

Partial Budgeting

This shortcut budgeting procedure can be used to determine if an investment or change in some portion of your business will be profitable.

Many proposed changes in a farming operation affect only a particular enterprise. Though a complete or whole-farm budget is essential for operating a successful farming business, it is not necessary to change this detailed budget every time you are considering a change in your operation. Many management decisions pertaining to an investment or change in your farming or ranching operation can be made rather easily and quickly by using a partial budget.

A complete or whole-farm budget is sufficiently detailed to provide an estimate of net farm income; i.e. all projected costs and returns from the largest to the smallest are included. A partial budget, on the other hand, compares alternatives by looking at only the costs and returns that change with alternative projected plans. In other words, a partial budget estimates the expected changes in income and expenses when a change in the whole-farm plan is made. It typically compares two alternative production practices for the same enterprise. Only increases and decreases in income and expenses from the proposed change are considered.

Some examples of decisions that can be made with partial budgeting are whether or not to irrigate a particular crop; expand a particular enterprise; purchase a new machine; custom hire, rent, or own a combine or some other piece of equipment; participate in a government farm program; substitute one crop for another on part of your acreage; or buy another parcel of land.

Analysis and computations are held to a minimum with partial budgeting. Only those costs and returns that change as a result of adjustments in one segment of your business are considered. These changes can have four possible effects:

A. Income reducing effects

1. Additional costs
2. Reduced returns

B. Income increasing effects

1. Additional returns
2. Reduced costs

The items listed under (A) reduce net income, while those listed under (B) increase net income. The technique of partial budgeting considers the effects for items that will actually change.

The following points need to be considered when you gather the information and prepare a partial budget:

1. Include each item of income that will be changed by your action.
2. Include each cost item that will be affected by the change.
3. Use realistic standards to evaluate your proposed change.

A partial budget tells you only if a change or investment will be more or less profitable than the present situation to which it is compared. It doesn't indicate if the change will be the most profitable use of resources. However, this can be

PARTIAL BUDGET FORM

Proposed change: Renting combine vs. custom hire

| Additional costs | \$ | Additional returns | \$ |
|--|--------------|--|--------------|
| 600 acres combine rent at \$15.00/acre | 9,000.00 | | |
| 600 acres of fuel and oil at \$3.50/acre | 2,100.00 | | —0— |
| 600 acres of labor 0.7 hrs/acre at \$6.00/hr. | 2,520.00 | | |
| | | | |
| Reduced returns | \$ | Reduced costs | \$ |
| | —0— | 600 acres custom harvest at \$22.00/acre | 13,200.00 |
| A. Total annual additional costs and reduced returns | | B. Total annual additional returns and reduced costs | |
| | \$ 13,620.00 | | \$ 13,200.00 |
| Net change in income (B minus A) | | | |
| | | | \$ (420.00) |

determined by comparing a series of partial budgets using your resources in several different ways. You may want to set up a blank master form such as the one used in our example and reproduce copies so you can run through a number of different changes to see how they compare.

Here is a simple example to demonstrate how the partial budget can be used. Let's say that you are currently having all crops on your operation harvested by a custom operator. You want to see if you can justify renting a combine from your local machinery dealer to allow you to harvest your own crops. The following facts are available:

1. You are currently paying \$22 per acre for harvesting the crop, and custom operators are available to remove the crop on time. Thus, you don't have to worry about suffering crop losses due to delayed harvest.

2. You can rent a combine for \$15 per acre from your local dealer.

3. It will cost you \$3.50 per acre for fuel and oil for the combine.

4. You have labor available to operate the combine at a cost of \$6 per hour. It's estimated that it will take 0.7 hours of additional labor per acre to complete the harvest.

5. A total of 600 acres will be harvested.

Summarizing those items that will change if you were to rent a combine rather than have a custom operator harvest your crops, our example shows that you would actually spend \$420 more to rent a combine. In this particular case we do not anticipate any reduced or additional returns by making this change. That is because we assume that the custom operator is available to get the crop out of the field during the same time period that you could if you rented a combine. Under a different set of conditions, such as a lower labor rate, a different rental rate for the combine, a different custom harvest rate, or untimely harvest due to unavailability of a custom operator, the outcome could be much different.

Be practical when reviewing your budget. If the profit from the change is not greatly improved compared to the existing situation, be especially careful that prices, cost, livestock production, and crop yields are reasonable and attainable. A small variation in any of these could mean a loss rather

than a profit. It may be particularly helpful to prepare several budgets using different yields, prices, production figures, and costs.

Select prices that you think will prevail for at least the years required to pay back an investment. Use as much information as you can from your own farm records. Fill in gaps with averages from state record summaries.

