Final Assignment

Course: **Managerial Economics**

Program: **MBA-90**

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Q1. What is cost? Differentiate the following

    Fixed and variable cost

    Direct and Indirect cost

    Explicit and Implicit cost

    Actual and Opportunity cost.

Answer: <u>**Cost:**</u> In accounting, cost is defined as the cash amount (or the cash equivalent) given up for an asset. Cost includes all costs necessary to get an asset in place and ready for use. For example, the cost of an item in inventory also includes the item's freight-in cost. The cost of land includes all costs to get the land ready for its use.

<u>**Fixed and variable cost:**</u>

<u>Fixed Costs:</u>

Fixed Costs do not vary with the number of goods or services a company produces over the short term. **For example**, suppose a company leases a machine for production for two years. The company has to pay $2,000 per month to cover the cost of the lease, no matter how many products that machine is used to make. The lease payment is considered a fixed cost as it remains unchanged.

<u>Variable Costs:</u>

Variable costs fluctuate as the level of production output changes, contrary to a fixed cost. This type of cost varies depending on the number of products a company produces. A variable cost increases as the production volume increases, and it falls as the production volume decreases. **For example**, a toy manufacturer must package its toys before shipping products out to stores. This is considered a type of variable cost because, as the manufacturer produces more toys, its packaging costs increase, however, if the toy

manufacturer's production level is decreasing, the variable cost associated with the packaging decreases.

Direct and Indirect cost:

Direct Cost

Direct costs are related to producing a good or service. A direct cost includes raw materials, labor, and expense or distribution costs associated with producing a product. The cost can easily be traced to a product, department, or project. **For example**, Ford Motor Company manufactures cars and trucks. A plant worker spends eight hours building a car. The direct costs associated with the car are the wages paid to the worker and the cost of the parts used to build the car.

Indirect Cost

Indirect costs, on the other hand, are expenses unrelated to producing a good or service. An indirect cost cannot be easily traced to a product, department, activity, or project. **For example**, with Ford, the direct costs associated with each vehicle include tires and steel. However, the electricity used to power the plant is considered an indirect cost because the electricity is used for all the products made in the plant. No one product can be traced back to the electric bill.

Explicit and Implicit cost

Explicit Cost

An implicit cost is any cost that has already occurred but not necessarily shown or reported as a separate expense. It represents an opportunity cost that arises when a company uses internal resources toward a project without any explicit compensation for the utilization of resources. This means when a company

allocates its resources, it always forgoes the ability to earn money off the use of the resources elsewhere, so there's no exchange of cash. Put simply, an implicit cost comes from the use of an asset, rather than renting or buying it. **For example,** payments for wages and salaries, rent, or materials.

Implicit costs

Implicit costs are a specific type of opportunity cost: the cost of resources already owned by the firm that could have been put to some other use. **For example,** an entrepreneur who owns a business could use her labor to earn income at a job.

Actual and Opportunity cost:

Actual Cost

The cost a company pays or is paid for a good or service. The actual cost may be more or less than the estimated cost. **For example,** a car shop may estimate that repairs will cost $700, but the actual cost may in fact be $800. One often is not informed of the actual cost until it is incurred.

Opportunity Costs

Opportunity cost is the benefits of an alternative given up when one decision is made over another. This cost is, therefore, most relevant for two mutually exclusive events. In investing, it's the difference in return between a chosen investment and one that is passed up. For companies, opportunity costs do not show up in the financial statements but are useful in planning by management. **For example,** a company decides to buy a new piece of manufacturing equipment rather than lease it. The opportunity cost would be the difference between the cost of the cash outlay for the equipment and the improved productivity vs. how much money could have been saved in interest expense had the money been used to pay down debt.

Q2.A. Suppose there is short of Facemask in the market during this Pandemic situation. What will be the effect of short of supply on the market equilibrium?

Answer: Suppose there is short of Facemask in the market then, the market price is below the equilibrium price, quantity supplied is less than quantity demanded, **creating a shortage**. The market is not clear. It is in shortage. Market price will rise because of this shortage of Facemask.

