

Social Welfare Function of Economics (With Diagram)

In a democracy, the value judgements must be determined collectively by the members of the society. The individuals can express their value judgements by means of voting. But Arrow pointed out that social welfare could not be evaluated by a democratic vote. This is known as Arrow's Impossibility Theorem.

According to Arrow, the social welfare choices should be transitive, i.e., if situation A is preferred to situation B and B is preferred to C, then A is preferred to C. Given the transitivity assumption, let us now consider the following rankings of three policies A, B and C by three individuals I, II and III (the lower number indicating a higher rank).

From the above rankings we obtain: Individuals I and II prefer the policy A to policy B. Thus, a majority vote between the policies A and B will lead to the choice of A. Again I and III prefer B to C. So a majority vote between B and C will lead to the choice of B. Thus, we obtain A is preferred to B and B is preferred C. This would imply, because of transitivity, that A is preferred to C.

Therefore, if transitivity holds, we obtain A is preferred to B and A is preferred to C. Therefore, democratic vote gives us that A is the policy that should be selected. However, when we consider A and C, we find that both II and III prefer C to A.

So, the majority vote between A and C will lead to a choice of C, and transitivity will not hold. Thus, democratic votes lead to the choice of all the three policies, i.e., here we arrive at what is known as the voting paradox.

Individuals	Policies		
	A	B	C
I	1	2	3
II	2	3	1
III	3	1	2

The above method of voting by ranks is paradoxical and confusing, and we may come out of it, if account is taken of the intensity of the preferences of different individuals, and a scheme of compensation is made use of. This is actually the idea behind the compensation principle.

For example, if the consumer I and II's preference for A is very intense and it is worth, say, Rs 1000 to each, and consumer I and III's preference for B, and II and III's preference for C, are not so intense, it is worth Rs 100, say, for each of them, then certainly a compensation scheme might be worked out and policy A might be implemented.

However, the criterion of SWF and also the Kaldor-Hicks compensation criterion based on potential and not actual compensation requires an assumption of omniscience on the part of the individuals evaluating the different policies.