Department of Economics, UC Berkeley

Economics 1

Fall 2019

Your Name:_____

Your SID:_____

Your GSI's name: :_____

PROBLEM SET #3 *(2 % of grade; 10 points possible)*

DUE:- via Gradescope, no later than 8 pm on Thursday October 24

Problem sets must be uploaded and submitted by 8 pm. Problem sets submitted in the 24 hours after the due date will be assessed a 5 point penalty. Your submitted work must be your own: Problem sets that are identical (in whole or in part) to another student's problem set will receive a zero. Essay must be submitted twice: as the last page(s) of your pdf of this problem set and electronically via bCourses.

***IMPORTANT**: Your answers must be on this sheet, with this formatting. You can hand write or type, but you can't reformat the questions.*

1. Monopolistic Competition (2 points total; ½ point per part)

Let's go back to (part of) the gentrification question from MT1. Consider a restaurant in an area that is experiencing rapidly rising rents. The restaurant operates in a monopolistically competitive industry. The industry is initially – before rents begin to rise – in long run equilibrium.

A. At the right, draw the initial long-run equilibrium for the typical restaurant. Assume the time frame is per month. Use subscripts "1" to label everything. (The ½ point offered here will be for the entire graph, both parts A & D.)

B. In perfect competition, the typical firm faced a horizontal demand curve at the market equilibrium price. Because the D curve was horizontal, the MR curve was also horizontal & identical to the D curve. Why is the demand curve facing the typical monopolistically competitive firm (here, restaurant) downward sloping rather than horizontal?

C. Now suppose the restaurant does not own its building and is instead renting the space. Suppose the rent doubles. In the short run, what is the effect on the profit-maximizing quantity of meals sold per month and price charged by the typical restaurant? Why?

Effect on q = _____

Effect on p = _____

D. For a restaurant that does not exit but instead chooses to "weather the storm," what are the long run effects on its profit-maximizing quantity of meals sold per month and price charged by the typical restaurant? Why? Amend your graph above using subscripts "2" to depict the new curve(s) in the long run for the firms that both pay the higher rent and survive the industry shake-out.

Effect on q = _____

Effect on p = _____

2. Externality and Optimal Tax (2 points total; ½ point per part)

Can we address climate change, at least a part of it, through taxation? Every time someone takes an airline flight, that action generates carbon emissions. Economists (someone with the job title "analyst") estimate the additional cost to society associated with increased carbon emissions. Suppose that for a 1,000 mile flight, economists estimate that the marginal damage cost of the flight is $50.

A. Is this a situation in which the Coase Theorem would apply? Why or why not?

B. We will use the axes at the right to depict the externality (top set of axes) and the penalty (bottom set of axes). Consider the market for 1,000 mile airline flights. Assume the time frame is "per month." First, set up the initial conditions. In the absence of a tax, ignoring social costs or benefits, draw the graphs for the determination of the privately optimal quantity of 1,000 mile airline flights taken per month (top graph) and for the market equilibrium quantity of 1,000 mile airline flights taken per month (bottom graph).

C. Now, using the information in the prompt above, show the effect of the negative externality in the top graph, which is also where you'll show the socially optimal quantity of 1,000 mile airline flights taken per month. In the bottom graph, show the optimal tax and the resulting market equilibrium quantity of 1,000 mile airline flights taken per month.

D. In the first part of the course, we showed that a tax generates a "deadweight loss" – a loss of potential *woo-hoo* to buyers and sellers – a result that leads some economists to oppose taxes. In this example, what is the optimal dollar amount of the per-flight tax? Why was a tax a "bad" thing in the first part of the course, but a "good" thing now? (It's a normative question. Remember that to answer any normative question, you must first state a goal, then answer the question, then defend your answer with reference to the goal.)

