Break Even Analysis

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In the linear **Cost**-**Volume**-**Profit** Analysis model, the break-even point (in terms of Unit Sales (X)) can be directly computed in terms of **Total Revenue** (TR) and **Total Costs** (TC) as:

$$TR = TC \tag{1}$$

$$P \times X = TFC + V \times X \tag{2}$$

$$P \times X - V \times X = TFC \tag{3}$$

$$(P - V) \times X = TFC \tag{4}$$

$$X = \frac{TFC}{P-V} \tag{5}$$

where: TFC is Total Fixed Costs, P is Unit Sale Price, and V is Unit Variable Cost.

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The Break-Even Point can alternatively be computed as the point where Contribution equals Fixed Costs. The quantity, $(P - V)$, is of interest in its own right, and is called the Unit Contribution Margin (C): it is the marginal profit per unit, or alternatively the portion of each sale that contributes to Fixed Costs.

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