

**The Quest for Profit and the Invisible Hand**

CHAPTER  
8

**The Central Role of Economic Profit**

- According to Adam Smith
  - People are motivated by self-interest.
  - The goal of profit maximization will serve society's collective interest.

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**The Central Role of Economic Profit**

- Important to distinguish clearly between three types of profits
  - Accounting profit
  - Economic profit
  - Normal profit
- When economists speak of "profit," typically mean economic profit.

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**The Central Role of Economic Profit**

- Accounting Profit
  - Accounting Profit = total revenue – explicit costs (payments for factors of production)
  - What is commonly reported for firms
  - Includes both economic profit and normal profit

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**The Central Role of Economic Profit**

- Economic Profit
  - Economic Profit = total revenue – explicit costs – implicit costs (opportunity cost of the resources supplied by the firm's owners)
  - Determines whether to enter (or stay in) the market

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**The Central Role of Economic Profit**

- Normal Profit
  - Normal Profit = accounting profit – economic profit
  - Compensates for the opportunity cost of resources supplied by owners of firm

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### The Central Role of Economic Profit

- What is the accounting, economic, and normal profits for the following firm?
  - TR [Total Revenue] = \$400,000
  - Explicit costs (salaries) = \$250,000/yr
  - Machinery and equipment worth \$1 million
    - Annual interest on savings = 10%, so \$1 million could have earned \$100,000/yr if invested

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### The Central Role of Economic Profit

- Accounting Profit
  - $\$400,000 (TR) - \$250,000 \text{ (explicit costs)} = \$150,000$
- Economic Profit
  - $\$400,000 (TR) - \$250,000 \text{ (explicit cost)} - \$100,000 \text{ (implicit cost)} = \$50,000$
- Normal Profit
  - Accounting Profit (\$150,000/yr) – Economic Profit (\$50,000/yr) = \$100,000/yr

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### The Difference Between Accounting Profit and Economic Profit

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### The Central Role of Economic Profit

- Why are the distinctions important?
  - Consider Pudge Buffet, a corn farmer
    - Payments for land and equipment = \$10,000/yr
    - He supplies only his labor which he values equally to managing a retail store for \$11,000/yr
    - Except for pay, he is indifferent between the farm or the store
    - Corn sells at a constant price and  $TR = \$22,000$

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### Revenue, Costs, and Profit Summary for Pudge

Total revenue (\$/year)	Explicit costs (\$/year)	Implicit costs (\$/year)	Accounting profit (\$/year)	Economic profit (\$/year)	Normal profit (\$/year)
22,000	10,000	11,000	12,000	1,000	11,000

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### The Central Role of Economic Profit

- What would Pudge's economic profit be if  $TR = \$20,000$ 
  - Economic profit
    - $TR (20,000) - \text{explicit } (10,000) \text{ and implicit costs } (11,000) = -\$1,000$
- Should Pudge stay in farming?

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### The Central Role of Economic Profit

- If instead Pudge owned his own land, should he stay in farming?
  - Assume
    - ◆ Pudge inherits the land
    - ◆ The land can be rented for \$6,000/yr

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### New Revenue, Costs, and Profit Summary for Pudge

Total revenue (\$/year)	Explicit costs (\$/year)	Implicit costs (\$/year)	Accounting profit (\$/year)	Economic profit (\$/year)	Normal profit (\$/year)
20,000	4,000	17,000	16,000	-1,000	17,000

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### The Central Role of Economic Profit

- A Review
  - Accounting Profit =  $TR - \text{explicit costs}$
  - Economic Profit =  $TR - \text{explicit and implicit costs}$
  - Economic Profit = 0 when accounting profit = normal profit
  - To remain in business in the long run, economic profits must be greater than or equal to 0 (zero).

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### The Invisible Hand Theory

- Two Functions of Price
  - The *rationing function of price*
    - ◆ To distribute scarce goods to those consumers who value them most highly

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### The Invisible Hand Theory

- Two Functions of Price
  - The *allocative function of price*
    - ◆ To direct resources away from overcrowded markets and toward markets that are underserved

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### The Invisible Hand Theory

- Profits and Losses Ensure
  - That supplies within a market are be distributed efficiently (rationing function)
  - Resources are be allocated across markets to produce the most efficient possible mix of goods and services (allocative function)

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### The Invisible Hand Theory

- Responses to Profits and Losses
  - Markets with firms earning economic profits will attract resources.
  - Markets where firms are experiencing economic losses will lose resources.

