# Demand Forecasting

## Introduction

An important aspect of demand analysis from the management point of view is concerned with forecasting demand for products, either existing or new. Demand forecasting refers to an estimate of most likely future demand for product under given conditions. Such forecasts are of immense use in making decisions with regard to production, sales, investment, expansion, employment of manpower etc., both in the short run as well as in the long run.

## Meaning And Features

Demand forecasting seeks to investigate and measure the forces that determine sales for existing and new products. Generally companies plan their business – production or sales in anticipation of future demand. Hence forecasting future demand becomes important. In fact it is the very soul of good business because every business decision is based on some assumptions about the future whether right or wrong, implicit or explicit. The art of successful business lies in avoiding or minimizing the risks involved as far as possible and face the uncertainties in a most befitting manner .**Thus Demand Forecasting refers to an estimation of most likely future demand for a product under given conditions.**

Important features of demand forecasting

- It is basically a guess work – but it is an educated and well thought out guesswork.
- It is in terms of specific quantities
- It is undertaken in an uncertain atmosphere.
- A forecast is made for a specific period of time which would be sufficient to take a decision and put it into action.
- It is based on historical information and the past data.
- It tells us only the approximate demand for a product in the future.
- It is based on certain assumptions.
- It cannot be 100% precise as it deals with future expected demand

Demand forecasting is needed to know whether the demand is subject to cyclical fluctuations or not, so that the production and inventory policies, etc, can be suitably formulated

Demand forecasting is generally associated with forecasting sales and manipulating demand. A firm can make use of the sales forecasts made by the industry as a powerful tool for formulating sales policy and sales strategy. They can become action guides to select the course of action which will maximize the firm's earnings. When external economic factors like the size of market, competitors attitudes, movement in prices, consumer tastes, possibilities of new threats from substitute products etc, influence sales forecasting, internal factors like money spent on advertising, pricing policy, product improvements, sales efforts etc., help in manipulating demand. To use demand forecasting in an active rather than a passive way, management must recognize the degree to which sales are a result not only of external economic environment but also of the action of the company itself. ¼br />

**Managerial uses of demand forecasting:**

**In the short run:**

Demand forecasts for short periods are made on the assumption that the company has a given production capacity and the period is too short to change the existing production capacity. Generally it would be one year period.

- **Production planning**: It helps in determining the level of output at various periods and avoiding under or over production.
- **Helps to formulate right purchase policy:** It helps in better material management, of buying inputs and control its inventory level which cuts down cost of operation.
- **Helps to frame realistic pricing policy:** A rational pricing policy can be formulated to suit short run and seasonal variations in demand.
- **Sales forecasting:** It helps the company to set realistic sales targets for each individual salesman and for the company as a whole.
- **Helps in estimating short run financial requirements:** It helps the company to plan the finances required for achieving the production and sales targets. The company will be able to raise the required finance well in advance at reasonable rates of interest.
- **Reduce the dependence on chances:** The firm would be able to plan its production properly and face the challenges of competition efficiently.
- **Helps to evolve a suitable labour policy:** A proper sales and production policies help to determine the exact number of labourers to be employed in the short run.

**In the long run:**

Long run forecasting of probable demand for a product of a company is generally for a period of 3 to 5 or 10 years.

**1.Business planning**

It helps to plan expansion of the existing unit or a new production unit. Capital budgeting of a firm is based on long run demand forecasting.

**2.Financial planning:**

It helps to plan long run financial requirements and investment programs by floating shares and debentures in the open market.

**3.Manpower planning :**

It helps in preparing long term planning for imparting training to the existing staff and recruit skilled and efficient labour force for its long run growth.

**4.Business control :**

Effective control over total costs and revenues of a company helps to determine the value and volume of business. This in its turn helps to estimate the total profits of the firm. Thus it is possible to regulate business effectively to meet the challenges of the market.

**5.Determination of the growth rate of the firm :**

A steady and well conceived demand forecasting determine the speed at which the company can grow.

**6.Establishment of stability in the working of the firm :**

Fluctuations in production cause ups and downs in business which retards smooth functioning of the firm. Demand forecasting reduces production uncertainties and help in stabilizing the activities of the firm.

