

Reference-Dependent Preferences: Examples

Alvaro has reference-dependent preferences over money. Let his realized outcome in money be c_1 , and his reference point in money be r_1 . Then, Alvaro's utility is given by

$$v(c_1 - r_1)$$

where $v(x) = x$ for $x \geq 0$, and $v(x) = 2x$ for $x < 0$. Normalize Alvaro's initial amount of money to zero.

- a. Alvaro has just agreed to take part in an experiment, and he was told by the organizers that he might receive \$10 for his participation. Suppose Alvaro can choose whether to incorporate the \$10 into his reference point. Calculate his utility with a reference point of \$0 and a reference point of \$10 if he receives \$10 for his participation. Calculate his utility with a reference point of \$0 and a reference point of \$10 if he receives \$0 for his participation. Which reference point yields higher utility? Explain the intuition.

Now suppose Alvaro has reference-dependent preferences not just over money, but over money, mugs, and pens. Let his consumption in money, mugs, and pens be c_1 , c_2 , and c_3 , respectively, and let his reference point in money, mugs, and pens be r_1 , r_2 , and r_3 , respectively. Then, Alvaro's utility is given by

$$v(c_1 - r_1) + v(4c_2 - 4r_2) + v(4c_3 - 4r_3)$$

where $v(x) = x$ for $x \geq 0$, and $v(x) = 2x$ for $x < 0$. Normalize Alvaro's initial amount of money to zero, and suppose he starts off with zero mugs and zero pens.

- b. Alvaro arrives at the experiment, and it turns out that he receives an \$8 show-up fee, which he does not incorporate into his reference point for money. Suppose Alvaro is given a mug (and he does incorporate this into his reference point). Calculate his selling price by (i) writing down his reference point; and (ii) solving for the price p_s that makes him indifferent between keeping his mug and receiving nothing and giving up his mug and getting p_s .
- c. Now suppose Alvaro is not given a mug. Calculate his buying price by (i) writing down his reference point; and (ii) solving for the price p_b such that he is indifferent between getting a mug for p_b and not getting or paying anything.
- d. Argue briefly that Alvaro's buying and selling prices for pens are the same as for mugs.

For the rest of the question, suppose that Alvaro has two options in the experiment: to buy a mug for \$7, and to buy a pen for \$6.

- e. Suppose Alvaro arrives at the experiment with a reference point of having one mug and one pen (perhaps because he was told he could get these as gifts). His reference point in money is still \$0 and he still receives the \$8 show-up fee. Would he buy a mug for \$7 if that was the only choice he was offered? Would he buy a pen for \$6 if that was the only choice he was offered? Would he make both purchases? Briefly explain the intuition.
- f. Now suppose Alvaro can choose whether to enter the above experiment with a reference point of getting the mug or a reference point of getting the pen, knowing the prices in advance. (He still cannot choose his reference point in money, which is \$0, and he knows he will get \$8.) Which one would he choose? Briefly explain the intuition.