

UNIT 2

Demand Analysis

Demand analysis, within the theory of consumer behavior, explores how consumers make choices about what to buy, influenced by factors like utility, prices, and income. Marginal utility analysis and indifference curve analysis are two key approaches to understanding this behavior.

Key Concepts:

Theory of Consumer Behavior:

This theory aims to explain how consumers make choices to maximize their satisfaction (utility) given their limited resources (income).

Marginal Utility Analysis (MUA):

This approach, developed by Alfred Marshall, focuses on the additional satisfaction a consumer gets from consuming one more unit of a good or service.

- **Law of Diminishing Marginal Utility:** As a consumer consumes more of a good, the additional satisfaction they get from each extra unit decreases.
- **Law of Equi-marginal Utility:** Consumers allocate their spending across different goods to maximize their overall satisfaction, where the marginal utility per dollar spent is equal for all goods.

Indifference Curve Analysis:

This approach, developed by J.R. Hicks and R.G.D. Allen, uses indifference curves to represent consumer preferences.

- **Indifference Curve:** A curve that shows all combinations of two goods that provide a consumer with the same level of satisfaction.

Marginal Rate of Substitution (MRS): The rate at which a consumer is willing to trade one good for another while maintaining the same level of satisfaction, represented by the slope of the indifference curve.

- **Assumptions:** Indifference curve analysis relies on assumptions like rationality (consumers make consistent choices) and the ability to rank preferences.

Demand Curve:

A graphical representation of the relationship between the price of a good and the quantity

demanded by consumers.

- **Consumer Surplus:**

The difference between what a consumer is willing to pay for a good and what they actually pay.

How these concepts relate to demand:

- Understanding consumer preferences (using MUA and indifference curves) helps economists predict how changes in prices or income will affect the quantity of goods consumers demand.
- Firms can use this knowledge to make decisions about pricing and production.
- For example, if a good is inelastic (demand doesn't change much with price changes), a firm might be able to raise prices without losing many customers.

1. Meaning of Demand:

- Demand is not just a desire for a product, but a desire backed by the ability and willingness to pay for it.
- It's a combination of consumer's needs, wants, and their financial capacity to purchase those needs and wants.
- It's a dynamic concept, changing with price fluctuations and other influencing factors.

2. Law of Demand:

- This law describes the inverse relationship between price and quantity demanded.
- When the price of a good rises, consumers tend to buy less of it, and when the price falls, they tend to buy more.
- This relationship is often depicted using a demand curve, which slopes downward.

3. Types of Demand:

- **Individual Demand:** The demand of a single consumer for a specific product.
- **Market Demand:** The total demand for a product by all consumers in a market.
- **Derived Demand:** The demand for a product that arises from the demand for another product (e.g., demand for steel is derived from the demand for cars).

- **Joint Demand:** When two or more goods are demanded together (e.g., cars and petrol).
- **Composite Demand:** When a good is demanded for multiple uses (e.g., electricity).
- **Direct Demand:** Demand for goods that satisfy consumer wants directly.

4. Determinants of Demand (Factors Affecting Demand):

- **Price:** The most direct influence on quantity demanded.
- **Consumer Income:** Higher income generally leads to increased demand for normal goods.
- **Tastes and Preferences:** Changes in consumer preferences can shift the demand curve.
- **Price of Related Goods:**
 - **Substitutes:** If the price of a substitute good increases, demand for the original good may increase (e.g., if the price of coffee increases, demand for tea may increase).
 - **Complements:** If the price of a complementary good increases, demand for the original good may decrease (e.g., if the price of printers increases, demand for ink cartridges may decrease).
- **Consumer Expectations:** Anticipated future price changes can affect current demand.
- **Population:** Changes in population size and demographics can influence overall demand.

