**Business Economics**

**December 2022 Examination**

**Q1. Demand forecasting in an organization plays a vital role in business organizations. It provides reasonable data for the organization's capital investment and expansion decisions. Keeping the above statement into consideration. Discuss the various steps involved in demand forecasting (10 Marks)**

**Ans 1.**

**Introduction:**

"Demand estimating (forecasting) may be characterized as a method of determining values for demand in future periods," creates Evan J. Douglas. Demand forecasting is estimating future demand for a firm's products or services. It is referred to as sales forecasting since it includes anticipating an organization's future sales figures. Demand forecasting helps a company make business choices such as intending the manufacturing process, obtaining raw materials, managing cash, and determining the pricing of its products. Organizations can anticipate demand either internally by guessing quotes or on the surface with specialized specialists or market research organizations.

Demand forecasting allows a business to prepare for the necessary inputs based upon the projected demand, staying clear of material and time waste. It is beneficial to both current and new services on the market. A new business must forecast demand to broaden its production dimension. On the other hand, a well-known organization requires demand forecasts to stay clear of problems such as overproduction and underproduction.

**Steps involved in demand forecasting**

To obtain the desired outcomes, demand forecasting should be done methodically. Allow us to go over these steps in deepness.

* **Identifying the goal**: Before beginning the process, the function of demand forecasting has to be determined. The adhering to criteria can be made use of to define the goal:
* Lasting or short-term product demand
* Sector demand or demand unique to a business
* Demand for the entire market or demand for a specific market segment
* **Determining the time horizon**: Depending upon the objective, demand might be projected for a brief (2-3 years) or prolonged duration (beyond ten years). Long-term demand forecasting requires an organization to make up for frequent market changes and the economy.
* **Choosing a Forecasting Method:** Demand forecasting can be performed in various methods. Not all methods, however, are appropriate for all types of demand forecasting. The organization must select the best forecasting technique based on the objective, time array, and data accessibility. The demand forecasting method is likewise influenced by the demand forecaster's experience and capability.
* **Data collection and analysis**: Data must be collected after picking a demand forecasting technique. Because data is gathered in its raw kind, it has to be analyzed to produce pertinent information. Data can be acquired from either additional or critical resources or both.
* **Interpretation results**: After the data has been analyzed, it is used to anticipate demand for the specified years. In general, the acquired results remain in the kind of equations that must be presented, not surprisingly.

Forecasting demand can be made at the company, economy, or market levels. The future demand for a particular organization's services and products is projected at a business degree. The collective demand for the services and products of all organizations in a details sector is prepared for at the market level. On the other hand, the accumulated demand for goods and services in the economy all at once is forecasted.

Products are classified as consumer or capital items based on their nature.

* **Consumer goods**: These items remain in high demand. Generally, demand forecasting for these products is done when a new product is introduced, or an existing product is replaced with a much better one.
* **Capital goods**: These are products that are essential to produce consumer goods, such as raw materials. Therefore, these commodities have derived demand. Capital items demand forecasting is influenced by durable goods demand. Forecasting more demand for consumer products would imply forecasting greater demand for capital products.

Demand is projected in the short and lengthy run based upon duration, which is detailed below:

* **Short-term projections**: It requires forecasting demand for approximately a year. It focuses on an organization's quick decisions (for example, arranging finance, developing production plans, establishing marketing plans, and so on).
* **Long-term projections**: It entails forecasting demand for a duration of 5-7 years, which might be included duration of 10 to 20 years. It is concerned with an organization's lasting decisions (for example, picking manufacturing capability, changing machinery, and so forth).

