

Enterprise Budgets

Components and Concepts



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Welcome to a brief discussion of the components and concepts of enterprise budgets. Important to know the pieces of the puzzle that go into building an enterprise budget and what those pieces mean.

Constructing an Enterprise Budget

- Revenue
- Operating or variable expenses
- Ownership or fixed expenses
- Profit
 - Return to all resources that were not charged in the budget (usually management)



An enterprise budget should include all costs and all returns associated with the defined enterprise.

Revenue

Operating

Fixed

Profit Profit is shown as residual earnings after resources utilized in the operation have been assigned a payment.

Revenue

- Quantity produced
- Price
- Government payments
- Insurance proceeds
- Other income



Price x quantity determines value of production. Other items include...

SAMPLE ONLY.

See www.agecon.okstate.edu/budgets for information on OSU Enterprise Budget Software.

Dryland Wheat Enterprise Budget - Grain and Graze
1000 acres farmed, 160 acres for this budget



2017 harvest price projection
Pasture valued at \$.40/lb gain

Low tillage

				Total
PRODUCTION	Units	Price	Quantity	\$/Acre
Wheat	Bu.	\$ 3.50	35.00	\$ 122.50
Small Grain Pasture	Acre	\$ 44.00	1	\$ 44.00
Other Income	Acre	\$ -	0	\$ -
Total Receipts				\$ 166.50
OPERATING INPUTS	Units	Price	Quantity	\$/Acre
Wheat Seed	Bu./acre	\$ 10.00	1.50	\$ 15.00
Fertilizer	Acre	\$ 45.42	1	\$ 45.42
Custom Harvest	Acre	\$ -	0	\$ -
Pesticide	Acre	\$ 18.64	1	\$ 18.64
Crop Insurance	Acre	\$ 7.50	1	\$ 7.50
Annual Operating Capital	Dollars	6.25%	63.56	\$ 3.97
Machinery Labor	Hrs.	\$ 15.00	0.79	\$ 11.85
Custom Hire	Acre	\$ 5.49	1	\$ 5.49
Machinery Fuel, Lube, Repairs	Acre	\$ 36.98	1	\$ 36.98
Other Expense	Acre	\$ -	0	\$ -
Total Operating Costs				\$ 144.85
Returns Above Total Operating Costs				\$ 21.65



Here's a revenue total...

Variable Costs

- Expenses that are incurred only if the enterprise is produced
- Vary as the level of production changes
 - Seed, fertilizer, and chemicals
 - Fuel, oil, and lubricants
 - Repairs
 - Veterinary and medicine
 - Labor (operator and hired)
 - Interest on variable expenses
 - Other cash expenses



The next component is variable costs or otherwise known as operating costs. Variable costs are those operating inputs that vary as the level of production changes. They are items that will be used during one production period. Examples are shown.

One special note. Many times, no differentiation between owner supplied or hired labor is assumed. If the farm operator or a family member supplies labor, a wage rate or salary that represents earnings if employed elsewhere would be shown. This illustrates one of the most important concepts in economics - opportunity costs. The opportunity cost of labor is the return the resource can earn when put to its best alternative.

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The variable costs shown in the wheat budget is...

Fixed Costs

- Expenses that will be incurred regardless of whether the enterprise is produced
- Do not vary with the level of production
 - Machinery, equipment, building/facilities
 - Depreciation based on economic useful life
 - Interest (average investment x interest rate)
 - Taxes and insurance
 - Land charge



In determining overall enterprise profitability, fixed costs also have to be part of the profit equation.

Fixed costs are not affected by short-term enterprise decisions and do not vary with the level of production. Generally, fixed costs are those ownership costs associated with buildings, machinery, and equipment that are pro-rated over a period of years. Fixed costs may also be cash or non-cash in nature. Taxes and insurance on buildings are examples of cash fixed costs. Non-cash costs include depreciation and interest on the capital investment of your assets.

Which brings an important point. Even if all of your machinery is paid for, the investment you have wrapped up in capital assets could be earning a return elsewhere. That's an opportunity cost. Even if your ag real estate has been bought and paid for, that value also has an opportunity cost - Funds invested in land could earn a return if invested in an alternative venture. It all boils down to putting a value and assigning a payment on a producer's owned resources used in a particular production activity.

