Psychology and Economics Field Exam

August 2025

The questions on the exam are all short questions with about equal weight unless otherwise noted. 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 "Those funneled into programs with higher administrative burdens also appear to be, on average, less likely to navigate those burdens successfully to access benefits" (Herd and Moynihan, 2025).

a. Give a one-sentence summary of one paper that provides empirical support **for** this claim.

b. Give a one-sentence summary of one paper that provides empirical support **against** this claim.

c. Suppose someone says that "ordeals **only** affect social welfare via the 'targeting' of the marginal person 'screened out' by an ordeal." Using the language from a model of take-up and targeting as in the Finkelstein and Notowidigdo (2019) model from class, answer the following questions:

i. Discuss how "targeting" (the "need" of the enrollee who newly takes up a program, for a marginal reduction in its ordeals) affects social welfare if individuals optimize (i.e., the envelope theorem does hold).

ii. Discuss how targeting affects social welfare if individuals fail to optimize (i.e., the envelope theorem does **not** hold).

iii. Discuss the other forces, besides targeting of the marginal enrollee, that affect the welfare impact of changes to ordeals — regardless of individual optimization.

[No mathematical notation is necessary to answer this question.]

Question 2 Consider a model of present focus and task completion as in O'Donoghue and Rabin (1999). Intuitively explain the conditions under which more sophistication would raise or reduce an individual's welfare relative to naïvété. Why does the incorrect intuition that "reducing behavioral bias raises welfare" not go through?

Question 3 A widely held but incorrect intuition is that "information interventions always raise social welfare."

a. Explain why one might possess such an intuition. Illustrate with a basic individual optimization set-up.

b. Now, consider the model of non-price interventions ("nudges") from Allcott et al. (2025). Describe at least two cases in which nudges can reduce welfare relative to no intervention. Carefully explain why an information intervention that shifts behaviors in the "right" direction on average, and which imposes no direct psychological costs, can still reduce welfare. No modeling or notation is necessary, but feel free to introduce some if that advances your argument.

Question 4 (worth twice the number of points) Susie misperceives the health costs of vaping e-cigarettes. She perceives that each vape cartridge costs her $2h$ in net present value due to health costs, in addition to its direct costs (listed price). In reality, each cartridge costs her h in net present value, in addition to its direct costs (listed price). Her money-metric utility over cartridge consumption e is $U(e; v, p, m) = v\sqrt{e} - (p + \tilde{h})e + m$, denoted in dollars, where $v > 0$ is the value she gets from vaping, $\tilde{h}$ is her perceived health cost ($\tilde{h} = 2h$), and $m > 0$ is her endowment of money.

The government can levy a uniform linear Pigouvian tax or subsidy on e-cigarettes in a basic and perfectly competitive Pigouvian environment. [Details, not necessary to read: the above implies that Susie faces after-tax price $p = q + \tau$ where q is the producer's marginal cost of producing one e-cigarette cartridge and $\tau \in \mathbb{R}$ is the tax or subsidy. To close the government's budget, revenues from the tax/subsidy are lump-sum redistributed/taxed. Agents can purchase a continuous and divisible number of e-cigarette cartridges.]

a. What is the optimal uniform linear Pigouvian tax or subsidy on e-cigarette consumption? Provide an econ-101 intuition and graph for full points.

b. Suppose Susie experiences a demand shock such that her utility is now $U(e; w, p, m) = w\sqrt{e} - (p + \tilde{h})e + m$ for $w \gg v$. What is the optimal Pigouvian tax or subsidy on e-cigarette consumption?

c. In the situation of part (a), can the optimal Pigouvian tax or subsidy recover the first best?

Now consider the situation in part (a) but suppose that, in addition to the misperceptions, e-cigarettes impose externalities on society. Specifically, the marginal externality from consuming

one e-cigarette cartridge is $-3h < 0$. (Positive externalities mean that consuming e-cigarettes saves public resources and negative externalities denote public waste.)

d. Then, what is the optimal Pigouvian tax or subsidy on e-cigarette consumption?

