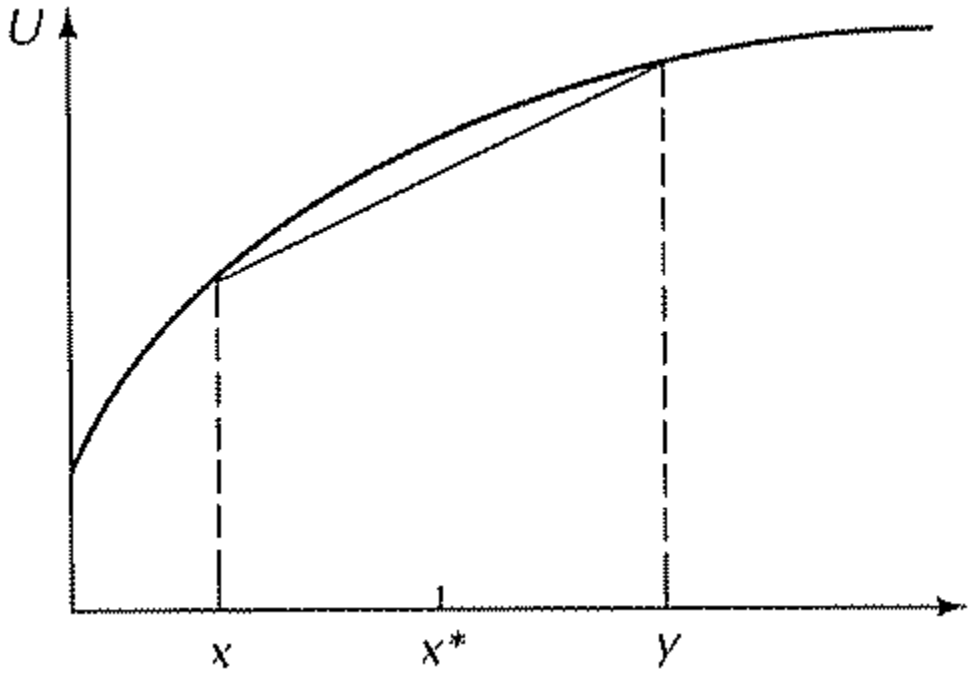
Utility Theory of Risk

Utility function



- Concave utility function= risk averse
- Convex utility function=risk lover
- Neither concave nor convex= risk neutral

You have two options!

- Head comes= +10 INR
- Tail appears= 0 INR

- Utility function= x-0.4x^2

Example

- Treasury bill=6INR (for sure)
- Second option= 10 INR, 5INR and 1 INR with 0.2, 0.4 and 0.4 probability

His utility function is U(x) =(x)^0.5

Arrow Pritt Absolute and Relative risk aversion measures

Arrow-Pratt measure of absolute risk aversion:

$$A = -\frac{U''(x)}{U'(x)}$$

Arrow-Pratt measure of relative risk aversion:

$$A' = -x\frac{U''(x)}{U'(x)}$$

Where x is the payoff of a given lottery and U(x) the utility derived from that payoff.

Examples

- utility=Ln(x)

- Utility= $x - cx^2$

Certainty Equivalence