5. Elasticity of Demand:

- Measures the responsiveness of quantity demanded to changes in price or other factors.
- **Price Elasticity of Demand:** Measures how much quantity demanded changes in response to a price change.
- **Income Elasticity of Demand:** Measures how much quantity demanded changes in response to a change in consumer income.
- **Cross Elasticity of Demand:** Measures how much quantity demanded of one good changes in response to a price change of another good.

6. Demand Forecasting:

- The process of predicting future demand for a product or service.
- Methods include statistical analysis, market surveys, expert opinions, and econometric models.
- Accurate demand forecasting is crucial for businesses to manage inventory, production, and pricing strategies.

What is demand?

- Demand simply means a consumer's desire to buy goods and services without any hesitation and pay the price for it. In simple words, demand is the number of goods that the customers are ready and willing to buy at several prices during a given time frame. Preferences and choices are the basics of demand, and can be described in terms of the cost, benefits, profit, and other variables.
- The amount of goods that the customers pick, modestly relies on the cost of the commodity, the cost of other commodities, the customer's earnings, and his or her tastes and proclivity. The amount of a commodity that a customer is ready to purchase, is able to manage and afford at provided prices of goods, and customer's tastes and preferences are known as demand for the commodity.

Determinants of Demand

There are many determinants of demand, but the top five determinants of demand are as follows:

Product cost: Demand of the product changes as per the change in the price of the commodity. People deciding to buy a product remain constant only if all the factors related to it remain unchanged.

The income of the consumers: When the income increases, the number of goods demanded also increases. Likewise, if the income decreases, the demand also decreases.

Costs of related goods and services: For a complimentary product, an increase in the cost of one commodity will decrease the demand for a complimentary product. Example: An increase in the rate of bread will decrease the demand for butter. Similarly, an increase in the rate of one commodity will generate the demand for a substitute product to increase. Example: Increase in the cost of tea will raise the demand for coffee and therefore, decrease the demand for tea.

Consumer expectation: High expectation of income or expectation in the increase in price of a good also leads to an increase in demand. Similarly, low expectation of income or low pricing of goods will decrease the demand.

Buyers in the market: If the number of buyers for a commodity are more or less, then there will be a shift in demand.

You may also want to know: *What are the Shifts in the Demand Curve?*

Types of Demand

Few important different types of demand are as follows:

1. **Price demand:** It refers to various types of quantities of goods or services that a customer will buy at a quoted price and given time, considering the other things remain constant.
2. **Income demand:** It refers to various types of quantities of goods or services that a customer will buy at different stages of income, considering the other things remain constant.
3. **Cross demand:** This means that the product's demand does not depend on its own cost but depends on the cost of the other related commodities.
4. **Direct demand:** When goods or services satisfy an individual's wants directly, it is known as direct demand.
5. **Derived demand or Indirect demand:** The goods or services demanded or needed for manufacturing the goods and satisfying the consumer indirectly is known as derived demand.
6. **Joint demand:** To produce a product there are many things that are related to each other, for example, to produce bread, we need services like an oven, fuel, flour mill, and more. So, the demand for other additional things to produce a product is known as joint demand.
7. **Composite demand:** A composite demand can be described when goods and services are utilised for more than one cause. Example: Coal

How to derive an Individual's Demand Curve from the Indifference Curve Analysis?

A demand curve depicts how much quantity of a commodity will be bought or demanded at various costs, presuming that the proclivity and tastes of a customer's income and costs of all goods remain the same (constant).

The demand curve that depicts a clear association between the cost and quantity demanded can be obtained from the price utilisation curve of the indifference curve analysis.

