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Chris Bennett/Farm Press

Perfect Competition

Anderson, Survey of Economics 1e

LEARNING OBJECTIVES

1. Characterize a perfectly competitive market
2. Show how the entry and exit of firms affect profits in a perfectly competitive market
3. Explain how a firm decides whether to shut down its operations
4. Discuss the efficiency of perfectly competitive markets

HOW COMPETITION AFFECTS MARKETS

- Adam Smith wrote that "the freer and more general the competition," the greater the benefits of markets.

- The benefits of competition include:
  - higher-quality products
  - lower prices
  - innovation
  - efficiency

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MARKET STRUCTURES: MONOPOLIES, DUOPOLIES, AND OLIGOPOLIES

- Different markets have different *market structures* with varying degrees of competition.

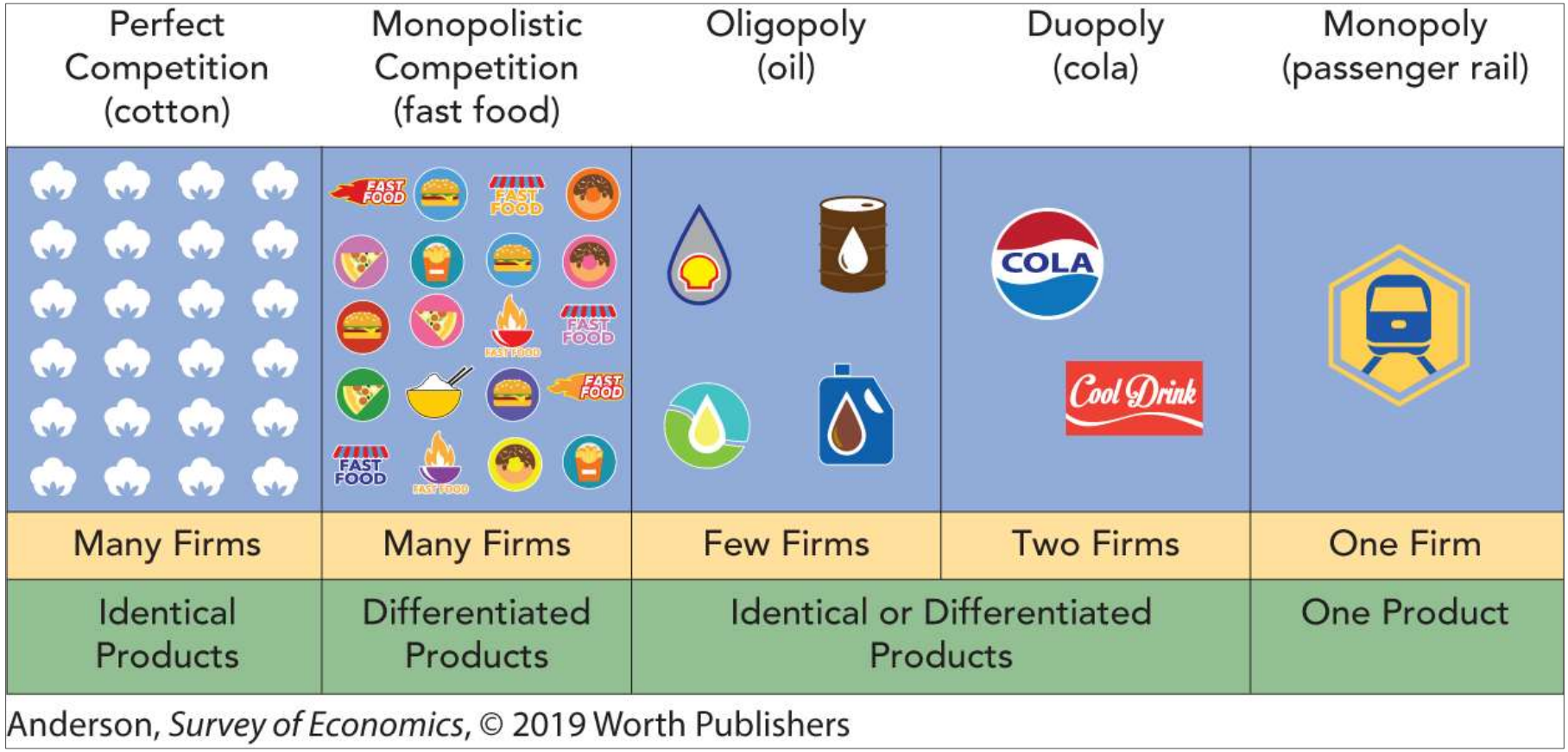
- *Monopolies* are markets with only one firm.
  - An example is Amtrak.

