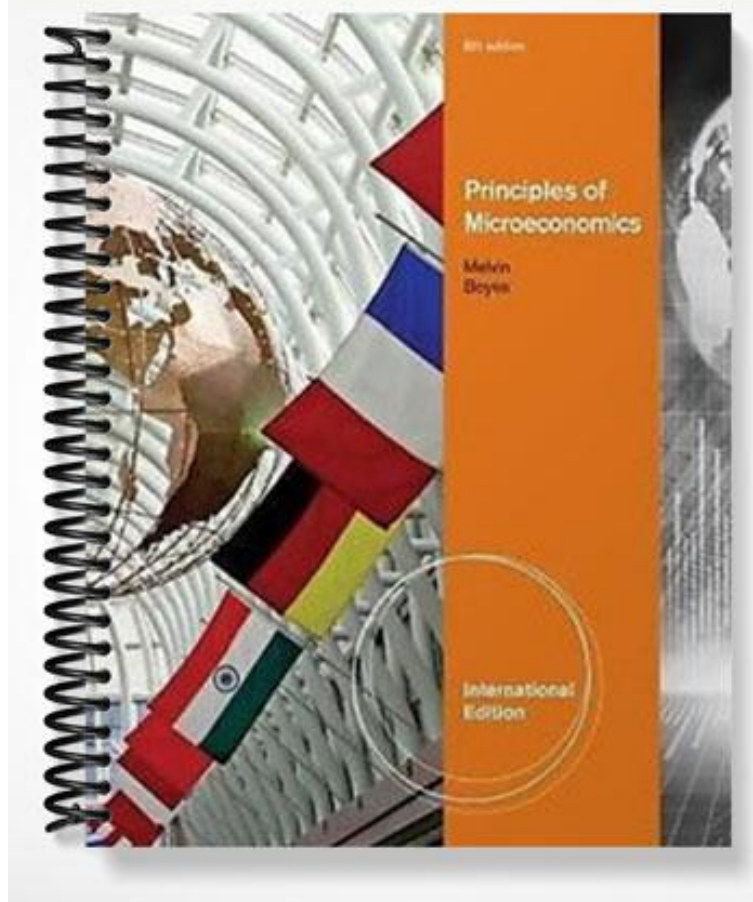


SOLUTIONS MANUAL



CHAPTER 2

(MACRO CHAPTER 2; MICRO CHAPTER 2)

Choice, Opportunity Costs, and Specialization

FUNDAMENTAL QUESTIONS

1. What are opportunity costs? Are they part of the economic way of thinking?
2. What is a production possibilities curve?
3. Why does specialization occur?
4. What are the benefits of trade?

OVERVIEW AND OBJECTIVES

The unique features of this chapter include the illustration of opportunity costs with an example students can readily understand—college tuition and the tradeoff between attending college and working. The chapter also uses the idea of relative opportunity costs among countries to motivate the discussion of comparative advantage, specialization, and trade.

After reading and reviewing this chapter, the student should be able to:

1. Define opportunity costs.
2. Construct and understand a production possibilities curve (PPC).
3. Discuss points inside and outside the PPC.
4. Calculate marginal opportunity costs.
5. Understand the concept of comparative advantage as it relates to specialization.

KEY TERM REVIEW

opportunity costs

tradeoff

production possibilities curve (PPC)

marginal cost

marginal opportunity cost

gains from trade

comparative advantage

private property rights

LECTURE OUTLINE AND TEACHING STRATEGIES

I. Opportunity Costs

An opportunity cost is the highest-valued alternative that must be forgone when a choice is made. The opportunity cost of going to college is the money income forgone during four years of study.

Teaching Strategy: Try to start your lecture by asking the students to list all their costs of going to college on a sheet of paper. Then ask if anyone included the cost of not working for four years.

A. Tradeoffs: Economists believe that people make decisions by comparing costs and benefits.

Teaching Strategy: Ask your students to compare the costs and benefits of attending class. Point out to them that, since they are in class, the benefits of attending class must have outweighed the costs.

B. The production possibilities curve: The production possibilities curve describes the nature of social choices between alternatives. It shows the maximum quantity of goods and services that can be produced when the existing resources are used fully and efficiently.

Teaching Strategy: The production possibilities curve is usually the first model that is introduced in an economics course. Consequently, you should develop it carefully and be certain to explain the assumptions that underlie the model.

1. Points inside the production possibilities curve: These points represent underutilized resources and could represent a recession.

