Economics 1: Introduction to Economics

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Office Hours: A Hint: Problem Set 1, Problem 2b

February 1, 2016 8-9 AM
Wheeler Auditorium, U.C. Berkeley
As Best as I Can Tell Over the Internet...

- Too many people are having a problem with 2b) on the problem set...
- Remember Problem 1: We gave you a table of productivities...
- And out of that you had to build the PPF and the supply curve.
### The Table, the PPF, and the Supply Curve

<table>
<thead>
<tr>
<th>Worker</th>
<th>Yoga Lessons Produced</th>
<th>Lattes Produced</th>
<th>Latte Comparative Advantage</th>
<th>Latte Price at Which They Switch...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfred</td>
<td>50</td>
<td>500</td>
<td>10.00</td>
<td>$1.00</td>
</tr>
<tr>
<td>Beatrice</td>
<td>100</td>
<td>500</td>
<td>5.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>Clxi</td>
<td>150</td>
<td>500</td>
<td>3.33</td>
<td>$3.00</td>
</tr>
<tr>
<td>Dante</td>
<td>200</td>
<td>500</td>
<td>2.50</td>
<td>$4.00</td>
</tr>
<tr>
<td>Earendil</td>
<td>250</td>
<td>500</td>
<td>2.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>Faramir</td>
<td>300</td>
<td>500</td>
<td>1.67</td>
<td>$6.00</td>
</tr>
<tr>
<td>Galus</td>
<td>350</td>
<td>500</td>
<td>1.43</td>
<td>$7.00</td>
</tr>
<tr>
<td>Hrothgar</td>
<td>400</td>
<td>500</td>
<td>1.25</td>
<td>$8.00</td>
</tr>
<tr>
<td>Audra</td>
<td>450</td>
<td>500</td>
<td>1.11</td>
<td>$9.00</td>
</tr>
<tr>
<td>Jenghiz</td>
<td>500</td>
<td>500</td>
<td>1.00</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

Memo: Yoga price = $10/lesson

#### Supply Curve for Lattes in Avicenna

![Supply Curve](image)

#### Production Possibility Frontier for Lattes in Avicenna

![PPF](image)
Webtools: Proposed Solution

• So we are going to link every file related to the course as a pdf off of: http://www.bradford-delong.com/course-syllabus-econ-1-spring-2016-uc-berkeley.html
• You can still get there via bCourses: that file will be mirrored and linked to at: https://bcourses.berkeley.edu/courses/1411451/assignments/syllabus
• And you may also want to check: http://www.bradford-delong.com/2016/01/econ-1-spring-2016-uc-berkeley-things-moved-off-the-course-syllabus-page.html
i>Clickers

• i>Clicker base station is supposed to appear today
• We need the base station because Wheeler does not have the wifi capacity to support 600 connections
• We need the base station because the local cellular network does not have the capacity either
• The LORD willing and the creek don’t rise, we will start with i>Clickers come Monday
• Be prepared!
Surplus II

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Last Week We Ended at the End of FBAH Chapter 5, Calculating Surplus

• Consumer surplus, producer surplus, and total surplus...

• The market as a machine for generating consumer utility—consumer well-being—by giving those with a high willingness-to-pay an opportunity to spend their income on something they want...

• The market as a machine for generating producer profit by giving those with a low opportunity cost the opportunity to devote their resources to producing things of the highest value, and thus gain income...

• Produces the right amount...
There Follows Chapter 6, “Perfectly Competitive Supply”

- Lots of good stuff in chapter 6...
- The chapter focuses on “perfect competition” and producer surplus
- In a year-long course we would spend a week on it...
- In this course, no time: we skip over it:
  - We did producer surplus last time
  - “Perfect competition”: a situation in which no business has any permanent advantage in terms of a lower opportunity cost than any other...
What Does Your Supply Curve Look Like If No Producer Has an Opportunity-Cost Advantage?

• Demand Curve:
  • \( P = P_{d0} - dQ_d \)
  • \( P = 10 - 0.0002Q_d \)
• The supply curve is?
What Does Your Supply Curve Look Like If No Producer Has an Opportunity-Cost Advantage? II

• Demand Curve:
  • \( P = P_{d0} - dQ_d \)
  • \( P = 10 - 0.0002Q_d \)

• The supply curve is?
  • Suppose that everyone has an opportunity cost of producing lattes of $2.50/latte...
What Does Your Supply Curve Look Like If No Producer Has an Opportunity-Cost Advantage? III

• Demand Curve:
  • \( P = P_{d0} - dQ_d \)
  • \( P = 10 - 0.0002Q_d \)

• The supply curve is?
  • Suppose that everyone has an opportunity cost of producing lattes of $2.50/latte...
  • The supply curve is flat—perfectly elastic—at a price of $2.50
What Does Your Supply Curve Look Like If No Producer Has an Opportunity-Cost Advantage? IV

- Demand Curve:
  - \( P = P_{d0} - dQ_d \)
  - \( P = 10 - 0.0002Q_d \)
- Supply Curve:
  - \( P = \$2.50 \)
- Equilibrium: \( P = \$2.50, Q = 37500 \)
- Calculating surplus:
  Average producer opportunity-cost = \$2.50.
What Does Your Supply Curve Look Like If No Producer Has an Opportunity-Cost Advantage?