- A *duopoly* is a market dominated by two firms.
  - An example is the cola market.

- An *oligopoly* is dominated by a small number of large firms.
  - An example is the oil market.

MARKET STRUCTURES: MONOPOLISTIC COMPETITION

- A *monopolistically competitive market* has many firms that sell products that are similar but not identical.
  - Two examples are fast food and clothing.



PERFECT COMPETITION

- A **perfectly competitive market** is one in which:
  - there are many buyers and sellers
  - every firm sells the same standardized product
  - buyers and sellers have full information about the product and its price
  - it is easy for firms to enter and exit the market

- No market is perfectly competitive, but many markets come close and can be modeled in this way.
  - Examples include agriculture goods and corporate stocks.

MANY BUYERS AND SELLERS

- Having many sellers promotes competition because it gives buyers options.

- Suppose that you try to sell lemonade at 30¢, while every other lemonade stand is selling lemonade at 25¢.
  - Buyers would likely choose to buy lemonade from your competitors because it is cheaper.

- If you are unable to charge above the market price, there are "many sellers."

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A STANDARDIZED PRODUCT

- If the quality of your lemonade is superior to your competitors', such as if your lemonade is hand-squeezed, you may be able to sell at a higher price.
- Similarly, you may be able to charge a higher price for a similar good, such as limeade.
- When a product is standardized, however, there is no reason for buyers to pay more to one firm than another.

FULL INFORMATION

- Full information means that buyers and sellers have all the relevant information about the products and prices available.

- If buyers did not know that you were selling lemonade for a lower price, they might end up buying it from your competitors.

- The table below is a resource provided by the USDA that promotes full information in the cotton market.

75.61
Average spot price in U.S. cents per pound for Upland cotton (color 41, leaf 4, staple 34) As of: Thursday, February 1, 2018 *Source:* USDA Market News

EASY ENTRY AND EXIT FOR FIRMS

- If you are making a profit in the lemonade market, it is easy for others to enter the market and increase your competition.
- If you are making a profit in the jumbo jet market, it is much more difficult for others to enter and increase the level of competition.
- Easy entry and exit allow markets to have the right amount of competition so that no one is able to maintain a large profit.

REALITY CHECK

- In the real world, perfection is an ideal but seldom a reality.
- There are very few markets in which products are perfectly identical.
  - For example, no two tomatoes will be exactly the same.
- There are also typically some imperfections in information.
- A model that incorporated these imperfections would be unwieldy, while a simplified model is very useful.
  - A clear view of a simplified situation can be more instructive than an incomprehensible view of reality.

