

Cost, volume, and profit formulas

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The Cost-Volume-Profit (CVP) analysis is composed of five components. The five Cost-Volume-Profit components are volume or activity level, unit selling price, variable cost per unit, total fixed costs, and sales mix. The volume component refers to the quantity of goods or services that were sold during a period. The preferable outcome in most businesses is to sell as many units as possible, thus high volumes are preferable. The selling price is the unitary price of each product. It can be calculated by dividing the total sales by the amount of units sold. If a company had sales of \$5,000 and it sold 100 units the unitary price is \$50 per unit. There are two types of costs. These two types of costs are variable costs and fixed costs. A variable cost can be defined as a cost of labor, material, or overhead that changes according to the change in the volume of production units (Investorwords, 2011). Variable cost per unit can be calculated dividing total variable costs by the quantity of units sold. The second type of cost is fixed costs. Fixed costs are costs that do not change with the volume of sales. The total amount of fixed costs is the same every month. Some examples of fixed costs include rent, managerial salaries, and depreciation (Moneyterms, 2011). The total fixed expenses component is calculated by adding up all the fixed costs of the company. The sales mix is the relative proportion in which a company's products are sold (Garrison & Noreen, 2003). The CVP analysis helps managers understand the relationship between cost, volume, and profit. This information can be very useful in the decision making process since it can help identify the profitable products and other products that should be discontinued due to low profit margins. One of the most important concepts to understand CVP is the contribution margin. The contribution margin is the amount that is remaining from a sale after variable costs are deducted. The <https://assignbuster.com/cost-volume-and-profit-formulas/>

contribution margin of each unit is used to cover the fixed costs of a firm. Once a company is able to generate enough sales to cover fixed costs each sale afterwards generates a net profit for the company. A metric that is used in CVP analysis is contribution margin ratio. The CM ratio is calculated by dividing contribution margin by sales. An important sales point that managers must determine is the breakeven point. The breakeven point is the amount of sales required to cover all the fixed expenses of a company. The breakeven point in units sold is calculated by dividing fixed expenses by unit contribution margin. To calculate the breakeven in terms of sales dollars the formula accountants use is fixed expenses divided by CM ratio. The five basic components of the CVP analysis are interrelated. Whenever one of the variables changes the results of the CVP analysis changes as well. Take for example an organization that has a CM ratio of 0.40. If the sales price of the firm was \$150 per unit the contribution margin of the product would be \$60. If the company decides to increase the sales price of the product the contribution margin would increase as well. The contribution margin of the product if the sales price increases to \$200 would be \$80. A higher contribution margin decreases the breakeven point of an organization. If the sales price is lowered the contribution margin decreases and the breakeven point is higher. CVP analysis can be used to determine how many sales are required to achieve a specific target profit level. The formula to calculate dollar sales to attain a target profit is listed below: $(\text{Fixed Expenses} + \text{Target Profit}) / \text{CM Ratio}$ Another metric that is often used by accountants when performing CVP analysis is margin of safety. The margin of safety is the excess of budgeted (or actual) sales over the break-even volume of sales (Garrison, et. al., 2003). The formula to calculate margin of safety is total

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budgeted or actual sales minus breakeven sales. A higher margin of safety lowers the risk of not breaking even. CVP analysis should be used by managers in all industries since it can help the manager increase the profitability of a firm. References Investorwords. com (2011). Variable Costs. Retrieved September 12, 2011 from http://www.investorwords.com/5221/variable_cost.html Moneyterms. co. uk (2011). Fixed Costs. Retrieved September 12, 2011 from <http://moneyterms.co.uk/fixed-variable-costs/> Garrison, R., Noreen, E. (2003). Managerial Accounting (10th ed.). Boston: McGraw Hill Irwin.