2. Points outside the production possibilities curve: These points are unattainable given the current technology and resources of the economy.

3. Shifts of the production possibilities curve: The PPC shifts if a nation obtains more resources or if the existing resources become more efficient.

Teaching Strategy: Point out that the PPC can also shift when there is a technological improvement that allows for a more efficient use of the nation's resources.

II. Specialization and Trade

Specialization affects the shape of the PPC curve.

A. Marginal cost: This is the incremental amount of one good or service that must be given up to obtain one additional unit of another good or service.

Teaching Strategy: Marginal costs can be related to your students' experiences; for example, if they buy a shirt, they cannot buy shoes or a tie with the same money.

Teaching Strategy: Note that marginal costs increase as resources that are in specialized uses are reallocated to other uses.

B. Specialize where opportunity costs are lowest: Scarce resources must be allocated where they can best perform the job.

1. Trade: Trade occurs because everyone will find that it is mutually beneficial to specialize in goods in which they have a comparative advantage and trade for the other goods. A gain from trade is the difference between what can be produced and consumed without specialization and trade versus that which can be produced and consumed with specialization and trade.

Teaching Strategy: Students usually have trouble with comparative advantage and trade, not because the ideas are inherently hard to understand but because there is a lot to keep track of. Work through an example and give them one to do on their own.

C. Comparative advantage: This is the ability of one person or nation to do something with a lower opportunity cost than another.

D. Private property rights: Specialization according to comparative advantage followed by trade allows everyone to acquire more of the goods they want. Private property rights are

necessary for trade to occur and refer to the laws, courts, and police required to enforce laws against theft and murder.

Teaching Strategy: Ask your students why a professor who is good at fixing cars might still prefer to take his automobile to a garage for a tune-up.

OPPORTUNITIES FOR DISCUSSION

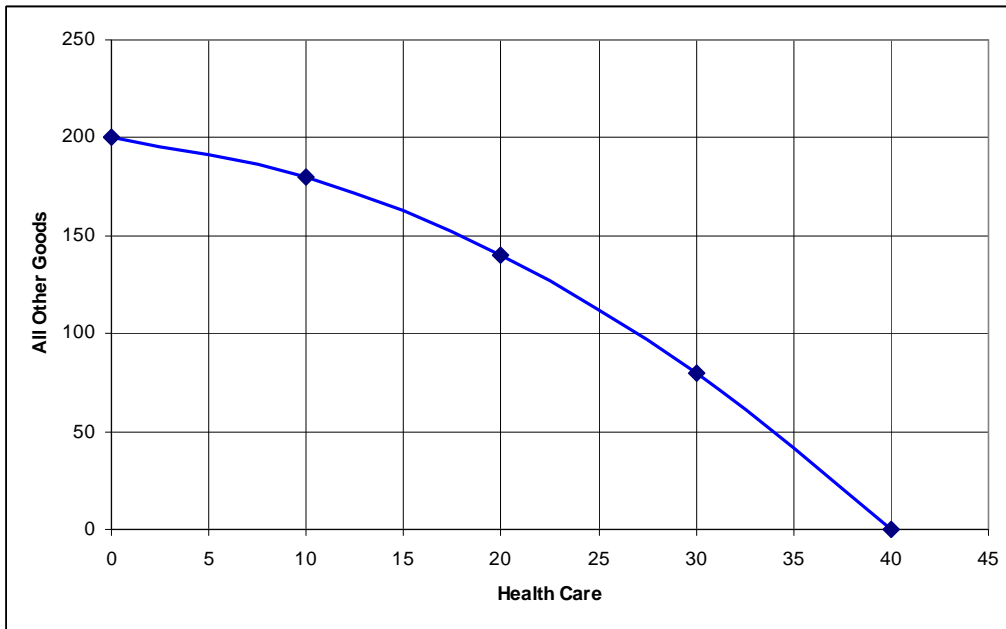
1. Discuss the opportunity cost of Tiger Woods, George Clooney, or another major sports or entertainment figure. Why do you think these people are paid more than school teachers or daycare workers?
2. Discuss ways that a country could shift its production possibilities curve to the right through improved technology.
3. Discuss the Boxed Item: Land Titling in Argentina. Can you think of some local examples of the consequences of a lack of private property rights?
4. List the major goods your state produces. Does your state have a comparative advantage in these goods? Can you describe the reasons for this comparative advantage?

