

**Let us make an in-depth study of Consumer Surplus:-**

**Introduction to Consumer Surplus 2. Explanation of the Concept of Consumer Surplus 3. Definition 4. Assumptions 5. Explanation of the Law 6. Diagrammatic Representation 7. Criticism 8. Practical Importance 9. Explanation by Prof. Hicks.**

**Introduction to Consumer Surplus:**

The doctrine of Consumer's Surplus which occupies an important place in the Marshallian System of Welfare Economic Analysis was originally stated by William Stanley Jevons and French Engineer economist Arsens Jules Dupuit in 1844 in a Crude form.

Later on Dr. Alfred Marshall explained this concept in "The Pure Theory of Domestic Values" as consumer's rent.

In his 'Principles of Economics' he further elaborated this concept in logical details and describe it as "Consumer's Surplus". He is called the Consumer's Surplus.

**Explanation of the Concept of Consumer Surplus:**

In actual life, when we buy a commodity for consumption, we gain some utility by consuming it, at the same time we lose some utility in terms of the price that we need to pay for it. In the beginning, utility gained is usually higher than the utility lost.

This concept is used to explain the gap between total utility that a consumer gets from the consumption of a certain commodity and the total money value which he actually pays for the same.

**For Example:**

Suppose, a student goes to buy a book. He is willing to pay Rs. 20 for the book. But he gets the book for Rs. 15. Thus, he has saved Rs. 5. This is called Consumer's Surplus.

Potential Price – Actual Price = Consumer's Surplus.

**Definition of Consumer Surplus:**

1. Regarding this Prof. Marshall has said that "The excess of price which he (consumer) would be willing to pay rather than go without. The thing over that which he actually does pay, is the economic measure of this surplus satisfaction. It may be called "Consumer's Surplus".

2. According to Penson – “The difference between what we would pay and what we have to pay is called Consumer’s Surplus.”

4. As per Samuelson – “There is always a gap between total welfare and total economic value. This gap is the nature of a surplus which consumer gets because he always receives more than he pays.”

5. According to Taussig – “Consumer’s Surplus is the difference between the sum which measures total exchange value”.

### **Assumptions of Consumer’s Surplus:**

**Prof. Marshall has discussed the concept of Consumer’s Surplus on the basis of the following assumptions:**

#### **1. Marginal Utility of Money is Constant:**

The marginal utility of money to the consumer remains constant. It is so when the money spent on purchasing the commodity is only a small fraction of this total income.

#### **2. No Close Substitutes Available:**

The commodity in question has no close substitutes and if it does have any substitute, the same may be regarded as an identical commodity and thus only one demand should may be prepared.

#### **3. Utility can be Measured:**

The utility is capable of cardinal measurement through the measuring rod of money. Moreover, the utility obtainable from one good is absolutely independent of the utility from the other goods. No goods affect the utility that can be derived from the other goods.

#### **4. Tastes and Incomes are Same:**

That all people are of identical tastes, fashions and their incomes also are the same.

### **Explanation of the Law:**

**The above definition of Prof. Marshall can be explained with the help of practical examples:**

(i) Consumer’s Surplus when there is single purchase and

(ii) Consumer’s Surplus when there is multiple unit purchase.

#### **(i) Consumer Surplus on Single Unit Purchase:**

When a consumer purchases only one unit of a commodity even then the Consumer Surplus arises. Let us suppose a student is willing to pay Rs. 30 for a particular book and when he actually go to market and purchase it at Rs. 25. Thus Rs. 5 (30-25) is the Consumer’s Surplus.

**(ii) Consumer's Surplus on a Multi-unit Commodity:**

In our real life one purchases number of units of a particular commodity. The price that a consumer pays for all the different units of commodity actually measures the utilities of the marginal unit and he pays the same price for different commodities.

The excess of utilities he derives from different commodities and the actual price paid is called as Consumer's Surplus. Let us take an example of a person whose marginal utility, price and Consumer's Surplus schedule for bread is given in the following table:

**Marginal Utility, Price and Consumer's Surplus Schedule**

Units of bread	Marginal Utility (in Rs.)	Price (in Rs.)	Consumer's Surplus (in Rs.)
1	10	2	8
2	8	2	6
3	6	2	4
4	4	2	2
5	2	2	0
6	0	2	-2

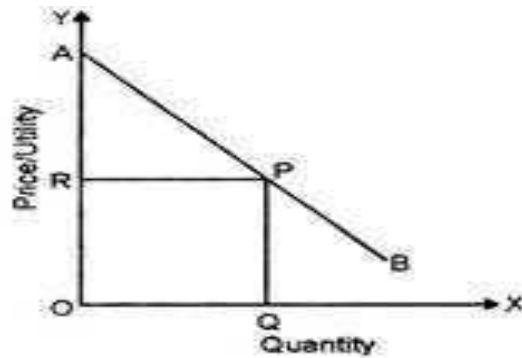
The above table expresses the various amounts of utilities he derives from the consumption of different units of bread. From the first bread alone he derives marginal utility of Rs. 10 but the price which he pays is Rs. 2 and hence Rs. 8 is the Consumer's Surplus.

