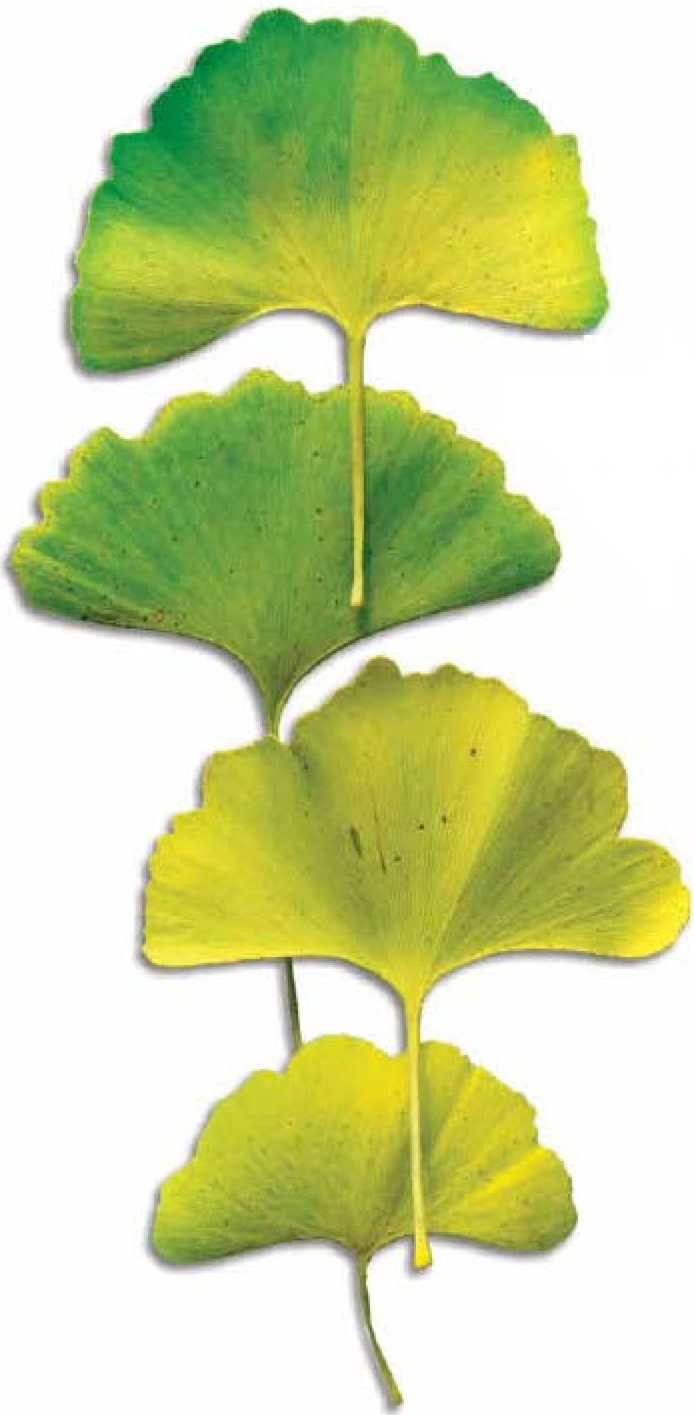


Chapter 10

Perfect Competition

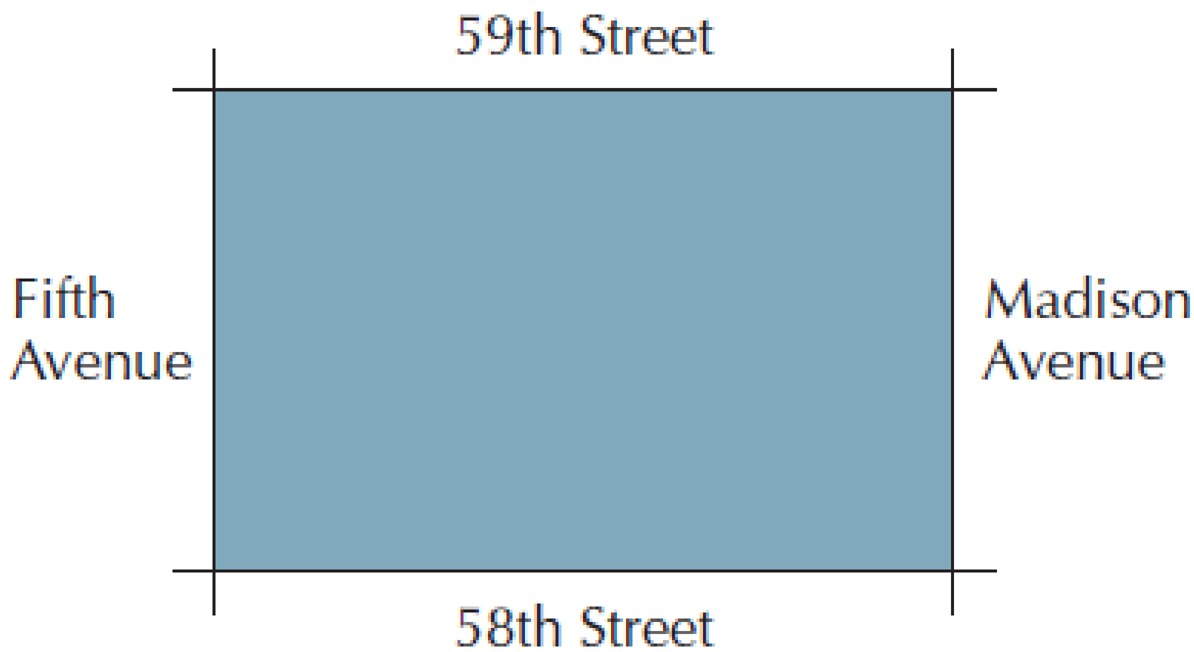
Chapter Outline

- The Goal Of Profit Maximization
- The Four Conditions For Perfect Competition
- The Short-run Condition For Profit Maximization
- The Short-run Competitive Industry Supply
- Short-run Competitive Equilibrium
- The Efficiency Of Short-run Competitive Equilibrium
- Producer Surplus
- Adjustments In The Long Run
- The Invisible Hand
- Application: The Cost Of Extraordinary Inputs
- The Long-run Competitive Industry Supply Curve
- The Elasticity Of Supply
- Applying The Competitive Model

The Goal of Profit Maximization

- ***Economic profit:*** the difference between total revenue and total cost, where total cost includes all costs—both explicit and implicit—associated with resources used by the firm.
- ***Accounting profit*** is simply total revenue less all explicit costs incurred.
  - does not subtract the implicit costs.
- Economists assume that the goal of firms is to maximize economic profit.

Figure 10.1: Potential Site for Manhattan Miniature Golf Course



The Four Conditions For Perfect Competition

1. **Firms Sell a Standardized Product**
   - The product sold by one firm is assumed to be a perfect substitute for the product sold by any other.

2. **Firms Are Price Takers**
   - This means that the individual firm treats the market price of the product as given.

3. **Free Entry and Exit**
   - With Perfectly Mobile Factors of Production in the Long Run

4. **Firms and Consumers Have Perfect Information**

The Short-Run Condition For Profit Maximization

- To maximize profit the firm will choose that level of output for which the difference between total revenue and total cost is largest.

- ***Marginal revenue:*** the change in total revenue that occurs as a result of a 1-unit change in sales.

- *To maximize profits the firm should produce a level of output for which marginal revenue is equal to marginal cost on the rising portion of the MC curve.*

