

Economics 1: Introduction to Economics

J. Bradford DeLong <delong@econ.berkeley.edu>

Administrivia

March 7, 2016 8-9 AM
Wheeler Auditorium, U.C. Berkeley

Meta-Announcement

- We are moving announcements and administrivia out of lecture time and onto the “announcements” bCourses page...
- That is all...

Where Is the Exam?

- Wheeler Hall: Ranchithaa, Waheed, Tiffany, Christian, Claire. 242 Students/ 600 Seats
- Dwinelle 145: Woody, Andrew. 108 Students/ 217 Seats
- Stanley 105: Elsa, Nikhil, Chimi. 146 Students/ 292 Seats

More About the Exam

- No study aids—brains alone...
 - This will probably fall next year, or whenever Wheeler gets enough bandwidth
 - The old argument was that you needed to have it in your brain (at least as of the time of the exam) because:
 - Looking it up took a lot of time
 - Only if you once had had it in your brain would you have a chance of knowing what to look up and where to look it up
 - But this is the age of smartphones. When will you be without your smartphone?

More About the Exam II

- Five parts—50 minutes—10 minutes/part
 1. Police-the-reading multiple choice
 2. Police-the-concepts short answers
 3. Supply-demand-surplus
 4. Market failure I
 5. Market failure II
- No tricks (as on the last question of problem set 4, where two kinds of market failure offset each other): things are what they seem to be!
- Pace yourself properly!

More About the Exam III

1. The answers to this part are circled letters
2. The answers to this part are short, two-sentence, answers: the first a definition of the concept, and the second a description of how the course uses the concept
3. The answers to this part are numbers
4. The answers to this part are numbers
5. The answer to this part is a short essay
 - Our GSIs are overworked—hence partial credit will be rare
 - For (1), (3), and (4), answers are either right or wrong
 - For (2), answers are either right, half-right, or wrong

Midterm Logistics

- On lectures, sections, Dasgupta, section exercises, problem sets, and FBAH through the end of chapter 13 (except for ch. 12, ch. 4 on elasticity, and those parts of the theory of the firm we did not touch in monopoly: i.e., no short-run long-run supply stuff)
- No sections next Wednesday and Thursday—your underpaid GSIs will be grading
- SLC in Cesar Chavez: Monday 7–9 pm RSVP link: <http://tinyurl.com/slc1form>

Orientation

March 7, 2016 8-9 AM
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The Market as an Institution

- We start from what look like to us deep truths of human psychology
 - People are *acquisitive*
 - People engage in *reciprocity*—i.e., want to enter into reciprocal gift-exchange relationships in which they are neither cheaters nor saps
 - With those they *trust*...

The Market as an Institution II

- We devised money as a substitute for trust...
- And so on the back of these human propensities have constructed a largely-peaceful global 7.4B-strong societal division of labor:
 - Built on assigning things to *owners*—who thus have responsibility for stewardship and the incentive to be good stewards...
 - And on very large-scale webs of *win-win exchange*...
 - Regulated by *market prices*...
- This is a very valuable and important societal institution

The Market Balance Sheet: Pro

- The market failure-free competitive market in equilibrium, from the perspective of a utilitarian seeking to achieve the greatest-good-of-the-greatest-number, accomplishes these goals:
 1. It produces at a scale that exhausts all possible *win-win exchanges*—and is “efficient” in that sense.
 2. It allocates the roles of producers and sellers to those who can make and sell them in a way least costly to society’s overall resources—to those with the lowest *opportunity cost*.
 3. It rations the goods produced to those with the greatest *willingness-to-pay*—to those who, by the money standard, need and want them the most.

The Market Balance Sheet: Con

- Markets can go wrong. We have covered how they:
 1. not fail but be failed by governments that fail to properly structure and support them—or that break them via quotas or price floors/ceilings
 2. be out-of-equilibrium
 3. have market power
 4. be non-rival (increasing returns to scale; natural monopolies)
 5. suffer externalities (in production and in consumption, positive and negative; closely related to non-excludibility)
 6. suffer from information lack or asymmetry
- We will cover
 7. be non-excludible (public goods, etc.)
 8. suffer from miscalculations and behavioral biases
 9. suffer from maldistributions

Problem Set 4: Sample Midterm

A

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Section I: Key Terms—Police the Reading (1)

- What does Partha Dasgupta think Friedrich von Hayek deserved his Nobel Prize?
 - A. he was the first economist to precisely identify and focus on the extraordinary utility of the market as a mechanism for widely and cheaply disseminating important and useful information about the state of the economy to producers and consumers;
 - B. his *Road to Serfdom* famously warned of the dangers of socialism;
 - C. his business-cycle theory was the first to precisely identify and focus on the dangers of overinvestment as the root cause of economic depressions;
 - D. he performed the first comprehensive analysis of natural monopoly and its costs and benefits;
 - E. none of the above.

