

Kosmas Marinakis, Ph.D.

## 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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## The economic problem

> The economic problem

- ★ Given **scarcity** all societies must answer **3 basic questions**:
  1. **What** gets produced?
  2. **How** is it produced?
  3. **Who** gets what is produced?
- ★ Societies **adopt economic systems** to answer:
  - ▶ **Command** economies: a **central authority** directly decides for the answers maximizing joint utility
  - ▶ **Laissez-faire** economies: individuals **pursue their own self-interests** without any central direction or regulation
  - ▶ **Mixed systems**: individuals **pursue their own self-interests** but some sort of **government** intervenes to provide public goods, to redistribute income and to stabilize the macro economy.

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## Consumer Choice & Demand

Estimated duration: 90min



THE BUDGET



UTILITY



DEMAND



ELASTICITY OF DEMAND



CROSS-PRICE ELASTICITY



INCOME ELASTICITY

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## The Law of Demand

> Demand

- ★ Demand shows the **willingness to pay** for each quantity
- ★ The **law of demand states** that price and quantity are **inversely related**
- ★ An **increase in the price of the good** causes:
  - ▶ The **budget line** to rotate inwards
  - ▶ The consumer to find a **new optimal choice** on the new budget line
  - ▶ There, a **lower quantity** of the good will be **demand**ed.
- ★ This occurs due to **two reasons**:
  - ▶ The **income effect**: as the price of a good increases, consumers **cannot afford** to buy the same quantity
  - ▶ The **substitution effect**: as the price of a good increases, consumers tend to **substitute** it with similar goods whose price has not increased.

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## The demand equation

> Demand

- ★ The relationship between price and quantity can be conveniently described by a **demand equation**, for **example**

$$q = 14 - 2p$$

if the item was **free** I would get **14 units** – then for every dollar increase in price, I would get **2 units less**
- ★ The easiest way to **estimate** a demand relationship is to **survey** consumers:
 

“**How much** would you buy if price was \$5? What if it was \$6, \$7, etc.”
- ★ Consumers, **consider** the given price, the prices of competing goods, their income and their preferences, calculate their **optimal choice** and come up with a **quantity**.

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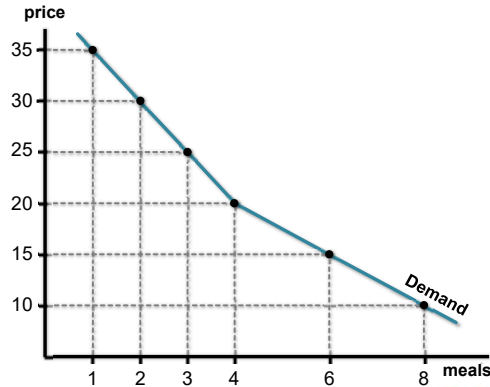
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## Example: My demand for Indian food

> Demand

- ★ Consider the following **schedule** regarding meals per month for different prices:

Price	Meals
10	8
15	6
20	4
25	3
30	2
35	1



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## Demand and changes in price !

> Demand

- ★ **Demand** shows how price and quantity demanded are **related**:
  - ▶ Price and quantity demanded are **variables** (that is, numbers, values)
  - ▶ Demand is a **relationship** (that is, a correspondence between values).
- ★ If **price** increases from \$10 to \$15:
  - ▶ Quantity will **decrease** from 8 to 6
  - ▶ BUT demand will **NOT change**.
- ★ **Demand** will change **only** if something makes the consumer buy **different quantities** at those prices:
  1. A change in **tastes** or **preferences**
  2. A change in **income** or **wealth**
  3. A change in the prices of **related products**
  4. A change in the **expectations** for the future

Price	Meals
10	8
15	6
20	4
25	3
30	2
35	1

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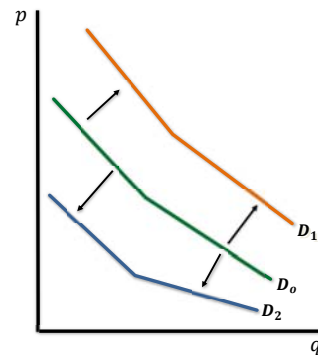
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## Shifts in demand for Indian food

> Demand

- ★ My **salary** increases ( $D_1$ ):
  - ▶ Or I **inherit** \$10M
  - ▶ Or the price of **Italian** food increases
- ★ I start a **diet** ( $D_2$ ):
  - ▶ Or I move **further away** from Little India
  - ▶ Or a **recession** is **expected**



