Microeconomics (Canadian) 2nd edition Hubbard Solutions Manual

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CHAPTER 2 | Trade-offs, Comparative Advantage, and the Market System

SOLUTIONS TO END-OF-CHAPTER EXERCISES

Review Questions

2.1 Production Possibilities Frontiers and Opportunity Costs (pages 30–36)

Learning Objective: Use a production possibilities frontier to analyze opportunity costs and trade-offs.

1.1 The production possibilities frontier (*PPF*) is a curve showing all the attainable combinations of two products that may be produced with available resources and existing technology. Combinations of goods that are on the frontier are efficient because all available resources are being fully utilized, and the fewest possible resources are being used to produce a given amount of output. Points inside the production possibilities frontier are inefficient, because the maximum output is not being obtained from the available resources. A production possibilities frontier will shift outward (to the right) if more resources become available for making the products or if technology improves so that firms can produce more output with the same amount of inputs.

1.2 *Increasing marginal opportunity costs* means that as more and more of a product is made, the opportunity cost of making each additional unit rises. It occurs because the first units of a good are made with the resources that are best suited for making it, but as more and more of the product is made, resources must be used that are better suited for producing something else. *Increasing marginal opportunity costs* implies that the production possibilities frontier is bowed out—that its slope gets steeper and steeper as you move down the production possibilities frontier.

2.2 Comparative Advantage and Trade (pages 36–41)

Learning Objective: Understand comparative advantage and explain how it is the basis for trade.

2.1 Absolute advantage is the ability to produce more of a good or service than competitors using the same amount of resources. Comparative advantage is the ability to produce a good or service at a lower opportunity cost than competitors. It is possible to have a comparative advantage in producing a good even if someone else has an absolute advantage in producing that good (and every other good). Unless the two producers have exactly the same opportunity costs of producing two goods—the same trade-off between the two goods—one producer will have a comparative advantage in making one of the goods and the other producer will have a comparative advantage in making the other good.

2.2 The basis for trade is comparative advantage. If each party specializes in making the product for which it has the comparative advantage, they can arrange a trade that makes both of them better off. Each party will be able to obtain the product made by its trading partner at a lower opportunity cost than without trade.

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2.3 The Market System (pages 42–46)

Learning Objective: Explain the basic idea of how a market system works.

3.1 A circular-flow diagram illustrates how participants in markets are linked. It shows that in factor markets, households supply labour and other factors of production in exchange for wages and other payments from firms. In product markets, households use the payments they earn in factor markets to purchase the goods and services produced by firms.

3.2 A free market is one with few government restrictions on how goods or services can be produced or sold, or on how factors of production can be employed. Economic decisions are made by buyers and sellers in the marketplace. In a centrally planned economy, the government—rather than households and firms—makes almost all the economic decisions. Free market economies have a much better track record of providing people with rising standards of living.

3.3 Private property rights are the rights that individuals or firms have to the exclusive use of their property, including the right to buy or sell it. If individuals and firms believe that property rights are not well enforced, they will be reluctant to risk their wealth by opening new businesses. Therefore, the enforcement of property rights and contracts is vital for the functioning of the economy. Independent courts are crucial because property rights and contracts will be enforced only if judges make impartial decisions based on the law, rather than decisions that favour powerful or politically connected individuals.

Problems and Applications

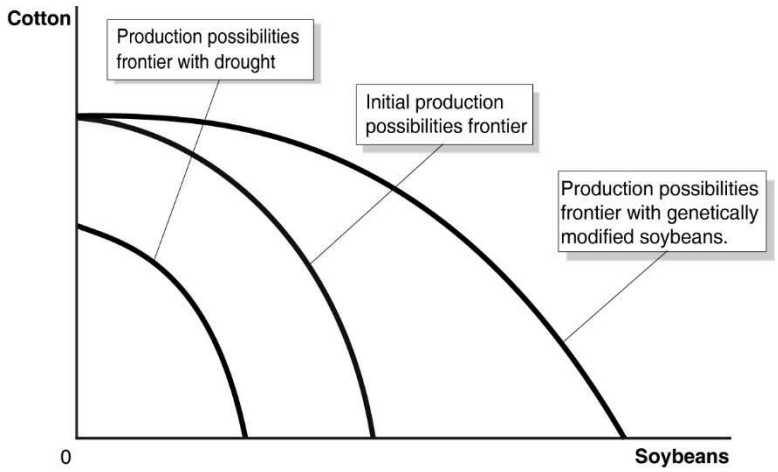
2.1 Production Possibilities Frontiers and Opportunity Costs (pages 30–36)

Learning Objective: Use a production possibilities frontier to analyze opportunity costs and trade-offs.

1.1 **a.** The production possibilities frontiers in the figure are bowed to the right from the origin because of increasing marginal opportunity costs. The drought causes the production possibilities frontier to shift to the left.

