



Law of Equi Marginal Equity

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LAW OF EQUI MARGINAL UTILITY

- ▶ The Law of equi marginal Utility is another fundamental principle of Economics. This Law explains consumer equilibrium in utility analysis. This law is also **called Gossen's Second Law. Consumer is rational & his aim is to obtain maximum satisfaction by distributing his income in different fields of satisfaction. Basis of this law is LAW OF SUBSTITUTION**
- ▶ **According to which a consumer replaces less useful goods by more useful goods.**
- ▶ This law is also known as the Law of substitution or the Law of Maximum Satisfaction.

Law of Equi-Marginal Utility

- ▶ **This law states** that consumer will distribute his income between the various goods in such a way that the utility derived from the last rupee spent of each good is equal.
- ▶ This law is based on the principle of obtaining maximum satisfaction from a limited income. It explains the behavior of a consumer when he consumes more than one commodity.

The **law** states that a consumer should spend his limited income on different commodities in such a way that the last rupee spent on each commodity yield him equal **marginal utility** in order to get maximum satisfaction

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- ▶ Suppose there are different commodities like A, B, ..., N. A consumer will get the maximum satisfaction in the case of equilibrium i.e.,
- ▶ $MU_A / P_A = MU_B / P_B = \dots = MU_N / P_N$
- ▶ Where MU's are the marginal utilities for the commodities and P's are the prices of the commodities.
- ▶ We know that human wants are unlimited whereas the means to satisfy these wants are strictly limited. It, therefore, becomes necessary to pick up the most urgent wants that can be satisfied with the money that a consumer has. Of the things that he decides to buy he must buy just the right quantity. Every prudent consumer will try to make the best use of the money at his disposal and derive the maximum satisfaction.



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► Assumptions of the Law

- There is no change in the price of the goods or services.
- The consumer has a fixed income.
- The marginal utility of money is constant.
- A consumer has perfect knowledge of utility.
- Consumer tries to have maximum satisfaction.
- The utility is measurable in cardinal terms.
- There are substitutes for goods.
- A consumer has many wants.



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- ▶ Suppose apples and oranges are the two commodities to be purchased. Suppose further that we have got seven rupees to spend. Let us spend three rupees on oranges and four rupees on apples. What is the result? The utility of the 3rd unit of oranges is 6 and that of the 4th unit of apples is 2. As the marginal utility of oranges is higher, we should buy more of oranges and less of apples. Let us substitute one orange for one apple so that we buy four oranges and three apples.



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- **Explanation of the Law:**
- In order to get maximum satisfaction out of the funds we have, we carefully weigh the satisfaction obtained from each rupee 'had we spend If we find that a rupee spent in one direction has greater utility than in another, we shall go on spending money on the former commodity, till the satisfaction derived from the last rupee spent in the two cases is equal.
- In other words, we substitute some units of the commodity of greater utility or some units of the commodity of less utility. The result of this substitution will be that the marginal utility of the former will fall and that of the latter will rise, till the two marginal utilities are equalized. That is why the law is also called the Law of Substitution or the Law of equi marginal Utility.

