant Season Grazing (Pairs) per month

Lo(\$35.08 to \$35.58)/pr, Mid(\$40.80 to \$41.30)/pr and Hi(\$45.95 to \$46.45)/pr

Hay Cost/ton

Lo(\$140 to \$160)/ton, Mid(\$160 to \$180)/ton and Hi(\$180 to \$200)/ton

Crop Residual (corn stalk grazing/hd/day)

Lo(\$0.80 to \$0.90)/hd/day, Mid(\$1.00 to \$1.10)/hd/day and Hi(\$1.15 to \$1.25)/hd/day

Supplement (cake)/ton

Lo(\$300 to \$330)/ton, Mid(\$330 to \$350)/ton and Hi(\$350 to \$380)/ton

Minerals/lb

Lo(\$0.30 to \$0.33)/lb, Mid(\$0.34 to \$0.35)/lb and Hi(\$0.38 to \$0.41)/lb

Vet Costs/cow

Lo(\$30 to \$32)/hd, Mid(\$35 to \$32)/hd and Hi(\$37 to \$35)/hd

Labor Hours/cow

Lo(5 to 6)hrs/cow, Mid(6 to 7)hrs/cow and Hi(7 to 8)hrs/cow

Figure 1. Listing of the values used for each of the three cost level budgets. Screen shot of the KIV's (Key input variables) The simulation file name: Excel 3 budget scenarios 2026.xlsm

KIV's					LOW Costs		MEDIUM Costs		HIGH Costs	
					Top	Bottom	Top	Bottom	Top	Bottom
Expected interest rate	percent				8%	6%	9%	7%	11%	8%
How many cows in the herd	cows				400	399	400	399	400	399
Number of cows culled	females				80	60	80	60	80	60
Expected average value of replacement cow?	dollars/head				4400	3500	4400	3500	4400	3500
Average cull cow weight when sold	pounds				1400	1150	1400	1150	1400	1150
Expected price per cwt for cull cows	dollars/cwt.				198	140	198	140	198	140
Expected markeing cost to market cull cows	head				60	50	60	50	60	50
Expected death loss	percent				2.0%	1.9%	2.0%	1.9%	2.0%	1.9%
Number of bulls needed	bulls				16	15	16	15	16	15
Number of bulls culled					5	4	5	4	5	4
Bulls cost (including delivery)	dollars/head				7500	6000	9000	7500	10500	9000
Expected Bull Life	years				6	4.9	6	4.9	6	4.9
How much does the average cull bull weigh when you sell him?	pounds				2100	1750	2100	1750	2100	1750
Expected premium per cwt for bulls verses cows	dollars/head				10.00	7.50	10.00	7.50	10.00	7.50
What is the total spent on artificial insemination each year for all females?	dollars/year				0.0001	0.00001	0.0001	0.00001	0.0001	0.00001
Feed Costs					Top	Bottom	Top	Bottom	Top	Bottom
Growing Season Grazing (Pairs)	months	6	6	6	\$ 71.15	\$ 70.15	\$ 82.60	\$ 81.60	\$ 92.90	\$ 91.90
Growing Season Grazing (Cows)	months									
Dormant Season Grazing (Pairs)	months	3	3	3	\$ 35.58	\$ 35.08	\$ 41.30	\$ 40.80	\$ 46.45	\$ 45.95
Dormant Season Grazing (Cows)	months									
Crop Residual (ie. Corn stalks)	days	60	60	60	\$ 0.90	\$ 0.80	\$ 1.10	\$ 1.00	\$ 1.25	\$ 1.15
Irrigated Pasture	months									
Hay	ton	1.5	1.5	1.5	\$ 160.00	\$ 140.00	\$ 180.00	\$ 160.00	\$ 200.00	\$ 180.00
DDG	pounds									
Corn	bu									
Supplement	lbs	60	60	60	\$ 330.00	\$ 300.00	\$ 350.00	\$ 330.00	\$ 380.00	\$ 350.00
Salt & Mineral	lbs	60	60	60	\$ 0.33	\$ 0.30	\$ 0.37	\$ 0.34	\$ 0.41	\$ 0.38
Other										
Other Cash Costs					Top	Bottom	Top	Bottom	Top	Bottom
Veterinary and medicine per cow					\$ 32.00	\$ 30.00	\$ 35.00	\$ 32.00	\$ 37.00	\$ 35.00
Cash costs on bldgs & equip					\$ 5.00	\$ 4.99	\$ 5.00	\$ 4.99	\$ 5.00	\$ 4.99
Miscelanous Expense					\$ 10.00	\$ 3.00	\$ 10.00	\$ 3.00	\$ 10.00	\$ 3.00
Average Labor Hours Per Cow Per Year					6	5	7	6	8	7
Per Hour Labor Costs					\$ 25.00	\$ 20.00	\$ 25.00	\$ 20.00	\$ 25.00	\$ 20.00
Cattle Insurance					\$ 5.00	\$ 4.25	\$ 5.00	\$ 4.25	\$ 5.00	\$ 4.25
Management					\$ 10.00	\$ 5.00	\$ 10.00	\$ 5.00	\$ 10.00	\$ 5.00
Physical Characteristics amd Calf Market Value					Top	Bottom	Top	Bottom	Top	Bottom
Expected Calving Rate					98%	88%	98%	88%	98%	88%
Calf Price/Cwt					400	325	400	325	400	325
Calf Weight					650	500	650	500	650	500