**7.Indicates interdependence of different industries :**

Demand forecasts of particular products become the basis for demand forecasts of other related industries, e.g., demand forecast for cotton textile industry supply information to the most likely demand for textile machinery, colour, dye-stuff industry etc.,

**8.More useful in case of developed nations:**

It is of great use in industrially advanced countries where demand conditions fluctuate much more than supply conditions.

The above analysis clearly indicates the significance of demand forecasting in the modern business set up.

**Levels Of Demand Forecasting**

Demand forecasting may be undertaken at three different levels, viz., micro level or firm level, industry level and macro level.

**Micro level or firm level**

This refers to the demand forecasting by the firm for its product. The management of a firm is really interested in such forecasting. Generally speaking, demand forecasting refers to the forecasting of demand of a firm.

**Industry level**

Demand forecasting for the product of an industry as a whole is generally undertaken by the trade associations and the results are made available to the members. A member firm by using such data and information may determine its market share.

**Macro-level**

Estimating industry demand for the economy as a whole will be based on macro-economic variables like national income, national expenditure, consumption function, index of industrial production, aggregate demand, aggregate supply etc, Generally, it is undertaken by national institutes, govt. agencies etc. Such forecasts are helpful to the Government in determining the volume of exports and imports, control of prices etc.

The managerial economist has to take into consideration the estimates of aggregate demand and also industry demand while making the demand forecast for the product of a particular firm.

**Criteria For Good Demand Forecasting**

Apart from being technically efficient and economically ideal a good method of demand forecasting should satisfy a few broad economic criteria. They are as follows:

- **Accuracy:** Accuracy is the most important criterion of a demand forecast, even though cent percent accuracy about the future demand cannot be assured. It is generally measured in terms of the past forecasts on the present sales and by the number of times it is correct.
- **Plausibility:** The techniques used and the assumptions made should be intelligible to the management. It is essential for a correct interpretation of the results.
- **Simplicity:** It should be simple, reasonable and consistent with the existing knowledge. A simple method is always more comprehensive than the complicated one
- **Durability:** Durability of demand forecast depends on the relationships of the variables considered and the stability underlying such relationships, as for instance, the relation between price and demand, between advertisement and sales, between the level of income and the volume of sales, and so on.
- **Flexibility:** There should be scope for adjustments to meet the changing conditions. This imparts durability to the technique.
- **Availability of data:** Immediate availability of required data is of vital importance to business. It should be made available on an up-to-date basis. There should be scope for making changes in the demand relationships as they occur.
- **Economy:** It should involve lesser costs as far as possible. Its costs must be compared against the benefits of forecasts
- **Quickness**: It should be capable of yielding quick and useful results. This helps the management to take quick and effective decisions.