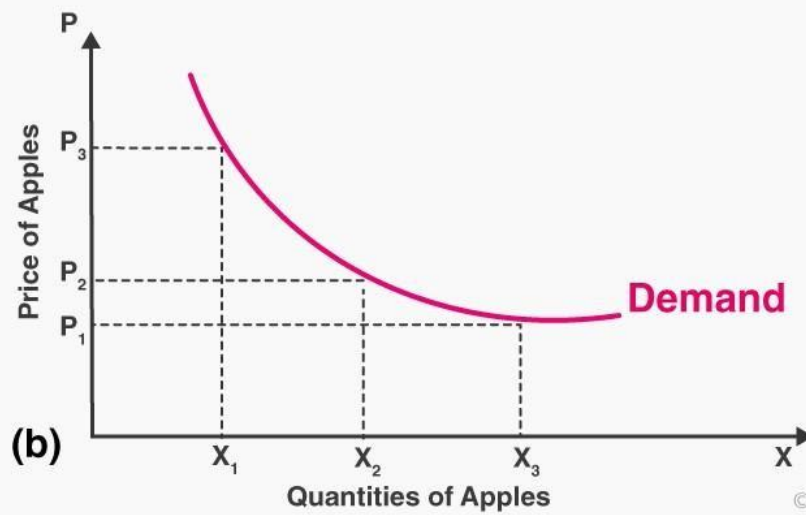
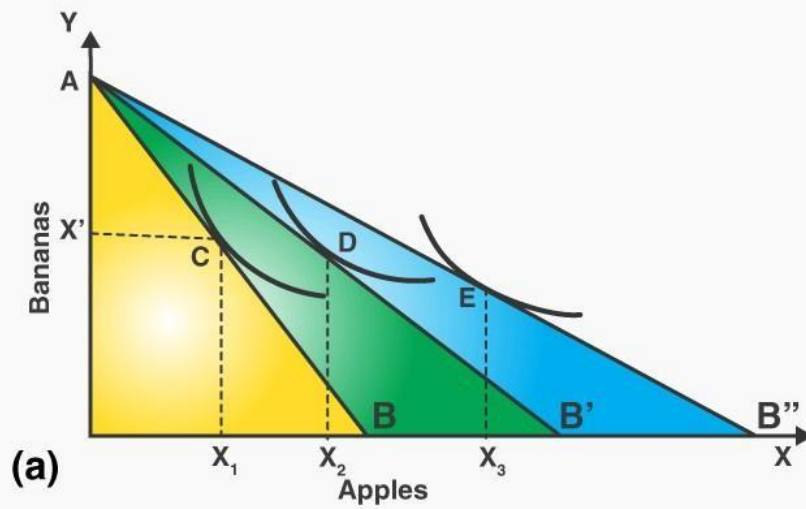
According to the Marshallian utility analysis, the demand curve was derived on the presumption that utility was cardinally quantifiable and the marginal utility of money lasted constantly with the difference in price of the commodity. In the indifference curve analysis, the demand curve is derived without making these uncertain presuppositions.

Do you know the law of demand?

Suppose a person is consuming apples (X_1) and bananas (X_2), and that person's income is N and the market prices of X_1 and X_2 are P'_1 and P'_2 respectively.

Figure (a) portrays their consumption equilibrium at point C, where they buy the X'_1 and X'_2 quantities of apples and bananas, respectively. In console (b) of the figure, we plot P'_1 against X'_1 , which is the first point on the demand curve for X_1 .

DERIVING A DEMAND CURVE



Theory of Consumer Behaviour

1. Utility – The meaning of utility in economics is a subjective preference for one out of several possible outcomes that satisfy certain expected outcomes. The term is used to refer to the adequacy, functionality, or usefulness of an outcome.

Utility means a good or service that is useful to consumers. Utilities are part of what one wants in a commodity. Consumers seek utilities when purchasing goods. The more utility they get, the more likely they are to buy something.

The utility is the usefulness of something. For example, when one uses a chair, it provides them with comfort and convenience, and becomes more useful to them as time goes on. The primary utility of money is to buy goods and services.

2. Cardinal Utility Analysis – Cardinal utility analysis is the study of how people value goods and services, particularly from a subjective perspective. This can include both microeconomic cultures like that of a household or a market, as well as macroeconomic factors like income distribution.

