12 Book Notes

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Risk, option Price, and option Value

option Price - amount WTP for Policies before realization of contingencies

option Value - difference between option Price and expected surplus

12.1 Ex-Ante WTP: option Price and certainty Equivalents

maximum WTP for a Policy in any contingency → option Price

↳ **certainty equivalent**

12.1.1 Illustrations of option Price

expected surplus can under or over-estimate option Price

Contingent Contract

certainty line - Payments are the same along the line

fair bet line - average Payoff based on Probability

WTP Locus - All combos of Contingent Payments for same expected Utility

12.1.2 Is option Price the best measure of benefits

moral hazard - insurance encourages risk by insurees

Adverse Selection - insurees know more about risks than insurers

If complete and actuarilly fair insurance is available, then the larger of option price or expected surplus is the appropiate measure of benefits

12.2 Determining the bias in expected surplus: signing option value

OV = OP - E(S) → OP = E(S) + OV

risk Premium (RP) = E(S) - OP → RP = -OV

12.2.1 Determining the sign of option value

12.3 Rationales for Expected Surplus as a Practical Net Benefit measure

12.3.1 Small changes in individual risks

systematic vs **non-systematic risk**

For broadly spread impacts, use NB

12.3.2 Risk reduction through Policy Portfolios

if systematic risk is small, Projects can be discounted by expected NB at risk free social discount rate

12.3.4 Pooling risks across individuals: collective and individual risk

individual risk: larger of OP or E(S) is better