

Chapter 1

The Principles and Practice of Economics

Questions

1. Give examples to explain how economic analysis can be positive and normative.

Answer: Positive economics is objective and based on facts. However, normative economics is subjective and opinion based. For example:

Positive: The mismatch between students' knowledge and the market requirements is a factor underlying low employability.

Normative: The government should increase the minimum wage earned by each employee.

2. Economics studies the allocation of scarce resources for unlimited wants. Explain this statement and identify how economics can apply to individuals, firms, and nations.

Answer: Individuals, firms, and nations face scarcity. Individuals have limited budgets (scarce resources) compared to their unlimited wants that they wish to satisfy. Firms have unlimited investment projects as compared to their limited budgets. Nations may have many areas—growth, human development, healthcare, legislature, education etc.—that require expenditure, but due to limited budgets the governments need to prioritize.

Scarcity of resources for individuals, firms, and nations compared to their unlimited wants pushes them to make choices by allocating scarce resources to desired wants. Economics is a science which helps in performing this allocation.

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

Answer:

- a. 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 statement that the government should increase carbon taxes to control emissions is normative since it states what the government ought to do. Normative economics advises individuals and society on their decisions and is almost always dependent on subjective judgments.

4. Differentiate the following—population, national income, firm’s production, economic growth, consumer budget, unemployment rate, national production, government spending, and inflation—based on whether they would be studied under microeconomics or macroeconomics.

Answer: Microeconomics studies economic behavior of individuals and firms and their relationship with product and factor markets when making choices in consumption, production, prices and income. Therefore, among all these examples, the firm’s production and consumer budget would be studied under microeconomics.

Macroeconomics focuses on aggregate economic variables. Therefore, population, national income, economic growth, unemployment rate, national production, government spending, and inflation would be 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. Scarcity exists because people have unlimited wants in a world of limited resources. Explain this statement by giving a real-life.

Answer: Since the world has limited resources, no one can have everything they want. For example, you have a given income that you would allocate to buy different things. You choose how much of this income you will allocate to buy clothes, how much of this income you will allocate to buy a car and how much from this income to travel and spend vacations. Due to your limited budget you will face a scarcity problem.

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 *maitre 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 $0.05 \times \$40,000 = \$2,000$ 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. What is meant by equilibrium? Give a real life example.

Answer: Equilibrium can be defined as a situation in which nobody would benefit from changing his or her own behavior and cannot do better by moving to another alternative. So, in an equilibrium situation each agent is optimizing. Suppose that the market for oranges is displaying an equilibrium price of \$2 per kilogram. This equilibrium situation means that both buyers and sellers are satisfied of this price, the quantity exchanged on the market and no one would change his or her situation. With this price, each agent is optimizing.

4. By taking the train, Alain can travel from Paris to Lille in one hour. The same trip takes 5 hours by bus. The train costs €80 and the bus €20. When Alain is not traveling he can work and earn €25 per hour.

- a. What is the opportunity cost for Alain of travelling by bus and by train?
- b. What will be the answer if another person chooses not to travel and to work for €10 per hour?

Answer:

- a. The opportunity cost of the bus = $20 + (5 \times 25/\text{hour}) = \text{€}145$. The opportunity cost for the train is $80 + (1 \times 20) = \text{€}100$.
 - b. The opportunity cost of the bus = $20 + (5 \times 10/\text{hour}) = \text{€}70$. The opportunity cost for the train is $80 + (1 \times 10) = \text{€}90$.
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. A sales manager is making a decision on whether to install a new computer-based processing system. He is aware that computerization sales will give a higher reliability and therefore an increase of sales of about \$500 monthly for 5 years. At the same time, implementing the new computerized system will induce \$20,000 installation costs, cabling costs of \$1,000, and training costs of \$4,000. Make a cost-benefit analysis to help the sales manager in making his decision.

Answer: The cost-benefit analysis requires an evaluation of the costs of the project to be implemented and the benefits that the sales manager will gain. The costs of implementing the project are estimated to $\$20,000 + \$1,000 + \$4,000 = \$25,000$. The benefits gained from the project in 5 years will be $\$500 \times 12 \times 5 = \$30,000$. Therefore, the manager should implement the project.

8. This chapter discussed the free-rider problem. Consider the following two situations in relation to the free-rider concept.
- 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?
 - 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:

- 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.
- 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.