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Econ 301—Bethany College

**Lecture 03: Elasticity II**

1. Elasticity of supply
	1. How does quantity supplied respond to a price change?
	2. Determinants
		1. *Availability of Inputs*. The easier it is to gather more inputs of production (labor, raw materials, etc), the easier production can adapt to changes in price.
		2. *Capacity/Transition*. Industries with flexible production capacity tend to have more elastic supply curves. Firms can easily respond to minor changes in prices by reducing or increasing capacity as needed. Similarly, industries that can easily move to and from another industry witness greater elasticity. Textbook production is more elastic than ocean liner construction. Both capacity and transition address the willingness to find inputs (because there’s only so much one can handle).
		3. *Global and Local*. The local supply of any good will be more elastic than the regional supply and *that* will be more elastic than the global supply. Increasing world production requires spending a lot more to produce. Increase local production simply requires transporting goods from one part of the world to another, spending the much smaller transportation cost. Note how this idea connects with the capacity/transition determinant. In practice, it is a particular form of capacity since their production is more flexible.
		4. *Time*. The more time a producer has to adapt to change, the easier it is to find more inputs. It takes time to build factories and find labor. Time addresses the ease of employing inputs, both in finding them and in using them.
	3. Like demand, elasticity of supply and be perfectly elastic or inelastic.
	4. Elasticity of supply is calculated in the same way as demand, though its results will be positive instead of negative.
2. Income elasticity of demand
	1. In addition to seeing how people respond to changes in the price of a good, we can see how changes in people’s income affect how they buy a particular good.
	2. Even though we call it income “elasticity,” we are more concerned about if the good is normal or inferior.
		1. A *normal good* is one where, as income rises, quantity consumed rises. Example: Meals at the Olive Garden.
		2. An *inferior good* is one where, as income rises, quantity consumed falls. Example: Ramen noodles.
			1. Understand that “inferior good” is not about the quality of the good. It is merely a classification.
	3. Mathematically, income elasticity of demand looks like elasticity of demand.

$$ϵ\_{I}=\frac{\%∆Q\_{x}}{\%∆I}$$

* + 1. If $ϵ\_{I}$ > 0, the good is normal.
		2. If $ϵ\_{I}$ = 0, the good is income-insensitive.
		3. If $ϵ\_{I}$ < 0, the good is inferior.
	1. We can modify the arc price elasticity of demand to determine income elasticity.

$$ϵ\_{I}=\frac{{ΔQ\_{x}}/{\overbar{Q\_{x}}}}{{ΔI}/{\overbar{I}}}$$

1. Cross price elasticity of demand
	1. Certain goods work well together and certain goods can be swapped for another. Another version of elasticity—cross price elasticity of demand—allows us to distinguish between the two.
	2. Again, we are not concerned with if the goods are elastic—despite the name—but if human action can reveal if the goods are complements or substitutes.
		1. Goods that are *complements* are consumed together: hammer and nails, peanut butter and jelly, and computers and electricity. When the price of one good changes the quantity demanded of the other good changes in the opposite direction.
		2. Goods that are *substitutes* are consumed in replacement of one another: butter and margarine, Macs and PCs, and cats and dogs. When the price of one good changes the quantity demanded of the other good changes in the same direction.
	3. Mathematically, cross price elasticity of demand looks like income elasticity of demand.

$$ϵ\_{x,y}=\frac{\%∆Q\_{x}}{\%∆P\_{y}}$$

* + 1. If $ϵ\_{x,y}$ > 0, the goods are normal.
		2. If $ϵ\_{x,y}$ = 0, the goods are unrelated.
		3. If $ϵ\_{x,y}$ < 0, the goods is inferior.
	1. We can modify the arc price elasticity of demand to determine income elasticity.

$$ϵ\_{x,y}=\frac{{ΔQ\_{x}}/{\overbar{Q\_{x}}}}{{ΔP\_{y}}/{\overbar{P\_{y}}}}$$