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Economics 201

General overview of elasticity

When analyzing the exchange of goods and services, we want to know both the direction and magnitude of one's response to specific types of change. One question we've already asked concerned the direction of one's response when we talked about shifts in the demand and supply model. E.g., we know that an increase in consumer income can increase or decrease the demand for a good, depending on whether that good is a normal good or an inferior good. When we draw this shift on a graph, we observe that the relationship between income and quantity demanded is positive with normal goods and negative with inferior goods. If the price of one good increases, then there is similarly an increase or decrease in the demand for other goods that are related to the higher priced good, depending on whether the relationship between these goods is that of substitutes or complements. When graphing this shift, we observe that the relationship between one good's price and another good's quantity demanded is positive with substitutes and negative with complements.

The result we haven't discussed yet is that of the magnitude of one's response to change. Suppose I'm interested in learning how better personal hygiene affects my social life. Let's say that I decide to measure "social life" in terms of how many dates I can get in a year, and then look at personal hygiene in terms of my expenditure on personal hygiene products. At the end of the first year, let's assume that my personal hygiene expenditure increases by 10% (relative to last year) and that I end up going on 25% more dates. This not only tells me that personal hygiene has a positive relationship to how often I'm able to go on a date, but also that spending more on personal hygiene has a fairly big (positive) effect on my dating life. It's this second revelation that we're concerned with when we ask about the magnitude of one's response to change.

Although it's straightforward what we mean by a positive or negative relationship between two variables, it's not so clear what determines whether a relationship between those variables is big or small.

In our example, we associated a 10% increase in one variable with a 25% increase in another variable. To determine whether this is a big or small effect, we need to define what big and small effects would be. Although this isn't necessarily a causal relationship (the two are definitely correlated, but we can't just claim it's causal without further investigation), let's still characterize this as cause and effect. In that context, it makes sense to say that if the size of the effect is smaller than that of the cause (i.e. smaller in terms of overall magnitude), we have a small response. If the effect is bigger in magnitude than the cause, we have a big response.

For the purpose of classification, we'll call a big response an elastic response and a small response an inelastic response.