Assignment 2
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Abstract

This document shows a homework assignment for the seminar Economics and Psychology of Risk and Time.

Exercise 1

Calculate the certainty equivalent of the prospect (0.2,40;0.6,50;0.2,30), under:
a) Expected utility theory with the utility function $u(x) = x/10$ with total wealth=0.
b) Rank dependent utility with the utility function $u(x) = x/10$ and $w(p) = p^2$ with total wealth=0.

Answer Exercise 1a

The expected value of the prospect is EV=0.2*40+0.6*50+0.2*30=44 and the utility given the formula $U(x) = \sum p * u$ is 4.4.
The certainty equivalent (CE) is calculated by determining the value of x for which an individual is indifferent of receiving the prospect or a certain amount. In this case, since utility is given by $U(x) = x/10$ the CE is calculated as follows:

$$U(x) = x/10 = 4.4$$

$$x = 4.4 * 10 = 44 = CE$$

Answer Exercise 1b

The rank dependent utility calculated using $U(x) = \sum \pi * u$ and $w(p) = p^2$ is as follows:
$0.2^2 * 4 + (0.8^2 - 0.2^2) * 5 + (1 - 0.8^2) * 3 = 4.24$.
Given that the utility is calculated as $u(x) = 0.1 * x$, so the amount for

which an individual would be indifferent between the prospect or a certain amount would be $CE = 4.24/0.1 = 42.2$

Graph

Figure 1: Regression