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 - E. none of the above.

Section I: Key Terms—Police the Reading (2)

- What is another name for what FBAH call the “Equilibrium Principle?”
 - A. the “Low-Hanging Fruit Principle”;
 - B. the “No-Cash-Left-on-the-Table Principle”;
 - C. the “Sunk-Cost Principle”;
 - D. the “Income Effect Principle”;
 - E. none of the above.

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 - E. none of the above.

Section I: Key Terms—Police the Reading (3)

- 3. What do FBAH mean when they refer to the “hurdle method of price discrimination”?
 - A. selling both inferior and normal goods;
 - B. monopolies that sell more than they should to maximize profits in order to discourage competition;
 - C. the practice by which a seller offers a discount to all buyers who overcome some obstacle;
 - D. investing in increased capacity to lower average fixed costs;
 - E. none of the above.

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 - E. none of the above.

Section I: Key Terms—Police the Reading (4)

- What is a “positional arms race”?
 - A. a strategic game between two players where the first mover receives more utility than the second player;
 - B. what occurs when an increase in one person’s performance reduces the expected reward of another’s performance;
 - C. an agreement in which contestants attempt to limit mutually offsetting investments in performance enhancement;
 - D. a series of mutually offsetting investments in performance enhancements that is stimulated by a positional externality;
 - E. none of the above.

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Section II: Key Terms—Police the Concepts (1)

- Explain each of the following in one sentence that convinces your GSI you understand the concept and how it has been used so far in lecture, section, and readings:
 1. What is the “willingness to pay” of a consumer?
 - **The price above which the consumer simply will not buy. The difference between WTP and the price a consumer pays is the benefit to the consumer of the existence of the market—the surplus they gain.**

Section II: Key Terms—Police the Concepts (2)

- Explain each of the following in one sentence that convinces your GSI you understand the concept and how it has been used so far in lecture, section, and readings:
 2. What is “producer surplus”?
- **Aggregate over all producers the surplus each gains from the market—the difference between the price they receive and their particular opportunity cost. That is producer surplus—the maximum amount that you could ever possibly induce producers as a group to pay in order to keep the market open.**

Section II: Key Terms—Police the Concepts (3)

- Explain each of the following in one sentence that convinces your GSI you understand the concept and how it has been used so far in lecture, section, and readings:
 3. What is a “first-mover advantage”?
 - **A situation in which the first competitor to make decisions can thereby make it very clear that it is impossible for it to follow certain competitive strategies, if that knowledge affects the strategies that other competitors are then induced to follow in a way that advantage the first competitor.**

Section II: Key Terms—Police the Concepts (4)

- Explain each of the following in one sentence that convinces your GSI you understand the concept and how it has been used so far in lecture, section, and readings:
 4. What are “increasing returns to scale”?
 - **A situation in which there is some degree of non-rivalry: in which the resources a producer uses to produce the first unit are not thereby used up, and are available in some degree to help produce the second unit. Thus it is less than twice as expensive to produce two units as one, less than ten times as expensive to produce a hundred units as ten, less than a hundred times as expensive to produce a hundred-thousand units as a thousand, and so forth. Any simulacrum of competitive equilibrium may be impossible to sustain in the presence of increasing returns to scale, and even if sustainable may well be grossly inefficient and wasteful.**

Section III: Supply, Demand, and Surplus

- Let's assume that we can treat all automobiles as more or less the same. Suppose demand for cars worldwide is $P = \$140 - 2Q$, where P is the price of cars in thousands of dollars and Q is the number of cars sold each year in millions. Suppose that cars can be produced at constant returns to scale at a fully-amortized cost of $P = \$20$, where P is the price of cars in thousands of dollars.
 1. What is the equilibrium price of a newly-produced car?
 2. What is the equilibrium quantity?
 3. What is the producer surplus?
 4. What is the consumer surplus?

