

## **User Manual - Custom Finish Cattle Profit Projection**

The purpose of this decision aid is to help facilitate the organization of custom finish cattle, feeder cattle price, costs and production data to project the potential production and financial performance or return on investment (ROI) of finishing cattle. Quick “what if” analysis is facilitated by this spreadsheet based decision aid. There are five key measures calculated including:

- 1. Value of weight gain to finish the cattle.**
- 2. Cost of gain including cattle owner cost in addition to direct feedyard cost.**
- 3. Marketing margin – buy versus sell margin on initial weight or roll back.**
- 4. Feeding margin – cost of gain versus sales price of gain.**
- 5. Maximum that can be paid and achieve target per head returns or ROI.**

Calculations are always based on payweight to payweight cattle prices and weights. See the definitions follow on the terminology used in the decision aid.

### **Data Required**

Each lot of cattle should be projected as prices, expected performance and costs frequently change. Do not use feedyard provided projections but do your own projections backed by data from previous closeouts. The calculations require the user to use net payweight prices and cattle weights (adjusted for shrink). Recall U.S.D.A reported market cattle prices are gross income and must be adjusted for marketing costs to determine net payweight prices.

Recording data for cattle closeouts will support projections and is always encouraged whether projections were good or bad. Price and feed cost volatility is a reality in the margin business and the major source of risk. The user should enter an expected target return per head as it's not a profitable activity to just cover total direct cost. This is why price risk management must be addressed in cattle finishing.

### **Reviewing Results**

After all data and results are corrected look over the graphs and review the summary report results. Note in the pie chart the initial cost of the feeder is in the range of 60 to 80% of total costs depending on initial weight and feeder cost. Ration cost is variable as it's a matter of markup and the daily yardage cost. Corn is the base for pricing rations.

It's very important to avoid buying a losing lot due to over payment for feeder. This points out the importance of the feeder cost relative to other costs. Then review margins. Is the feeding margin sufficient to offset the marketing margin? The ROI is the most important measure of the financial performance. If target returns cannot be achieved then alternatives investments need to be considered.

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## **Description of Cattle**

There is data that describes the cattle and this is to provide information that should be part of the analysis process when evaluating performance between lots. The lot summary helps this process. Prior management, weights, time of the year fed and marketed and cost of corn are all factors that influence ADG and feed conversion.

Of course all these factors and the volatility of prices and costs become a limitation in the use of any single lots performance projection as a guide. The total cost and target margin data are useful for hedging decision making.

Because of the importance of feed cost in the economics of cattle feeding a separate sensitivity analysis of feed cost is provided in sheet 2.

**All projections need to be followed up with a closeout evaluation** facilitated by a separate decision aid included in this set of spreadsheet based decision aids.

## **Cattle Price Slide and Marketing Cost Calculator**

Comparing cattle pricing is important to evaluate marketing alternatives and to negotiate terms for direct sales or forward contracts. This decision facilitates organization of data and calculating cattle price slide and marketing costs. The futures market is frequently used to estimate prices for cattle for budget projections. Feeder cattle future price is based off feeder steers weighing 750 pounds in Amarillo TX (see sheet 2 of the decision aid).

The concept of a price slide is that adjustments in price needs to be made to compensate for the fact that as the weight of stocker or feeder cattle increases, their market price decreases. This can be observed in historical prices and in the marketplace. The reason this takes place is as weight increases, the buyer has less weight to add to the animal before finishing covering the higher cost feeders initial purchased weight.

In the spreadsheet, a base weight for calculating the slide is chosen, and then the tolerance level is entered. This is the range weight before the price discount or premium is applied. The actual slide value is expressed as a dollar per 100 pounds adjustment in price above or below the base and the tolerance weight range. The spreadsheet also allows for input of other price adjustment factors that can influence final price.

Price slide is used by buyers and sellers to account for the possibilities of error in projecting cattle weight. Slide terms are clearly specified in contracts. It is intended to establish the base price and the “tolerance” range before the slide is used. Some contracts specify up slide, but no down slide. The seller is best protected by both an up price slide if the weight is below the base.

## **Operation**

The third sheet in the decision aid has the operations instructions. As is noted all variables are in blue for users to input their data. The example is only for illustration purpose. It is advisable to save the user-prepared alternatives with a name and date when revised. The sheet labeled as “notes”. Has some guidance on the spreadsheet use.

## Disclaimer

**The results and uses of the decision aid are the sole responsibility of the user.**

## Definition of Retained Ownership Terms

**Accumulated Cost** is the sum of direct and indirect production costs, general and administrative (G&A) cost or the total operating cost plus finance cost associated with production.

**Annualized Net Return on Investment ROI** is the annualized return on investment (ROI), including net margin objective, and is the net income plus cash interest cost plus the target margin objective divided by annualized capital (asset) requirement to support the enterprise. The reason interest is added back is interest paid represents a return the debt capital. ROI is a return to capital invested irrespective of capital ownership. Capital is adjusted for the time cattle are on feed. Investment required is estimated by taking one half of the investment is non-cattle costs plus the total payweight cost of the feeder cattle times days on feed divided by 365 days.

**Average Daily Gain (ADG)** is the net payweight weight gain divided by head days. This weight is adjusted for death loss (deads are in) as only live cattle payweight are counted. Average daily gain is total gain divided by days fed.

