

An aerial photograph of a city landscape. In the foreground, there is a large green golf course with a winding path and a small pond. A multi-lane road curves through the middle of the image, intersecting with another road. The background shows a city skyline with various buildings under a clear blue sky.

# Unit 2

## Supply in a Competitive Market (Ch. 8)

### 10/9

**ECON 323 – MICROECONOMIC THEORY – DR. STRICKLAND**

# Introduction



For some output level, firms choose the cheapest input mix

- Cost minimization problem

How much output should the firm produce?

- This decision is driven by the desire to maximize profit

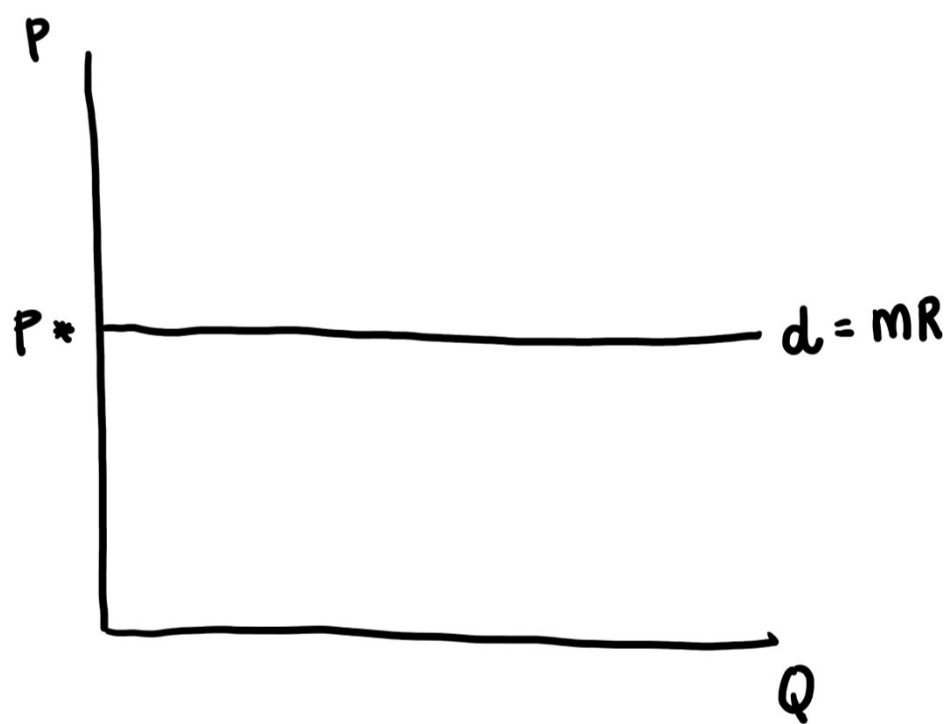
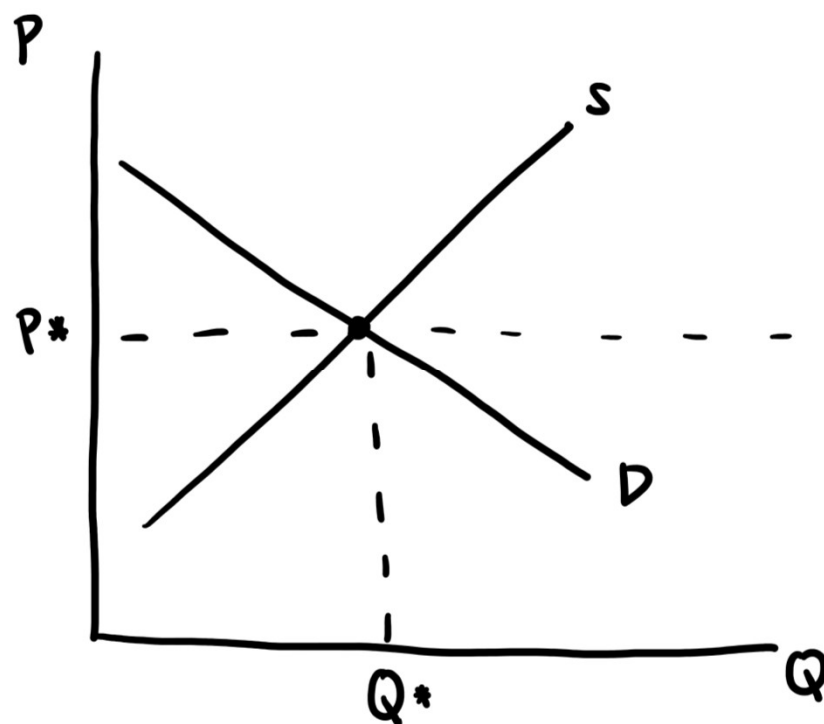
Profit maximizing behavior depends on a firm's market structure

- This chapter focuses on perfect competition

# Demand curve for perfectly competitive firms



If a firm must sell its product at the same price, no matter the quantity produced, what does its demand curve look like?



