Two-moment Decision Models and Expected Utility Maximization

Comment to J. Meyer

by Hans-Werner Sinn

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By HANS-WERNER SINN*

Jack Meyer (1987) has confirmed that, contrary to frequent belief, the (μ, σ) criterion and the expected utility criterion are fully compatible if all probability distributions from an agent's choice set are members of the same linear class. Neither quadratic utility nor normal probability distributions are required. The merit of his contribution is that it makes the (μ, σ) approach for linear distribution classes more widely known. However, the cited result is not new, and Meyer has not given due recognition to the European literature which followed James Tobin's (1958) pioneering contribution.

Tobin had tried to prove the existence and convexity of indifference curves in (μ, σ) space for arbitrary von Neumann-Morgenstern utility functions, but he claimed too much when he argued that his results applied to two-parameter families in general. The first who perceived this mistake seems to have been Hans Schneeweiß (1967, pp. 121–129). He explicitly distinguished between linear classes and other two-parametric classes showing that the former, but not in general the latter, produce Tobin's results.

A number of further general properties of the indifference curves in the case of linear distribution classes have been derived and published in English by H.-W. Sinn (1983, pp. 56–58, 115–120, 153–182). They include the relationship between the Pratt-Arrow measures of risk aversion and the indifference curve slope as well as additional properties that relate primarily to the cases of constant relative risk aversion and lower bounds on utility and wealth.[1] The approach has been applied to problems of currency speculation, portfolio selection, and redistributive taxation under risk (Sinn, 1983, ch. V, secs. A and B; 1981; 1985) as well as to insurance problems (Kornelius Kraft and Matthias Graf von der Schulenburg, 1986; and Sinn, 1977; 1978; 1983, ch. VC); in all of these applications, the (μ, σ) criterion was used with explicit reference to the assumption of a linear distribution class. Meyer's point that most of the published expected utility approaches use linear classes has been anticipated as has his remark on Tobin's theory of liquidity preference or his denial of Feldstein's counterexample on the grounds that this example did not refer to a linear class (Sinn, 1983, p. 120; p. 269, fn. 19; and p. 118, fn. 37).

I mention this literature to help prevent further reduplication of scientific research in different parts of the world.

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[1] Recent extensions of this work can be found in Sinn (1988).

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