

Welfare Economics

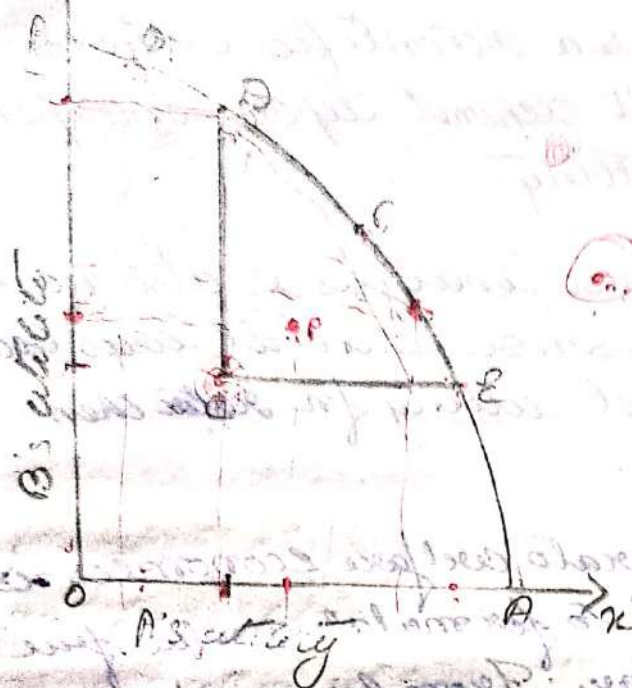
welfare economics has been defined as that part of economic theory which is concerned primarily with the policy that can be adopted to maximize social welfare. It is thus a normative study which is consult with judgement & prescription, but it doesn't mean that it is not a positive study. It has certain

principles & standards on the basis of which economist can judge & formulate economic policies. The subject matter of welfare economics is the economic wellbeing of the persons as consumers and as producers and the possible ways of improving that wellbeing & welfare. According to Pigou, "Economic welfare implies the satisfaction or utility derived by individuals from the use of economic goods & service or those that can be exchanged for money."

Parato

Pareto Optimality

V. Pareto was the 1st economist to find out an objective test of social welfare maximum which is called Pareto optimality or Pareto Criterion. According to Pareto Criterion if any reorganization of economic resources doesn't harm anybody but makes someone better off it indicates an increase in social welfare. Pareto optimality can be explained with the help of Samuelson utility possibility curve.



A	B
↓	↓
10	10
↓	↓
15	8

Suppose there are 2 individuals A & B sharing a given amount of good x & y . A's utility is represented on the horizontal axis & B's utility on vertical axis. BA represents utility possibility curve of all combos of individual utilities. According to Pareto criterion, any (movement/change which causes a movement from) C to D or E on utility possibility curve BA is an improvement because it makes both individuals better off by maximising their welfare. Similarly, a movement from C to D or E on the B.A curve is an improvement as it makes at least one person better off without making the other person worse off. But any point outside the segment DE is not a Pareto improvement. For instance, any movement from C to G increases B's welfare at the cost of A's welfare. In such circumstances Pareto's criterion can't tell us whether social welfare increases or decreases.

Assumptions

- 1) There are 2 factors of prodⁿ, L & K whose quantities are given exogenously. These factors are homogeneous & perfectly divisible.
- 2) Only 2 commo are produced X & Y . Technology is given. The prodⁿ fn of the 2 commo are represented by 2 isoquant maps, with usual properties. Further it is assumed that the 2 prodⁿ fn are independent.
- 3) There are 2 consumers in the country, A & B whose preferences are represented through indifference curve with usual characteristics.
- 4) The consumers seek to maximize his utility subject to budget constrained constraint.
- 5) The producer seeks to maximize profit sub to technology constraint of prodⁿ.
- 6) The factor of prodⁿ are owned by consumers.
- 7) There is P.C in the commodity & factor market. Consumers and firms pursue their goal. faced by the same set of prices (P_x, P_y, w, r) .

Pareto optimality

This criterion refers to economic efficiency which can be ~~me~~ objectively measured. As to this criterion any change that makes at least one individual better off & no one worse off is an improvement in social welfare. Conversely, a change that makes no one better off but at least one worse off is a decrease in social welfare.

