

Some Notes on Expected Utility Theory

Let i be some event, Pr_i be its probability of happening and X_i its payoff/wealth,

Expected Wealth / Payoff : $E[X] = \sum_i Pr_i \cdot X_i = Pr_1 \cdot X_1 + Pr_2 \cdot X_2 + \dots$

Expected Utility : $E[U(X)] = \sum_i Pr_i \cdot U(X_i) = Pr_1 \cdot U(X_1) + Pr_2 \cdot U(X_2) + \dots$

An agent always chooses the option that gives the highest expected utility.

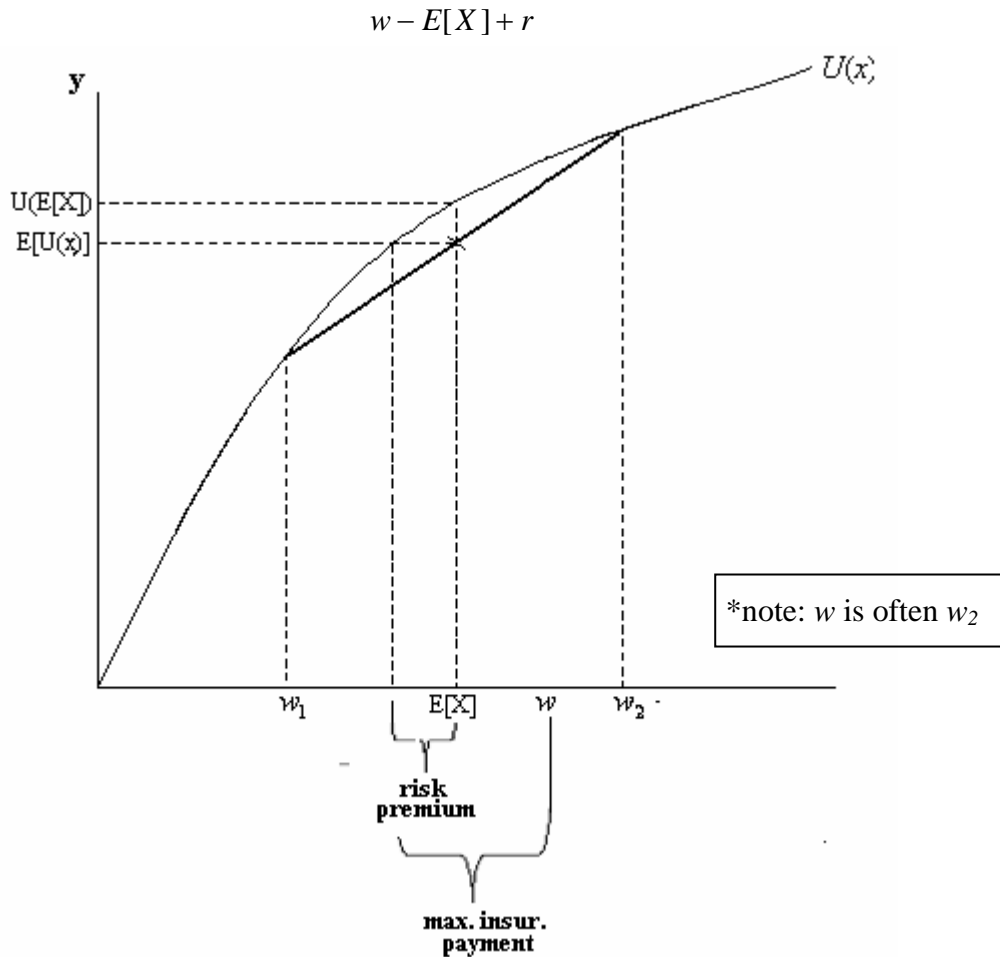
Risk Premium

Let r be the risk premium, r can be found from the following formula:

$$E[U(X)] = U(E[X] - r)$$

Maximum Insurance Payment

Let w be the initial wealth and r be the risk premium, the maximum amount willing to pay for insurance is



Risk Neutral

A risk neutral person only cares about the expected payoff/wealth $E[X]$; she does not care about risk at all.

Risk Averse and Risk Loving

If you know the choice of a risk neutral person then you know the following *even without the utility function*:

Risk neutral person...	Risk adverse person...	Risk loving person...
Takes the bet	No idea	Takes the bet for sure
Does not take the bet	Does not take the bet for sure	No idea