R. DUNCAN LUCE

CORRECTION TO 'SEVERAL POSSIBLE MEASURES OF RISK'

Professor A. A. J. Marley has pointed out to me that Theorems 3 and 4 of Luce (1980) hold, as stated, only for positive random variables. The general case can be derived in an analogous way by developing the form for $T(x)$, $x < 0$, which is done by treating the special case of the uniform density over $(-(1/\alpha), 0)$. Equations (7) and (9) are thus replaced by, respectively,

$$(7) \qquad R(f) = B_1 \int_0^\infty f(x)\,\mathrm{d}x + B_2 \int_{-\infty}^0 f(x)\,\mathrm{d}x + A \log(|X|), \quad A > 0,$$

and

$$(9) \qquad R(f) = A_1 \int_0^\infty x^\theta f(x)\,\mathrm{d}x + A_2 \int_{-\infty}^0 |x|^\theta f(x)\,\mathrm{d}x, \quad \theta > 0,$$

where

$$A_1 = (\theta + 1) \int_0^1 T(x)\,\mathrm{d}x \quad \text{and} \quad A_2 = (\theta + 1) \int_{-1}^0 T(x)\,\mathrm{d}x.$$

In general, neither form is subadditive over convolutions. When T is symmetric about 0, $A_1 = A_2$ and $B_1 = B_2$, in which case they reduce to E (log $|X|$), which is subadditive, and E ($|X|\theta$), which is not. The fact that the general solution is partitioned into the positive and negative parts of the gamble is in accord with the intuitions of several students of risk. Corresponding changes must be made in the last display on p. 226. The first part of Equation (8) should read $C = \int_0^1 T(x)\,\mathrm{d}x$.

Harvard University

REFERENCE

Luce, R. D.: 'Several possible measures of risk,' *Theory and Decision* **12** (1980), 217–228.

Theory and Decision **13** (1981) 381. 0040–5843/81/0134–381 $00.10.