Perfect Competition in the Short Run & the Long Run
Price Taker

- A **price taker** is a firm that cannot influence the price of the good or service that it produces.
- The firm in perfect competition is a price taker.
Revenue Concepts

- In perfect competition, market demand and market supply determine price.
- A firm’s total revenue equals the market price multiplied by the quantity sold.
- A firm’s *marginal revenue* is the change in total revenue that results from a one-unit increase in the quantity sold.
- Figure 15.1 on the next slide illustrates the revenue concepts.
A FIRM’S PROFIT-MAXIMIZING CHOICES

Part (a) shows the market for syrup. The market price is $8 a can.
A FIRM’S PROFIT-MAXIMIZING CHOICES

In part (b), the market price determines the demand curve for Dave’s syrup, which is also his marginal revenue curve.
In part (c), if Dave sells 10 cans of syrup a day, his total revenue is $80 a day at point $A$. 

![Diagram](image_url)
A FIRM’S PROFIT-MAXIMIZING CHOICES

Dave’s total revenue curve is $TR$.

The table shows the calculations of $TR$ and $MR$.
A FIRM’S PROFIT-MAXIMIZING CHOICES

Profit-Maximizing Output

- As output increases, total revenue increases.
- But total cost also increases.
- Because of decreasing marginal returns, total cost eventually increases faster than total revenue.
- There is one output level that maximizes economic profit, and a perfectly competitive firm chooses this output level.
A FIRM’S PROFIT-MAXIMIZING CHOICES

- One way to find the profit-maximizing output is to use a firm’s total revenue and total cost curves.
- Profit is maximized at the output level at which total revenue exceeds total cost by the largest amount.
- Figure 15.2 on the next slide illustrates this approach.
A FIRM’S PROFIT-MAXIMIZING CHOICES

Total revenue increases as the quantity increases — shown by the TR curve.

Total cost increases as the quantity increases — shown by the TC curve.

As the quantity increases, economic profit (TR – TC) increases, reaches a maximum, and then decreases.
A FIRM’S PROFIT-MAXIMIZING CHOICES

At low output levels, the firm incurs an economic loss.

When total revenue exceeds total cost, the firm earns an economic profit.

Profit is maximized when the gap between total revenue and total cost is the largest, at 10 cans per day.
Marginal Analysis and the Supply Decision

- Marginal analysis compares marginal revenue, $MR$, with marginal cost, $MC$.
- As output increases, marginal revenue remains constant but marginal cost increases.
- If marginal revenue exceeds marginal cost (if $MR > MC$), the extra revenue from selling one more unit exceeds the extra cost incurred to produce it.
- Economic profit increases if output increases.
A FIRM’S PROFIT-MAXIMIZING CHOICES

- If marginal revenue is less than marginal cost (if \( MR < MC \)), the extra revenue from selling one more unit is less than the extra cost incurred to produce it.

- Economic profit increases if output decreases.

- If marginal revenue equals marginal cost (if \( MR = MC \)), the extra revenue from selling one more unit is equal to the extra cost incurred to produce it.

- Economic profit decreases if output increases or decreases, so economic profit is maximized.
A FIRM’S PROFIT-MAXIMIZING CHOICES

Figure 15.3 shows the profit-maximizing output. Marginal revenue is a constant $8 per can.
Marginal cost decreases at low outputs but then increases.
A FIRM’S PROFIT-MAXIMIZING CHOICES

1. Profit is maximized when marginal revenue equals marginal cost at 10 cans a day.
2. If output increases from 9 to 10 cans a day, marginal cost ($7) is below marginal revenue ($8), so profit increases.
A FIRM’S PROFIT-MAXIMIZING CHOICES

3. If output increases from 10 to 11 cans a day, marginal cost ($9) exceeds marginal revenue ($8), so profit decreases.
1. How is the price established at which the firm sells?

*By the intersection of the industry supply and demand curves.*
3. Why do we say a perfect competitor is a *price taker*?

*Because the firm has no control over the price and has to “take” the price established in the industry*
2. How much control does the firm have over this price?

