

Microeconomics

Chapter 7: Perfect Competition and the Invisible Hand

Acemoglu Laibson List
Modified by Joseph Tao-yi Wang

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Chapter Outline

- 7.1. Perfect Competition and Efficiency
- 7.2. Extending the Reach of the Invisible Hand:
 - ▶ From the Individual to the Firm
- 7.3. Extending the Reach of the Invisible Hand:
 - ▶ Allocation of Resources across Industries
- 7.4. Prices Guide the Invisible Hand
- 7.5. Equity and Efficiency

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Key Ideas

1. The invisible hand efficiently allocates goods and services to buyers and sellers.
2. The invisible hand leads to efficient production **within** an industry.
3. The invisible hand efficiently allocates resources **across** industries.

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Key Ideas

4. Prices direct the invisible hand.
5. There are trade-offs between making the economic pie as big as possible and dividing the pieces equally.

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Evidence-Based Economics Example

▶ Can markets composed of only self-interested people maximize the overall well-being of society?



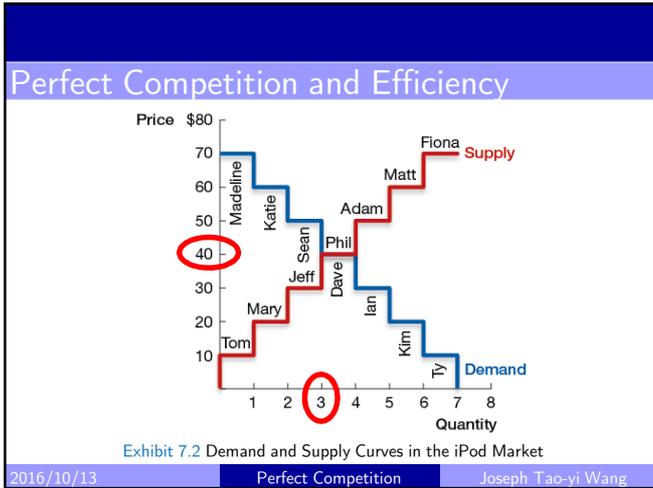
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Perfect Competition and Efficiency

Reservation Values of Buyers/Sellers in the iPod Market

Buyers	Res. Value (\$)	Q ^d	Sellers	Res. Value (\$)	Q ^s
Madeline	\$70	1	Tom	\$10	1
Katie	\$60	2	Mary	\$20	2
Sean	\$50	3	Jeff	\$30	3
Dave	\$40	4	Phil	\$40	4
Ian	\$30	5	Adam	\$50	5
Kim	\$20	6	Matt	\$60	6
Ty	\$10	7	Fiona	\$70	7

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Perfect Competition and Efficiency

Social Surplus (If Equilibrium Price = 40)

Reservation Values of Buyers/Sellers in the iPod Market

Buyers	Res. Value (\$)	Consumer Surplus	Q ^d
Madeline	\$70	\$30	1
Katie	\$60	\$20	2
Sean	\$50	\$10	3
Dave	\$40	\$ 0	4
Ian	\$30		5
Kim	\$20		6
Ty	\$10		7
Total		\$60	

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Perfect Competition and Efficiency

Social Surplus (If Equilibrium Price = 40)

Reservation Values of Buyers/Sellers in the iPod Market

Sellers	Res. Value (\$)	Producer Surplus	Q ^d
Tom	\$10	\$30	1
Mary	\$20	\$20	2
Jeff	\$30	\$10	3
Phil	\$40	\$ 0	4
Adam	\$50		5
Matt	\$60		6
Fiona	\$70		7
Total		\$60	

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Perfect Competition and Efficiency

Social Surplus

- ▶ Social surplus =
- ▶ The sum of consumer and producer surplus
- ▶ = \$120

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Perfect Competition and Efficiency

Social Surplus (If We Restrict Quantity = 2)

Reservation Values of Buyers/Sellers in the iPod Market

Buyers	Res. Value (\$)	Consumer Surplus	Q ^d
Madeline	\$70	\$30	1
Katie	\$60	\$20	2
Sean	\$50	\$10	3
Dave	\$40	\$ 0	4
Ian	\$30		5
Kim	\$20		6
Ty	\$10		7
Total		\$50	

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Perfect Competition and Efficiency

Social Surplus (If We Restrict Quantity = 2)

Reservation Values of Buyers/Sellers in the iPod Market

Sellers	Res. Value (\$)	Producer Surplus	Q ^d
Tom	\$10	\$30	1
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Phil	\$40	\$ 0	4
Adam	\$50		5
Matt	\$60		6
Fiona	\$70		7
Total		\$60	

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Perfect Competition and Efficiency
Social Surplus (If We Restrict Quantity = 2)