ANSWERS TO EXERCISES

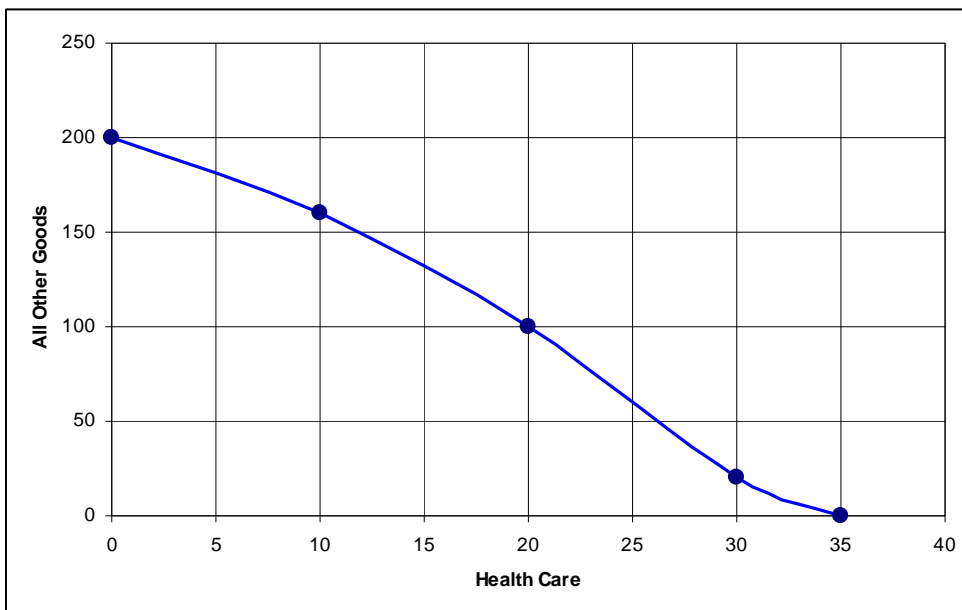
1. The concept ignored is opportunity costs. If the society is operating along a *PPC*, then it is impossible to have increases in all goods and services. It is impossible to have more and better health, education, infrastructure, and other things without giving up something else.
2. If we assume that Janine's and Robert's opportunity costs can be measured by their salaries, then Robert's opportunity cost of standing in line is less than Janine's. We could, however, specify that in neither case will Janine or Robert lose any income by standing in line. In this case, their opportunity costs depend on what else they could be doing. We do not have sufficient information to evaluate whose opportunity costs are higher in this case.
3. The government is limited in what it can provide. Because resources are scarce, a government cannot produce as much of everything that it wants. For each good or service provided, some other good or service will be forgone. This is the concept of opportunity cost.
4.
 - a. 10 hours working; \$100 income
 - b. No
 - c. 30 hours studying; 2.0 GPA
5.
 - a. A person's comparative advantage is the activity in which that person has the lowest opportunity cost.
 - b. No one can have a comparative advantage in all activities because comparative advantage is the relative or "comparative" opportunity costs.
 - c. If the issue is who should study full-time and who should work full-time, then the second individual, described in (4) should work while the individual described in (5) should study full-time, figuring each person's opportunity cost of studying as the hourly wage. Otherwise it depends where on the *PPC* both individuals are located since the slopes of the *PPCs* are constant.

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6. No. In both cases the next best opportunity to playing tennis on Saturday morning is relaxing around the house.
- 7.



- a. The marginal opportunity cost of 10 additional units of health care are: *A to B*, 20 units of all other goods, *B to C*, 40 units of all other goods, *C to D*, 60 units of all other goods, *D to E*, 80 units of all other goods.
- b. The opportunity cost of combination *C* is all other combinations.
- c.



Producing at combination *A* for nation 1 means producing 200 units of other goods; combination *E* means producing 40 units of health care. For nation 2, combination *A* is 200 units of all other

goods, and combination E is 35 units of health care. It is more costly for nation 1 to produce only all other goods than it is for nation 2. For nation 1, $40/200$ is the cost, while for nation 2, $35/200$ is the cost. Thus, nation 1 should specialize in health care and nation 2 in all other goods.