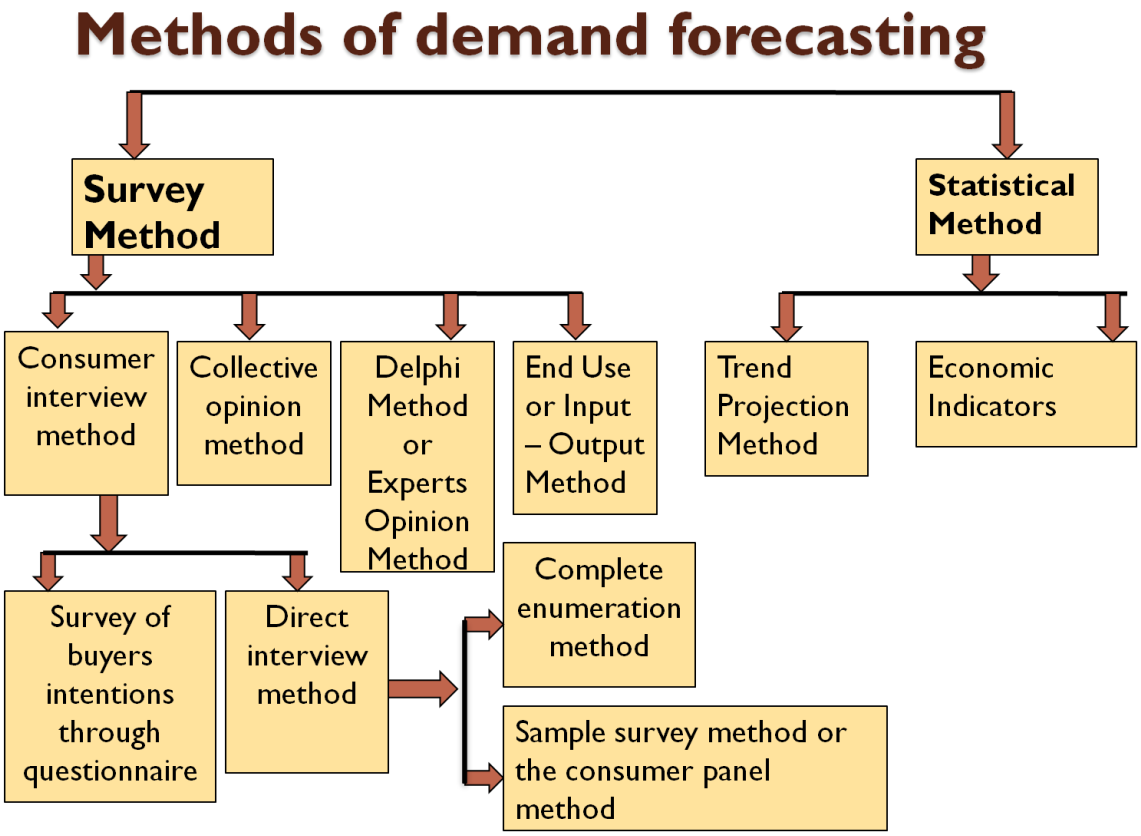
Thus, an ideal forecasting method should be accurate, plausible, durable, flexible, make the data available readily, economical and quick in yielding results.

**Analyze different methods demand forecasting for both old and new products**

**Methods or Techniques of Forecasting**

Demand forecasting is a highly complicated process as it deals with the estimation of future demand. It requires the assistance and opinion of experts in the field of sales management. While estimating future demand, one should not give too much of importance to either statistical information, past data or experience, intelligence and judgment of the experts. Demand forecasting, to become more realistic should consider the two aspects in a balanced manner. Application of commonsense is needed to follow a pragmatic approach in demand forecasting.

Broadly speaking, there are two methods of demand forecasting. They are: 1.Survey methods and 2 Statistical methods.




**Survey Methods**

Survey methods help us in obtaining information about the future purchase plans of potential buyers through collecting the opinions of experts or by interviewing the consumers. These methods are extensively used in short run and estimating the demand for new products. There are different approaches under survey methods. They are

**A. Consumers interview Method:**

**Under this method, efforts are made to collect the relevant information directly from the consumers with regard to their future purchase plans.** In order to gather information from

consumers, a number of alternative techniques are developed from time to time. Among them, the following are some of the important ones.

**1. Survey of buyer's intentions or preferences:** It is one of the oldest methods of demand forecasting. It is also called as "Opinion surveys".

**Under this method, consumer-buyers are requested to indicate their preferences and willingness about particular products. They are asked to reveal their 'future purchase plans with respect to specific items**. They are expected to give answers to questions like what items they intend to buy, in what quantity, why, where, when, what quality they expect, how much money they are planning to spend etc. Generally, the field survey is conducted by the marketing research department of the company or hiring the services of outside research organizations consisting of learned and highly qualified professionals.

The heart of the survey is questionnaire. It is a comprehensive one covering almost all questions either directly or indirectly in a most intelligent manner. It is prepared by an expert body who are specialists in the field or marketing.

The questionnaire is distributed among the consumer buyers either through mail or in person by the company. Consumers are requested to furnish all relevant and correct information.

The next step is to collect the questionnaire from the consumers for the purpose of evaluation. The materials collected will be classified, edited analyzed. If any bias prejudices, exaggerations, artificial or excess demand creation etc., are found at the time of answering they would be eliminated.