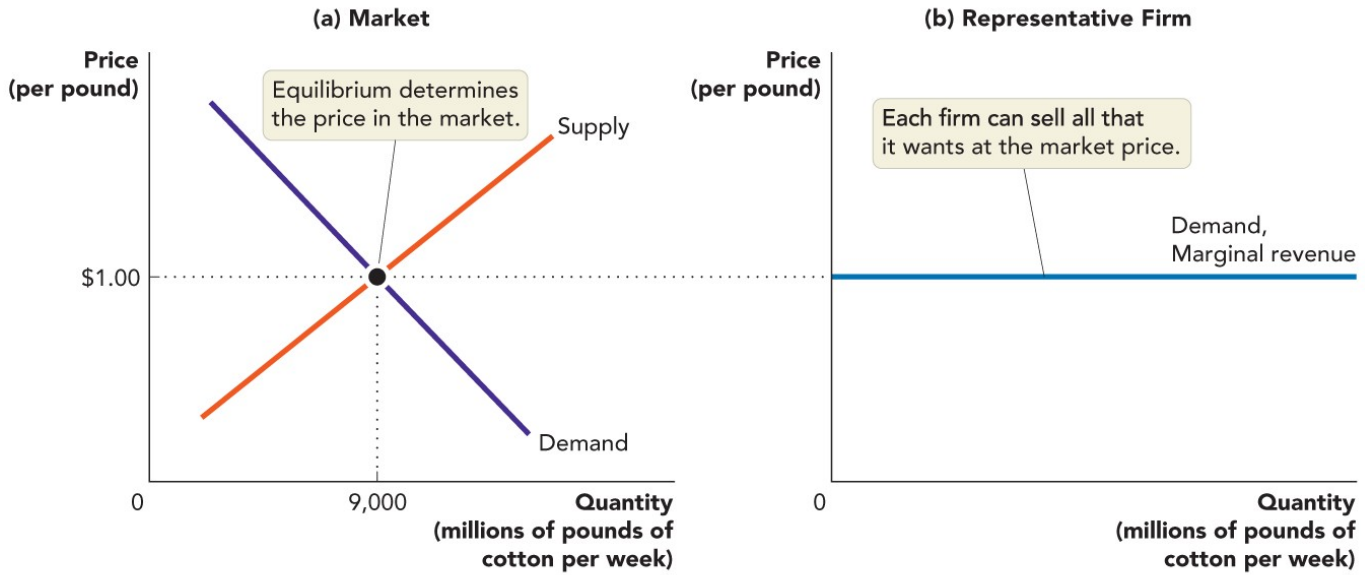
FIRMS AS PRICE TAKERS

- Each firm in a perfectly competitive market is too small to influence the market price.
- Instead, each firm is a **price taker**, meaning that the firm takes the market equilibrium price as given.
- If a firm tries to charge above the market price, buyers would refuse to pay the elevated price because they know that many other firms will sell at the market price.

Ashok Saxena/Alamy stock photo

DEMAND AND MARGINAL REVENUE

- Each firm in perfection competition can sell as much as it wants at the market equilibrium price but cannot sell any at a higher price. This is represented by the horizontal demand line.



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- Because every unit is sold at the same price, the marginal revenue curve is also horizontal and coincides with the demand curve.

- This is not the case outside of perfect competition.

LEARN BY DOING: PRACTICE QUESTION 1

Which of the qualifications for perfect competition does the tomato market fail to reach?

a) There are many buyers and sellers.

b) Every firm sells the same standardized product.

c) Buyers and sellers have full information about the product and its price.

d) It is easy for firms to enter and exit the market.

LEARN BY DOING: PRACTICE QUESTION 1 (Answer)

Which of the qualifications for perfect competition does the tomato market fail to reach?

a) There are many buyers and sellers.

b) Every firm sells the same standardized product. (correct answer)

c) Buyers and sellers have full information about the product and its price.

d) It is easy for firms to enter and exit the market.

PROFIT MAXIMIZATION

- Maximizing profit is not always the goal of firms.
  - Some firms are nonprofit and have other goals.
  - Others may give up profit in exchange for prestige.

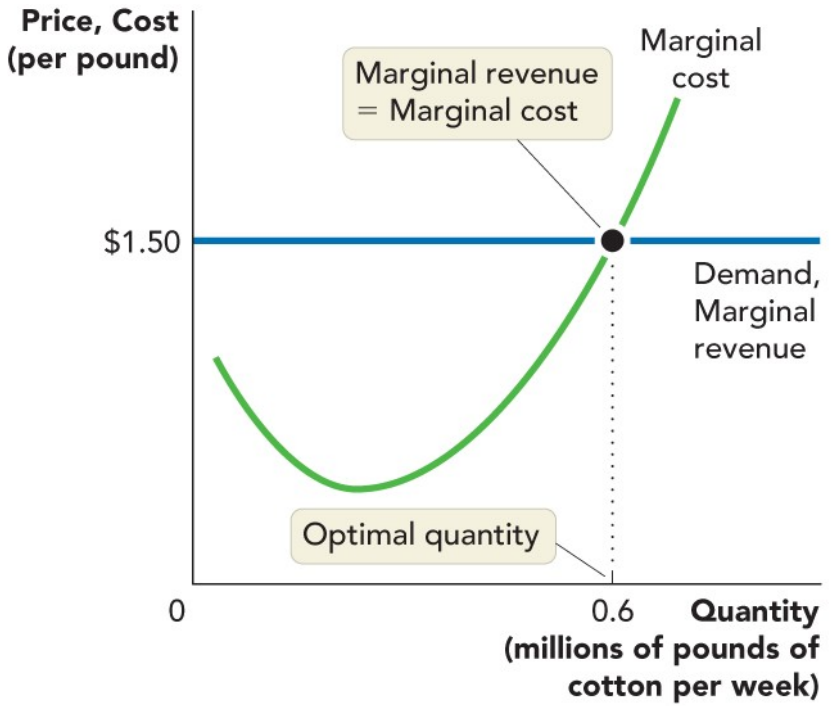
- However, in perfect competition, these are highly unlikely because no firm serves a large share of the market and all goods are identical. We can assume that firms seek to maximize profit.