Cardinal utility is a concept of economics that describes the way people calculate the attributes of things by comparing them with others. It uses ordinal scales in making comparisons; for example, it could be used to demonstrate that preferred pizza toppings are more important than colour preference.

The cardinal utility theory is a theory in economics that describes individuals' preferences as utilities. It is based on the idea that individuals choose between goods and services based on the ratio of their respective costs to their desired utilities. The greater the relative difference between the two, the higher the individual's preference for each good or service by comparison.

It was the beginning of an era where economists began analysing how goods and services were supplied in a marketplace.

3. Total Utility – The meaning of total utility in economics is the sum of all individual values for each commodity. Together, these commodities can be exchanged for other goods that are not produced by the same production function and still produce the same total utility. Their utility can then value the work done by their employees to meet the needs of employees, and this sum will represent the value of their work.

The meaning of total utility is the sum of individual utilities expressed as a ratio between two ratios. The two ratios are called marginal utilities, which in this case are measures of the size, quality or intensity of goods or services. The higher the marginal utility (the more intense or important to one something becomes), the lower the rate of consumption (because one is

prepared to forego with part for a greater share of something).

Total utility is the total evaluation of all positive and negative effects of a decision-making situation. This analysis is used in economics to determine the best course of action. The total utility of a product is the sum of individual utilities. The higher the total utility, the greater the satisfaction achieved by consuming that product.

4. Marginal Utility – Marginal utility is the change in the satisfaction of a consumer when the price of a particular good changes. It does not refer to money, even though economists use the term ‘marginal utility’ to make it easier for people to understand.

Marginal utility is the change in utility caused by a change in one unit of money. Marginal utility is a concept used in economics to describe the degree to which the addition of one or more units of an item increases or decreases the value of that item relative to all other items. For example, if a baguette costs Rupees 200, having an additional baguette worth Rupees 250 extra has no marginal utility because it doesn’t make any difference. On the other hand, if a person has only one baguette, and decides to buy another at Rupees 150, then the marginal utility becomes apparent; the consumer now has two for Rupees 200 total, which might be better value for money!

This concept defines how consumers react to changes in utility. Marginal utility is important for understanding why consumers do what they do when making decisions, and how different products can affect this relationship.

5. Law of Diminishing Marginal Utility – The law of diminishing marginal utility states that the additional satisfaction or utility gained from consuming an additional unit of a good is less than the additional satisfaction or utility lost from consuming another unit of the same good. This means that if one consumer is on a consumption ladder, in preference order, the consumer wants to consume the highest valued unit first. In this case, each additional unit would be more valuable than the preceding one but not nearly as valuable as another following unit.

The law of diminishing marginal utility is a theory that is a mechanism used by consumers to assign prices to goods. It states that, in essence, consumers do not value the second unit of a good at the same level as they would the first unit.

The law of diminishing marginal utility states that with each additional unit of something, the value (or utility) decreases. This means that the shopper will not always want to purchase the last piece of a cake they have bought, and that they will once again be happy with the previous or first cake they purchased. The function of this statement is to indicate that a consumer’s satisfaction decreases as they consume more.

The law of diminishing marginal utility states that an individual's satisfaction from one unit of a commodity decreases as additional units of the same commodity is purchased.

For example, suppose one finds themselves stranded in a forest with only three matches. The stranded person lights one match, which immediately gives them enough light for them to see where they are going without the risk of causing a fire. Next, the stranded person lights two more matches and uses them both as well. The first two matches gave them adequate light to see where they were heading; they didn't have to waste time looking around or crouching down, and so forth, because there was no danger that could have emerged from the darkness.

However, once there are 3 matches, it gets tricky since they don't last quite as long since there is much more lighting required now than before if only 3 matches were used at once. Due to diminishing marginal utility (diminishing returns), in order to get any additional uses out of each match after this point, it would take 5 more matches than what would be necessary in order to get just enough light for 5 more steps towards safety after being afraid to make a mistake because there wasn't enough light for movement

6. Law of Demand – Law of demand is a general principle of economics that states the total quantity demanded at each price depends on the prices actually charged, the income of consumers, and their tastes. The law states that when all other things remain unchanged, a change in the price or income will result in a proportional change in the quantity demanded.

