

Sources of Income, Income Inequality and Social Welfare-An Alternative Decomposition

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Chakrabarty (1983b) has, in a recent issue of this journal, decomposed Sen's (1974) welfare measure into additive components corresponding to various sources of income. The procedure was illustrated by using data collected by the National Council of Applied Economic Research (NCAER) for the agricultural year July 1975 to June 1976 and published as *Household Income And Its Disposition*. This particular paper was a natural sequel to Chakrabarty (1982, 1983a), in which the theoretical framework for decomposing Sen's welfare measure into additive components was worked out and various welfare measures were computed for Indian income distributions.

The intention of our paper is to decompose an alternative welfare measure into additive components corresponding to various sources of income. The measure we have in mind is Kakwani's (1980) welfare measure. Before Kakwani's axioms and his welfare measure are postulated, we postulate Sen's axioms and his welfare measure as a useful contrast. In stating Sen's axioms we follow Kakwani (1980), so that the statement of the axioms is somewhat different from the statement given in Chakrabarty (1983b). In the approaches of both Sen and Kakwani, one starts with a general form of the welfare function given as

$$W(x) = \sum_{i=1}^n x_i v_i(x) \quad \dots \quad (1)$$

x is the income vector and x_i is the income of the i^{th} individual. $v_i(x)$ is the weight attached to x_i in the welfare function. Different axiomatic structures lead to differences in the determination of the weights, and therefore, to different measures of welfare. (x, i) is used to denote the position of being individual i when the income distribution is x .

The four axioms proposed by Sen are as follows:

Axiom 1 (Weighting equity) : If for all individuals the preference relation is such that (x, i) is preferred to (x, j) , then