Psychology and Economics Field Exam

August 2022

The questions on the exam are all short questions with about equal weight. You will be graded on the quality of your explanation. Make as convincing of a case as possible—whether that involves plain English or brief model sketches. Don't stress too much if you do not get all parts of all problems.

Question 1 Consider a population of individuals who are heterogeneously present focused, and are offered commitment contracts to exercise more. The commitment contract is that individuals will lose $100 dollars unless they exercise at least twice a week over the next 8 weeks. Thirty percent of these individuals choose such a commitment contract. Please explain whether the following statement can or cannot be justified: "The individuals who choose commitment contracts are more present-focused, on average, than the individuals who do not." Hint: In answering this question, please consider that there may be significant uncertainty about whether going to the gym in the future is going to be worthwhile, due to uncertainty about availability and other shocks to one's time.

Question 2 Consider a study in which individuals are first asked whether they would like a chocolate or an apple in one week. In answer to this question, 70% of the individuals say that they would like the apple. One week later, the individuals are unexpectedly asked if they would like to switch their choices. This leads to only 40% of the individuals choosing the apple. Moreover, the direction of switches is highly asymmetric: many of the individuals who previously wanted the apple switch to the chocolate, but few of the individuals who wanted the chocolate switch to the apple. Does this evidence reject the hypothesis that the individuals in this study all have time-consistent preferences?
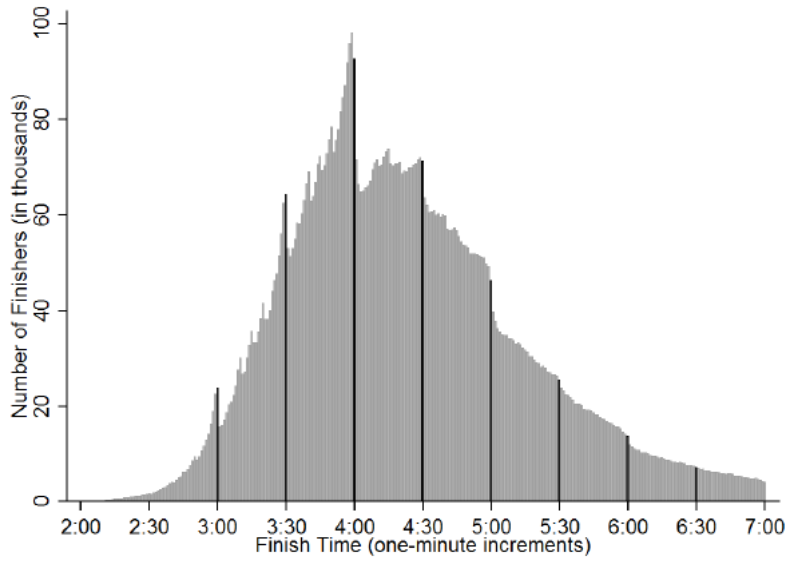
Question 3 Consider a model of costly effort with reference point

$$\max_e e - c\left(e\right) + \eta\left[e - r\right] \quad \text{for } e \ \geq \ r$$

$$\max_e e - c\left(e\right) + \eta\lambda\left[e - r\right] \quad \text{for } e \ < \ r$$

When the reference point r is low, is it the case that an increase in loss aversion λ leads to higher effort e^*? What about when the reference point is high? Does this model predict bunching, and to what?

Question 4

NOTE: The dark bars highlight the density in the minute bin just prior to each 30 minute threshold.

Describe briefly the finding above from the Allen, Dechow, Pope and Wu (MS 2016) paper. Which models could make sense of the patterns above? If you can, discuss more than one. Explain.

Question 5

Suppose that a person prefers \$20,000 with 80% chance over \$41,000 with 40% chance (thus, strictly prefers \$20,000 with 80% chance over \$40,000 with 40% chance), and also prefers \$39,000 with 2% chance over \$21,000 with 4% chance (thus, strictly prefers \$40,000 with 2% chance over \$20,000 with 4% chance). Is this set of preferences consistent with expected utility preferences? If not, what can explain this person's behavior?

Question 6   It is common to observe individuals in laboratory experiments to exhibit small-stakes risk aversion. That is, they turn down small-stakes bets with positive expected value, such as 50% chance of winning \$11 and 50% chance of losing \$10. Is this small-stakes risk aversion consistent with the kinds of risk preferences we observe over much larger stakes in the field? Please provide intuition and/or appropriate references for why or why not. If not, please provide some intuition about what explains the disparity.

