Lab 4 – Price Elasticities

Price Elasticity of Demand and Supply

1. Price elasticities provide economists with a way to estimate the responsiveness or sensitivity of markets to changes in price.
2. Price elasticities show how quantity demanded/supplied will change in response to percent changes in the price of a good or service.
3. Elasticities show relative changes and are a ratio of the percent change in quantity demanded/supplied to a change in price.
    a. Elasticity of Demand:

    b. Elasticity of Supply:

    c. Computationally:

    d. Note, Elasticity does not equal slope

4. Classes of price elasticities: take the absolute value of elasticity
    a. Elastic: $|E^D| > 1; |E^S| > 1$

    b. Inelastic: $|E^D| < 1; |E^S| < 1$

    c. Unit Elastic: $|E^D| = 1; |E^S| = 1$

d. Perfectly Elastic: $|E^D| = \infty; |E^S| = \infty$

e. Perfectly Inelastic: $|E^D| = 0; |E^S| = 0$

5. Determinants of Price Elasticities:
    a. Availability of substitutes – more substitutes there are for a good the more elastic a good is.
    b. Time – goods become more elastic over time because we are able to find more substitutes.
    c. Proportion of income spent on a good – the larger the percentage of income that is spent on a good the more elastic it is. This is because an increase on the price in these goods is most likely to reduce our ability to buy them.

Tax Burdens

1. Tax shifting occurs when a tax levied on sellers of a good causes the market price of the good to increase
    a. The effect of a per unit tax is the same as the effect of having the price of an input increase by the amount
    b. Shifts the supply curve upward by the per unit tax
2. Suppliers bear all the burden when:
    a. Perfectly Inelastic Supply:

    b. Perfectly Elastic Demand:

3. Demanders bear all the burden when:
    a. Perfectly Elastic Supply:

    b. Perfectly Inelastic Demand:

Problems

1. Measuring the price of Lou Gehrig photographs in dollars, an economist calculates the price elasticity of demand to be -0.43. What would be the elasticity be if the economist had chosen to measure the price of Lou Gehrig photographs in pennies?

2. If the price elasticity of demanded for the movie "Dirty Harry" is -0.44 at the local video store. How would you classify the demand for this Clint Eastwood movie? [elastic or inelastic]

3. A 10% increase in the price of Carolina Hurricanes' jerseys causes the quantity demanded to fall by 10%. How would you classify the demand for the jerseys? [elastic or inelastic]

4. The price of elasticity of demand for Phantom of the Opera tickets is -0.25. If the theater wanted to increase the quantity demanded by 50%, then what should be the corresponding price change?

5. The price elasticity of demand for watches is -3. There is a 5% increase in the price of the watches. What will happen to the quantity demanded?

6. The price of oysters increases by 25%. As a result, the quantity demanded declines by 50%. What is the price elasticity of demand for oysters?

7. The elasticity of demand for cigarettes is equal to –0.922. Thus, a 1% decrease in the price of cigarettes will cause the quantity of cigarettes demanded to increase/decrease by how much?

8. As the manager of a surf shop, you want to increase the number of surfboards sold by 8%. You have determined that the price elasticity of demand for surfboards is -2. To increase sales by the desired amount, you should decrease the price of surfboards by how much?

9. The price elasticity of demand for tickets to NC State football games is -3. At the prevailing price of $50 per ticket, the quantity of tickets demanded exceeds the stadium's seating capacity by 30%. To equate the quantity of tickets demanded to the total number of seats available, what should the price of a ticket be?

10. The price elasticity of supply for peanuts is 0.5. If the price of peanuts rises by 10%, what will be the change in quantity supplied be?