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### Economic Profit in the Short Run in the Corn Market

Market price of \$2/bushel produces economic profits

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### The Effect of Entry on Price and Economic Profit

Economic profits attract firms, reducing prices and profits

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### Equilibrium when Entry Ceases

Entry of firms continues until all firms earn a normal profit

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### A Short-Run Economic Loss in the Corn Market

Prices below minimum ATC results in economic losses.

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### Equilibrium when Exit Ceases

The departure of firms from the industry increases the market price

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## The Invisible Hand Theory

- Observations
  - In the long-run, in a competitive market, all firms will tend to earn zero economic profits.

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## The Invisible Hand Theory

- Observations
  - Zero economic profits are the consequence of price movements caused by the entry and exit of firms trying to maximize economic profits.

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## The Invisible Hand Theory

- Observations
  - The equilibrium principle (no cash on the table) predicts, when people confront an opportunity for gain they are almost always quick to exploit it.

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## Long-Run Equilibrium in a Corn Market with Constant Long-Run Average Cost

Similar ATC curves allow the industry to supply any output at a price equal to minimum ATC.

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## The Invisible Hand Theory

- Two Attractive Features
  - The market outcome is efficient in the long run.
    - ◆  $P = MC$ 
      - If output were increased:  $MC > MB$ .
      - If output were reduced:  $MC < MB$ .

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## The Invisible Hand Theory

- Two Attractive Features
  - The market is fair.
    - ◆ The price the buyers pay is no higher than the cost incurred by sellers.
    - ◆ The cost includes a normal profit.

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## The Invisible Hand Theory

- Example
  - What happens in a city with “too many” hair stylists and “too few” aerobics instructors?

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## Initial Equilibrium in the Markets for Haircuts

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## Initial Equilibrium in the Markets for Aerobics Classes

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## The Short-Run Effect of Demand Shifts in Two Markets

Assume: Long hair and physical fitness become popular.  
Price of haircuts fall; the price of aerobics classes rise.

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## Economic Profit and Loss in the Short Run

The decrease in demand for haircuts causes economic losses while the increase in demand for classes creates economic profits

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## The Invisible Hand Theory

- Responses to the change in demand for stylists and aerobics instructors
  - Economic loss for stylists will
    - ◆ Reduce the supply of stylists
    - ◆ Increase price until zero economic profits
  - Economic profit for instructors will
    - ◆ Increase the supply of aerobics instructors
    - ◆ Decrease price until zero economic profits

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**Economic Rent Versus Economic Profit**

- Economic profits attract resources that push economic profits toward zero.

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**The Invisible Hand Theory**

- Importance of Free Entry and Exit
  - Free entry and exit must exist for the allocative function of price to operate

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**The Invisible Hand Theory**

- The Importance of Free Entry and Exit
  - Barriers to entry can be caused by legal constraints and unique market characteristics
  - A barrier to exit can become a barrier to entry

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**Economic Rent Versus Economic Profit**

- Economic Rent
  - That part of a payment for a factor of production that exceeds the owner's reservation price
  - Market forces will not push economic rent to zero because inputs cannot be replicated easily

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**Economic Rent Versus Economic Profit**

- How much rent will a talented chef get?
  - A community with 100 restaurants
  - 99 restaurants employ chefs with normal ability for \$30,000/yr (the same amount they could earn elsewhere)
  - The 100<sup>th</sup> restaurant employs a talented chef and customers are willing to pay 50% more for their meals

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**Economic Rent Versus Economic Profit**

- Assume
  - $TR$  at each of the 99 restaurants is \$300,000, which yields a normal profit
  - $TR$  at the 100<sup>th</sup> restaurant is \$450,000 (50% more)

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### Economic Rent Versus Economic Profit

- Assume that the 100<sup>th</sup> restaurant earns a normal profit
- The talented chef
  - ◆ Earns \$180,000 = \$30,000 + \$150,000
  - ◆ Reservation price = \$30,000
  - ◆ Economic rent = \$150,000
- Why not pay the chef less and increase the economic profit for the restaurant?


