**Chapter Three - Baye**

**Quantitative Demand Analysis**

**Demonstration Problem 3-1**

You have just opened a new grocery store. Every item you carry is generic (generic beer, generic bread, generic chicken, etc.) You recently read an article in The Wall Journal reporting that the price of recreation is expected to increase by 15 percent. How will this affect store’s sales of generic food products?

**Demonstration Problem 3-2**

You firm’s department has estimated the income elasticity of demand for nonfed ground beef to be – 1.94. you have just read in The Wall Street Journal that due to an upturn in the economy, consumer incomes are expected to rise by 10 percent over the next three years. As a manager of meat-processing plant, how will this forecast affect your chases of nonfed cattle?

**Demonstration Problem 3-3**

The daily demand for Invigorated PED shoes is estimated to be

$$Q\_{x }^{d}=100-3P\_{x}+ 4P\_{y}- .01M+2A\_{x} $$

Where $A\_{x} $represents the amount of advertising spent on shoes *(X)* $P\_{x} is $the price of good X, $P\_{y} $is the price of good *Y*, and *M* is average income. Suppose good *X* sells at $25 a pair, good *Y* sells at $35, the company utilizes 50 units of advertising, and average consumer income is $20,000. Calculate and interpret the own price, cross-price, and income elasticity of demand.

**Demonstration Problem 3-4**

An analyst for a major apparel company estimates that the demand for its raincoats is given by

In $Q\_{x}^{d}=10-1.2 In P\_{x }+ 3 In R-2 In A\_{y } $

Where *R* denotes the daily amount of rainfall and $A\_{y } $represents the level of advertising on good *Y*. What would be the impact on demand of a 10 percent increase in the daily amount of rainfall? What would be the impact of a 10 percent reduction in the amount of advertising directed toward good *Y*? Can you think of a good that might be good *Y* in this example?

**Demonstration Problem 3-5**

During the 31 day s this past March, an online ticket agent offered varying price discounts on Broadway tickets in order to gather information needed to estimate the demand for its tickets. A file named Demo\_3\_5.xls is available online at [www.mhhe.com/baye6e](http://www.mhhe.com/baye6e). If you open this file and view the tab labeled *Data*, you will find information about the quantity of Broadway tickets the company sold at various prices in March. Use these data to estimate a log-linear demand function. Use an equation to summarize your findings.

**Demonstration Problem 3-6**

FCI owns 10 apartment buildings in a college town which it rent exclusively to students. Each apartment buildings contains 100 rental units, but the owner is having cash flow problems due to an average vacancy rate of nearly 50 percent. The apartments in each building have comparable floor plans, but some buildings are closer to campus than others. The owner of FCI has data from last year on the number of apartments rented, the rental price (in dollars), and the amount spent on advertising (in hundreds of dollars) at each of the apartments. These data, along with the distance (in miles) from each apartment building to campus, are presented in rows 1 through 11 of Table 3-9. The owner regressed the quantity demanded of apartments on price, advertising, and distance. The result of the regression are reported in rows 16 through 35 of Table 3-9. What is the estimated demand function for FCI’s rental units? If FCI raised rents at one complex by $100, what would you expect to happen to the number of units rented? If FCI raised rent at an average apartment building, what would happen to FCI revenues? What inferences should be drawn from this analysis?