

1. INTRODUCTION TO WELFARE ECONOMICS

Individual welfare and Social welfare:

Individual welfare refers to the sum-total of satisfaction derived by an individual from the consumption of economic goods. Individual satisfaction is linked with individual choice. He chooses the combination which gives him the maximum satisfaction.

Social welfare is an aggregate of the utilities or satisfaction of all the individuals in the society. The welfare of all the individuals is synonymous with the welfare of the society. The object of social welfare is to secure for each human being the economic necessities, a decent standard of health and living conditions, equal opportunities with his fellow citizens, and the highest possible degree of self-respect and freedom of thought and action without interfering with same rights of others.

General welfare and Economic welfare:

General welfare of an individual refers to the state of mind or happiness which an individual enjoys due to number of factors such as economic and also various other factors such as friendship, health, religious beliefs, philosophical outlook on life and so on. Thus, general welfare refers to the satisfaction derived by an individual from both economic and non-economic factors.

Economic welfare is a function of the satisfaction derived from the use of exchangeable material goods and services almost confine with real national income of the community. Economics confines itself to social welfare of all persons alone. The subject of economics is the well-being of persons as consumers and producers and the possible ways of improving that well-being or welfare.

Welfare Economics:

Economics can be dividing as 'Positive economics' And 'Welfare economics '. Positive economics may be said refer to the analysis of the theories or principles of economics, while welfare economics may be said to confine itself to an examination of economic policies. Positive economics builds up analytical tools; welfare economics applies such tools to specific economic situations to maximize economic welfare. Positive economics is merely theoretical; welfare economics is prescriptive in nature.

2. CONCEPT OF PARETO OPTIMALITY

We now turn to the concept of Pareto Optimality, named after the economist **Vilfredo Pareto**. It is a concept that you will find recurring frequently in the economics literature. The main proposition of Pareto Optimality can be summed up as follows.

An economy is in a Pareto Optimal state when no further changes in the economy can make one person better off without at the same time making another worse off.

You may immediately recognise that this is the socially optimal outcome achieved by a perfectly competitive market referred to above. It can be shown that an economy will be Pareto Optimal when the economy is perfectly competitive and in a state of static general equilibrium. The intuitive case for this is based on the fact that prices reflect economic values in a competitive market. If a unit of goods or services could produce more or bring greater satisfaction in some activity other than its present use, someone would have been willing to bid up its price, and it would have been attracted to the new use.

When this price system is in equilibrium, the marginal revenue product, the opportunity cost, and the price of a resource or asset will all be equal. Each unit of every good and service is in its most productive use or best consumption use. No transfer of resources could result in greater output or satisfaction.

This can be examined more formally in terms of three criteria that have to be met for a market equilibrium to result in Pareto Optimality. These are that there should be: exchange efficiency, production efficiency and output efficiency.

Exchange efficiency

Exchange efficiency occurs when, for any given bundle of goods, it is not possible to redistribute them such that the utility (welfare) of one consumer is raised without reducing the utility (welfare) of another consumer.

A simple example of this is where there are two individuals, one with a loaf of bread, the other with a block of cheese. Both can be made better off by exchanging bread for cheese. An efficient exchange system will allow exchange of bread and cheese to take place until neither party can be made better off without one of them becoming worse off.

In a multi-product, multi-consumer economy, exchange is far more complex and involves the use of money to facilitate exchange. However, the principle is the same. So long as products can be reallocated to make one person better off without making another worse off, the economy is operating sub-optimally from the point of view of exchange efficiency. In a perfectly competitive market, exchange will occur until this criterion is met.

Exchange efficiency alone does not necessarily result in Pareto Optimality. This is because it relates only to a specific bundle of goods. It may be possible to make one or more individuals even better off - without making any one else worse off - by altering the bundle of goods produced in the economy. This could involve raising the total volume of goods produced, as well as altering the combination of goods produced.