8. Assuming that each can choose to work more hours or to spend time negotiating the price of a car, then the plumber would be expected to spend more time negotiating..
9. There is an opportunity cost to everything. The time spent at lunch has a cost; you could be doing something else.
10. You look at the opportunity cost of spending another 45 minutes. You can remain in line or do something else. Your decision to spend more time in line has nothing to do with the time you have already spent in line. You may say, "I've already spent 30 minutes; I will lose that time if I do not remain here." However, you have lost that 30 minutes no matter what you do.
11. Having paid the \$600 fee at the beginning of the semester means that the opportunity cost of eating any quantity of food does not include the price of the food. However, a fee per quantity means that the opportunity cost of consuming more food includes the price of that food. Because there are lower opportunity costs under the fixed-fee scheme, the average quantity of food consumed will be higher under this scheme.
12. You may do everything better than others, but to do one thing, you have to forgo doing other things, and this opportunity lost is what specialization is all about. Each person specializes in the activity in which his or her opportunity cost is lowest. If you take one hour to cook a gourmet meal but could also solve three math problems in that hour, while a friend takes two hours to cook the meal or solve five math problems, you are "better at everything." But your gourmet meal costs you three math problems, whereas your friend's one meal costs five math problems. Your friend is relatively better off specializing in cooking.
13. The policy is an attempt to work against the idea of specialization according to comparative advantage. The educated people were not able to use their training. As a result, China made a move from a point on its PPC to a point inside its PPC, which reduced its total output. China's output fell so much that the policy was finally abandoned, even in the face of strong political pressures to maintain it.
14. The focus at the elementary level is on the development of skills to be used the rest of the individual's life. The knowledge of a specific subject is less important than the continuity of the individual's development. As the student ages, the subject matter becomes increasingly important. The more important the knowledge of subject matter becomes relative to general skills, the more specialized the instructor must be. In the elementary schools, specialization in general development and general skills occurs; in college and graduate school, specialization according to specific subject matter occurs.
15. Even though most of these officials and corporate executives know how to drive, the government and the corporations believe that their time is better spent concentrating on their positions rather than on driving. The executives and government officials specialize in their managerial expertise, while the chauffeurs specialize in driving. The result should be greater output.
16. Individuals in Botswana, Zimbabwe, and South Africa have private property rights to elephants. Private property rights create an incentive to take care of the elephants. In other African countries, no one has an incentive to take care of the elephants; thus, the population is falling.

ANSWERS TO STUDY GUIDE HOMEWORK

1. Any answer could be correct. The key mistake to watch for is listing *more* than one possible use for the same hours on Friday night.

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2. Production possibilities curve.
3.
 - a. Bob's opportunity cost of one bird is two bookends.
 - b. Bill's opportunity cost of one bird is three bookends.
 - c. Bob has the lower opportunity cost, so Bob has a comparative advantage.
4. Through specialization, Bob and Bill together can produce more output in a week.
5.
 - a. Shopping at the no-frills store yields better prices but is more time-consuming. The Shorts have a higher income but less time to spend with their children. They are likely to perceive the opportunity cost of shopping at the no-frills store to be high because it is so time-consuming. Also, because their income is higher, they are likely to opt for the more expensive superstore. Mrs. Long has more time with her children, so she is likely to perceive the opportunity cost of shopping at the no-frills store as lower. Also, the time spent is worth the lower prices to her because her income is lower.
 - b. The Longs are more likely to clip coupons and buy sale items because they have more time and less money to spend.
 - c. The Shorts are more likely to pay the higher prices at convenience stores because they have more income to spend, but less time.

ACTIVE LEARNING EXERCISE

This exercise offers students the opportunity to explore the concept of comparative advantage as well as the chance to review the construction of a production possibilities curve.

Materials Needed

Graph paper or prepared graphs for each student

Worksheet

Have students pair up, letting one choose to be Mexico and the other the United States. Give them the following Production Possibilities Schedules for trucks and computers.

Percentage of Resources Devoted to:		Number Produced:			
		United States		Mexico	
Trucks	Computers	Trucks	Computers	Trucks	Computers
100	0	5	0	4	0
0	100	0	10	0	2

Have the students draw their PPCs. Then ask each student to pick a point along his or her curve that he or she likes. Having chosen these points, have the students find a way to trade trucks and computers so that each is better off—each gets more of something without getting less of something else.

While individual student results will differ, the instructor should reinforce the basic meaning of the production possibilities curve and the concept of opportunity cost. Once the various combinations are plotted, students should be encouraged to discuss why they chose a particular point on the PPC for production and how they determined that trade should take place. They should be able to quantify the advantages of trade among the two nations.