

# Managerial Economics- Demand and Supply

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**Abstract:** In this article, the author explores in a short communication the concepts of demand and supply in relationship to the price mechanism as well as the need for Keynesian market intervention. He further explores the philosophical underpinnings of the idea of the welfare state with regard to merit goods and general wellbeing of citizens.

**Keywords:** eleemosynary economics, revealed preference, elasticity, opportunity cost, demand, supply, scarcity, choice, human behaviour, wants needs, price mechanism, equilibrium, Pareto optimality, welfare economics, buffer stock, price floor

## I. INTRODUCTION

The word Economics is derived from the two Greek words **TOEIKOS** and **NEMOS** which mean *house management*. From that basic definition of household management in the microcosm, the definition has expanded to mean the management of the scarce resources of firms, corporations, entities, and nations. Economics is said to be hinged on the study of scarcity and choice. Lionel Robbins once said that Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternate uses.

This definition is loaded as Economics is said to be a science about human behaviour which is hard to predict because human beings are said to be capricious, volatile, mercurial, kaleidoscopic and unpredictable in their behaviour. Science is any organised body of knowledge which is logical, internally and externally consistent and has predictive ability and explanatory powers to explain phenomena through simplified models.

Ends in Economics refer to human wants and needs though wants are luxuries and needs are necessities of life. Human needs are unlimited relative to the means for satisfying them so the issue of choice arises by having a scale of preference which is a list of our immediate needs ordered according to rank order of importance. Once a choice is made, some other alternate choice has to be sacrificed or foregone.

The foregone alternative is known as the real cost or opportunity cost. This is different from the money or nominal cost of the item chosen. The real cost or opportunity cost refers to the real alternative choice foregone. Let us say Maria has 10 dollars which can buy either a novel or a meal but not both and Maria chooses to eat a meal; then she cannot afford to have the novel. The opportunity or real cost of the meal she chose to have is the novel she gave up for the meal. This choice and scarcity issue confronts every economic entity, be they individuals, firms, nations, MNCs and Conglomerates.

## II. MEANING OF DEMAND

In Economics, demand is revealed preference of our needs given an array of prices for a given commodity. Hayes (n.d.) stated that demand is how much quantity of a product or service that consumers or buyers are willing and able to buy at a given price at a given time. In Economics, demand means effective demand or demand backed by ability to purchase and not a mere desire or wish.

The demand schedule shows the relationship between price and quantity demanded which is inverse or a negative relationship expressed by the equation:

$$Q_D = a - bP \text{ where}$$

$Q_D$  is quantity demanded,

$a$  is the intercept or constant,

$b$  is the slope or propensity to demand,

$P$  is price

The market demand schedule is a horizontal summation of all individual schedules and the law of demand holds true for both individuals and the market demand schedules as both schedules when plotted with price on the Y- axis and quantity on the X-axis, show inverse or negative or indirect relationship between price and quantity demanded.

The law of demand states that *ceteris paribus* (all things being equal), the lower the price the greater the quantity demanded and the higher the price, the lower the quantity demanded because when the price rises, consumers' opportunity cost is greater as their utility area falls affecting their welfare. Note that a change in own price of a good brings about a movement along the same demand curve called a change in quantity demanded. On the other hand, a whole bodily shift of the entire demand curve either outwards to the right or inward to the left is called a shift in demand and are caused by factors other than own price change.

The abnormal demand curve which behaves like a supply curve is caused by speculation or fear of future rise in price (inflation), lack of consumer knowledge and belief that higher price connotes superior quality, effect of adverts, Veblen effect or snob appeal or conspicuous consumption, keeping up with the Joneses or being on the band wagon, and consumer ignorance, among other factors.

## III. MEANING OF SUPPLY

Supply in Economics means the quantity of goods and services that suppliers and producers are willing and able to

supply to the market at a given price in time. Suppliers are profit and revenue maximizers as the higher the price offered, the higher the quantity supplied. When prices rise, producer surplus increases while consumer surplus reduces. It is a zero sum game between suppliers and consumers.

The supply schedule produces a curve or graph which is upward sloping from left to right, meaning that there is a positive and direct relationship between price and quantity supplied.  $Q_s = a + bP$

where  $Q_s$  represents quantity supplied,

$a$  is a constant or intercept on the Y-axis,

$b$  represents propensity to supply, and  $P$  represents price.