- Demand Curve:
  - $P = P_{d0} - dQ_d$
  - $P = 10 - 0.0002Q_d$
- Supply Curve:
  - $P = $2.50
- Equilibrium: $P =$2.50, $Q =$37500

Calculating surplus:
- Average producer opportunity-cost = $2.50. $P =$2.50. No producer surplus
- Average consumer willingness-to-pay = ($10+$2.50)/2 = $6.25.
What Does Your Supply Curve Look Like If No Producer Has an Opportunity-Cost Advantage? VI

• Demand Curve:
  • \( P = P_{d0} - dQ_d \)
  • \( P = 10 - 0.0002Q_d \)

• Supply Curve:
  • \( P = $2.50 \)

• Equilibrium: \( P = $2.50, Q = 37500 \)

• Calculating surplus: Average producer opportunity-cost = $2.50.\( P = $2.50. \) No producer surplus

• Calculating surplus: Average consumer willingness-to-pay = \((10 + $2.50)/2 = $6.25.\) Price = $2.50.

• \( CS = 37500 \times ($6.25 - $2.50) \)

• \( CS = $146,025 \)
Isn’t It Interesting That...

- Where producers most have their act together—where they can share resources and technologies and quickly expand production cheaply...
- They do not receive any producer surplus?
- A perfectly-competitive market is a consumer surplus-generating machine
And That Brings Us to the End of Chapter 6...

• That’s all we have time for in chapter 6
• But read and pay attention to the “theory of the firm” stuff
• How large a profit-maximizing firm decides to be...
• How much profit it makes in the short run...
• And how the short run turns into the long run in which there is no producer surplus—in which factors of production all receive only their opportunity cost...
What Does Your Supply Curve Look Like If There Is No Supply Elasticity at All?

• Demand Curve:
  • \( P = P_{d_0} - dQ_d \)
  • \( P = 10 - 0.0002Q_d \)

• Supply Curve:
  • \( Q = 37500 \)

• Equilibrium: \( P = $2.50, \ Q = 37500 \)

• Calculating surplus: Average producer opportunity-cost = $0. \ P = $2.50.
What Does Your Supply Curve Look Like If There Is No Supply Elasticity at All?

• Demand Curve:
  • \( P = P_{d0} - dQ_d \)
  • \( P = 10 - 0.0002Q_d \)

• Supply Curve:
  • \( Q = 3750 \)

• Equilibrium: \( P = $2.50, \quad Q = 3750 \)

• Calculating surplus: Average producer opportunity-cost = $0. \( P = $2.50 \).
  • \( PS = 3750 \times $250 \)
  • \( PS = $9375 \)

• Producers are, here, useless: they don’t do anything—they can’t—to expand production. They don’t sacrifice anything in order to produce

• Yet they are well-rewarded
These Observations Are the Root of the Socialist Critique of the Market

• When producers are parasitic, static, and monopolistic, they are amply rewarded

• When producers are contributors, expanding, sharing, and competitive, they get little
Quotas

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On to FBAH Chapter 7: Efficiency, Exchange, and the “Invisible Hand” of the Market in Action

• A competitive market in equilibrium produces one piece of information: the equilibrium price.

• That price of information and the market mechanism then:
  • Ration consumption—only those consumers with a willingness-to-pay higher than the price consume.
  • Direct production—only those potential producers with an opportunity-cost lower than the price produce.
  • Proper scale of operation...

• In so doing, the market produces the maximum money-value surplus.

• In the sense of maximizing money-value surplus, we can’t do better in this case.
Monkeying with the Invisible Hand: Quotas

• Why couldn’t we do better? We couldn’t we find a better way of running the economy than the competitive market system?
  • Recall our free-market equilibrium: \( P = $4, Q = 30000 \)
Monkeying with the Invisible Hand: Quotas II

- Why couldn’t we do better? We couldn’t we find a better way of running the economy than the competitive market system?
  - Recall our free-market equilibrium: $P = \$4, \ Q = 30000$
- The United Coffee Drinker’s Movement elects a majority to the Avicenna Town Council
- They conduct a study, and decide that more coffee should be produced in Avicenna—not 30,000 lattes/day, but more
Monkeying with the Invisible Hand: Quotas III

• Why couldn’t we do better? We couldn’t find a better way of running the economy than the competitive market system?
  • Recall our free-market equilibrium: \( P = \$4, \ Q = 30000 \)
• PDC decrees that 50,000 lattes/day are going to be produced in Avicenna, and then sold to consumers in order to make enough coffee available
• What’s the market price going to be?
• The price is going to be zero: cafes trying to get rid of their stock will undercut each other, and find that coffee is now so abundant they can (barely) give it away
Monkeying with the Invisible Hand: Quotas III

- Why couldn’t we do better? We couldn’t we find a better way of running the economy than the competitive market system?
  - Recall our free-market equilibrium:
    \[ P = $4, \; Q = 30000 \]
- PDC decrees that 50,000 lattes/day are going to be produced in Avicenna, and then sold to consumers in order to make enough coffee available
- What’s the market price going to be?
- The price is going to be zero: cafes trying to get rid of their stock will undercut each other, and find that coffee is now so abundant they can (barely) give it away
- That evening, everybody quits—you make no money in the latte business
Why couldn’t we do better? We couldn’t we find a better way of running the economy than the competitive market system?