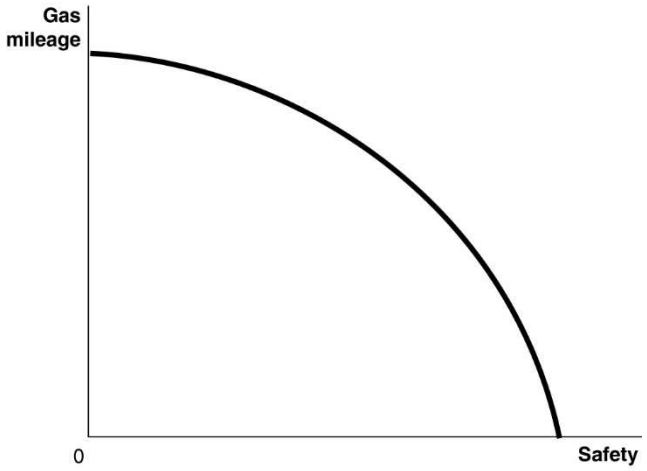
Draw the initial and after drought ppfs here.

b. The genetic modifications would shift the maximum soybean production to the right (doubling it), but not the maximum cotton production.



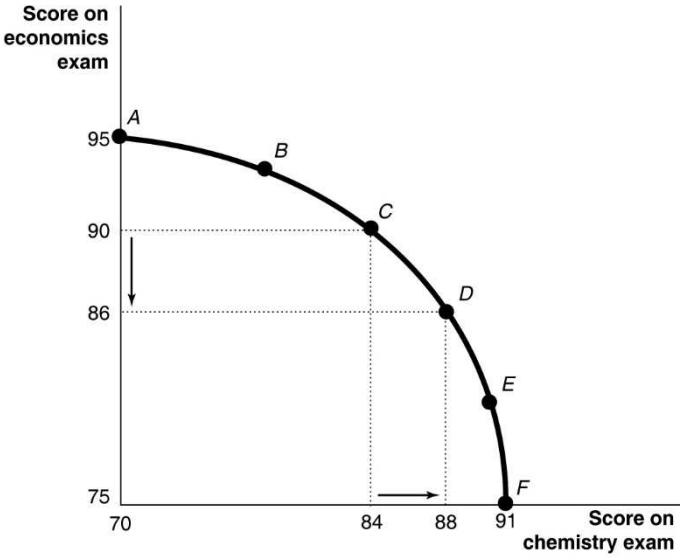
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1.2 Increased safety will decrease gas mileage, as shown in the figure below. Trade-offs can be between physical goods, such as cotton and soybeans in problem 1.1, or between less tangible features such as mileage and safety.



1.3 You would still have an opportunity cost represented by the next best use of your time.

1.4 **a.**



If you spend all five hours studying for your economics exam, you will score a 95 on the exam; therefore, your production possibilities frontier will intersect the vertical axis at 95. If you devote all five hours to studying for your chemistry exam, you will score a 91 on the exam; therefore, your production possibilities frontier will intersect the horizontal axis at 91.

b. The points for choices *C* and *D* can be plotted using information from the table. Moving from choice *C* to choice *D* increases your chemistry score by four points, but lowers your economics score by four points. Therefore, the opportunity cost of increasing your chemistry score by four points is the four points decline in your economics score.

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c. Choice *A* might be sensible if the marginal benefits of doing well on the chemistry exam are low relative to the marginal benefits from doing well on the economics exam—for example, if the chemistry exam is only a small portion of your grade but the economics exam is a large portion of your grade; or if you are majoring in economics and don't care much about chemistry; or if you already have an A sewn up in chemistry but the economics professor will replace a low exam grade with this exam grade.

1.5 Your report should focus on the opportunity costs of spending more money on research to find a cure for heart disease. While heart disease kills thousands of Canadians every year, you need to consider what else could be done with the government resources your minister is considering spending. These same resources could be spent on preventative programs, the arts, roads, etc. You also need to consider the impact the additional spending is likely to have on heart disease treatments. These factors make many government decisions very difficult to make.

1.6. The government should consider whether the costs involved in either of the two programs exceed the benefits received from the programs. If the government decides that the costs of program A exceed its benefit, it may decide that the funds would be better spent on program B. Program A will allow four more students to participate than program B, but at an extra cost of $812.5 per participant. Although this would be a difficult trade-off to consider, spending less even though four fewer students can participate would save resources that could be used for other purposes.

2.2 Comparative Advantage and Trade (pages 36–41)

Learning Objective: Understand comparative advantage and explain how it is the basis for trade.

