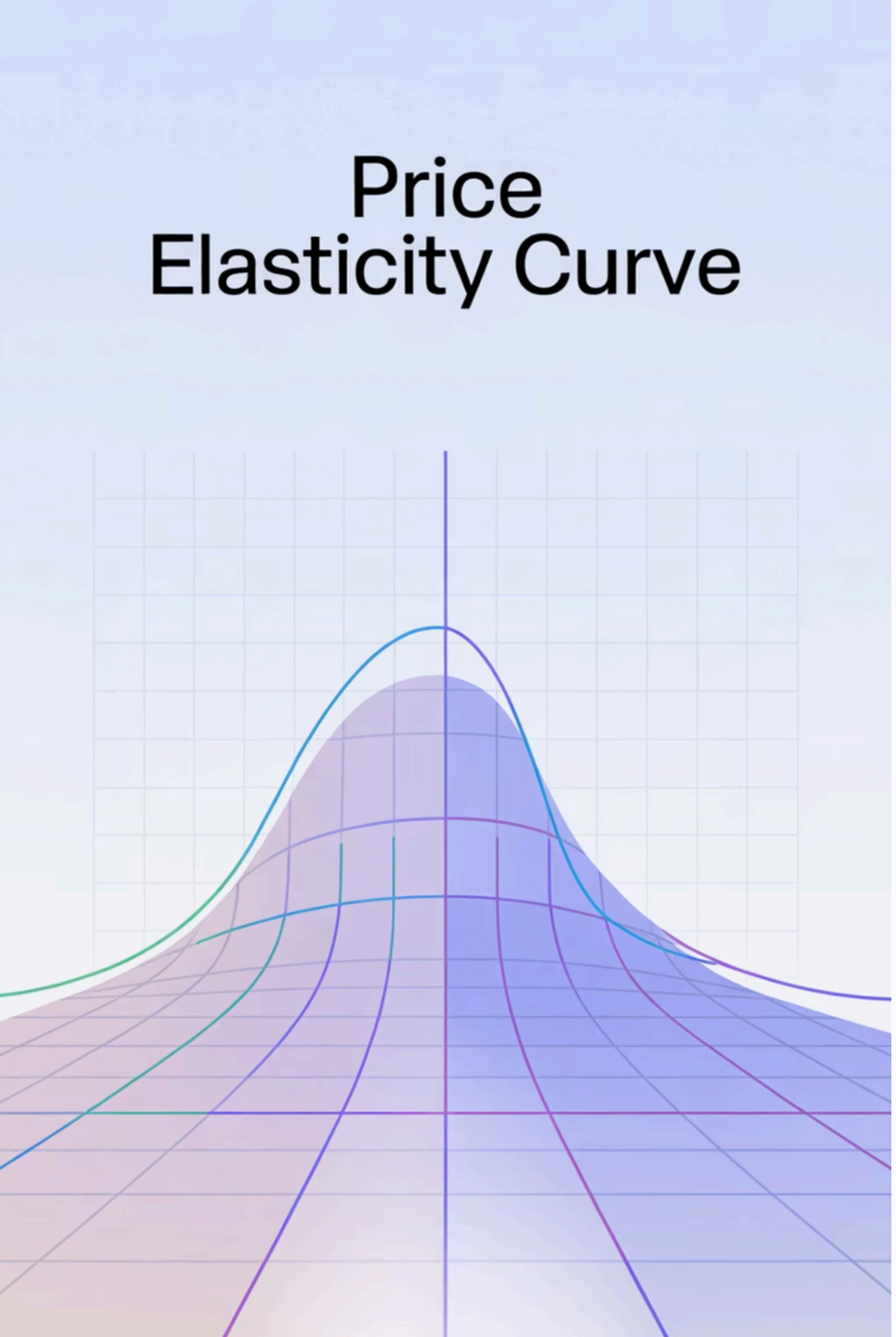


Elasticity of Demand and Its Business Applications

Welcome to Week 3 of our Economics for Business course. This week, we'll explore the critical concept of elasticity and how businesses can leverage this powerful economic tool to optimize pricing strategies, forecast market responses, and maximize revenue.

