

# Econ 2: Spring 2014: Sample Final Exam I

Name: \_\_\_\_\_ GSI: \_\_\_\_\_ Section: \_\_\_\_\_ SID: \_\_\_\_\_

A. Identifications (20 minutes—if you are not through after 20 minutes, skip to the next question): Briefly, in one or two sentences, explain the terms set out and how they have been used in the course:

1. Supply and Demand Curves

2. Consumer and Producer Surplus

3. Pigovian Taxes

4. Price Ceilings and Price Floors

5. Willingness-to-Pay

6. Opportunity Cost

7. Planned Expenditure

8. Inflation



4. What is the consumer surplus?

5. Explain, intuitively, why the distribution of producer and consumer surplus is what it is.

6. What would the distribution of consumer and producer surplus be if the supply equation were:  $P = 3.6Q$ ?

C. Elasticity: (20 minutes—if you are not through after 20 minutes, skip to the next question): Still in Avicenna—same setup as B—but this time we have different supply and demand curves

- Demand:  $P = 148.413 \times Q^{(-0.5)}$
- Supply:  $P = 1/54.598 \times Q$

1. What is the elasticity of demand at  $Q = 1$ ?

2. What is the elasticity of supply at  $Q = 1$ ?

3. What is the market equilibrium price

4. What is the market equilibrium quantity?

5. What is the producer surplus?

6. What is the consumer surplus?

7. At what quantity is total revenue maximized?

D. Externalities (20 minutes—if you are not through after 20 minutes, skip to the next question): Externalities can be subtle... Let us move across the bay and 60 miles south from Avicenna to the town of Tall Stick, home of Crony Capitalism University...

The 10,000 students at CCU do two things with their disposable incomes of \$5,000/year each:

- Buy gourmet pizzas at \$20/pizza
- Rent BMWs at \$5000/year

Utility of each student:

- $U = (\text{number of pizzas}) + 500(\text{if renting BMW}) - (1/20)(\text{number of other students renting BMWs})$

This utility function thus has both **envy** and **spite**...

1. If nobody rents a BMW, what is the utility of a typical student?



6. What is the optimal externality-compensating Pigovian tax on BMW rentals at CCU?

E. Envy (20 minutes—if you are not through after 20 minutes, skip to the next question): Back in January 2012 Republican presidential candidate Mitt Romney said:

You know, I think it's about envy. I think it's about class warfare. When you have a President encouraging the idea of dividing America based on the 99 per cent versus one per cent—and those people who have been most successful will be in the one per cent—you have opened up a whole new wave of approach in this country which is entirely inconsistent with the concept of one nation under God. The American people, I believe in the final analysis, will reject it...

This is an argument that when we do benefit-cost calculations with a utility function like the one in D:

- $U = (\text{number of pizzas}) + 500(\text{if renting BMW}) - (1/20)(\text{number of other students renting BMWs})$

We should count the first two terms and add them up as parts of our social welfare function and throw away the third term.

Write a short essay of three paragraphs: the first paragraph should set out what are, in your estimation, the strongest reasons for rejecting Mitt Romney's argument; the second paragraph should set out what are, in your estimation, the strongest reasons for Mitt Romney's argument; and the third paragraph should choose a side and explain why you chose the side you did.



F. Macroeconomic Policy (20 minutes—if you are not through after 20 minutes, skip to the next question): Suppose that it is December 2016 and you are called to Washington to audition for a cabinet-level post in the next administration and to advise him on the proper size of the economic stimulus program.

Your forecast is that, were 2018 to be a normal business-cycle time, that the level of real GDP in 2018 would be \$17.0 trillion/year. You are conducting your analysis in the income-expenditure framework where:  $Y = C + I + G + X$ ,  $C = c_0 + c_y(Y - T)$ . You believe that  $c_y = 0.5$ .

You project that there will be little change from trend in consumer confidence  $c_0$ , which you project at \$2.5 trillion/year in 2018. you project that business demand for investment spending will be \$3.5 trillion/year in 2018. You project that exports will be \$2 trillion/year in 2018. And you project that the Federal Reserve will not take additional steps to stimulate the economy.

1. What level of government purchases spending  $G$  do you recommend for 2018? Explain why?

2. Suppose that the President-Elect's political advisors say that it is very important, politically, to cut government spending. What do you say in response?

3. Suppose that the collapse of the euro suddenly drives up interest rate spreads, and leads you to forecast that I in 2018 will be not \$3.5 trillion but \$2.5 trillion. How do you change your recommendation for G?

G. Economic Growth (20 minutes—if you are not through after 20 minutes, skip to the next question): In 8300 BC there were roughly 5 million people in the world—with an average standard of living of about \$500/year. In 1700 there were roughly 640 million people in the world—with an average standard of living of about \$500/year. In 1900 there were roughly 1.6 billion people—with an average standard of living of about \$1000/year. Today there are roughly 7.4 billion people—with an average material standard of living of \$8000 dollars per year.

1. Use the Rule of 72 to calculate the average population growth rate and the average global real GDP growth rate between 8300 BC and 1700 AD.

2. Use the Rule of 72 to calculate the average global real GDP growth rate between 1700 and 1900 AD.

3. Use the Rule of 72 to calculate the average global real GDP growth rate between 1900 and 2014

4. How much faster has global real GDP growth been over 1900-2014 than it was over 8300 BC-1700 AD?

5. How much faster has global real GDP growth been over 1900-2014 than it was over 1700-1900?

6. What would global real GDP be in 2100 if it were to grow as rapidly between now and 2100 as it grew from 1900-2012?

7. If there are 10 billion people in the world in 2100 and if global real GDP be in 2100 if it were to grow as rapidly between now and 2100 as it grew from 1900-2014, what would average living standards be in 2100?

H. Next time (20 minutes—if you are not through after 20 minutes, skip to the next question): This is the first time we have taught Econ 2 since 2007, so we are especially anxious for feedback. Write a four-paragraph essay. Pick one element of the course that you thought worked best, and explain why you thought it worked best. Pick one element of the course that you thought worked badly but needs to be improved, and explain how you think it could be improved. Pick one element of the course that you thought worked badly and should be dropped, and explain why it should be dropped. And pick one topic not covered in the course that you think should be added, and explain why it should be added.



I. You now have 20 minutes left to go back over your exam, check your work, and make what progress you can on questions that you could not finish in the time allotted. Good luck...