

Elasticity Primer

In economics, price elasticity of demand refers to how sensitive the quantity demanded for a good is to a change in price. Price elasticity of demand is calculated as the percent change in quantity demanded divided by the percent change in price. Demand is said to be “inelastic” when the percentage change in quantity is less than the percentage change in price, where the value is less than one. When demand is inelastic, it implies that the consumption of that good will only change a little when price changes a lot, in other words it is “insensitive” to changes in price. Demand is said to be “elastic” when the percentage change in quantity is greater than the percentage change in price, where the value is greater than one. When demand is elastic, it implies the consumption of a good will change a lot when price changes a little bit, in other words demand is “sensitive” to changes in price.

When examining policy mandates for residential energy consumption, price elasticity is an important factor to consider. There is a close relationship between price elasticity of demand and possibilities to switch between fuel types. If a household has only one appliance (no substitution possibilities) the household will be insensitive to price changes (inelastic demand). For example, if a household has only a central oil boiler, and heating oil prices increase, in the short-run that household will have no possibilities to substitute to a different fuel type i.e. wood, coal, pellets, etc. A household facing higher energy prices can typically take different actions to reduce the impact of the price increase on their household budget. The most common is to turn the temperature down or install window insulation kits. A household with two heating appliance types will be more sensitive to changes in price of one fuel type. For example, a household with central oil boiler and a wood stove has the ability to substitute between heating oil and wood in the face of higher heating oil prices and therefore will be more sensitive to changes in heating oil price. In short, households with one appliance are more insensitive to changes in price than those with two heating appliances.

Illustration: Why do we need to calculate a household's sensitivity to change in oil price?