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### The Invisible Hand in Action

- Key Concept
  - Opportunities for private gain seldom remain unexploited for very long

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### The Invisible Hand in Action

 Economic Naturalist

- Why do supermarket lines tend to be roughly the same length?
- Why do all lanes on a crowded, multilane freeway move at about the same speed?

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### The Invisible Hand in Action

- The Invisible Hand and Cost-Saving Innovations
  - In a competitive market
    - ◆ Firms are price takers
    - ◆  $P = MC$
    - ◆ Zero economic profits exist in the long run

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### The Invisible Hand in Action

- Why do these firms have an incentive to introduce cost-saving innovations?
  - How do cost-saving innovations affect economic profit in the short run? In the long run?

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### The Invisible Hand in Action

- Assume
  - 40 companies transport oil from the middle east to the U.S.
  - The cost/trip, including normal profit, is \$500,000
  - One company uses a new propeller that saves \$20,000/trip

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## The Invisible Hand in Action

- Short Run
  - No impact on price
  - Economic profits for the company will increase \$20,000/trip


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## The Invisible Hand in Action

- Long Run
  - Other companies use the propeller
  - Market supply increases and the price falls
  - Zero economic profits after all firms have adopted the new propeller
  - Any firm without the new propeller would have an economic loss of \$20,000/trip

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## The Invisible Hand in Action

 Economic Naturalist

- Why do New York City taxicab medallions sell for more than \$250,000?
  - ◆ Annual cost of operating the cabs = \$40,000
  - ◆  $TR/year = \$60,000$
  - ◆ Annual interest on savings = 8%
- How much would you pay for a medallion?

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## The Invisible Hand in Action

 Economic Naturalist

- At any price below \$250,000, economic profit would exist, so price bid up to \$250,000
  - ◆ Forego \$20,000 in interest
  - ◆ Earn \$20,000
  - ◆ Zero economic profit
  - ◆ Indifferent between investing \$250,000 at 8% interest and buying medallion for \$250,000.

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## The Invisible Hand in Action

 Economic Naturalist

- Why did major commercial airlines install piano bars on the upper decks of Boeing 747s in the 1970s?

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## The Invisible Hand in Action

 Economic Naturalist

- Regulated prices generated economic profits
- With regulated fares, competition could not drive down price
- Airlines added more flights on each route until economic profit equaled zero.
- Airlines engaged in "quality wars": a piano bar, gourmet meals, etc.

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## The Invisible Hand in Action

- The Invisible Hand in Antipoverty Programs
  - How will an irrigation project affect the incomes of poor farmers?

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Slide 55

## The Invisible Hand in Action

- An unskilled worker has two job choices
  - Textile worker for \$8,000/yr
  - Renting land to grow rice
    - ◆ Rent = \$5,000/yr
    - ◆ Non-labor cost = \$3,000/yr
    - ◆  $TR = \$16,000/\text{yr}$
    - ◆ Net income = \$8,000/yr
  - A state funded irrigation program will double output and not change the market price.

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Slide 56

## The Invisible Hand in Action

- What will be the impact of the irrigation program?
  - $TR$  will increase to \$32,000
  - Income will increase to \$24,000
  - The demand for land will increase and the rent on the land will rise to \$21,000
  - The land owners gain, not the farmers

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Slide 57

## The Invisible Hand in Action

- The Efficient Market Hypothesis
  - The current price of a stock reflects all relevant information about its current and future earnings prospects.

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Slide 58

## The Invisible Hand in Action

- What do you think?
  - Can you increase your profit in the stock market by using information from the mass media?
  - Do stocks in well-managed companies perform better than those in poorly managed companies?

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Slide 59

## The Distinction Between Equilibrium and a Social Optimum

- The equilibrium (no-cash-on-the-table) principle means that there are no unexploited opportunities in markets that are in equilibrium.

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Slide 60

### The Distinction Between and Equilibrium and a Social Optimum

- The market equilibrium does not imply that the resulting allocation is necessarily best from the point of view of society as a whole.

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### The Distinction Between and Equilibrium and a Social Optimum

- Equilibrium will not be socially optimal when the cost and benefits for the individuals differ from society as a whole.

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### The Distinction Between and Equilibrium and a Social Optimum



#### Economic Naturalist

- What do you think?
  - ◆ Are there “too many” smart people working as corporate earnings forecasters?

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