Production efficiency

Production efficiency occurs when the available factors of production are allocated between products in such a way that it is not possible to reallocate the production factors so as to raise the output of one product without reducing the output of another product.

This is analogous to technical or production efficiency at the level of the firm. What is being said here is that there are many situations in which it is possible to raise the total output in an economy by simply reallocating factors of production at no additional cost. This is because factors of production are more productive in some uses than they are in others. In a competitive economy, producers bid for factors of production until they are reallocated to their most productive use.

For example, if there is a lot of unproductive, low-wage labour employed in the agricultural sector and labour shortages in the industrial sector where labour productivity is potentially high, factory owners will bid up the price of labour and draw labour from the agricultural sector into the industrial sector. This could significantly raise output in the industrial sector without having a negative impact on output in the agricultural sector. So long as factors of production can be redistributed in a way that increases the output of one product without reducing the output of others, the economy is operating sub-optimally in terms of production efficiency.

Output efficiency

Output efficiency occurs where the combination of products actually produced is such that there is no alternative combination of products that would raise the welfare of one consumer without reducing the welfare of another.

Both the exchange efficiency and the production efficiency criteria must hold in order for this criterion to be met. The combination of outputs produced according to this criterion is distributed between consumers according to the exchange efficiency criterion, and the economy is operating with production efficiency.

Pareto Optimality is the result of rational economic behaviour on the part of producers, consumers and owners of factors of production in a perfectly competitive economy. Although we don't have the scope to examine the underlying theory here it can be shown that Pareto Optimality will be achieved if all markets are perfectly competitive and in equilibrium.

It is important to realise that, whilst Pareto Optimality is the outcome in an economy that meets each of the three efficiency criteria listed earlier, this does not mean that there is only one 'optimal' allocation of resources. A Pareto efficient economy results in the maximisation of aggregate economic welfare for a given distribution of income and a specific set of consumer preferences. A shift in income distribution changes the incomes of individual consumers. As their incomes change, so too will their preferences, as their demand curves for various products shift to the left or right. This will result in a different equilibrium point in the various markets that make up the economy. Every alternative distribution of income or set of preferences is characterised by a different Pareto Optimum. Thus, since there is an infinite number of different ways in which income can be distributed, there is also an infinite number of different Pareto Optimal equilibriums.

Obviously, in practice, no economy can be expected to attain the Pareto Optimum position. Moreover, the Pareto principle is of little practical use as a policy tool since it is rarely possible to devise a policy that makes someone better off without making someone else worse off. Nevertheless, it is an important concept in the neo-classical tradition of economics and integrates much of the theory. It is also a standard against which economists can explore the real world, where making one person better off almost invariably means making someone else worse off.

3. ARROW'S IMPOSIBILITY THEOREM

Arrow's impossibility theorem is a social-choice paradox illustrating the flaws of ranked voting systems. It states that a clear order of preferences cannot be determined while adhering to mandatory principles of fair voting procedures. Arrow's impossibility theorem, named after economist Kenneth J. Arrow, is also known as the general impossibility theorem

Understanding Arrow's Impossibility Theorem

Democracy depends on people's voices being heard. For example, when it is time for a new government to be formed, an election is called, and people head to the polls to vote. Millions of voting slips are then counted to determine who is the most popular candidate and the next elected official.

According to Arrow's impossibility theorem, in all cases where preferences are ranked, it is impossible to formulate a social ordering without violating one of the following conditions:

- **No dictatorship:** The wishes of multiple voters should be taken into consideration.
- **Pareto Efficiency:** Unanimous individual preferences must be respected: If every voter prefers candidate A over candidate B, candidate A should win.
- **Independence of Irrelevant Alternatives:** If a choice is removed, then the others' order should not change: If candidate A ranks ahead of candidate B, candidate A should still be ahead of candidate B, even if a third candidate, candidate C, is removed from participation.
- **Unrestricted Domain:** Voting must account for all individual preferences.
- **Social Ordering:** Each individual should be able to order the choices in any way and indicate ties.