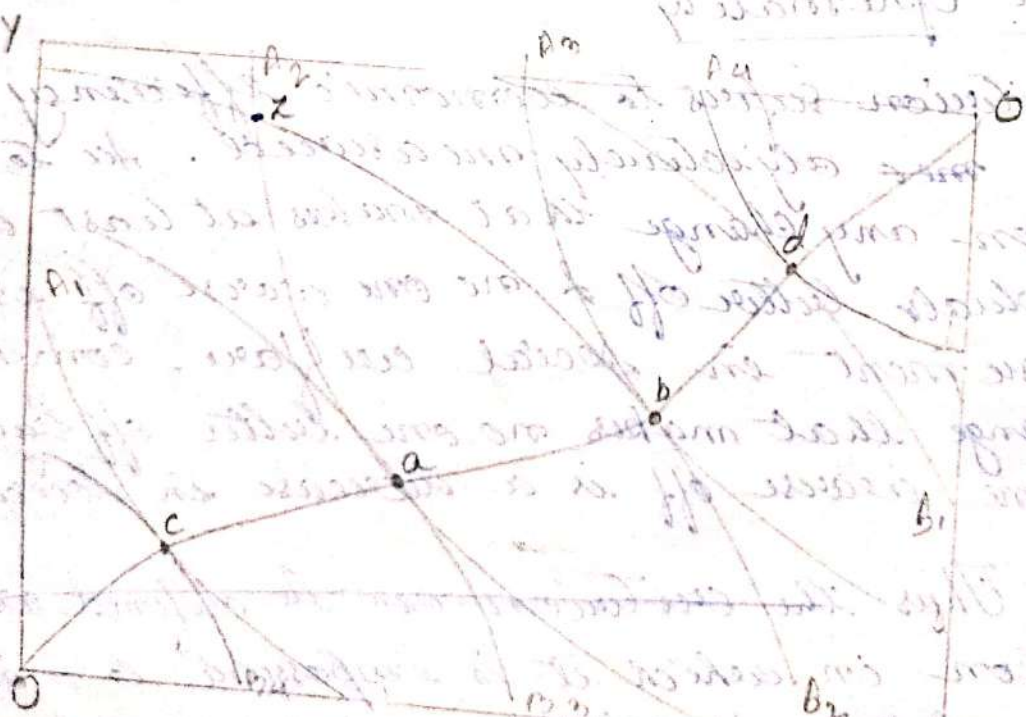
Thus ~~the criterion~~ can be defined as a situation in which it is impossible to make anyone better off without making someone worse off is said to be Pareto-optimal.

For the attainment of Pareto-efficient situation in an economy, three marginal conditions must be satisfied, viz:

- a) Efficiency of distribution of commodities among consumers.
- b) Efficiency in allocation of factors among firms.
- c) efficiency of in allocation of factors among commodities.

These 3 marginal conditions & their attainment are shown below.

- a) Efficiency of Distribution of Commodities among consumers:



Under the Pareto criterion, the distribution of X & Y commodities between the 2 consumers is efficient if it is impossible by a redistribution of these goods to increase the utility of one consumer without reducing the utility of other. In the above Edgeworth box of consumption, housing 2 sets of i.c.s (i.e. A's & B's), the point lying on the contract curves are efficient & satisfy the Pareto optimal criterion. Any other point on the Edgeworth box is inefficient (i.e. off the contract curve). In the above diagram, a & b are more efficient than point Z. A movement from Z to 'a' would increase the utility of B keeping the utility of A constant. Similarly, a movement from Z to 'b' would increase the utility of A without changing the utility of B. Thus the contract curve shows the Pareto-optimal or efficient distribution of goods bet^w consumers. The contract curve is thus derived from the tangency points of the i.c.s & ∴ at each point of contract curve the following condition is satisfied

$$MRS_{XY}^A = MRS_{XY}^B \quad \text{--- (1)}$$

b) Efficiency of allocation of factors among firm - producers -

The allocation of factors (L & K) among 2 producers is said to be efficient under Pareto's criterion, when it is impossible by

c) Efficiency in the composition of output
 The best possible way of increasing social welfare is a change in the product mix. To define the best marginal condition of Pareto optimal state in a economy we will use a prodⁿ possibility curve. The slope of the PPC is called the marginal rate of (product) transformation (MRPT) & it shows the amount of Y that must be sacrificed in order to obtain an additional unit of X. In other words MRTP is the rate at which a good can be transformed into another.

The marginal condition for a Pareto-optimal or efficient composition of output requires that the MRPT bet^w any 2 commodities be equal to the MRS bet^w the same 2 goods.

$$MRPT_{x,y} = MRS_{x,y}^A = MRS_{x,y}^B$$

∴ the MRPT shows the rate at which a good can be transformed into another & the MRS shows the rate at which consumers are willing to exchange a good for another, the rates must be equal for a Pareto-optimal situation to be attained.