CHOOSING THE OPTIMAL QUANTITY OF OUTPUT

- For any decision on *how much* to do something, the answer is to increase the quantity until the additional benefit of any more would fall below the additional cost.

- For a firm determining how much to produce, the additional benefit is marginal revenue, and the additional cost is the marginal cost.

- So, profit maximization occurs at the quantity where marginal revenue equals marginal cost.

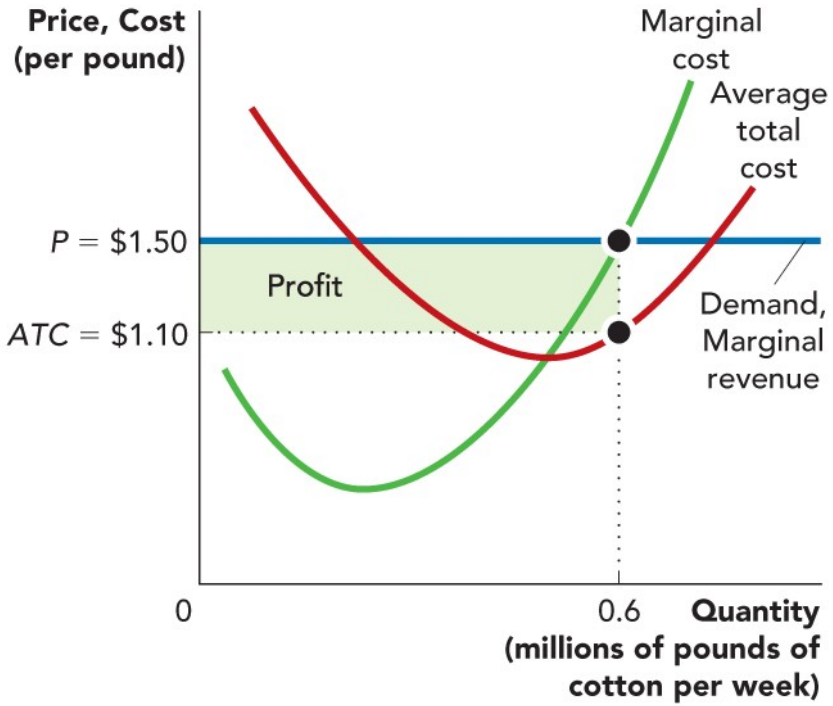


FINDING THE AMOUNT OF PROFIT OR LOSS

- When marginal revenue equals marginal cost, profit is maximized, but that does not tell us how big the profit will be or even whether it's a profit or a loss.

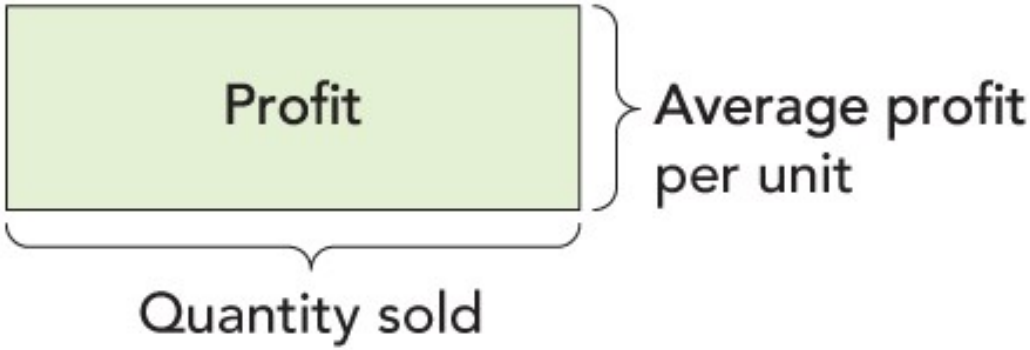
- The profit can be found by first finding the distance between the average total cost and the price at the quantity sold.