Figure 10.2: Revenue, Cost, and Economic Profit

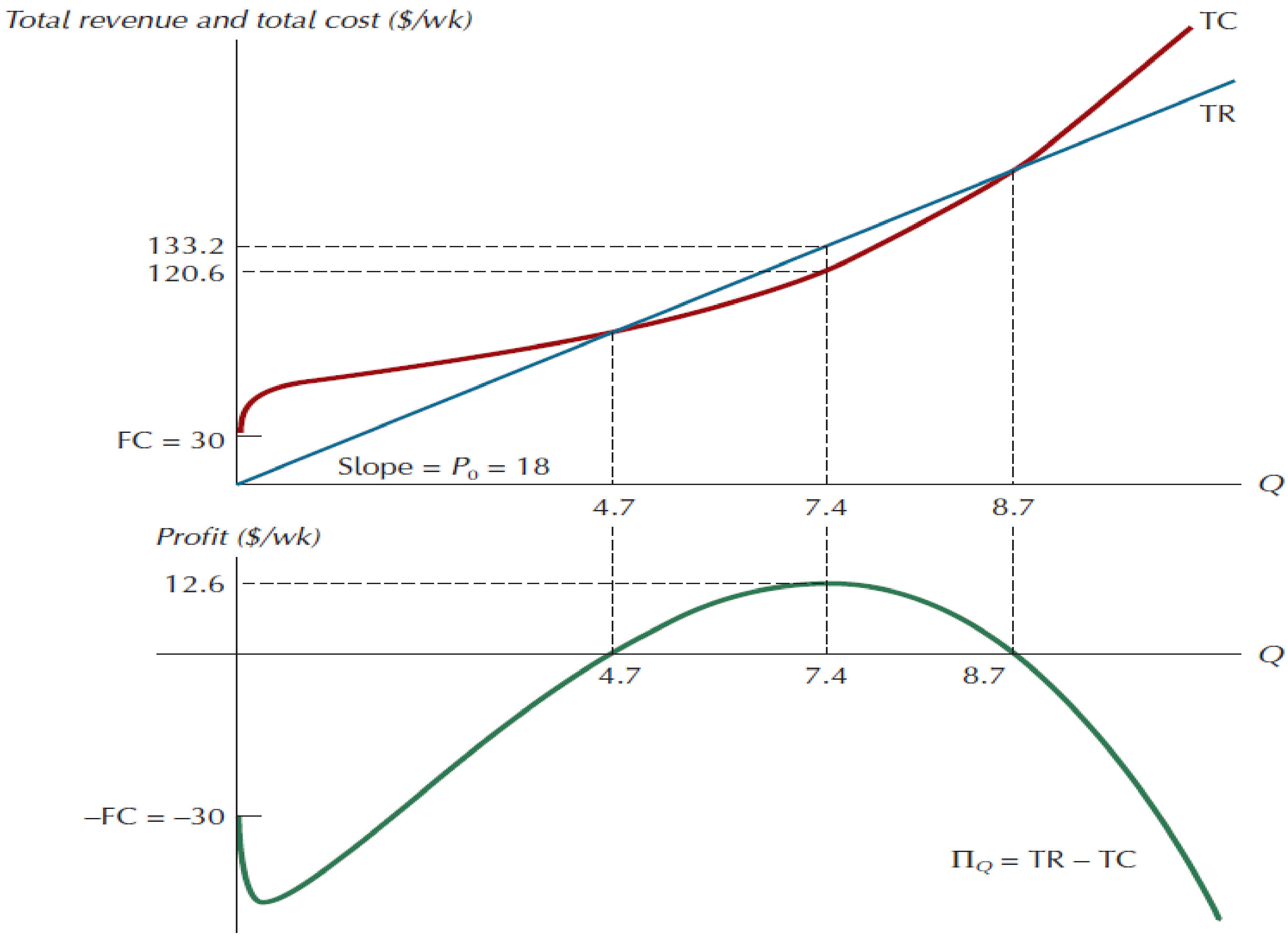
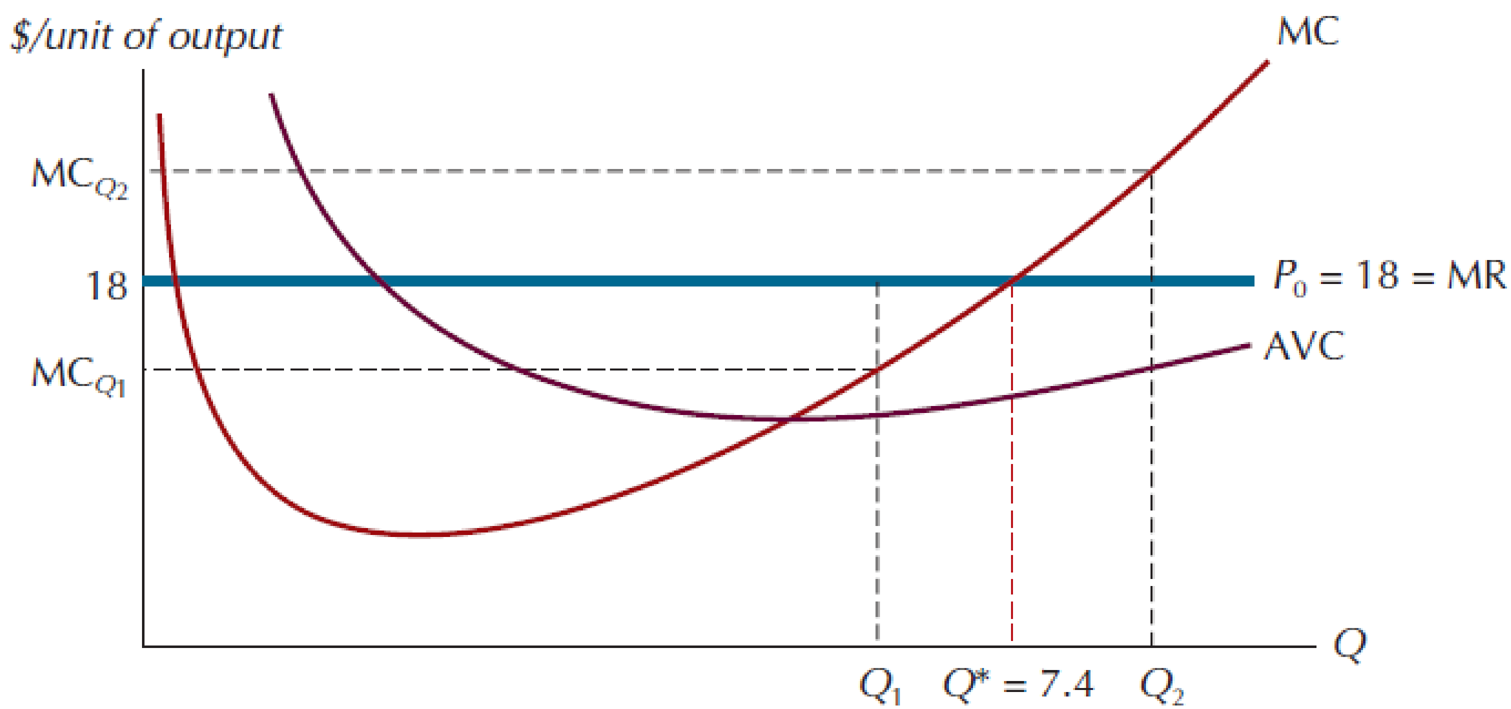


Figure 10.3: The Profit-Maximizing Output Level in the Short Run



The Shutdown Condition

- ***Shutdown condition:*** if price falls below the minimum of average variable cost, the firm should shut down in the short run.

- The ***short-run supply curve*** of the perfectly competitive firm is the rising portion of the short-run marginal cost curve that lies above the minimum value of the average variable cost curve