The information so collected will now be consolidated and reviewed by the top executives with lot of experience. It will be examined thoroughly. Inferences are drawn and conclusions are arrived at. Finally a report is prepared and submitted to management for taking final decisions.

The success of the survey method depends on many factors. 1) The nature of the questions asked, 2) The ability of the surveyed 3) The representative of the samples 4) Nature of the product 5) characteristics of the market 6) consumer buyers behavior, their intentions, attitudes, thoughts, motives, honesty etc. 7) Techniques of analysis conclusions drawn etc.

The management should not entirely depend on the results of survey reports to project future demand. Consumer buyers may not express their honest and real views and as such they may give only the broad trends in the market. In order to arrive at right conclusions, field surveys should be regularly checked and supervised.

This method is simple and useful to the producers who produce goods in bulk. Here the burden of forecasting is put on customers.

However this method is not much useful in estimating the future demand of the households as they run in large numbers and also do not freely express their future demand requirements. It is

expensive and also difficult. Preparation of a questionnaire is not an easy task. At best it can be used for short term forecasting.

**B. Direct Interview Method**

Experience has shown that many customers do not respond to questionnaire addressed to them even if it is simple due to varied reasons. Hence, an alternative method is developed**. Under this method, customers are directly contacted and interviewed. Direct and simple questions are asked to them.** They are requested to answer specifically about their budget, expenditure plans, particular items to be selected, the quality and quantity of products, relative price preferences etc. for a particular period of time. There are two different methods of direct personal interviews. They are as follows:

**i. Complete enumeration method**

**Under this method, all potential customers are interviewed in a particular city or a region**. The answers elicited are consolidated and carefully studied to obtain the most probable demand for a product. The management can safely project the future demand for its products. This method is free from all types of prejudices. The result mainly depends on the nature of questions asked and answers received from the customers.

However, this method cannot be used successfully by all sellers in all cases. This method can be employed to only those products whose customers are concentrated in a small region or locality. In case consumers are widely dispersed, this method may not be physically adopted or prove costly both in terms of time and money. Hence, this method is highly cumbersome in nature.

**ii. Sample survey method or the consumer panel method**

Experience of the experts' show that it is impossible to approach all customers; as such careful sampling of representative customers is essential. Hence, another variant of complete enumeration method has been developed, which is popularly known as sample survey method. **Under this method, different cross sections of customers that make up the bulk of the market are carefully chosen. Only such consumers selected from the relevant market through some sampling method are interviewed or surveyed.** In other words, a group of consumers are chosen and queried about their preferences in concrete situations. The selection of a few customers is known as sampling. The selected consumers form a panel. This method uses either random sampling or the stratified sampling technique. The method of survey may be direct interview or mailed questionnaire to the selected consumers. On the basis of the views expressed by these selected consumers, most likely demand may be estimated. The advantage of a panel lies in the fact that the same panel is continued and new expensive panel does not have to be formulated every time a new product is investigated.

As compared to the complete enumeration method, the sample survey method is less tedious, less expensive, much simpler and less time consuming. This method is generally used to estimate short run demand by government departments and business firms.

Success of this method depends upon the sincere co-operation of the selected customers. Hence, selection of suitable consumers for the specific purpose is of great importance.

Even with careful selection of customers and the truthful information about their buying intention, the results of the survey can only be of limited use. A sudden change in price, inconsistency in buying intentions of consumers, number of sensible questions asked and dropouts from the panel for various reasons put a serious limitation on the practical usefulness of the panel method.

**C. Collective opinion method or opinion survey method**

This is a variant of the survey method. This method is also known as "Sales – force polling" or "Opinion poll method". **Under this method, sales representatives, professional experts and the market consultants and others are asked to express their considered opinions about the volume of sales expected in the future**. The logic and reasoning behind the method is that these salesmen and other people connected with the sales department are directly involved in the marketing and selling of the products in different regions. Salesmen, being very close to the customers, will be in a position to know and feel the customer's reactions towards the product. They can study the pulse of the people and identify the specific views of the customers. These people are quite capable of estimating the likely demand for the products with the help of their intimate and friendly contact with the customers and their personal judgments based on the past experience. Thus, they provide approximate, if not accurate estimates. Then, the views of all salesmen are aggregated to get the overall probable demand for a product.