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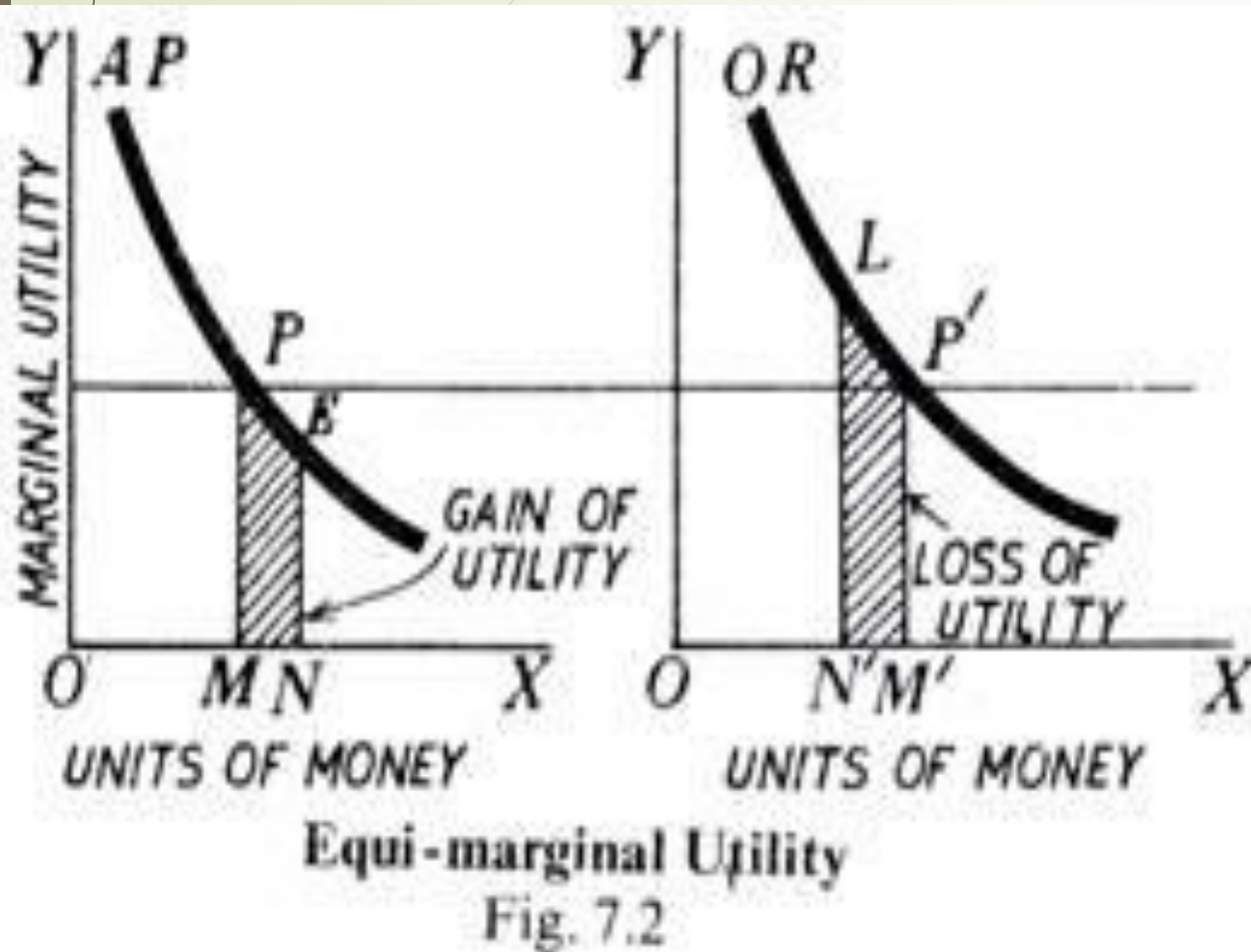
<i>Units</i>	<i>Marginal utility of oranges</i>	<i>Marginal utility of apples</i>
1	10	8
2	8	6
3	6	4
4	4	2
5	2	0
6	0	-2
7	-2	-4
8	-4	-6

- Now the marginal utility of both oranges and apples is the same, i.e., 4. This arrangement yields maximum satisfaction. The total utility of 4 oranges would be $10 + 8 + 6 + 4 = 28$ and of three apples $8 + 6 + 4 = 18$ which gives us a total utility of 46. The satisfaction given by 4 oranges and 3 apples at one rupee each is greater than could be obtained by any other combination of apples and oranges. In no other case does this utility amount to 46. We may take some other combinations and see. We thus come to the conclusion that we obtain maximum satisfaction when we equalize marginal utilities by substituting some units of the more useful for the less useful commodity. We can illustrate this principle with the help of a diagram.

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- ▶ In the two figures given below, OX and OY are the two axes. On X-axis OX are represented the units of money and on the Y-axis marginal utilities. Suppose a person has 7 rupees to spend on apples and oranges whose diminishing marginal utilities are shown by the two curves AP and OR respectively.
- ▶ The consumer will gain maximum satisfaction if he spends OM money (3 rupees) on apples and OM' money (4 rupees) on oranges because in this situation the marginal utilities of the two are equal ($PM = P'M'$). Any other combination will give less total satisfaction.

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- Let the purchase spend MN money (one rupee) more on apples and the same amount of money, $N'M'$ ($= MN$) less on oranges. The diagram shows a loss of utility represented by the shaded area $LN'M'P'$ and a gain of $PMNE$ utility. As $MN = N'M'$ and $PM = P'M'$, it is proved that the area $LN'M'P'$ (loss of utility from reduced consumption of oranges) is bigger than $PMNE$ (gain of utility from increased consumption of apples). Hence the total utility of this new combination is less. We then, conclude that no other combination of apples and oranges gives as great a satisfaction to the consumer as when $PM = P'M'$, i.e., where the marginal utilities of apples and oranges purchased are equal, with given amount, of money at our disposal.



