

Behavioral and Experimental Economics

Final Exam

27.8.2018

(2-hour closed book exam)

Answers only in English.

This exam question consists of 3 pages in total. All questions must be answered to obtain the top grade.

NB: If you fall ill during an examination at Peter Bangsvej, you must contact an invigilator in order to be registered as having fallen ill. In this connection, you must complete a form. Then you submit a blank exam paper and leave the examination. When you arrive home, you must contact your GP and submit a medical report to the Faculty of Social Sciences no later than seven (7) days from the date of the exam.

Be careful not to cheat at exams!

You cheat at an exam, if during the exam, you:

- Make use of exam aids that are not allowed
- Communicate with or otherwise receive help from other people
- Copy other people's texts without making use of quotation marks and source referencing, so that it may appear to be your own text
- Use the ideas or thoughts of others without making use of source referencing, so it may appear to be your own idea or your thoughts
- Or if you otherwise violate the rules that apply to the exam

Question 1: Framing and nudging

- a) Provide a definition of a “framing effect”.
- b) Behavioral economists sometimes refer to a “System 1” and “System 2” in decision making (with reference to, e.g., Kahneman’s book “Thinking, fast and slow”). Explain what is meant by these systems. How may such thinking be related to money illusion?
- c) Explain what is meant by a “nudge” (Thaler and Sunstein 2008).
- d) Thaler and Benartzi’s (JPE 2004) “Save more tomorrow” scheme has increased savings in defined-contributions plans. Explain which behavioral aspects make it successful.

Question 2: Oligopoly

Consider an oligopoly with n firms with a structure similar to the one used in the experiment of Gächter, Thöni, Tyran (JEE 2006): firms simultaneously choose q_i with cost $c = 80q_i$ and $P = 200 - Q$, where Q is total production in the market.

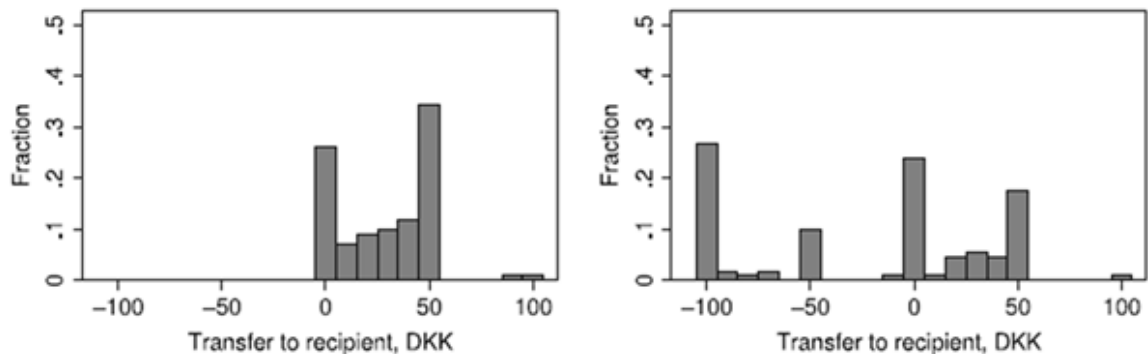
- a) What is the prediction of standard economics for $n = 2$? Calculate prices, quantities and profits in equilibrium for the duopoly case.
- b) How are prices, quantities and profits predicted to change when $n = 4$? That is, provide a *qualitative* comparison of these values for duopoly and quadropoly in equilibrium (i.e., no need to calculate the exact values for $n = 4$).
- c) Huck, Normann and Oechssler (JEBO 2004) investigate the ability of firms to engage in tacit collusion. What do they find with respect to the success of tacit collusion in oligopoly markets with 2 vs. 4 firms?

Question 3: Biases in probability estimates

- a) Consider the following scenario: For a woman at age 45 who participates in routine mammography screening, the probability of breast cancer is 0.01. The test accuracy is 90%. That is, if a woman has breast cancer, the probability is 0.9 that she will have a positive mammogram (and conversely, the probability that the test will show she has no cancer if she in fact has no cancer is also 90%). If a woman does not have breast cancer, the probability is 0.1 that she will still have a positive mammogram. Now imagine a randomly drawn woman from this age group with a positive mammogram. What is the probability that she actually has breast cancer? (*Hint*: use Bayes’ rule)
- b) What probability would a person prone to the Base-rate fallacy estimate for the woman in the example above? (Explain why).
- c) “Probability weighting” is one of the assumptions of prospect theory (Kahneman and Tversky, ECMA 1979). Describe the assumption (*Hint*: draw a diagram).
- d) Explain what “Myopic loss aversion” implies for the tendency to accept single vs. multiple bets (*Hint*: refer to Gneezy and Potters QJE 1997).
- e) Fellner and Sutter (EJ 2012) replicate the finding of Gneezy and Potters (QJE 1997) concerning myopic loss aversion. To test the robustness of this finding, Fellner and Sutter run a treatment inspired by the story of Ulysses and the Sirens. Describe the treatment and the findings.

Question 4: Social Preferences

- a) Sometimes, beginning students ask: “Can it be rational to have prosocial preferences?” Comment on this question with reference to the definition of rationality, and by distinguishing prosocial acts and preferences.
- b) Franzen and Pointner (ExEc 2012) use the “misdirected letter technique” to study the “generalizability” of findings in the dictator game. What do they find?
- c) The figure below is taken from (Cappelen et al. Ecs Letters 2013). Explain the design, including treatments Give and Take. How do the authors interpret the main result with respect to “generosity”?



- d) Prasnikar and Roth (QJE 1992) study the multi-proposer Ultimatum game. Describe the game and its equilibria, and the main finding.

Question 5: Public goods and Voting

- a) The standard linear public goods game (PGG) is a workhorse to study cooperation. Describe the standard PGG and explain the “free rider incentive”.
- b) Tyran and Feld (SJE, 2006) study the effect of voting on formal sanctions on cooperation. In their treatment MildEnd, groups vote on whether or not to implement mild sanctions.
 - b1. What is the prediction for MildEnd if all players are fully rational and self-interested?
 - b2. How do observed contributions in MildEnd compare to MildEx (when mild sanctions are imposed)? How do the authors explain these observations?
- c) Mechtenberg and Tyran (WP 2016) study costly voting in a common interest situation. How is voting in this situation related to the provision of public goods?