Further, these opinions or estimates collected from the various experts are considered, consolidated and reviewed by the top executives to eliminate the bias or optimism and pessimism of different salesmen. These revised estimates are further examined in the light of factors like proposed change in selling prices, product designs and advertisement programs, expected changes in the degree of competition, income distribution, population etc. The final sales forecast would emerge after these factors have been taken into account. This method heavily depends on the collective wisdom of salesmen, departmental heads and the top executives.

It is simple, less expensive and useful for short run forecasting particularly in case of new products.

The main drawback is that it is subjective and depends on the intelligence and awareness of the salesmen. It cannot be relied upon for long term business planning.

**D. Delphi Method or Experts Opinion Method**

This method was originally developed at Rand Corporation in the late 1940's by Olaf Helmer, Dalkey and Gordon. This method was used to predict future technological changes. It has proved more useful and popular in forecasting non– economic rather than economical variables.

It is a variant of opinion poll and survey method of demand forecasting**. Under this method, outside experts are appointed. They are supplied with all kinds of information and**

**statistical data. The management requests the experts to express their considered opinions and views about the expected future sales of the company.** Their views are generally regarded as most objective ones. Their views generally avoid or reduce the "Halo – Effects" and "Ego – Involvement" of the views of the others. Since experts' opinions are more valuable, a firm will give lot of importance to them and prepare their future plan on the basis of the forecasts made by the experts.

**E. End Use or Input – Output Method**

**Under this method, the sale of the product under consideration is projected on the basis of demand surveys of the industries using the given product as an intermediate product**. The demand for the final product is the end – use demand of the intermediate product used in the production of the final product. An intermediate product may have many end – users, For e.g., steel can be used for making various types of agricultural and industrial machinery, for construction, for transportation etc. It may have the demand both in the domestic market as well as international market. Thus, end – use demand estimation of an intermediate product may involve many final goods industries using this product, at home and abroad. Once we know the demand for final consumption goods including their exports we can estimate the demand for the product which is used as intermediate good in the production of these final goods with the help of input – output coefficients. The input – output table containing input – output coefficients for particular periods are made available in every country either by the Government or by research organizations.

This method is used to forecast the demand for intermediate products only. It is quite useful for industries which are largely producers' goods, like aluminum, steel etc. The main limitation of the method is that as the number of end – users of a product increase, it becomes more inconvenient to use this method.

**Statistical Method**

It is the second most popular method of demand forecasting. It is the best available technique and most commonly used method in recent years. **Under this method, statistical, mathematical models, equations etc are extensively used in order to estimate future demand of a particular product.** They are used for estimating long term demand. They are highly complex and complicated in nature. Some of them require considerable mathematical back – ground and competence.

They use historical data in estimating future demand. The analysis of the past demand serves as the basis for present trends and both of them become the basis for calculating the future demand of a commodity in question after taking into account of likely changes in the future.

There are several statistical methods and their application should be done by some one who is reasonably well versed in the methods of statistical analysis and in the interpretation of the results of such analysis.

**A. Trend Projection Method**

An old firm operating in the market for a long period will have the accumulated previous data on either production or sales pertaining to different years. If we arrange them in chronological order, we get what is called as 'time series'. It is an ordered sequence of events over a period of time pertaining to certain variables. It shows a series of values of a dependent variable say, sales as it changes from one point of time to another. In short, a time series is a set of observations taken at specified time, generally at equal intervals. It depicts the historical pattern under normal conditions. This method is not based on any particular theory as to what causes the variables to change but merely assumes that whatever forces contributed to change in the recent past will continue to have the same effect. **On the basis of time series, it is possible to project the future sales of a company.**

Further, the statistics and information with regard to the sales call for further analysis. When we represent the time series in the form of a graph, we get a curve, the sales curve. It shows the trend in sales at different periods of time. Also, it indicates fluctuations and turning points in demand. If the turning points are few and their intervals are also widely spread, they yield acceptable results. Here the time series show a persistent tendency to move in the same direction. Frequency in turning points indicates uncertain demand conditions and in this case, the trend projection breaks down.

