Chapter 10

Cost Analysis for Management Decision Making
Learning Objectives

LO1 Compute net income under the variable costing and absorption costing methods.

LO2 Discuss the merits and limitations of variable costing.

LO3 Define the concept of segment profitability analysis and explain the distinction between direct and indirect costs.
Learning Objectives

LO4 Compute the break-even point and the target volume needed to earn a certain profit for both single- and multi-product firms.

LO5 Calculate the contribution margin ratio and the margin of safety ratio.

LO6 Discuss the impact of income tax on break-even and target-volume computations.
Learning Objectives

LO7 Use differential analysis techniques to make special decisions.

LO8 Identify the appropriate techniques to analyze and control the distribution costs incurred in selling and delivering products.
Variable Costing

- The cost of manufacturing a product includes only variable manufacturing costs.
- Fixed factory overhead is a period cost and is expensed on each month’s income statement.
- The difference between sales and variable cost of goods sold is termed contribution margin.
Variable Costing (cont.)

Direct Material
Direct Labor
Variable Manufacturing OH

Fixed Manufacturing OH
Selling Costs
Administrative Costs

Product Costs

Inventory Accounts on Balance Sheet

Cost of Goods Sold When Finished Goods are Sold

Expense Accounts on Income Statement

Period Costs
Absorption Costing

- Assigns both fixed and variable manufacturing costs to the product.
- Absorption method will report a higher cost of goods sold due to the inclusion of the fixed factory overhead.
- The difference between sales revenue and cost of goods sold is termed gross margin.
Absorption Costing (cont.)

Direct Material
Direct Labor
Variable Manufacturing OH
Fixed Manufacturing OH

Selling Costs
Administrative Costs

Inventory Accounts on Balance Sheet

Cost of Goods Sold When Finished Goods are Sold

Expense Accounts on Income Statement

Product Costs
Period Costs
Merits and Limitations of Variable Costing

- This method highlights the relationship between sales and variable production costs.
- May be easier for members of management who are not formally trained in accounting.
- Variable costing is not a generally accepted method of inventory costing for external purposes because total costs are not matched with sales revenue and does not include fixed factory overhead in the work in process and finished goods inventories.
Segment Reporting for Profitability Analysis

- A segment of a company may be a division, a product line, a sales territory, or another identifiable unit.

- This analysis requires that all costs be classified into one of two categories:
  - Direct costs – can be traced to the segment being analyzed.
  - Indirect costs – cannot be identified directly with a specific segment.
A company’s segment report isolates costs, variable and fixed, that can be charged directly to the segments.

Costs may be direct costs in one segment and indirect costs in another segment.
Cost-Volume-Profit (CVP) Analysis

- Technique that uses the degrees of cost variability for measuring the effect of changes in volume on resulting profits.
- It is assumed that fixed costs will remain the same in total within a range of production volume in which the firm expects to operate.
Limitations of CVP Analysis

- CVP analysis assures that all factors except volume will remain constant for a given period of time.
- In some cases, costs are relatively unpredictable except over very limited ranges of activity.
- Anticipated results depend on the stability of the CVP relationships as they have been established.
Break-Even Analysis

- The break-even point is the point at which sales revenue covers all costs to manufacture and sell the product, but there is no profit.
- Costs must be segregated according to their degree of variability.
Break-Even Point Calculations

- Sales revenue (to break even) = Cost to manufacture + Selling and Administrative Costs
- Sales revenue (to break even) = Fixed manufacturing and selling and administrative costs + Variable manufacturing and selling and administrative costs
Break-Even Point Calculations (cont.)

- Break-even sales volume (dollars) = Total fixed costs / Contribution margin ratio
- Break-even volume (dollars) = Total fixed costs / 1 – (Variable costs/Sales revenue)
- Break-even sales volume = Total fixed cost / Unit contribution margin
Margin of Safety

- Indicates the amount that sales can decrease before the company will suffer a loss.

- Margin of safety ratio = \( \frac{\text{Total sales} - \text{Break-even sales}}{\text{Total sales}} \)
Differential Analysis

- Differential analysis is a study that highlights the significant cost and revenue data alternatives.
- The designated purpose for which a cost measurement is to be made should be included in the cost analysis.
- Where there is excess capacity, only the differential costs per unit should be considered in producing additional units.
- Differential costs do not include fixed factory overhead costs.
- May be used in make-or-buy decisions.
Accept or Reject a Special Order

- Many companies follow a practice of contribution pricing, meaning accepting a selling price as long as it exceeds variable cost, thus contributing some positive contribution margin in times of excess capacity.
Make-or-Buy Decisions

- Unused plant capacity might be utilized to manufacture a finished part that was purchased in the past.
- This analysis will determine the savings that may be realized.
Distribution Costs

- Efficient control of all costs covers both the production costs and the costs incurred to sell and deliver the product.
- Accountants must answer questions concerning the spreading of selling and administrative expenses to the different products, sales offices, salespersons, and each separate order.