

Economic Growth and Development

DEMAND FORECASTING

- Demand Forecasting is the activity of estimating the quantity of a product or service that consumers will purchase.
- Demand forecasting involves techniques including both informal methods, such as educated guesses, and quantitative methods, such as the use of historical sales data or current data from test markets.
- Demand forecasting may be used in making pricing decisions, in assessing future capacity requirements, or in making decisions on whether to enter a new market.

Necessity for forecasting demand

Stock effects:

- lack of availability.
- Demand is also untapped when sales for an item are decreased due to a poor display location, or because the desired sizes are no longer available.
- For example, when a consumer electronics retailer does not display a particular flat-screen TV, sales for that model are typically lower than the sales for models on display.
- And in fashion retailing, once the stock level of a particular sweater falls to the point where standard sizes are no longer available, sales of that item are diminished.

Market response effects

- The effect of market events that are within and beyond a retailer's control.

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- Demand for an item will likely rise if a competitor increases the price or if you promote the item in your weekly circular.
- The resulting sales increase reflects a change in demand as a result of consumers responding to stimuli that potentially drive additional sales.
- Regardless of the stimuli, these forces need to be factored into planning and managed within the demand forecast

LAW OF DIMINISHING MARGINAL UTILITY

A law of economics stating that as a person increases consumption of a product - while keeping consumption of other products constant [**Ceteris paribus** (meaning: other factors are constant)] - there is a decline in the marginal utility that person derives from consuming each additional unit of that product.

For example, say you go to a Hotel and the first plate of food you eat is very good. On a scale of ten you would give it a ten. Now your hunger has been somewhat tamed, but you get another full plate of food.

Since you're not as hungry, your enjoyment rates at a seven at best. Most people would stop before their utility drops even more, but say you go back to eat a third full plate of food and your utility drops even more to a three.

If you kept eating, you would eventually reach a point at which your eating makes you sick, providing dissatisfaction, or 'dis-utility'.

CONSUMER SURPLUS

An economic measure of consumer satisfaction, which is calculated by analyzing the difference between what consumers are willing to pay for a good or service relative to its market price.

A consumer surplus occurs when the consumer is willing to pay more for a given product than the current market price.

Consumers always like to feel like they are getting a good deal on the goods and services they buy and consumer surplus is simply an economic measure of this satisfaction.

SETTING A PRICE

- **Psychology of Pricing:**

Pricing can involve a complicated decision-making process on the part of the consumer, and there is plenty of research on the marketing and psychology of how consumers perceive price.

Pricing Methods

It is a mix of quantitative and qualitative factors. If you've created a brand new, unique product, you should be able to charge a premium price, but if you're entering a competitive industry, you'll have to keep the price in line with the going rate or perhaps even offer a discount to get customers to switch to your company.

- Cost-based pricing", is which calls for figuring out how much it will cost to produce one unit of an item and setting the price to that amount plus a predetermined profit margin. This approach is frowned upon since it allows competitors who can make the product for less than you to easily undercut you on price.
- "Price-based costing" encourages business owners to "start with the price that consumers are willing to pay (when they have competitive alternatives) and cut down costs to meet that price." That way if you encounter new competition, you can lower your price and still turn a profit.

MONOPOLIES, OLIGOPOLIES AND PERFECT COMPETITION

Market Structure and Perfect Competitive Firm

Market structure – identifies how a market is made up in terms of:

- The number of firms in the industry
- The nature of the product produced
- The degree of power each firm has
- The degree to which the firm can influence price
- Profit levels
- Firms' behaviour – pricing strategies, non-price competition, output levels
- The extent of barriers to entry
- The impact on efficiency

Types of Market

For any particular market, we ask

How many buyers and sellers are there in the market?

Is each seller offering a standardized product, more or less indistinguishable from that offered by other sellers?

Are there any barriers to entry or exit, or can outsiders easily enter and leave this market?

- Four basic types of market
 - **Perfect competition**
 - **Monopoly**
 - **Monopolistic competition**
 - **Oligopoly**

Market Structure

Perfect
Competition

Pure
Monopoly



The further right on the scale, the greater the degree of monopoly power exercised by the firm.

