Answers to Textbook Questions and Problems

CHAPTER 1 The Science of Macroeconomics

Questions for Review

1. Microeconomics is the study of how individual firms and households make decisions, and how they interact with one another. Microeconomic models of firms and households are based on principles of optimization—firms and households do the best they can given the constraints they face. For example, households choose which goods to purchase in order to maximize their utility, whereas firms decide how much to produce in order to maximize profits. In contrast, macroeconomics is the study of the economy as a whole; it focuses on issues such as how total output, total employment, and the overall price level are determined. These economy-wide variables are based on the interaction of many households and many firms; therefore, microeconomics forms the basis for macroeconomics.
2. Economists build models as a means of summarizing the relationships among economic variables. Models are useful because they abstract from the many details in the economy and allow one to focus on the most important economic connections.
3. A market-clearing model is one in which prices adjust to equilibrate supply and demand. Market-clearing models are useful in situations where prices are flexible. Yet in many situations, flexible prices may not be a realistic assumption. For example, labor contracts often set wages for up to three years. Or, firms such as magazine publishers change their prices only every three to four years. Most macroeconomists believe that price flexibility is a reasonable assumption for studying long-run issues. Over the long run, prices respond to changes in demand or supply, even though in the short run they may be slow to adjust.

Problems and Applications

1. Most of the macroeconomic issues that have been in the news lately (early 2009) are related to the worsening recession that officially began in December of 2007. The economy has not seen a recession like this since the back-to-back recessions of 1980–1982. Noteworthy topics would be an unemployment rate that hit 8.1% in February 2009, a rising saving rate, an inflation rate that is near zero, output growth that was –6.3% in the fourth quarter of 2008, the ongoing financial and housing market crises, and news about the stimulus package designed to help the economy recover more quickly.
2. Many philosophers of science believe that the defining characteristic of a science is the use of the scientific method of inquiry to establish stable relationships. Scientists examine data, often provided by controlled experiments, to support or disprove a hypothesis. Economists are more limited in their use of experiments. They cannot conduct controlled experiments on the economy; they must rely on the natural course of developments in the economy to collect data. To the extent that economists use the scientific method of inquiry, that is, developing hypotheses and testing them, economics has the characteristics of a science.
3. We can use a simple variant of the supply-and-demand model for pizza to answer this question. Assume that the quantity of ice cream demanded depends not only on the price of ice cream and income, but also on the price of frozen yogurt:

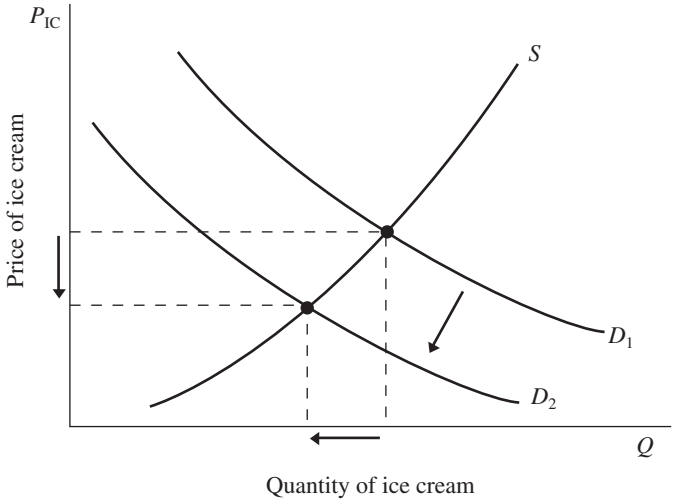
$$Q^d = D(P_{IC}, P_{FY}, Y).$$

We expect that demand for ice cream rises when the price of frozen yogurt rises, because ice cream and frozen yogurt are substitutes. That is, when the price of frozen

yogurt goes up, I consume less of it and, instead, fulfill more of my frozen dessert urges through the consumption of ice cream.

The next part of the model is the supply function for ice cream, $Q^s = S(P_{IC})$. Finally, in equilibrium, supply must equal demand, so that $Q^s = Q^d$. Y and P_{FY} are the exogenous variables, and Q and P_{IC} are the endogenous variables. Figure 1–1 uses this model to show that a fall in the price of frozen yogurt results in an inward shift of the demand curve for ice cream. The new equilibrium has a lower price and quantity of ice cream.

Figure 1–1



4. The price of haircuts changes rather infrequently. From casual observation, hairstylists tend to charge the same price over a one- or two-year period irrespective of the demand for haircuts or the supply of cutters. A market-clearing model for analyzing the market for haircuts has the unrealistic assumption of flexible prices. Such an assumption is unrealistic in the short run when we observe that prices are inflexible. Over the long run, however, the price of haircuts does tend to adjust; a market-clearing model is therefore appropriate.