Similarly, the Consumer's Surplus from 2nd, 3rd, 4th and 5th units are 6, 4, 2 and zero respectively. A rational consumer will consume only 5th commodity where the marginal utility is equal to its price and thereby maximises his Consumer's Surplus. If he will consume the 6th unit he derive zero marginal utility where as he pays the price as Rs. 2. A rational consumer will not consume that commodity.

**Diagrammatic Representation of Consumer Surplus:**

**This can be shown by the following diagram:**

In this diagram AB is a demand curve of a consumer OR is the market price. The price line is parallel to X axis because of perfect competition. At point P the marginal curve AB intersect the market price curve OR. Thus for OQ quantity the consumer derives utility as AOQP where as he pays ROQP. Thus, triangular shaded area ARP is Consumer's Surplus.



Consumer's Surplus = Total Utility - (Marginal Utility) x (Multiply x No. of Units purchased)

### **Criticism of the Concept of Consumer's Surplus, Or Difficulties in the Measurement of Consumer's Surplus:**

**The concept of Consumer's Surplus has been criticized on several grounds:**

#### **1. This Concept is Imaginary:**

The concept is complete imaginary, illogical and illusory. You just imagine, what you are prepared to pay and you proceed to deduct from that what you actually pay. It is all hypothetical. One may say that one is prepared to pay anything. Hence it is unreal.

#### **2. Measurement of this Concept is Difficult:**

The critics of this concept allege that measurement of Consumer's Surplus is difficult. It is because utility is a subjective concept and will vary from person to person. Total utility is impossible to measure because when we consume more units it is said that the marginal utility of even earlier units start diminishing. Prof. Hicks and Allen have contended and proved that utility being a subjective phenomenon is determinate and immeasurable.

#### **3. This Concept is not Applicable to Substitutes:**

The concept may not apply in case of goods which have substitutes. Why should one imagine how much will be willing to pay for a commodity. One finds it hard to think that the substitute of a commodity has no significant effect on the surplus satisfaction he derives from the commodity.

Decidedly, the consumer will feel more satisfied if two good substitutes as well as complements are made available to him than in case he gets only one of the two at a time. The consumer can properly appreciate the utility from a pen only when the same is accompanied by ink.

#### **4. The Marginal Utility of Money never Remains Constant:**

It is improper to assume with Prof. Marshall that the marginal utility of money remains constant and does not alter with increase or decrease in the money stock with the consumer. Therefore, it is incorrect to believe the consistency of the marginal utility of money in real life.

### **5. Exhaustion of Surplus Utility:**

It is said that if a consumer knew that any such thing existed, he would go on buying more and more till the surplus utility he enjoyed disappeared. This is not correct. A consumer does not run after a surplus yielded by one commodity. He has to weigh the utilities of other commodities too.

### **6. This Concept is not Applicable to Necessaries:**

The idea of Consumer's Surplus does not apply to the necessities of life or conventional necessities. In such cases the surplus is immeasurable. What would not a man be prepared to pay for a glass of water when he is dying of thirst?

### **7. The Complete List of Demand and Price not Available to Consumer:**

Another ground on which the concept has been criticized is that the complete and reliable list of demand and prices is never available to the consumer. The demand schedule according to which he regulates and decides his purchases is not necessary to come true in practice. How much the consumer would be willing to pay rather than go without the thing is something hard to answer correctly.

### **Practical Importance of Consumer's Surplus:**

Economists are of this opinion that the actual measurement of Consumer's Surplus is a difficult task as utility being purely a psychological concept, yet the concept has a great practical importance.

#### **1. Distinction between Value-in-use and Value in Exchange:**

Consumer's Surplus points to the distinction between the use value and the exchange value of a thing. Commodities like salt and match-box have a great value-in-use but much less value in exchange. Being necessities and cheap things they yield, however a large Consumer's Surplus. The Consumer's Surplus depends on total utility, where as price depends on marginal utility.

#### **2. Comparison of Gains from the International Trade:**

Consumer's Surplus from international transactions enables us to compare the relative gains from the international trade of the different countries. For example—We can import things cheaply from abroad, but before importing, we were paying more for similar home produced goods. The imports therefore yield a surplus satisfaction. This is Consumer's Surplus. The larger this surplus, the more beneficial is the international trade.

