CHAPTER 3

Cost–volume–profit analysis

CVP ANALYSIS

A CVP analysis is a systematic method of examining the relationship between changes in activity (output) and changes in total sales revenue, expenses and net profit.

COST BEHAVIOUR

The costs incurred by a business may be classified in various ways and one important way is according to how they behave in relation to changes in the volume of activity. Costs may be classified according to whether they

- remain constant (fixed) when changes occur to the volume of activity,

or

- vary according to the volume of activity

FIXED COST

Total fixed costs remain constant as volume varies in the relevant range of production. Fixed cost per unit decreases as the cost is spread over an increasing number of units. Examples include: Fire insurance, depreciation, facility rent, and property taxes.

VARIABLE COST

Variable cost per unit remains constant no matter how many units are made in the relevant range of production. Total variable cost increases as the number of units increases. Examples include: Production material and labor. If no units are made, neither cost is necessary or incurred. However, each unit produced requires production material and labor.

SEMI-VARIABLE COST

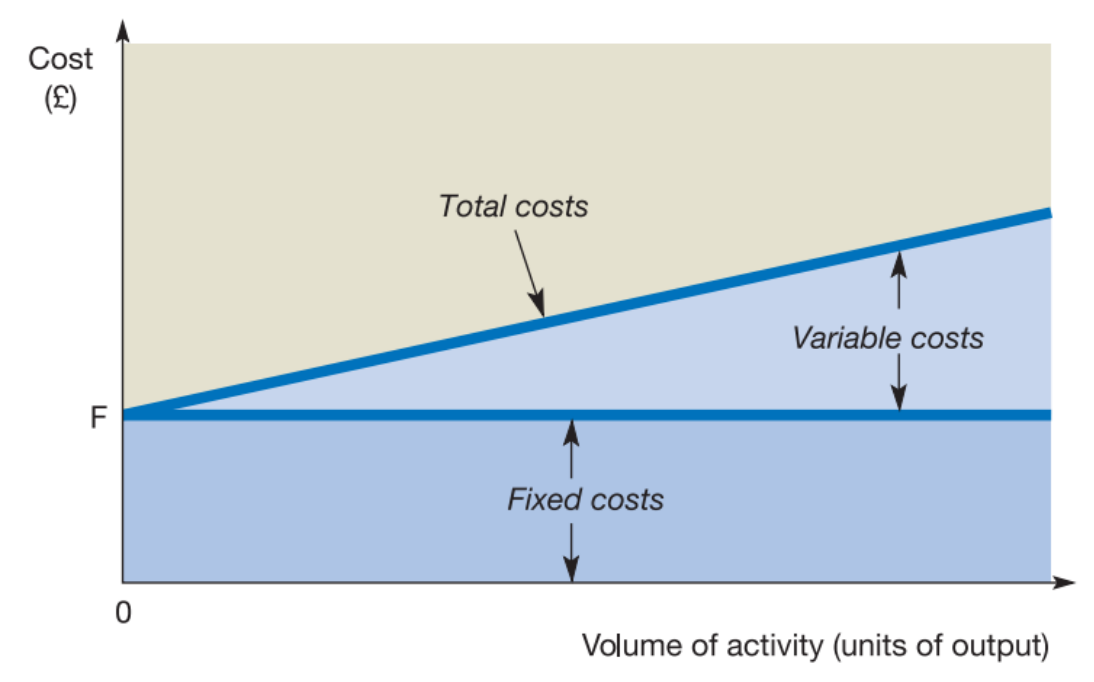
Semi-variable costs include both fixed and variable cost elements. Costs may increase in steps or increase relatively smoothly from a fixed base. Examples include: Supervision and utilities, such as electricity, gas, and telephone. Supervision costs tend to increase in steps as a supervisor's span of control is reached. Utilities typically have a minimum service fee, with costs increasing relatively smoothly as more of the utility is used.

YOU CAN USE THE COST-VOLUME RELATIONSHIP FOR:

- Evaluating item price in price analysis.
- Evaluating direct costs in pricing new contracts.
- Evaluating direct costs in pricing contract changes.
- Evaluating indirect costs.

FINDING THE BREAK-EVEN POINT

Graph of total cost against volume of activity



Total sales revenue = Fixed cost + Total variable cost

ACHIEVING A TARGET PROFIT

In the same way as we can derive the number of units of output necessary to break even, we can calculate the volume of activity required to achieve a particular level of profit.

Total sales revenue = Fixed cost + Total variable cost + Target profit

QUESTIONS

1. What is CVP analysis?
2. Define the terms fixed cost and variable cost. Explain how an understanding of the distinction between fixed cost and variable cost can be useful to managers.
3. What is meant by the BEP for an activity? How is the BEP calculated? Why is it useful to know the BEP?

REFERENCE

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