The law of demand is an economic law that explains the relationship between prices, quantity demanded, and income. The law states that when income increases, one will demand more of a good or service. Common sense says this would be true if one had more money at their disposal. Take the example, where one has a Rupees 100 monthly salary but wishes to purchase a new pair of shoes costing Rupees 150. One would probably buy the new shoes because, with a Rupees 100 monthly salary, one can't really afford them otherwise. It is better for one to save up their money to buy something less luxurious from time to time, if items are cheaper than what one wants to buy currently.

The law of demand states that as the price of a good is raised, its quantity demanded will fall and vice versa. The law of demand states that as the price falls, the quantity demanded and the quantity supplied will increase. Together, these state the formula for how total fundamental output changes. The rule is often used to predict economic behaviour from observed changes in the market price.

7. Indifference Curve – The indifference curve is the product of the marginal rate of

substitution and marginal rate of transformation; that is, it implies how much each good or service can be substituted for another good or service when the values of both goods are considered equal.

Indifference curve analysis is a technique used in economics to study how individuals' utility depends on the joint properties of two goods. It was developed by Armen Alchian, Harold Demsetz and Stanley Engerman. It is often called "indifference curve analysis," "choice theory," or "Alchian-Demsetz".

The indifference curve is a graph that shows all of the combinations of variables that have equivalent amounts of utility, each point being equidistant from all other points. An indifference curve can be drawn horizontally, because increasing the absolute size of one variable (say, the quantity of consumption) will result in decreasing relative size in the other variable (the quantity of consumption).

8. Marginal Rate of Substitution (MRS) – The Marginal Rate of Substitution (MRS) is the ratio of the marginal cost to the marginal benefit. Hence, it represents the change in a factor's price when an additional unit is produced or consumed by that factor.

Marginal Rate of Substitution (MRS) is a concept used in economics to estimate the change in quantity demanded or the change in quantity supplied due to a change in price. Marginal pricing assumes that consumers are only interested in changes in price, so there is no information about product quality and satisfaction.

The Marginal Rate of Substitution (MRS) is the percentage change in the quantity that occurs when any factor changes. It is equal to 1 minus the ratio of two marginal rates.

In simple words, the Marginal Rate of Substitution (MRS) is a measure of how much of one item an increase or decrease in a quantity of money has on another.

9. Law of Diminishing Marginal Rate of Substitution – The law of diminishing marginal rate of substitution is a principle in economics that states that the marginal rate of substitution will decrease with the increasing consumption of a good or service.

The law of diminishing marginal rate of substitution is a theory that states that, as the quantity of a commodity increase, the marginal rate of its price falls. The law of diminishing marginal rates of substitution is a fundamental law in economics that holds that as the cost of one good increases, consumers are more likely to buy a different product instead. The law is often used as an explanation for changes in consumer behaviour over time.

The law of diminishing marginal rate of substitution explains that, as the price of a good decreases, more of the good will be purchased in order to save the same amount. A supply curve

for a product is used to illustrate this concept. The supply curve for a product has an upward slope for a low price, then becomes flat or horizontal at high prices. If the supply curve shifts down as the price of a product decreases (changing from an upward slope to a downward slope), then it is telling us that when demand increases, fewer units will be produced and sold than before when demand was lower in value because fewer people would want what was being offered at Rupees 100 instead of Rupees 200.

10. Consumer's Budget – The concept of a consumer's budget is a simple economic, accounting term that permits one to organise a limited stock of money and credit. It shows how much money we have left after we have spent everything

we can on current expenses; the difference between our living expenses and what we have left over is known as disposable income.