Part II. The Three Requirements of Perfect Competition

- Large numbers of buyers and sellers
- Each buys or sells only a tiny fraction of the total quantity in the market
- Sellers offer a standardized product
- Sellers can easily enter into or exit from market
- Significant barriers to entry and exit can completely change the environment in which trading takes place .

i. A Large Number of Buyers and Sellers

- In perfect competition, there must be many buyers and sellers
- How many?
- Number must be so large that no individual decision maker can significantly affect price of the product by changing quantity it buys or sells

ii. Selling Standardized Products

- Buyers do not perceive significant differences between products of one seller and another
- For instance, buyers of wheat do not prefer one farmer's wheat over another

iii. Easy Entry into and Exit from the Market

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- Easy Entry
- no significant barriers to discourage new entrants
- any firm wishing to enter can do business on the same terms as firms that are already there
- Easy exit

A firm suffering a long-run loss must be able to sell off its plant and equipment and leave the industry for good, without obstacles

In many markets there are significant barriers to entry

Legal barriers

Existing sellers have an important advantage that new entrants can not duplicate

Brand loyalty

Cost advantage of existing firms from significant economies of scale

Price Taker

- A firm in a perfectly competitive market is said to be a price taker because the price of the product is determined by market supply and demand, and the individual firm can do nothing to change that price.
- Both buyers and sellers are price takers.
- A *price taker* is a firm or individual who takes the market price as given.
- In most markets, households are price takers – they accept the price offered in stores.
- A retail store is not a price taker but a price maker.

The Necessary Conditions for Perfect Competition

- The number of firms is large.
- Large means that what one firm does has no bearing on what other firms do.

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- Any one firm's output is tiny when compared with the total market.
There are no barriers to entry.
- *Barriers to entry* are social, political, or economic impediments that prevent other firms from entering the market.
- Barriers sometimes take the form of patents granted to produce a certain good.
- Technology may prevent some firms from entering the market.
- Social forces such as bankers only lending to certain people may create barriers.

The firms' products are identical.

- This requirement means that each firm's output is indistinguishable from any competitor's product.

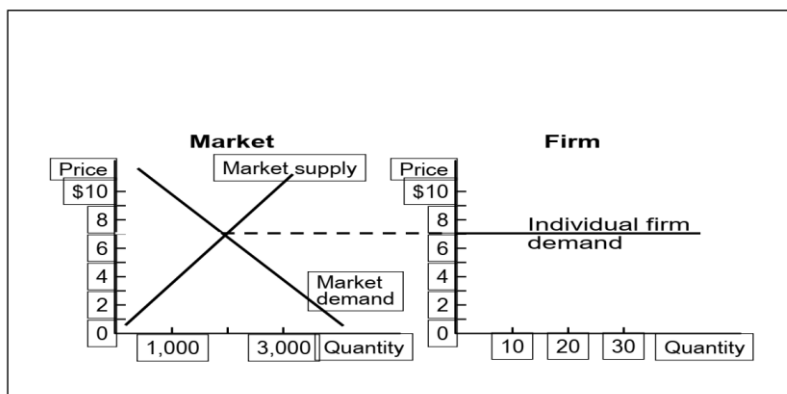
There is complete information.

- Firms and consumers know all there is to know about the market – prices, products, and available technology.
- Any technological breakthrough would be instantly known to all in the market.

A perfectly competitive firm's demand schedule is perfectly elastic even though the demand curve for the market is downward sloping.

The result is that the individual firm perceives the demand curve for its product as being perfectly horizontal

Market Demand versus Individual Firm Demand Curve



MONOPOLY

Pure monopoly – where only one producer exists in the industry

In reality, rarely exists – always some form of substitute available!

Monopoly exists therefore where one firm dominates the market

Firms may be investigated for examples of monopoly power when market share exceeds 25%

Monopoly

Monopoly power – refers to cases where firms influence the market in some way through their behaviour – determined by the degree of concentration in the industry

- Influencing prices
- Influencing output
- straight barriers to entry

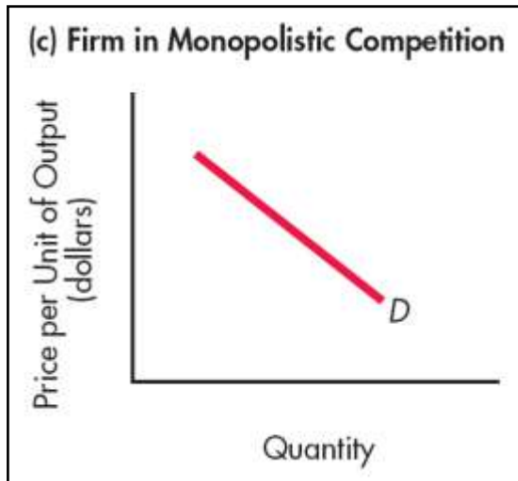
Origins of monopoly:

Natural monopoly – usually on a network or grid... wasteful to duplicate!

Geographical factors – where a country or climate is the only source of supply of a raw material...quite rare. However, consider a single grocery store in a isolated village...

