Chapter 8

Profit Maximization and Competitive Supply

Q: Decision Making of Owner-managed Business

- Suppose you are running a small business.
  - What is your objective?
  - What are you supposed to decide?
  - What is profit?
  - How can you make your profit max?

Perfectly Competitive Markets

- Basic assumptions of Perfectly Competitive Markets

1. (   )
2. Product homogeneity
3. Free entry and exit

Profit Maximization

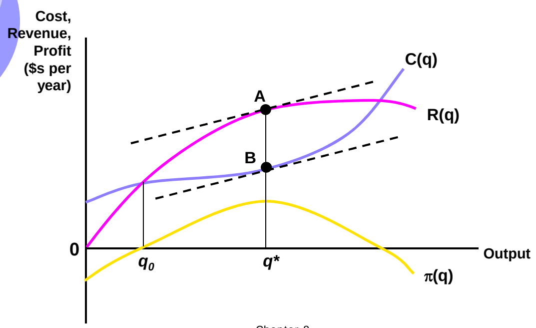
- (   ) for the firm, π, is difference between revenue and costs

$$\boxed{\pi(q) = R(q) - C(q)}$$

Profit Maximization

- Slope in (   ) curve is the marginal revenue
  - Change in revenue resulting from a one-unit increase in output
- Slope of (   ) curve is marginal cost
  - Additional cost of producing an additional unit of output

Profit Maximization



Marginal Revenue, Marginal Cost, and Profit Maximization

- Profit is maximized at the point at which an additional increment to output leaves profit unchanged

$$\pi = R - C$$

$$\frac{\Delta \pi}{\Delta q} = \frac{\Delta R}{\Delta q} - \frac{\Delta C}{\Delta q} = 0$$

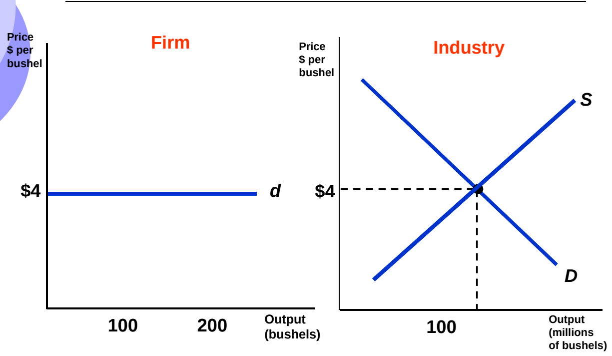
$$MR - MC = 0$$

$$MR = MC$$

The Competitive Firm

- (   ) – price is determined at the market by demand and supply
- Demand curve faced by an individual firm is a (   )
- Demand curve faced by whole market is downward sloping

The Competitive Firm

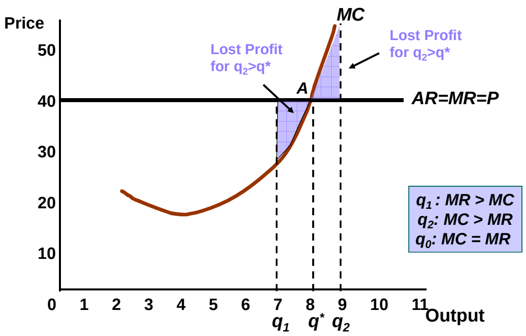


The Competitive Firm

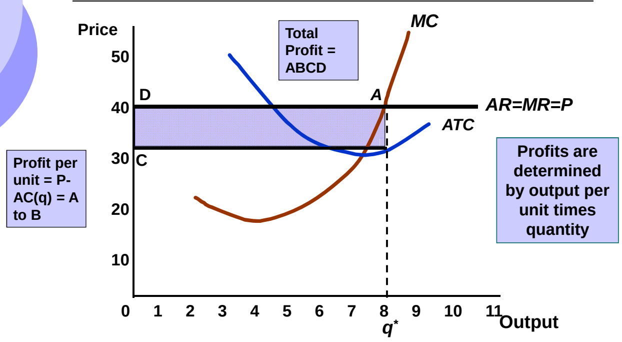
- The competitive firm's demand
  - (   ) with the horizontal demand curve
- For a perfectly competitive firm, profit maximizing output occurs when

$$\boxed{MC(q) = MR = P = AR}$$

A Competitive Firm



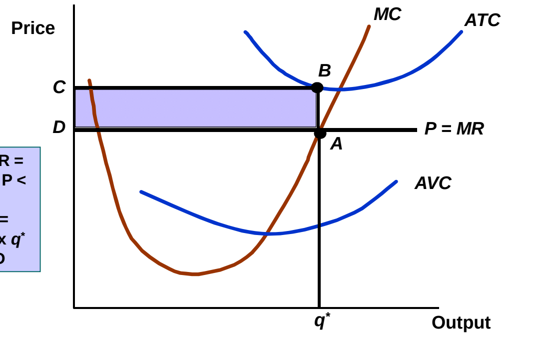
A Competitive Firm – Positive Profits



Q: What to do when π < 0?