Figure 10.4: The Short-Run Supply Curve of a Perfectly Competitive Firm

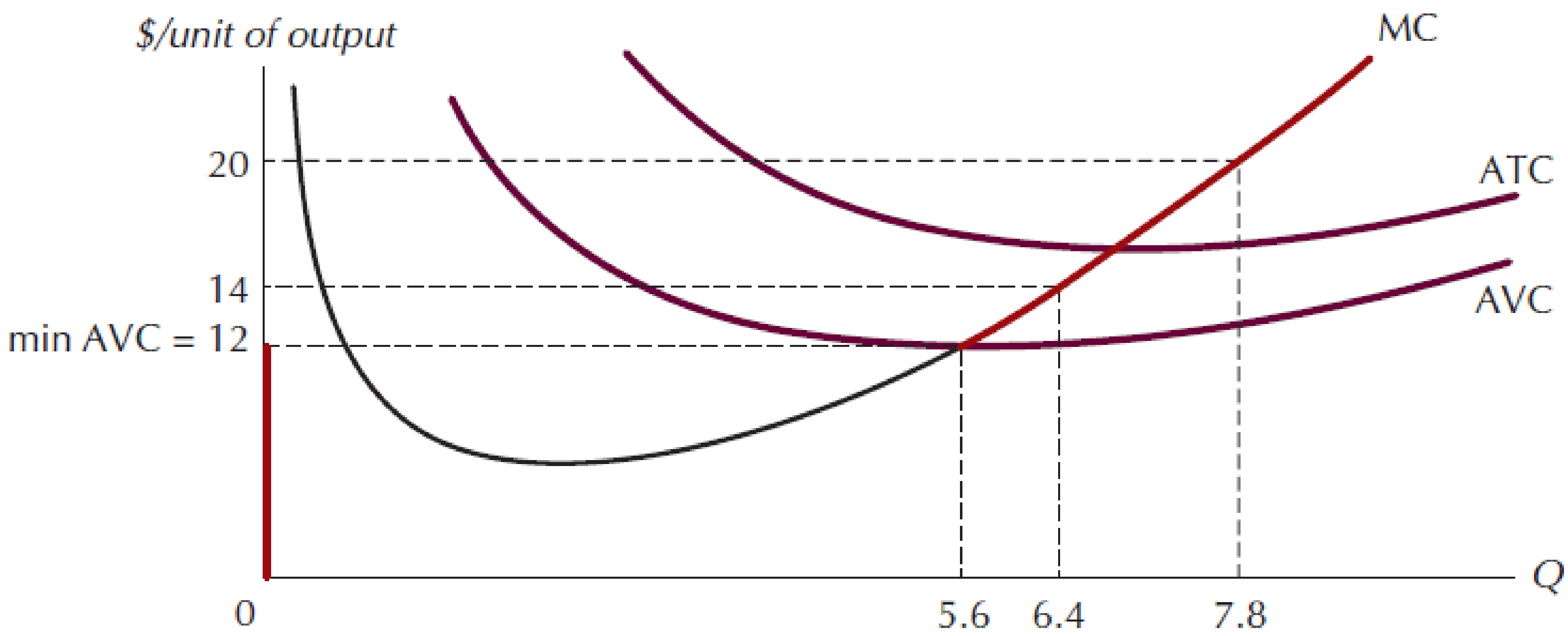


Figure 10.5: The Short-Run Competitive Industry Supply Curve

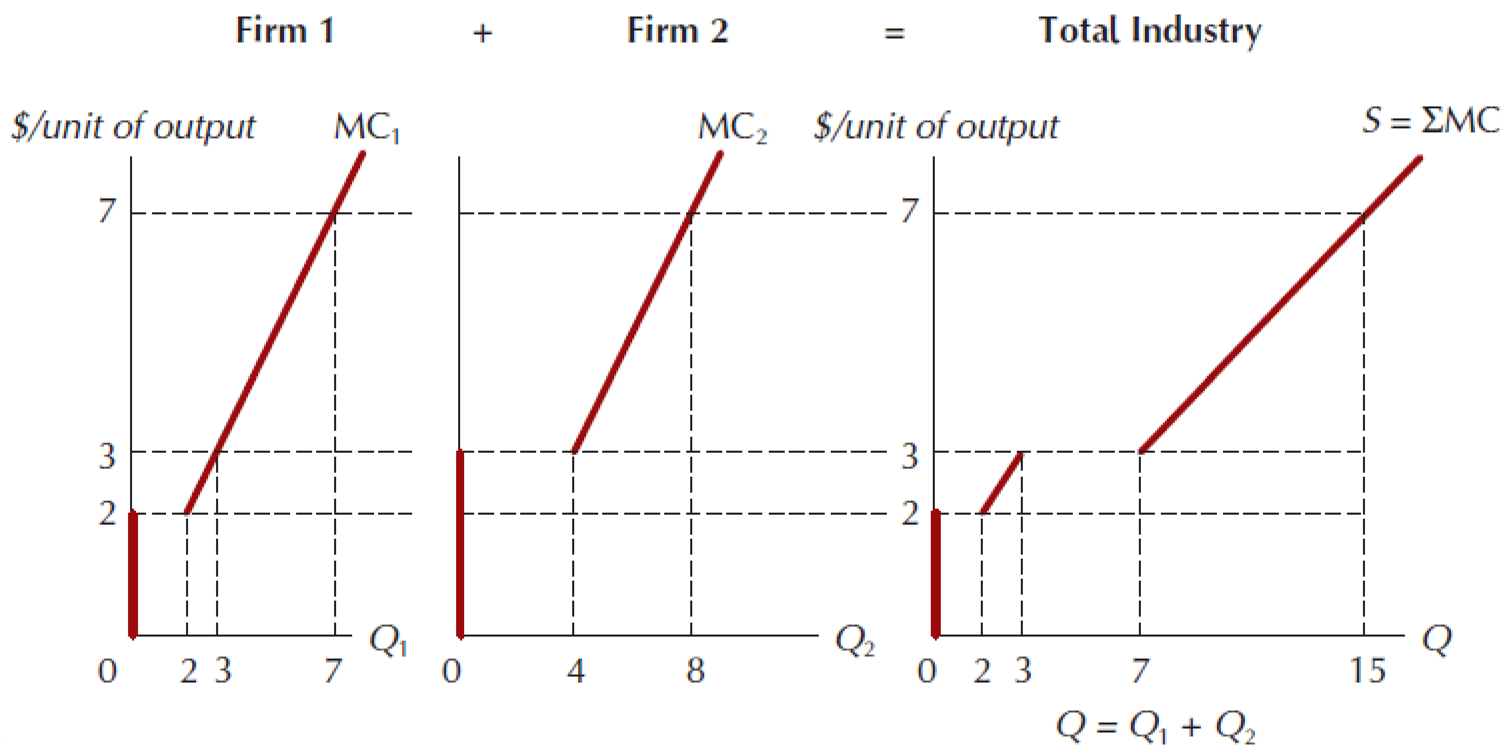
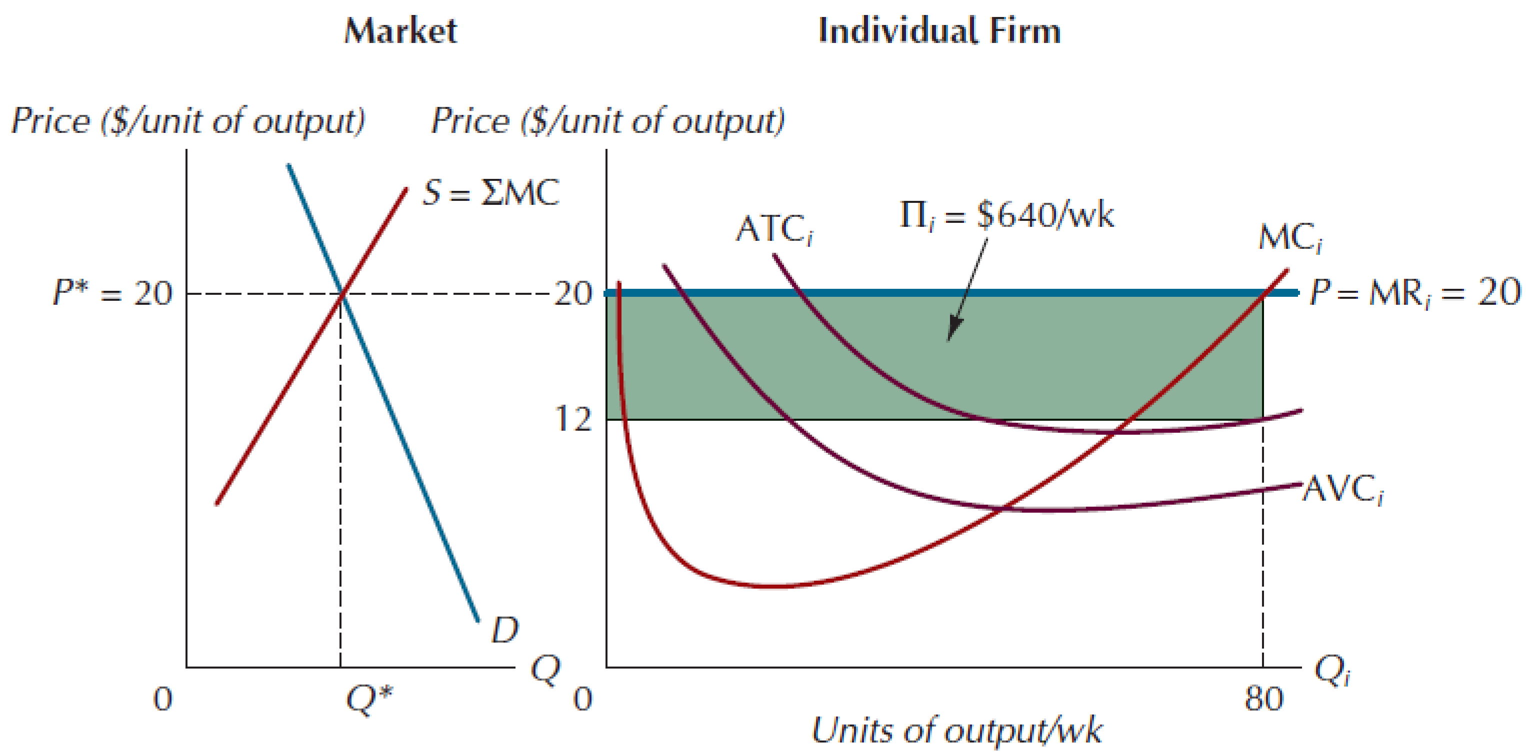


Figure 10.6: Short-Run Price and Output Determination under Pure Competition



Short-Run Competitive Equilibrium

- Even though the market demand curve is downward sloping, the demand curve facing the individual firm is perfectly elastic.

- ***Breakeven point:*** the point at which price equal to the minimum of average total cost.
  - The lowest price at which the firm will not suffer negative profits in the short run.

Figure 10.7: A Short-Run Equilibrium Price that Results in Economic Losses

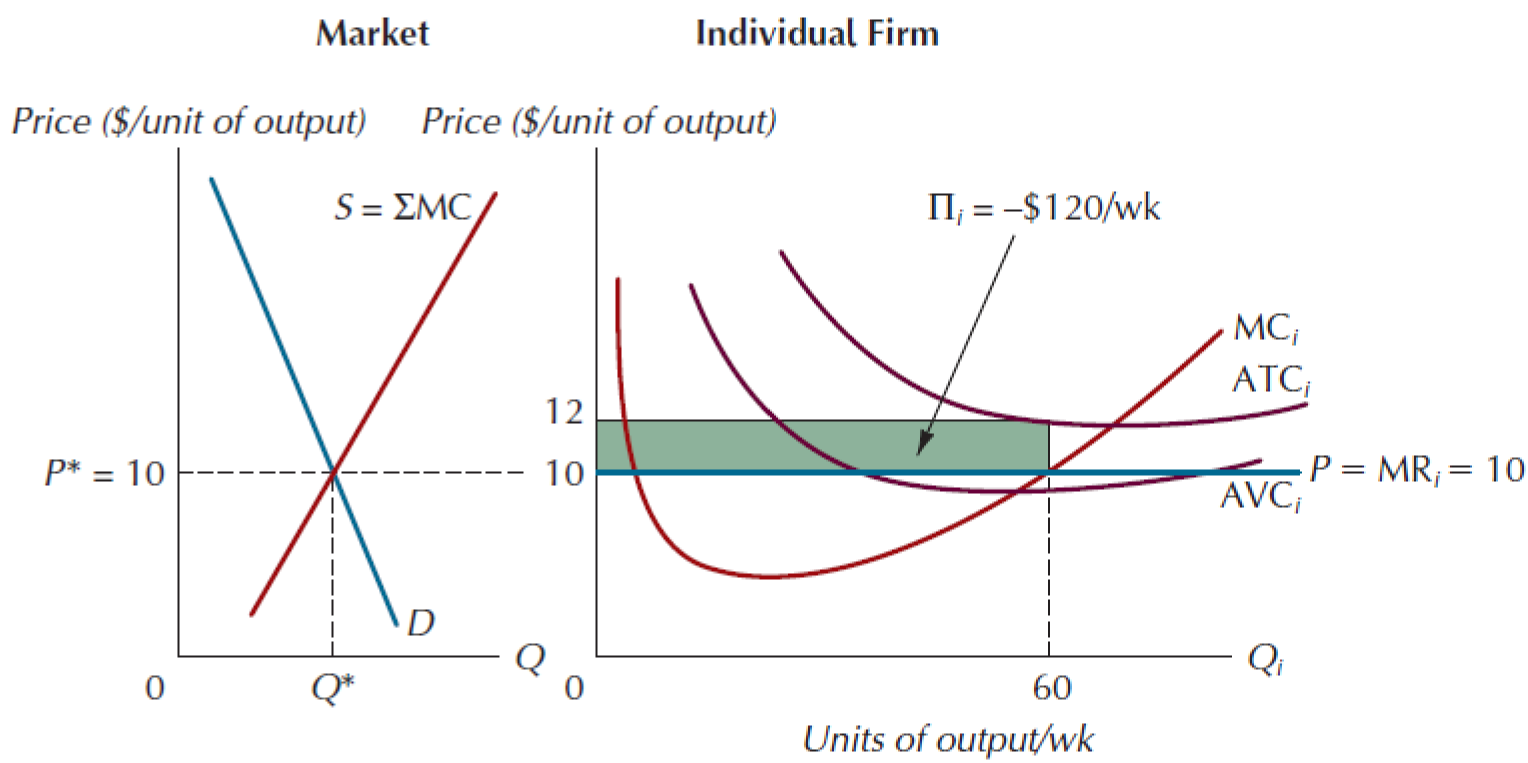
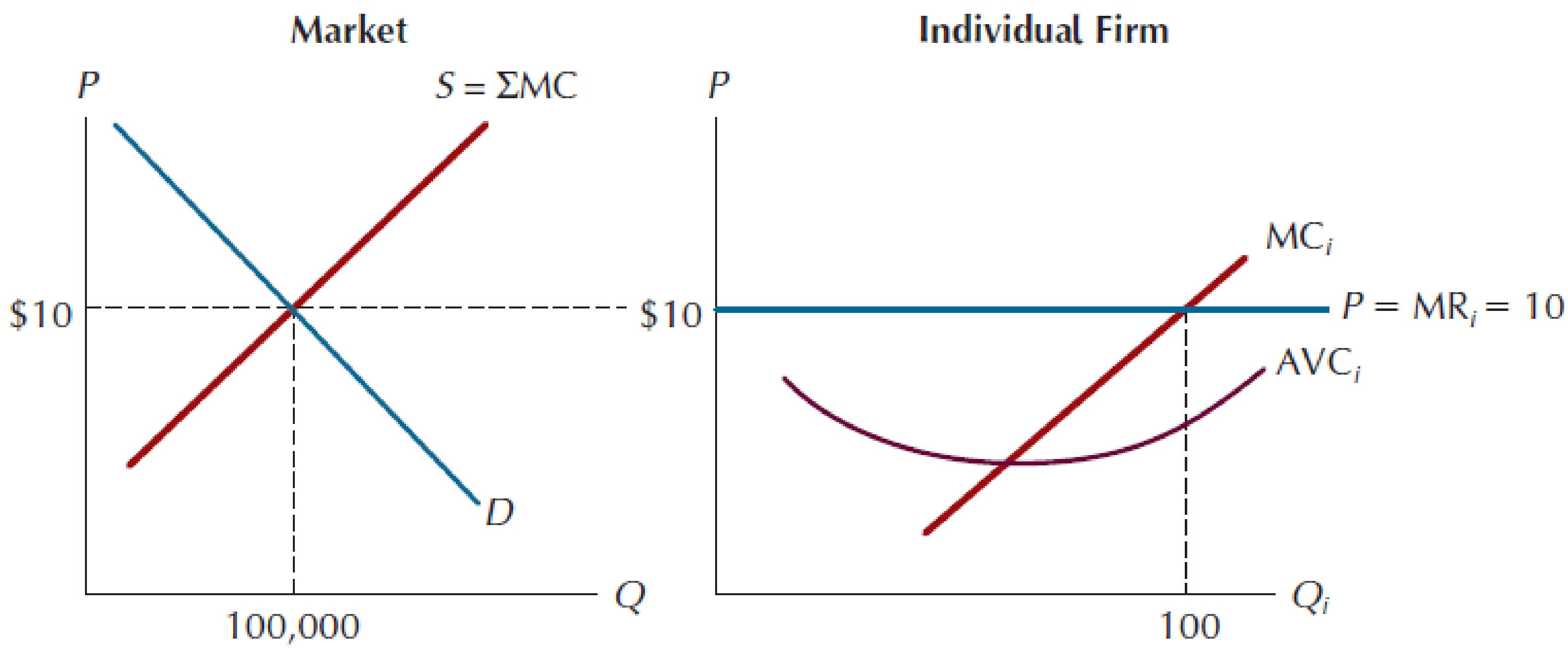