- Government created monopolies – now sold off!
- Through growth of the firm
- Through amalgamation, merger or takeover
- Through acquiring patent or license
- Through legal means – Royal charter, nationalisation, wholly owned plc

Monopolistic Competition



Monopolistic Competition is characterized by:

- A large number of firms
- Easy entry
- Differentiated products, because each firm's product is slightly different, each firm is kind of a mini-monopoly—the only

producer of that specific product.

- This allows the firm to be a price maker.

The firm's demand curve is downward sloping and depending on the differentiation of the firm's product, it may be fairly inelastic.

Oligopoly

Oligopoly is a market structure in which there are a few interdependent firms.

There are often significant barriers to entry.

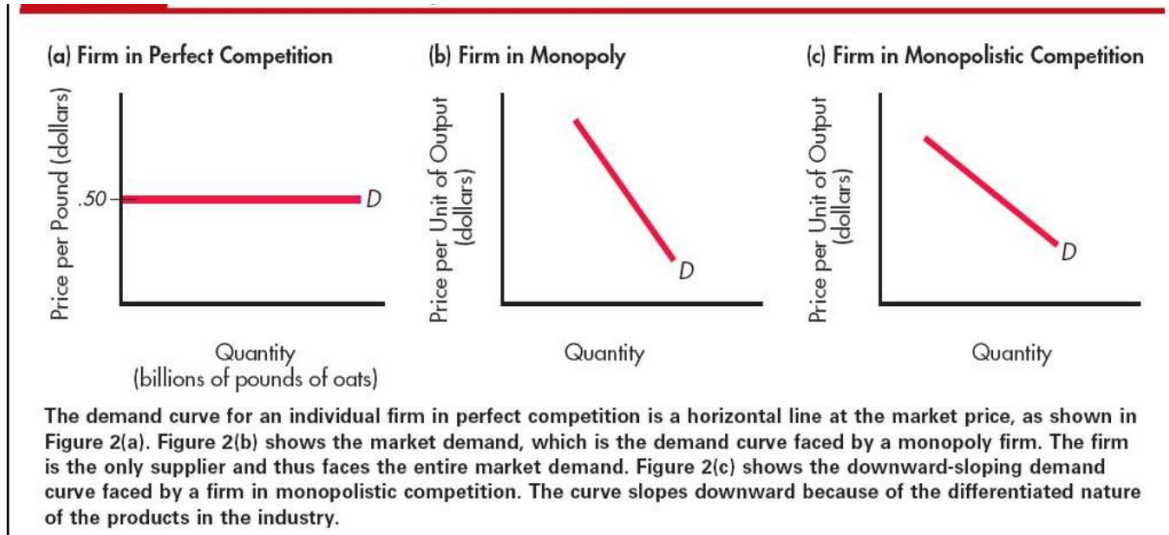
Oligopoly is characterized by:

- Few firms—more than one, but few enough so each firm alone can affect the market.
- Entry is more difficult, but can occur.
- The firms are interdependent—each is affected by what others do.

The demand curve is downward sloping for each firm.

Demand for Various Markets

Competition among Consumers



Monopsony

A market structure in which there is a single buyer (e.g., rural area granary)

Oligopsony

A market structure in which there are only a few buyers (e.g., tobacco market)

Monopsonistic competition

A market structure in which there are many buyers offering differentiated conditions to sellers (e.g., toy manufacturers)

DEMAND FORECASTING

NEED FOR DEMAND FORECASTING

Business managers, depending upon their functional area, need various forecasts. They need to forecast demand, supply, price, profit, costs, investment, and what have you. In this unit, we are concerned with only demand forecasting. The reason is, the concepts and techniques of demand forecasting discussed here can be applied anywhere.

The question may arise:

Why have we chosen demand forecasting as a model?

What is the use of demand forecasting?

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The significance of demand or sales forecasting in the context of business policy decisions can hardly be overemphasized. Sales constitute the primary source of revenue for the corporate unit and reduction for sales gives rise to most of the costs incurred by the firm.

Thus sales forecasts are needed for **production planning, inventory planning, and profit planning and so on**. Production itself requires the support of men, materials, machines, money and finance, which will have to be arranged.

Thus, **manpower planning, replacement or new investment planning, working capital management and financial planning—all depend on sales forecasts**.

Thus demand forecasting is crucial for corporate planning. The survival and growth of a corporate unit has to be planned, and for this sales forecasting is the most crucial activity.

There is no choice between forecasting and no-forecasting. The choice exists only with regard to concepts and techniques of forecasting that we employ. It must be noted that the purpose of forecasting in general is not to provide an exact future data with perfect precision, the purpose is just to bring out the range of possibilities concerning the future under a given set of assumptions.

In other words, it is not the 'actual future' but the 'likely future' that we build up through forecasts. Such **forecasts do not eliminate, but only help you to reduce the degree of risk and uncertainties of the future**. Forecasting is a step towards that kind of 'gursstimation'; it is some sort of an approximation to reality. If the likely state comes close to the actual state, it means that the forecast is dependable.