A change in quantity supplied reflects a movement along the same supply curve actuated by a change in own price. For example, when the price of fuel goes up, all things being equal, producers will have the incentive to produce and supply more to sell. Unfortunately, the oil market is not a good example of an efficient and perfect market as it is an oligopolistic market controlled by cartels and syndicates such as OPEC (Organisation of Petroleum Exporting Countries with headquarters in Vienna, Austria).

However, the law of supply holds true for many goods and services. It is however, important to note that both the laws of demand and supply should take cognizance of the effects of elasticities of demand and supply as in extreme scenarios of perfectly elastic and perfectly inelastic demand and supply, the laws are ineffectual.

However, for a commodity such as wheat, producers will produce more wheat to sell if the price goes up and vice versa. However, for supply, response cannot be immediate as it takes time to organise the farm inputs such as land, labour, capital, seedlings, fertilizers, and machinery, among others. Supply is therefore inelastic in the short run and fairly elastic in the long-run. However, the market or medium term supply curve has an elasticity of 1(one) or unity so far as it passes through the origin of the Cartesian plane.

#### *Key Non-Price Factors that Influence Demand and Supply*

Non-price factors which affect demand and supply are legion. However, the main variables are according to the PESTEL model political, economic, social, technological, ethical, environmental and legal. Demand for goods are affected by taste, fashion, adverts, size of family, educational attainment, lifestyle, social class, geographical location, marital status, culture, religion, ethnicity, propensity to save, conspicuous consumption, weather and seasons, availability of substitutes, prices of related goods, government policy such as taxes and subsidies, embargoes and sanctions, disposable income or net pay, previous wealth, and previous consumption levels, among other variables.

There are many theories on consumption which explain both the price and non-price factors of demand such as Keynes

Absolute Income Hypothesis, Permanent Income Hypothesis, Relative Income Hypothesis of Arthur Duesenberry, Milton Friedman, Andri Modigliani (Life Cycle Hypothesis), and Tobin & Smithies consumption theory. All these theories posit that demand or consumption is influenced and affected by past, current, and expected income levels, habits, expectations, and non-income factors.

Apart from own price of the good, supply is influenced greatly by time horizon, weather patterns, prices of producer inputs, the level of technology available, number of producers or suppliers of the good, supply-chain bottlenecks in distribution, market structure with regard to information asymmetry, market transactions cost, number of intermediaries, incomplete contracts, market structure according to Herfindahl Index (measured between zero (0) for perfect market, and ten thousand (10,000) for imperfect market.

#### *Focus on Price while Holding other Factors Constant*

Marginal analysis in economics is a mathematical method in calculus which examines small changes at the margin using the techniques of calculus. Other factors are held constant with the proviso that other things being equal (*ceteris paribus*), to first reflect the omnipotence of price as a deciding factor in the market, and also to show the power of money over human affairs.

The word 'money' is derived from the name of the Greek goddess, Hera Monetera. Discriminant analysis in statistics shows that about ninety per cent of market decisions are price-related. Price is both cardinal to the consumer who wants to maximize utility or satisfaction on the one hand, and the producer who wants to maximise profit on the other hand (utilitarianism of Jeremy Bentham and John Stuart Mills recommended the *pro bono publico* or the greatest good to the greatest number of people (*somumbonum*) and Pareto optimality recommends a decision as being Pareto efficient if a change will make at least one person better off and none worse off)

The free market economy or capitalism or the price mechanism is the only production and distribution organisation or arrangement that meets the criteria of a perfect and efficient market. Thus price is paramount as a means of signalling, allocation, rationing, and bringing about distributive justice (functions of the price mechanism). However, in the real world, perfect market as an ideal is constrained in its attainment by missing markets for public and merit/demerit goods, existence of monopolies, information asymmetry, existence of externalities, non-existence or extension of property rights, and undue government interventions.

#### *Comparison between Comparative Statics Analysis and Sensitivity Analysis*

According to Watkins (n.d) comparative analysis in Microeconomics deals with examining a change brought about by a change in the endogenous variables as a result of

exogenous variables to the model undergoing changes. Thus it deals with how one market equilibrium position changes to another equilibrium when some exogenous variable such as price changes. Thus Comparative static Analysis is, on the one hand, theoretical and not dynamic.

On the other hand, Sensitivity Analysis according to Investopedia.com (online) is a simulation whereby in a model, effects of changes in independent variables are examined in relationship to their impact on the dependent variable outcome. For example, a model can examine the impact of changes in interest rates on sales volume, given a set of assumptions. It is a what-if simulation analysis of cause and effect. This can be statistically inferred from multiple regression analysis or factor analysis, correlation and other significance testing techniques using statistical methods. No matter what, models are not hundred per cent self-explanatory as there are unexplained and residual factors to account for.

