$$\text{Breakeven number of units} = \frac{\text{Fixed costs}}{\text{Contribution margin per unit}}$$

Although it is expressed in units, it can also be expressed in revenues (see below formula).

$$\text{Breakeven revenues} = \text{Breakeven number of units} \times \text{Selling price}$$

In practice, management accountants usually calculate the BEP directly in terms of revenues using contribution margin percentages (see below formula).

$$\text{Breakeven revenues} = \frac{\text{Fixed costs}}{\text{Contribution margin \%}}$$

While the BEP tells managers how much they must sell to avoid a loss, managers are equally interested in how they will achieve the operating income targets underlying their strategies and plans. To do this, they can use below formulas.

$$\text{Quantity of units required to be sold} = \frac{\text{Fixed costs} + \text{Target operating income}}{\text{Contribution margin per unit}}$$

$$\text{Revenues needed to earn target operating income} = \frac{\text{Fixed costs} + \text{Target operating income}}{\text{Contribution margin percentage}}$$

Learning Objective 3 : Understand How Income Taxes Affect CVP Analysis

Net Income is operating income plus nonoperating revenues minus nonoperating costs minus income taxes. To calculate target net income, we can use below formula.

$$\text{Target net income} = \left(\text{Target operating income}\right) - \left(\text{Target operating income} \times \text{Tax rate}\right)$$

To calculate the quantity of units required to be sold to achieve target net income, we can use below formula.

$$\text{Quantity of units required to be sold} = \frac{\text{Fixed costs} + \text{Target operating income}}{\text{Contribution margin per unit}}$$

Learning Objective 4 : Explain How Managers Use CVP Analysis to Make Decisions

A manager can also use CVP analysis to make other strategic decisions, such as decision to advertise, decision to reduce the selling price, and decision to determine the target price. When using CVP analysis, managers should try evaluating their decisions based on differences rather than mechanically working through the contribution income statement. Analyzing differences allows managers to get to the heart of CVP analysis and sharpens their intuition by focusing only on the revenues and costs that will change as a result of a decision. Moreover, strategic decisions invariably entail risk. Managers can use CVP analysis to evaluate how the operating income of their companies will be