3. Income Distribution (1 point)

Go to this NY Times article, https://www.nytimes.com/interactive/2019/10/06/opinion/income-tax-rate-wealthy.html, and most importantly, look at the graph. If you can't access NYTimes because you've used up your free looks for the month, you can look at the graph here: https://twitter.com/gabriel_zucman/status/1181009202837254144. The graph is based on groundbreaking work by UC Berkeley economics Emmanuel Saez and Gabriel Zucman, highlighted in their new book, *The Triumph of Injustice*, released to the public after this PS goes live. Based on the graph, the article, what you can find on their websites (https://eml.berkeley.edu/~saez/ and http://gabriel-zucman.eu/), at the Center for Equitable Growth (http://ceg.berkeley.edu/index.html), or the Washington Center for Equitable Growth (https://equitablegrowth.org/)), (whew ... not all, at least the graph, and the reader article, and your brain, but also those resources are worth checking if you're interested in really delving into the topic), write a paragraph on this topic: Provide and discuss one explanation for why the distribution of income has become more unequal in the United States over the last several decades.

4. Macro data from Fred (2 points; 1 point each)

For this question, you need to download graphs from Fred (https://fred.stlouisfed.org/) and write 2 sentences that describe the patterns seen in the graph. The sentences will be written on this page in the space below. The graphs should be included as a separate page (page 4 of the submitted pdf) that immediately follows this page.

A. The U.S. unemployment rate, 1960 - present (use monthly data, seasonally adjusted)

B. The core inflation rate, 1960-present, as measured by the PCE excluding food & energy

PDF Page 4 (next page) should be your graphs for #4
PDF Page(s) 5 (and 6 if you have a works cited page) should be your essay; prompt is on the next page.

5. Essay: Asymmetric Information (3 points total)

Asymmetric information problems beset many important markets. Some markets are plagued by problems of adverse selection; others by moral hazard. In the absence of a remedy, markets characterized by asymmetric information will fail. The classic reference is "The Market for Lemons," by Berkeley Professor and Nobel Laureate George Akerlof, Quarterly Journal of Economics (August 1970), http://www.jstor.org/stable/1879431.

Write a one-page essay in which you address these points:

- Give an example of a good or service whose market is disrupted by asymmetric information problems. Your example can be from any time period (current or historical) and any location. What is the product? What is the nature of the asymmetric information? In this particular example, what does it mean to say "the market will fail"?

- Continuing with your example, what remedies are in place to address the issues of asymmetric information in this market? How do those remedies address the market failure?

- Conclude with a normative assessment: do you think it is good to have those remedies in place? Why or why not? Remember that with any normative question, you must begin by stating a goal, then answering the question (yes, no, good, bad), then defending your answer with reference to your goal and the positive analysis you've conducted of the market.

Remember that in economics (as in life), the conclusions you come to will depend in part on the assumptions you make. So be sure you make the relevant assumptions explicit. Don't invoke wildly unrealistic assumptions; the assumptions you make should be reasonable.

Your essay must be your own work. To present anyone else's work as your own is theft of intellectual property: plagiarism. That means you must use quote marks " " around any words you quote exactly from any source (and then provide the source for the quote). It also means that if you get ideas from anyone else, or if you paraphrase someone else, you must again give them credit for their ideas. To do otherwise is plagiarism: the theft of intellectual property, a violation of the Code of Student Conduct and one of the worst offenses in academe. If you have questions about whether or not you've properly cited your sources, please talk with your GSI, the Head GSI, or Prof. Olney.

"Your own work" also means that essays crafted jointly on piazza or otherwise are not acceptable. That too is plagiarism.

Specifications: 400 words maximum, one page maximum. ("Works Cited" list can be on a second page and does not count against the 400 word maximum. End notes can be on the second page and don't count against the 400 word max.) Double space. 10-11-12 pt font. 1" margins on all sides. Your name, date, and the word count in the top right corner. For submission on gradescope, your essay should be the last page(s) of your pdf file.

Submission: Essay must be submitted twice. [1] To gradescope, as the final page(s) of your problem set sheets. [2] To bCourses, assignments tab, just the essay. Acceptable formats: doc, docx, pdf. bCourses will check your paper using TurnItIn to ensure you have not plagiarized from published sources or previously submitted papers. GSIs will likely grade in gradescope.

Grading: 0 - 1 - 2 - 3 points, taking into account content, following specifications, and writing quality. No submission on bCourses results in a 0 on the essay.

For your submitted PDF to gradescope:
PDF Page 4 should be your graphs for #4
PDF Page(s) 5 (and 6 if you have a works cited page) should be your essay