Figure 2. Pasture summer rental rates used in the budget simulation (Excel 3 budget scenarios 2026.xlsm)

Pasture/range cost for cow-calf pair from the 2026 Nebraska Farmland Values and Cash Rental Rates (Preliminary Report March 18, 2026

2026 UNL			Statistical District							
Land Survey Info			Northwest	North	Northeast	Central	East	Southwest	South	Southeast
Average										
.....			56.45	82.1	77.35	74.6	69.2	64.95	61.4	66.75
%	Change		3	5	6	8	3	4	3	2
High	Third	Quality...	65.95	92.4	89.75	85.3	80.65	73.25	71.8	78.1
Low	Third	Quality.....	47.8	70.65	65.2	63.05	58.45	56.7	50.55	53.85

Link

https://cap.unl.edu/sites/unl.edu.ianr.agecon.center-for-ag-profitability/files/media/file/ne-farm-real-estate_2026_prelim.pdf

Figure 3, Information from the “2026 Excel 3 budget scenarios 2026.xlsm”, (The Cow Cost Cow-Q-Lator or CC-CQL), found on the Analysis worksheet of the CP-CQL (results of 1,000 iterations) The CDFs, Figures 1, 2, and 3 in the document depict the variation.

	Simulated Costs, Without Replacement/ No Cow opportunity costs		
Mean	\$1,316.69	\$1,562.51	\$1,720.39
Std Dev	\$21.12	\$19.26	\$20.41
Min	\$1,261.34	\$1,497.08	\$1,654.49
Max	\$1,385.75	\$1,612.97	\$1,775.33
	Simulated Costs, Including Opportunity cost of cows		
Mean	\$1,715.85	\$1,962.83	\$2,119.68
Std Dev	\$21.12	\$19.26	\$20.41
Min	\$1,660.50	\$1,897.40	\$2,053.78
Max	\$1,784.91	\$2,013.29	\$2,174.63

Cow-Calf Cost Cow-Q-lator (High Costs Production)

Written By Matt Stockton

Annual Cow Cost Value

(depreciation, death loss, interest, and insurance)

Cows Only	634.27
Cows and Bulls	680.65

Key

Transferred Cells
Calculated Cells

General, Replacement, and Breeding Inputs

			High	Low	Mean	Outcome	Variability	
Expected interest rate	6.8%	percent	11%	8%	7%	6.80%	6	
How many cows in the herd	400	cows	400	399	399.5	400.00		
Number of cows culled	70	females	80	60	70	70.00		
Expected average value of replacement cow?	\$ 3,840.65	dollars/head	4400	3500	3950	3840.65		
Average cull cow weight when sold	1,251	pounds	1400	1150	1275	1250.97		
Expected price per cwt for cull cows	\$ 163.86	dollars/cwt.	198	140	169	163.86		
Expected marketing cost to market cull cows	57	head	60	50	55	57.40		
Expected death loss	1.91%	percent	2%	2%	2%	1.91%		
Number of bulls needed	16	bulls	16	15	15.50	16.00		
Number of bulls culled	4		5	4	4.50	4.00		
Bulls cost (including delivery)	6,651	dollars/head	10500	9000	6750	6651.99		
Expected Bull Life	5	years	6	4.9	5.5	5.34		
How much does the average cull bull weigh when you sell him?	1,965	pounds	2100	1750	1925	1966.00		
Expected price for cull bulls?	\$ 172.87	dollars/cwt.						
Expected premium per cwt for bulls verses cows	\$ 9.01	dollars/head	10.00	7.50	8.75	9.01		Net Gain or (
Cull Bull Value per head	\$ 3,396.96				3421.6875			Stoch Cull R
What is the total spent on artificial insemination each year for all females?	0	dollars/year	0.00001	0.00001	0.000055	0.00		Det Cull Rate