**Q2. From the given hypnotically table Calculate Total Cost, Average Fixed Cost, Average Variable cost, and Marginal Cost. (10 Marks)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Quantity | Total  Fixed  Cost | Total  Variable  Cost | Total  Cost | Average  Fixed  Cost | Average  Variable  Cost | Average  Total  Cost | Marginal  Cost |
| 0 | 100 | 0 |  |  |  |  |  |
| 1 | 100 | 20 |  |  |  |  |  |
| 2 | 100 | 30 |  |  |  |  |  |
| 3 | 100 | 40 |  |  |  |  |  |
| 4 | 100 | 50 |  |  |  |  |  |
| 5 | 100 | 60 |  |  |  |  |  |

**Ans 2.**

**Introduction:**

Organizations incur miscellaneous expenses on various activities for manufacturing services and products, such as acquiring basic materials, paying labor salaries/wages, and purchasing or leasing machines and buildings. These expenditures represent the company's cost of generating its services and products. The quantity of sources required for manufacturing items and services is referred to as the cost. The sum of the cash values of the inputs multiplied by their specific costs is referred to as the cost of production.

Fixed costs are costs endured by a company that does not change in response to variations in output degree. Even if the business does not create anything, its dealt costs will continue to be continuous. As an example, devaluation, administrative costs, land and building rent, tax obligations, and various other costs of a company continue to be continuous even when the company's output rises and falls. Variable costs are directly associated with the company's outcome level. To put it simply, variable costs vary with production quantity or level adjustments.

**Calculation of various costs**

The total cost is the actual cost incurred by a company to create a particular degree of the outcome. An organization's Short-Run Total Cost (SRTC) is comprised of two significant elements:

**TFc (Total Fixed Cost):** These costs do not alter due to changes. Even when the result is zero, TFC stays consistent. TFC is represented as a horizontal line parallel to the x-axis (result).

**TVc (Total Variable Cost):** These expenditures are straight related to a firm's result. This indicates that when outcome boosts, TVC boosts as well, and when output decreases, TVC reduces.

SRTC is determined by adding the total fixed and variable costs.

TFC + TVC = SRTC

The average cost is calculated by splitting the total cost by the number of systems a business generates. A firm's short-run average cost (SRAC) describes the cost of results at different stages of production.

SRAC is calculated by dividing the short-run overall cost by the result.

A firm's SRAC is U-shaped. It starts to drop, and after that gets to a minimum and starts to enhance. The taken care of costs remains consistent initially, while only the variable costs, such as primary material and work costs, modify. Later, as the repaired costs are spread out throughout the manufacturing, the typical cost starts to reduce. When a company uses all available resources, the typical cost is maintained to a minimum. The SRAC curve illustrates the short-run average cost of creating a particular quantity of outcomes. The SRAC curve's downward slope suggests that as output expands, so do average costs. The SRAC contour begins to slope higher, revealing that typical costs increase at output degrees above Q1.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Quantity | Total  Fixed  Cost | Total  Variable  Cost | Total  Cost | Average  Fixed  Cost | Average  Variable  Cost | Average  Total  Cost | Marginal  Cost |
| 0 | 100 | 0 | **100** |  |  |  | **20** |
| 1 | 100 | 20 | **120** | **100** | **20** | **120** | **10** |
| 2 | 100 | 30 | **130** | **50** | **15** | **65** | **10** |
| 3 | 100 | 40 | **140** | **33.33** | **13.333** | **46.666** | **10** |
| 4 | 100 | 50 | **150** | **25** | **12.5** | **37.5** | **10** |
| 5 | 100 | 60 | **160** | **20** | **12** | **32** | **10** |

**Conclusion:**

When a business determines to produce an asset, it has to pay the rate for the numerous inputs required in the process. The company requires labor, raw materials, gas, and power, along with the rental fee for the production center. Business decisions are made by evaluating the monetary value of inputs in connection with the output. The cash value of inputs is computed by multiplying inputs by their corresponding prices (cost of production). Cost analysis is essential in business decision-making given that the term cost has different significances in different circumstances and might be interpreted differently. An organization should have a strong recognition of the various cost concepts to make efficient resource appropriation choices.

**Q3a. Suppose the monthly income of individual increases from Rs 20,000 to Rs 25,000 which increase his demand for clothes from 40 units to 60 units. Calculate the income elasticity of demand. (5 Marks)**

**Ans 3a.**

**Introduction:**

Even if the product's price stays the same, an increase in consumer earnings increases demand for it. The term "earnings elasticity of demand" refers to the amount of demander's responsiveness to consumer income. The proportion of the percentage adjustment in the amount demanded to the percentage adjustment in income is what Watson refers to as "revenue flexibility of demand." Richard G. Lipsey claims that "earnings elasticity of demand" refers to how responsively demand adjustments with changes in revenue.

