EXTENSION

Department of Agricultural Economics

Farm and Ranch Management Series

Report No. 1-1, Sept 2016

Partial Budgeting: Making Incremental Farm Business Changes

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INTRODUCTION

Business owners must often make decisions about changes for their agricultural businesses. Many of the decisions are incremental, such as adding land, expanding or reducing, adding or changing how an enterprise is managed. Analyzing the whole farm impacts for these types of changes is unnecessary. The partial budget is a useful analytical tool for agricultural managers, operators, owners, and investors when these situations arise.

A partial budget helps agricultural owners/managers evaluate the financial effect of incremental changes. A partial budget only includes those resources that will be changed; it does not consider the resources in the business that are left unchanged. It is important to remember, only the change under consideration is evaluated for its ability to increase or decrease income in the agricultural business. Including costs or income outside the scope of the proposed change is not part of partial budget analysis and should be disregarded.

Partial Budgeting Principles

Partial budgets are based on the principle that small agricultural business changes have effects in one or more of the following areas.

1. Increased income.
2. Reduction or elimination of costs.
3. Increased costs.
4. Reduction or elimination of income.

The net impact of the above effects will be the positive financial changes minus the negative financial changes. A positive net indicates an increase in net agricultural income due to the change, while a negative net indicates the change will reduce net income.

Partial Budget Components

A partial budget consists of two columns, a subtotal for each column and a total gain or loss calculation. The left hand column contains those items that increase income while the right hand column contains those items that reduce income in the business. Table 1 below illustrates the use of the partial budget for purchased versus raised beef replacements. In this example income increases come from the sales of heifer calves, reduced cost (feed and pasture) and reduced operating costs. Increased costs come from the purchase of replacement heifers.

Added Income

This area only contains estimates of new income, i.e. if a new enterprise is to be added or current one expanded. The farm manager must use realistic yields, product quality, and prices to reduce over-estimating income effects. Over-estimation may lead to a poor decision and possibly reduce overall financial performance when the intended change was meant to improve it. The use of long run average prices from the most likely end-markets, or wherever products are most likely to be sold is recommended. When quality differences might change price, use average quality unless the change under consideration is meant to improve crop or livestock quality.

Income increases may come from the expansion of an enterprise. If the expansion is minor, current production quantities, quality, and average prices are reasonable approximations to use; however, if the expansion is large, over 20% increased output, during the early production periods, lower yields, and quality may result. This might be due to start-up difficulties or other challenges in implementing the change. Take this factor in consideration when estimating income.

Reduced Costs

This is the first section of Column 1 and includes any crop or livestock expenses you no longer expect the business to incur. These costs might be reductions or total elimination of certain expenses. Examples include, but are not limited to, seed, custom work, repairs, veterinary expense, interest expense and paid or unpaid labor. Inclusion of non-cash costs, unpaid labor, and depreciation, would provide a full economic analysis.

Additional costs

This is the first section of Column 2 and includes a list of increased expenses due to the business change under consideration. These will be costs of production for the new enterprise. Examples of increased costs may also include non-cash costs such as labor and depreciation; however, if they are included, the results of the analysis may incorrectly lead the agricultural business owner or manager to conclude cash income is lower than analysis results. It might be appropriate; however, if including unpaid labor in the analysis, to be certain that the operator is also equitably compensated for his/her labor and management input. A depreciation charge, if included, will help analyze whether there is a return on the investment the operator makes.

Reduced Returns

This section follows 'Additional Costs.' These two sections are included in the same column since both reduce net income in the analysis. Examples of these items might include, but are not limited to, reductions in product sales, such as corn, feeder pigs, apples or milk, rental income, custom work income, or USDA program payments. Another consideration here may be reductions in yields due to reduced planting or harvest timeliness. Some cropping operations may not be completed as timely as the operator might need to maintain yield and quality which may reduce net income when utilizing custom operators or in shared equipment ownership arrangements. Accurately estimating reduced returns can be difficult, however.

Summarizing the Partial Budget

The reconciliation of the of the above four partial budget components is the last step in partial budgeting process. Total each of the two factors in column 1 and write this result on the column 1 subtotal line. Repeat the process for column 2. Then take column 1 (added income/reduced cost) and subtract column 2 (increased costs/reduced income) to arrive at a projected net return from adoption of the change under consideration. A negative number, as in the example in Table 1 below, indicates the change under consideration will likely reduce net income in this area of the operation. A positive number indicates the opposite is likely to occur.

Discussion of Example Partial Budget

This example, Table 1, considers whether to buy all of the beef replacement heifers for a beef cow operation rather than raising them. The operations would sell heifer calves in November of the birth year. Prices will vary over time; in this example 500 pound calves are sold for $1.20 per pound. Reduced costs, which increases net income, include feed not used, veterinary cost reduction, lower utility expenses and lower pasture maintenance costs. The subtotal of Column 1, increases to net income, then is $930.

The second column presents the higher costs attributable to the proposed change. In this case only the purchase of replacements is necessary, $1200. There are no items that reduce income in this case but in a partial budget that contemplates a new crop compared to one already grown income reductions would be the lack of sales for the crop no longer grown. Thus the increased costs due to the prosed change in the example Table 1 is $1200.

To find the net results of the proposed change subtract column 2 from column 1. The net result of this proposed change is -$270 ($970-$1200). Since the result is negative, the proposed change would reduce net ranch income rather than increase it.

Conclusion

Partial budgeting is useful in the decision process farm owners and managers use to decide on alternative uses of resources they have in their business. Partial budgeting is a systematic approach that assists the user in making informed evidence-based decisions; however, the budgeting process might only estimate possible financial impact, it does not assure it. Management aspects and chance can easily change or skew the projections. The specific numbers used in partial budget analysis may not reflect realistic possibilities, resulting in better or worse than expected performance. Careful assessment of possible operational changes will help prevent inaccurate projections of the overall impact to the agricultural business.

Table 2 allows agricultural business operators to complete a partial budget when considering different options in their own operation.

Table 1 Example partial Budget (buy replacements vs raising replacements)

Column 1 Increased income due to change:	Column 2 Increased costs due to change:
Sell raised heifer calf: 500lb x $1.20= $600	Purchase bred heifer: $1200
Subtotal $600	Subtotal $1200
Reduced costs due to change:	Reduced income due to change:
Pasture maintenance: $20	
Feed: $205	
Health, utilities, labor: $105	$0
Subtotal $930	Subtotal $1200
Change in income: (subtotal from Column 1 minus subtotal Column 2) $930 – 1200 = (270)	

Table 2 Blank Partial Budget Form

Column 1 Increased income due to change:	Column 2 Increased costs due to change:
Subtotal $	Subtotal $
Reduced costs due to change:	Reduced income due to change:
Subtotal $	Subtotal $
Change in income: (subtotal from Column 1 minus subtotal Column 2)	