- ▶ Social surplus =
- ▶ The sum of consumer and producer surplus
- ▶ = \$100

Perfect Competition and Efficiency
Social Surplus

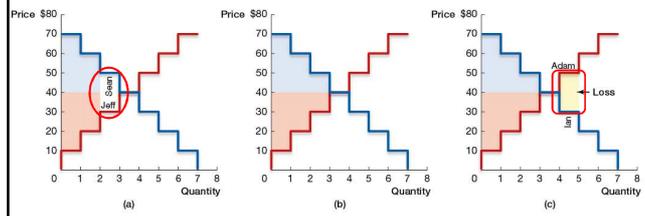


Exhibit 7.3 Maximizing Social Surplus

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Pareto Efficiency

- ▶ Pareto Efficiency =
- ▶ When no one can be made better off without making someone else worse off
- ▶ Example: When price was set at \$20, consumers were made better off, but producers were made worse off

Perfect Competition and Efficiency
Pareto Efficiency

- ▶ The invisible hand directs consumers and producers to maximize their surplus...
- ▶ And leads to the highest level of social welfare.

Extending the Reach of the Invisible Hand:
From the Individual to the Firm

- ▶ You're the new CEO of a company that operates two manufacturing plants.
- ▶ Old Plant vs. New Plant
- ▶ 50 years old vs. 4 years old
- ▶ Old machinery vs. New technology
- ▶ The old plant has higher MC at every level of production than the new plant.

Extending the Reach of the Invisible Hand:
From the Individual to the Firm

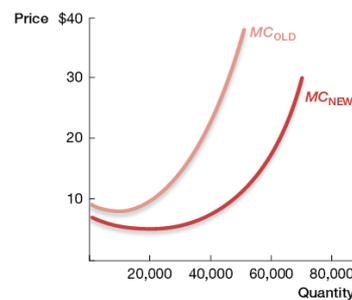


Exhibit 7.4 Marginal Costs for Two Manufacturing Plants

Extending the Reach of the Invisible Hand: From the Individual to the Firm

- ▶ In the past, each plant has been run independently, and each plant manager is charged with maximizing profit at his/her plant.

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Extending the Reach of the Invisible Hand: From the Individual to the Firm

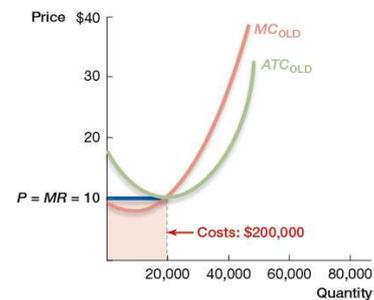


Exhibit 7.5 Optimal Production Quantity at the Old Manufacturing Plant

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Extending the Reach of the Invisible Hand: From the Individual to the Firm

- ▶ Total revenue for old plant:
 - ▶ $\$10 \times 20,000 = \$200,000$
- ▶ Total costs for old plant:
 - ▶ $20,000 \times \$10 \text{ (ATC)} = \$200,000$
- ▶ Economic profit = \$0

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Extending the Reach of the Invisible Hand: From the Individual to the Firm

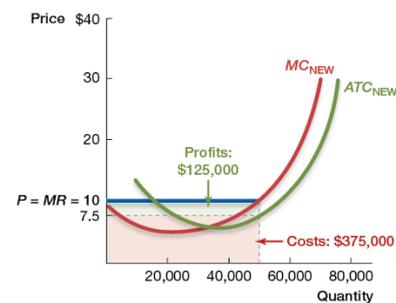


Exhibit 7.6 Optimal Production Quantity at the New Manufacturing Plant

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Extending the Reach of the Invisible Hand: From the Individual to the Firm

- ▶ Total revenue for new plant:
 - ▶ $\$10 \times 50,000 = \$500,000$
- ▶ Total costs for new plant:
 - ▶ $50,000 \times \$7.50 \text{ (ATC)} = \$375,000$
- ▶ Economic profit = \$125,000

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Extending the Reach of the Invisible Hand: From the Individual to the Firm

- ▶ As the CEO, should you close the old plant and shift production to the new plant?
- ▶ The new plant:
 - ▶ Earns more profit
 - ▶ Has lower costs
 - ▶ Has newer technology

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Extending the Reach of the Invisible Hand:
From the Individual to the Firm

- ▶ One year later...
- ▶ Old Plant:
 - ▶ Output = 0
 - ▶ Profit = \$0
- ▶ New Plant:
 - ▶ Output = 70,000
 - ▶ Profit = -\$875,000
- ▶ What?