**Breakeven Cost** is a cost component divided by the amount of saleable product. The costs included **must be defined before** a breakeven can provide useful information to a decision maker. **A break-even that does not cover full cost is very misleading.** Feedyards never calculate a “full cost” breakeven. It is a feedyard direct cost breakeven. Producers must add to direct costs full cost of the feeder and the business’s general and administrative (G & A) and finance costs. They must have **total unit cost** to have a true measure of profitability. Having G&A and actual interest cost will mean lot profitability and TUC is consistent with the total business income statement or profit and loss (P&L) statement.

**Cost of Gain Plus Target Margin** is the is the full cost **plus a target return above cost** that represents a reasonable return per head and on given the production and price risk involved in retained ownership. This is the price to keep in mind while projecting profitability and measuring success. Business grows and accumulates equity from profits not from breaking even at cost.

**Direct Expenses** are expense items that are directly related to production activity such as grazing, feed, yardage, health and feeder cost.

**Economic Cost** is, in addition to the financial or accounting cost, an opportunity cost that is charged for owned land (what it could be leased for) and owner equity capital (what it would earn in an alternative investment or by how much it would reduce interest if used to repay debt). Opportunity cost represents the return that could be received for a resource in its next best use. Economic cost represents the cost “if all resources” earned their opportunity cost or a use forgone.

**Financial Analysis** focuses on determining the accounting cost (cash and non-cash), profitability or change in equity, and repayment capacity of the enterprise or business being evaluated.

**Financial Costs** include cash costs, and non-cash adjustments, such as accounts payable, accrued interest, etc. These costs are recorded and reported in the business accounting system. The financial cost does not include opportunity cost of resources like lease equivalent or owned land and interest on equity capital.

**Freight Shrink** is the extra shrink calves suffer when they travel long distances. The time and feed required to recover will reduce performance and increase cost. This should be a factor of consideration in reviewing and comparing close outs.

**Grazing Margin** is the net feeder sales price minus the total cost of gain times the net payweight gain. This is a measure of cost of gain versus the sales value.

**Payweight Price** is the net income from sale after adjustments for freight and marketing costs. Payweight is the net weight after shrinkage for the cattle.

**Marketing Margin** is the weaning weight times the rollback or roll up in price, or the positive or negative margin between initial feeder price and the sales price.

**Net Payweight Gain** is the difference between net sales or payweight and weaning weight.

**Net Margin** is the difference between the value of the net sales and the original stocker value and added cost for production, G&A and financing cost. If all these costs are accounted for then this is **total cost or total unit cost** when expressed per head or per cwt. of cattle marketed. The net margin is made up of two components, marketing margin and feeding margin.

**Net Payweight Sales Revenue** The revenue received per cwt after shrink and all freight and marketing costs are accounted for.

**Owner Operator Labor and Management** compensation should be included in the production cost calculation at a level equivalent to the salary required to hire a non-family member to provide an equivalent service. Compensation in excess of this amount must be considered capital distributions in order to reconcile the retained earnings and statement of cash flows. This makes a sole proprietors cost comparable to a corporate business's calculation. Owner manager costs need to be included in production costs.

**Payweight In** is net beginning payweight. Off truck weights are not used in financial analysis.

**Payweight Out** is the net weight out after shrinkage (deads are in). In other words, it is net-to-net payweight.

**Preconditioning and Backgrounding** is often used interchangeably. This is the phase of production between weaning and selling or transferring to a stocker or finishing phase of production. Preconditioning is a 30-60 day period. Backgrounding is normally used to describe cattle that are confinement fed for a longer period between weaning and sale as feeders.

**Profit (Loss).** Great care must be exercised in reading reports in the cattle sector labeling the value profit or loss. Most frequently in feedyard and other cattle reporting, these numbers are gross margins (gross revenue minus direct costs) and do not include overhead and owner labor and management costs, which are required to calculate a true profit or return to business equity.

**Rate of Return on Equity (ROE)** measures the rate of return on equity capital employed in the farm business. The higher the ROE value the more profitable the business. ROE can be high when cattle are profitable and equity is low (highly leveraged). If not profitable leverage works the opposite way and equity will be lost.

**Rate of Return on Investment (ROI)** can also be called return on assets. This ratio gives an indication of how productively the assets are being utilized. A low return on assets could indicate inefficiencies in the use of assets; low net income due high stocker cost, high grazing costs, poor production performance or low cattle price or a combination of these factors.

**Roll Back** is a term to describe the difference between the net payweight price of cattle and their payweight purchase price or cost. This is the cost per cwt. weight on the beginning weight that has to be overcome by cost of gain to make a profit.

**Sunk Cost** – is used to describe a cost that has incurred or has taken place that cannot be reversed. At the time to harvest a crop the cost of the seed and fertilizer are sunk costs and are irrelevant in the decision the harvest the crop or not. At the weaning time the costs to produce the calf are sunk costs. These costs do not determine if the weaned calves should be retained or not. It's a question will the added revenue be greater than the added costs from retained ownership in greater than just selling the unweaned calf.

**Total Unrealized Sales Value** (opportunity cost) is the net sales revenue that is projected if the calves are sold at weaning after shrink and marketing costs. The weight, price and marketing costs are critical in determining net payweight and payweight price.

**Yardage Cost** is used as an expression feedyard costs including ownership (depreciation, housing, insurance and interest costs) and operating cost of facilities, repair and maintenance of machinery and equipment, fuel, labor, management, utilities, property tax and general and administrative costs. These costs are and charged head days fed. The sum of direct costs and yardage combined with financing cost is **total unit cost**. The “yardage concept” is used for grazing cattle as feedyards use for custom fed cattle. It is common in Texas feedyards to charge a markup per ton of feed fed rather than daily yardage.