Section III: Supply, Demand, and Surplus (1)

1. What is the equilibrium price of a newly-produced car?
 - **\$20 (thousand/car).**
 - **The supply curve is perfectly responsive at a price of \$20.**
 - **What else could the equilibrium price be?**

Section III: Supply, Demand, and Surplus (2)

2. What is the equilibrium quantity?

- **60 million cars/year.**
- **The demand curve is $P = \$140 - 2Q$.**
- **We know that the equilibrium price is \$20.**
- **That price is associated with a demand of 60 (million/year).**

Section III: Supply, Demand, and Surplus (3)

3. What is the producer surplus?

- Zero.
- This is a perfectly-competitive constant-returns-to-scale industry with no fixed factors of production.
- The price is the same thing as the (constant) opportunity cost.
- So there is no producer surplus.

Section III: Supply, Demand, and Surplus (4)

4. What is the consumer surplus?

- **Since the maximum willingness-to-pay is \$140 and the minimum willingness to pay among those who purchase is \$20, the average willingness to pay is (unrealistically) \$80 (thousand/car).**
- **Average surplus per consumer is average willingness to pay minus price. That is (unrealistically) \$60 (thousand/car).**
- **At 60 million cars/year, multiplying the average surplus per car by the number of cars sold gives us \$3.6 (trillion/year) of consumer surplus.**

Section IV: Monopoly

1. What is a “natural monopoly”?

- **A situation in which non-rivalry—increasing returns to scale—are strong enough that two competing producers cannot both profitably survive in the market.**
- **Hence over time the market will tend to wind up with one dominant producer.**
- **And then no other producer will have an incentive to enter the market and challenge it.**

Section IV: Monopoly

2. Why is it the case that the market system cannot deliver a sustainable competitive equilibrium in the case of a “natural monopoly”.

- **In a competitive market, price is equal to (or near) opportunity cost.**
- **But in the case of natural monopoly the opportunity cost is less than the average cost.**
- **And so if the good sells for its competitive price no producers will make money.**
- **Hence producers will drop out and exit the market until the wedge between the price and opportunity cost is large enough that producers are at least covering their costs**

Section IV: Monopoly

3. What, in your view is likely to be the most attractive option for how the government should deal with cases of natural monopoly?

- **Interested in what people say—anything reasonably intelligent-sounding and thoughtful gets full credit.**
- **Important points to hit are:**
 - A. that the problem cannot be solved because a competitive market is unsustainable,**
 - B. that production ought to be pushed above the monopoly level,**
 - C. public ownership is a possibility, as is**
 - D. rate regulation—imposing a price ceiling. And one has to worry about**
 - E. government failure: might it be better to simply let the situation alone?**

Section IV: Monopoly

4. Why does this option strike you as more attractive than the other options you can think of?

- **Interested in what people say— anything reasonably intelligent-sounding and thoughtful gets full credit.**

Section V: Externalities

1. Describe the advantages and disadvantages of using taxes and bounties to regulate negative externalities.

- **Major advantage: if you get the Pigovian tax (or bounty) right, you have fixed the externality.**
- **Major disadvantage: the government has to be able to calculate and then have the incentive to impose the right Pigovian solution.**
- **It's a contest between the magnitude of market failure on the one hand, and government calculation and incentivization failures on the other**

Section V: Externalities

2. Describe the advantages and disadvantages of allowing individuals to sue to regulate negative externalities.

- **Major advantage: if property rights are well-specified and bargaining costs are low, it fixes the externality without risking government calculation and incentivization failures.**
- **Major disadvantages:**
 - 1. well-specifying property rights is a lot harder than it looks (recall the section exercise in which running express trains is unprofitable as any enterprise other than as a Coaseian law-enabled extortion racket);**
 - 2. if bargaining costs are low... well, if bargaining costs are low, we can simply require consensus for everything and live in utopia, right?**

Additional Questions: Multiple Choice

1. What do FBAH mean by “variable factor of production”?
 - A. a factor of which the firm is uncertain about how much of it is variable;
 - B. resources available to a firm that are fixed in the short-run but can be varied over time via investment, capacity expansion, and depreciation;
 - C. a factor of production with a price that varies over time;
 - D. resources available to a firm that must be specified and ordered before the current level of demand is known;
 - E. none of the above.

