Unit 2
Cost classifications for predicting cost behavior

ILO1. Cost classifications used to predict cost behavior
ILO2. Cost classifications for decision making
ILO3. Traditional and contribution format income statements

ILO1. Cost Classifications Used to Predict Cost Behavior

When discussing cost behaviour, its important to remember that it is a measure of how costs change when production, or activity levels vary. These are very common costs related to production, which are variable, fixed and total costs.

Variable Costs - Alter in direct proportion to change in production. For example, the amount of packaging required for a product is dependent on how many units are produced. Variable cost in this regard remains constant per unit. The cost of packaging per unit is consistent, the number of units produced varies.

A Cost Driver is used to measure the cause of variable costs. This is important and will be revisited throughout this course as a fundamental characteristic of variable costs is that as the level of production increases, variable costs increase proportionally also.

Fixed Costs – As the name suggests, these are costs that do not change. Example include lease of machinery, or managerial wages etc. These costs are consistent despite level of productivity. However, this measure can be differentiated if taken on a per unit basis. In such case, the average fixed cost has an inverse relationship the changes in production.

- Strategic multi year planning, with commitments which prevents the redirection to short term investments are referred to as committed fixed costs.
- In contrast, discretionary fixed costs are generated by management that do not hold the same level of commitment as the previous fixed costs, therefore allowing for greater mobility to short term investment.

With this consideration, accountants make the assumption that fixed costs are linear in nature. However, economists suggest that the fixed costs are curvilinear in structure, as such a format would allow for a narrow level of activity variation known as the relevant range. This variation of activity allows accountants to make their assumptions regarding cost behaviour.

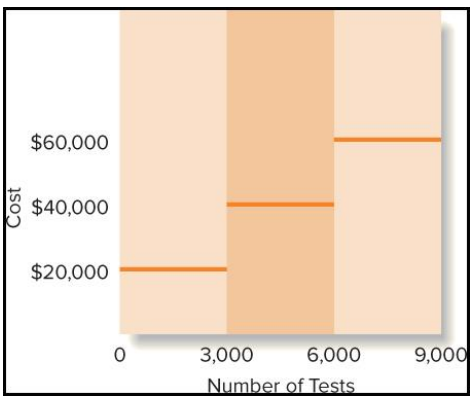


Fig 2.1 Relevant Range

This relevant range, applies to both fixed costs and variable costs are shown in Fig 2.1. A better way to demonstrate this would be through the following example.

Imagine an office space is available for rent at a rate of $30,000 per year, per 1,000 square feet. This highlights a fixed cost that would increase in a step-like increment of $30,000 for each 1,000 square feet. The relevant range therefore for a fixed cost is the range of activity over this “flat” area of the step-like formation.

A mixed cost differs as it combines both fixed and variable costs together. If we consider the example of electricity expense. This utility contains both fixed, and variable elements. The fixed component could be the connection fee that remains unchanged despite the number of kilowatts that are used. The variable component varies in proportion to the amount that is consumed. If a small amount is used, the expense will be same, if a large amount is used, then the expense will likewise be large.

For our purposes, a mathematical equation can be used to show the amount of activity mixed costs. This model can be used to show the relationship of total mixed costs for any level of activity.

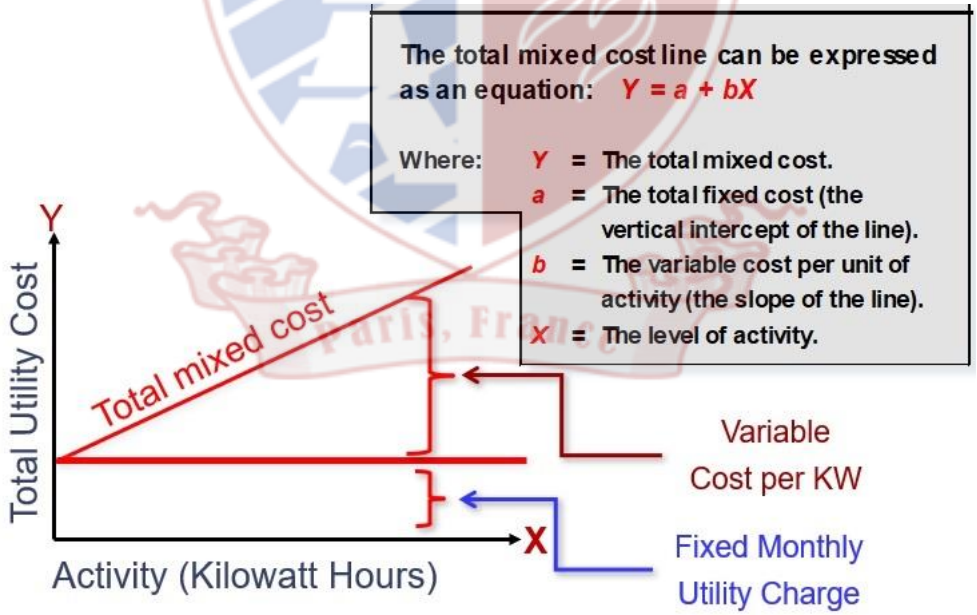
Y = a + bx

Where Y = the total mixed cost

a = total fixed costs (found on the y-intercept on the graph)

b = variable cost per unit of activity (gradient of the line)

x = level of activity



We can apply this by considering a fixed monthly electricity expense of $40, and a variable cost of $0.03 for every kilowatt used, and a monthly consumption (level of activity) of 2,000 kilowatt hours. By using the equation, we can find;

$$Y = 40 + 0.03 \times 2{,}000$$

$$Y = \$100$$

ILO2. Cost classifications for Decision Making

Managers would use such aspects of costs; variable and fixed, to aid their decision making process. Their objective is to differentiate between costs that are either relevant or irrelevant to the decision. To facilitate this contract, managers look at the characteristics of the costs involved.

- Differential Costs (incremental) is the difference between alternatives. These costs can be further scrutinized as either fixed or variable.
- Sunk Costs are those that once paid, or transferred, cannot be changed.
- Opportunity Costs relate to the potential benefit that is sacrificed in exchange for an alternative.

ILO3. Traditional and Contribution Format Income Statements

There are a number of differences between these types of income statements, and those involved in managerial positions should be aware of them. The traditional method (most commonly used) separates product costs from both selling and administrative costs. It does this to meet the external reporting requirement. Also, the traditional method does not focus on cost behaviour. Whereas the contribution approach divides costs into fixed and variable entities by the following;

Sales – Variable Costs = Contribution Margin
Contribution Margin – Fixed Costs = Net Operating Income

Comparison of the Contribution Income Statement with the Traditional Income Statement

Traditional Format		Contribution Format	
Sales	$ 100,000	Sales	$ 100,000
Cost of goods sold	70,000	Variable expenses	60,000
Gross margin	$ 30,000	Contribution margin	$ 40,000
Selling & admin. expense	20,000	Fixed expenses	30,000
Net operating income	$ 10,000	Net operating income	$ 10,000

And finally, the contribution income statement is used primarily for internal planning/strategy purposes, and is most beneficial in its analysis with;

a) CVP (Cost Volume Profit)
b) Segmented reporting of data
c) Budgeting
d) Pricing and/or make or buy analysis

References:

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3. Management accounting, Will Seal-Carsten Rohde-Ray Garrison-Eric Noreen - McGraw-Hill Education, 6ed. - 2019