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► **Limitation of the Law**

- There are some limitations to this law. They are
 - The law is not applicable in case of knowledge. Reading books provides more knowledge and has more utility.
 - This law is not applicable in case of fashion and customs.
 - This law is not applicable for very low income.
 - There is no measurement of utility.
 - Not all consumer care for variety.
 - The law fails when there are no choices available for the good.
 - The law fails in case of frequent price change.

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- ▶ **Limitations of the Law of Equi marginal Utility:**

- ▶ Like other economic laws, the law of equi marginal utility too has certain limitations or exceptions. The following are the main exception.

- ▶ **(i) Ignorance:**

- ▶ If the consumer is ignorant or blindly follows custom or fashion, he will make a wrong use of money. On account of his ignorance he may not know where the utility is greater and where less. Thus, ignorance may prevent him from making a rational use of money. Hence, his satisfaction may not be the maximum, because the marginal utilities from his expenditure can-not be equalized due to ignorance



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- ▶ **(ii) Inefficient Organisation:**

- ▶ In the same manner, an incompetent organ-iser of business will fail to achieve the best results from the units of land, labour and capital that he employs. This is so because he may not be able to divert expenditure to more profitable channels from the less profitable ones.

- ▶ **(iii) Unlimited Resources:**

- ▶ The law has obviously no place where this resources are unlimited, as for example, is the case with the free gifts of nature. In such cases, there is no need of diverting expenditure from one direction to another.



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- **(iv) Hold of Custom and Fashion:**

- A consumer may be in the strong clutches of custom, or is inclined to be a slave of fashion. In that case, he will not be able to derive maximum satisfaction out of his expenditure, because he cannot give up the consumption of such commodities. This is specially true of the conventional necessities like dress or when a man is addicted to some into-xicant.

- **(v) Frequent Changes in Prices:**

- Frequent changes in prices of different goods render the observance of the law very difficult. The consumer may not be able to make the necessary adjustments in his expenditure in a constantly changing price situation.



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➔ Importance of the Law

- This law is helpful in the field of production. A producer has limited resources and tries to get maximum profit.
- This law is helpful in the field of exchange. The exchange is of anything like some goods, wealth, trade, import, and export.
- It is applicable to public finance.
- The law is useful for workers in allocating the time between the work and rest.
- It is useful in case of saving and spending.
- It is useful to look for substitution in case of price rise.



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- ▶ **Practical Importance of the Law of Substitution:**
- ▶ The law of substitution is of great practical importance. Everybody has got limited income. Naturally he must try to make the best use of it.
- ▶ **This can be done by the application of this law in the various aspects of economic life as under:**
- ▶ **(i) Consumption**
- ▶ A wise consumer consciously acts on this law while arranging his expenditure. His expenditure is so distributed that the same price measures equal utilities at the margin of different purchases. Every person must try to spend his income in a manner which yields him the greatest satisfaction. This he will be able to do only if he spends his money in such a manner as to obtain equal satisfaction from the marginal units of money spent on the various commodities he purchases.



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- ▶ **(ii) Production:**

- ▶ The law is also of great importance in production. The producer has to use several factors of production. He wants maximum net profit. For this purpose, he must substitute one factor for another so as to have the most economical combination, for example, he will substitute labour for machinery and vice versa, So that the marginal utility or marginal productivity of the two is equalised in this manner, he will get most economical combination of the 'actors of production at his disposal to make maximum profit.



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- ▶ **(iii) Exchange:**

- ▶ The law also applies in exchange because exchange is nothing else but substitution of one thing for another. When we sell a commodity, say, sugar, we get money. With this money, we buy another commodity, say, wheat. We have, therefore, really substituted sugar for wheat.

- ▶ **(iv) Distribution:**

- ▶ It is on the principle of marginal productivity that the share of each factor of production (viz., land, labour, capital, organisation) is determined. The use of each factor is pushed up to a point where its marginal product is equal to the marginal product of every other factor, of course after allowing for the differences in their respective remunerations. This necessitates substituting one factor for another.



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- **(v) Public Finance:**

- The Government, too, is guided by this law in public expenditure. The public revenues are so spent as to secure maximum welfare for the community. The Government must cut down all wasteful expenditure while the return is not proportionate and instead concentrate its resources on more productive or more beneficial expenditure.

- **(vi) Influences Prices:**

- The law of substitution influences prices. When a commodity becomes scarce and its price soars high, we substitute for it things which are less scarce. Its price, therefore, comes down.