

Essentials of Economics

Chapter 4: Elasticity

General Economics

Ferdowsi University of Mashhad

Winter Term 2023-24

Elasticity

- ❖ **Elasticity:** a measure of the **responsiveness** of quantity demanded or quantity supplied to a **change** in one of its **determinants**.
- ❖ Price Elasticity of Demand: a measure of how much the quantity demanded of a good responds to a change in the price of that good, computed as the percentage change in quantity demanded divided by the percentage change in price

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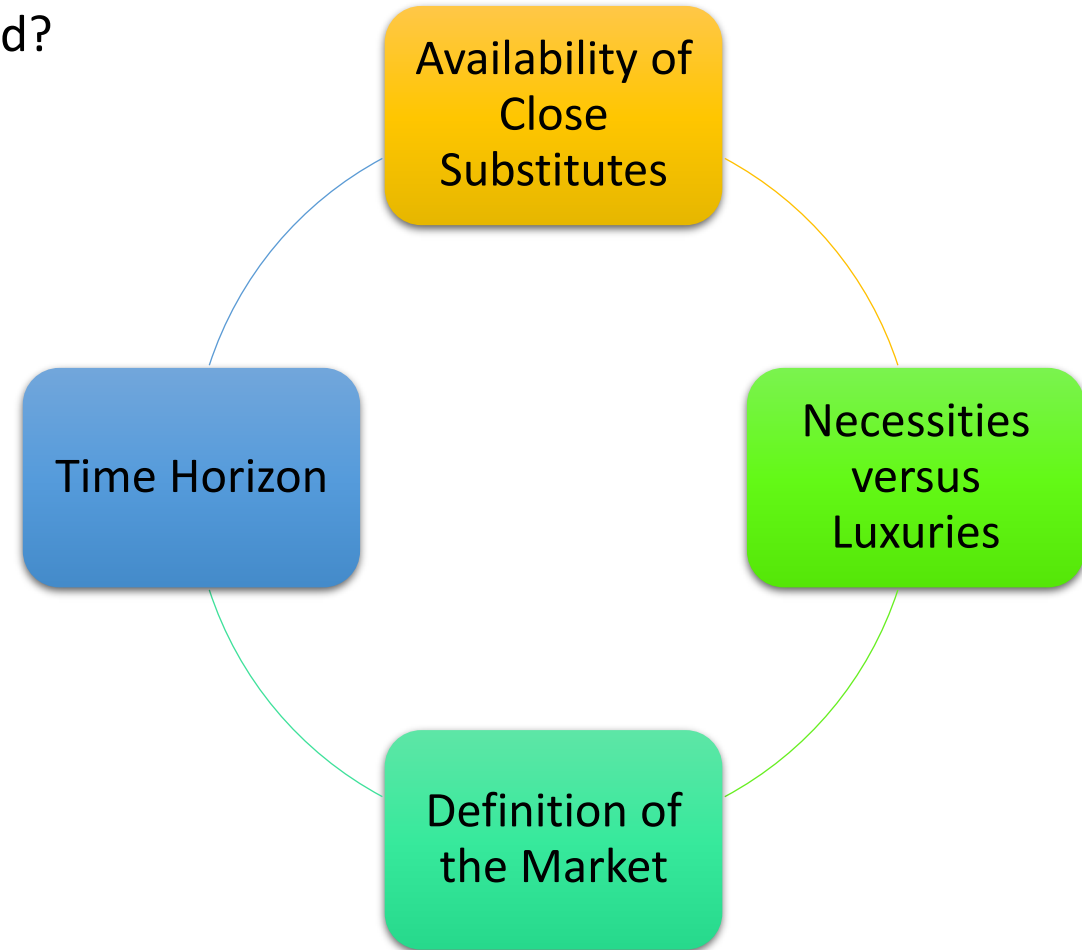
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How willing consumers are to **buy less** of the good as its **price rises**.