FIXED COSTS	Units	Rate	S/Acre
Machinery/Irrigation	\$/value		
Interest at	Dollars	6.00%	\$ 7.74
Taxes at	Dollars	1.00%	\$ 1.98
Insurance	Dollars	0.85%	\$ 1.08
Depreciation	Dollars		\$ 13.99
Land	\$/acre	\$ 1,900	
Interest at	Dollars	3.00%	\$ 57.00
Taxes at	Dollars	0.40%	\$ 7.60
Total Fixed Costs			\$ 89.39
Total Costs (Operating + Fixed)			\$ 234.74
Returns Above All Specified Costs			\$ (67.74)

Garfield County - North-Central OK Owner-Operator
Owned equipment

Grain Break-Even (B-E) Analysis			
B-E Yield at \$/bu.	3.50	B-E Price at bu./acre	35.00
Above Operating Costs (Bu.)	29	Above Operating Costs	\$ 2.88
Above Total Costs (Bu.)	54	Above Total Costs	\$ 5.44



Going back to our wheat budget example....

Interpreting and Analyzing Budgets

- Remember to place a value on every resource utilized in the production activity.
- The profit (or loss) is what remains after covering all expenses.
- Positive returns above total operating costs means production is economically rational in the short run.
- Positive returns above all specified costs signals a return to management and risk.



When interpreting and analyzing budgets, its important to remember placing a value on every resource utilized in the operation...

The profit or loss is what remains after covering expenses... what do we mean by that? Well first...

The returns above total operating costs is calculated by subtracting total operating costs from total receipts. When that return is positive, production is economically rational for an established enterprise. Positive returns indicate that the enterprise generates enough revenue to cover all variable costs and some portion of fixed costs. If the returns are negative, the enterprise is not generating enough revenue to cover even variable costs. Unless the producer is willing to subsidize the operation (for instance, by contributing off-farm income), eliminating this enterprise will increase profits or decrease losses in the overall farm business.

In determining overall enterprise profitability, fixed costs need to be part of the profit equation. The return above all specified costs is calculated by subtracting total variable and fixed costs from operating revenues. Positive returns above all specified costs signals a return to management and risk. Shows how much is available for family living and rewards the producer for their management efforts and exposure to risk.

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The return above total operating costs is positive and economically rational to stay in wheat production. Also indicates the operation is able to contribute to fixed costs associated with owning capital assets

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However, the return above all specified costs is negative, which means insufficient income is generated to cover all the costs specified. The enterprise is not generating a true economic profit and isn't self-supportive because we just don't have enough revenue to make a payment for all of the cost items specified. It could be a short-term problem or it may reflect a situation that has occurred over several production periods. Its all part of the variability in farm earnings that production agriculture experiences every year.

Break-Even Analysis

- Determine what quantity of production or price received is required to equal variable costs

- Wheat budget example

Variable costs \$144.85

Other revenue - 44.00

Cost to cover \$100.85

$\$100.85 / \$3.50 \text{ bu.} = 29 \text{ bu. break-even yield}$

$\$100.85 / 35 \text{ bu.} = \$2.88 \text{ break-even price}$



it is important to remember that when it comes to production ag, everything doesn't go just like you planned. Budget projections can be influenced by production and price uncertainty. How bad can yields or prices be before I can't cover my costs? A break even analysis will help you determine what those values are.

Need at least 29 bu @ 3.50 bu or 2.88/bu @ 35 bu to cover our variable costs. point...otherwise we'll have a hard time cash flowing an operation and paying for all of the operating inputs on time.

What can we do to mitigate the downside risk? Crop insurance? A sound marketing plan? Up to the producer to develop some risk management strategies.

One last thought.....

- Unless you know your costs of production, you don't know if you are making a profit.
- If you can't pencil in a profit, you aren't likely to plow (or raise) one!



That's why good financial and production records are so important that go into a budget. you need to know your costs of production to calculate your breakeven levels so you can develop the appropriate risk mgt strategies.

Keep in mind that if it doesn't look like it will work on paper, it probably won't work in life. You might be able to prevent a very expensive lesson in the pocketbook.

Don't have a bad day! Use those Budgets!



Remember, knowledge of budgeting and the ability to use them will help you make or save money.