**Price Elasticity of Demand**

Definition

Price elasticity measures tile extent to which demand for a product changes when its price is changed.

When a company increases the price of a product, it expects to lose some sales. Some customers will switch to a rival supplier; others may decide they do not want (or cannot afford) the product at all. Economists use the term 'the law of demand' to suggest that, almost invariably:



Price elasticity looks beyond the law of demand to ask the more subtle question: 'When the price goes up, by how much do sales fall?' Elasticity measures the extent to which price changes affect demand.

[**Who is Martin Shkreli - 'the most hated man in America'?**](http://www.bbc.co.uk/news/world-us-canada-34331761)

Price elasticity of demand

Case Study

In the short term, the most important factor affecting demand is price. When the price of the Independent newspaper increased from £1.20 to £1.40 in 2013, sales fell by 9 per cent between May and October, whereas the Telegraph's price rise from £1 to £1.20 (the year before) cut sales by just 4 per cent. Readers of the Independent proved more price sensitive than readers of the Telegraph. Therefore, the owners of the ' Telegraph could feel delighted with their pricing decision. Selling 4 percent fewer papers but receiving 20 per cent more for each one sold meant a significant boost to revenue and profits.

Some products are far more price sensitive than others. Following a 5 per cent increase in price, the demand for some products may fall sharply; say by more than 20 per cent. The demand for another type of product may fall by less than 1 per cent.



Price elasticity can be calculated using the formula shown below:

Price elasticity = % change in quantity demanded

 % change in price

Price elasticity measures the percentage effect on demand of each 1 per cent change in price. So if a 10 per cent increase in price led to demand falling by 2 per cent, the price elasticity would be 2. Strictly speaking, price elasticities are always negative and therefore the actual figure is - 2. This is because a price rise pushes demand down, and a price cut pushes demand up.

Determinants of price elasticity of demand

Why do some products, services or brands have low price elasticity of demand, and some high elasticity? Why is the price elasticity of demand for Branston Baked Beans higher than that of Heinz Baked Beans? Or the price elasticity of demand for the Financial Times as low as -0.05 while the price elasticity of demand for Look magazine is as high as -2.0 (that is, 40 times higher)?

The main determinants of price elasticity are as follows.

The degree of product differentiation

The extent to which the product is perceived as unique

The availability of substitutes

Customers see 7up and Sprite as similar drinks. Customers will buy the cheaper of the two.

We receive our water supplies from Yorkshire Water. I do not consider bottles water as a close substitute. Demand for mains supplied water is very price inelastic. If the price doubled, I may consider watering the garden and washing the car a little less frequently, but demand will fall very little (the kids still need to get showered and clothes need to be washed!)

1. **Do you think that Yorkshire water is free to alter prices as they see fit? If not, why not?**

Branding and brand loyalty

Products with low price elasticity of demand are those that consumers buy without thinking about the price tag. Some reach for Coca- Cola without checking its price compared with Pepsi, or buy a Harley-Davidson motorcycle even though a Honda superbike may be £4,000 cheaper. Strong brand names with strong brand images create customers who buy out of loyalty.

1. **Why do companies spend so much money on developing brand loyalty?**
2. **Identify products which you consider yourself to be brand loyal towards?**

Real Example

Boosting revenue

When the Telegraph newspaper increased its price from £1 to £1.20, its dally sales fell by 4 per cent, from 604,000 to 579,000 copies per day. This caused tile following effect on daily revenue:

Before price rise: price £1 x sales volume 604,000 = £604,000.

After price rise: price £1.20 x sales volume 579,000 = £694,800.

That is, sales revenue rose by £90,800 per day, a 15 per cent increase. As the slight fall in sales volume would reduce total variable costs, the impact on profit would have been even greater.

Classifying price elasticity

**Price-elastic demand**

A product with price-elastic demand has a price elasticity of above 1. This means that the percentage change in demand is greater than the percentage change in price that created it. For example, if a firm increased prices by 5 per cent and as a result demand fell by 15 per cent, price elasticity would be:

-15% = -3

+5%

The higher the price elasticity figure, the more price elastic the demand. Cutting price on a product with price-elastic demand will boost total revenue. On the other hand, a price increase on a product with price-elastic demand will lead to a fall in total revenue.