Figure 10.8: The Efficiency Of Short-run Competitive Equilibrium

- ***Allocative efficiency:*** a condition in which all possible gains from exchange are realized.



Producer Surplus

- A competitive market is efficient when it maximizes the net benefits to its participants.

- ***Producer surplus:*** the dollar amount by which a firm benefits by producing a profit-maximizing level of output.

Figure 10.9: Two Equivalent Measures of Producer Surplus

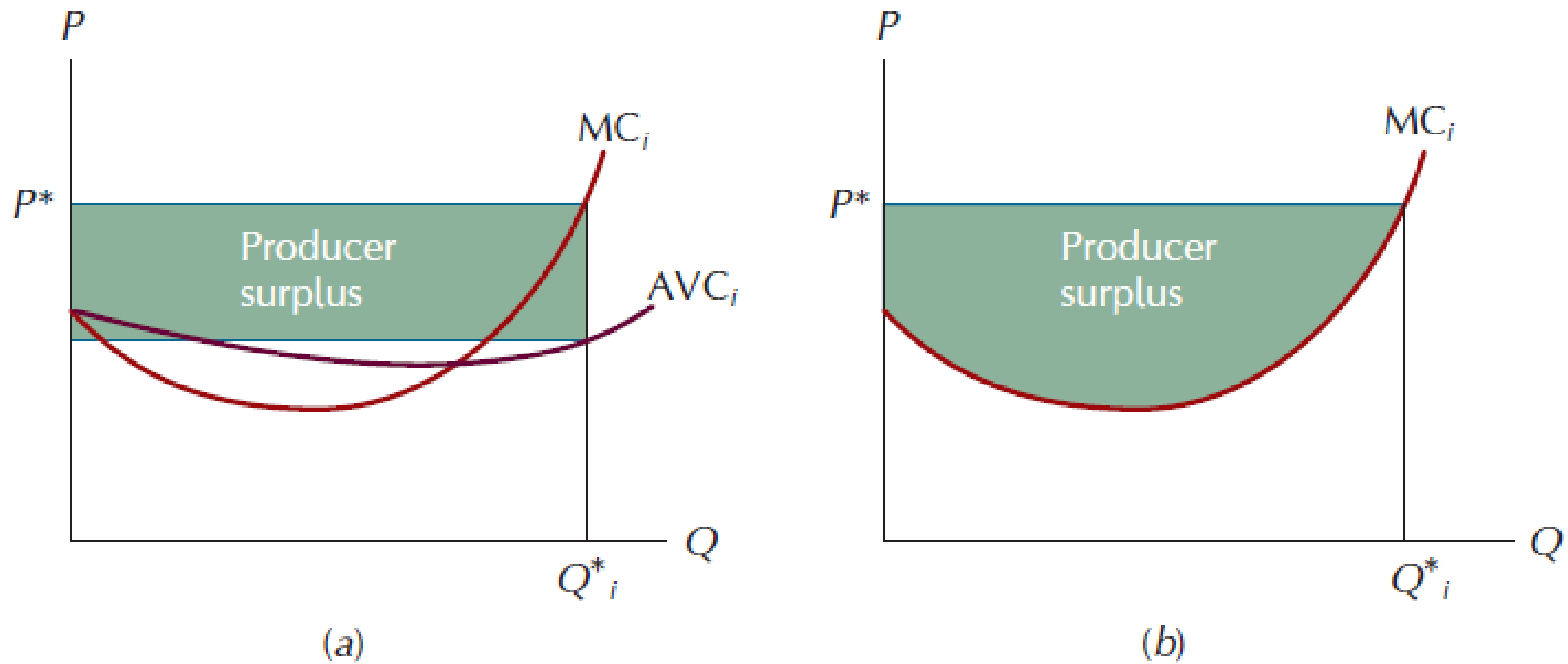


Figure 10.10: Aggregate Producer Surplus When Individual Marginal Cost Curves are Upward Sloping Throughout