**Income elasticity of Demand**

Ey = Percentage change in quantity demanded/ Percentage change in income

Where Percentage change in quantity demanded = New quantity demanded – Original quantity demanded (∆Q)/ Original quantity demanded (Q)

Percentage change in Income = New income – Original income (∆Y)/ Original income (Y)

Ey = ∆Q/∆Y × Y/Q

Applying the formula in the present case,

∆Q = 50 – 40 = 10

∆Y = 35,000 – 20,000 = 15,000

Q = 40

Y= 20,000

Ey = 1/3

Demand's income elasticity modifications rely on the product and the circumstances. The revenue flexibility of demand is divided into three groups based upon a numerical value, with the following descriptions.

* Revenue flexibility of demand is considered favorable when a consumer's demand increases in reaction to a proportionate change in revenue and the other way around.

There are three different sorts of positive revenue elasticity of demand: unitary, less than unitary, and higher than income elasticity.

* Unitary revenue elasticity of demand: When a proportionate adjustment in a customer's earnings translates into a relative change in the demand (increase) for a great, the revenue elasticity of demand is said to be unitary.
* Less than unitary revenue flexibility of demand: When a proportionate adjustment in a customer's revenue leads to a minor increase in demand for an excellent, this is when the income flexibility of demand is smaller than 1.

**Conclusion:**

Demand's revenue flexibility helps sellers select where to put their cash. In general, sellers favor purchasing markets where product demand is a lot more sensitive to adjustments in earnings as a percentage or where the income elasticity of demand is more significant than no (> 1).

**Q3b. Assume that a business firm sells a product at the price of Rs 500. The firm has decided to reduce the price of the product to Rs 400. Consequently, the demand for the product is raised from 20,000 units to 25,000 units. Calculate the price elasticity of demand. (5 Marks)**

**Ans 3b.**

**Introduction:**

Price elasticity of demand is a measure of the change in the quantity requested of a product due to a modification in the product's market value. Simply put, it is the percentage modification in the required amount divided by the price modification. It can be specified numerically as:

Price elasticity of demand = Proportionate change in the quantity demanded/ Proportionate change in Price

A symbol ∆ denotes a percentage change in demand and price.

As a result, the formula for estimating demand price elasticity is as follows:

Ep = ∆ Q/∆P × P/Q

Where,

Ep = Price elasticity of demand

P = Initial Price

∆P = Change in price

Q = Initial quantity demanded

∆Q = Change in quantity demanded

Applying the formula in the present case,

∆Q = 25000 – 20000 = 5000

∆P = 500 – 400 = 100

P = 500

Q = 20,000

Ep = 1.25

The degree to which demand reacts to value adjustments does not continue to be continuous in every scenario. A product's demand can be inelastic or elastic, based upon the price of change sought after in connection with a product's price adjustment. The price elasticity of demand is categorized right into five significant teams based on the rate of adjustment:

* **Perfectly elastic demand:** Perfectly elastic demand happens when a slight modification (increase or autumn) in price causes a substantial adjustment (surge or autumn) in quantity desired. A little increase in price results in a decline in sought-after to no, while a little reduction in price results in an increase in demand to infinity. In this circumstance, demand is flexible, or e= ∞.
* **Perfectly inelastic demand:** When an adjustment in the price of a product does not result in a modification in the quantity required, the demand is stated to be flawlessly inelastic. In this circumstance, the demand elasticity is zero, represented by ep = 0.
* **Unitary elastic demand:** Unitary elastic demand occurs when an adjustment (increase or autumn) in price results in an equivalent modification (fall or rise) in demand. The mathematical value for unitary elastic demand is equal to one.

**Conclusion:**

Thus, it is critical to gauge the price elasticity of demand.