

Marva Gasim

1

ID# 16765, MBA 72

Final Assignment (Examination)

Managerial Economics

Sir Zafar Ul Haq

Q#1: What is cost? Differentiate

Cost: The expenses faced by the business in the process of supplying goods and services to consumers.

OR

The monetary value of goods or services that producers and consumers purchase.

1) Fixed Cost and Variable Cost:

Fixed Cost: The cost which does not vary with changing output. Fixed cost might include insurance, legal bills, rent, salaries - Even if output changes ^{or production increases/decreases} ↑, your fixed cost remain the same -

Variable Cost: The cost which depends on the output produced. Variable cost raises as production increases and falls as production decreases. It includes labor and cost of raw materials depending on working hours or increased production. For e.g: producing more cars will lead to usage of more raw materials like metal.

2) Direct and Indirect Cost:

2

Direct Cost: The cost, a company can easily connect to specific 'cost object', which can be a product, department or project. For Eg: If an employee is hired to work on project for assigned number of hours, the labor on that project is direct cost.

Indirect Cost: The cost which is not directly accountable to specific 'cost object' or not directly related to production. The materials and supplies needed for company's day-to-day operations, they contribute to company as a whole but are not assigned to creation of any one service. For example: Supplies, utilities, office equipment rental, telecom etc.

3) Explicit and Implicit cost :-

Explicit cost: The cost to buy or hire resources from outside the organization for production. The rent that a firm pays for its office. Explicit cost are out-of-pocket cost.

Implicit Cost:- The cost used of self owned resources of organization that are used in production. For example: Using ground floor of a home as a retail store.

4) Actual and Opportunity Cost:

3.

Actual Cost: An actual cost is amount paid or incurred as opposed to estimated or standard cost.

Opportunity cost: The cost which is next best alternative forgone. For eg: Investing in developing a cure for pancreatic cancer, the opportunity cost is that money invested can not be used to invest in developing cure for skin cancer.

3a. What is Regression Analysis and what is its importance ?

4

Regression Analysis :-

The dependence of one variable (dependent variable) upon other variables (independent variables) is called regression.

Regression analysis, the technique of studying dependence of one variable on one or more variables (explanatory variable) to estimate or predict the average value of dependent variables in terms of known or fixed values of independent variables.

Example: (simple regression)

- i) Consumption of household depends on income.
- ii) Sale of product dependent on quality.

Importance in managerial economics :-

→ Regression analysis estimates the relationship that exists, between dependent and explanatory variable.

→ Determine the effect of each of explanatory variables on dependent variables, controlling the effects of all explanatory variables.

→ Predicts value of dependent variable for given value of explanatory variable.

Applications in Managerial Economics:

5

1) Forecasting: Forecasting future opportunities and risks is the most prominent application of regression analysis in business. For example: Forecasting the number of shopper/customers will pass in front of a billboard and use the data to estimate bid for an advertisement.

2) Operation Efficiency: It can be used to optimize business processes. A factory manager, for example, create model to understand impact of oven temperature on shelf life of baked pizzas in those ovens.

3) Correcting Errors: Regression also helps in identifying errors. Regression analysis can provide quantitative support for decisions and prevent mistake due to manager's intuitions. For example: A retail store owner may believe that extending shopping hours will greatly increase sales. Through regression analysis, it may indicate that increase in revenue might not be enough to support rise in operating expenses due to longer working hours.

4) New Insights:- Business have gathered a large amount of unorganized data that has potential to yield valuable insights. The data is useless without

Proper analysis - Regression analysis techniques can find a relationship between variables by uncovering patterns that were gone unnoticed.

Q#3 (b): Estimate the parameters and interpret results.