- This amount is the average profit per unit. Multiplying this by the quantity sold gives the total profit or loss.



PROFIT OR LOSS IN THE SHORT RUN

- When firms in perfect competition earn a profit in the short run, it causes new firms to enter the market in pursuit of that profit.



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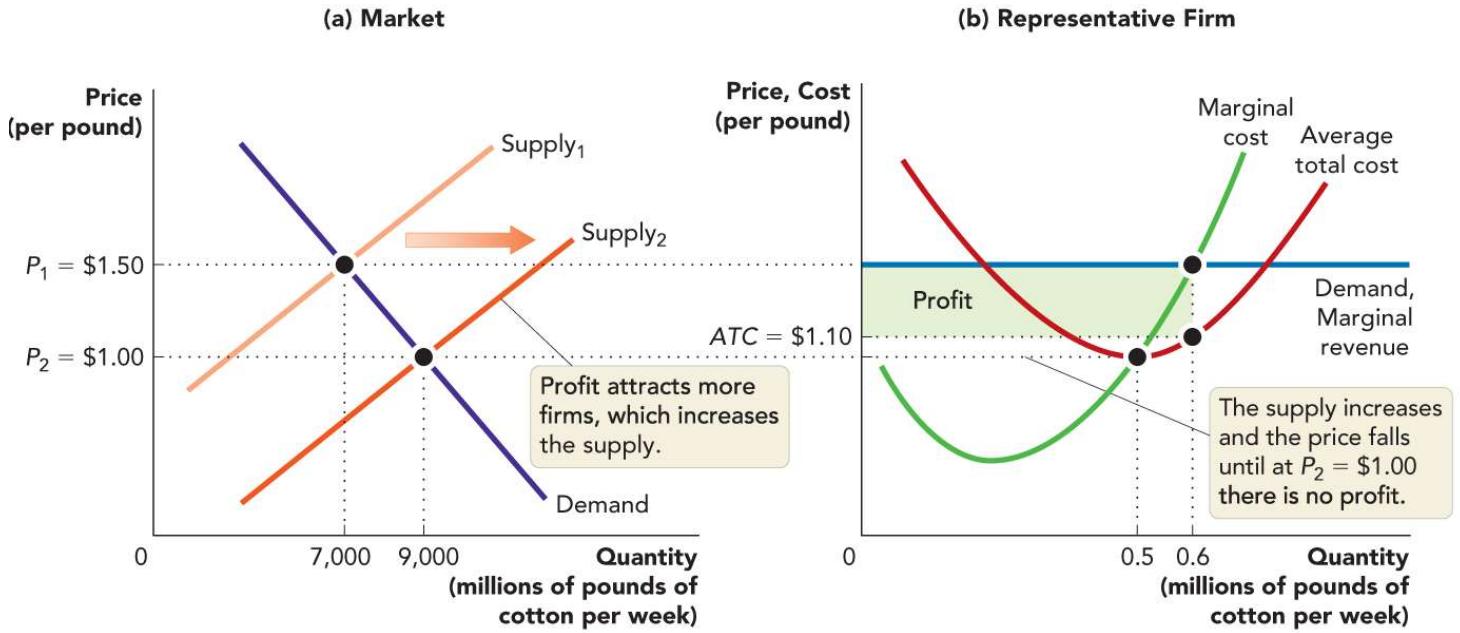
- Similarly, when firms in perfect competition experience large or consistent losses, some of the firms will exit the market.

- These changes in the number of firms cause the supply to shift.

PROFIT IN THE SHORT RUN

- A profit causes firms to enter the market, increasing the supply. This increase in supply drives the price down until it reaches the minimum average total cost.

- At this point, no firm earns a profit, and there is no incentive for new firms to enter the market.