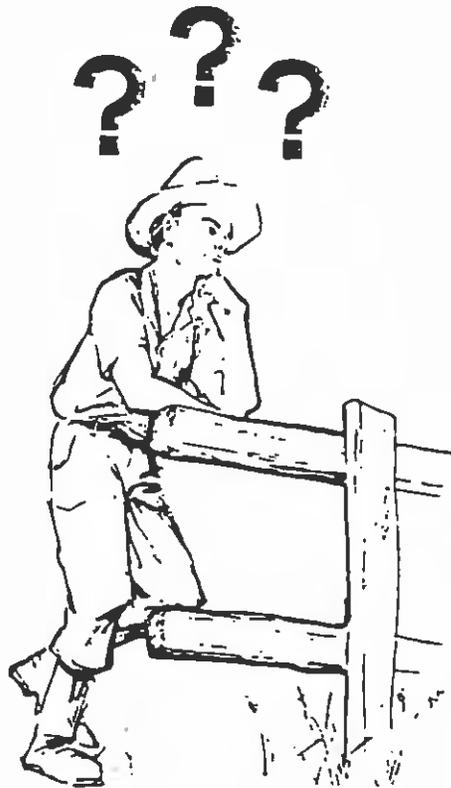
Several precautions should be heeded when you analyze a partial budget. For instance, to simplify our example, we have compared only renting versus custom hiring a combine, but in a real situation you would probably want to see how owning the combine would compare with custom hiring as well. So make sure you consider several other alternatives. Our analysis includes only the profitability of two alternatives. Also, you will probably want to consider what the effect would be after taxes are taken into account.

Another precaution is that you should consider the impact of a change on your cash flow. Further, if you decide on a long-term investment, be aware that initial expenses are more costly than expenses that occur in the future. This is because money saved or received today, instead of being spent, can be put to an alternative, profitable use (referred to as the time value of money). Simply stated, a dollar today is worth more than a dollar at a later date. Also, consider that the money you invest to make a change in some aspect of your business represents a cost in the form of interest given up in order to make the investment. That should appear as a cost (opportunity cost) in your budget form.

The decision to make a change or a new investment should involve consideration of factors other than a sufficient profit and cash for family living and debt retirement. Other factors to weigh are risk associated with the change, markets, effect on management, availability of capital, and personal preferences.

A partial budget analysis is only as good as the data and estimates that are used in your calculations. So be careful and realistic when you predict returns and expenses for new alternatives. Once you become familiar with this method of budgeting, you'll likely use it more and more frequently to analyze little decisions that crop up in the day-to-day management of your farm.

PARTIAL BUDGETING--AN AID TO MAKING MANAGEMENT DECISIONS



Add another crop....

Switch from alfalfa to potatoes....

Invest in farm storage....

How much will it cost?

Will income increase?

How will net income change?

A PARTIAL BUDGET IS.....

an orderly and logical method of ESTIMATING what will happen to your PROFITS if you make a PARTIAL CHANGE in your farm operations.

A PARTIAL CHANGE AFFECTS.....

only PART of your COSTS and INCOME. If you are changing crops, for example, only the cost and income changes for those crops need to be considered.

THIS WORKBOOK IS AN AID IN DETERMINING AND ESTIMATING THE COST AND INCOME ITEMS THAT WILL CHANGE.

When completed you will have:

An ANSWER--the net change in your profits due to the change.

An ANALYSIS of the answer, and how it was estimated.

A BASIS for deciding about operational changes.



PARTIAL CHANGES PLANNED

WHAT CHANGES ARE YOU CONSIDERING?

WHEN? And over what period of TIME?

Will additional BUILDINGS be needed?

What changes in EQUIPMENT are required?

What MAJOR CULTURAL PRACTICES are involved?



IF YOU ARE CHANGING TO, OR ADDING A NEW CROP

Number of ACRES:

Estimated MARKETABLE YIELD:

What will be the expected GRADES AND VALUE of the product?

Should marketing charges and commodity assessments be deducted?
How Much?

Will there be any special marketing problems, such as NEED FOR MORE
STORAGE OR HANDLING FACILITIES, TRANSPORTATION, CHANCES OF MARKET
GLUTS, SEASONAL PRICE FLUCTUATIONS, etc.?