**Price-inelastic demand**

Products with price-inelastic demand have price elasticities below 1. This means the percentage change in demand is less than the percentage change in price. In other words, price changes have hardly any effect on demand, perhaps because consumers feel they must have the product or brand in question: the stunning dress, the trendiest designer label or -less interestingly - gas for central heating.

Customers feel they must have it, either because it really is a necessity or because it is fashionable. Firms with products with price-inelastic demand will be tempted to push the prices up. A price increase will boost revenue because the price rise creates a relatively small fall in sales volume. This means the majority of customers will continue to purchase the brand but at a higher, revenue-boosting price.

|  |  |  |
| --- | --- | --- |
|  | **Product with price-elastic demand** | **Product with price-inelastic demand** |
| Characteristics | * Undifferentiated
* Many competitors
 | * Differentiated
* Few competitors
 |
| Impact of a price cut | * Sales rise sharply ...
* ... so revenue rises
 | * Sales rise, but not much ...
* ... so revenue falls
 |
| Numerically | * Between -1 and -5 or more
 | * Between -0.1 and
* -0.99
 |
| Impact of a price rise | * Sales fall sharply ...
* .. . so revenue falls
 | * Sales fall, but not much ...
* ... so revenue rises
 |

**The value of price elasticity to decision makers**

Being able to estimate a product's price elasticity of demand is a hugely valuable aid to marketing decision making. At West Ham United, ticket prices for under-16s vary, from £70 in top seats for top games such as Manchester United, all the way down to £1 when trying to fill the stadium against less attractive opposition on midweek winter evenings. Unusually for a business, the objective is to fill the stadium rather than maximise revenue. Understanding the price elasticity of demand (PED) for junior tickets, helps West Ham achieve an average capacity utilisation of 95 per cent or more. A business that knows its price elasticity can make better decisions than one that is in ignorance.

**Five whys and a how**

|  |  |
| --- | --- |
| Questions  | Answers |
| **Why might a company care more about its price elasticity of demand than its sales figures?** | Because extra sales do not necessarily boost profit, but control over pricing can transform a firm's profits and prospects. |
| **Why might it be a mistake to cut the price of a product with high price elasticity of demand?** | As demand will jump ahead following the price cut, this might hit competitors so hard that they have to respond - risking a price war. |
| **Why might a product's price elasticity of demand change over time?** | Because the degree of competition may change, as may the level of differentiation established by advertising. |
| **Why are consumers better off buying price elastic products (and services)?** | Because the close rivalry between suppliers ensures efficient, value-for-money products. |
| **Why might a product's price elasticity of demand vary over its life cycle?** | If innovative, it would be low at birth, but increase as rivals catch up; then rise more when it falls out of fashion and into decline. |
| **How might a retail dry cleaner reduce its price elasticity of demand?** | By finding a USP or strong point of differentiation, e.g. free local collection and delivery. |

**Price elasticity of demand – evaluation**

For examiners, elasticity is a convenient concept. It is hard to understand, but very easy to write exam questions on! But how useful is it in the real world? Would the average marketing director know the price elasticities of his or her products?

In many cases, the answer is no. Examiners and textbooks exaggerate the precision that is possible with such a concept. The fact that the price elasticity of the Telegraph proved to be -0.2 in 2012 does not mean it will always be that low. Price elasticities change over time, as competition changes and consumer tastes change.

Even though elasticities can vary over time, certain features tend to remain constant. Strong brands such as BMW and Coca-Cola have relatively low price elasticity. This gives them the power over market pricing that ensures strong profitability year after year. For less established firms, these brands are the role models: everyone wants to be the Coca-Cola of their own market or market niche.

**Key terms**

External constraint: something outside the firm's control that can prevent it achieving its objectives.

Predatory pricing: pricing low with the deliberate intention of driving a competitor out of business.

Price-elastic: a product with demand that is highly price sensitive, so price elasticity is above 1 (strictly speaking, from minus 1 to minus infinity).

Price-inelastic: a product with demand that is not very price sensitive, so price elasticity is below 1 (strictly speaking, between minus 0.01 and minus 0.99).