Arrow's impossibility theorem, part of social choice theory, an economic theory that considers whether a society can be ordered in a way that reflects individual preferences, was lauded as a major breakthrough. It went on to be widely used for analysing problems in welfare economics.

Example of Arrow's Impossibility Theorem

Let's look at an example illustrating the type of problems highlighted by Arrow's impossibility theorem. Consider the following example, where voters are asked to rank their preference of three projects that the country's annual tax dollars could be used for: A; B; and C. This country has 99 voters who are each asked to rank the order, from best to worst, for which of the three projects should receive the annual funding.

- 33 votes $A > B > C$ (1/3 prefer A over B and prefer B over C)
- 33 votes $B > C > A$ (1/3 prefer B over C and prefer C over A)
- 33 votes $C > A > B$ (1/3 prefer C over A and prefer A over B)

Therefore,

- 66 voters prefer A over B
- 66 voters prefer B over C
- 66 voters prefer C over A

So a two-thirds majority of voters prefer A over B and B over C and C over A---a paradoxical result based on the requirement to rank order the preferences of the three alternatives.

Arrow's theorem indicates that if the conditions cited above in this article i.e., Non-dictatorship, Pareto efficiency, independence of irrelevant alternatives, unrestricted domain, and social ordering are to be part of the decision-making criteria then it is impossible to formulate a social ordering on a problem such as indicated above without violating one of the following conditions

4. CAUSES OF MARKET FAILURE AND GOVERNMENT ROLE TO CORRECT IT

What is Market Failure?

Market failure refers to the inefficient distribution of goods and services in the free market. In a typical free market, the prices of goods and services are determined by the forces of supply and demand, and any change in one of the forces results in a price change and a corresponding change in the other force. The changes lead to a price equilibrium.

Market failure occurs when there is a state of disequilibrium in the market due to market distortion. It takes place when the quantity of goods or services supplied is not equal to the quantity of goods or services demanded

Causes

1. Externality

An externality refers to a cost or benefit resulting from a transaction that affects a third party that did not decide to be associated with the benefit or cost. It can be positive or negative. A positive externality provides a positive effect on the third party. For example, providing good public education mainly benefits the students, but the benefits of this public good will spill over to the whole society.

On the other hand, a negative externality is a negative effect resulting from the consumption of a product, and that results in a negative impact on a third party. For example, even though cigarette smoking is primarily harmful to a smoker, it also causes a negative health impact on people around the smoker

2. Public goods

Public goods are goods that are consumed by a large number of the population, and their cost does not increase with the increase in the number of consumers. Public goods are both non-rivalrous as well as non-excludable. Non-rivalrous consumption means that the goods are allocated efficiently to the whole population if provided at zero cost, while non-excludable consumption means that the public goods cannot exclude non-payers from its consumption.

Public goods create market failures if a section of the population that consumes the goods fails to pay but continues using the good as actual payers. For example, police service is a public good that every citizen is entitled to enjoy, regardless of whether or not they pay taxes to the government.

3. Market control

Market control occurs when either the buyer or the seller possesses the power to determine the price of goods or services in a market. The power prevents the natural forces of demand and supply from setting the prices of goods in the market.

On the supply side, the sellers may control the prices of goods and services if there are only a few large sellers (oligopoly) or a single large seller (monopoly). The sellers may collude to set higher prices to maximize their returns. The sellers may also control the quantity of goods produced in the market and may collude to create scarcity and increase the prices of commodities.

4. Imperfect information in the market

Market failure may also result from the lack of appropriate information among the buyers or sellers. This means that the price of demand or supply does not reflect all the benefits or opportunity cost of a good. The lack of information on the buyer's side may mean that the buyer may be willing to pay a higher or lower price for the product because they don't know its actual benefits.

On the other hand, inadequate information on the seller's side may mean that they may be willing to accept a higher or lower price for the product than the actual opportunity cost of producing it.