SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution
Coimbatore-35

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliat
ed to Anna University, Chennai

Department of Automobile Engineering

III YEAR/ VI SEMESTER
19MEE301 / Engineering Economics and cost Analysis
UNIT-5

Break even analysis

An analysis to determine the point at which revenue received equals the costs associated with receiving the revenue. Break-even analysis calculates what is known as a margin of safety, the amount that revenues exceed the break-even point. This is the amount that revenues can fall while still staying above the break-even point.

Break-evenanalysis Assumptions:

• All costs are classified as either fixed or variable. If not impossible or impractical, dividing costs into the variable and fixed cost elements as an extremely difficult job. This is attributable to the inherent nature or characteristics of the cost per se.

• Fixed costs remain constant within the relevant range. Fixed costs remain unchanged at any level of activity within the relevant range, even at the zero level.

• The behavior of total revenues and total costs will be linear over the relevant range, i.e. will appear as a straight line on the BE chart. This is based on the idea that variable costs vary in direct proportion to volume; the fixed costs remain unchanged, hence drawn as a straight horizontal line on the graph within the relevant range and that selling price is constant.

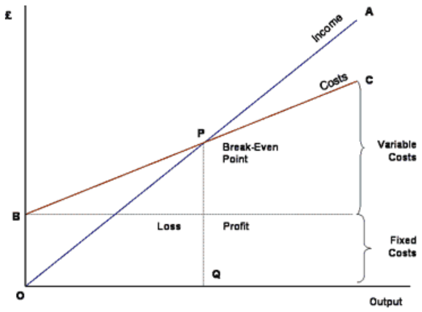
• In case of multiple product companies, the selling prices, costs and proportion of units sold will not change. This cannot always be correct. Sales mix ratio may be due to the change in the consuming habits of customers. Selling prices of the individual products may likewise change due to competition, popularity and salability of the products, etc.

• There is no significant change in the inventory levels during the period under review. Stated in another way, production volume is assumed to be almost equal to the sales volume, which causes an immaterial difference between the beginning and ending inventories.

The Break-Even Chart

In its simplest form, the break-even chart is a graphical representation of costs at various levels of activity shown on the same chart as the variation of income (or sales, revenue) with the same

variation in activity. The point at which neither profit nor loss is made is known as the "break-even point" and is represented on the chart below by the intersection of the two lines:



In the diagram above, the line OA represents the variation of income at varying levels of production activity ("output"). OB represents the total fixed costs in the business. As output increases, variable costs are incurred, meaning that total costs (fixed + variable) also increase. At low levels of output, Costs are greater than Income. At the point of intersection, P, costs are exactly equal to income, and hence neither profit nor loss is made.