

It is given that the utility function will be scaled such that the utilities of the least preferred profit (15 M€) and the most preferred profit (85 M€) are 0 and 1, so we can assign the utility as $U(15) = 0$, and $U(85) = 1$

The CEO's responses give us the following certainty equivalents:

He is indifferent between 50-50 gamble for 15 M€ and 85 M€ and certain profit of 32 M€.

He is indifferent between 50-50 gamble for 32 M€ and 85 M€ and certain profit of 49 M€.

He is indifferent between 50-50 gamble for 15 M€ and 32 M€ and certain profit of 21 M€.

He is indifferent between 0.9-0.1 gamble for 85 M€ and 15 M€ and certain profit of 68 M€

We can find the utility of each profit using the expected utility. The utilities of each profit now can be solved by the four equations:

$$0.5 \times U(15) + 0.5 \times U(85) = U(32)$$

$$\Rightarrow U(32) = 0.5 \times 0 + 0.5 \times 1 = 0.5$$

$$0.5 \times U(32) + 0.5 \times U(85) = U(49)$$

$$\Rightarrow U(49) = 0.5 \times 0.5 + 0.5 \times 1 = 0.75$$

$$0.5 \times U(15) + 0.5 \times U(32) = U(21)$$

$$\Rightarrow U(21) = 0.5 \times 0 + 0.5 \times 0.5 = 0.25$$

$$0.9 \times U(85) + 0.1 \times U(15) = U(68)$$

$$\Rightarrow U(68) = 0.9 \times 1 + 0.1 \times 0 = 0.9$$