The major task of a firm while estimating the future demand lies in the prediction of turning points in the business rather than in the projection of trends. When turning points occur more frequently, the firm has to make radical changes in its basic policy with respect to future demand. It is for this reason that the experts give importance to identification of turning points while projecting the future demand for a product.

The heart of this method lies in the use of time series. Changes in time series arise on account of the following reasons:-

1. **Secular or long run movements:** Secular movements indicate the general conditions and direction in which graph of a time series move in relatively a long period of time.
2. **Seasonal movements:** Time series also undergo changes during seasonal sales of a company. During festival season, sales clearance season etc., we come across most unexpected changes.
3. **Cyclical Movements:** It implies change in time series or fluctuations in the demand for a product during different phases of a business cycle like depression, revival, boom etc.
4. **Random movement.** When changes take place at random, we call them irregular or random movements. These movements imply sporadic changes in time series occurring due to unforeseen events such as floods, strikes, elections, earth quakes, droughts and other such natural calamities. Such changes take place only in the short run. Still they have their own impact on the sales of a company.

An important question in this connection is how to ascertain the trend in time series? A statistician, in order to find out the pattern of change in time series may make use of the following methods.

1. The Least Squares method.

2. The Free hand method.
3. The moving average method.
4. The method of semi – averages.

The method of Least Squares is more scientific, popular and thus more commonly used when compared to the other methods. It uses the straight line equation Y= a + bx to fit the trend to the data.

**Illustration.**

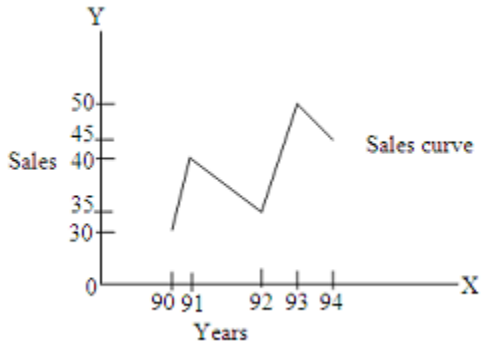
Under this method, the past data of the company are taken into account to assess the nature of present demand. On the basis of this information, future demand is projected. For e.g., A businessman will collect the data pertaining to his sales over the last 5 years. The statistics regarding the past sales of the company is given below.

The table indicates that the sales fluctuate over a period of 5 years. However, there is an up trend in the business. The same can be represented in a diagram.

**Diagrammatic representation.**

**a)Deriving sales Curve.**

| Year | Sales (Rs.) |
|---|---|
| 1990 | 30 |
| 1991 | 40 |
| 1992 | 35 |
| 1993 | 50 |
| 1994 | 45 |




We can find out the trend values for each of the 5 years and also for the subsequent years making use of a statistical equation, the method of Least Squares. In a time series, x denotes time and y denotes variable. With the passage of time, we need to find out the value of the variable.

To calculate the trend values i.e., $Y_c$, the regression equation used is –

$$Y_c = a + bx.$$

As the values of 'a' and 'b' are unknown, we can solve the following two normal equations simultaneously.

(i) $\Sigma Y = Na + b\Sigma x$

(ii) $\Sigma XY = a\Sigma x + b\Sigma x^2$

Where,

$\Sigma Y$ = Total of the original value of sales ( y)

N = Number of years,

$\Sigma X$ = total of the deviations of the years taken from a central period.

$\Sigma XY$ = total of the products of the deviations of years and corresponding sales (y)

$\Sigma X^2$ = total of the squared deviations of X values .