A sales forecast is meant to guide business policy decision. Without forecasting, forward planning by a corporate unit will be directionless.

STEPS IN DEMAND FORECASTING

Demand or sales forecasting is a scientific exercise. It has to go through a number of steps. At each step, you have to make critical considerations. Such considerations are categorically listed below:

1) Nature of forecast:

To begin with, you should be clear about the uses of forecast data- how it is related to forward planning and corporate planning by the firm. Depending upon its use, you have to choose the type of forecasts: short-run or long-run, active or passive, conditional or non-conditional etc.

2) Nature of product:

The next important consideration is the nature of product for which you are attempting a demand forecast. You have to examine carefully whether the product is consumer goods or producer goods, perishable or durable, final or intermediate demand, new demand or replacement demand type etc. A couple of examples may illustrate the importance of this factor. The demand for intermediate goods like basic chemicals is derived from the final demand for finished goods like detergents. While forecasting the demand for basic chemicals, it becomes essential to analyse the nature of demand for detergents. Promoting sales through advertising or price competition is much less important in the case of intermediate goods compared to final goods. The elasticity of demand for intermediate goods depends on their relative importance in the price of the final product.

Time factor is a crucial determinant in demand forecasting. Perishable commodities such as fresh vegetables and fruits can be sold over a limited period of time. Here skilful demand forecasting is needed to avoid waste. If

there are storage facilities, then buyers can adjust their demand according to availability, price and income. The time taken for such adjustment varies from product to product. Goods of daily necessities that are bought more frequently will lead to quicker adjustments. Whereas in case of expensive equipment which is worn out and replaced after a long period of time, adaptation of demand will be spread over a longer duration of time.

3) Determinants of demand:

Once you have identified the nature of product for which you are to build a forecast, your next task is to locate clearly the determinants of demand for the product. Depending on the nature of product and nature of forecasts, different determinants will assume different degree of importance in different demand functions. In the preceding unit, you have been exposed to a number of price-income factors or determinants-own price, related price, own income-disposable and discretionary, related income, advertisement, price expectation etc. In addition, it is important to consider socio-psychological determinants, specially demographic, sociological and psychological factors affecting demand. Without considering these factors, long-run demand forecasting is not possible.

Such factors are particularly important for long-run active forecasts. The size of population, the age-composition, the location of household unit, the sex-composition-all these exercise influence on demand in varying degrees. If more babies are born, more will be the demand for toys; if more youngsters marry, more will be the demand for furniture; if more old people survive, more will be the demand for sticks. In the same way buyers' psychology-his need,

social status, ego, demonstration effect etc. –also effect demand. While forecasting, you cannot neglect these factors.

4) Analysis of factors & determinants:

Identifying the determinants alone would not do, their analysis is also important for demand forecasting. In an analysis of statistical demand function, it is customary to classify the explanatory factors into (a) **trend factors**, which affect demand over long-run, (b) **cyclical factors** whose effects on demand are periodic in nature, (c) **seasonal factors**, which are a little more certain compared to cyclical factors, because there is some regularity with regard to their occurrence, and (d) **random factors** which create disturbance because they are erratic in nature; their operation and effects are not very orderly.

An analysis of factors is specially important depending upon whether it is the aggregate demand in the economy or the industry's demand or the company's demand or the consumers; demand which is being predicted. Also, for a long-run demand forecast, trend factors are important; but for a short-run demand forecast, cyclical and seasonal factors are important.

5) Choice of techniques:

This is a very important step. You have to choose a particular technique from among various techniques of demand forecasting. Subsequently, you will be exposed to all such techniques, statistical or otherwise. You will find that different techniques may be appropriate for forecasting demand for different products depending upon their nature. In some cases, it may be possible to use more than one technique. However, the choice of technique has to be logical and appropriate; for it is a very critical choice. Much of the accuracy and

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relevance of the forecast data depends accuracy required, reference period of the forecast, complexity of the relationship postulated in the demand function, available time for forecasting exercise, size of cost budget for the forecast etc.

6) Testing accuracy:

This is the final step in demand forecasting. There are various methods for testing statistical accuracy in a given forecast. Some of them are simple and inexpensive, others quite complex and difficult. This stating is needed to avoid/reduce the margin of error and thereby improve its validity for practical decision-making purpose. Subsequently you will be exposed briefly to some of these methods and their uses.

REFERENCES

1. Arkieva business blog - <https://blog.arkieva.com/demand-forecasting/>
2. Demand forecasting Wikipedia - https://en.wikipedia.org/wiki/Demand_forecasting