

Exercise 4

In this exercise, we will consider the decision made by an agent when applying Prospect Theory in comparison with when applying Expected Utility Theory.

For the case of Prospect Theory, we assume the Value Function $v(z)$ and the Weighting Function $\pi(p_1, p_2)$ as

$$v(z) = \begin{cases} z^{0.88} & , \text{if } z \geq 0 \\ -2.25(-z)^{0.88} & , \text{if } z < 0 \end{cases}$$
$$\pi(p_1, p_2) = \frac{p_1^{0.65}}{(p_1^{0.65} + p_2^{0.65})^{1/0.65}}$$

For the case of Expected Utility Theory, we assume that the Bernoulli utility function is given by

$$u(z) = \ln(z + 1)$$

*** Look at the excel file supplemented with this exercise for help.

Compare between the prospects provided in each case using the Prospect Theory and the Expected Utility Theory. To make the application of Expected Utility Theory possible, assume that the initial level of wealth of the agent is \$5,000.

- a) Compare $P11(0.001, \$5000, 0.999, \$0)$ and $P12(\$5)$
- b) Compare $P13(0.001, -\$5000, 0.999, \$0)$ and $P14(-\$5)$
- c) Compare $P15(0.8, \$4000, 0.2, \$0)$ and $P16(\$3000)$
- d) Compare $P17(0.2, \$4000, 0.8, \$0)$ and $P18(0.25, \$3000, 0.75, \$0)$