Chapter 1

The Principles and Practice of Economics

Questions

1. Why do we have to pay a price for most of the goods we consume?

   *Answer:* The inputs we use to produce most goods and services (for example, capital and labor) are scarce. Therefore almost all goods and services are scarce compared to the quantity that consumers want to consume. In other words, at a price of zero the demand for most goods is higher than the available supply; our wants are unlimited but our resources are not. Prices act as a rationing mechanism to prevent the overconsumption of such scarce goods, making them available in the quantity such that the supply of these goods matches the demand.

2. Many people believe that the study of economics is focused on money and financial markets. Based on your reading of the chapter, how would you define economics?

   *Answer:* Economics is the study of how agents (for example, households and firms) choose to allocate scarce resources and how these choices affect society. Although it is true that economics studies money and the financial markets, the study of economics is really focused on human behavior and choices. Given that we have limited resources, we need to choose between various options. Economic analysis is used to understand people’s choices in order to describe what people do and recommend what people ought to do.

3. Examine the following statements and determine if they are normative or positive in nature. Explain your answer.

   a. The U.S. automotive industry registered its highest growth rate in 5 years in 2012; U.S. auto sales increased by 13% compared to 2011.

   *Answer:* This is an objective statement about the rate of growth in the U.S. automotive industry. Positive economics is analysis that generates objective descriptions or predictions about the world that can be verified with data. Since data can be used here to verify the rate of growth and whether it is the highest in five years, this is a positive statement.

   b. The U.S. government should increase carbon taxes to control emissions that cause global warming.

   *Answer:* This is a normative statement. Normative economics advises individuals and society on their decisions and is almost always dependent on subjective judgments.
4. How does microeconomics differ from macroeconomics? Would the supply of iPhones in the United States be studied under microeconomics or macroeconomics? What about the growth rate of total economic output in the national economy?

Answer: Microeconomics is the study of how individuals, households, firms, and governments make choices, and how those choices affect prices, the allocation of resources, and the well-being of other agents. Macroeconomics is the study of the economy as a whole. Macroeconomists study factors that affect overall – in other words, aggregate – economic performance. Macroeconomics is the study of the forest as a whole. Microeconomics is the study of individual trees.

The supply of iPhones refers to the supply of a good by an individual firm, Apple. Therefore, the iPhone market will be studied under microeconomics. Microeconomics studies how individuals, households, firms and governments make choices, and how those choices affect prices and the allocation of resources. The growth rate of total economic output, on the other hand, refers to the aggregate American economy, and is therefore studied under macroeconomics.

5. What does a budget constraint represent? How do budget constraints explain the trade-offs that consumers face?

Answer: A budget constraint is an equation representing the goods or activities that a consumer can choose given her limited budget. Tradeoffs arise when some benefits must be given up in order to gain others. In other words, a tradeoff occurs when you give one thing up to get something else. Since a budget constraint shows the set of things that you can choose to do or buy with a fixed amount of money, it also shows that if you choose to buy more of one good, you will have to buy less of another. Therefore, a budget constraint equation implies that a consumer faces a tradeoff.

6. This chapter introduces the idea of opportunity cost.

a. What is meant by opportunity cost? How are the opportunity costs of various choices compared?

b. What is the opportunity cost of taking a year after graduating from high school and backpacking across Europe? Are people who do so being irrational?

Answer:

a. Opportunity cost is the best alternative use of a resource. The opportunity cost of a particular choice is measured in terms of the benefit foregone from the next best alternative. To facilitate comparison, the benefits and costs of various choices are translated into monetary units like dollars.

b. The opportunity cost of backpacking across Europe, for a particular person, is the cost of anything else that could have been done in that year. The backpacker could have attended college or started working. These costs are the opportunity costs of the gap year. This, however, does not mean that backpackers are irrational, because the benefits may exceed the cost. Every action has an opportunity cost. The choices that people make are optimal based on their perceived costs and benefits.

7. Suppose your New Year’s resolution is to get back in shape. You are considering various ways of doing this; you can sign up for a gym membership, walk to work, take the stairs instead of the elevator, or watch your diet. How would you evaluate these options and choose an optimal one?

Answer: You can use cost-benefit analysis to compare the various feasible alternatives and pick the best one. Cost-benefit analysis is a calculation that adds up costs and benefits using a common unit of measurement, like dollar values. The costs and benefits of using the gym, walking, taking the stairs, or dieting need to be converted into dollar values. This will include monetary as well as opportunity costs. You can then choose the option that offers you the greatest net benefit.
8. Suppose the market price of corn is $5.50 per bushel. What are the three conditions that will need to be satisfied for the corn market to be in equilibrium at this price?

Answer: For the market to be in equilibrium, three conditions will need to be satisfied.