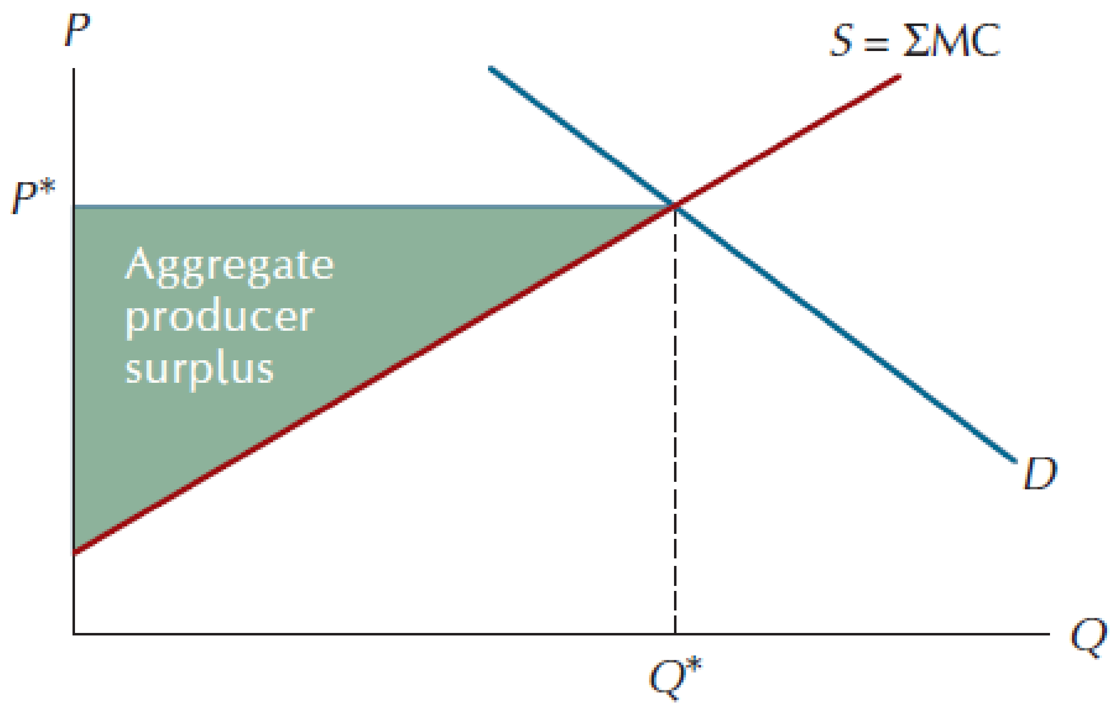


Figure 10.11: The Total Benefit from Exchange in a Market

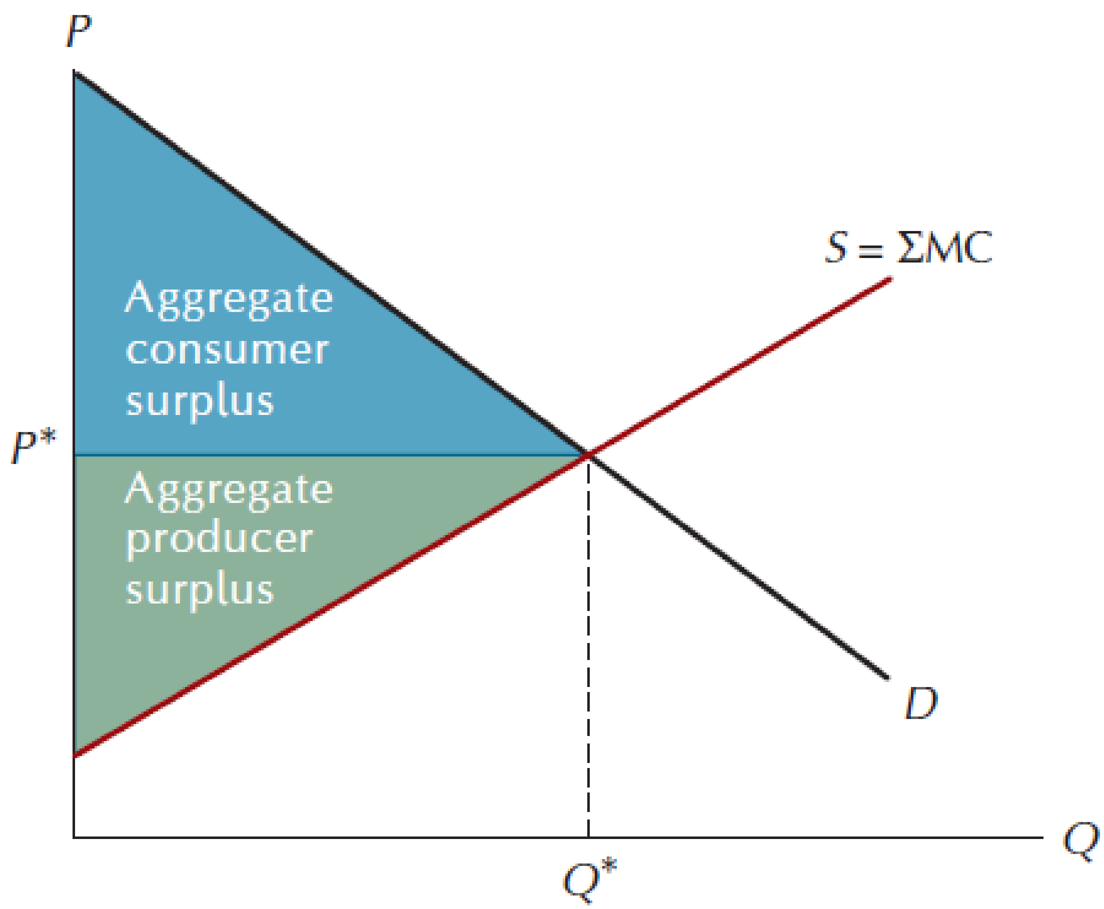


Figure 10.12: Producer and Consumer Surplus in a Market Consisting of Careful Fireworks Users

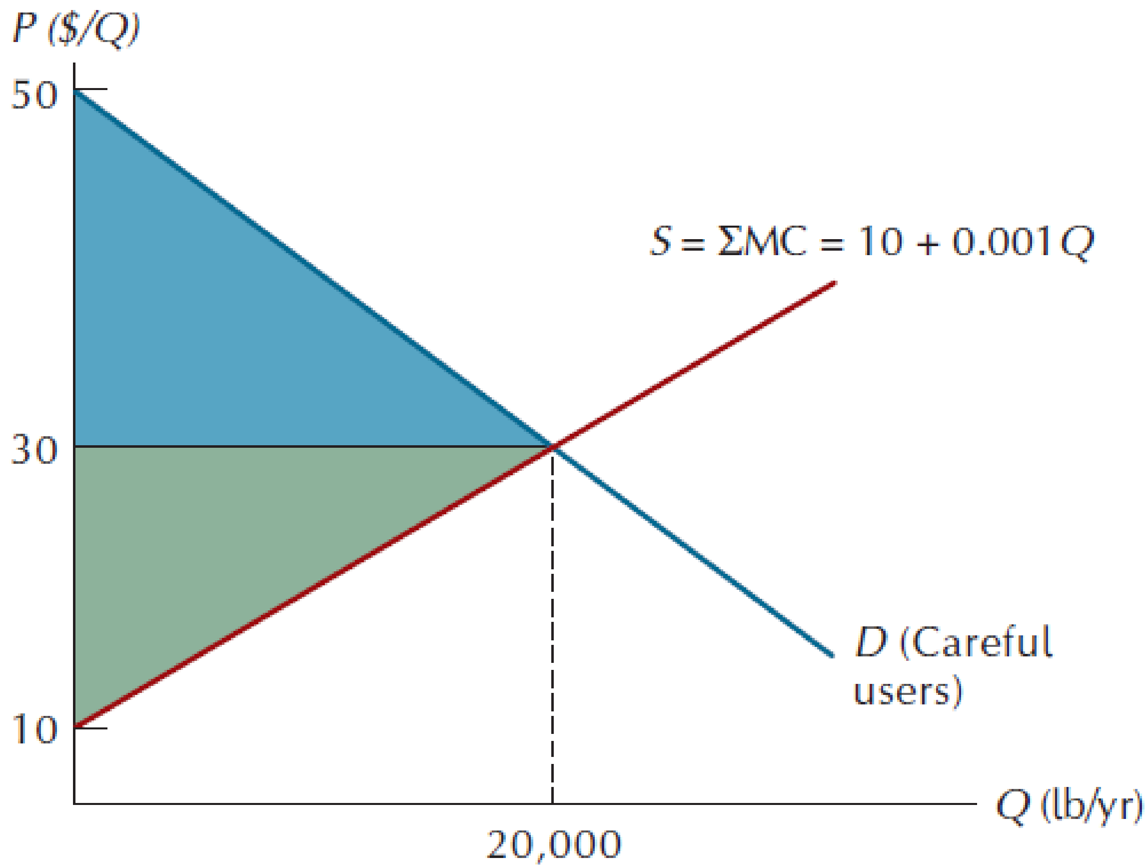
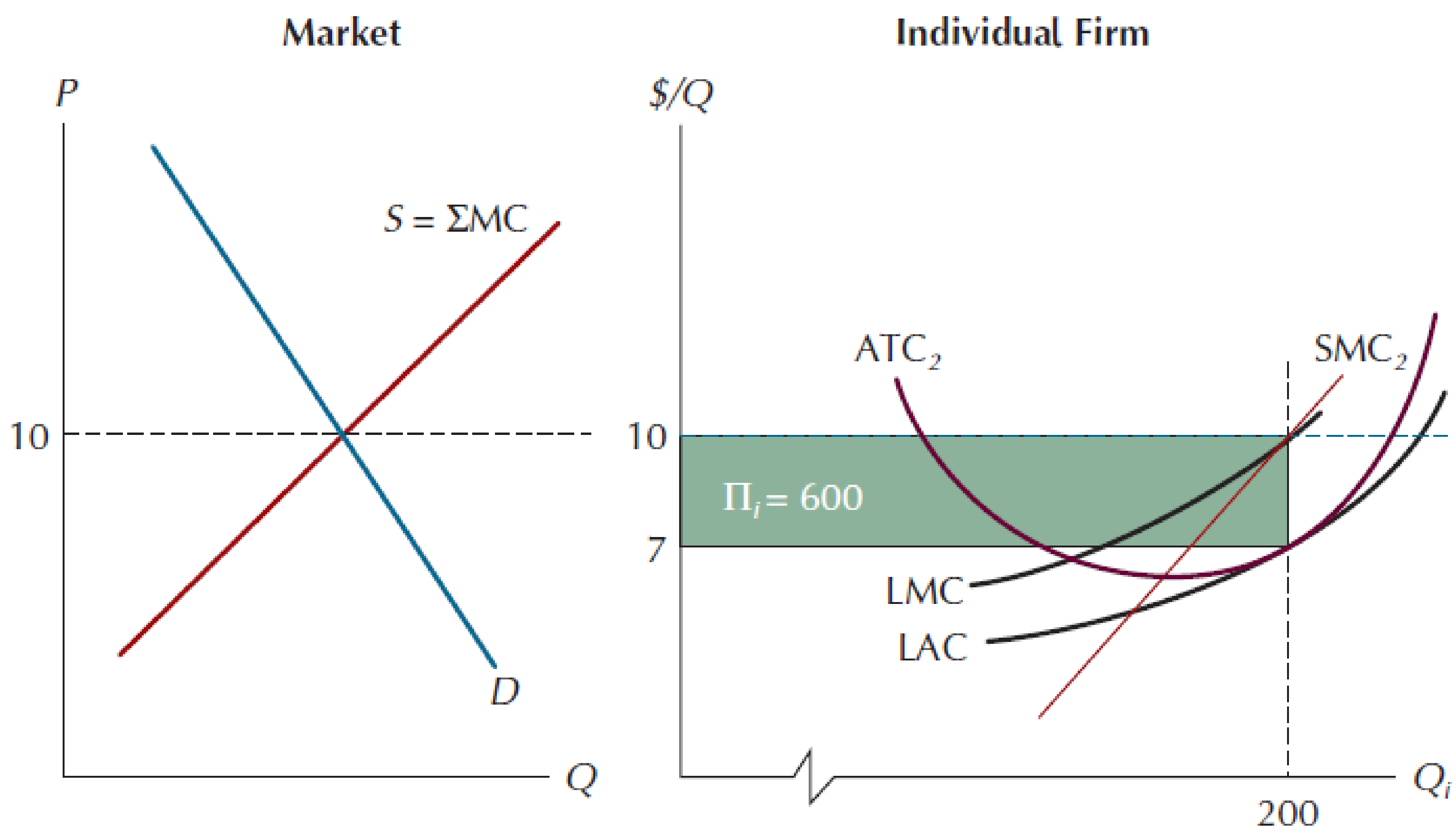


Figure 10.13: A Price Level that Generates Economic Profit



Adjustments In The Long Run

- Positive economic profit creates an incentive for outsiders to enter the industry.
- As additional firms enter the industry the industry supply curve to the right.
- This adjustment will continue until these two conditions are met:
  - (1) Price reaches the minimum point on the LAC curve
  - (2) All firms have moved to the capital stock size that gives rise to a short-run average total cost curve that is tangent to the LAC curve at its minimum point.

