

Economics 100B
Spring 2010
Gallet
Homework #2

[1] The annual market demand for good X has been estimated as:

$$Q_X = 115 - 2P_X - 2.5I - 1.5P_Y,$$

where Q_X is the quantity demanded of good X (in units per year), P_X is the price of good X (in dollars per unit), I is per capita income (in thousands of dollars per year), and P_Y is the price of good Y (in dollars per unit). Currently, $P_X = 8$, $I = 30$, and $P_Y = 10$. Compute the price, income, and cross elasticities of demand for good X. Based on your results, discuss (i) whether demand is price elastic, inelastic, or unit elastic, (ii) whether good Y is a substitute or complement in consumption to X, and (iii) whether X is a normal or inferior good.

[2] As an analyst for Coca-Cola, your job entails advising Coca-Cola on pricing strategies. You estimate that the price elasticity of demand for Coca-Cola is -4, while the cross elasticity of demand (with respect to the price of Pepsi) is 3. In a bold move, Pepsi announces that it will cut the price of its product by 12%. Desiring to maintain Coca-Cola's position in the market, you are asked to recommend a price adjustment for Coca-Cola just sufficient to offset the impact of Pepsi's move. What do you recommend?

[3] Facing low tuition revenue, the president of Allegheny College, a small liberal arts college, hires a statistician to estimate the demand for college, where the statistician estimates that the demand for college is price inelastic. Accordingly, the president increases tuition, hoping that such a move will increase tuition revenue. What is the rationale for this move? Unfortunately, after doing so, tuition revenue declines. An economist then tells the president that the statistician estimated the wrong demand. In particular, rather than estimate the demand for college, the statistician should have estimated the demand for Allegheny College. If the statistician would have done this, the price elasticity would likely have been elastic. Why is this the case?

[4] You work for an unemployment agency that distributes unemployment checks to unemployed workers in California. Your boss recently learned that the President proposed a 21 percent increase in the minimum wage, and wants you to provide her with an estimate of the number of additional workers who will file for unemployment compensation claims next year if the bill passes. Based on library research at a nearby university, you learn that about 1,000,000 workers are employed at the current minimum wage, while the number of unemployed workers at the current minimum wage equals 50,000.

Further library research turns up a study that reports a price elasticity of labor demand to equal -0.10, and a price elasticity of labor supply to be 0.10. Based on this information, provide an estimate of the number of unemployed workers that will result from a 21% increase in the minimum wage.