Now suppose there is a continuum of consumers $\theta \in [0, 1]$ with true health costs h_θ and misperceptions $\tilde{h}_\theta$ that are correlated with demand v_θ. Otherwise, the environment is as in part (a).

e. Can the optimal uniform linear Pigouvian tax or subsidy generically recover the first best? Why or why not?

f. In Allcott et al. (2019), the soda tax paper, the authors discuss another possible motive for corrective (Pigouvian) taxation: regressivity. Discuss informally how one might incorporate such a motive into the above. Discuss informally why simply looking at e-cigarette cartridge purchases vary with income (or consumption) is insufficient to test for a regressivity motive.

Question 5

A basic finding in experimental economics is that participants exhibit small-stakes risk aversion. For instance, lab subjects often prefer the lottery (\$0.8, $p = 1$; \$0, $p = 0$) to the lottery (\$1, $p = 0.9$; 0, $p = 0.1$).

a. Is such a finding compatible with Expected Utility Theory? Explain, appealing to Rabin's "Calibration Theorem."

b. Explain how a model of reference-dependent utility à la Koszegi and Rabin (2006) with $\lambda > 1$ permits small-stakes risk aversion.

Question 6 Einav, Klopack, and Mahoney (2025) features this graph. As discussed in class, the graph shows subscription "retention rates" across different products. The different series in the graph show cohorts that replace credit cards at 6, 12, and 18 months after signing up for the subscription.

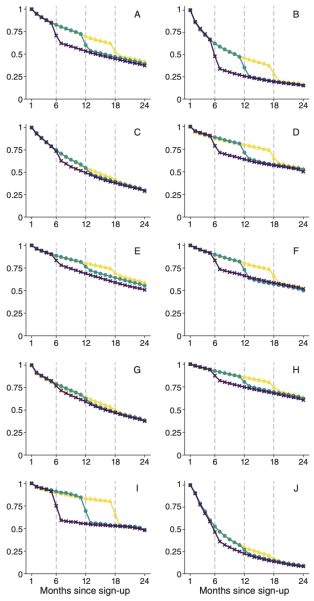


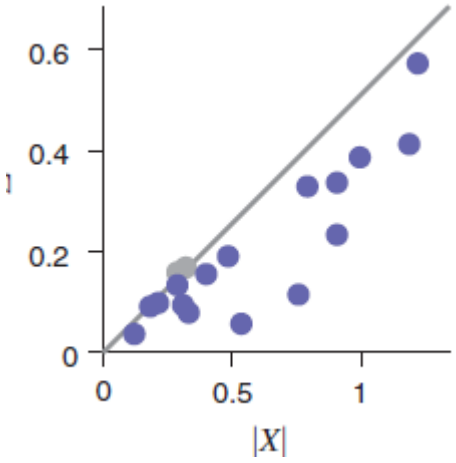
FIGURE 2. RETENTION RATE BY MONTHS SINCE SIGN-UP, ALL SUBSCRIPTION SERVICES AND COHORTS

Notes: Figure shows the adjusted retention rate, $\hat{R}_a(x)$, by month since sign-up, separately by groups of cohort with card replacement at 6, 12, or 18 months after sign-up and subscription service (denoted by the letter in the top right corner of each panel). The adjusted retention rate aggregates across cohorts net out calendar-month fixed effects. See Section II for details.

a. The authors argue this graph is consistent with two models, one non-classical and one classical. Informally (but rigorously) propose two models that are consistent with the data. Your answer can be in English or with light notation (a formal model is not necessary).

b. Absent other data, which model do you think is a more plausible explanation for this pattern and why? What additional data and/or variation could distinguish the models (feel free to be creative)?

Question 7 The funnel plot below is from the Camerer et al. (Science 2016) paper which replicated 18 laboratory experiments. The plot shows the original point estimates on the x axis and the original standard errors on the y axis. What does the plot show? What does Camerer et al. (2016) find in terms of replication of laboratory experiments and would you expect perfect replication in light of the plot? Describe some efforts in behavioral economics or economics more broadly to ensure a high replication rate of results.