Question 7
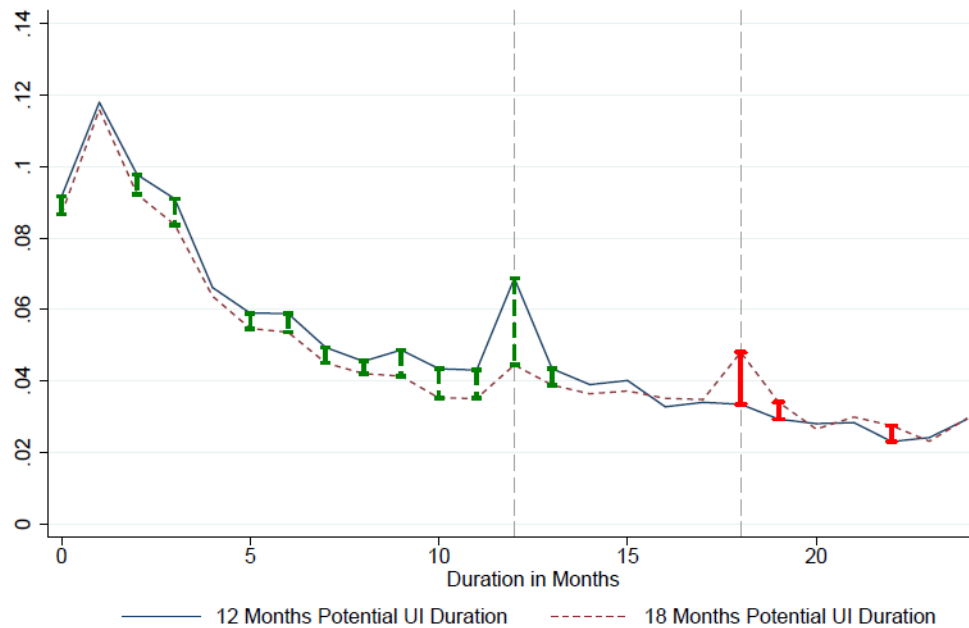
Explain what is a hazard plot as in this graph and describe the patterns in terms of (i) the path of the hazard in the initial months; (ii) the path of the hazard leading up to UI expiration and (iii) the path of the hazard following the UI expiration. Discuss at least one standard job search model and one behavioral model and how well they explain (i), (ii), and (iii).

Question 8

Suppose that researchers find that individuals over-consume candy due to a combination of incorrect beliefs about health costs and failures of self control. Low-income individuals consume more candy than high-income individuals, and in large part this is because they have more incorrect beliefs and larger self-control problems. Would a tax on sugary drinks be regressive, in the sense that it hurts low-income individuals more than high-income individuals? How, if at all, does the price elasticity of demand for candy play into this question?

Question 9 Suppose researchers want to test whether individuals are partially inattentive to an opaque price or attribute, such as a sales tax that is paid only at the register but not included in the the price tags that consumers see in the aisle of the store. Describe an empirical strategy for measuring this inattention.

Question 10 Consider a workplace setting in which workers exert effort e which is costly, and assume that the workers are altruistic with weight α towards their co-workers. Explain how a positive altruism $\alpha > 0$ affect worker effort under (i) piece rate; (ii) relative pay; (iii) team pay. Explain the result in words or write down the model if you can.
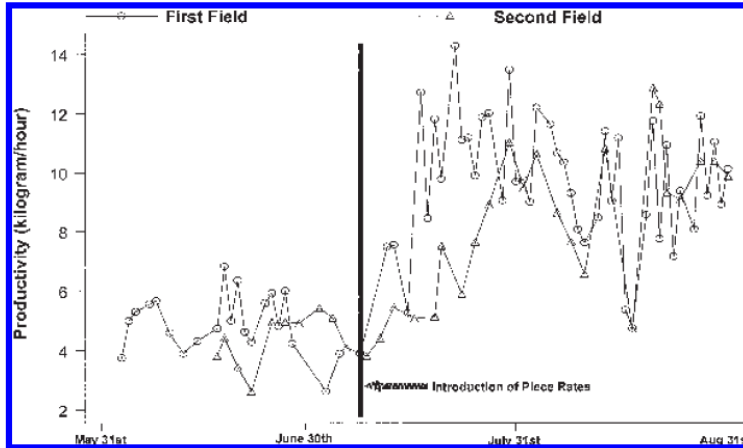
Question 11

FIGURE I
Productivity (kilogram/hour) over the Season

Comment the finding here from Bandiera, Barankay, and Rasul (QJE) of the switch from relative pay to piece rate on productivity, and relate to your answer in the previous question. How is your answer affected by the finding below differing between strawberries (Fruit 1) and raspberries (Fruit 2)?

DEPENDENT VARIABLE = LOG OF WORKER'S PRODUCTIVITY
(KILOGRAM PICKED PER HOUR PER FIELD-DAY)
ROBUST STANDARD ERRORS REPORTED IN PARENTHESES, ALLOWING FOR CLUSTERING
AT FIELD-DAY LEVEL

	(1) Fruit type 2	(2) Fruit type 1	(3) Fruit types 1 and 2 combined
Piece rate dummy (P_t)	−.063	.483***	
	(.129)	(.094)	
Piece rate × fruit type 2			−.100
			(.095)
Piece rate × fruit type 1			.490***
			(.092)

Question 12

Consider this model of giving a la Benabou-Tirole (2003). An individual gives $(g = 1)$ if

$$
\begin{aligned}
U(1) &= w - 1 + \gamma + \lambda_\gamma E\left(\gamma | 1\right) \geq \\
U(0) &= w + \lambda_\gamma E\left(\gamma | 0\right)
\end{aligned}
$$

Discuss the terms in the equations above. What is the solution in the case of no social signaling? How does the presence of social signaling affect the solution?

Question 13

Discuss this statement: "Even if firms can create contracts with shrouded attributes, market competition will drive down the size of these attributes, will make firms want to educate consumers about opaque features of contracts, and will make markets efficient."