None
4. Why does a perfect competitor maximize profits where Price = MC?

All firms maximize profit by producing at the quantity where MR = MC, and for a perfectly competitive firm P = MR since a firm can sell all it wants at the price determined by the industry.
5. Is this perfect competitor making a profit? Why or why not?

Yes. \( P > ATC \) and \( TR > TC \).
Activity 27

**Figure 27.1**
Output, Total Cost and Marginal Cost

<table>
<thead>
<tr>
<th>Output</th>
<th>Total Cost (TC)</th>
<th>Marginal Cost (MC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$55</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>210</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 27.2**
Plotting Marginal Cost of Yo-Yos
### Figure 27.3
Fixed and Variable Costs of Yo-Yos

<table>
<thead>
<tr>
<th>Total Product</th>
<th>Fixed Cost</th>
<th>Variable Cost</th>
<th>Total Cost</th>
<th>Marginal Cost</th>
<th>Average Fixed Cost</th>
<th>Average Variable Cost</th>
<th>Average Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$100.00</td>
<td>$0</td>
<td>$100.00</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>$100.00</td>
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<td>$110.00</td>
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<td>21.00</td>
<td>117.00</td>
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<td></td>
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<td>6</td>
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<td>7</td>
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<td>10</td>
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<tr>
<td>11</td>
<td>100.00</td>
<td>109.00</td>
<td>209.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>100.00</td>
<td>130.00</td>
<td>230.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>100.00</td>
<td>160.00</td>
<td>260.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 27.4
Total Fixed Costs, Total Variable Costs and Total Costs

COSTS

OUTPUT OF YO-YOS
Figure 27.5
Average Variable, Average Fixed, Average Total and Marginal Costs

OUTPUT OF YO-YOS

COSTS

130
120
110
100
90
80
70
60
50
40
30
20
10
0

1 2 3 4 5 6 7 8 9 10 11 12 13
Temporary Shutdown Decisions

- If a firm is incurring an economic loss that it believes is temporary, it will remain in the market, and it might produce some output or temporarily shut down.
A FIRM’S PROFIT-MAXIMIZING CHOICES

– If the firm shuts down temporarily, it incurs an economic loss equal to total fixed cost.

– If the firm produces some output, it incurs an economic loss equal to total fixed cost plus total variable cost minus total revenue.

– If total revenue exceeds total variable cost, the firm’s economic loss is less than total fixed cost. So it pays the firm to produce and incur an economic loss.
A FIRM’S PROFIT-MAXIMIZING CHOICES

– If total revenue were less than total variable cost, the firm’s economic loss would exceed total fixed cost. So the firm would shut down temporarily.

– Total fixed cost is the largest economic loss that the firm will incur.

– The firm’s economic loss equals total fixed cost when price equals average variable cost.

– So the firm produces some output if price exceeds average variable cost and shuts down temporarily if average variable cost exceeds price.
A FIRM’S PROFIT-MAXIMIZING CHOICES

– The firm’s **shutdown point** is the output and price at which price equals minimum average variable cost.
– Figure 15.4 on the next slide illustrates a firm’s shutdown point.
A FIRM’S PROFIT-MAXIMIZING CHOICES

Marginal revenue curve is $MR$. The firm’s cost curves are $MC$, $ATC$, and $AVC$. 
A FIRM’S PROFIT-MAXIMIZING CHOICES

1. With a market price (and MR) of $3 a can, the firm minimizes its loss by producing 7 cans a day. The firm is at its shutdown point.
A FIRM’S PROFIT-MAXIMIZING CHOICES

2. At the shutdown point, the firm incurs an economic loss equal to total fixed cost.

<table>
<thead>
<tr>
<th>Quantity (Q)</th>
<th>Total revenue (TR)</th>
<th>Total variable cost (TVC)</th>
<th>Total fixed cost (TFC)</th>
<th>Total cost (TC)</th>
<th>Economic profit (TR – TC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>18</td>
<td>19</td>
<td>15</td>
<td>34</td>
<td>–16</td>
</tr>
<tr>
<td>7</td>
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<td>21</td>
<td>15</td>
<td>36</td>
<td>–15</td>
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<tr>
<td>8</td>
<td>24</td>
<td>25</td>
<td>15</td>
<td>40</td>
<td>–16</td>
</tr>
</tbody>
</table>
A FIRM’S PROFIT-MAXIMIZING CHOICES

