Department of Economics, Patna University,Patna

Name of the Programme: M A Economics (Sem-II)

Name of the Course: CC-7: Microeconomics Analysis-II

Module 4: Welfare Economics

Topic: Social Welfare Function

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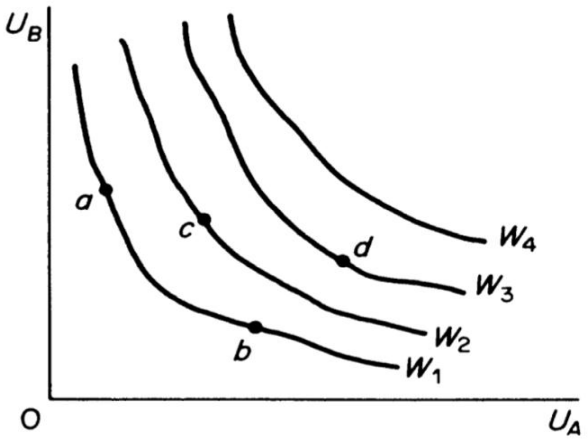
THE SOCIAL WELFARE FUNCTION (Bergson Criterion)

In welfare economics, a **social welfare function** is a function that ranks social states (alternative complete descriptions of the society) as less desirable, more desirable, or indifferent for every possible pair of social states. One use of a social welfare function is to represent prospective patterns of collective choice as to alternative social states. The social welfare function provides the government with a simple guideline for achieving the optimal distribution of income.

The social welfare function is analogous to the consumer theory of indifference-curve–budget constraint tangency for an individual, except that the social welfare function is a mapping of individual preferences or judgments of everyone in the society as to collective choices, which apply to all, whatever individual preferences are for (variable) constraints on factors of production. One point of a social welfare function is to determine how close the analogy is to an ordinal utility function for an individual with at least minimal restrictions suggested by welfare economics, including constraints on the number of factors of production

Bergson Criterion

The various welfare criteria so far discussed show that when a change in the economy benefits some individuals and hurts others it is impossible to evaluate it without making some value judgement about the deservingness of the different individual or groups. Bergson suggested the use of an explicit set of value judgements in the form of a social welfare function. *A social welfare function is analogous to the individual consumer's utility function. It provides a ranking of alternative states(situations, configurations) in which different individuals enjoy different utility levels.* If the economy consists of two individuals the social welfare function could be presented by a set of social indifference contours (in utility space) like the

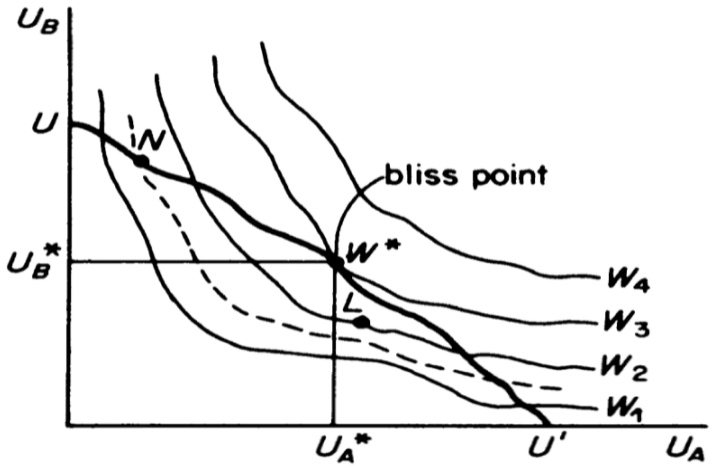


ones shown in figure. Each curve is the locus of combinations of utilities of A and B which yield the same level of social welfare. The further to the right a social indifference contour is, the higher the level of social welfare will be. With such a set of social indifference contours alternative states in the economy can be unambiguously evaluated. For example a change which would move the society from point b to point c (or d) increases the social welfare. A change moving the society from a to b leaves the level of social welfare unaltered. The problem with the social welfare function is that there is no easy method of constructing it. Its existence is axiomatically assumed in welfare economics.Somebody in the economy must undertake the task of comparing the various individuals or groups and rank them according to what he thinks their worthiness is. A democratically elected government could be assumed to make such value judgements which

would be acceptable by the society as a whole. This is implicitly or explicitly assumed when use is made of the apparatus of the social welfare function. It should be noted that the social welfare function cannot be used to derive social (or community) indifference curves in output space (analogous to the indifference curves of a single individual) without taking into account the distribution of income among the various individuals in the economy.

DETERMINATION OF THE WELFARE-MAXIMISING STATE: THE 'POINT OF BLISS'.

In figure the grand utility possibility frontier is combined with the



social welfare function shown by the set of social indifference contours**.** Social welfare is maximised at the point of tangency of the 'envelope' utility possibility frontier with the highest possible social indifference contour. This point is called 'the point of bliss'. It is denoted by w• in figure. The maximum social welfare attainable in our example is the level implied by the indifference contour W3 . The two consumers will enjoy the levels of utility $U^{\bullet}_{A}$ and $U^{\bullet}_{B.}$

We can now see why the Pareto-optimality is a necessary but not sufficient condition for welfare maximisation. The welfare maximisation will occur at a point on the 'envelope' utility possibility frontier, and we saw that all points on this frontier satisfy all three conditions of Pareto optimality. Thus, the point of welfare

maximisation is a Pareto-optimal state. However, a large number of points below the grand utility frontier, although not Pareto-optimal, yield a higher level of social welfare than points on the utility frontier. For example, point N in figure is a Pareto-optimal situation while point L is not. Yet L lies on a higher social indifference contour than point N. However, it can be shown that, given any inefficient point (below the 'envelope' utility frontier), there will exist some point(s) on the grand utility frontier that represents an improvement in social welfare.

Thank You