# Profit maximization



Goal: maximize **profit**

$$\overset{\text{ECON. PROFIT}}{\pi} = \underbrace{TR}_{P \times Q} - \underbrace{TC}_{VC + FC} \quad \text{ECON. COST}$$

\*  $\pi$  MAX RULE:  $MR = MC$

\* FOR PC FIRM:  $P = MR$   
 $\Rightarrow \pi \text{ MAX: } P = MC$

# Profit maximization



$$ATC = \frac{TC}{Q}$$

$$\Rightarrow Q \cdot ATC = TC$$

3 SCENARIOS  
OF ATC:

ATC<sub>1</sub>:  $\pi > 0$

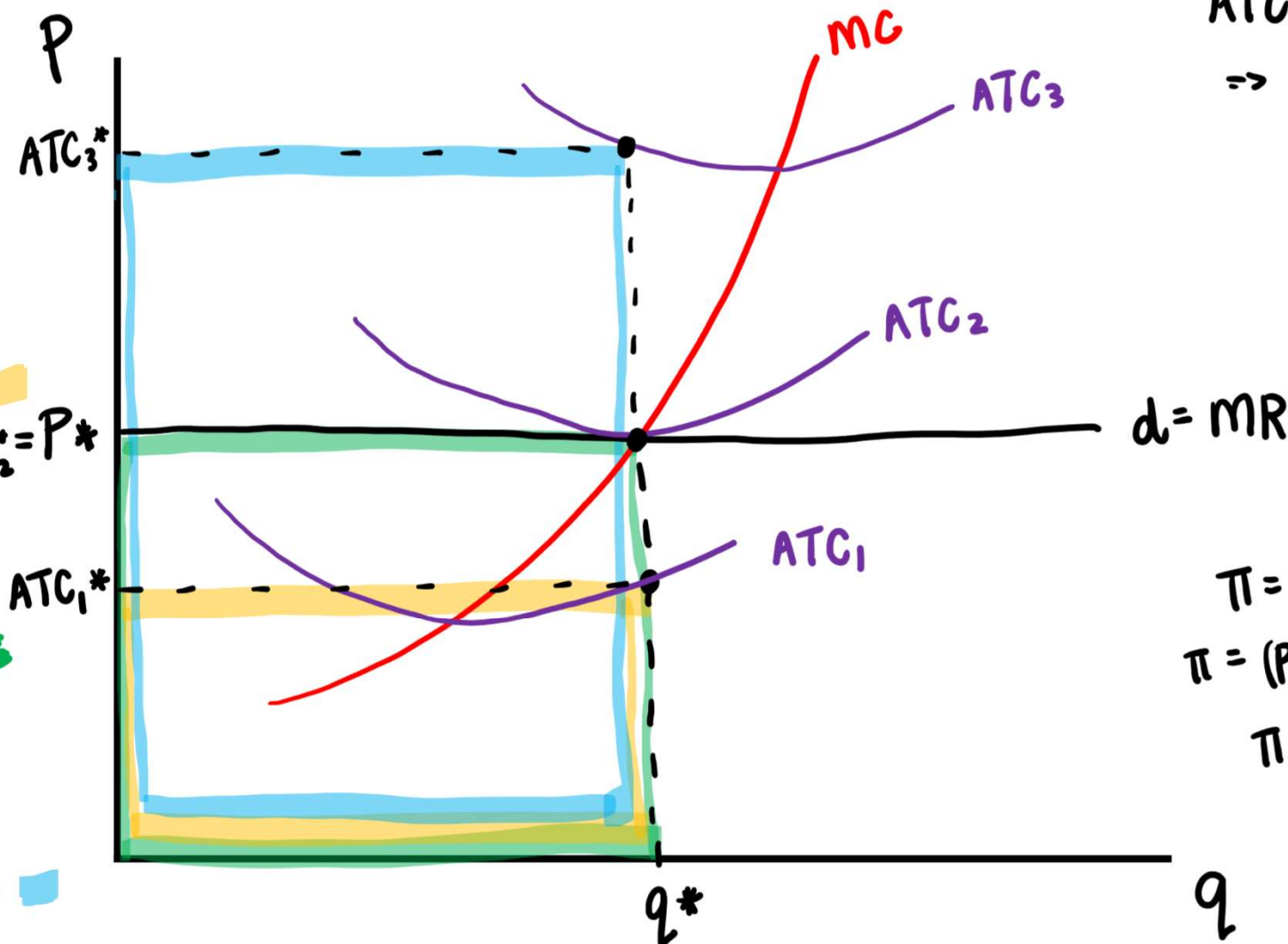
TR =  TC =   
 $ATC_2^* = P^*$

ATC<sub>2</sub>:  $\pi = 0$

TR =  TC = 

ATC<sub>3</sub>:  $\pi < 0$

TR =  TC = 



$$\pi = TR - TC$$

$$\pi = (P \times Q) - (ATC \times Q)$$

$$\pi = (P - ATC) \times Q$$



# Short-run shutdown decision



## What happens if profit is negative? Should a firm shut down?

LP:  $\pi < 0 \Rightarrow$  SHUT DOWN (EXIT)

SR:  $\pi = TR - VC - FC$   $\searrow$  SUNK

$TR < VC \Rightarrow$  SHUT DOWN (STOP PRODUCING)

$$P \times Q < VC$$
$$\Rightarrow P < \frac{VC}{Q} \Rightarrow P < AVC$$

# Short-run shutdown decision & firm supply curve