2.1 In the example in Figure 2.4 the opportunity cost of one pound of apples is one pound of cherries to you, and two pounds of cherries to your neighbour. Any price of apples between one and two pounds of cherries will be a fair trading price, and because ten pounds of apples for fifteen pounds of cherries is the same as one pound of apples for 1.5 pounds of cherries, it falls within this range. We could take any other value in this range to complete the table. Let's take, for example, 1.25 pounds of cherries per pound of apples. We will keep the pounds of apples traded as before at ten. The completed table will now be as follows:

TABLE 2.1: A Summary of the Gains from Trade

	You		**Your Neighbour**	
	Apples (pounds)	Cherries (pounds)	Apples (pounds)	Cherries (pounds)
Production *and* consumption *without* trade	8	12	9	42
Production *with* trade	20	0	0	60
Consumption *with* trade	10	$10 \times 1.25 = 12.5$	10	$60 - 12.5 = 47.5$
Gains from trade (increased consumption)	2	$12.5 - 12 = 0.5$	1	$47.5 - 42 = 5.5$

Note that both you and your neighbour are better off after trade than before trade. Note also that this rate of trading cherries for apples is better for your neighbour than the original rate of trading and worse for you.

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2.2 Yes, the United States would have benefited from importing those products for which Britain had a comparative advantage, which, in fact, is what happened.

2.3 **a.** When France produces one more bottle of wine, it produces two fewer pounds of schnitzel. When Germany produces one more bottle of wine, it produces three fewer pounds of schnitzel. Therefore, France's opportunity cost of producing wine—two pounds of schnitzel—is lower than Germany's—three pounds of schnitzel. When Germany produces one more pound of schnitzel, it produces 0.33 fewer bottles of wine. When France produces one more pound of schnitzel, it produces 0.50 fewer bottles of wine. Therefore, Germany's opportunity cost of producing schnitzel—0.33 bottles of wine—is lower than that of France—0.50 bottles of wine. We can conclude that France has the comparative advantage in making wine and that Germany has the comparative advantage in making schnitzel.

b. We know that France should specialize where it has a comparative advantage and Germany should specialize where it has a comparative advantage. If both countries specialize, France will make four bottles of wine and zero pounds of schnitzel, and Germany will make zero bottles of wine and fifteen pounds of schnitzel. After both countries specialize, France could then trade three bottles of wine to Germany in exchange for seven pounds of schnitzel. This will give France the same amount of wine as they initially had, but an extra one pound of schnitzel. Germany will have three bottles of wine and eight pounds of schnitzel—that is, the same amount of wine, but more schnitzel. Other mutually beneficial trades are possible as well.

2.4 An individual or a country cannot produce beyond its production possibilities frontier. The production possibilities frontier shows the most that an individual or country can produce for a given amount of resources and technology. Without trade an individual or country cannot consume beyond its production possibilities frontier, but with specialization and trade an individual or country can consume beyond its production possibilities frontier. In Figure 2.5, both you and your neighbour were able to consume beyond your production possibilities frontiers, and in Solved Problem 2.2, both Canada and the United States were able to consume beyond their production possibilities frontiers.

2.5 Specialization and trade are about standard of living, not jobs. In both cases, individuals and countries have jobs. You have a job if you produce everything yourself and do not trade with others, and you have a job if you specialize and trade with others. But your standard of living will be higher if you specialize and trade.

2.6 Importing only products that could not be produced here would result in Canada producing—rather than importing—many goods for which it does not have a comparative advantage. These products would be produced at a higher opportunity cost than if they had been imported.

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2.3 The Market System (pages 42–46)

Learning Objective: Explain the basic idea of how a market system works.

3.1 **a.** An auto purchase takes place in the product market. The household (George) demands the good and the firm (Toyota) supplies the good.

b. The labour market is a factor market. Households supply labour and the firm demands labour.

c. The labour market is a factor market. The household (George) supplies the factor of production (labour), while the firm (McDonald's) demands it.

d. The land market is a factor market. The household supplies the factor of production (land) and the firm (McDonald's) demands it.

3.2 Adam Smith was making the "invisible hand" argument that, in pursuing their self-interest, business people end up producing the goods and services most desired by consumers.

3.3 Adam Smith realized—as economists today realize—that people's motives can be complex. But in analyzing people in the act of buying and selling, economists have concluded that in most instances, the motivation of financial reward provides the best explanation for the actions people take. Moreover, being self-interested—looking out for your own well-being and happiness—and being selfish—caring only about yourself—are not exactly the same things. Many successful business people are, in fact, generous: donating to charity, volunteering for activities, and otherwise acting in a generous way. This is not inconsistent with making business decisions that maximize profits for their companies.

3.4 **a**. "Psychic rewards" refer to the psychological benefits of, in this case, buying lottery tickets, which provide the excitement of playing the lottery and the chance of winning big.

b. An entrepreneur might receive the psychic rewards of creating and running his or her own business along with the chance of making large profits.

c. Answers will vary here. Elements of being an entrepreneur do appear to be similar to buying a lottery ticket, with the psychic rewards of playing the game along with the possibly of large returns. Other elements may differ, such as the probability of success.

3.5 Having secure property rights would enable resource owners to use their resources in more efficient ways, because they would spend less time on activities such as guarding their property. Owners would also be able to make improvements to their property without fear that someone would seize the property. They would also better able to finance a business by borrowing money, using their property as collateral for a loan.

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