ABSTRACT. This paper shows that, if the performance of the economy is independent of the identities of individuals, then many welfare criteria yield sets of optimal social states that are equal to the Pareto optimal set. This result is proved for income distributions and extended to more general social choice problems. If the independence condition holds, then the set of optimal states is invariant to the adoption of an anonymity axiom, and to the utility information available.

KEY WORDS: Equal opportunity, Income distribution, Pareto optimality, Rank dominance, Welfare

1. INTRODUCTION

The Pareto principle is the most important and widely used welfare criterion in economics. An important problem with the Pareto principle is that it is often indecisive, and social states frequently cannot be ranked. More decisive social welfare criteria can be built up from the Pareto principle by adopting additional axioms, such as anonymity (symmetry) or equity, to provide rankings in situations where the Pareto principle alone does not. These additional axioms may also require additional utility information. For example, the use of a Bergson-Samuelson welfare function requires utilities that are absolutely measurable and fully interpersonally comparable.

One may object to modifications of the Pareto principle on the basis of the ethical judgements embodied in the added axioms or on the basis of the additional informational requirements. Such objections are strengthened if it can be shown that a given welfare criterion is equivalent to Pareto optimality. If the given welfare criterion is equivalent to Pareto optimality then the additional axioms, intended to yield a more decisive criterion, have no power. In an important but neglected paper, Saposnik (1983) provides a joint condition on the operation and social structure of an economy under which a number of alternative welfare criteria are equivalent to Pareto opti-
mality. Saposnik (1981, 1983) focuses on the application of rank dominance to income distributions. One income distribution rank dominates another if the poorest, second poorest, third poorest, etc., individual has a higher income under the first income distribution. Saposnik shows that the sets of Pareto optimal and rank optimal income distributions are equal if, and only if, there is ‘equal opportunity’. there is equal opportunity whenever ‘... a particular income distribution is attainable, so are all income distributions arrived at by switching identities of persons’. [so that] ‘... the set of attainable income distributions is independent of the identities of persons’ (Saposnik, 1983, p. 332).

This paper provides weaker conditions under which Pareto optimality, rank optimality, and several other welfare criteria, are equivalent. Equal opportunity imposes conditions on both the operation of the economy and the structure of society. First, equal opportunity requires that the performance of the economy be independent of the identities of persons. Second, equal opportunity requires that all switches of identities of persons must be possible, so that each individual can attain any rank in the income distribution, from poorest to richest. This paper shows that the condition on the social structure is not essential, and that the independence condition alone is necessary and sufficient for the sets of Pareto optimal and rank optimal income distributions to be equal.

This paper also shows that this stronger result applies to more general social choice problems. If utilities are interpersonally comparable, the attainable set can be interpreted as a set of attainable utility levels. The independence result can then be interpreted as applying to social welfare orderings. If the independence condition holds then the set of optimal social states is invariant to the adoption of anonymity axioms and invariant to the utility information available.

Section 2 shows that independence is equivalent to the equality of the Pareto and rank optimal sets. Other welfare criteria considered include the Suppes-Sen grading principle, utilitarian and general welfare functions and Lerner’s probabilistic welfarism. Section 3 extends the analysis to social welfare orderings, and Section 4 provides brief concluding remarks.