Sol: To find :

$$Y = \hat{a} + \hat{b}X$$

Given data:

Y	X	$x = X - \bar{X}$	$y = Y - \bar{Y}$	xy	x^2
25	100	-1183.33	-218.33	258356.43	1400269.88
55	250	-1033.33	-188.33	194607.03	1067770.88
68	500	-783.33	-175.33	137341.24	613605.88
90	800	-483.33	-153.33	74108.98	233607.88
122	1050	-233.33	-121.33	28309.92	54442.88
200	1300	16.67	-43.33	-722.31	277.88
280	1650	366.67	36.67	13445.78	134446.88
450	2400	1116.67	206.67	230782.18	1246951.88
900	3500	2216.67	656.67	1455620.68	4913625.88
$\Sigma Y = 2190$	$\Sigma X = 11550$			$\Sigma xy = 2391849.93$	$\Sigma x^2 = 9664999.92$

$$\begin{aligned} \bar{X} &= \frac{\Sigma X}{n} \\ &= \frac{11550}{9} \end{aligned}$$

$$\bar{X} = 1283.33$$

$$\begin{aligned} \bar{Y} &= \frac{\Sigma Y}{n} \\ &= \frac{2190}{9} \end{aligned}$$

$$\bar{Y} = 243.33$$

$$i) \hat{b} = \frac{\sum xy}{\sum x^2}$$

$$= \frac{2391849.93}{9664999.92}$$

$$\boxed{\hat{b} = 0.24}$$

$$ii) \hat{a} = \bar{Y} - \hat{b}\bar{X}$$

$$\hat{a} = 243.33 - (0.24)(1283.33)$$

$$\hat{a} = 243.33 - 307.99$$

$$\boxed{\hat{a} = -64.66}$$

Finding:

$$Y = \hat{a} + \hat{b}X$$

$$\boxed{Y = -64.66 + 0.24X}$$

Interpretation :-

- 1) Both the variables X and Y have positive relationship between them.
- 2) Increase in one unit of X will increase 0.24 units in Y.

Q#2 (b) What are variables and differentiate b/w dependent & independent variables with examples.

Variable: A characteristic, number or quantity that increase or decrease over time or takes different values in different situations.

There are two types of variables i) dependent variable and ii) independent variable

Difference between dependent & independent variable:

Independent variable

i) If two variables are involved, variable that is basis of estimation is called independent variable.

ii) The independent variable is called explanatory, regressor and exogenous variable.

iii) In regression analysis, independent variable is denoted by 'X'

Dependent variable

i) A variable whose value is to be estimated is called dependent variable.

ii) The dependent variable is known as explained variable, predictand, response and endogenous variable.

iii) Dependent variable is denoted by 'Y'

Examples:

1) We want to assess the association between total cholesterol and body mass index (BMI) where total cholesterol is dependent variable and BMI is independent variable. $Y = \text{Total cholesterol}$, $X = \text{BMI}$

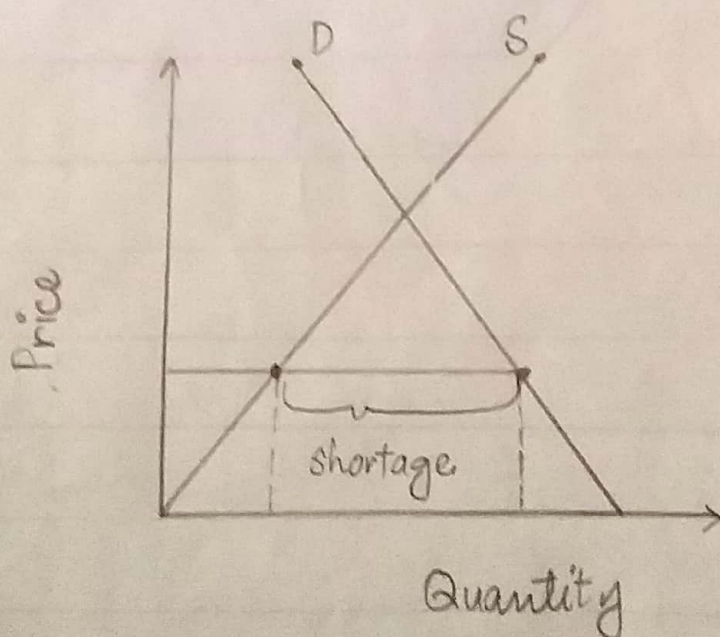
2) Consider consumption as dependent variable (Y) and income, household size and remittances as independent variables (X).

