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Lecture 2

Consumer Choice & Demand

Economics
& Society

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Previously in E&S

- ★ Course presentation
- ★ Definition of Economics
- ★ Micro vs. Macro
- ★ Opportunity Cost / Economic vs. Accounting Profit
- ★ Ceteris paribus / post hoc propter ergo hoc fallacy ▶
- ★ Representative agent ▶
- ★ Utility basics ▶
- ★ Graphs & Equations ▶

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Question:


– Is there a **one-and-only** characteristic that determines what has **value** and what not?

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Consumer Choice & Demand




THE BUDGET




UTILITY




DEMAND



ELASTICITY OF DEMAND



CROSS-PRICE ELASTICITY



INCOME ELASTICITY

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The price elasticity of demand

> Elasticity

- ★ A demand curve **shows** how quantity demanded responds to changes in price along a **wide range** of prices
- ★ However, usually we **only need** information in the vicinity of the **current price**
- ★ A way to measure the response of quantity to price **at a specific price point** is the **elasticity of demand** (ϵ_d)

ϵ_d **measures** the percentage change in quantity demanded of a good **resulting from a percentage change in the good's price**

$$\epsilon_d = \frac{\% \Delta Q}{\% \Delta p} \quad \text{or} \quad \epsilon_d = \frac{\Delta Q / Q}{\Delta p / p}$$

- ★ The price elasticity of demand will always be **negative**

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Elasticity of demand – example

> Elasticity

$$\epsilon_d = \frac{\% \Delta Q}{\% \Delta p} \quad \text{or} \quad \epsilon_d = \frac{\Delta Q / Q}{\Delta p / p}$$

- ★ Assume that:
 - ▶ Price **increases** from \$10 to \$12
 - ▶ Quantity responds by **decreasing** from 50 to 45.
- ★ Then,

$$\frac{\Delta Q}{Q} = \frac{45 - 50}{50} = -0.1 \quad \text{and} \quad \frac{\Delta p}{p} = \frac{\$12 - \$10}{\$10} = 0.2$$
- ★ Thus,

$$\epsilon_d = \frac{-0.1}{0.2} = -0.5$$

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Elastic goods

> Elasticity

- ★ If a good has $-\infty < \epsilon_d < -1$,
 - ▶ The $\% \Delta p$ causes a **larger** $\% \Delta Q$
 - ▶ Consumers are **too responsive** in price changes.

- ★ **For example**, p increases from \$10 to \$11 $\Delta p / p = 0.1$
 Q decreases from 500 to 400 $\Delta Q / Q = -0.2$
 $\epsilon_d = -2$, which means that drop in quantity is **double** than the increase in price
- ★ What **kind** of goods are elastic?
- ★ What happens to the **revenue** of elastic goods?
 - ▶ Revenue **before**: $\$10 \cdot 500 = \$5,000$
 - ▶ Revenue **after**: $\$11 \cdot 400 =$

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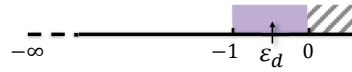
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Inelastic goods

> Elasticity

★ If a good has $-1 < \epsilon_d < 0$,

- ▶ The $\% \Delta p$ causes a **smaller** $\% \Delta Q$
- ▶ Consumers **respond a little** to price changes.



★ **For example**, p increases from \$10 to \$11 $\Delta p/p = 0.1$
 Q decreases from 500 to 475 $\Delta Q/Q = -0.05$

$\epsilon_d = -0.5$, which means that drop in quantity is half than the increase in price

★ What **kind** of goods are inelastic?

★ What happens to the **revenue** of inelastic goods?

- ▶ Revenue **before**: $\$10 \cdot 500 = \$5,000$
- ▶ Revenue **after**: $\$11 \cdot 475 =$

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Demand elasticities estimates (at current price)

> Elasticity

Goods	Price Elasticity
Olive Oil	-1.92
Peanut Butter	-1.73
Ketchup	-1.36
Wine	-1.00
Laundry Detergent	-0.81
Shampoo	-0.79
Potato chips	-0.45
Cigarettes	-0.40

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Elasticity for linear demand

★ A **linear** demand will be of the form

$$p = a - b \cdot q$$

constant
gradient

★ For instance:

$$p = 20 - 2q$$

$$\text{or } p = 5 - q$$

$$\text{or } p = 10,000 - 0.43q$$

★ Its elasticity of demand will **always** be given by

$$\epsilon_D = 1 - \frac{a/b}{q}$$

★ If, for instance, $p = 20 - 2q$, then $\epsilon_D = 1 - \frac{10}{q}$

- ▶ Elasticity is **NOT constant** along a linear demand (**varies** with q)
- ▶ A product becomes **more inelastic** ($\epsilon_D \rightarrow 0$) as its quantity (q) **increases**

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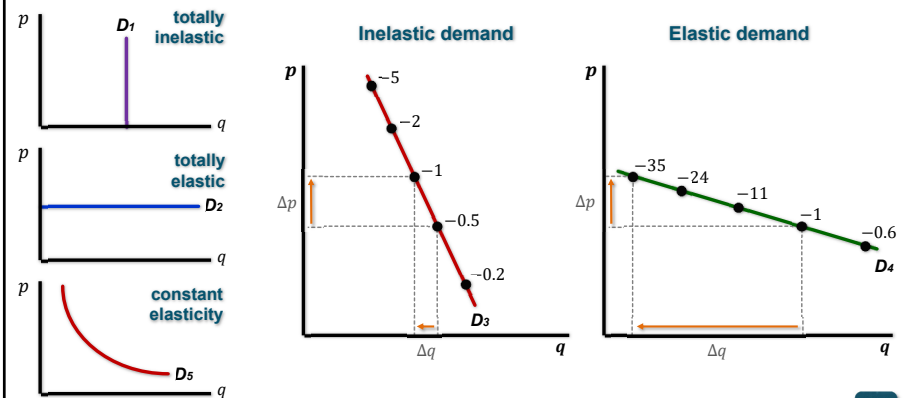
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Demand curves & elasticity

> Elasticity



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Determinants of elasticity of demand

> Elasticity

1. Strength of **need** and availability of **substitutes**:
 - ▶ Consumers are **less willing to tolerate** price increases for goods that can be **easily substituted** or just **avoided**
 - ▶ The **harder** the substitution, the **more inelastic** the product will be.
2. **Budget share** spent on the good:
 - ▶ When total expenditure for a good is a **small share** of the budget, consumers **care less** for its price
 - ▶ The **smaller** the share, the **more inelastic** the product will be.
3. **Time**: ⚠
 - ▶ Products tend to become **more elastic over time** as consumers gradually discover **new substitutes** that cover the same need but cheaper.

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Uses outside Economics

> Elasticity

- ★ Elasticity is a **valuable** measurement of response
- ★ Moreover, elasticity **can reveal** what happens beyond the observable result:
 - ▶ **Brand** loyalty
 - ▶ **Election** results
 - ▶ Inter-personal **relationships**
 - ▶ Choosing a **future**

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Internal video

This video presents Cross-price elasticity and Income elasticity. Everything you need to know with theory and examples.



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Thank you!

(you are welcomed to stay for consultation or discussion)

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WARNING!

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