

His insurance agent has quoted the following premiums:

Amount of Insurance, \$	Premium, \$
30,000	$30 + AVL_1^*$
40,000	$27 + AVL_2$
50,000	$24 + AVL_3$

* Actuarial value of loss = expected value of the insurer's loss.

Mr. Casadesus expects neither to save nor to dissave during the coming year, and he does not expect his home to change appreciably in value over this period. His utility for wealth at the end of the period covered by the renewal is logarithmic, i.e., $U(W) = \ln(W)$.

- a) Given that the insurance company agrees with Mr. Casadesus's estimate of his losses, should he renew his policy (1) for the full value of his house, (2) for \$40,000, or (3) for \$30,000, or (4) should he cancel it?
- b) Suppose that Mr. Casadesus had \$320,000 in a savings account. Would this change his insurance decision?
- c) If Mr. Casadesus has \$20,000 in savings, and if his utility function is

$$U(W) = -200,000W^{-1},$$

should he renew his home insurance? And if so, for what amount of coverage?

[Note: Insurance covers the first x dollars of loss. For simplicity, assume that all losses occur at the end of the year and that the premium is paid at the beginning of the year.]

4.12 Assume that security returns are normally distributed. Compare portfolios A and B , using both first- and second-order stochastic dominance:

Case 1	Case 2	Case 3
$\sigma_A > \sigma_B$	$\sigma_A = \sigma_B$	$\sigma_A < \sigma_B$
$E_A = E_B$	$E_A > E_B$	$E_A < E_B$

4.13 Given the following probability distributions for risky assets X and Y :

Probability X_i	X_i	Probability Y_i	Y_i
.1	-10	.2	2
.4	5	.5	3
.3	10	.2	4
.2	12	.1	30

- a) If the only available choice is 100% of your wealth in X or 100% in Y and you choose on the basis of mean and variance, which asset is preferred?
- b) According to the second-order stochastic dominance criterion, how would you compare them?