Q#2 (a): Suppose there is short of face mask.....

A shortage, also called excess demand, the amount by which the quantity of good demanded by consumers is greater than the quantity supplied by producers.

Equilibrium is then important to create balanced market. If market is at equilibrium price and quantity, then there is no reason to move away from equilibrium point because quantity supplied and quantity demanded is balanced. If market is not equilibrium, then economic pressure arise to move market towards equilibrium price & quantity, this happens due to more demand than the market is supplying.

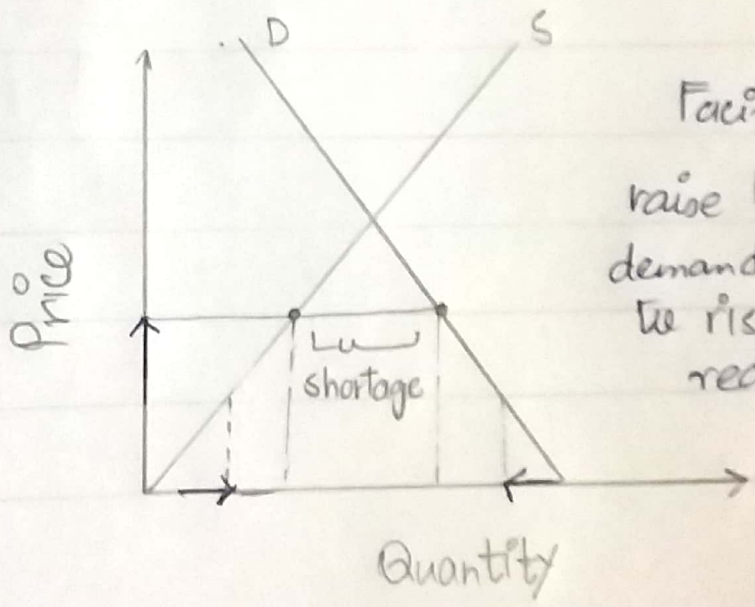
Graph:



In this situation, eager facemask buyers will mob the stores in which they are available, only to find many stores running short of face masks as the quantity demanded of facemask by consumer is greater than the quantity supplied by producers. The stores recognize that they have an opportunity to make higher profits by selling what amount of facemask they have at higher price.

Market Equilibrium:

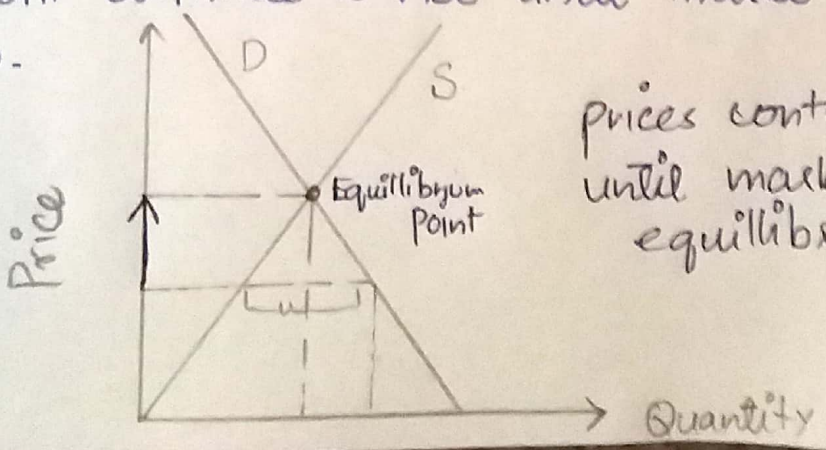
S=Supply, D=demand



Facing shortage, sellers raise the price causing demand to fall and supply to rise, which will reduce shortage.

The prices increase will stimulate quantity supplied and reduce the quantity demanded, As this occurs, shortage will decrease.

The price will continue to rise until market will reach equilibrium.



prices continue to rise until market reaches equilibrium.