- ❑ what does influence the price elasticity of demand?

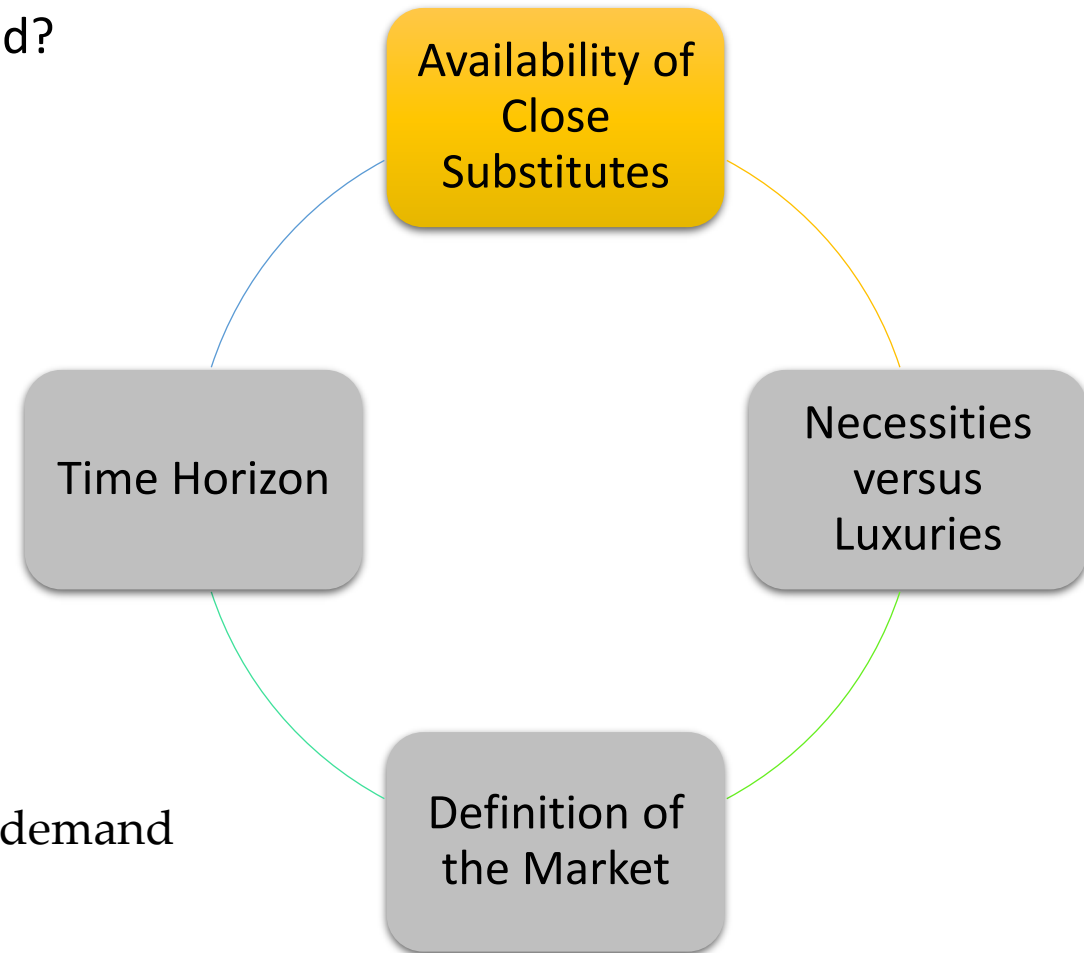
Elasticity

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Elasticity

