Insurance Economics Class Problem

Finance 4335, February 24, 2023

Source: http://fin4335.garven.com/spring2023/Insurance_Economics_Class_Problem.pdf

Suppose that a consumer is subject to the following loss distribution:

State-Contingent Loss (L_s)	Probability of State (p_s)
\$0	1/3
\$2,500	1/3
\$5,000	1/3

This consumer is considering four possible strategies for dealing with this risk. Besides self-insurance, she can also consider the following three insurance policies:

a) Policy A has a \$625 deductible for a premium of \$2,375;
b) Policy B covers 80% of all losses for a premium of \$2,250; and
c) Policy C covers 100% of all losses for a premium of \$3,000.

A. Suppose the consumer's initial wealth is \$10,000, and the only source of risk is the loss distribution. Calculate the expected value of final wealth under the four available risk management strategies (i.e., self-insurance, Policy A, Policy B, and Policy C).

B. What are the premium loadings for Policies A, B, and C?

C. Suppose that $U(W) = \ln W$. Which risk management strategy (i.e., self-insurance, Policy A, Policy B, or Policy C) should be selected?