When the total values of X. i.e., $\Sigma X = 0$

| Year = n | Sales in Rs Lakhs Y | Deviation from assumed year X | Square of Deviation $X^2$ | Product sales and time Deviation XY | Computed trend values Yc |
|---|---|---|---|---|---|
| 1990 | 30 | -2 | +4 | -60 | 32 |
| 1991 | 40 | -1 | +1 | -40 | 36 |
| 1992 | 35 | 0 | 0 | 0 | 40 |
| 1993 | 50 | +1 | +1 | +50 | 44 |
| 1994 | 45 | +2 | +4 | +90 | 48 |
| N = 5 | $\Sigma Y = 200$ | $\Sigma X = 0$ | $\Sigma X^2 = 10$ | $\Sigma XY = 40$ | |

Regression equation = $Y_c = a + bx$

To find the value of a = $\sum Y/N$ = 200/5 = 40

To find out the value of b = $\sum XY/\sum X^2$ = 40/10 = 4

For 1990 Y = 40+(4x-2)

Y = 40-8 = 32

For 1991 Y = 40+(4x-1)

Y = 40-4 = 36

For 1992 Y = 40+(40×0)

Y = 40+0 = 40

For 1993 Y = 40+(4X1)

Y = 40+4 = 44

For 1994 Y = 40+(4X2)

Y = 40+8 = 48

For the next two years, the estimated sales would be:

For 1995 Y = 40+(4X3)

Y = 40+12 = 52

For 1996 Y = 40+(4X4)

Y = 40+16 = 56

Finding trend values when Even Years are given.

| Year =N | Sales in Rs lakhs = Y | Deviation From Assumed year= X | Square of Deviation $= X^2$ | Product sales and time deviation =XY | Computed trend values Y c |
|---|---|---|---|---|---|
| 1990 | 55 | -3 | 9 | -165 | 44 |
| 1991 | 25 | -1 | 1 | -25 | 48 |
| 1992 | 65 | +1 | 1 | +65 | 52 |
| 1993 | 55 | +3 | 9 | +165 | 56 |
| N = 4 | $\sum Y=200$ | $\sum X=0$ | $\sum X^2=20$ | $\sum XY=40$ | |

**Note** : –

1. When even years are given, the base year would be in between the two middle years. In this example, in between the two middle years is 1991.5 ( one year = 1 where as 6 months = .5)
2. For the purpose of simple calculation, we assume the value for each 6 months i.e. o.5 = 1

To find out the value of a = 200/4 = 50

To find out the value of b = 40/20 = 2

a=50, b=2.

**<u>Calculation for each year. Finding trend values.</u>**

1991.5 = Base Year For 1990 Y = 50 +2X –3

Y = 50 – 6 = 44

90 = -3

90.5 = -2 For 1991 Y = 50+2X -1

91 = -1 Y = 50 – 2 = 48

91.5 = 0

92 = +1 For 1992 Y = 50+2X1

92.5 = +2 Y = 50+2 = 52

93 = +3

For 1993 Y = 50+2 X 3

Y = 50+ 6 = 56 Š

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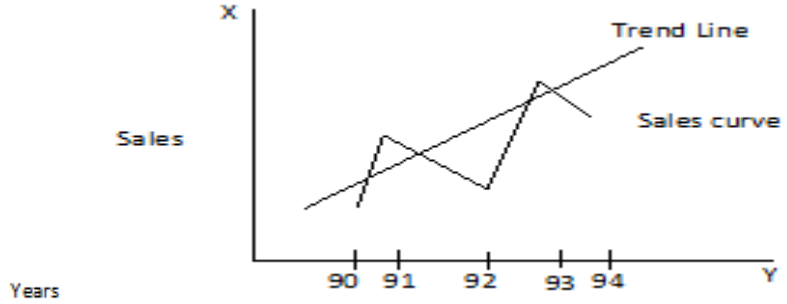
Deriving trend line




Trend projection method requires simple working knowledge of statistics, quite inexpensive and yields fairly reliable estimates of future course of demand…

While estimating future demand we assume that the past rate of change in the dependent variable will continue to remain the same in future also. Hence, the method yields result only for that period where we assume there are no changes. It does not explain the vital upturns and downturns in sales, thus not very useful in formulating business policies.

