The Meaning of Competition

- A perfectly competitive market has the following characteristics:
  - There are many buyers and sellers in the market.
  - The goods offered by the various sellers are largely the same.
  - Firms can freely enter or exit the market.

As a result of its characteristics, the perfectly competitive market has the following outcomes:
  - The actions of any single buyer or seller in the market have a negligible impact on the market price.
  - Each buyer and seller takes the market price as given.
  - Thus, each buyer and seller is a price taker.
Example of Competitive Markets

- Eggs vs. Nike Sneakers.
- Pay attention to the difference between the two market structures.
- Which brand names do you recognize?

Revenue of a Competitive Firm

Total revenue for a firm is the selling price times the quantity sold.

\[ TR = (P \times Q) \]

Revenue of a Competitive Firm

Marginal revenue is the change in total revenue from an additional unit sold.

\[ MR = \frac{\Delta TR}{\Delta Q} \]
Revenue of a Competitive Firm

For competitive firms, **marginal revenue** equals the price of the good.

<table>
<thead>
<tr>
<th>Quantity (Q)</th>
<th>Price (P)</th>
<th>Total Revenue (TR=PxQ)</th>
<th>Average Revenue (AR=TR/Q)</th>
<th>Marginal Revenue (MR=ΔTR/ΔQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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Profit Maximization for the Competitive Firm

- The goal of a competitive firm is to **maximize profit**.
- This means that the firm will want to produce the quantity that maximizes the difference between total revenue and total cost.
### Profit Maximization: A Numerical Example

<table>
<thead>
<tr>
<th>Price (P)</th>
<th>Quantity (Q)</th>
<th>Total Revenue (TR=P*Q)</th>
<th>Total Cost (TC)</th>
<th>Profit (TR-TC)</th>
<th>Marginal Revenue (MR)</th>
<th>Marginal Cost (MC)</th>
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The firm maximizes profit by producing the quantity at which marginal cost equals marginal revenue.

Costs and Revenue

- **ATC**
- **AVC**
- **MC**
- **P = MR = AR**

**Profit Maximization for the Competitive Firm**

Profit maximization occurs at the quantity where marginal revenue equals marginal cost.
Profit Maximization for the Competitive Firm

When \( MR > MC \) \( \Rightarrow \) increase \( Q \)

When \( MR < MC \) \( \Rightarrow \) decrease \( Q \)

When \( MR = MC \) \( \Rightarrow \) Profit is maximized.
The firm produces up to the point where \( MR=MC \)

The Interaction of Firms and Markets in Competition


The Marginal-Cost Curve and the Firm’s Supply Decision...

This section of the firm’s MC curve is also the firm’s supply curve (long-run).
The Firm’s Short-Run Decision to Shut Down

- A shutdown refers to a short-run decision not to produce anything during a specific period of time because of current market conditions.
- Exit refers to a long-run decision to leave the market.

The firm considers its sunk costs when deciding to exit, but ignores them when deciding whether to shut down.

- Sunk costs are costs that have already been committed and cannot be recovered.

The firm shuts down if the revenue it gets from producing is less than the variable cost of production.

- Shut down if \( TR < VC \)
- Shut down if \( TR/Q < VC/Q \)
- Shut down if \( P < AVC \)
The Firm's Short-Run Decision to Shut Down...

- If \( P > \text{AVC} \), keep producing in the short run.
- If \( P < \text{AVC} \), shut down.
- If \( P > \text{ATC} \), keep producing at a profit.

The portion of the marginal-cost curve that lies above average variable cost is the competitive firm's short-run supply curve.

The Firm's Long-Run Decision to Exit or Enter a Market

- In the long-run, the firm exits if the revenue it would get from producing is less than its total cost.
  - Exit if \( TR < TC \)
  - Exit if \( TR/Q < TC/Q \)
  - Exit if \( P < ATC \)
The Firm’s Long-Run Decision to Exit or Enter a Market

- A firm will enter the industry if such an action would be profitable.
  - Enter if \( TR > TC \)
  - Enter if \( TR/Q > TC/Q \)
  - Enter if \( P > ATC \)

The Competitive Firm’s Long-Run Supply Curve...

- Costs
- Firm enters if \( P > ATC \)
- Firm exits if \( P < ATC \)
- MC = Long-run S
- ATC
- AVC

Quantity