Figure 10.14: A Step along the Path Toward Long-Run Equilibrium

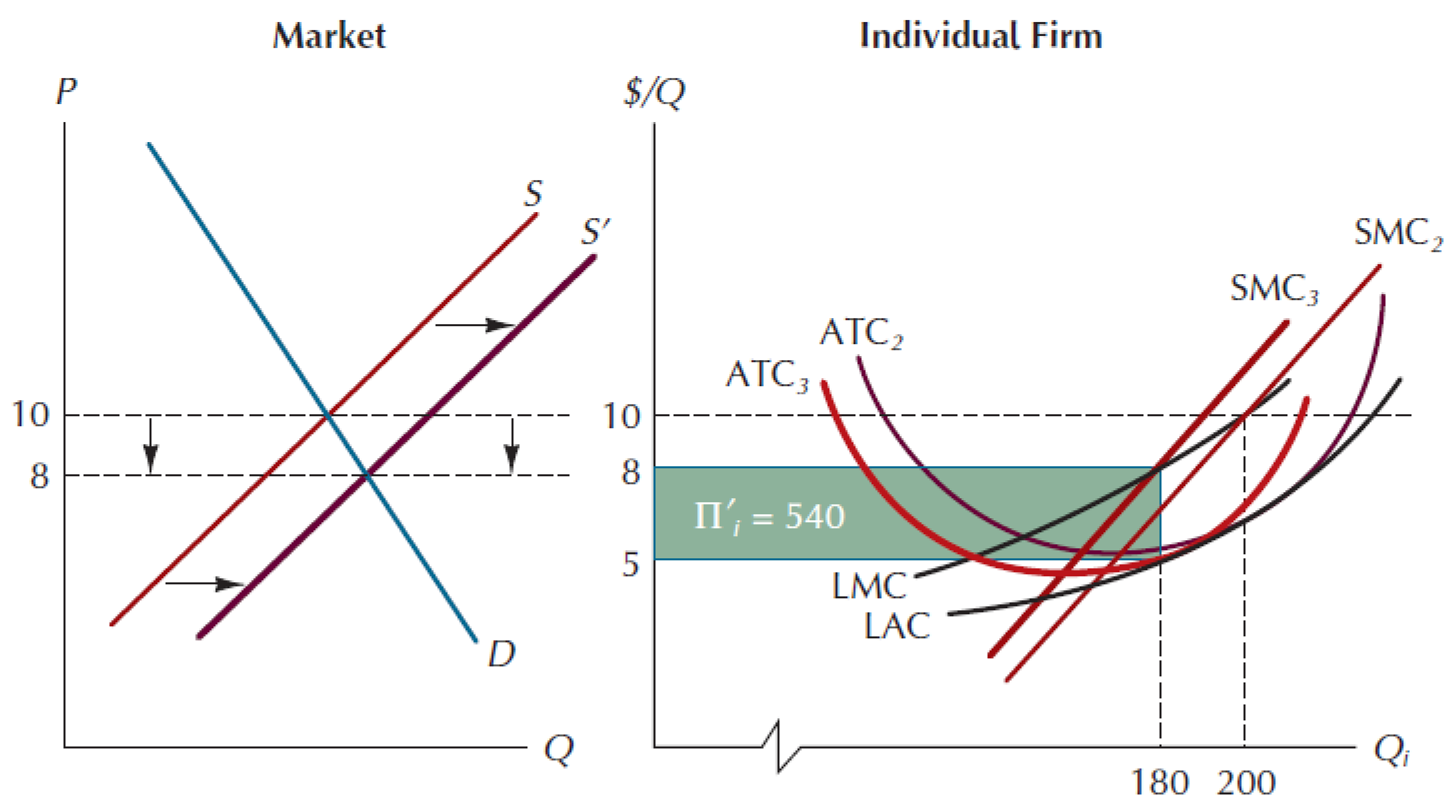
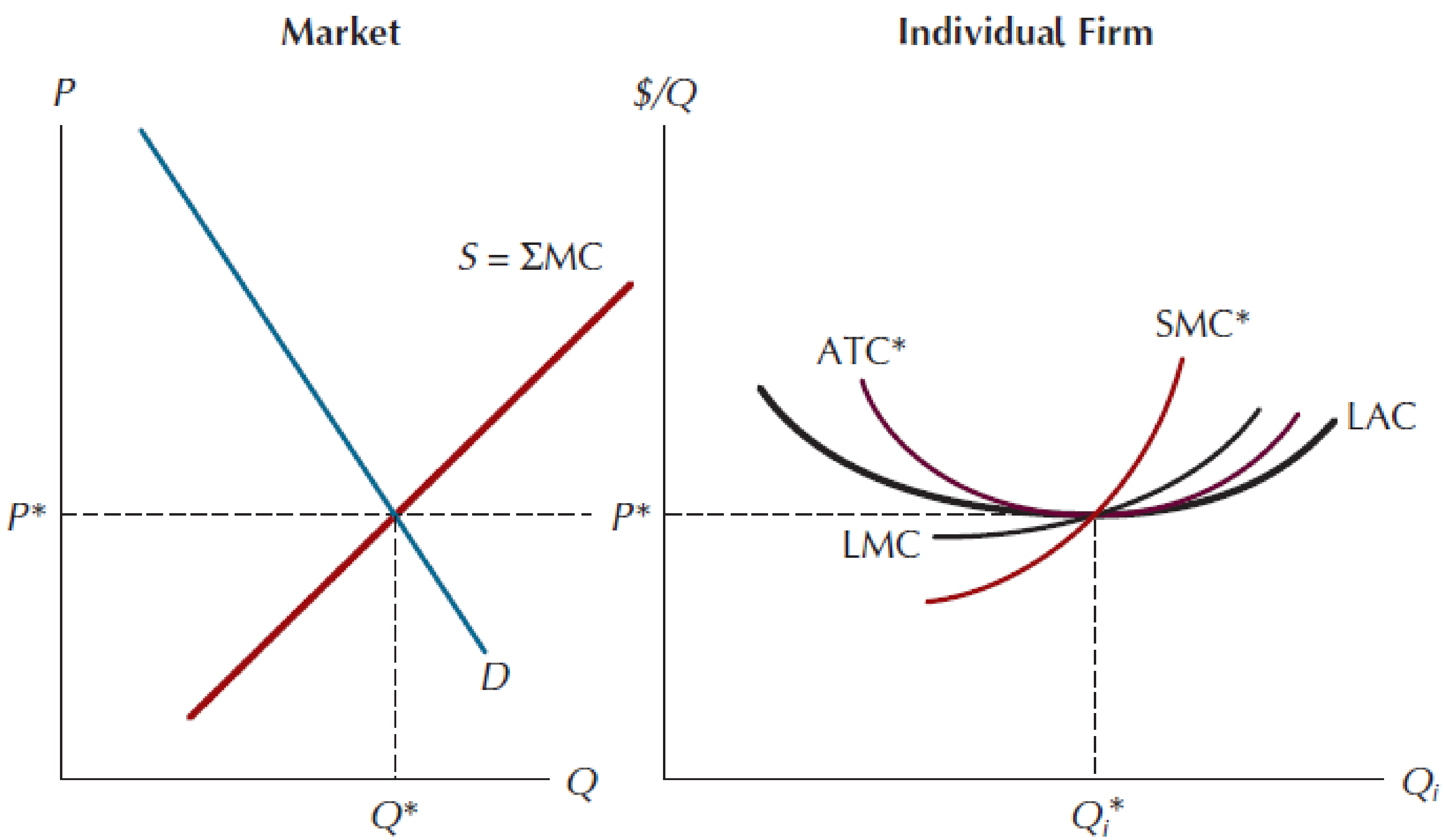


Figure 10.15: The Long-Run Equilibrium under Perfect Competition



The Invisible Hand

- Why are competitive markets attractive from the perspective of society as a whole?
  - Price is equal to Marginal Cost.
    - The last unit of output consumed is worth exactly the same to the buyer as the resources required to produce it.
  - Price is equal to the minimum point on the long-run average cost curve.
    - There is no less costly way of producing the product.
  - All producers earn only a normal rate of profit.
    - The public pays not a penny more than what it cost the firms to serve them.

The Long-Run Competitive Industry Supply Curve

- ***Constant cost Industries***: long-run supply curve is a horizontal line at the minimum value of the LAC curve.
- ***Increasing cost industries***: long-run supply curve is upward sloping.
- ***Decreasing cost industries***: long-run supply curve is downward-sloping.