A consumer's budget is a method of measuring how much a consumer has to spend on goods and services potentially purchased during a given time period. It is used to identify the amount of money needed for a person's daily needs, family finances, and future investments.

A consumer's budget is a collection of spending money and savings plans. It is also a planning process to determine the amount of money needed for daily expenditure, monthly short-term expenses, and long-term financial needs. Consumer budget is not only used by individual consumers but also is used by all types of organisations for planning their future expenses.

The consumer's budget is the aggregate resources available for all households in a country to purchase goods and services. The idea is to determine what the consumer spends their income on, taking into account everything from food and clothing to entertainment expenses and travel. Many times we hear about how consumers spend money on a budget through accounts like credit cards and cheques. This tool allows one to see exactly how much their fellow Indians spent on everything from groceries last year. The information is based on expenditures reported by people who receive some form of government assistance (including medical aid, food stamps, and other government aid), or who report having no income in 2011.

11. Budget Set – “Budget set is a section of the economy in which we evaluate all the goods and services, how much resources are required to produce it, and then we can calculate where the excess of production ended up. That's the budget set.”

Budget Set is the set of assumptions used in constructing a budget constraint. A budget set is the set of all possible choices of any item from the basket of products or services in a particular period. It is a subset of the set of all possible choices.

The defining features of a budget set are that there should be three portfolios defined by the same policy and geographical location, the first two portfolios have a limited sample of

constituents, and the third portfolio has unlimited. For each asset class, we have a wide range of options allowing an assessment of demand response scenarios.

12. Budget Line – The budget line is a graph showing the budget line that represents the maximum feasible output of a market economy at a given income and price level. A budget line is horizontal at equilibrium, where total real output equals total real income with a price.

As the name implies, the budget line assumes that both the goods demand curve and overall cost function depend on the fixed amount of income. The budget line is simply a straight line from this origin to a fixed level of consumption.

The budget line shows the relationship between price, income, and expenditure: the higher price and lower the expenditure, the more consumption falls. The budget line is a line in the cartesian plane that represents the amount of money needed to buy all goods and services produced in an economy.

13. Demand – The demand for a good or service is the relationship between the price of a good or service and the available quantity at that price. Demand is defined as the summation of all purchases or sales of one or more specific goods at a specific time and place, along with all other important determinants such as income, population, interest rates, etc.

Demand is the quantity of a good or service that buyers are willing to pay and are able to buy at a certain price. Demand is the amount of a quantity of goods or services that buyers are willing and able to buy at any given time. It consists of

two components: Willingness To Purchase (WTP) and Ability To Purchase (WTA).

A demand is a quantity at which an individual or a market will purchase something. It describes the amount of a good or service that buyers are willing and able to obtain at any given price.

14. Demand Curve – A demand curve is a graph that shows how much of a product is demanded at each price. In economics, the demand curve is determined by the relationship between quantity demanded and price.

The demand curve is a graphical representation of the relationship between the marginal utility of consumption and the price level. It is a graph of the quantity demanded at a specific good or service (called the demand quantity) relative to its price.

The demand curve displays the quantities of goods demanded when prices are increased. The variables in a demand equation include quantity, price, and income of a good or service. The demand curve for a commodity is the relationship between the price of the good and the quantity demanded.

15. Demand Function – The demand function describes a person's demand for a product. This is the same as saying that a person will consume more of that product if the price of the product increases. The demand function is related to elasticity, which measures how responsive a person is to a change in price.

A demand function is an expression of the relationship between a set of goods and the price. The demand curve is determined by substitution effect from households, and other market participants, income effect from households, income effects from firms, expenditure multiplier effect, and income tax effect.

The demand function describes consumer behaviour and is derived by multiplying the individual's buying behaviour by the consumer's income and tastes.

Demand is the relationship between the price of a good and quantity demanded. When demand increases, consumers are more likely to purchase more of it, and when demand decreases, so does the quantity purchased.

