

Answer on Question #40834 – Economics - Economics of Enterprise

Cost function expresses the relationship between cost and its determinants such as the size of plant, level of output, input prices, technology, managerial efficiency, etc. In a mathematical form, it can be expressed as, $C = f(S, O, P, T, E, \dots)$,

where C = cost (it can be unit cost or total cost)

S = plant size

O = output level

P = prices of inputs used in production

T = nature of technology

E = managerial efficiency

Determinants of Cost Function

The cost of production depends on many factors and these factors vary from one firm to another firm in the same industry or from one industry to another industry. The main determinants of a cost function are:

- a) plant size
- b) output level
- c) prices of inputs used in production,
- d) nature of technology
- e) managerial efficiency

We will discuss briefly the influence of each of these factors on cost.

- a) Plant size: Plant size is an important variable in determining cost. The scale of operations or plant size and the unit cost are inversely related in the sense that as the former increases, unit cost decreases, and vice versa. Such a relationship gives downward slope of cost function depending upon the different sizes of plants taken into account. Such a cost function gives primarily engineering estimates of cost.
- b) Output level: Output level and total cost are positively related, as the total cost increases with increase in output and total cost decreases with decrease in output. This is because increased production requires increased use of raw materials, labour, etc., and if the increase is substantial, even fixed inputs like plant and equipment, and managerial staff may have to be increased.
- c) Price of inputs: Changes in input prices also influence cost, depending on the relative usage of the inputs and relative changes in their prices. This is because more money will have to be paid to those inputs whose prices have increased and there will be no simultaneous reduction in the costs from any other source. Therefore, the cost of production varies directly with the prices of production.
- d) Technology: Technology is a significant factor in determining cost. By definition, improvement in technology increases production leading to increase in productivity and decrease in production cost. Therefore, cost varies inversely with technological progress. Technology is often quantified as capital-output ratio. Improved technology is generally found to have higher capital-output ratio.
- e) Managerial efficiency: This is another factor influencing the cost of

production. More the managerial efficiency less the cost of production. It is difficult to measure managerial efficiency quantitatively. However, a and change in cost at two points of time may explain how organisational or managerial changes within the firm have brought about cost efficiency, provided it is possible to exclude the effect of other factors.

The firm's primary objective in producing output is to maximize profits. The production of output, however, involves certain costs that reduce the profits a firm can make. The relationship between costs and profits is therefore critical to the firm's determination of how much output to produce.