Figure 10.16: The Long-Run Competitive Industry Supply Curve

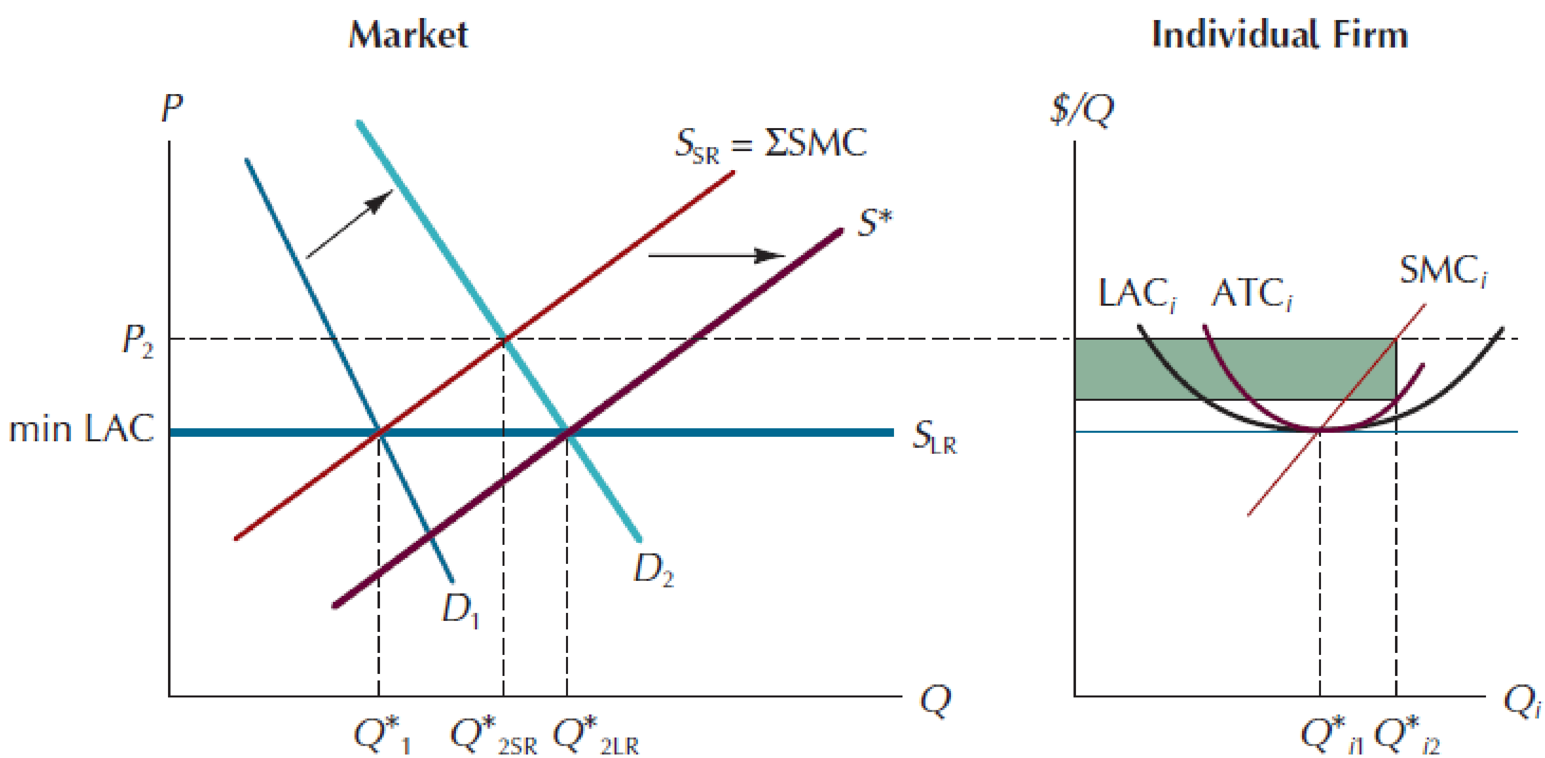


Figure 10.17: Long-Run Supply Curve for an Increasing Cost Industry

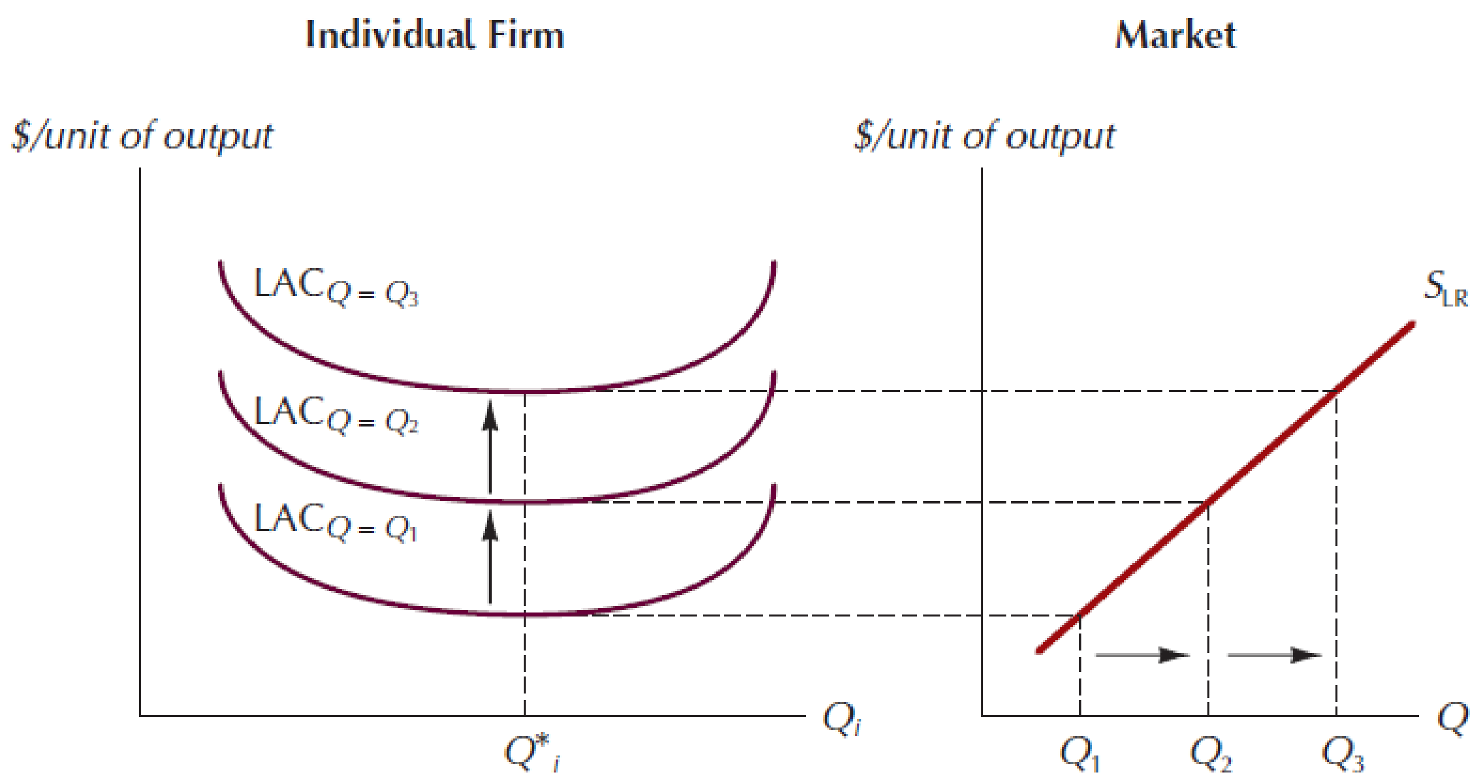


Figure 10.18: Pecuniary Economies and the Price of Color and Black-and-White Photos

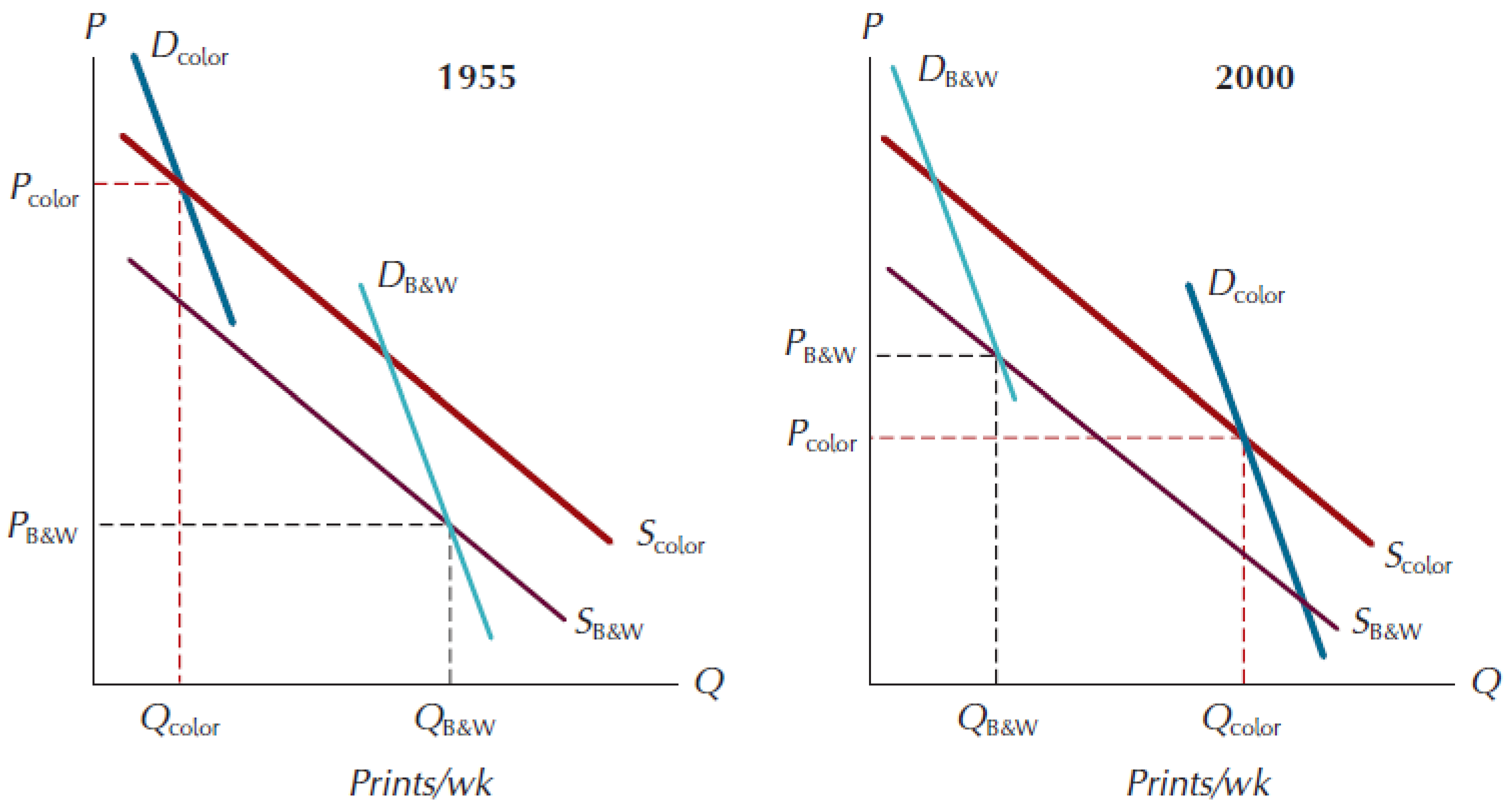


Figure 10.19: The Elasticity Of Supply

- ***Price elasticity of supply:*** the percentage change in quantity supplied that occurs in response to a 1 percent change in product price.

