

**University of Notre Dame**  
**Department of Finance**  
**Economics of the Firm**  
**Fall 2009**

**Project #1: Due in class, Saturday, October 3<sup>rd</sup>.**

1) Suppose that we have the following observations:

**Observation #1:** Honda Accords are selling for \$18,000. A Toyota Camry has a price of \$21,000, but Toyota is offering a \$4,000 rebate. You choose to purchase the Honda Accord.

**Observation #2:** A year later, Honda begins offering a \$2,000 rebate (Honda Accords still sell for \$18,000). Toyota has the same deal that they had a year ago (\$21,000 list price plus a \$4,000 rebate). You decide to buy the Toyota.

Explain why this would be considered irrational buyer behavior.

- 2) Explain how each of the following events would affect the supply curve for education (by colleges), the demand curve for education (by potential students), total enrollments, and tuition rates.
- a) University professors unionize and use their increased bargaining power to increase their salaries by 20%.
  - b) Legislation is passed raising the minimum wage.
  - c) Students nationwide file a class action lawsuit charging universities with unfair tuition policies. The result is that each university nationwide is fined \$200M.
  - d) Universities increase the availability of student aid.
- 3) Explain how each of the following events would influence market prices/quantities
- a) The surgeon general announces that eating oranges lowers the risk of a heart attack (market for oranges)
  - b) Terrorists destroy a major oil pipeline in Iraq (market for oil)
  - c) Immigration increases in the US by 20% (market for labor – what's the price here?)
  - d) Consumers start getting their news from the internet (market for newspapers)
  - e) Real income in the US increases (the market for BMW's)

- 4) Suppose that you estimated the following demand curve.

$$Q = 400 - 6P + .005I$$

$Q$  Represents quantity demanded,  $P$  represents price and  $I$  represents average income.

You know that the current market price is \$50 and average income is \$20,000

- Calculate current demand.
  - Calculate the price elasticity of demand.
  - Calculate current market expenditures.
  - If you wanted to increase revenues, would you raise or lower price? Explain.
- 5) Now, suppose, we know what demand and supply look like for restaurant meals:

$$Q_d = 40 - 2P + 3I$$

$$Q_s = 20 + 2P$$

Where  $Q$  is the number of meals sold (in thousands) per month,  $P$  is the average meal price and  $I$  is average income (in thousands). Assume that average income is equal to \$20,000.

- Calculate the equilibrium price and quantity.
  - Calculate the elasticity of demand at the equilibrium price.
  - What effect would a 10% increase in average income have on the price of restaurant meals?
- 6) Suppose that you have estimated the following regression (standard errors associated with each are below in parentheses):

$$Q_d = 300 - 4P + \varepsilon$$

$$(6.5) \quad (1.2) \quad (60.5)$$

- Calculate your forecast at the sample average of \$50.
- Calculate the 95% confidence interval for your forecast.
- Why might you be worried about calculating an estimate of demand at a price of \$70?

- 7) For this portion, you will need the data set entitled: Floridavote.xlsx. This is available for download at [www.nd.edu/~jstiver](http://www.nd.edu/~jstiver) – go to “Economics of the Firm”. In the class notes, I ran a regression to explain the number of votes Buchanan received in Palm Beach county in 2000. It’s not necessary, but it might be useful to reproduce the results in the class notes.
- a) Now, try and create a regression analysis to explain the votes received by Bush, Gore, or Nader. Try and get the best regression you can.
  - b) Explain the meaning of the coefficients in your regression equation.
  - c) Calculate a forecast for votes using your regression.