Budgeted Cost

	Amount	Price	Stochastic Cost/Cow	Expected Cow Cost	The Difference	High	Low	Mean	Outcome
Feed Costs									
Growing Season Grazing (Pairs)	6 months	92.39 / mo.	554.32	554.40	-0.08	\$ 92.90	\$ 91.90	\$ 92.40	\$ 92.39
Growing Season Grazing (Cows)	months	/ mo.				\$ -	\$ -	\$ -	\$ -
Dormant Season Grazing (Pairs)	months	/ mo.				\$ -	\$ -	\$ -	\$ -
Dormant Season Grazing (Cows)	3 months	46.09 / mo.	138.27	138.60	-0.33	\$ 46.45	\$ 45.95	\$ 46.20	\$ 46.09
Crop Residual (ie. Corn stalks)	60 days	1.19 / day	71.48	72.00	-0.52	\$ 1.25	\$ 1.15	\$ 1.20	\$ 1.19
Irrigated Pasture	months	/ mo.				\$ -	\$ -	\$ -	\$ -
Hay	1.5 ton	189.28 / ton	283.92	285.00	-1.08	\$ 200.00	\$ 180.00	\$ 190.00	\$ 189.28
DDG	pounds	/ lb.				\$ -	\$ -	\$ -	\$ -
Corn	bu	/ bu.				\$ -	\$ -	\$ -	\$ -
Supplement	60 lbs	364.88 / ton	10.95	10.95	0.00	\$ 380.00	\$ 350.00	\$ 365.00	\$ 364.88
Salt & Mineral	60 lbs	0.39 / lb.	23.50	23.70	-0.20	\$ 0.41	\$ 0.38	\$ 0.40	\$ 0.39
Other						\$ -	\$ -	\$ -	\$ -
Estimated Bull Feed Costs			68.01	63.54	4.47				
Total Feed Costs (excluding bulls used for breeding)			1082.44	1084.65	-2.21	0.5117052	0.6032034	0.5574543	#NUM!
Total Feed Costs (including bulls used for breeding)			1150.45	1148.19	2.26	692.59	0.3267432	346.45845	333.00
Other Cash Costs									
Veterinary and medicine per cow			36.23	36.00	0.23	\$ 37.00	\$ 35.00	\$ 36.00	\$ 36.23
Cash costs on bldgs & equip			4.99	5.00	0.00	\$ 5.00	\$ 4.99	\$ 5.00	\$ 4.99
Miscellaneous Expense			7.47	6.50	0.97	\$ 10.00	\$ 3.00	\$ 6.50	\$ 7.47
						\$ -	\$ -	\$ -	\$ -
AI Costs			0.00	0.00	0.00	64%	63.9%	0.6393785	1.00
Estimated Other Bull Cash Costs			3.06	2.78	0.28	51%	51.2%	0.5133334	1.00
Int. on pur. feed & cash costs 0.5 yr.	684.12	683.61	46.51	47.85	-1.34	33%	32.7%	0.3282151	
Total Other Cash Costs			98.27	98.13	0.14	8	7	7.5	7.71
Total Labor Costs	7.71 hrs	\$21.54 /hr	166.04	168.75	-2.71	\$ 25.00	\$ 20.00	22.5	\$ 21.54
Total Operating Costs (Per Head Basis)			1414.76	1415.07	-0.31				
Cow and Bull Ownership Costs									
Cow Depreciation			323.43	324.20	-0.77				
Cow Death Loss			67.28	70.70	-3.42				
Interest on Cows	3517.22	3625.80	239.13	253.81	-14.68				
Bull Depreciation			26.03	23.69	2.34				
Bull Death Loss			4.47	4.38	0.09				
Interest on Bulls	233.50	224.40	15.88	15.71	0.17				
Cattle Insurance			4.44	4.63	-0.19	\$ 5.00	\$ 4.25	\$ 4.63	\$ 4.44
Total Ownership Costs			680.65	697.11	-16.47				
Management			6.58	7.50	-0.92	\$ 10.00	\$ 5.00	\$ 7.50	\$ 6.58
Total Cost			2101.98	2119.68	-17.69				
Expected Calving Rate			93%	93%	0.00	98%	88%	93%	93%
Calf Price/Cwt			372.68	362.50	10.18	400	325	362.5	\$ 372.68
Calf Weight			569.00	575.00	-6.00	650	500	575	569
Calf Value			2120.57	2084.38	36.19				
Cost Per Calf			2269.99	2279.22	-9.23				
Profit			-149.42	-194.85	45.43				

Hi Cost
Stochastic Deterministic
1704.70 1717.28

*Items charged interest

Run Simulation