

# On the axiomatic foundations of aggregate consumer surplus measures

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**Abstract:** In standard economic environments, axiomatic foundations are developed for the two aggregate Hicksian consumer surplus measures - aggregate willingness-to-pay (compensating variation) and aggregate willingness-to-accept (equivalent variation) - as ordinal social welfare indices, without the imposition of any extraneous assumptions such as the interpersonal utility comparison and the expected utility hypothesis. Each of the measures is characterized by the three axioms in Arrovian form (Pareto, anonymity and independence). Among the axioms, the same Pareto and anonymity axioms are shared by the two measures, but each independence axiom is specific to each of the measures. Hence each measure has a secure axiomatic foundation as a social welfare index within the economic environments, and the differences of social orderings determined by the two measures are explained only by the difference of each independence axiom.

**Key words:** Consumer Surplus; Willingness-to-pay; Willingness-to-accept; Social Welfare Function.

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