Example: if you are the producer, your product (Facemask) is out of stock. Will you raise the price to make more profit? Most for-profit firms will say yes. Once you raise the price of your product, your product's quantity demanded will drop until equilibrium is reached. Therefore, shortage drives price up.

Q2.B. What are variables and also differentiate between dependent and independent variables with examples.

Answer:

Variables: A variable is a placeholder for an unknown quantity. Variables are given a special name that only applies to experimental investigations.

Differentiate between dependent and independent variables

The independent variable is the variable the experimenter changes or controls and is assumed to have a direct effect on the dependent variable. Two examples of common independent variables are gender and educational level.

The dependent variable is the variable being tested and measured in an experiment, and is 'dependent' on the independent variable. An example of a dependent variable is depression symptoms, which depends on the independent variable.

Examples of Independent and Dependent Variables in Experiments

For example, we might change the type of information (e.g. organized or random) given to participants to see what effect this might have on the amount of information remembered.

In this particular example the type of information is the independent variable (because it changes) and the amount of information remembered is the dependent variable (because this is being measured).

Q3.A: What is Regression Analysis and what is its importance in Managerial Economics?

Answer: <u>Regression:</u> Regression is a statistical method used in finance, investing, and other disciplines that attempts to determine the strength and character of the relationship between one dependent variable (usually denoted by Y) and a series of other variables (known as independent variables).

<u>Importance of Regression in Managerial Economics.</u>

Regression helps investment and financial managers to value assets and understand the relationships between variables, such as commodity prices and the stocks of businesses dealing in those commodities.

The two basic types of regression are simple linear regression and multiple linear regression, although there are non-linear regression methods for more complicated data and analysis. Simple linear regression uses one independent variable to explain or predict the outcome of the dependent variable Y, while multiple linear regression uses two or more independent variables to predict the outcome.

Regression can help finance and investment professionals as well as professionals in other businesses. Regression can also help predict sales for a company based on weather, previous sales, GDP growth, or other types of conditions. The capital asset pricing model (CAPM) is an often-used regression model in finance for pricing assets and discovering costs of capital.

Q3.b. Estimate the parameters and interpret your results.

Answer: (next page)

Q3.(b):- Estimate the parameters and interpret your results.

y	x	$y - \bar{y}$	$x - \bar{x}$	$(x - \bar{x})(y - \bar{y})$	$(x - \bar{x})^2$
25	100	−218.3	−1182.3	258,314.39	~~1400198.89~~ 1400198.89
55	250	−188.3	−1033.3	194510.39	1067708.89
68	500	−178.3	−783.3	139662.39	613558.89
90	800	−153.3	−483.3	74089.89	233578.89
122	1050	−121.3.	−233.3	28229.29	54428.89 ~~278.89~~
200	1300	−43.3	16.7	−723.11	278.89 +34468.89
280	1650	36.7	366.7	13451.89	134468.89.
450	2400	206.7	1116.7	230821.89	1247018.89.
900	3500	656.7	2216.7	1455766.89	4913578.89.
				$\Sigma = 2394129.91$	$\Sigma(x - \bar{x})^2$ $= 9664820.05$

$$\bar{y} = \frac{\Sigma y}{n}, \quad \bar{x} = \frac{\Sigma x}{n}$$

PTO.

Q3-(b) "Continued ——

$$\bar{y} = \frac{\Sigma y}{n} = \frac{2190}{9} = 243.3.$$

$$\bar{x} = \frac{\Sigma x}{n} = \frac{11550}{9} = 1283.3.$$

$$y = a + bx$$

$$b = \frac{\Sigma\left(x - \bar{x}\right)\left(\vec{y} - \bar{y}\right)}{\Sigma\left(x - \bar{x}\right)^2}$$

$$b = \frac{2,394,129.91}{9,664,820.01}$$

$$\boxed{b = 0.247}$$

$$a = \bar{y} - b\bar{x}.$$

$$a = 243.3 - (0.24)(1283.3)$$

$$a = 243.3 - 316.97.$$

$$\boxed{a = -73.67}$$

(End).