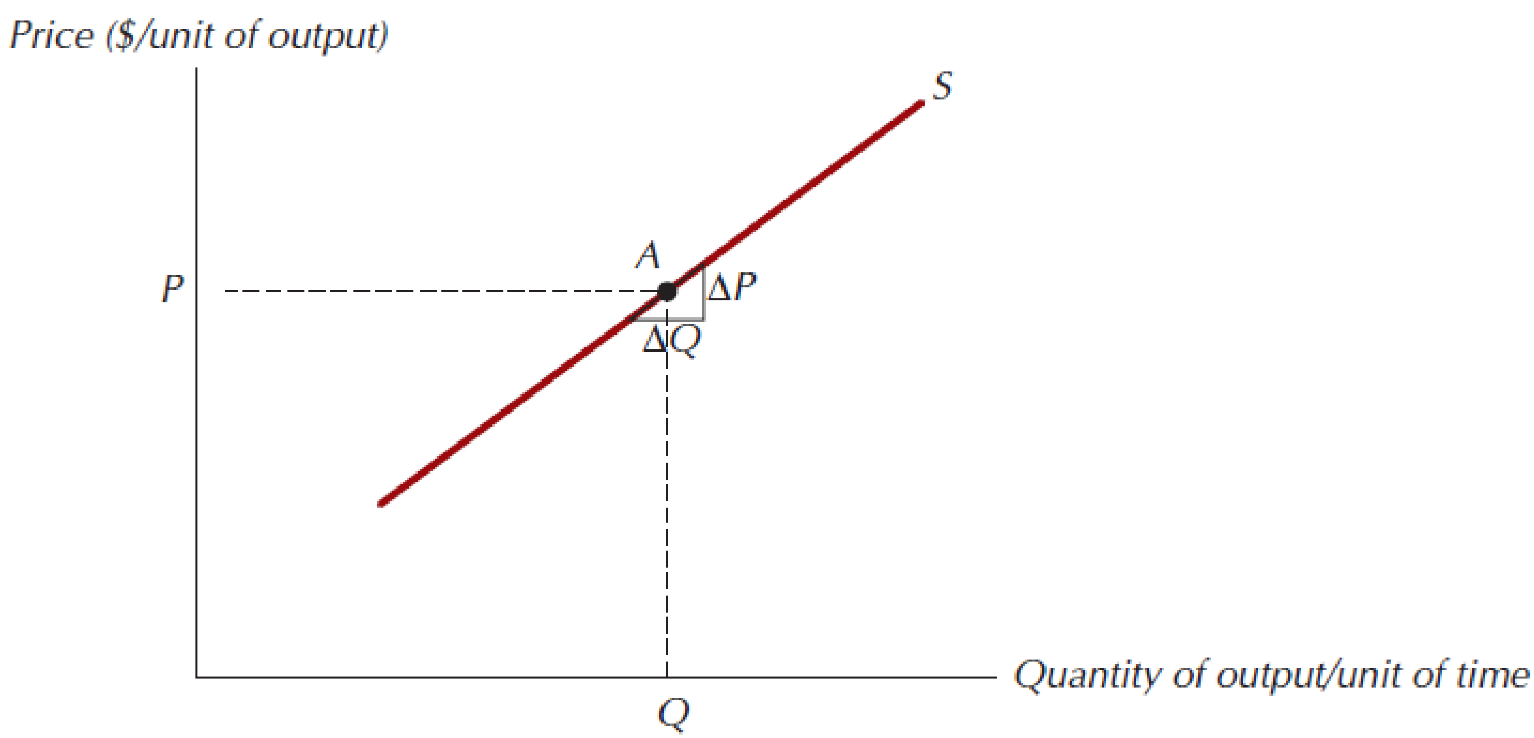


Figure 10.20: Cost Curves for Family and Corporate Farms

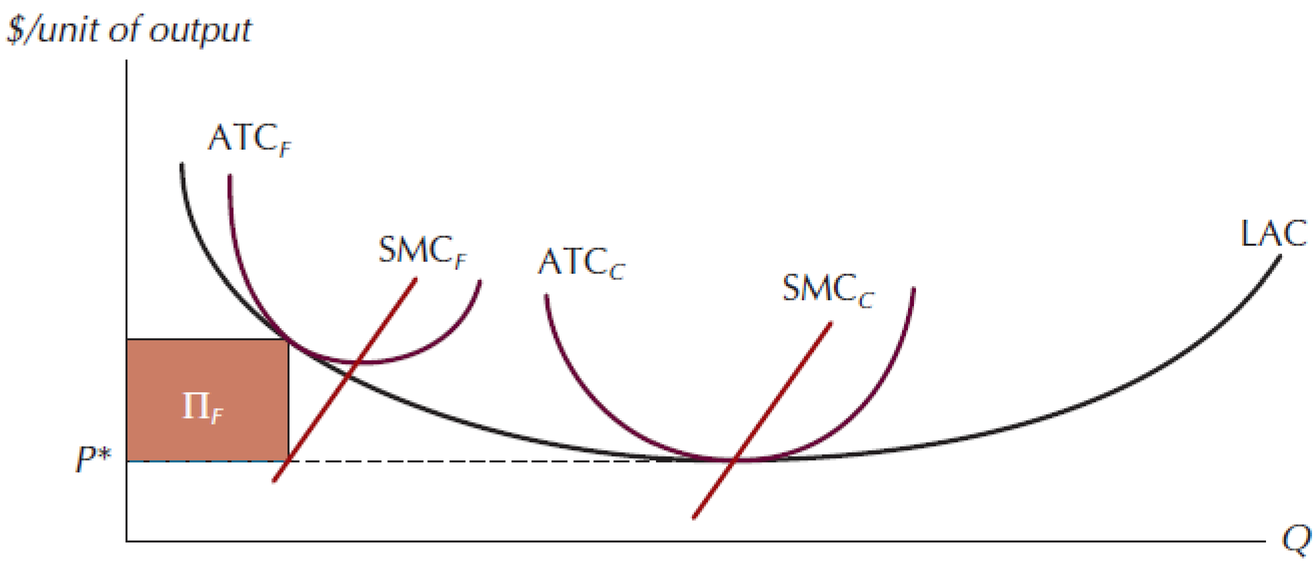


Figure 10.21: The Short-Run Effect of Agricultural Price Supports

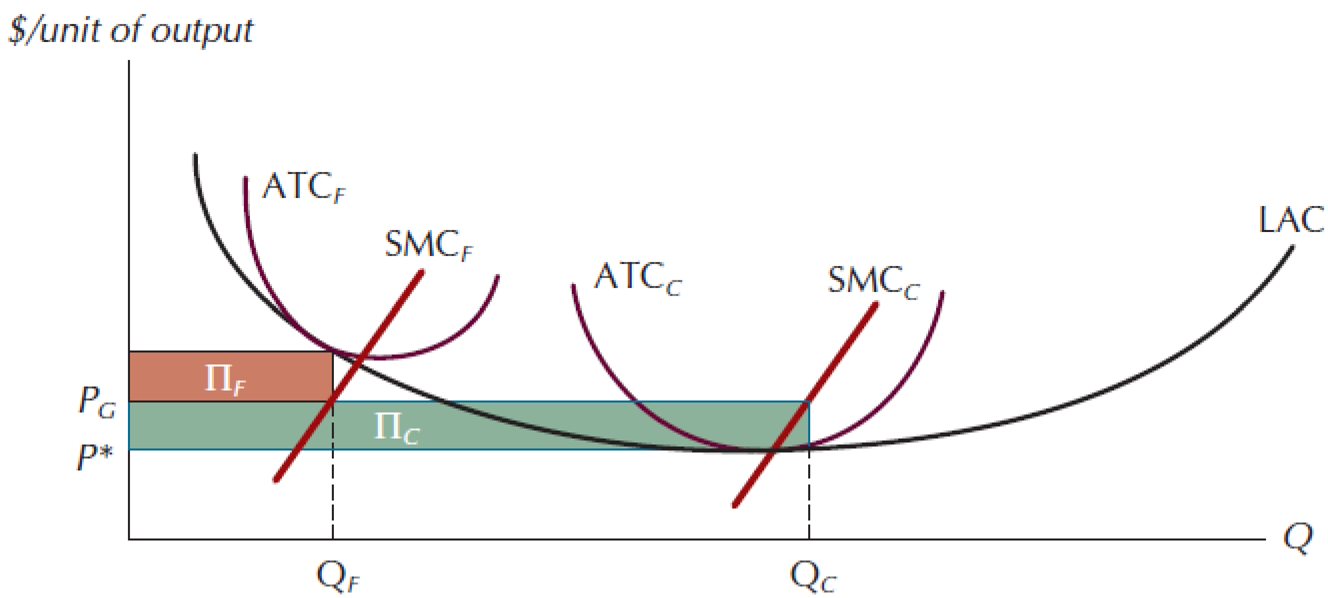


Figure 10.22: The Effect of a Tax on the Output of a Perfectly Competitive Industry