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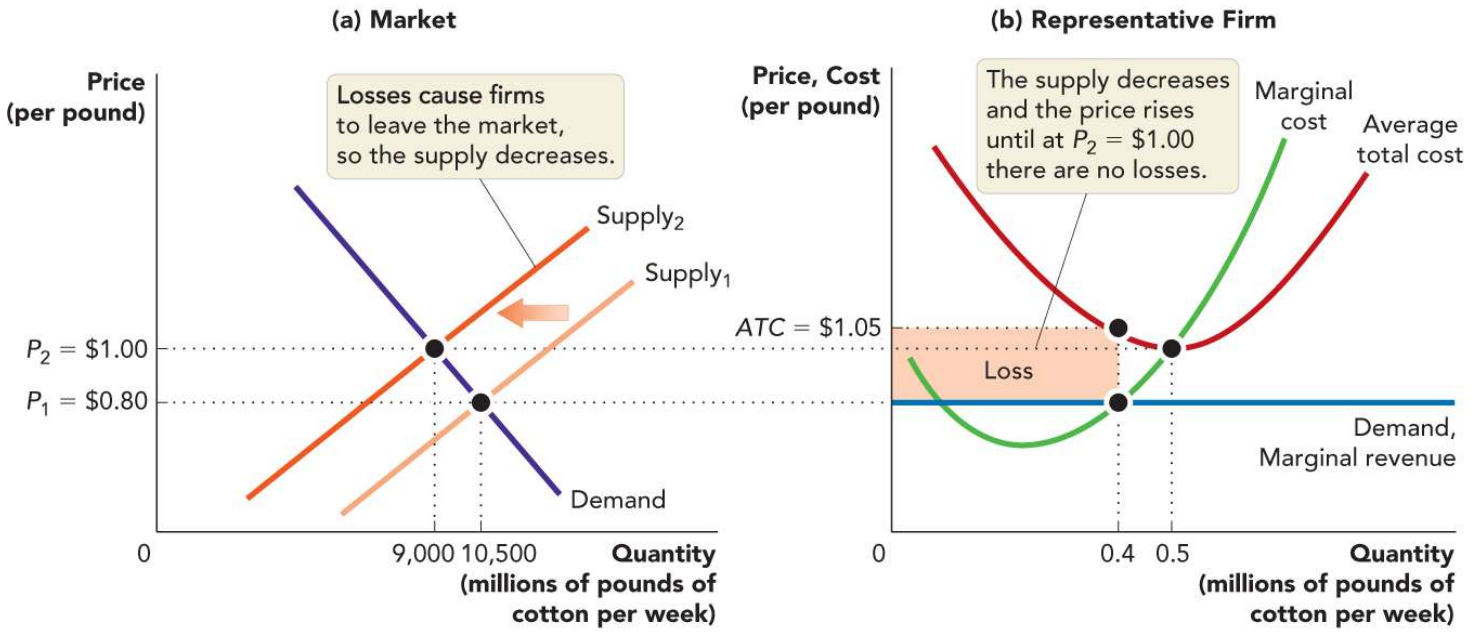
LOSS IN THE SHORT RUN

- A loss causes firms to exit the market, decreasing the supply. This decrease in supply drives the price up until it reaches the minimum average total cost.

- At this point, firms do not make a loss, and there is no incentive for firms to leave the market.



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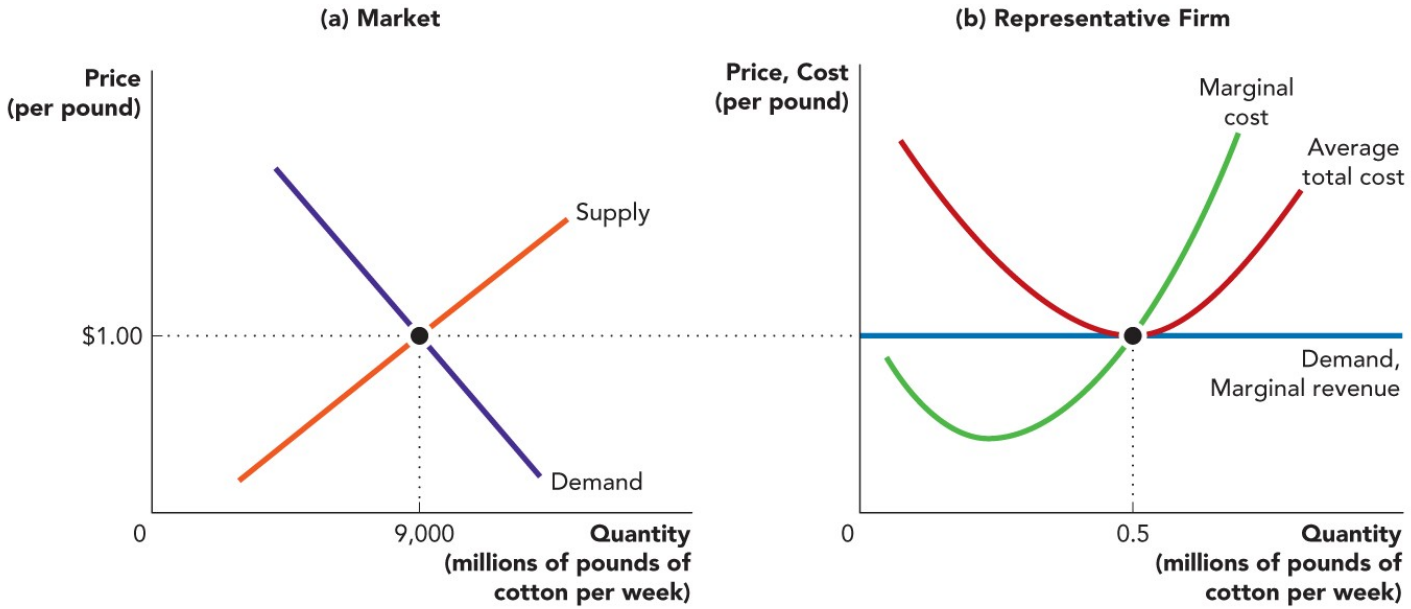
LONG-RUN EQUILIBRIUM

