Prices, Costs, and the Gains from Trade

Now that we've talked a bit about buying and selling, it's time to pause and ask why people buy and sell things in the first place. Put more succinctly, the question is: Why do people trade?

The answer is twofold. Sometimes people trade because they have different tastes. That ceramic teapot you inherited from your grandmother—the one in the shape of a smiling pig—might seem to you like a piece of junk and to someone else like a charming piece of American folk art. By listing the smiling pig on eBay, you can locate that someone else and make a trade that leaves both of you happier.

We'll have a lot more to say about tastes in Chapters 3 and 4. In this chapter we'll concentrate on the other reason people trade—they have different abilities. No matter how much you like lobster, it makes no sense for you to set your own lobster traps unless you know what you're doing. Better to let someone else set the traps and trade for your lobster.

That much is obvious. But here's a much deeper and far more important point: Even if you are the world's greatest lobster trapper, it *still* might make no sense for you to set your own lobster traps—for the simple reason that you might have something else better to do. Maybe you should be doing your homework, for example—or maybe you're running a profitable business that merits your full attention. In that case, you'll want to trade for your lobster not because of your lobstering abilities but because of your other abilities, whether as a student or as an entrepreneur.

The potential for gains from trade is determined by all of our abilities taken together. The theory of how this all works is called the theory of *comparative advantage,* and it will be the major theme of this chapter. But before proceeding to that theory, we'll take a few pages to solidify some important vocabulary—the vocabulary of *prices* and of *costs.*

2.1 Prices

In Chapter 1 we had much to say about prices, on the assumption that everybody knows what prices are. Now it is time for a more precise discussion. In this section we will specify exactly what the word *price* means in microeconomics.

Absolute versus Relative Prices

Imagine a world without money. In such a world, people would still trade, and it would make perfectly good sense to talk about prices. For example, if you gave your neighbor 2 loaves of bread in exchange for 1 bottle of wine, we would say that the price you paid for the wine was 2 loaves of bread per bottle. At the same time, we would say that your neighbor had purchased 2 loaves of bread at the price of ½ bottle of wine per loaf.

In the real world, we use money to make purchases. Consequently, we usually measure the price of wine in terms of dollars rather than in terms of bread. However, it is still possible to measure the price of wine in terms of bread. If bread sells for $1 per loaf and wine sells for $2 per bottle, it follows that you can exchange 2 loaves of bread for 1 bottle of wine.[1] We can still say that the price of wine is 2 loaves of bread per bottle or that the price of bread is ½ bottle of wine per loaf.

We now have two different meanings for the word *price,* and we must distinguish between them. The number of dollars necessary to purchase a bottle of wine is called the **absolute price** of the bottle, whereas the number of loaves of bread necessary to purchase a bottle of wine is called the **relative price** of wine in terms of bread. In general, the absolute price of a good is measured in dollars and the relative price of a good is measured in units of some other good.

Of course, there are many different relative prices of wine. We could measure the relative price of wine in terms of chickens, the relative price of wine in terms of steel, or the relative price of wine in terms of hours of labor.

To illustrate the difference between relative and absolute prices, suppose that the absolute prices of bread and wine in two different years are given by the following table:

	2006	2011
Bread	$1/loaf	$3/loaf
Wine	$2/bottle	$6/bottle

In this example, the absolute price of wine has tripled over a five-year period. However, the relative price of wine in terms of bread has remained fixed at ½ bottle of wine per loaf. This illustrates the important point that changes in absolute prices are not the same thing as changes in relative prices.

In microeconomics, the prices that we study are relative prices. So the price of wine should always be measured in terms of other goods, such as bread. But, we can still use dollars to measure the relative price of wine—provided we assume that the dollar price of bread does not change. We simply must remember that the dollars in which we express the price of wine are really just stand-ins for loaves of bread.

In microeconomics the single word *price* always refers to a relative price.

Relative Prices When There Are More than Two Goods

If we imagine a world with only two goods, such as bread and wine, the *price of wine* refers to something unambiguous: namely, a certain number of loaves of bread. In the real world, there are many different relative prices for wine: one in terms of bread, one

Absolute price

The number of dollars that can be exchanged for a specified quantity of a given good.

Relative price

The quantity of some other good that can be exchanged for a specified quantity of a given good.

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[1] To do this, you might first have to sell the bread for $2 cash and then use the cash to buy the wine. But the end result is the same as if you had exchanged the bread for the wine directly.

in terms of chickens, and so on. We can also consider the price of wine relative to a basket containing representative quantities of all goods in the economy. Sometimes we will speak of *the* price of wine, in which case we will be referring to the price relative to that representative basket. Often we will measure this relative price in dollars, keeping in mind that the word *dollar* is being used to refer not to a piece of green paper but to a basket of goods.

Changing Prices

Suppose that in 2010 the absolute price of bread is $1 per loaf, the absolute price of wine is $2 per bottle, and that these are the only two items you consume. Now suppose that because bad weather has damaged the vineyards, you are led to expect that the price of wine will double in 2011. Because we are studying relative prices, this means that in 2011, 1 bottle of wine will trade for 4 loaves of bread rather than for the 2010 price of 2 loaves. The table in Exhibit 2.1 shows only a few of the many different absolute prices at which this could happen.

If in 2011 any of the last four columns of the table describes the prices correctly, then we will be able to say that the price of wine has doubled, just as we predicted it would. All four of these columns fit our prediction equally well. Because microeconomics is concerned only with relative prices, from our point of view there is no real difference between those columns. If you woke up tomorrow morning to discover that all absolute prices (including wages) had doubled (or halved), the world would not really be different in any significant way.