- At the price of $5.50 per bushel, the amount of corn produced by sellers should be equal to the amount of corn purchased by buyers in the market.
- Farmers have chosen the optimal quantity of corn to produce given the price of $5.50 per bushel.
- Consumers have chosen the optimal quantity of corn to buy given the price of $5.50 per bushel.

9. Economists are often concerned with the free-rider problem.

a. What is meant by free riding? Explain with an example.

b. Are public parks subject to the free-rider problem? What about keeping city streets clean? Explain your answer.

Answer:

a. A free rider is a person who receives the benefit of a good but avoids paying for it. People tend to pursue their own private interests and usually don’t contribute voluntarily to the public interest. For example, watching a pirated copy of a movie is cheaper than buying one. Those who watch the pirated version are essentially free riders because there are others who buy the movie or pay for movie tickets. If everyone watched pirated copies, making movies would not be profitable and the industry would not function.

b. Cleaning of city streets may be subject to free riding. Suppose the streets are cleaned every day at a fixed cost. This cost is borne by those who pay taxes to the city government. However, they cannot prevent others who do not pay taxes from using the clean streets. This leads to the free rider problem. Public parks, however, can avoid the free rider problem by setting an entrance fee. This means that only those who pay toward the maintenance and upkeep of the park will be able to use it.

10. Explain the concept of causation with the help of a simple real-life example.

Answer: Causation is a relationship between two events or states, such that one brings about a change in the other. In short, it explains the cause and effect relationship between two variables or events. For example, people who go to college learn skills that are valuable to prospective employers. So a college degree causes someone’s wages to rise.

11. Identify the cause and the effect in the following examples:

a. Lower infant mortality and an improvement in nutrition

b. A surge in cocoa prices and a pest attack on the cocoa crop that year

Answer:

a. An increase in nutrition is likely to lead to or cause lower infant mortality.

b. The pest attack is likely to have reduced the cocoa crop, leading to a rise in prices.
Problems

1. In an episode of the sitcom *Seinfeld*, Jerry and his friends Elaine and George are waiting to be seated at a Chinese restaurant. Tired of waiting, Elaine convinces the others that they should bribe the maître d’ to get a table.

   a. What factors should they consider when they are deciding how high to make their bribe?
   
   b. Jerry, Elaine, and George had tickets for a movie after dinner. How would this have affected the amount that they were willing to pay as a bribe?
   
   c. The amount that they finally decide to pay is higher than the value of the meal that they would have had. Does this mean that they are being irrational?

   *Answer:*
   
   a. They should consider the opportunity cost of the time that they will have to spend waiting to get a table. This calculation would depend on how much they value the best alternative activity that they could have been doing instead of waiting.
   
   b. The fact that they had to catch a movie would have increased their opportunity cost of waiting.
   
   c. Not necessarily. Given that they had already been waiting for a while and had to catch a movie after dinner, it’s possible that they placed a very high value on the time that they spent waiting for the table.

   Adapted from http://yadayadayadaecon.com/clip/10/

2. You are thinking about buying a house. You find one you like that costs $200,000. You learn that your bank will give you a mortgage for $160,000 and that you would have to use all of your savings to make the down payment of $40,000. You calculate that the mortgage payments, property taxes, insurance, maintenance, and utilities would total $950 per month. Is $950 the cost of owning the house? What important factor(s) have you left out of your calculation of the cost of ownership?

   *Answer:* You have ignored the opportunity cost of the funds you are using for the down payment. By using your $40,000 to buy the house, you give up the opportunity to earn interest on that money. If you could earn 5% interest, then the opportunity cost is 0.05 x $40,000 = $2,000 per year, or $167 per month. This does not imply that you should not buy this house. It does imply, however, that you need to think carefully about opportunity cost as you weigh this decision. An economist would tell you that the monthly cost of owning this home is $950 + $167 = $1,017.

3. You have 40,000 frequent flier miles. You could exchange your miles for a round trip ticket to Bermuda over spring break. Does that mean your flight to Bermuda would be free? Explain your reasoning.

   *Answer:* It does not. You could use your miles for other travel and so there is an opportunity cost if you use your miles to fly to Bermuda. Suppose, for example, you are definitely going to fly to Chicago when the spring semester is over. You could use your 40,000 miles to fly to Chicago or you could purchase a ticket for $300. In this case, the opportunity cost of using your miles to fly to Bermuda is the $300 you will have to spend for the airfare to Chicago.
4. You have decided that you are going to consume 600 calories of beer and snacks at a party Saturday night. A beer has 150 calories and a snack has 75 calories.

   a. Create a table that shows the various combinations of beer and snacks you can consume. To keep things simple, use only round numbers (e.g., you could choose 1 or 2 beers but not 1.5 beers).

   b. What is the opportunity cost of a beer?