- The Firm’s Short-Run Supply Curve
  - A perfectly competitive firm’s short-run supply curve shows how the firm’s profit-maximizing output varies as the price varies, other things remaining the same.
  - Figure 15.5 on the next slide illustrates a firm’s supply curve and its relationship to the firm’s cost curves.
FIRM’S ... CHOICES

The firm’s marginal cost curve is $MC$. Its average variable cost curve is $AVC$, and its marginal revenue curve is $MR_0$.

With a market price (and $MR_0$) of $3$ a can, the firm maximizes profit by producing 7 cans a day—at its shutdown point.

Point $T$ is one point on the firm’s supply curve.
FIRM’S ... CHOICES

If the market price rises to $8 a can, the marginal revenue curve shifts upward to $MR_1$.

Profit-maximizing output increases to 10 cans per day.

The black dot in part (b) is another point of the firm’s supply curve.
FIRM’S … CHOICES

If the price rises to $12 a can, the marginal revenue curve shifts upward to $MR_2$.

Profit-maximizing output increases to 11 cans per day.

The new black dot in part (b) is another point of the firm’s supply curve.

The blue curve in part (b) is the firm’s supply curve.
The blue curve is the firm’s supply curve.

At prices below $3 a can, the firm shuts down and output is zero.

At prices above $3 a can, the firm produces along its $MC$ curve.

The supply curve is the same as the $MC$ curve at prices above the minimum point of $AVC$. 

Market Supply in the Short Run

– The market supply curve in the short run shows the quantity supplied at each price by a fixed number of firms.

– The quantity supplied at a given price is the sum of the quantities supplied by all firms at that price.

Figure 15.6 on the next slide shows the market supply curve in a market with 10,000 identical firms.
At the shutdown price of $3, each firm produces either 0 or 7 cans a day.

At prices below the shutdown price, firms produce nothing.
At prices above the shutdown price, firms produce along their $MC$ curve.
OUTPUT, PRICE, PROFIT IN THE SHORT RUN

The market supply curve:
- Below the shutdown price, it runs along the y-axis.
- At the shutdown price, it is perfectly elastic.
- Above the shutdown price, it slopes upward.

<table>
<thead>
<tr>
<th>Price (dollars per can)</th>
<th>Dave's quantity supplied</th>
<th>Market quantity supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>A</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>T</td>
<td>3</td>
<td>0 or 7</td>
</tr>
</tbody>
</table>
In part (a), with market supply curve, $S$, and market demand curve, $D_1$, the market price is $5$ a can.
OUTPUT, PRICE, PROFIT IN THE SHORT RUN

Short-Run Equilibrium in Normal Times

- Market demand and market supply determine the market price and quantity bought and sold.

- Figure 15.7 on the next slide illustrates short-run equilibrium when the firm makes zero economic profit.
In part (a), with market supply curve, $S$, and market demand curve, $D_1$, the market price is $5$ a can.
In part (b), marginal revenue is $5 a can. Dave produces 9 cans a day, where marginal cost equals marginal revenue.
At this quantity, price equals average total cost, so Dave makes zero economic profit.
Short-Run Equilibrium in Good Times

- In the short-run equilibrium that we’ve just examined, Dave made zero economic profit.

- Although such an outcome is normal, economic profit can be positive or negative in the short run.