Thus a Pareto-optimal situation can be achieved

1. The $MRS_{x,y}$ bet^w 2 goods be equal for all consumers
2. The $MRTS_{L,K}$, bet^w 2 inputs be equal for the prodⁿ of all commo.
3. $MRPT_{x,y}$ be equal to the $MRS_{x,y}$ for any 2 goods.

Merits & Demerits of Pareto welfare economics

Merits

- 1) Pareto criterion is a scientific criterion because it doesn't depend upon interpersonal comparison of utility.
- 2) The Pareto welfare analysis is also more scientific in the sense that it was built up on the ordinal utility fn rather than cardinal utility fn.
- 3) Another merit of Pareto welfare economics is that it attempted to formulate a value free criterion of welfare. From his welfare analysis Pareto ruled out value judgement.
- 4) The main merit of Pareto welfare economics is that it has made distinction betw ambiguous and unambiguous change in social welfare. The former refers to those change which increase the welfare of some while reducing the welfare of others. The latter refers to those changes which benefit some without harming others. The Pareto analysis takes into account only the latter because the former type of changes are left out since they involve value judgement which Pareto had rejected.

Demerits

- 1) The main defect of Pareto's criterion is that it ~~enables~~ enables to judge unambiguous welfare changes. In other words it can tell us whether welfare has increased when some governmental policy make one person better off ~~and~~ wouldn't making any person worse off. It does not evaluate those govt policies which benefits some & harm others. Thus Pareto's criterion failed to evaluate ambiguous welfare changes.
- 2) It doesn't define an ~~in~~ unique ~~is~~ optimum economic situation. There can be a infinite number of Pareto's optimum each with a different level of optimum.
- 3) To say that it is not possible to make every person better off without making anyone worse off is a value judgement itself. Though Pareto was the proponent of ordinal measurement of utility yet he couldn't present a value free criterion.

Externalities & its types

Externalities are the external effects of

the welfare and the directions on welfare

8) Social Welfare Function

(The concept of social welfare function was first introduced by Prof. Bergson & Laiton & is developed by Samuelson, Tinbergen & others) There are of the view that no meaningful economics without introducing value judgement. The value judgement determining the form of the social welfare function, with different sets of value judgement, the form of social welfare function would be different. A social welfare function is a set of social indifference curve where an increase in one individual's welfare, all other individual welfare remaining the same, increases the social welfare. Hence the social welfare function is an ordinal index of societies welfare & is also a form of individual utility constituting the society. It is expressed as

$$W = F(u_1, u_2, u_3, \dots, u_n)$$

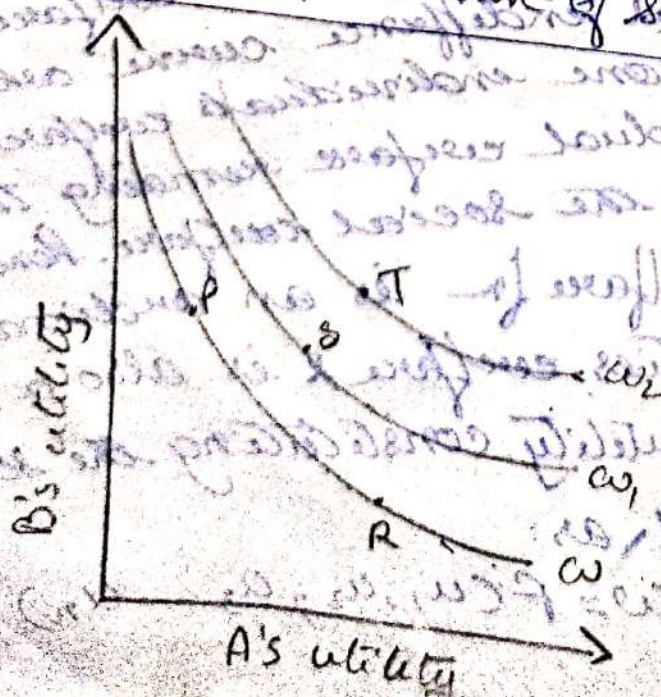
where w = Social economic welfare
 $P = f(n)$
 $u_1, u_2, \dots, u_n$ = level of utilities of n individuals

