Market Insurance, Self-Insurance, and Self-Protection

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The article develops a theory of demand for insurance that emphasizes the interaction between market insurance, "self-insurance," and "self-protection." The effects of changes in "prices," income, and other variables on the demand for these alternative forms of insurance are analyzed using the "state preference" approach to behavior under uncertainty. Market insurance and self-insurance are shown to be substitutes, but market insurance and self-protection can be complements. The analysis challenges the notion that "moral hazard" is an inevitable consequence of market insurance, by showing that under certain conditions the latter may lead to a reduction in the probabilities of hazardous events.

The incentive to insure and its behavioral implications have usually been analyzed by applying the expected utility approach without reference to the indifference curve analysis ordinarily employed in consumption theory. In this paper insurance is discussed by combining expected utility and an indifference curve analysis within the context of the "state preference" approach to behavior under uncertainty (the preferences in question relating to states of the world).[1] We use this framework to restate

and reinterpret in a simpler and more intuitive way some familiar proposi-
tions concerning insurance behavior; more important, we derive a number
of apparently new results, especially those concerned with self-insurance
and self-protection. Our approach separates objective opportunities
from "taste" and other environmental factors, which facilitates an inde-
pendent investigation of each class of factors analytically as well as
empirically. In addition, we consider not only the incentive to insure,
but also how much insurance is purchased under varying "opportunities"[2]
and in view of the existence of the alternatives of self-insurance and self-
protection. We use the basic analytical tools employed throughout tra-
ditional consumption and production theory.

It has been argued that insurance is different from "ordinary" goods
and services because it is not desired per se, but as a means of satisfying
more basic needs.[3] Recent developments in consumption theory[4] suggest,
however, that the distinction between goods and services purchased in the
market and more basic needs they satisfy is not a unique characteristic of
insurance, but applies to all goods and services. The demand for the
latter is also derived from the needs they satisfy, just as the demand for
factors of production in ordinary production theory is derived from their
contribution to final products.

The basic needs underlying the purchase of insurance will be identified
with consumption opportunities contingent upon the occurrence of various
mutually exclusive and jointly exhaustive "states of the world."[5] Market
insurance in this approach redistributes income and, consequently, con-
sumption opportunities, toward the less well-endowed states. Self-insurance,
however, redistributes income similarly, self-protection has a related
effect, and either might be pursued when market insurance was not avail-
able. Moreover, optimal decisions about market insurance depend on the
availability of these other activities and should be viewed within the con-
text of a more comprehensive "insurance" decision.

[2] Theorems concerning optimal insurance decisions have been derived in two recent
contributions by Smith (1968) and Mossin (1968). Our approach differs not only in
form but also in substance; for example, in the analysis of the interaction between
market insurance, self-insurance, and self-protection.

[3] For example, Arrow (1965) says, "Insurance is not a material good . . . its value
to the buyer is clearly different in kind from the satisfaction of consumer's desires
for medical treatment or transportation. Indeed, unlike goods and services, trans-
actions involving insurance are an exchange of money for money, not money for
something which directly meets needs" (p. 45).

[4] See, for example, Becker and Michael (1970).

[5] By consumption opportunities in each state of the world is meant command over
commodities, C_i, produced by combining market goods, X_i, time spent in consumption,
t_i, and the "state environment," E_i, via household production functions (for the latter
concept see Becker and Michael 1970): $C_{ij} = f_{ij}(X_{ij}, t_{ij}, E_i)$ $j = 1, \ldots, m$ where j
refers to different commodities. If the production functions fully incorporate the effects
of environment, the utility function of commodities would not depend on which state
occurred. In particular, for an aggregate commodity C, $U(C_0) = U(C_1)$ if $C_0 = {}_1$,
where 0, 1 denote different states.