Economics 1: Spring 2012
Correcting and Overriding Markets; Consumers

J. Bradford DeLong, Lanwei Wang, and a cast of thousands...

February 27, 2012
The Midterm...

• Looks by and large good...
  – We are going to pick up the pace...
  – More doing of sample problems in lectures...
  – Slightly longer problem sets...
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Correcting and Overriding Markets

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Governments Correct/Override Markets

• Taxes (to repair externalities)
• Subsidies (to compensate for spillovers)
• Quotas
  – No more than X can be imported or sold
  – Voluntary Export Restraints of the Reagan Administration
• Price ceilings: rent control
• Price floors: price maintenance
Supply and Demand

The Market for Lattes in Sunnydale

Price

Quantity
Supply and Demand

**The Market for Lattes in Sunnydale**

Supply: \( Q = 200(P - 1) \)
Supply and Demand

The Market for Lattes in Sunnydale

Supply: $Q = 200(P - 1)$

Demand: $Q = 1000 - 100P$
Supply and Demand

The Market for Lattes in Sunnydale

Supply: $Q = 200(P - 1)$

Demand: $Q = 1000 - 100P$

$P = 4$

$Q = 600$
Supply and Demand

The Market for Lattes in Sunnydale

Price

Supply: $Q = 200(P - 1)$

Demand: $Q = 1000 - 100P$

Avg purchaser willingness to pay: $7
Average seller reservation price: $2.50
Total surplus: $4.50 \times 600 = $2700
Consumer surplus: $1800
Producer surplus: $900

$P = 4$

$Q = 600$
A Quota (Litter, etc.): No More than 300 Lattes/Day

The Market for Lattes in Sunnydale

Price

Quota: $Q = 300$

Supply: $Q = 200(P - 1)$

Demand: $Q = 1000 - 100P$

Avg purchaser willingness to pay: $7$
Average seller reservation price: $2.50$
Total surplus: $4.50 \times 600 = $2700$
Consumer surplus: $1800$
Producer surplus: $900$

$P = 4$

$Q = 600$
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a quota of 300 lattes per day, what is the price at which those lattes are going to be sold?
  - A. $4
  - B. $7
  - C. $2.50
  - D. $8
  - E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

**If PDC puts on a quota of 300 lattes per day, what is the price at which those lattes are going to be sold?**

- A. $4
- B. $7
- C. $2.50
- D. $8
- E. Not enough information
What Is Consumer Surplus Going to Be?

The Market for Lattes in Sunnydale

Price

Quota: $Q = 300$

Quote Price: $P = 4$, $Q = 600$

Avg purchaser willingness to pay: $P = 7$

Average seller reservation price: $P = 2.50$

Total surplus: $4.50 \times 600 \cdot 2 = 2700$

Consumer surplus: $1800$

Producer surplus: $900$

Supply: $Q = 200(P - 1)$

Demand: $Q = 1000 - 100P$
Ladies, and Gentlemen, to Your i>Clickers...

• If PDC puts on a quota of 300 lattes per day, what is consumer surplus going to be?
  – A. $1800
  – B. $900
  – C. $450
  – D. $2400
  – E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

• If PDC puts on a quota of 300 lattes per day, what is consumer surplus going to be?
  – A. $1800
  – B. $900
  – C. $450
  – D. $2400
  – E. Not enough information
What Is Producer Surplus Going to Be?

The Market for Lattes in Sunnydale

Quote: $7

Price

Quota: Q = 300

Supply: Q = 200(P - 1)

Demand: Q = 1000 - 100P

P = 4, Q = 600
Avg purchaser willingness to pay: $7
Average seller reservation price: $2.50
Total surplus: $4.50 x 600 = $2700
Consumer surplus: $1800
Producer surplus: $900
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a quota of 300 lattes per day, what is producer surplus going to be?
  - A. $225
  - B. $900
  - C. $1575
  - D. $1800
  - E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a quota of 300 lattes per day, what is producer surplus going to be?
  - A. $225
  - B. $900
  - C. $1575
  - D. $1800
  - E. Not enough information
Ladies, and Gentlemen, to Your 
>Clickers...