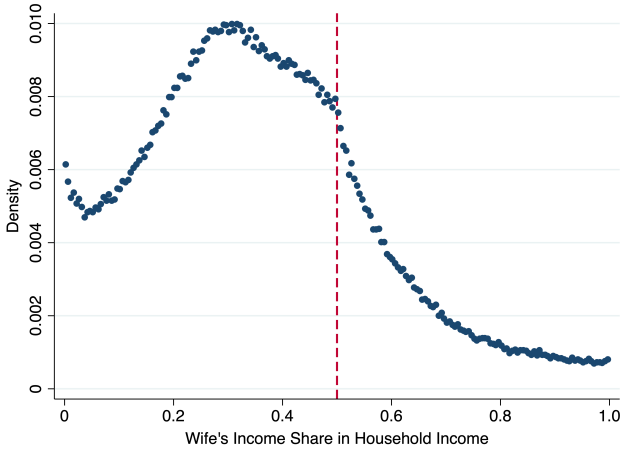
Question 8

The search effort problem of an unemployed worker can be written as

$$V_t^U = \max_{s_t \in [0,1]} u\left(y_t\right) - c\left(s_t\right) + \delta\left[s_t V_{t+1}^E + \left(1 - s_t\right) V_{t+1}^U\right]$$

Describe briefly the terms in the equation above and why the problem is written as above. What are at least two ways that this maximization can be generalized to allow behavioral determinants of job search? Describe briefly one paper in the behavioral job search literature.

Question 9 Hermle (2023) replicates the Bertrand, Kamenica and Pan (QJE) finding with the more detailed German data for couples, plotting the share of income that is earned by the wife in the couple. Describe the finding in the paper and how it relates to the Bertrand, Kamenica and Pan (QJE) finding. What kind of social preferences within the couple does this finding imply? Be as precise you can.



Question 10

Consider the following simple model of work effort e in the experiments on gift exchange in the field:

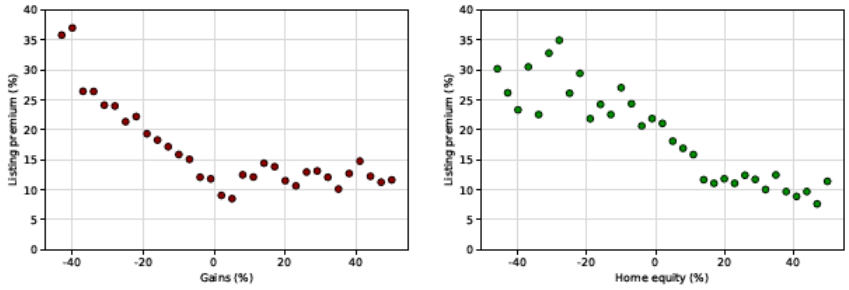
$$\max_{e} u(e) = w - c(e) + \alpha \left[ve - w\right]$$

What do the various terms indicate? Derive the first order conditions – what implications would the first order condition have with respect to changes in w and with respect to changes in v (provided assumptions you can provide about $c(e)$)? Describe at least one gift exchange paper in the literature and explain how it relates to this simple model. Could one estimate the model with the data in that experiment?

Question 11

The evidence below is from **Andersen, Badarinza, Liu, Marx, and Ramadorai (AER 2022)** which uses administrative data set of house sales in Denmark for 1992-2016 for 217,028 listings. They compute $ln(\hat{P})$ with hedonic model, compute predicted gain $\widehat{ln(G)} = ln(\hat{P}) - ln(P_0)$ and they compute the home equity $ln(\hat{P}) - ln(M)$, as well as the listing premium $ln(L) - ln(\hat{P})$. Describe the findings in the plots below and how each of the panels relates to a behavioral model, and/or to borrowing constraints.

Panel B: Listing premia moments



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