MBS 93-28 Joint Receipt and Certainty Equivalents R. Duncan Luce

Several rules have been proposed for calculating the utility of the joint receipt of two amounts of money in terms of their individual utilities and/or the utility of their sum. this paper explores how the rules can be generalized to gambles. A concept of a structure of gambles with a joint receipt operation & and a certainty equivalence (CE) mapping is described (Definition 1). Monotonicity of & relative to preference permits simple generalizations of the rules to gambles (Theorem 1), and general properties of the utility function are related to general properties of CE (Theorem 2). the latter establishes that several apparently plausible properties are inconsistent, which raises empirical questions. A homogeneous scaling property is introduced that leads to a class of joint receipt operations that have not yet received attention (Theorem 3). Finally, for the restrictive case of lotteries (random variables), it is shown that if the convolution operation is monotonic in preference, then the CE mapping is onto addition (Theorem 4). It is argued that gamblers, at least, must fail monotonicity of convolution.