

## Calves, Stocker/Feeder Retained Ownership Profit Projection User Manual

### You can't predict but you can prepare.

Cattle retained ownership is a margin business where added revenue must be greater than added cost to be profitable (see appendix A). Profitability is measured by the return on investment (ROI). In order to make informed decisions producers need projection and closeout dates for their decision situation. Producers must develop their own performance and financial numbers and constantly monitor them to be successful. Any published “breakeven” are based on incomplete cost and prices and costs are too volatile to make the information timely and relevant.

For the cow-calf producer the goal of retained ownership is to achieve higher business net income. At the time of weaning it's a question – given the **net payweight price** that can be received for the calf (**opportunity cost**). The **added net revenue** must be greater than the **added cost** associated with retained ownership including preconditioning, background, grazing stocker. The cost of producing the weaned calf at the time of weaning is irrelevant in the decision to retain ownership. The cost of raising the calf is a **sunk cost** and cannot be changed. Another consideration is retained ownership increases price and production risk and requires more operating capital.

The purpose of these decision aids is to help facilitate the organization of retained ownership cattle price, costs and production data to project the potential production and key financial performance measures including return on investment (ROI) of retained ownership. “What if” analysis is facilitated by this spreadsheet-based decision aid. There are six key **economic measures** calculated including:

1. Cost of calf vs. sales price of retained cattle.
2. Value of weight gain
3. Cost of gain – dominated by feed and grazing cost
4. Marketing margin – buy versus sell margin on initial weight or roll back.
5. Grazing or feeding margin – cost of gain versus sales price of gain.
6. Return on Investment (ROI).
7. Maximum that can be paid for calf or feeder and achieve target net returns.

The key data and production performance measures are:

1. Average daily gain (ADG) – which also reflects shrink in and out of cattle
2. Death and culling losses

Calculations are always based on payweight to payweight cattle prices, weights, death loss and average daily gain. Definitions follow on the terminology used in the decision aid.

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These spreadsheets will facilitate standardization of the data used and report benchmark performance measures. The initial work for this methodology was developed by a NCBA-IRM committee in 1995 for a Stocker/Feeder standardized performance analysis (SPA). The methodology is consistent for retained ownership projections and closeouts.

**Retained Ownership – is added return greater than added cost.**

Because the calf or feeder in cost account for 60 to 80% of total unit cost (TUC) feeder in cost can be easily modified to show a “profit” on the actual closeout. Remember “**there is always a calf or feeder price low enough to project a positive net income for retained ownership**”. Cattle owners have to be responsible to estimate their “opportunity cost”. For preconditioned cattle it is essential to identify buyers or special sales that pay for the added cost including compliance with source verification. Seasonality of pricing and selling must be a consideration in short preconditioning retained ownership. It’s easy to retain into a declining market in the fall.

When producers have accurate complete TUC cost this **sunk cost can be compared** to net **market price** to evaluate if calves could be purchased at a lower cost than the total TUC. The business income statement reflects the same cost that would be used to arrive at sunk costs to calculate business profitability. Or accumulated cost of the calf produced.

It is very common for ranchers to use “plugged cost” or estimated market value when projecting profitability of retained ownership or doing closeouts. Few know their TUC thus profit is only estimated. The plugged measured finishing profitability will be over or understated if the value differs from the actual feeder TUC. Its equivalent to having purchase cost as the base cost for feeders. Decision aid users are encouraged to evaluate retained ownership at each marketing alternative at both net market and TUC.

**Be cautious retaining ownership to minimize business loss when costs are unknown.**

*You Achieve Nothing Breaking Even through Retained Ownership* You achieve nothing financially by breaking even in preconditioning, backgrounding or feeding cattle. Yet, retained ownership and feedyard projections most often calculate breakeven as if it were the ultimate goal. It is extremely important to understand what is included in the cost to arrive at breakeven or net income. Seldom are cattle owners’ costs complete. Most all calculations of retained ownership only include direct cost of production. Nothing is included in the cost to cover indirect costs or overhead, owner’s labor and management (living withdrawals) or taxes. Your business will go broke if there is no income to pay indirect costs.