COST ITEMS FOR CROP ADDED

| Items | Amount (per acre, per crop) | Cost per Unit | Cost (per acre, per crop) | Total added costs |
|---|-----------------------------------|---------------------|---------------------------------|-------------------------|
| <u>Planting</u> | | | | |
| Land preparation | | | | |
| Pesticides | | | | |
| Fertilizer | | | | |
| Seed or seedlings | | | | |
| Machinery (fuel, oil, repairs, etc.) | | | | |
| Labor | | | | |
| Other | | | | |
| <u>Growing</u> | | | | |
| Mow, till, cultivate, etc. | | | | |
| Fungicides | | | | |
| Herbicides | | | | |
| Insecticides | | | | |
| Fertilizers | | | | |
| Irrigation | | | | |
| Machinery (fuel, oil, repairs, etc.) | | | | |
| Labor | | | | |
| Other | | | | |
| <u>Harvest</u> | | | | |
| Mow, pick, dig, etc. | | | | |
| Containers, other eqpt. | | | | |
| Haul, stack, etc. | | | | |
| Supervision, etc. | | | | |
| Post harvest operations | | | | |
| Machinery (fuel, oil, repairs, etc.) | | | | |
| Other | | | | |
| <u>Marketing</u> | | | | |
| Sort, grade, pack (before sale) | | | | |
| Storage (before sale) | | | | |
| Haul (before sale) | | | | |
| Assessments | | | | |
| Other | | | | |
| TOTAL COSTS | | | | |

MULTIPLY BY NUMBER OF CROPS AND ACRES

IF YOU ARE DISCONTINUING OR REDUCING THE ACREAGE OF A CROP

Number of ACRES reduced:

Amount usually marketed (say, last year):

Normal prices:

What income will you be giving up?

(Were marketing charges, commodity assessments, etc., deducted to arrive at these prices?)

COST ITEMS FOR CROP REDUCED

| Items | Amount (per acre, per crop) | Cost per Unit | Cost (per acre, per crop) | Total added costs |
|---|-----------------------------------|---------------------|---------------------------------|-------------------------|
| <u>Planting</u> | | | | |
| Land preparation | | | | |
| Pesticides | | | | |
| Fertilizer | | | | |
| Seed or seedlings | | | | |
| Machinery (fuel, oil, repairs, etc.) | | | | |
| Labor | | | | |
| Other | | | | |
| <u>Growing</u> | | | | |
| Mow, till, cultivate, etc. | | | | |
| Fungicides | | | | |
| Herbicides | | | | |
| Insecticides | | | | |
| Fertilizers | | | | |
| Irrigation | | | | |
| Machinery (fuel, oil, repairs, etc.) | | | | |
| Labor | | | | |
| Other | | | | |
| <u>Harvest</u> | | | | |
| Mow, pick, dig, etc. | | | | |
| Containers, other eqpt. | | | | |
| Haul, stack, etc. | | | | |
| Supervision, etc. | | | | |
| Post harvest operations | | | | |
| Machinery (fuel, oil, repairs, etc.) | | | | |
| Other | | | | |
| <u>Marketing</u> | | | | |
| Sort, grade, pack (before sale) | | | | |
| Storage (before sale) | | | | |
| Haul (before sale) | | | | |
| Assessments | | | | |
| Other | | | | |
| TOTAL COSTS | | | | |

MULTIPLY BY NUMBER OF CROPS AND ACRES



Estimate the INVESTMENT COST and the annual charges for UTILITIES, TAXES, ETC., which will be added or reduced because of the change:

| Items | Present value or cost | Years of life | Annual charge |
|--|--------------------------|------------------|---------------|
| <u>Ownership Costs</u> | | | |
| Taxes | | | |
| Insurance | | | |
| Depreciation | | | |
| Interest on Investment* | _____ | | _____ |
| TOTAL | ===== | | ===== |
| *INTEREST is calculated on half the present value: | | | |
| $\frac{1}{2}$ of present value (\$ _____ / 2) X Interest (@ _____ %) | | | |
| or \$ _____ X _____ % = _____ | | | |



Estimate the INVESTMENT COST and the annual charges for OWNING the equipment which will be added or reduced because of the change:

| Items | Present value or cost | Years of life | Annual charge |
|---|--------------------------|------------------|---------------|
| <u>Ownership Costs</u> | | | |
| Taxes | | | |
| Insurance | | | |
| Depreciation | | | |
| Interest on Investment* | _____ | | _____ |
| TOTAL | _____ | | _____ |
| *INTEREST is calculated on half the present value: | | | |
| $\frac{1}{2}$ of present value (\$_____/2) X Interest (@_____%) | | | |
| or \$_____ X _____ % = _____ | | | |



TIME FOR A COFFEE BREAK

By this time you should be thinking in terms of facts and figures. You may even think of some changes you hadn't thought of before, about new ways to improve your business.

If so, make a note of those new ideas:

Now you are ready to use the accumulated data to figure how the proposed change will affect your net farm profits.

LET'S LOOK AT THE NEXT SHEETS

Together they form what is known as a PARTIAL BUDGET, a method of systematically setting down only those items which are directly affected by a change in operations. The summary of the partial budget on page 12 is your estimated change in profit.

TIME TO GO TO WORK AGAIN.....



PARTIAL BUDGET SHEET NO. 1: GAINS IN INCOME

On this sheet, list the GAINS in business income you expect from the proposed change.

