

## Elasticity Memo

### *Logistics*

This assignment is due in class, on paper, November 14 (Lecture 11). I may ask you to submit electronically as well; if so, I will provide details on that later.

The final paper should be three to five pages, double-spaced, usual MS Word margins, Times New Roman font. Number pages and cite the sources you use. Your bibliography, tables and charts do not count as part of the five page limit. Use the American Economic Association citation style; see <http://goo.gl/PgV2Z1>.

Do not plagiarize. If you are using more than three words from another source, become immediately very very nervous. If you are confused about what plagiarism is, see this helpful website (<https://goo.gl/bgVrP1>) and please come see me. Do not experiment with your assignment.

I am very happy to discuss potential ideas during office hours. Email is not well-suited to offering detailed feedback on this project. If you absolutely can't make office hours, in person or by phone, email me to set up a meeting at another time. Please do not ask me to read any drafts. But feel free to ask your classmates to read drafts!

Some of the most successful papers from last year are posted on the course website, on the handouts page, under "Elasticity memo." This year's instructions are slightly different so these papers may not follow this assignment exactly.

### *Draft*

I will assign you to groups of three. Each of you will post a draft in a google folder (links to come) for your classmates to review. Post by the start of class on October 24 (Lecture 8). You must respond with comments to all posted drafts by midnight Sunday October 29.

To receive credit for this assignment, you must both post a minimally sufficient draft and provide comments. A minimally sufficient draft is one that has some numerical calculations and enough surrounding text for a student to give feedback.

You must post comments by each of the two other students in his group. Comments should be either edits on the draft or approximately a half a page of feedback. Your grade on this portion of the memo derives primarily from your comments to classmates.

If you would like to me to set up anything on Blackboard that would facilitate your working with your classmates, please let me know.

### *Content*

Your goal in this memo is to choose a proposed (proposed, not implemented!) policy of interest and estimate its anticipated effect on either  $P$  or  $Q$ , using the tools of elasticity from class. To do this successfully, you'll need a policy that attempts to modify either  $P$  or  $Q$ .

In other classes you may learn estimation techniques to study the direct impact of a policy change. For example, how does the introduction of free clinic visits impact health? This is not the goal of this memo.

Your goal in this memo is to use elasticity to give an estimate of the effects of a policy on  $P$  or  $Q$ . Your key final output is a number of set of numbers that tell us about the magnitude of the change in  $P$  or  $Q$ .

For example, suppose there is proposed policy that increase student loan subsidies to students. Policymakers would like to know how much this policy will cost the government. A naive policymaker would anticipate that the cost of this policy is the direct increased expenditure on loans for the current population of loan-takers. However, as we learn in this class, changing the subsidy for loans is equivalent to changing the price of loans. How do we expect participants in the market to respond to this change in price?

Here we have an example where we know the original equilibrium – the number of loans and the price of loans – and we also know the new price. We can deduce that this causes the demand curve to shift outward. This new policy changes the price at which students can purchase any quantity of education, and it has no impact on the supply of education. What is the new  $Q$ ? To get to the new  $Q$ , we need an estimate of the price elasticity of supply for education.

Begin by noting that

$$E^S = \frac{\% \Delta Q}{\% \Delta P}$$

Let  $P_o$  be the old price and  $P_n$  be the new price. Let  $Q_o$  be the old quantity and  $Q_n$  be the new quantity. Given this, we can re-write the equation above as

$$E^S = \frac{\frac{Q_n - Q_o}{Q_o}}{\frac{P_n - P_o}{P_o}}$$

It is likely helpful to draw yourself a picture of the original supply and demand equilibrium, and what the policy does to change that equilibrium. It is critical to think carefully about whether the proposed policy changes demand or supply.

In the example above, we should be able to find actual numbers for (probably rough estimates)  $Q_o$  and  $P_o$ , which are the current price and quantity of loans. The policy sets a new  $P_n$ , so we know that as well.

We can find (and it is your job to find) an estimate of elasticity **in the economics literature** for  $E^S$ . Now the only unknown above is  $Q_n$ , and you can estimate what  $Q_n$  will be after the policy change.

When you consult the economics literature, you may find a range of relevant elasticities. Each elasticity will give a different  $Q_n$ . I encourage you to estimate outcomes given a range of elasticities. You can “bound” your estimates by using the highest and lowest estimates of the elasticity.

### *Finding Estimated Elasticities*

Your best bet for finding elasticity estimates is a database called EconLit. Google “gwu library econlit” to follow the link, or follow the first link under databases from <http://libguides.gwu.edu/c.php?g=258714&p=1728089>. You’ll need to be in GW’s network, either on campus or via VPN, to use this database.

You may not be able to find an estimated elasticity for your specific market. If you cannot, find the market you think is the closest and explain why.

### *Organization*

Your paper should have an introduction that briefly introduces the policy at issue and summarizes your results. You should then have slightly more background on the policy (but no more than we need to understand your estimates), then an explanation of how you’ll calculate the change in Q or P, followed by an explanation of your calculations. Are your estimated consequences as proponents intend? Conclude with a brief summary.

If you think it will be helpful for your narrative, please include tables and figures. It is difficult to imagine a successful paper that has no tables and no figures.

### *Dos and Don'ts*

Do

- make sure you have a specific policy of interest

- make multiple estimates if this helps us understand the potential magnitude of the change
- contextualize your findings – do they agree with claims by proponents? by opponents?
- if you use multiple elasticities, explain which you think is most appropriate and why
- draw a diagram that explains what's happening to the supply or demand curves and explain it in the text
- provide more than one estimate
- put tables and figures at the end of the paper, and refer to them by number throughout

Do not

- do a regression
- find equations for supply and demand curves
- estimate consumer and producer surplus (you don't have enough information to do this)
- put in an executive summary
- write as an advocacy piece. The goal is to be a detached observer, providing analytical support
- use the slope formulation for elasticity from textbook

It would be nice to

- compare your findings to those of proponents
- choose a policy with proponents (or enemies) so there are points of comparison for your estimates