• If PDC puts on a quota of 300 lattes per day, what is the deadweight loss?  
  – A. $675  
  – B. $1350  
  – C. $225  
  – D. $1800  
  – E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a quota of 300 lattes per day, what is the deadweight loss?
  - A. $675
  - B. $1350
  - C. $225
  - D. $1800
  - E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

• PDC puts on a quota of 300 lattes per day. Is there a better way to accomplish its policy goals?
  – A. Yes
  – B. No
  – C. Not sure
Yes, There Is a Better Policy: A $4.50/Latte Tax on Lattes

- Why is this policy better?
- Because:
  - Are we sure that the low-cost producers will wind up being the ones making the lattes?
  - Anybody with a reservation price of less than $7 would want to produce
  - How does PDC sort out who gets the latte-producing licenses?
  - Friends of PDC? Campaign contributors? Lobbyists?
Yes, There Is a Better Policy: A $4.50/Latte Tax on Lattes

- Why is this policy better?
- Because:
  - If licenses are handed out to low-cost producers, a quota looks like a tax—but with the tax revenue all handed back to producers
  - If licenses are handed out according to some other logic, well then...
    - Average reservation cost = $4
    - Consumer surplus = $450
    - Producer surplus = $900
    - Deadweight loss = $1350
- And do you want the potential revenue from the tax going to the producers?
  - Cap-and-trade
Supply and Demand

The Market for Lattes in Sunnydale

Price

Supply: \( Q = 200(P - 1) \)

P = 4

Demand: \( Q = 1000 - 100P \)

Q = 600

Avg purchaser willingness to pay: $7
Average seller reservation price: $2.50
Total surplus: $4.50 \times 600 = $2700
Consumer surplus: $1800
Producer surplus: $900
A Price Ceiling: PDC Says: It Is Unfair to Charge More than $2/latte

The Market for Lattes in Sunnydale

- Supply: $2/latte is unfair.
- Demand: $7 is the average willingness to pay.
- Producer surplus: $900
- Consumer surplus: $1800
- Total surplus: $2700

Demand: $Q = 1000 - 100P$

Supply: $Q = 200(P - 1)$

Price Ceiling: $P = 4$

Quantity: $Q = 600$
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a price ceiling of $2/latte per day, what is the equilibrium price and quantity?
  - A. ($2, 200)
  - B. ($4, 600)
  - C. ($8, 200)
  - D. ($2, 800)
  - E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a price ceiling of $2/latte per day, what is the producer surplus?
  - A. $900
  - B. $450
  - C. $225
  - D. $100
  - E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

- If PDC puts on a price ceiling of $2/latte per day, what is the producer surplus?
  - A. $900
  - B. $450
  - C. $225
  - D. $100
  - E. Not enough information
Ladies, and Gentlemen, to Your i>Clickers...

• If PDC puts on a price ceiling of $2/latte per day, what is the consumer surplus?
  – A. $900
  – B. $1400
  – C. $445
  – D. $100
  – E. Not enough information
Effects of a $2 Price Ceiling

- Consumer surplus has gone from $1800 to $1400
- Producer surplus has gone from $900 to $100
- $1200 of deadweight loss...
- And this analysis may not be right:
  - Remember: everyone who would find a latte worth more than $2 is a potential demander
  - Random demand: average willingness to pay is $6
  - That would mean not $1400 but rather $800 of consumer surplus
  - That would mean not $1200 but $1800 of deadweight loss.
Why Would Anybody Ever Impose a Price Ceiling?

**The Market for Yoga in Sunnydale**

- Price: $P = 20$, Quantity: $Q = 300$
- Producer surplus: $6000$
- Consumer surplus: $4500$

Equation:
- Demand: $Q = 500 - 10P$
A Yoga Boom...

The Market for Yoga in Sunnydale

Price

S = 300

New Demand: Q = 800 - 10P

Demand: Q = 500 - 10P

P = 20, Q = 300
Producer surplus: $6000
Consumer surplus: $4500
A Yoga Boom...

The Market for Yoga in Sunnydale

Price

S = 300

Price

Quantity

Demand: \( Q = 500 - 10P \)

New Demand: \( Q = 800 - 10P \)

\( P = 20, Q = 300 \)
Producer surplus: $6000
Consumer surplus: $4500

\( P = 50, Q = 300 \)
Producer surplus: $15000
Consumer surplus: $4500

But lots of people who used to buy $20 yoga lessons now can't, and they are unhappy
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Consumers

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How Do/Should Consumers Behave?