- Figure 15.8 on the next slide illustrates short-run equilibrium when the firm makes a positive economic profit.
In part (a), with market demand curve $D_2$ and market supply curve $S$, the market price is $8$ a can.
In part (b), Dave’s marginal revenue is $8 a can. Dave produces 10 cans a day, where marginal cost equals marginal revenue.
At this quantity, price ($8 a can) exceeds average total cost ($5.10 a can). Dave makes an economic profit shown by the blue rectangle.
OUTPUT, PRICE, PROFIT IN THE SHORT RUN

- Short-Run Equilibrium in Bad Times
  - In the short-run equilibrium that we’ve just examined, Dave is enjoying an economic profit.
  - But such an outcome is not inevitable.
  - Figure 15.9 on the next slide illustrates short-run equilibrium when the firm incurs an economic loss.
In part (a), with the market supply curve, $S$, and the market demand curve, $D_3$, the market price is $3$ a can.
In part (b), Dave’s marginal revenue is $3 a can. Dave produces 7 cans a day, where marginal cost equals marginal revenue and not less than average variable cost.
At this quantity, price ($3 a can) is less than average total cost ($5.14 a can). Dave incurs an economic loss shown by the red rectangle.
1. At what output will the firm operate at price $P_4$, $Q_4$?

$E$; yes
2. At price $P_3$, will the firm make a profit, break even, or have an economic loss?

**Break even**

What does it mean to break even?

*TR just covers TC*
3. At price $P_2$, will the firm make a profit, break even, or have an economic loss?

**Economic loss**

Will it continue to produce? Why or why not?

*It will continue to produce. Price is greater the AVC or TR > TVC.*
4. At price $P_1$, will the firm make a profit, break even, or have an economic loss?

Economic loss
Profit, Loss and Shutdown for a Perfectly Competitive Firm

Will it continue to produce? Why or why not?

Indifferent. If firm produces, revenue covers variable costs, but firm must pay fixed costs out-of-pocket. Price = AVC or TR = TVC.
The Perfectly Competitive Firm in Long-Run Equilibrium

- The market price is determined by supply and demand in the industry.
Once the price is established, every firm must sell at that price or not sell at all. There is no reason for a firm to lower its price since it can already sell as much as it wants.
If firms are making economic profits, more firms will enter the industry—an event that reduces and makes profits disappear.
If firms have economic losses, firms will exit the market – an event that will cause the price to rise.
A perfectly competitive firm in long-run equilibrium is good for society because there is productive and allocative efficiency when the firm is at the lowest point on its average total cost curve.
### The Fiasco Company’s Cost Table

<table>
<thead>
<tr>
<th>Output (per day)</th>
<th>Total Variable Cost</th>
<th>Total Cost</th>
<th>Marginal Cost</th>
<th>Average Total Cost</th>
<th>Average Variable Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$0</td>
<td>$12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4.00</td>
<td>16.00</td>
<td>4.00</td>
<td>16.00</td>
<td>4.00</td>
</tr>
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<td>2</td>
<td>7.00</td>
<td>19.00</td>
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<td>9.50</td>
<td>3.50</td>
</tr>
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<td>3</td>
<td>9.00</td>
<td>21.00</td>
<td></td>
<td>7.00</td>
<td>3.00</td>
</tr>
<tr>
<td>4</td>
<td>12.00</td>
<td>24.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>18.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>10</td>
<td>79.00</td>
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</table>
Figure 28.2
The Fiasco Company's Cost Curves

|$\ 18$
| 16
| 14
| 12
| 10
| 8
| 6
| 4
| 2
| 0

OUTPUT

COST
### Figure 28.3
A Perfectly Competitive Firm Earning a “Normal” Rate of Profit

<table>
<thead>
<tr>
<th>Output</th>
<th>Total Cost</th>
<th>Marginal Cost</th>
<th>Average Total Cost</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>$9.00</td>
<td></td>
<td>$9.00</td>
</tr>
<tr>
<td>2</td>
<td>13.00</td>
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<td>18.00</td>
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<td>6.20</td>
</tr>
<tr>
<td>4</td>
<td>24.00</td>
<td>6.00</td>
<td></td>
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<tr>
<td>5</td>
<td>31.00</td>
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</table>
Figure 28.4
Price and Quantity Supplied

<table>
<thead>
<tr>
<th>Price</th>
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<tbody>
<tr>
<td>$6</td>
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<td>7</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td></td>
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<td></td>
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<tr>
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<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
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</tbody>
</table>
### Figure 28.5
Market Demand for an Industry

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity Demanded</th>
<th>Quantity Supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>$12</td>
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<td>9,000</td>
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<tr>
<td>10</td>
<td>4,000</td>
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<tr>
<td>9</td>
<td>5,000</td>
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<tr>
<td>8</td>
<td>6,000</td>
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<tr>
<td>7</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8,000</td>
<td></td>
</tr>
</tbody>
</table>
Neither good times nor bad times last forever in perfect competition.