What is Elasticity?

Elasticity measures how responsive one economic variable is to changes in another. In business contexts, it quantifies how sensitive consumers are to changes in various market factors.

Think of elasticity as the "stretchiness" of demand or supply - how much they expand or contract when conditions change.

> Elasticity provides businesses with a mathematical tool to predict market behavior and optimize decision-making.

Price Elasticity of Demand: Formula and Graphs

The Formula

$$PED = \frac{\%\ \text{Change in Quantity Demanded}}{\%\ \text{Change in Price}}$$

When |PED| > 1: Elastic demand (responsive to price)

When |PED| < 1: Inelastic demand (less responsive)

When |PED| = 1: Unit elastic demand

The steeper the demand curve, the more inelastic the demand. The flatter the curve, the more elastic the demand.

Determinants of Elasticity

Availability of Substitutes

More substitutes lead to higher elasticity. Products with many alternatives (like specific brands of cereal) tend to have elastic demand.

Necessity vs. Luxury

Necessities (medication, basic food) tend to be inelastic. Luxuries (vacation packages, designer clothing) tend to be elastic.

Budget Share

Items consuming a larger portion of consumers' budgets tend to have more elastic demand as price changes have greater impact.

Time Horizon

Demand typically becomes more elastic over time as consumers can adjust their behavior and find alternatives.

Elasticity and Revenue: Strategic Insights

The Revenue Rule

1. For elastic demand (|PED| > 1): Price ↓ → Revenue ↑
2. For inelastic demand (|PED| < 1): Price ↑ → Revenue ↑
3. For unit elastic demand (|PED| = 1): Revenue remains constant regardless of price changes

Understanding this relationship allows businesses to strategically adjust prices to maximize total revenue.

Cross Elasticity and Income Elasticity

Cross-Price Elasticity (XED)

$$XED = \frac{\%\ \text{Change in Quantity Demanded of Good A}}{\%\ \text{Change in Price of Good B}}$$

Positive XED: Substitutes (coffee and tea)

Negative XED: Complements (printers and ink)

Zero XED: Unrelated goods

Income Elasticity (YED)

$$YED = \frac{\%\ \text{Change in Quantity Demanded}}{\%\ \text{Change in Income}}$$

Positive YED: Normal goods

YED > 1: Luxury goods (high-end electronics)

Negative YED: Inferior goods (bus travel vs. car ownership)

Business Pricing Strategies Using Elasticity

Price Discrimination

Charging different prices to different consumer segments based on their elasticity (student discounts, senior pricing, business vs. economy class).

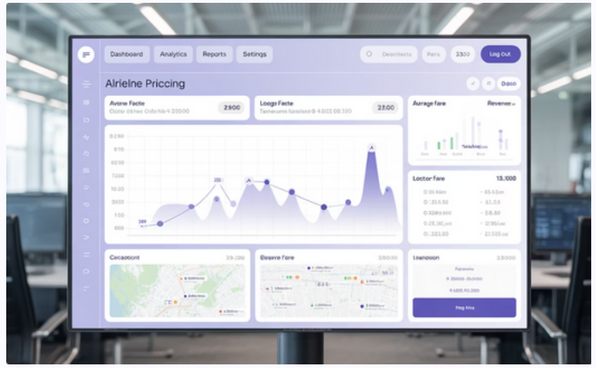
Peak-Load Pricing

Charging higher prices during peak demand periods when demand is less elastic (electricity rates, hotel rooms during high season).

Bundling

Combining products with different elasticities to capture consumer surplus and increase overall revenue (cable TV packages, software suites).

Elasticity in Real-World Markets



Airlines

Use sophisticated elasticity models for dynamic pricing. Business travelers have inelastic demand (less price-sensitive), while leisure travelers have elastic demand.

Technology

New tech products often start with inelastic demand (early adopters), becoming more elastic as competition increases and substitutes emerge.

FMCG

Fast-moving consumer goods typically have high cross-price elasticity due to brand substitutability, leading to frequent promotions and competitive pricing.