Problem Set 11

Present Bias

Due: 11PM Eastern Time on Sunday, November 24

Econ 316: Industrial Organization

Honor code

I am allowed to discuss the problem sets with others. However, I will write everything I submit, such as code, mathematical derivations, and final answers. I will not copy others. When I receive advice from others, I will cite them in my problem set.

For example, if student named "Juana Diaz" gave me advice on a line of code, I will write "(Received advice from Juana Diaz)" on that line. Receiving advice does not affect your grade or how the grader thinks of you.

Question 0

0A: I followed the honor code on this problem set. (Answer Yes or No.)

0B: How much time did you spend on this problem set?

Question 1: The dual-self model

In this question, we'll determine the amount L for a commitment contract that a person might make on StickK.com to exercise in one year. Assume that $\beta = 0.7$ and the discount *rate* is 5% per year. (Remember the difference between discount *rate* and discount *factor*.) Assume that Exercise has a one-time health benefit b of $20 that accrues four (4) years after the exercise happens, and a personal utility cost c of $5. The game is like the StickK.com game from lecture, except that the one-time benefit accrues four years after exercise instead of one year after exercise.

A) We discussed three types of people in the lecture slides: standard (time-consistent) people, sophisticated present biased people, and naïve present biased people. Which of those three types might use StickK.com? Why?
B) If price p is such that the Present self Exercises if and only if the Long-run self chooses StickK, what is the maximum p such that the "Long-run self" chooses StickK instead of No StickK?
C) Assume that $p = 10$. What is the minimum amount L that could induce the "Present self" to Exercise instead of sit on the Couch?

Question 2: Pricing consumption goods with present biased consumers

Consider the DellaVigna and Malmendier (2004) health club pricing model considered in class. Imagine that $\delta = 0.95$, $b = 20$, $c = 10$, $a = 5$, and $K = 2$. If consumers are present biased, their $\beta = 0.7$.

A) What is/are the firm's profit-maximizing (L, p) if all consumers are time-consistent?
B) What is/are the firm's profit-maximizing (L, p) if all consumers are sophisticated present biased?
C) What is/are the firm's profit-maximizing (L, p) if all consumers are naive present biased?
D) For which of the three consumer types is the social optimum attained in the SPNE?

Question 3: Example of behavioral IO on the internet

Find an example of a business practice that exploits consumer biases. Potential biases to consider are present bias, overconfidence, confusion, and inattention to add-on costs. Potential types of practices are intentionally confusing contracts, intentionally hidden costs, and contracts that exploit overconfidence.

A) Include a screen shot or link to a web page describing the practice. Describe briefly the practice and what bias it's intended to exploit.
B) Is "exploiting consumer mistakes" the only reason why firms might do this, or are there alternative explanations such as costs or price discrimination?
C) What harmful effects (either in terms of deadweight losses or transfers away from disadvantaged people) might this practice cause?
D) Describe one or more ways in which a regulator such as the Federal Trade Commission or Consumer Financial Protection Bureau might intervene to reduce or eliminate the harmful effects.
E) Might such regulatory action have other potentially-harmful side effects?