#### **3. Useful to Businessman and Monopolist:**

It is of practical importance to the monopolist and businessman in fixing the price of his commodity. If the commodity is such that the consumers are willing to pay more for it, they will enjoy large surplus. In such a case the monopolist and businessman can raise the price without affecting the sale. Thus, the monopolist and businessman is guided by the knowledge of the Consumer's Surplus in fixing the price of his product.

#### **4. Comparing Advantages of Different Places:**

Consumer's Surplus proves useful when we compare the advantage of living in two different places. A place where there are greater amenities available at cheaper rates will be better to live in. In these places, the consumers enjoy large surplus of satisfaction. Consumer's Surplus thus indicates environmental and conjectural advantages i.e., the advantages of environment and opportunities.

#### **5. Importance in Public Finance:**

The concept has a great practical importance to the Government in determining the desirability of imposing tax on certain commodity. A tax imposed on a commodity tends to raise its price and to reduce Consumer's Surplus thereby, but it yields some revenue to the government.

The Finance Minister is to compare the Loss of Consumer's surplus to the increase in tax-revenue. A tax is justified when the loss in Consumer's Surplus becomes less than the increase in tax revenue, otherwise it will be harmful.

#### **6. Importance in Welfare Economics:**

This concept is an important tool in welfare economics also.

#### **This can be explained in the following manner:**

(i) In his partial analysis, Marshall deals with the surplus of all the consumers in a market.

(ii) Next, the effects of price-quantity variations of commodities on the welfare of the commodity are also being worked out with the aid of this concept.

(iii) Further, the gain which accrues to the community from a new product and the loss from the total dis-appearance of a product from the market are some of the other problems which are being explained with the idea of Consumer Surplus.

(iv) In the end, the effects of a tax and a subsidy on total welfare can be explained by it.

#### **Explanation of Consumer's Surplus by Prof. Hicks:**

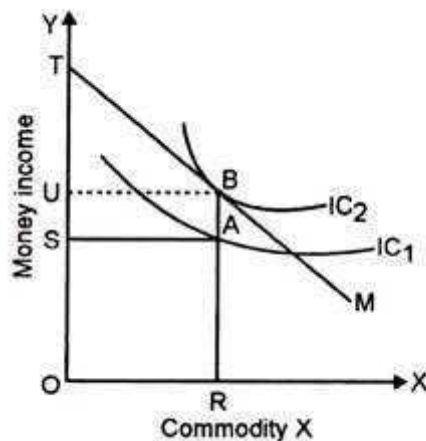
The concept of Consumer's Surplus was rehabilitated by Prof. J. R. Hicks even without the measurement of utility. In this connection Hicks has said that the best way of looking at Consumer's Surplus is to regard it as a means of expressing in terms of money income, the gain which accrues to the consumer as a result of all in price.

Hicks in his "Indifference Curve Analysis" takes resources to the external behaviour of a man whereby a man prefer one situation to another and with the help of this ordinal utility function, finds out the Consumer's Surplus.

### For example:

Let us suppose that the consumer does not know the price of commodity X. He chooses to have the combination A on  $IC_1$  i.e., OR of X commodity and OS amount of money. In other-words he is prepared to pay for OR commodity of X commodity and OS amount of money. In other words he is prepared to pay for OR commodity of X the TS amount of money.

Now let us suppose he knows the price of X which is indicated by TM budget line. The consumer finds that he can get on to a higher indifference curve with the same income. The consumer's new equilibrium is represented by B the tendency between  $IC_2$  and TM. At this point consumers combination is OR amount of X commodity + UO amount of money.



In other-words, the consumer has to spend only TU amount of money as compared to TS which he is prepared to pay for the same amount of X commodity. Thus, Consumer's Surplus equivalent to SUBA. We can thus conclude that in indifference curve analysis Consumer's Surplus signifies a passage from a lower to a higher indifference curve which environment makes possible for an economic subject.

### Consumer surplus and price elasticity of demand

How is consumer surplus affected by the elasticity of a demand curve?

1. When the demand for a good or service is **perfectly elastic**, consumer surplus is zero because the price that people pay matches exactly what they are willing to pay.
2. In contrast, when demand is **perfectly inelastic**, consumer surplus is infinite. In this situation, demand does not respond to a price change. Whatever the price, the quantity demanded remains the same. Are there any examples of products that have such zero price elasticity of demand? Perhaps the closest we get is a life-saving product with no obvious substitutes - in this situation, consumers' willingness to pay will be extremely high.
3. The majority of demand curves in markets are assumed to be downward sloping. When demand is inelastic (i.e.  $E_d < 1$ ), there is a greater potential consumer surplus because there are some buyers willing to pay a high price to continue consuming the product. Businesses often raise prices when demand is inelastic so that they can turn consumer surplus into producer surplus.