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 - E. none of the above.**

Additional Questions: Multiple Choice

2. What are the four kinds of market failure that Partha Dasgupta identifies in his Economics: A Very Short Introduction?

- A. market-power, non-rivalry, macroeconomic, and distributional;
- B. market-power, network, miscalculation, and macroeconomic;
- C. non-rivalry, market-power, network, and miscalculation;
- D. distributional, free-riding, market power, and macroeconomic;**
- E. none of the above.

Additional Questions: Short Answer

3. What is “diminishing marginal utility”?

- **Whenever the willingness-to-pay of additional consumers declines as the number of consumers buying increases,**
- **Or when the willingness-to-pay of a single consumer for an additional unit declines as the number of units he or she buys increases.**
- **It's what makes demand curves slope downward**

Additional Questions: Short Answer

4. What is “adverse selection”

- **Whenever raising the price of a commodity leads those whom it is less costly to provide that commodity to drop out of the market.**

5. What is the “opportunity cost” of a producer?

- **The price below which the producer simply will not produce. The difference between OC and the price a producer receives is the benefit to the producer of the existence of the market—the surplus they gain.**

6. What is an “equilibrium price”?

- **A price at which there is neither excess demand nor excess supply—at which the number of people who want to buy at that price is equal to the number of people who want to sell.**
- **A price at equilibrium will have no tendency to rise or fall.**

Additional Questions: Monopoly and Externality

- Suppose PowerCo is a power-plant operating company that runs coal-powered plants and has to decide how many power plants to run. The marginal revenue for power plants is given by $MR = \$10 - 2Q$, where Q is the number of power plants operated and MR is measured in millions of dollars per year. The marginal cost of operating power plants is given by $MC = \$2$, where MC is measured in millions of dollars per year. Each power plant imposes social costs through increased asthma in the nearby town of Breathville, with total social pollution costs = $\$4 \times Q$.
 - A. How many plants should Powerco run to maximize profit?
 - B. If the town can successfully sue Powerco as **parens patriae** to recover the social costs of operating power plants, how many power plants will Powerco operate?
 - C. What is an alternative policy by which the government could cause Powerco to run the socially optimal number of power plants?

Additional Questions: Monopoly and Externality

A. PowerCo: $MR = \$10 - 2Q$, $MC = \$2$. How many plants should Powerco run to maximize profit?

- **4 power plants**
- **To maximize profit, set marginal revenue = marginal cost**
- **Hence $MR = \$2$**
- **Hence $Q = 4$ power plants**

Additional Questions: Monopoly and Externality

B. PowerCo: $MR = \$10 - 2Q$, $MC = \$2$. Running Q power plants imposes social costs $= \$4 \times Q$. If the town can successfully sue Powerco as **parens patriae** to recover the social costs of operating power plants, how many power plants will Powerco operate?

- **Running a power plant now costs you \$2 in marginal operating costs plus \$4 in legal fees and damages**
- **Profit maximization sets marginal revenue equal to that \$6 of marginal operating plus legal costs**
- **$MR = MC$ when the number of power plants is 2**

Additional Questions: Monopoly and Externality

C. PowerCo: $MR = \$10 - 2Q$, $MC = \$2$. Running Q power plants imposes social costs = $\$4 \times Q$. What is an alternative policy by which the government could cause Powerco to run the socially optimal number of power plants?

- **This is subtle: I'm being mean here...**
- **The social optimum is to set society's willingness-to-pay to opportunity cost at the margin**
- **Willingness-to-Pay of society is not the MR curve but the demand curve**
- **A MR curve given by:**
 - **$MR = \$10 - 2Q$**
- **Is a demand curve given by:**
 - **$P = \$10 - Q$**

Additional Questions: Monopoly and Externality

C. PowerCo: $MR = \$10 - 2Q$, $MC = \$2$. Running Q power plants imposes social costs = $\$4 \times Q$. What is an alternative policy by which the government could cause PowerCo to run the socially optimal number of power plants?

- **Demand curve: $P = \$10 - Q$**
- **Total opportunity costs—operating plus pollution = $\$6$ per powerplant**
- **Social optimum: $\$10 - Q = \$6 \rightarrow Q = 4$**
- **But that's what the monopoly does!**
- **Alternative policy is to leave the monopoly alone!**
- **The monopoly market failure leads PowerCo to produce too little...**
- **The pollution externality market failure leads PowerCo to produce too much...**
- **They exactly offset each other here**