

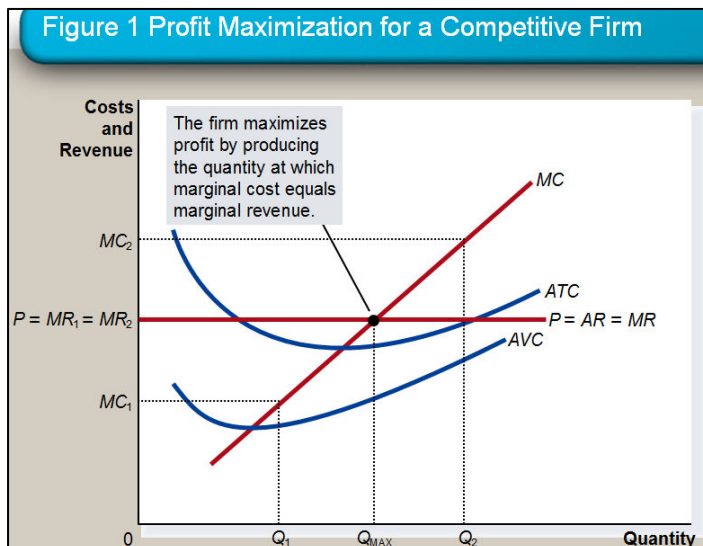
Chapter 14: Firms in Competitive Markets (Lecture Outline)

I. What is a Competitive Market?

- A. A perfectly competitive market has the following characteristics:
- i. There are *many* buyers and sellers in the market
 - ii. The goods offered by the various sellers are largely the *same* (*homogenous*)
 - iii. Firms can *freely* enter or exit the market
- B. As result of its characteristics, perfectly competitive market has following *outcomes*:
- i. The actions of any single buyer or seller in the market has *negligible impact* on the market price
 - ii. Each buyer and seller takes the *market price as given*
- C. A competitive market has many buyers and sellers trading identical products (*perfect substitutes*) so that each buyer and seller is a *price taker* (must accept market price)
- D. Total revenue for a firm is the *selling price* times the *quantity sold*
- i. $TR = P \times Q$
 - ii. Proportional to the *amount of output*
- E. Average revenue tells us how much revenue a firm receives for the typical unit sold
- i. *Total revenue* divided by *quantity sold*
 - ii. $AR = TR / Q = \text{Price}$
 - iii. In *all* firms, average revenue *equals* the price of the good
- F. Marginal revenue is the change in total revenue from an additional unit sold
- i. $MR = \Delta TR / \Delta Q = \text{Price}$
 - ii. For *competitive* firms, marginal revenue *equals* the price of the good

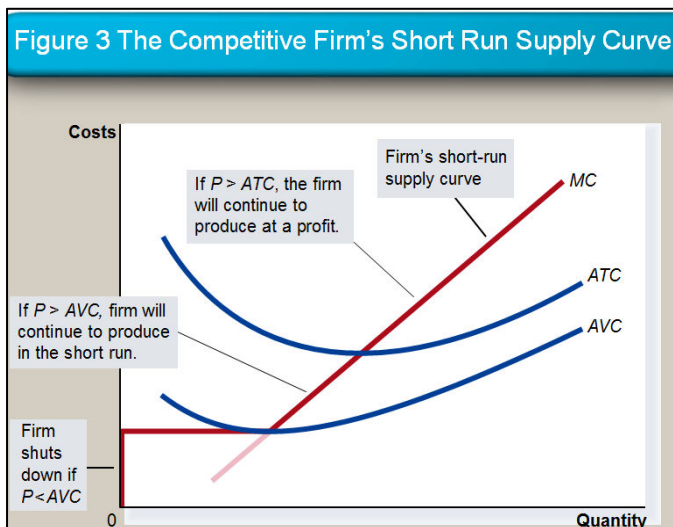
II. Profit Maximization and the Competitive Firm's Supply Curve

- A. The goal of a competitive firm is to *maximize profit*
- B. This means that the firm will want to produce the quantity that maximizes the *difference between total revenue and total cost*
- C. Profit maximization occurs at the quantity where *marginal revenue = marginal cost*



