EC428/528: Problem Set 2
Due in class on Wednesday, May 4th

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In this homework, we will work through the theory and evidence about one application of reference dependent preferences: workers' labor supply decisions.

Ground Rules

- May work in groups of up to 4 (e-mail me if you need help finding a group).
- Only submit one assignment per group.
- Homework can be typed or (legibly) handwritten.
- Homework can be submitted in class or via Canvas.
- I will only answer e-mailed questions if sent by Tuesday, May 3rd.

1 Theory (50 points)

Henry is a cab driver. We will model Henry's decision about how many hours to work by assuming his utility function is $U(h) = wh - \beta h^2/2 + (wh - 100)$ where h is how many hours Henry has worked today.

1.1. Assuming the wage is 20 and $\beta = 1$, how many hours does Henry work? (5 points)

1.2. Will Henry work more or less if the wage increases? (5 points)

Colin is also cab driver. Colin's utility function is given by:

$$U(h; \lambda, w) = \begin{cases} wh - \beta h^2/2 + (wh - 100) & \text{if } wh \geq 100 \\ wh - \beta h^2/2 + \lambda(wh - 100) & \text{if } wh < 100, \end{cases} \tag{1}$$

where w is Colin's hourly wage and h is the number of hours Colin works in a day.

1.3. Graph Colin's marginal benefit from working an additional hour as a function of hours worked (where hours are necessarily capped at 24) assuming λ equals 2 and the wage is 20. (5 points)

1.4. On the same graph, plot Colin's marginal cost from working an additional hour as a function of hours worked (where hours are necessarily capped at 24) assuming $\beta = 2$. (5 points

1.5. Interpret the parameter λ. (10 points)

1.6. How many hours does Colin work? (Still assuming $\lambda = 2, w = 20, \beta = 2$). (5 points)

1.7. Will Colin work more or less if his wage increases (Still assuming $\lambda = 2, w = 20, \beta = 2$)? (5 points)

1.8. Is it always true that someone with reference dependent preferences, like Colin, will work more when wages go up? Why or why not? Hint: Draw a second graph including three curves: Colin's marginal benefit to working at two different wages (two curves) and Colins's marginal cost to working? (10 points)

2 Evidence (50 points)

This question will be about the paper: Fehr, Ernst and Lorenz Goette. 2007. "Do Workers Work More if Wages are High? Evidence from a Randomized Field Experiment." *American Economic Review*, 97(1): 298-317. This paper is uploaded on Canvas.

2.1. What is their research question? (5 points)

2.2. Describe their experimental design. (10 points)

2.3. Why is a randomized experiment necessary? Hint: This is discussed in the first two pages. (10 points)

2.4. What do we learn from columns 1 and 4 of Table 3 and from Table 5? Hint: They discuss the results in the paper! (15 points)

2.5. Thinking about your answer to question 1.8, describe why it is difficult to characterize how hours change with wages? Does this experimental design solve that problem? (10 points)