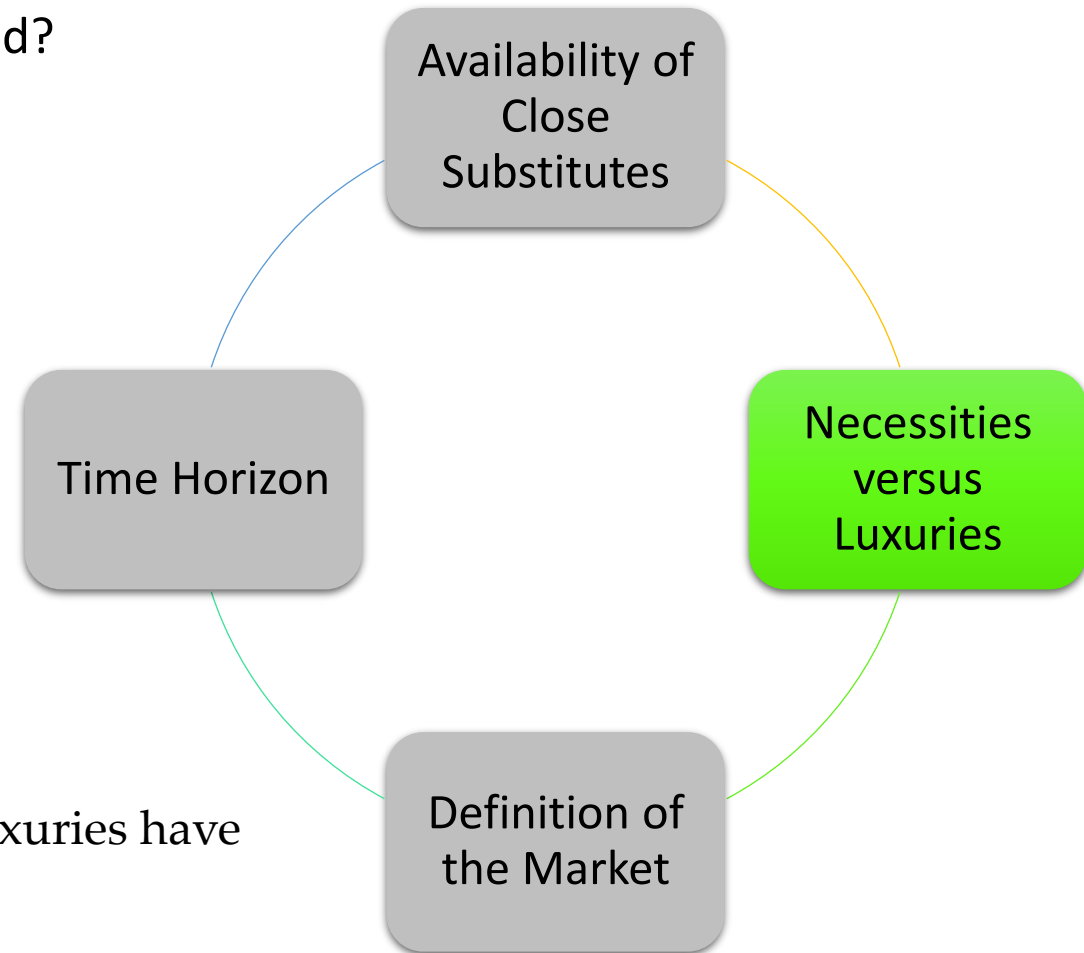
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Goods with close substitutes tend to have more elastic demand