In projections, it’s good to establish your target net return, change the interest rate, and determine what sale price is necessary to cover total costs to justify taking on the additional risks. It is good to consider at least three levels of possible outcome (pessimistic, likely, and optimistic prices). Calculate what the target net return to risk (profit) and equity capital will be for each price situation. Always remember you achieve nothing by attaining breakeven that only include the direct cost of production.

**Breaking even is financial failure as a business is not financially sustainable if net price merely covers costs particularly to incomplete costs often reported in the cattle sector.**

### **Input Data**

Retained ownership closeout are a good source of production data if backed by financial data generated from QuickBooks™ set up by using the class feature to generate the necessary accounting data or an alternative accounting system. Note the financial data names can be set up in the chart of accounts and each lot can be a separate class in QuickBooks™. The spreadsheet can be uses record inventory and weight data. Key information needed is as follows:

- (1) Payweight of unweaned calf, weaned calf, stocker/feeder cattle.
- (2) Payweight purchase cost of cattle – included freight in.
- (3) Net payweight when marketed.
- (4) Payweight gain.
- (5) Full cost of gain – all cost including direct, indirect and interest cost.
- (6) Payweight net sales price – price minus freight and other marketing cost.
- (7) Number of head sold net of death loss.
- (8) Head days grazed or fed for the lot being evaluated.
- (9) The grazing and or feed fed by lot.
- (10) Accounting cost and revenue data.

Accurate cattle inventory and feed fed or land grazed data is essential for accurate production performance information that is useful to evaluate the production and marketing system performance. Information on performance can be used to improve future decision making and help prevent repeating errors. See reference list for sources of decision aids that address these different data and information needs.

### **Operation of the Projection Spreadsheets**

All data is entered into the first and second sheet. All cells in **blue** are unprotected and should have values or a zero. **The example is only for illustration purpose.** It is advisable to save the blank version and start each new lot in the blank. Add notes as this helps check back on the basis for the projection. Two decision aid options are provided. See the web site to choose from the alternative retained ownership decision aid options.

Stocker/Feeder Retained Ownership – a. is much more detailed. b. requires less data other spreadsheets focuses on costs and margins for quick evaluation of alternatives.

- a. Stocker-Feeder Profit Projection Budget
- b. Projected Profitability of Purchased Calves or stockers
- c. Calculated Total Cattle Costs and Net Margin
- d. Calculated Total Cattle, Feedings Costs and Net Margin
- e. Calves, Stocker/Feeder and Health Feeding Cost Calculator

**Note:** When saving lot data each lot needs a unique file name and is saved by using the “save as” command. It is useful to **identify files by lot and date** of data entry.

**Cost of Gain (COG)** is the total cost for the retained ownership minus the total initial cost the feeder divided by net gain. Costs must be carefully monitored (see notes on cost below). Gain is payweight sales minus payweight of the initial feeder payweight. Invoiced feedyard costs are direct costs. Interest may be invoiced if financed by the feedyard. If financed independently the cattle owner must add the cost to closeout data.

An area of information not communally observed is closeout performance evaluation of where the margins are earned and stresses the importance of marketing when retaining cattle ownership. These margins are defined as follows:

**Marketing margin** is the net payweight sales for the weaned calf or purchase payweight of the stocker or feeder based on sales and inventory adjustments times buy/sell margin or the rollback or roll-up (positive or negative margins between cost of buying and selling price). For a negative marketing margin, the cost of gain has to be less than its market price (sales price) to have a positive net income.

**Feeding margin** is the sales price minus the cost of gain times the net payweight gain. It is a measure of how much the value of gain exceeds the cost of gain. Under normal buy-sell prices, there is a negative marketing margin. The feeding margin must offset this negative margin for the enterprise to generate a positive net income. To generate a profit, the marketing margin plus the feeding margin must be positive.

The most important product of the cattle cost accounting system is the cost of gain as it measures both efficiency and competitiveness of the grazing, backgrounding or finishing enterprise. The sum of marketing margin and grazing or feeding margin is profit per head.

**Annualized Net Return on Investment (ROI)** is the annualized or the net income plus cash interest cost divided by annualized capital requirement to support the enterprise. Capital is adjusted for the time cattle are on feed.

**Annualized Net Return on Equity (ROE)** is net income after all costs including interest paid divided by the portion of the investment as defined by lender for the ROI that is the equity investment. The higher the ROE more profitable the business. The portion of equity relative to total investment is referred to as leverage. If ROE is greater than interest cost, using debt is profitable. The opposite is true if ROE is less than cost of capital. Leverage investment thus does increase risk and should be addressed when considering retained ownership feeding.

