Chapter 5: Elasticities (English)

Section 1.1: Price Elasticity of Demand

Price Elasticity of Demand (PED) measures how responsive the quantity demanded of a good is to changes in its price. Essentially, it shows how much the demand for a product will increase or decrease following a change in its price.

The formula for PED is: $PED = \frac{\%\triangle Quantity\ Demanded}{\%\triangle Price}$. This calculation reveals how sensitive consumers are to price changes. If PED is greater than 1, the product is considered elastic, meaning consumers respond significantly to price changes. A PED less than 1 indicates inelastic demand, where price changes have little effect on the quantity demanded. For example, a 10% decrease in the price of a product that results in a 15% increase in demand shows high elasticity.

A high elasticity indicates that demand for a product is sensitive to price changes; for example, a small decrease in the price of a luxury good can lead to a large increase in the quantity demanded. Conversely, a low elasticity means that demand is relatively unresponsive to price changes, as seen with necessities like basic food items and fuel.

Understanding PED is crucial for businesses in setting prices to maximize revenue. For instance, a company may reduce prices slightly on an elastic product to increase sales volume and overall revenue, whereas prices on inelastic goods can be raised without significantly reducing sales volume. This concept also informs tax policy, where governments might impose higher taxes on inelastic goods to increase revenue without causing a substantial decrease in sales.

Section 1.2: Price Elasticity of Supply

Price Elasticity of Supply (PES) measures the responsiveness of the quantity supplied of a good to a change in its price. High elasticity means that suppliers can increase production quickly in response to price increases, while low elasticity indicates that production cannot be easily changed in the short term.

Factors affecting PES include the availability of materials, mobility of factors of production, time period considered, and the level of spare production capacity.

The formula for price elasticity of supply is $PES = \frac{\%\Delta Quantity\ Supplied}{\%\Delta Price}$. Goods with a YED greater than 1 are considered normal goods or luxuries; they see greater demand as consumer incomes increase. For example, if consumer income increases by 5% and the demand for luxury cars increases by 15%, the YED is 3.0, indicating a luxury good.

For example, agricultural products have variable elasticity because they depend heavily on external factors such as weather and growing conditions. In contrast, manufactured goods tend to have a higher elasticity because production can be ramped up or down more swiftly.

Understanding PES helps businesses and governments predict how changes in price will affect supply quantities. This is vital for planning and can influence decisions on imports and exports, resource allocation, and industrial strategy to optimize economic outcomes based on expected market conditions.

Section 1.3: Income Elasticity of Demand

Income Elasticity of Demand (YED) measures how the quantity demanded of a good changes as consumer income changes. This metric helps assess whether goods are necessities or luxuries. The formula for the income elasticity of demand is $YED = \frac{\%\Delta Quantity\ Demanded}{\%\Delta\ Income}$. Goods with a YED greater than 1 are considered normal goods, or luxuries; as income increases, the demand for these goods grows at a faster rate than income. Goods with a YED of less than 1 are necessities; demand increases with income but not as rapidly.

For example, as people's income rises, they might buy more restaurant meals (a luxury) rather than just more groceries (a necessity). Conversely, during economic downturns, demand for luxury goods typically falls faster than demand for necessities.

YED is a crucial tool for businesses to predict changes in consumer spending patterns based on economic trends. It also helps governments to understand which sectors may be most affected by economic changes, guiding welfare and economic policies to better stabilize consumption across different income brackets.

Section 1.4: Fun Facts

- Did you know that during economic downturns, fast food often exhibits inelastic demand? People turn to cheaper dining options, but the overall quantity of fast food consumed doesn't drop as drastically as might be expected based on income reductions, showing the inelastic nature of such goods during recessions.
- Did you know Alfred Marshall was the first to differentiate between elastic and inelastic demand in his book "Principles of Economics" published in 1890? His insights are still foundational in economic teachings today.

- Did you know that in emerging markets, the income elasticity for technology products is typically higher than in developed markets? As incomes rise in these countries, the demand for technology often increases at an even faster rate, reflecting a strong desire to catch up with technological advancements.