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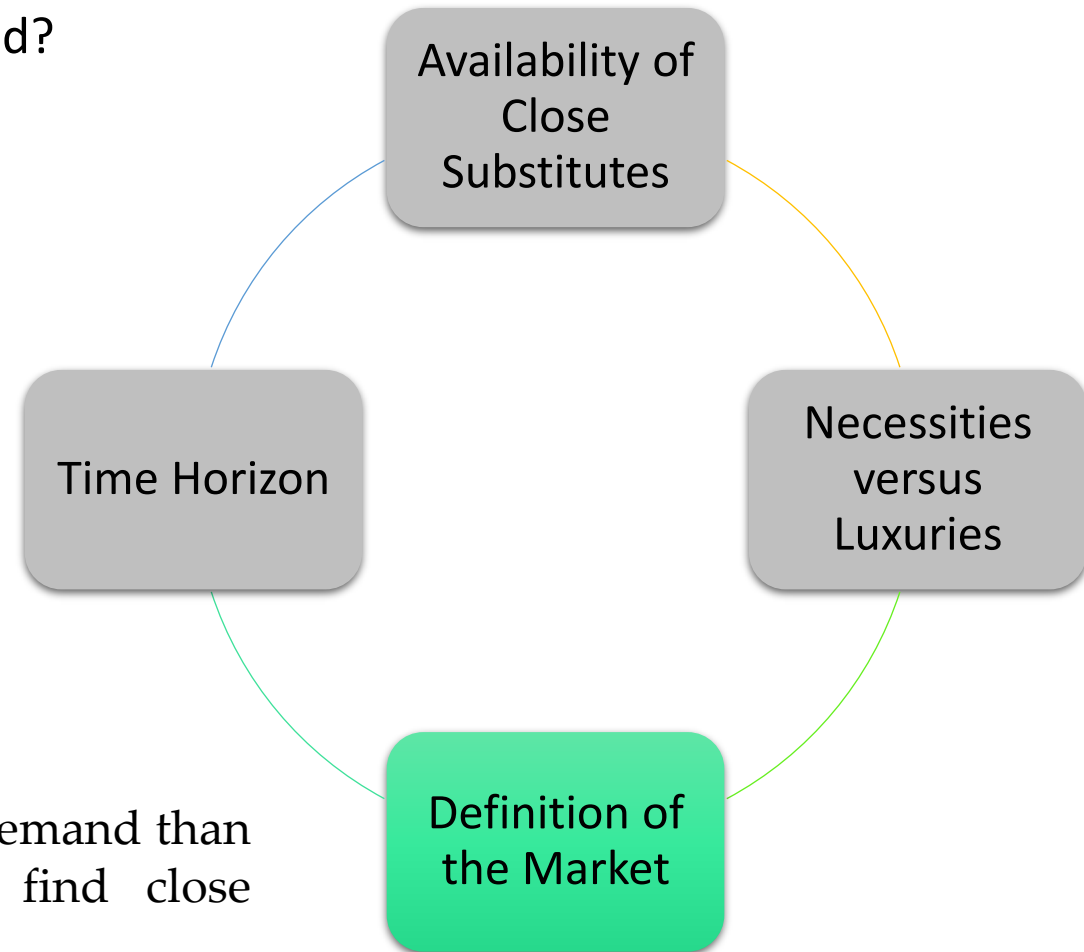
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Necessities tend to have inelastic demands, whereas luxuries have elastic demands.