**B. Economic Indicators**

Economic indicators as a method of demand forecasting are developed recently. Under this method, a few economic indicators become the basis for forecasting the sales of a company**. An economic indicator indicates change in the magnitude of an economic variable. It gives the signal about the direction of change in an economic variable.** This helps in decision making process of a company. We can mention a few economic indicators in this context.

1. Construction contracts sanctioned for demand towards building materials like cement.

2. Personal income towards demand for consumer goods.

3. Agriculture income towards the demand for agricultural in puts, instruments, fertilizers, manure, etc,

4. Automobile registration towards demand for car spare parts, petrol etc.,

5. Personal Income, Consumer Price Index, Money supply etc., towards demand For consumption goods.

The above mentioned and other types of economic indicators are published by specialist organizations like the **Central Statistical Organization** etc. The analyst should establish relationship between the sale of the product and the economic indicators to project the correct sales and to measure as to what extent these indicators affect the sales. The job of establishing relationship is a highly difficult task. This is particularly so in case of new products where there are no past records.

**Under this method, demand forecasting involves the following steps: ¼br />**

a. The forecaster has to ensure whether a relationship exists between the demand for a product and certain specified economic indicators.

b. The forecaster has to establish the relationship through the method of least square and derive the regression equation. Assuming the relationship to be linear, the equation will be $y = a + bx$.

c. Once the regression equation is obtained by forecasting the value of x, economic indicator can be applied to forecast the values of Y. i.e. demand.

d. Past relationship between different factors may not be repeated. Therefore, the value judgment is required to forecast the value of future demand. In addition to it, many other new factors may also have to be taken into consideration.

When economic indicators are used to forecast the demand, a firm should know whether the forecasting is undertaken for a short period or long period. It should collect adequate and appropriate data and select the ideal method of demand forecasting. The next stage is to determine the most likely relationship between the dependent variables and finally interpret the results of the forecasting.

However it is difficult to find out an appropriate economic indicator. This method is not useful in forecasting demand for new products.

**Demand Forecasting For A New Product**

Demand forecasting for new products is quite different from that for established products. Here the firms will not have any past experience or past data for this purpose. An intensive study of

the economic and competitive characteristics of the product should be made to make efficient forecasts.

Professor Joel Dean, however, has suggested a few guidelines to make forecasting of demand for new products.

**a. Evolutionary approach**

The demand for the new product may be considered as an outgrowth of an existing product. For e.g., Demand for new Tata Indica, which is a modified version of Old Indica can most effectively be projected based on the sales of the old Indica, the demand for new Pulsor can be forecasted based on the sales of the old Pulsor. Thus when a new product is evolved from the old product, the demand conditions of the old product can be taken as a basis for forecasting the demand for the new product.

**b. Substitute approach**

If the new product developed serves as substitute for the existing product, the demand for the new product may be worked out on the basis of a 'market share'. The growths of demand for all the products have to be worked out on the basis of intelligent forecasts for independent variables that influence the demand for the substitutes. After that, a portion of the market can be sliced out for the new product. For e.g., A moped as a substitute for a scooter, a cell phone as a substitute for a land line. In some cases price plays an important role in shaping future demand for the product.

**c. Opinion Poll approach**

Under this approach the potential buyers are directly contacted, or through the use of samples of the new product and their responses are found out. These are finally blown up to forecast the demand for the new product**.**

**d. Sales experience approach**

Offer the new product for sale in a sample market; say supermarkets or big bazaars in big cities, which are also big marketing centers. The product may be offered for sale through one super market and the estimate of sales obtained may be 'blown up' to arrive at estimated demand for the product**.**

**e. Growth Curve approach**

According to this, the rate of growth and the ultimate level of demand for the new product are estimated on the basis of the pattern of growth of established products. For e.g., An Automobile Co., while introducing a new version of a car will study the level of demand for the existing car.

**f. Vicarious approach**

A firm will survey consumers' reactions to a new product indirectly through getting in touch with some specialized and informed dealers who have good knowledge about the market, about the different varieties of the product already available in the market, the consumers' preferences etc. This helps in making a more efficient estimation of future demand.

These methods are not mutually exclusive. The management can use a combination of several of them supplement and cross check each other.