In the long run, a firm in perfect competition makes zero profit.

Figure 15.10 on the next slide illustrates equilibrium in the long run.
Part (a) illustrates the firm in long-run equilibrium. The market price is $5 a can and Dave produces 9 cans a day.
In part (a), minimum $\text{ATC}$ is $5$ a can. In the long run, Dave produces at minimum $\text{ATC}$. 

![Graphs showing output, price, and profit in the long run.](image)
If supply decreases, the price rises above $5 a can and Dave will make a positive economic profit.

Entry increases supply to $S$ and the price falls to $5$ a can.
If supply increases, the price falls below $5 a can and Dave incurs an economic loss.

Exit decreases supply to $S$ and the price rises to $5$ a can.
In the long-run, the price is pulled to $5 a can and Dave makes zero economic profit.
Entry and Exit

- In the long run, firms respond to economic profit and economic loss by either entering or exiting a market.

- New firms enter a market in which the existing firms are making positive economic profits.

- Existing firms exit the market in which firms are incurring economic losses.

- Entry and exit influence price, the quantity produced, and economic profit.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

– The immediate effect of the decision to enter or exit is to shift the market supply curve.

– If more firms enter a market, supply increases and the market supply curve shifts rightward.

– If firms exit a market, supply decreases and the market supply curve shifts leftward.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

– The Effects of Entry

– Economic profit is an incentive for new firms to enter a market, but as they do so, the price falls and the economic profit of each existing firm decreases.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

Figure 15.11 shows the effects of entry.

Starting in long-run equilibrium,

1. If demand increases from $D_0$ to $D_1$, the price rises from $5$ to $8$ a can.

Firms now make economic profits.
Economic profit brings entry.

2. As firms enter the market, the supply curve shifts rightward, from $S_0$ to $S_1$.

The equilibrium price falls from $8$ to $5$ a can, and the quantity produced increases from 90,000 to 140,000 cans a day.
The Effects of Exit

- Economic loss is an incentive for firms to exit a market, but as they do so, the price rises and the economic loss of each remaining firm decreases.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

Figure 15.12 shows the effects of exit.

1. If demand decreases from $D_0$ to $D_2$, the price falls from $5$ to $3$ a can.

Firms now incur economic losses.
Economic loss brings exit.

2. As firms exit the market, the supply curve shifts leftward, from $S_0$ to $S_2$.

The equilibrium price rises from $3$ to $5$ a can, and the quantity produced decreases from 70,000 to 50,000 cans a day.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

- Change in Demand
  - The difference between the initial long-run equilibrium and the final long-run equilibrium is the number of firms in the market.
  - An increase in demand increases the number of firms. Each firm produces the same output in the new long-run equilibrium as initially and makes zero economic profit.
  - In the process of moving from the initial equilibrium to the new one, firms make positive economic profits.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

– A decrease in demand triggers a similar response, except in the opposite direction.

– The decrease in demand brings a lower price, economic loss, and some firms exit.

– Exit decreases market supply and eventually raises the price to its original level.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

- Technological Change
  - New technology allows firms to produce at a lower cost. As a result, as firms adopt a new technology, their cost curves shift downward.
  - Market supply increases, and the market supply curve shifts rightward.
  - With a given demand, the quantity produced increases and the price falls.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

Two forces are at work in a market undergoing technological change.