## **Appendix A: Using Information Determine the Most Profitable Option to Market Calves**

Cow-calf producers have a number of production and market options to sell their calves including:

1. Sell unweaned off the cows.
2. Precondition calves for 34-60 days and sell as weaned calves.
3. Backgrounds calves and sell as feeders.
4. Stocker or graze and sell as feeders or sell as grass fed.
5. Retain ownership of options 2 to 4 through custom finishing niche branded beef markets.
6. Retain ownership of options 2 to 4 through generic custom finishing.

For ranch owners wishing to choose the most profitable retaining ownership options it's important be knowledgeable of production systems required to qualify for different options. This is especially true for health and implant programs used. For all options it's a question of **added cost versus added returns** of each alternative beyond selling unweaned calves or for each step in retained ownership. These decision aids facilitate evaluation using profit **projections** but also by **closeouts** that generate benchmark data.

Two concepts need to be kept in mind when evaluating alternatives: 1. **Sunk cost** is used to describe a cost that has taken place that cannot be reversed. At the weaning time the costs to produce the calf is a sunk cost. These sunk costs are not used to determine if the weaned calves should be retained or not it always **added cost versus added return for retaining ownership**.

Each step in retained ownership creates a sunk cost. And 2. **Opportunity cost of cattle** is the unrealized net sales value if a retained option is not used. Again, this applies to each step in retained ownership evaluation.

When producers have completed total unit cost (TUC) the **sunk cost can be compared** to net **market price** to evaluate if calves could be purchased at a lower cost. The business income statement reflects the same TUC or sunk costs to calculate business profitability.

Since the calf or feeder cost going through each retained ownership option is by far the largest cost, (60-80% of total cost), the net market payweight value and cost of production or (TUC) are critical values to evaluate the alternatives. One also must realize the production and price risk and capital requirement increases with retained ownership.

The size of the herd and number of calves produced does limit the participation for some alternatives. Some ranchers will not want to borrow the capital to participate in retained ownership.

In the ideal world the ranchers have the payweight market value and total unit cost (TUC) of each option. Calculating the net payweight market value is the least difficult measure as it involves attain the market price and adjusting for shrink, freight and other marketing costs. Calculating TUC is more complex but with the use of Quick Books™ and Excel™ spreadsheets it's well worth the time to make the effort to calculate TUC.

All ranches benefit by having benchmark data of their performance. This requires closeouts at each phase of retained ownership. This information can also be used in the negotiate beef price and inform others in the supply chain. Having performance information makes selecting profitable production and marketing option successful.

**Texas A&M University - Department of Agricultural Economics – Agri-Life Extension  
Beef Cattle Decision Aids**

<http://agecoext.tamu.edu/resources/decisionaids/beef/>

## Appendix B: Notes on Shrink

[Steve Boyles](#), Ohio State University Extension Beef Specialist notes better understanding of factors affecting shrink should help buyers and sellers of cattle to arrive at a fair pencil shrink under specific marketing conditions.

Types of Shrink: There are two types of shrink. The first is excretory which is the loss of urine and feces. Excretory shrink is the initial loss of belly fill. Much of this loss is replaced when cattle are again allowed to eat and drink. The second type is loss is tissue loss. It is the loss of fluid from the cells. Tissue loss is more critical. The proportion of shrink from urine, feces, and other sources varies depending on environmental conditions. When ambient temperatures are low (below freezing, urine and fecal output can comprise 30-35% of shrink. When temperatures are hot, urine and fecal losses account for about 15-20% of shrink. Therefore, actual tissue loss may account for a significant proportion of the total shrink that must be replaced during a subsequent feeding period. Time and Distance-Rules of Thumb: A very important factor is time in transit. In many cases, three-fourths of the variation is due to time. This explains why truckers should deliver cattle as soon as possible. The following are some estimates.

Hours in moving Truck	% Shrink	Days required to Recover Payweight
1	2	0
2-8	4-6	4-8
8-16	6-8	8-16
16-24	8-10	16-24
24-32	10-12	24-30

Distance is included as a factor because some people think in terms of distance rather than time. One estimate is a 3% shrink for the first 100 miles.