- A firm does not have to make profits
- It is possible a firm will incur losses if the (   ) for the profit maximizing quantity
  - Profit per unit is negative (P – AC < 0)

A Competitive Firm – Losses



At q^*: MR = MC and P < ATC
Losses = (P- AC) x q^* or ABCD

Choosing Output in the Short Run

- Summary of Production Decisions
  - Profit is maximized when MC = MR
  - If P > ATC the firm is making profits.
  - If P < ATC the firm is making losses

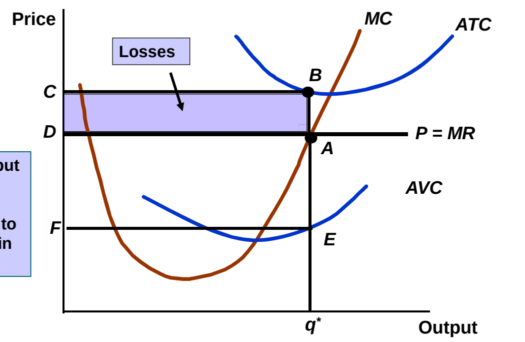
Short Run Production

- Why would firm produce at a loss?
- Firm has two choices in short run
  - Continue producing
  - Shut down temporarily
  - Will compare profitability of both choices

Short Run Production

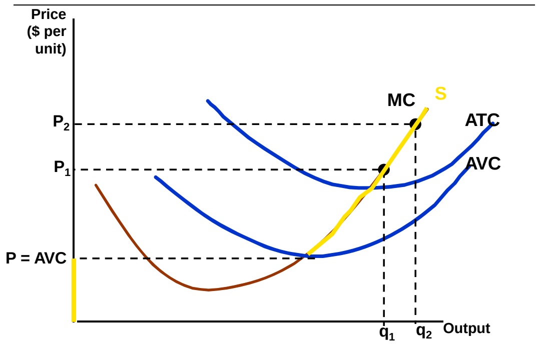
- When should the firm shut down?
  - If AVC < P < ATC the firm should continue producing in the short run
  - If AVC > P < ATC the firm should shut-down.

A Competitive Firm – Losses

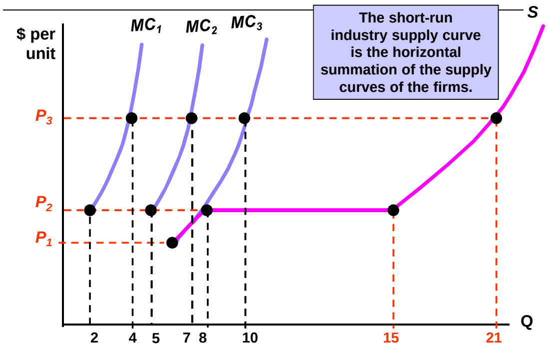


P < ATC but > AVC so firm will continue to produce in short run

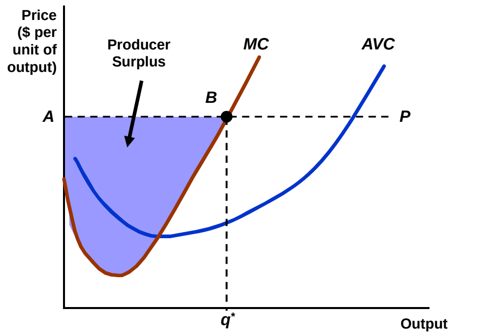
A Competitive Firm's Short-Run Supply Curve



Industry Supply in the Short Run



Producer Surplus for a Firm



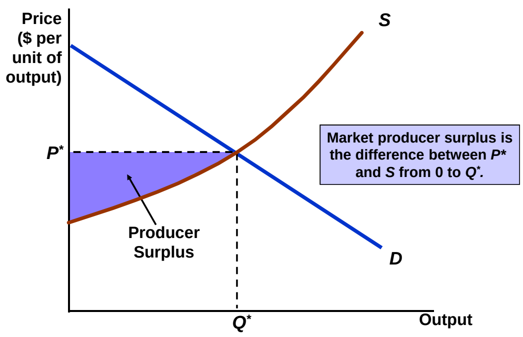
Producer Surplus versus Profit

- ( ) is revenue minus total cost (not just variable cost)
- When fixed cost is positive, producer surplus is greater than profit

$$\text{Producer Surplus} = PS = R - VC$$

$$\text{Profit} = \pi - R - VC - FC$$

Producer Surplus for a Market



Choosing Output in the Long Run

- In short run, one or more inputs are fixed
- ( ), a firm can alter all its inputs, including the size of the plant.
- We assume ( ) and free exit.

Long-run Competitive Equilibrium

- (   )
  - Profits will attract other producers.
  - More producers increase industry supply which lowers the market price.
  - This continues until there are no more profits to be gained in the market – zero economic profits

Long-Run Competitive Equilibrium – Profits