1. Firms that adopt the new technology make an economic profit.
   - So new-technology firms have an incentive to enter.

2. Firms that stick with the old technology incur economic losses.
   - These firms either exit the market or switch to the new technology.
Output, Price, Profit in the Long Run

- Is Perfect Competition Efficient?
  - Resources are used efficiently when it is not possible to get more of one good without giving up something that is valued more highly.
  - To achieve this outcome, marginal benefit must equal marginal cost. That is what perfect competition achieves.
  - The market supply curve is the marginal cost curve. It is the sum of the firms’ marginal cost curves at all points above the minimum of average variable cost (the shutdown price).
OUTPUT, PRICE, PROFIT IN THE LONG RUN

- The market supply curve is the marginal cost curve.

- The market demand curve is the marginal benefit curve.

- Because the market supply and market demand curves intersect at the equilibrium price, that price equals both marginal cost and marginal benefit.

- Figure 15.13 on the next slide shows the efficiency of perfect competition.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

1. Market equilibrium occurs at a price of $5 a can and a quantity of 90,000 cans a day.

2. Supply curve is also the marginal cost curve.

3. Demand curve is also the marginal benefit curve.
Because marginal benefit equals marginal cost

4. Efficient quantity is produced.

5. Total surplus (sum of consumer surplus and producer surplus) is maximized.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

- Is Perfect Competition Fair?
  - Perfect competition places no restrictions on anyone’s actions—everyone is free to try to make an economic profit.
  - The process of competition eliminates economic profit and brings maximum attainable benefit to consumers.
  - Fairness as equality of opportunity and fairness as equality of outcomes are achieved in long-run equilibrium.
OUTPUT, PRICE, PROFIT IN THE LONG RUN

– But in the short run, economic profit and economic loss can arise.

– These unequal outcomes might seem unfair.
How an Increase in Demand Changes Long-Run Equilibrium for the Firm and Industry

These graphs show what occurs if there is an increase in the demand for Greebes or any other good.
How a Decrease in Demand Changes Long-Run Equilibrium for the Firm and Industry

These graphs show what occurs if there is a decrease in the demand for Greebes or any other good.
Activity 29

Figure 29.1
Competitive Firm and Industry

Diagram A: Cost Situation for Each Greebe Producer

Diagram B: Market Supply and Demand for Greebes
Activity 29

Figure 29.2

Competitive Firm and Industry

Diagram C: New Cost Situation for Each Greebe Producer

Diagram D: New Market Supply and Demand for Greebes
Figure 31.1
Short-Run Economic Profit

Industry

Firm

PRICE

QUANTITY

PRICE

QUANTITY

MC

P = MR
Activity 31

Figure 31.2
Short-Run Economic Loss

Industry

Firm

PRICE

QUANTITY

PRICE

QUANTITY

MC

P = MR
Figure 31.3
Classic Shutdown Position

Industry

Firm

PRICE

PRICE

QUANTITY

QUANTITY

MC

P = MR
Activity 31

Figure 31.4
Long-Run Equilibrium

Industry

Firm

MC

P = MR
Figure 31.5
From Short-Run Profit to Long-Run Equilibrium

Industry

Firm

PRICE

QUANTITY

PRICE

QUANTITY

MC

P = MR
Activity 31

Figure 31.6
From Short-Run Losses to Long-Run Equilibrium

Industry

Firm

PRICE

QUANTITY

PRICE

QUANTITY

MC

P = MR
In 2008, the average price at which old GM could sell a vehicle was $18,000.

To maximize profit (minimize loss), GM sold 8 million vehicles.

Average total cost of 8 million vehicles was $22,000, so the economic loss was $4,000 per vehicle.

With no prospect of turning this loss around, old GM had to exit the industry.
Why Did GM Fail?

The firm’s “restructuring” has plans for cost savings and investment in new green technology vehicles.

Restructuring won’t change the market price—the global market determines the price.

Restructuring won’t lower the marginal cost of a vehicle—technology and factor prices determine marginal cost.
Why Did GM Fail?

Cutting fixed cost is the only way that the new GM can have a major impact on its profitability.

The minimum that the new GM must do is cut fixed cost to shift its $ATC$ curve down from $ATC_O$ to $ATC_N$.

GM can then maximize profit at the same quantity, 8 million vehicles a year and make zero economic profit.