- The existence of profit or loss in a perfectly competitive market causes the supply to shift to the point where no profit or loss is experienced.

- **Long-run equilibrium** is a situation in which no firm has an incentive to enter or exit the market because each firm earns zero profit.

- Zero economic profit is a *normal* accounting profit.



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AVERAGE VARIABLE COST

- In the long run, a firm should exit the market if it can't cover all of its costs, but the fixed cost is sunk in the short run.

- Thus, in the short run, firms only need to be concerned with covering variable cost.

Chris Bennett/Farm Press

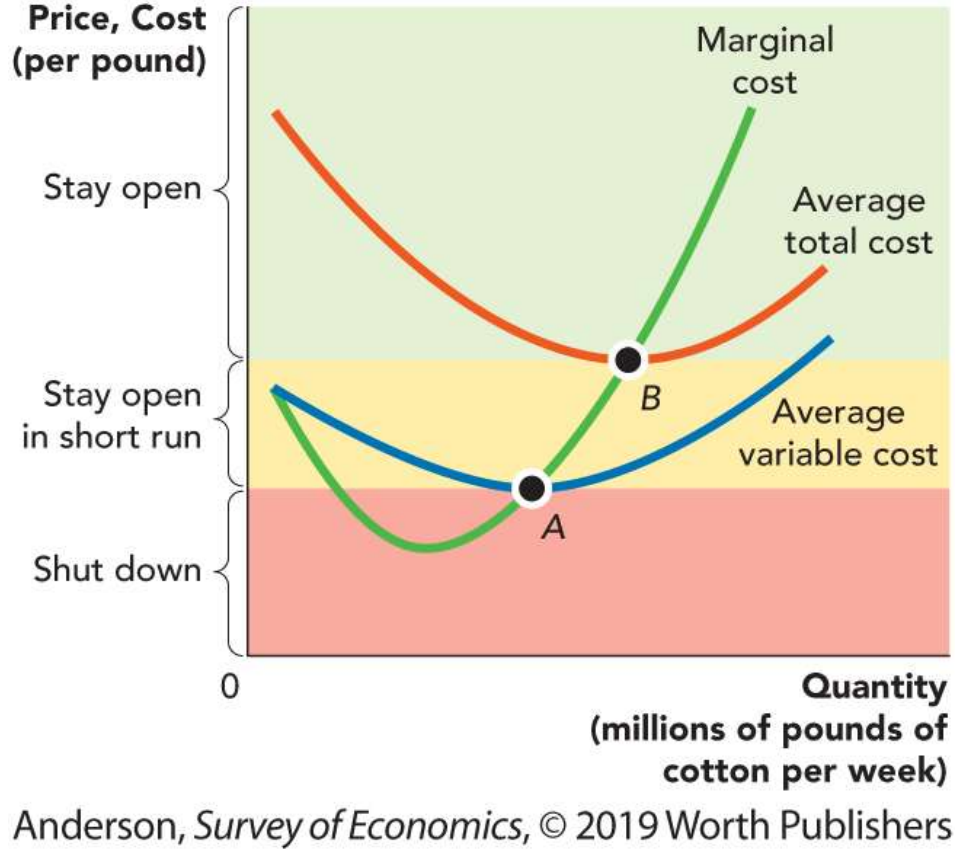
$$\textbf{average variable cost} = \frac{\text{variable cost}}{\text{quantity of output}}$$

THE SHUTDOWN DECISION

- In the short run, a firm should continue to operate as long as the market price is above the average variable cost.