#### *Rationing Function of Price*

Price has the function of rationing goods among those who demand them, including derived demand for factor inputs and for consumer goods. Human beings have unlimited wants as against limited means. Price set by the interaction of market forces of demand and supply enable those who are willing and able to pay for goods to get them at an affordable price. If goods were not priced or were to have zero price then there would not be enough of them to go round everyone who desired or wished to have them for free.

Thus price acts as a rationing mechanism or device to make goods available to only those who have the means to effectively demand for them at the prevailing market price. The social, moral, and ethical question to pose at this juncture is: What happens to those who cannot fulfil their needs due to their inability to pay for goods? These people are priced out of the market and therefore they become social misfits and desperadoes who may benefit from government largesse in a welfare state where subsidies are given to support the poor.

This is where the Welfare State and the Mixed Economies step in to fill the vacuum. Advocates of the Free Market do not play God nor do they succumb to the ideal of being their brother's keeper. The Good News Bible (2007) in Leviticus 23: 22 states,

*When you harvest your fields, do not cut the corn at the edges of the fields, and do not go back to cut the ears of corn that were left; leave them for poor people and foreigners. The Lord is your God*

(Leviticus 23:22)

Advocates of the free market philosophy will advise non-support for destitutes or destitute people as such people are deemed lazy and undesirable in the free market system.

This is in contradiction to the biblical injunction quoted above from Leviticus admonishing the creation of pro-poor space by not clearing the whole field during the harvest but leaving the crops at the margins for the sake of the poor destitutes and hungry passers-by who may be strangers.

However, moral philosophy teaches that not providing for the needs of such needy people may spur economic, social, and political instabilities, hence the need for introducing interventions such as resort to either eleemosynary economics or the welfare state.

At the equilibrium or market clearing price, quantity demanded equals quantity supplied and buyers and sellers are all satisfied. This economic equilibrium may be unrealistic or illusive as there is also need for achieving an all-inclusive global social and political equilibrium in all spheres and sectors, whereby Economic Equilibrium = Social Equilibrium = Political Equilibrium.

i.e.  $EE = SE = PE$ . (ESP Equilibrium)

#### *Guiding or Allocative Function of Price*

In a market economy, price helps to allocate productive resources to their best optimum or efficient use. The price mechanism helps factors of production to be put to their optimum use based upon Adam Smith's Invisible Hand of market forces. Factors of production have derived demand as their demand is dependent on the demand for the finished goods they help to produce.

For example, Mr Danny has a four bedroom house which can be used as a Lodge, a School, or a Restaurant. Mr Danny will weigh all three options and settle for the user who will be able to meet his rent bill. If Mr Danny succeeds in his venture by renting out to a restaurateur, then other landlords and landladies in the area may also follow suit.

#### *Short-run and Long-run Perspectives of Producers and Consumers- Signalling*

There is an expensive joke in Economics that in the long run we are all dead. The short run in Economics is such a short time that certain conditions cannot be varied. For example, when the price of tomatoes shoot up suddenly, tomato growers cannot immediately react or respond quickly to the demand for more tomatoes. They need time to organise resources before increasing acreage under tomato. Price in this instance becomes a signalling factor to tomato producers to alert them to put more effort in growing tomatoes.

However, there is the phenomenon of the Hog Cycle or abnormal Cobweb Theorem in Economics whereby in the next growing cycle, farmers may overshoot supply and there will be a market glut or surfeit or over-supply. To even out such abnormal spurts, there could be government policy of farm subsidies and Buffer Stock schemes to buy up over-supplied stock. However, this is market intervention and not sustainable in the long-run as shown by the Butter Mountains and Wine Lakes in the EU in the 70s due to the Common

Agriculture Policy (CAP) then. That led to price ceilings, price floors or maximum and minimum price controls.

#### IV. CONCLUSION

Demand and supply are at the core of Economics therefore an understanding of them enhances the study of the intricate nature of Economics as a Discipline for study. The writer concludes that despite economic equilibrium of demand equalling supply, the underlying socio-political implications of such sub-optimal and artificial economic equilibrium should not lead to complacency as in the long run, such economic equilibrium may not be sustainable, in view of the frequent bubble bursts, economic recessions and depressions, financial crunches, and market failures. The Efficient Market Hypothesis needs redefining and revisiting.

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