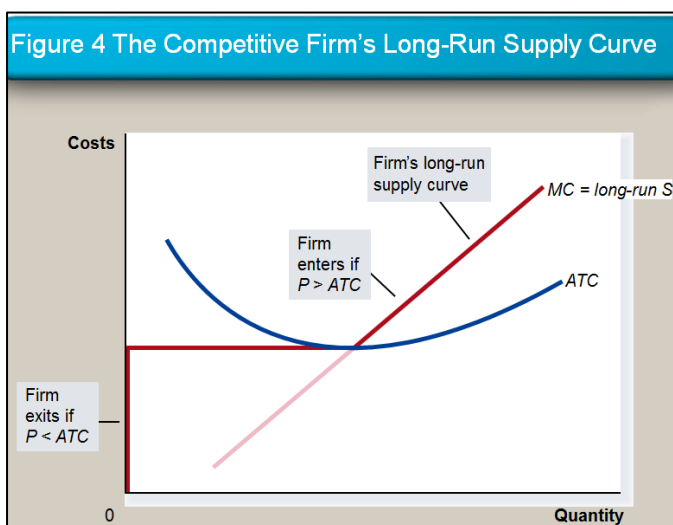
- When $MR > MC$ increase Q to increase profit
- When $MR < MC$ decrease Q to increase profit
- When $MR = MC$ profit is maximized
- Because the firm's *marginal-cost curve* determines the quantity of the good the firm is willing to supply at any price, it is competitive firm's *supply curve*

- D. **Shutdown**—refers to a *short-run decision* not to produce anything during a specific period of time b/c of current market conditions
- E. **Exit**—refers to a *long-run decision* to leave the market
- F. The firm considers its *sunk costs* when deciding to *exit*, but *ignores* them when deciding whether to *shut down*
- Sunk costs**—costs that have already been committed and cannot be recovered
 - Opposite of opportunity costs
- G. The firm *shuts down* if the revenue it gets from producing is *less than* the variable cost of production



- **Shut Down...**
 - If $TR < VC$
 - If $TR/Q < VC/Q$
 - If $P < AVC$
- Portion of marginal-cost curve that lies *above* average variable cost is the competitive firm's *short-run supply curve*

H. In the *long run*, the firm *exits* if the revenue it would get from producing is *less than* its total cost



- **Exit...**
 - If $TR < TC$
 - If $TR/Q < TC/Q$
 - If $P < ATC$
- A firm will *enter* the industry if such an action would be *profitable*
- **Enter...**
 - If $TR > TC$
 - If $TR/Q > TC/Q$
 - If $P > ATC$
- Competitive firm's *long-run supply curve* is the portion of its marginal-cost curve that lies *above* average total cost

I. $\text{Profit} = (P - ATC) \times Q$

III. The Supply Curve in a Competitive Market

- A. Short-Run Supply Curve—the portion of its *marginal cost curve* that lies *above average variable cost*
- B. Long-Run Supply Curve—the *marginal cost curve* above the *minimum point* of its *average total cost curve*
- C. *Market supply* = *sum* of the *quantities* supplied by the *individual firms* in the market
- D. The Short Run: Market Supply with a Fixed Number of Firms**
 - i. For any given price, each firm supplies a *quantity of output* so that its *marginal cost equals price*
 - ii. The market supply curve reflects the *individual firms' marginal cost curves*
- E. The Long Run: Market Supply with Entry and Exit**
 - i. Firms will enter or exit the market until profit is driven to *zero*
 - ii. In the long run, price equals the *minimum of average total cost*
 - iii. The long-run market supply curve is *horizontal* at this price
 - iv. At the end of the process of entry and exit, firms that remain must be making *zero economic profit*
 - v. The process of entry and exit ends only when *price* and *average total cost* are driven to *equality*
 - vi. Long-run equilibrium must have firms operating at *efficient scale*
- F. Why Do Competitive Firms Stay in Business If They Make Zero Profit?**
 - i. $Profit = total\ revenue - total\ cost$
 - ii. Total cost includes all the *opportunity costs* of the firm
 - iii. In the *zero-profit equilibrium*, the firm's revenue *compensates* the owners for the *time and money* they expend to keep the business going
- G. A Shift in Demand in the Short Run and Long Run**
 - i. An *increase* in *demand* raises *price* and *quantity* in the *short run*
 - ii. *Firms earn profits* b/c *price* now *exceeds average total cost*
- H. Why the Long-Run Supply Curve Might Slope Upward**
 - i. Some resources used in production may be available only in *limited quantities*
 - ii. Firms may have *different costs*
 - iii. Marginal firm—firm that would *exit* the market if the price were any *lower*
 - iv. Because firms can enter and exit *more easily* in the *long run* than in the short run, the *long-run supply curve* is typically *more elastic* than the *short-run supply curve*