   Answer:

   a. Suppose you choose to consume 0 beers. Then you could use all 600 calories on snacks. Since snacks have 75 calories you could consume 600 / 75 = 8 snacks. Now suppose you choose 1 beer. A beer has 150 calories and so you would be left with 600 – 150 = 450 calories for snacks. You could therefore consume 450 / 75 = 6 snacks if you choose 1 beer. You can use the same logic to complete the table below.

<table>
<thead>
<tr>
<th>Beer</th>
<th>Snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

   b. If you consume 1 more beer you will have 150 fewer calories for snacks. Since a snack has 75 calories, consuming one more beer means that you will have to give up 150 / 75 = 2 snacks. The opportunity cost of a beer is therefore 2 snacks.

5. There is an old saying that "The proof of the pudding is in the eating," which means that by definition good decisions work out well and poor decisions work out badly. This question asks you to consider this the wisdom of this saying.

   a. Your friends live in a city where it often rains in May. Nonetheless, they plan a May outdoor wedding and have no backup plan if it does rain. The weather turns out to be lovely on their wedding day. Do you think your friends were being rational when they made their wedding plans? Explain.

   b. You usually have to see a doctor several times each year. You decided to buy health insurance at the start of last year. It turns out you were never sick last year and never had to go the doctor. Do you think you were being rational when you decided to buy health insurance? Explain.

   c. Given your answers to the first two parts of this question, do you agree or disagree that "The proof of the pudding is in the eating?" Explain.

   Answers:

   a. Your friends probably have not optimized, i.e. they were not rational. There was a good chance of rain on their wedding day and they had no backup plan if it did rain. Given the information available when they made their plans, they made a poor decision.

   b. You probably were being rational when you bought health insurance. You usually have to see a doctor several times each year and without insurance you would have to pay for those visits to the doctor. Given the information available when you made your plan, you made a good decision.
c. Sometimes the proof is not in the pudding. Sometimes poor decisions work out well (your friends live in a rainy city but planned an outdoor wedding); sometimes good decisions work out poorly (you bought health insurance that you never used).

6. Consider the following three statements:
   i. You can either stand during a college football game or you can sit. You believe that you will see the game very well if you stand and others sit but that you will not be able to see at all if you sit and others stand. You therefore decide to stand.
   ii. Your friend tells you that he expects many people to stand at football games.
   iii. An economist studies photos of many college football games and estimates that 75 percent of all fans stand and 25 percent sit.

Which of these statements deals with optimization, which deals with equilibrium, and which deals with empiricism? Explain.

Answer: The first statement involves optimization. You believe that you will be best off if you stand regardless of the decisions other people make. The second statement involves equilibrium. If many other people also reason as you did then we should expect many people will decide to stand. The third statement involves empiricism. Our theory tells us that we should expect many people to stand at games. This economist’s empirical study supports the theory.

7. The costs of many environmental regulations can be calculated in dollars but the benefits often are in terms of lives saved (mortality) or decreases in the incidence of a particular disease (morbidity). What does this imply about the cost-benefit analysis of environmental regulations? There is an old saying “You can’t put a price on a human life.” Do you agree or disagree? Explain.

Answer: We will need to translate the mortality and morbidity data into dollars if we are going to compare the costs and benefits of environmental regulation. For example, if we knew that a new regulation would impose a cost of $20 million on firms and that it would save one life, we would need to know whether a life is worth more than $20 million or less than $20 million. As ghoulish as these efforts to place a dollar value on a life may sound, government (and individuals, for that matter) need to make these calculations implicitly or explicitly. There is very substantial economic literature on the value of a life. Most studies estimate the value of a life in the range of $7 million to $9 million.

8. This chapter discussed the free-rider problem. Consider the following two situations in relation to the free-rider concept.
   a. The Taft-Hartley Act (1947) allows workers to be employed at a firm without joining the union at their workplace or paying membership fees to the union. This arrangement is known as an open shop. Considering that unions negotiate terms of employment and wages on behalf of all the workers at a firm, why do you think that most unions are opposed to open shops?
   b. For your business communication class, you are supposed to work on a group assignment in a team of six. You soon realize that a few of your team members do not contribute to the assignment but get the same grade as the rest of the team. If you were the professor, how would you redesign the incentive structure here to fix this problem?

Answer:
   a. The free rider problem could explain why unions are opposed to open shops. If a union negotiates wages and employment terms on behalf of all the workers at a firm, then even those workers who do not join the union will benefit. This means that workers no longer have an incentive to pay union fees as they can free-ride on those who do.
b. Since all the team members get the same grade, an individual team member can free ride on the work that the others have done. This means that an individual student does not have the incentive to contribute to the group assignment. To prevent this from happening, the professor can ask students to work on the assignment together but hand in individual papers.