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Extending the Reach of the Invisible Hand:
From the Individual to the Firm

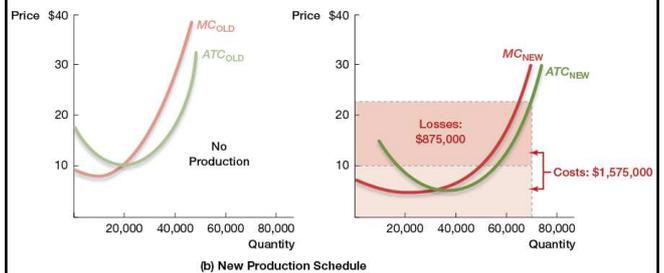


Exhibit 7.7 The Impact of Enforced Production Schedules
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Extending the Reach of the Invisible Hand:
From the Individual to the Firm

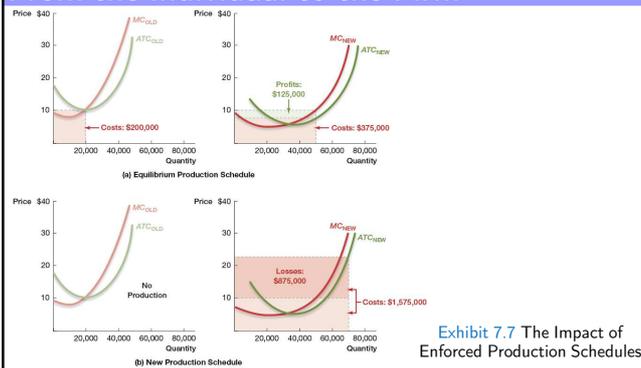


Exhibit 7.7 The Impact of Enforced Production Schedules
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Extending the Reach of the Invisible Hand:
From the Individual to the Firm

- ▶ The invisible hand directs managers to pursue their own self-interest...
- ▶ And results in the most efficient (least-cost) production allocation.

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Extending the Reach of the Invisible Hand:
Allocation of Resources Across Industries

- ▶ What if industries are different?

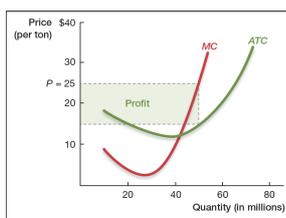


Exhibit 7.9 Economic Profits in the Paper Delivery Business

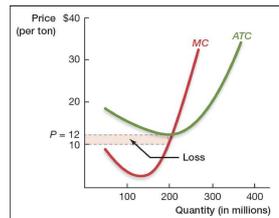


Exhibit 7.11 Economic Losses in the Trucking Market

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Extending the Reach of the Invisible Hand:
Allocation of Resources Across Industries

- ▶ The invisible hand directs firms to seek out profits...
- ▶ And results in resources being allocated to their highest value of use.

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Prices Guide the Invisible Hand



- ▶ Prices are the key to the invisible hand.

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Prices Guide the Invisible Hand



- ▶ What is the economic function of parking meters?

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Prices Guide the Invisible Hand

- ▶ Price controls act to restrict



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Prices Guide the Invisible Hand: Deadweight Loss

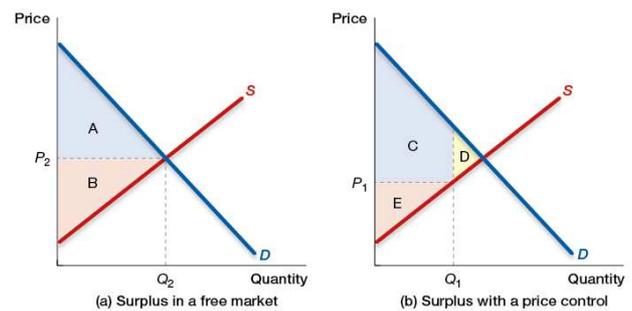


Exhibit 7.14 Deadweight Loss from Price Controls

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Prices Guide the Invisible Hand: Deadweight Loss

- ▶ Deadweight Loss =
- ▶ The reduction in social surplus resulting from a market intervention

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Prices Guide the Invisible Hand: The Command Economy



How does this all come together?

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Prices Guide the Invisible Hand: The Command Economy

- ▶ Two problems:
 1. Coordination problem =
 - ▶ bringing together self-interested economic agents to form markets
 2. Incentive problem =
 - ▶ how to motivate agents to participate in markets

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Prices Guide the Invisible Hand: The Command Economy

- ▶ Two possible solutions:
 1. Market economy =
 - ▶ prices direct flow of resources, provide incentives for participants
 2. Command economy =
 - ▶ central agency directs resources, provides incentives

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Prices Guide the Invisible Hand: The Central Planner

Bluelight Specials—see them
before they happen!



- ▶ K-Mart's move to a command economy

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Equity and Efficiency

- ▶ Equity (or Equality) =
- ▶ Addresses the issue of a "fair" distribution of resources across society

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Equity and Efficiency Evidence-Based Economics Example

- ▶ Can markets composed of only self-interested people maximize the overall well-being of society?



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Are Markets Fair?

- ▶ Yes in the sense that the Competitive Equil.
 - ▶ Maximizes Social Surplus, and
 - ▶ Achieves Pareto Efficiency
 - ▶ Prices = Mastermind of the Invisible Hand
- Homework:**
- ▶ ALL Chap.7, Problem 3, 4, 7, 11
 - ▶ Challenge Questions (from Past Midterms)
 - ▶ 2008 - Multi-Choice Q7
 - ▶ 2009 - Essay A
 - ▶ 2010 - Essay B1, C5

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Sellers and Incentives

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