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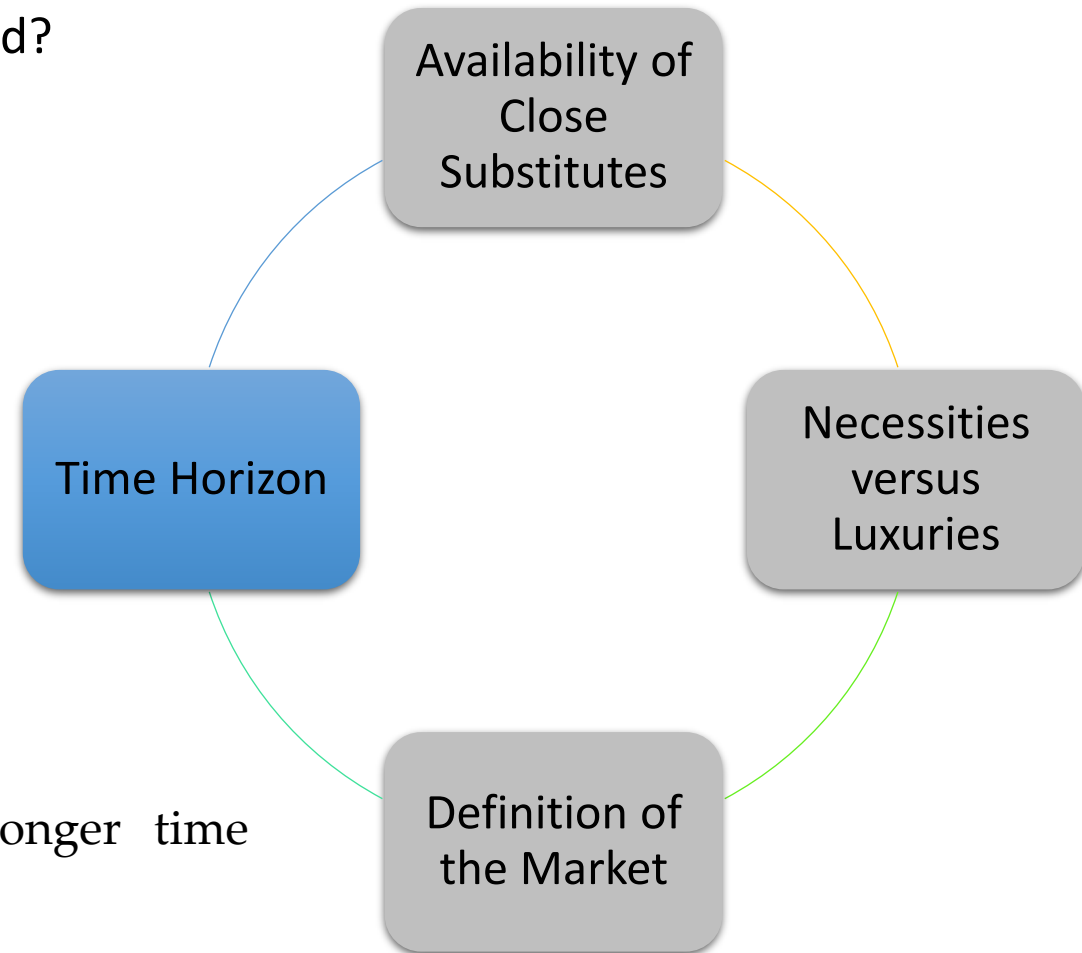
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Narrowly defined markets tend to have more elastic demand than broadly defined markets because it is easier to find close substitutes for narrowly defined goods.

Elasticity

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- ❑ There is no general rule BUT:



Goods tend to have more elastic demand over longer time horizons.

❖ Computing the Price Elasticity of Demand:

$$\text{Price elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}.$$

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$$\text{Price elasticity of demand} = \frac{20 \text{ percent}}{10 \text{ percent}} = 2.$$

The Midpoint Method: A Better Way to Calculate Percentage Changes and Elasticities

If you try calculating the price elasticity of demand between two points on a demand curve, you will quickly notice an **annoying problem**: The elasticity from point A to point B seems different from the elasticity from point B to point A. For example, consider these numbers:

Point A: Price = \$4 Quantity = 120

Point B: Price = \$6 Quantity = 80

Going from point A to point B, the price rises by 50 percent, and the quantity falls by 33 percent, indicating that the price elasticity of demand is $33/50$, or 0.66. By contrast, going from point B to point A, the price falls by 33 percent, and the quantity rises by 50 percent, indicating that the price elasticity of demand is $50/33$, or 1.5.

The **Midpoint Method**: A Better Way to Calculate Percentage Changes and Elasticities

The midpoint method computes a percentage change by dividing the change by the midpoint (or average) of the initial and final levels. For instance, \$5 is the midpoint between \$4 and \$6. Therefore, according to the midpoint method, a change from \$4 to \$6 is considered a 40 percent rise because $(6 - 4) / 5 * 100 = 40$. Similarly, a change from \$6 to \$4 is considered a 40 percent fall.