An aerial photograph of a city landscape. In the foreground, there is a large, multi-lane intersection with several cars. To the left of the intersection is a golf course with green fairways and a small pond. In the background, there are various city buildings, including a large white building that looks like a university or government building. The sky is clear and blue.

# Unit 1

## Demand Curves (Ch. 2)

### 9/18

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

# Introduction



In this chapter, we'll look closer at the **demand curves** we derived in chapter 5.

- Determinants of demand
- Demand curves vs. inverse demand curves
- Elasticity

# Demand



**Demand:** the consumer's desire to purchase a good/service

What matters for demand?

1. Price **LAW OF DEMAND:  $P \uparrow, Q \downarrow$  &  $P \downarrow, Q \uparrow$**

2. Income/wealth

3. Tastes/preferences

4. Prices of other goods

5. Number of consumers (if examining market demand)

# Demand Curves



A demand curve isolates the effect of price on demanded <sup>QUANTITY</sup>

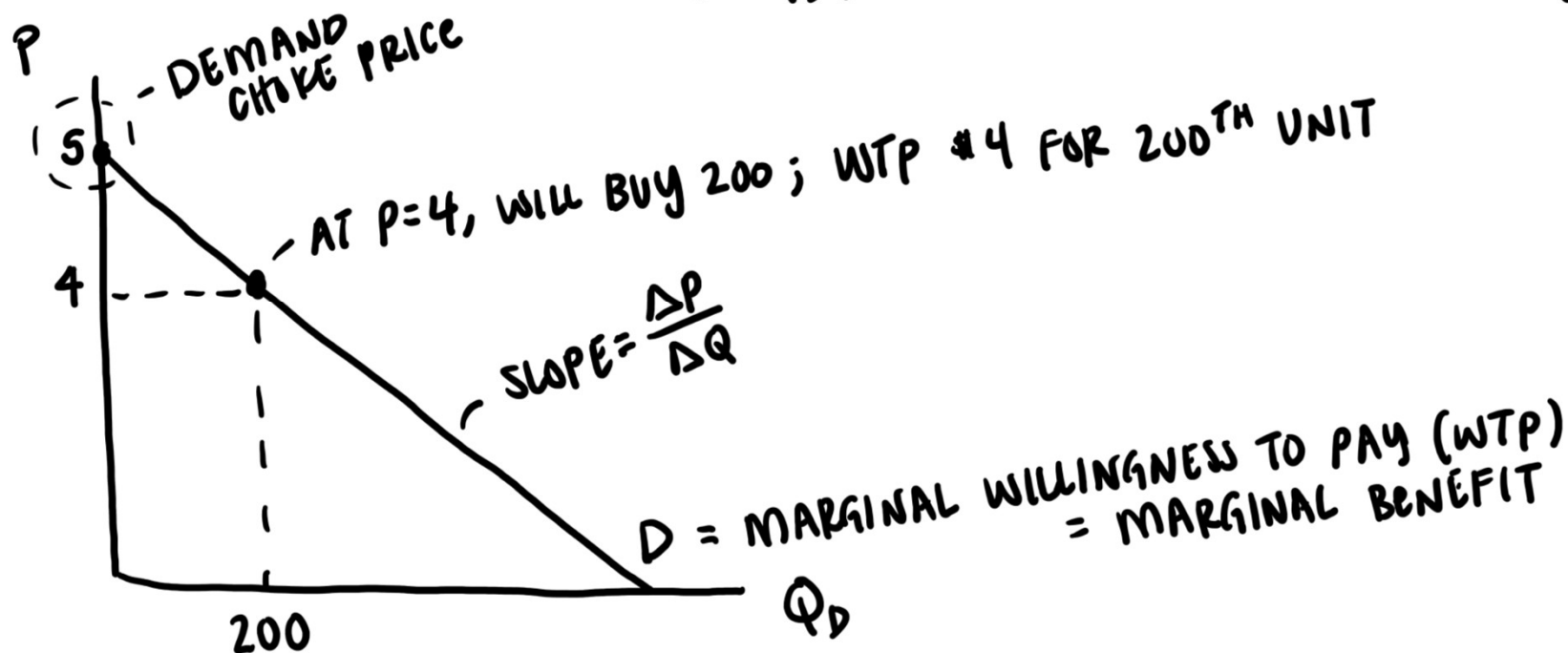
$$y = mx + b$$

- Economists plot the inverse demand curve

DEMAND CURVE:  $Q_D = f(P)$  ex.  $Q_D = 1000 - 200P$

INVERSE DEMAND CURVE:  $P = f(Q_D)$  ex.  $P = 5 - 0.005Q_D$

\* WHAT WE GRAPH



# Price Elasticity of Demand



**Price elasticity of demand:** the percentage change in quantity demanded divided by the percentage change in price

$$\epsilon_D = \frac{\% \Delta Q_D}{\% \Delta P} = \frac{\frac{\Delta Q_D / Q_D}{\Delta P / P}}{\quad} = \boxed{\frac{\Delta Q_D}{\Delta P} \cdot \frac{P}{Q_D} \text{ - old}}$$

new-old  
old

\* ELASTICITY  
BTWN 2  
PRICES

$$\frac{\Delta Q_D}{\Delta P} = \frac{1}{\Delta P / \Delta Q}$$

$\frac{\Delta P}{\Delta Q}$  is SLOPE INVERSE  
DEMAND

}

$$\epsilon_D = \frac{1}{\text{SLOPE}} \cdot \frac{P}{Q_D}$$

OF INVERSE  
demand

\* ELASTICITY  
AT A PRICE



# Characterizing Price Elasticity of Demand



When price elasticity of demand is high...

- **Elastic**  $|\epsilon_D| > 1$
- Infinitely high? **Perfectly elastic**  $|\epsilon_D| = \infty$

$$\epsilon_D = \frac{\% \Delta Q_D}{\% \Delta P} \Rightarrow$$

$$\text{A } 1\% \Delta P \Rightarrow \epsilon_D \% \Delta Q_D$$

$$\text{e.g. } \epsilon_D = -2$$

When price elasticity of demand is low...

- **Inelastic**  $|\epsilon_D| < 1$
- Zero? **Perfectly inelastic**  $|\epsilon_D| = 0$

$$\text{UNIT. ELASTIC: } |\epsilon_D| = 1$$