16. Substitution Effect – In economics, the substitution effect occurs when consumers choose to trade-off between two goods. For example, if a consumer purchases bananas and oranges for their food instead of apples, it is because they think that oranges are more nutritious than apples and that they can afford to spend more on one good in order to meet their nutritional requirements. The substitution effect can be used in a marketing strategy as well, where companies use this concept to differentiate themselves from other similar products in their markets.

The substitution effect is a change in the quantity of something demanded in response to an increase or decrease in its value. The demand for a good decreases when its price increases, and the demand for a good increases if its price decreases.

The substitutability effect is a result in the economics literature that shows how people may change their behaviour based on information they learn about other consumers' behaviour. This effect is important to understand when considering how absolute and relative prices affect consumer behaviour.

The substitution effect indicates that because food and beverage costs rise for students going to school, other goods and services must become cheaper for the consumer in order to maintain or increase purchasing power.

17. Income Effect – The income effect is a concept in economics which refers to the observation that people tend to consume more now than they would have had,

if they earned more money. It could be said that people buy things now with their current income and don't wait until they have accumulated enough money to buy these items.

The income effect is a theoretical effect that shows how the timing of income affects economic decisions. In other words, it is a hypothesis stating how individuals react to changes in their real or nominal incomes.

The income effect occurs when the price of good decreases due to a decrease in demand. An increase in supply always affects the price of that good and will not lead to an income effect.

The income effect is the change in market demand that results when a price change also causes income changes. Income elasticity poses a problem for the Walrasian theory of competitive equilibrium, which utilises the money to buy goods and services. The opposite is true for markets with high price elasticity of supply, in which higher prices lead to greater resource availability.

18. Normal Goods – In economics, normal goods are goods that are considered to be of such low value that businesses will not change their prices even if they could produce more units of that good.

Normal goods are goods that have no quality – they are simply useful. Examples of normal goods include basic food, clothing, and household appliances. In economics, normal goods are those affordable by the vast majority of people in a society.

Normal goods are products with some internal symmetry, such as those made of homogenous materials. Normal goods have absolutely no brand loyalty, meaning that consumers won't pay more for any specific brand.

19. Inferior Goods – In economics, inferior goods are goods that are priced below the price of another good. Economists call these goods 'Dummies' because their price is almost negligible. Examples include: The price for a bun is approximately \$ 1 per bun or less, depending on the country.

In economics, "inferior goods" refer to those goods that consumers cannot use as a basis for attaching a price – prices must be attached to all other goods. "Inferior goods" are capable of being substituted by another commodity within the same market, but not in a time-consistent manner nor with equality. The implication is that more inferior goods are sold.

Inferior goods have features that make them less desirable than more expensive or better-quality products. In economics, in response to the fact that supply is influenced by demand and that the equilibrium price of a good depends on its marginal cost, in order to distinguish between goods with the same or similar characteristics. In other words, you can see why a good

is called “good”; actually, there are some features that may make this object better and others worse.

20. Giffen Goods – The term Giffen goods is a neoclassical theory in microeconomic economics. The first person to use the term was Ward Giffen of Canada. Ward Giffen described the concept as one where price increases make a good relatively more valuable, but not necessarily its quality.

Giffen goods are goods for which the demand increases with income, contrary to the more common assumption that it decreases with income. The Giffen good is a good that has high relative prices but low absolute prices.

In economics, Giffen goods are goods that become more expensive when the price of two competing goods rises. The name comes from Thorstein Veblen, who noticed that grocery items like bread tended to be purchased by poorer people while luxuries such as automobiles tended to be acquired by wealthier individuals.

Giffen goods are perfect substitutes for inferior goods. This means that one would be willing to spend more on a taxicab than on their usual ride in a private car. In other words, a taxi is more desirable than a ride to work which costs roughly the same amount. Therefore, it makes sense to purchase taxis since they increase their income and thus will demand more cabs.