- The graph shows that when the price is in the red zone, the firm cannot cover the variable cost and should shut down immediately.

- If the firm can cover the variable cost but not the total cost, the firm should operate in the short run but exit in the long run.



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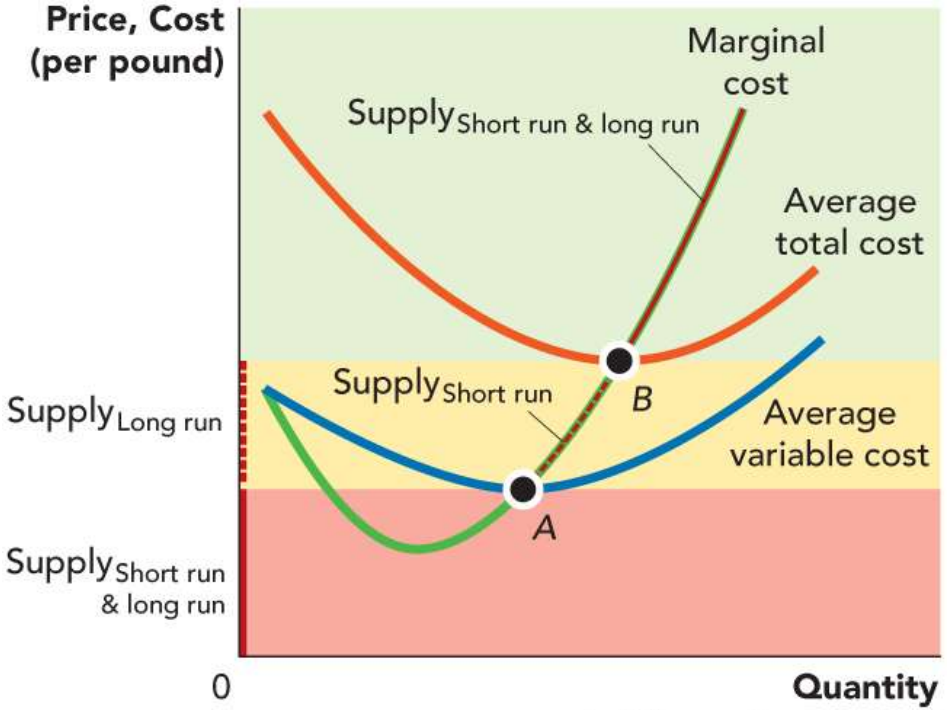
THE FIRM'S SUPPLY CURVE

- Now that we know when a firm chooses to operate and how it chooses what quantity to supply, we can identify the firm's supply curve.

- When the firm chooses to operate, supply curve coincides with the marginal cost curve.

- When the firm chooses not to operate, there is zero supply.

- This graph displays a firm's short- and long-run supply.



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THE EFFICIENCY OF PERFECT COMPETITION

- Firms provide the quantity at which marginal cost equals marginal revenue. In perfect competition, marginal cost coincides with supply, and marginal revenue coincides with demand.
- So, the quantity of output is found at the intersection of supply and demand. This means that perfectly competitive markets achieve efficiency in the allocation of resources.
- Competition drives the price of a good to the minimum average total cost, which causes firms to seek to minimize their costs. Doing so leads to efficiency in production.
- This pressure to minimize costs also motivates innovation.

LEARN BY DOING: PRACTICE QUESTION 2

Suppose that you run a clothing company and you earn revenue of $700,000 per year. Your annual variable cost is $500,000, and your annual fixed cost is $130,000. Is the clothing market in long-run equilibrium? How can you tell?

a) Yes, because you are making a profit.

b) Yes, because market forces push the market to equilibrium.

c) No, because you are operating at a loss.

d) No, because you are not making a profit.

LEARN BY DOING: PRACTICE QUESTION 2 (Answer)

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