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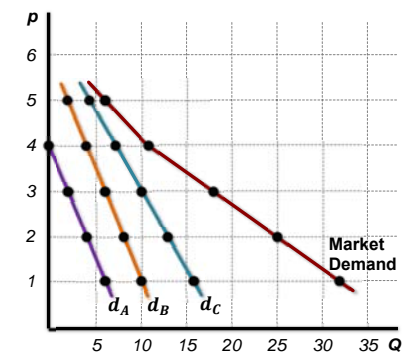
## The market demand

> Demand > Market Demand

- ★ Consider the **individual demands** by consumers A, B and C

$p$	$q_A$	$q_B$	$q_C$	$Q$
1	6	10	16	32
2	4	8	13	25
3	2	6	10	18
4	0	4	7	11
5	0	2	4	6

- ★ The market demand will be the **sum of quantities** per each price



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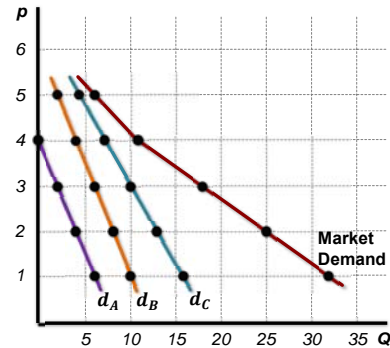
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## Remarks on the market demand

> Demand > Market Demand

- ★ Market demand is influenced by the **preferences** of individual consumers
- ★ But is additionally affected by the **number** of consumers  
if **more consumers** join the market, the market demand will shift to the **right**.



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## External video



In this CNBC video, watch how everything from this lecture applies in real world. How the Covid-19 crisis accelerated the decay in demand of one of the most iconic foods of the century: milk.



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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** ( $\epsilon_d$ )

$\epsilon_d$  **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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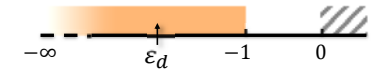
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## Elastic goods

> Elasticity

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

a % increase in price ( $\Delta p/p$ )  
causes a **larger** % decrease in quantity ( $\Delta Q/Q$ )



★ **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 loss in sales 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**:  $\$11 \cdot 400 = \$4,400$

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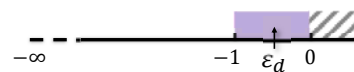
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## Inelastic goods

> Elasticity

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

a % increase in price ( $\Delta p/p$ )  
causes a **smaller** % decrease in quantity ( $\Delta Q/Q$ )



★ **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 loss in sales 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**:  $\$11 \cdot 475 = \$5,225$

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## Demand elasticities estimates

> 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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## Determinants of elasticity of demand

> Elasticity

### 1. Availability of **substitutes**:

- ▶ Consumers are **less willing to tolerate** price increases for goods that can be **easily substituted**
- ▶ The **easier** the substitution, the **more elastic** 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 alternative ways to cover the need.

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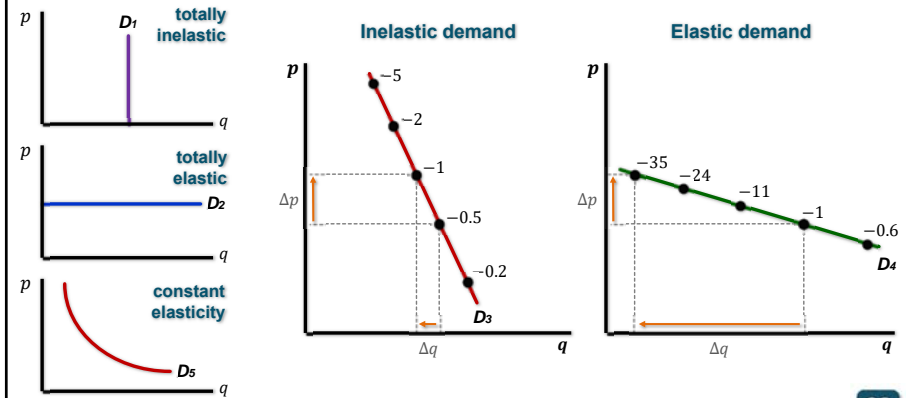
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## Demand curves & elasticity

> Elasticity



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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! ⚠**

The slides in this handout are created with the intention to serve a visual aid for the audience during the live presentation of the material in the lecture. As such, **they are not designed to be standalone reading material** and should be used strictly as **reference**, side by side with notes taken in the lecture. Studying solely from the slides **is not recommended** and might in some cases **mislead** those who have not attended the relevant lecture. **Less than 20% of tasks in test and exam can be answered solely from the slides.**

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