Price Elasticity of Demand (PED) Knowledge File

What is Price Elasticity of Demand?

Imagine for a moment there's a xBox game that you really want to buy. If the price goes up, you might still buy it because you really want it. That means your demand for that game isn't very elastic - it doesn't change much with price increases/decreases.

However, imagine there's another game you'd like to buy and play, but you're not as keen as the one in the example before. If the price goes up, you might decide it's not worth it anymore and you won't buy it. That means your demand for that game is more elastic - it changes more with price increases/decreases.

So, PED tells marketing directors and managers how much people's buying habits change when the price changes. If a product or service is elastic, consumers are sensitive to price changes, and therefore, demand is likely to fall at a greater percentage than the rise in price. If the product or service is inelastic, consumers aren't as sensitive, so while demand will fall, it'll fall at a smaller percentage than the rise in price.

What is Price Elastic Demand?

A product that's price elastic will see a greater change in demand following a price increase or decrease. For example, when the price of an elastic product like football tickets or concert tickets has been increased by 5%, demand falls by 6%, and therefore, sales revenue declines. However, when the price of an elastic product decreases by 5%, demand increases by 6%, and therefore, sales revenues increase. Most products and services are price elastic.

What is Price Inelastic Demand?

A product that's price inelastic will see a smaller change in demand following a price increase or decrease. For example, when the price of an inelastic product like gas heating has increased by 10%, demand will change, but fall less than 10%, so it could be just 2% fall in demand, for instance. However, if the price for gas heating is reduced by 10%, demand may only increase by 2%, because the need is satisfied at the lower price.

How to Calculate Price Elasticity of Demand?

PED = Percentage Change in Quantity Demanded / Percentage Change in Price

Example using 10% gas heating price increase: -0.2 = -0.02 (2%) / +0.1 (10%)

How to Interpret the Numerical Values in Price Elasticity of Demand?

When calculating PED, it'll always give us a negative number e.g., -0.2. It's always negative because there's an inverse relationship between price and demand. So, it means every 1% increase in the price of a product, we can expect demand to fall by 0.2% using the example above. Note in the example above the minus symbol was used for demand. If the price fell, then you'd use the minus symbol in that part of the formula.

To determine whether a product is price elastic or inelastic, we must ignore the minus symbol. Once we ignore the minus symbol, we want to know if PED is greater than, less than or equal to 1. If it's greater than 1, it's price elastic, if it's less than 1, and if it's equal to 1, it's unitary.

What are the Factors that Influence Price Elasticity of Demand?

Necessity

Products and services that are deemed necessities by consumers will be price inelastic. Bread, milk, tap water, central heating, electricity and properties. When the prices rise, people still buy bread and turn on the central heating, but may use slightly less.

Habit

Products and services that are necessities to some people are typically classified as habits. Behaviours like smoking cigarettes, drinking alcohol and eating chocolate. When the price rises, these consumers will continue to buy them, which makes these products inelastic.

Availability of substitutes

Products and services with lots of substitutes, either the same, very similar or different but the same purpose, will be elastic. So, products with limited substitutes will be elastic because consumers have a lack of choice to buy the product or service elsewhere.

Proportion of income

Products and services that represent a small percentage of consumers' incomes like a can of coke can be inelastic compared to those that represent a high proportion like a car.

Branding

Products that are well differentiated with branding in terms of characteristics, features, designs, functionality, good reputations, good values, can be inelastic, compared to generic products and services.

Time

In the short-term, products and service types are inelastic, but in the long-term, they become elastic, due to increased availability of substitutes. For example, fuel as a product type is inelastic. So, if the price jumps 30% in a month, drivers will still pay it, albeit reluctantly. However, over 10 years, more consumers will either switch to fuel-efficient cars or switch to electric cars.