INCREASED INCOME:

Enter all the income from the new crops. (Marketable yields and prices should be included. See Pages 2 and 3.)

DECREASED COSTS:

Include all costs that will be eliminated because you are discontinuing crops or operations. (See pages 2, 6, 7, and 8.)

TOTAL GAINS FROM INCREASED INCOME
AND DECREASED COSTS



PARTIAL BUDGET SHEET NO. 2: REDUCTIONS IN INCOME

Now list REDUCTIONS in business income expected from the proposed change.

INCREASED COSTS:

Specifically this refers to costs that will be incurred by adding a new crop or altering your operations. (See pages 2, 4, 7, and 8.)

DECREASED INCOME:

List the income you will no longer have because you are discontinuing some crops or list the operations. (See pages 2 and 5.)

**TOTAL REDUCTIONS FROM INCREASED COSTS
AND REDUCED INCOME**



PARTIAL BUDGET SHEET NO. 3: NET RESULTS

SUMMARY OF THE PARTIAL BUDGET:

| | |
|---|-----------------|
| TOTAL GAINS FROM SHEET NO. 1 (page 10) | \$ _____ |
| TOTAL REDUCTIONS FROM SHEET NO. 2 (page 11) | \$ _____ |
| NET CHANGE IN PROFIT | \$ <u>_____</u> |

NOW YOU HAVE AN ANSWER.

BUT REMEMBER, IT IS BASED ON THE ESTIMATES YOU MADE ON:

Yields Supplies
Prices Wages
Investment changes

SO, WHAT DOES THE ANSWER MEAN?

What if actual yields, prices, and/or costs are different from your estimates?

Is the estimated change in profit enough to justify making the change?



WHAT DOES THE ANSWER MEAN?

YOU HAVE COMPLETED A PARTIAL BUDGET OF A PROPOSED CHANGE.

It took into account only the changes in costs and changes in income resulting from the proposed change.

It provides a valuable reference for future use and analysis.

It did not require:

1. The help of an accountant, or
2. A complete set of records

THE IMPORTANT PART OF THE PARTIAL BUDGET LIES IN INTERPRETING THE ANSWER OR THE FIGURES USED TO COME UP WITH AN ANSWER.

It depends upon your estimates of changes in income and costs.

All of your estimates are listed:

The yields you expect

The prices you expect

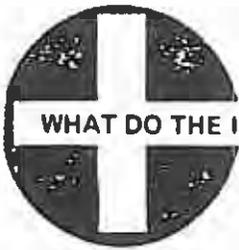
The cost items that are involved

SOME OF THESE ITEMS ARE PROBABLY BIG ENOUGH TO AFFECT THE ANSWER CRITICALLY, BUT SOME MAY BE INSIGNIFICANT.

Seek out the items which would have a critical effect on the answer if they were changed. Usually there are only a few of them.

(The insignificant items would not be critical to the results even if you over- or under-estimated them by a large percentage.)

CAREFULLY SELECT AND QUESTION THE CRITICAL ITEMS.



WHAT DO THE INCOME FIGURES MEAN?

1. Marketable Yield

Are your estimates average, conservative, or optimistic?

What will be the effect on your answer if the marketable yield is 20 percent more or less than you estimated?

Have you allowed enough for spoilage, etc.?

2. Prices

Are your estimates average, conservative, or optimistic?

What is the effect of each \$.01/lb. change in the actual price received?

What are the chances of market gluts if others make the same change at the same time as you?

Have you allowed sufficiently for annual and seasonal market fluctuations, commodity assessments, etc.?



WHAT DO THE COST FIGURES MEAN?

1. Labor

Can you actually get the kind of and amount of labor needed at the estimated wages?

What would be the effect of a \$.50 per hour increase for labor?

What would be the effects on yield and quality if you paid your workers \$3.00 an hour?

2. Buildings and Equipment Costs

What are the alternatives to purchasing the needed equipment and buildings?

Are the costs critical for your size of crop enterprise?

How large an acreage would justify special equipment and buildings?

3. Land Costs

What are the alternatives, and their costs?



WHAT DOES THE NET CHANGE IN PROFIT MEAN?

1. Risk

Is the NET CHANGE enough to be worth taking the risk of low yields and adverse price changes?

If you made the change, could adverse prices and yields put you into critical financial difficulty?

2. Returns to your labor and management efforts

Have you allowed for the additional burden on your time and labor? How much?

Is it enough?

3. Returns on your additional investment

Have you allowed enough costs for the additional money that will be needed for the proposed change in your crops and practices?

Are there any other alternatives, on or off the farm, that might earn more on the additional investment?

4. Other requirements

If the estimated net change is not enough, what yields and prices would result in a sufficient increase?

What are the chances of attaining these higher yields and prices?