- Recall our free-market equilibrium: \( P = \$4, \ Q = 3000 \)
- PDC decrees 5000 lattes/day
- On Day 2, PDC drafts enough potential latte producers into the Avicenna Caffeine Service to make sure that 5000 lattes/day are produced.
- The situation settles down
- 5000 lattes/day are produced
- They are then given away
- Has PDC made Avicenna better?
The Coffee Quota: Who Gains?

- Potential consumers who did not used to drink coffee gain.
- It wasn’t worth it for them before because their willingness-to-pay was less than the $4/latte equilibrium price.
- Now they get coffee for free.
- They drink 20000 lattes/day.
- They have an average willingness to pay of $2.
- \((\text{AWP} - \text{P}) \times \text{Q} = \text{surplus}\)
- $40000 in surplus.
The Coffee Quota: Who Gains? II

- Consumers who used to drink coffee also gain
- They used to pay the $4/latte equilibrium price
- Now they get coffee for free
- They drink 30000 lattes/day
- They save $4/latte
- They receive an additional:
  - \(30000 \times 4 = 120,000\) in extra surplus

![Supply and Demand for Lattes in Avicenna](image)
The Coffee Quota: Who Loses?

• Producers lose
• They used to collect $4/latte for the 30,000 lattes/day they made
• Now they collect $0/latte
• They lose $120,000
• They would leave the industry and do something else—but they are drafted, and can’t
The Coffee Quota: Who Loses? II

• People who did not use to produce lattes who are drafted into the ACS lose
• They now prepare 20000 lattes/day
• Their average opportunity cost of doing so is $5/latte
• They lose $100,000
Net Losses

- Old consumers: +$120,000
- New consumers: +$40,000
- Old producers: -$120,000
- New producers: -$100,000
- Net losses: -$60,000
- PDC has taken from producers by paying them less and drafting them to work making lattes
  - They value their losses at -$220,000
- PDC has given to consumers by giving them all as much free coffee as they want
  - They value their gains at $140,000
- Is this a good policy?
- Is this politically sustainable?
Fixed Prices

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A Fixed Administrative Price

• Suppose PDC gets nervous, and backs off of its policy
• It says: the problem with the old free-market equilibrium was that the price of coffee was too high
• But going to free coffee was going too far
• PDC decides to set the price at $2/latte...
• What happens?
Excess Demand at $2/Latte

• At $2/latte, only those with low opportunity costs show up to make lattes
• Only 10,000 lattes/day are made
• But lots of people think a $2 latte is worth buying
• Consumers try to buy 40000 lattes
• 3/4 of potential consumers are disappointed, and go home latteless...
Winners and Losers Relative to Free Market

• Losers: Producers with OC<$2. They used to receive $4/latte. Now they get $2:
  • Losses: 10000 x $2 = $20000

• Losers: producers with OC>$2. They used to make lattes. Now they exit. Lose producer surplus:
  • Losses: 10000 x $2 = $20000
Winners and Losers Relative to Free Market II

• Winners: The 10000 who buy lattes used to pay $4. Now they pay $2.
  • Winnings: $20000
• Losers: The 20000 who used to buy lattes at $4, but now can’t find one. Their average willingness to pay: $6:
  • Losses: $40000
Winners and Losers Relative to Free Market III

- Former producers who exit lose b
- Producers who do not exit lose a
- Consumers who were willing to pay the old price but can’t buy lose c
- Consumers lucky enough to buy gain a
- Net effect: -b-c = -$60,000, in this example
Winners and Losers Relative to Free Market IV

• But consider that net effect: \(-b-c = -$60,000\)
• Is that right?
• What about area (e)?
• With a fixed price, the wrong amount is being produced and sold
• It is, however, being produced by the right people—by the low opportunity-cost producers
• But is it being consumed by the right people—by the high willingness-to-pay consumers?
  • Nothing to make it so…
The Market System: Balance Sheet

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The Advantages of the Competitive Market

- The competitive market, when it works:
  - Maximizes the dollar value of surplus
  - By producing the right amount
  - Having it made by the low opportunity-cost potential producers
  - Having it consumed by the high willingness-to-pay potential consumers
What Can Go Wrong with the Market, I & II

- What can go wrong with the competitive market?
- First, the government can monkey with it
  - Via quotas that produce the wrong amount
  - Via fixed prices that lead to the wrong amount being produced
- And if the price is wrong, the rationing consumption/assigning production decision can go wrong as well
- And now we’ve reached page 202 of FBAH...
Striking a Balance

• Plus:
  • Maximizes the dollar value of surplus

• Minuses:
  1. Can be monkeyed with by government via quotas
  2. Can be monkeyed with by government via fixed prices