w is an increasing fn of utilities. As the

Assumptions

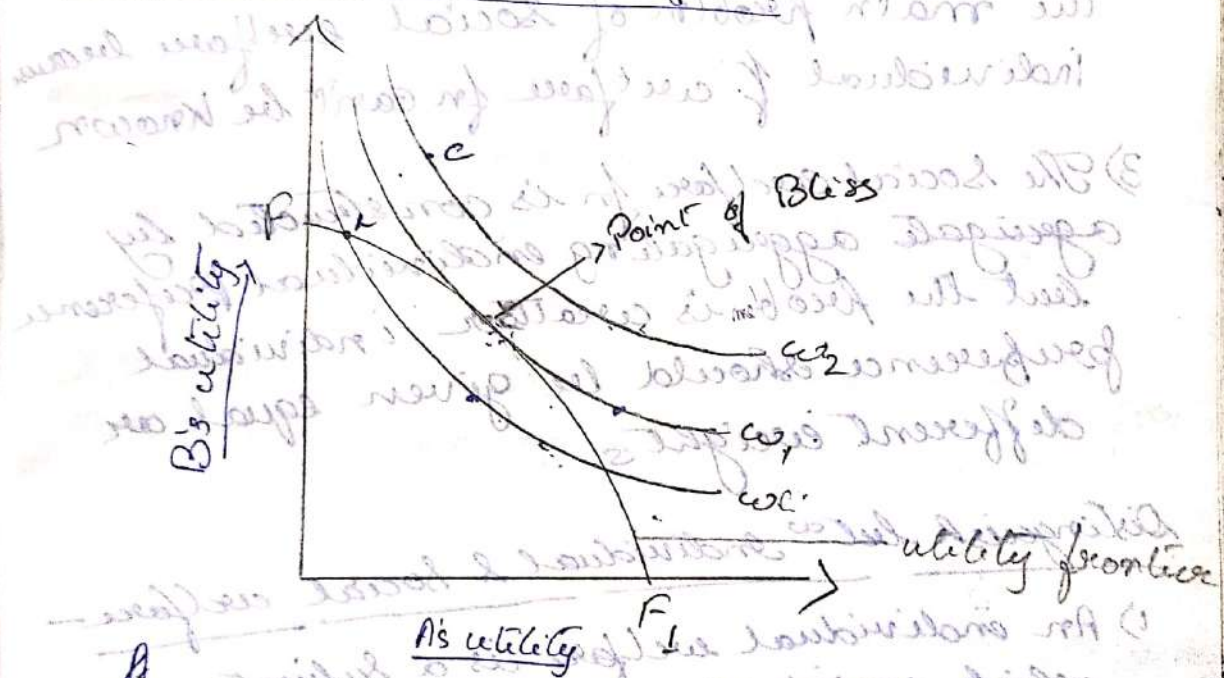
- 1) Social welfare depends on each individual's ~~wealth~~ ^{welfare} & income & each individual's welfare depends in turn on his wealth & income & on the distribution of welfare among the members of society.
- 2) It assumes the presence of internal economies & diseconomies with their consequent effect
- 3) It is based on ordinal & ranking of combinations of those variables which influence individual welfare.
- 4) Interpersonal comparisons of utility involving value judgement are permissible

Diagrammatic representation of social welfare for



In the fig IC_1, IC_2, IC_3 are the social indifference curves showing various distribution of utility among individuals which have the same level of welfare. Such curves help the policy maker to find out whether a particular policy brings an improvement or not. If a change moves the individuals to a higher i.e. curve, social welfare is said to have increased. In the figure a movement from P to S or from P to S represent increase in social welfare & movement from T to P or T to S represent decrease in social welfare.

Maximum Social Welfare



In the fig PF_1 is the utility curve which represent all utility combination possible with the given resources of economy. The social i.c curve IC_1 shows a higher level of social welfare than IC_2 & IC_3 then IC_2 . The point of Maximum social welfare is the one where utility frontier (PF_1) is tangent to social i.c curve.

For eg, point E represent the situation of maximum social welfare. Point L is on a lower welfare curve 'W' whereas point 'e' on C_2 curve is beyond the utility frontier FF_1 of the society. Thus point E represent Maximum social welfare.

Limitations

- 1) ~~This theory is not applicable in a democratic state~~
- 2) The representation of social welfare fn in terms of social i.e. curve doesn't solve the main problem of social welfare because individual welfare fn can't be known.
- 3) The social welfare fn is constructed by aggregate aggregating individual preferences but the problem is whether individual preference should be given equal or different weights.