Relative Price Changes and Inflation

Because relative prices and absolute prices are determined independently of each other, it is always misleading to attribute an absolute price change to a relative price change. It is quite common to hear that there has been inflation (a rise in the level of absolute prices) because of a rise in the price of a particular commodity such as oil, housing, or wine. But we can see from Exhibit 2.1 that a rise in the relative price of wine is equally consistent with either a rise or a fall in the absolute price level.

In fact, when the relative price of wine increases to 4 loaves of bread per bottle, what happens to the relative price of bread? It decreases, from ½ to ¼ bottle of wine per loaf. Any increase in the relative price of wine must be accompanied by a decrease in the relative price of bread.

EXHIBIT **2.1**	**Absolute and Relative Price Changes in a World with Two Goods**				
	2010	2011(a)	2011(b)	2011(c)	2011(d)
Bread	$1/loaf	$1/loaf	50¢/loaf	$5/loaf	25¢/loaf
Wine	$2/bottle	$4/bottle	$2/bottle	$20/bottle	$1/bottle

The table shows the absolute prices of bread and wine in 2010 and four possibilities for the absolute prices in 2011. In each of the four cases the relative price of a bottle of wine has risen from 2 loaves of bread to 4 loaves of bread. In each case we can correctly assert that "the price of wine has doubled," because in microeconomics the *price* always means the *relative price.*

Exercise 2.1 Explain why the preceding statement is true.

Inflation

An ongoing rise in the average level of absolute prices.

Inflation is an ongoing rise in the average level of absolute prices. When you hear the commentator on the nightly news program attribute the latest burst of inflation to a rise in the price of gasoline, reflect on what he means. He means that gasoline is now more expensive relative to, say, shoes than it was before. Another way to say the same thing is to state that shoes are now cheaper, relative to gasoline, than they were before. If the rise in the relative price of gasoline causes inflation, why doesn't the fall in the relative price of shoes cause deflation? In fact, relative price changes do not cause absolute price changes—and you now know more than the commentator on the nightly news.

Some Applications

The Quality of Oranges

Oranges are grown in Florida and shipped to places like New York. In which state do you suppose that people, on average, eat better oranges?[2]

Most noneconomists guess Florida. But a little understanding of relative prices leads to the surprising conclusion that the answer is New York.

To see why, suppose for simplicity that there are only two kinds of oranges: "good" oranges, which cost $1 in Florida, and "bad" oranges, which cost 50¢ there. When we speak of "bad" oranges, we don't mean to imply that these oranges are entirely undesirable, only that they are not quite so desirable—not so sweet or so juicy—as the "good" ones are.

What, then, is the relative price of a good orange in Florida? The answer is: two bad oranges. The Floridian who chooses to eat a good orange passes up the opportunity to eat two bad ones.

Now let us calculate the relative price of a good orange in New York. The key observation is that it is impossible for a New Yorker to buy just an orange. What he buys, implicitly, is a combination package consisting of an orange and a train ticket to transport that orange to New York. Suppose for illustration that it costs 50¢ to transport an orange to New York. The New Yorker must pay $1.50 for a good orange ($1 for the orange and 50¢ for the transportation) and $1 for a bad orange. The relative price of a good orange in New York is only 1.5 bad oranges. A New Yorker who chooses to eat a good orange passes up the opportunity to eat just 1.5 bad ones.

Who, then, is more likely to select a good orange: the New Yorker facing a relative price of 1.5 bad oranges, or the Floridian facing a relative price of 2 bad oranges? Clearly, the New Yorker, because he faces the lower relative price.

Dangerous Curve

Of course, the relative price of *oranges* (in terms of, say, apples) is higher in New York than in Florida, and New Yorkers will therefore buy fewer oranges than they would at Florida prices. But once the New Yorker has made the decision to consume an orange, he faces a lower relative price than the Floridian does for choosing a good orange rather than a bad one.

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[2] The example in this section is adapted from A. Alchian and W. Allen, *Exchange and Production: Theory in Use* (Belmont, CA: Wadsworth, 1969).

Because orange-eating New Yorkers are more likely to choose good oranges than their compatriots in Florida, the average quality of oranges bought in New York is higher than in Florida. Because every orange bought is an orange sold, we can express the same thing by saying that the average quality of oranges sold is higher in New York than in Florida: New York supermarkets carry better oranges, on average, than Florida supermarkets do.

2.2 Costs, Efficiency, and Gains from Trade

In the preceding section we discussed the concept of *price.* In this section we will discuss the related concept of *cost.* Once we understand what costs are, we will be able to see how everyone can benefit when activities are carried out at the lowest possible cost. This will provide us with a powerful example of the gains from trade.

Costs and Efficiency

When you decide to spend an evening at the opera, you must forgo a number of other things. First, you pay a price, say $50, for the ticket. Of course, the money itself is valuable only insofar as you could have used it to buy something else. That "something else"—perhaps ten movie tickets or five pizzas—represents some of the cost of going to the opera.

The ticket price is only part of the cost, because your evening at the opera entails many other sacrifices as well. There is the gasoline that you use to drive to the opera. There is also the time spent actually attending the performance. That time could have been spent doing something else, and the value of that something else is also part of the cost of going to the opera.

In summary, a **cost** is a forgone opportunity. The cost of engaging in an activity is the totality of all the opportunities that the activity requires you to forgo.

Cost
A forgone opportunity.

You may have heard the term *opportunity cost* used to describe such costs as the time sacrificed in attending the opera. This term is quite misleading because it implies that an "opportunity cost" is one of several types of cost. In reality, *every cost is an opportunity cost.* The dollars that you pay for the opera ticket are valuable only insofar as they represent forgone opportunities to purchase other goods. They are of exactly the same nature as the costs represented by your time and your gasoline—forgone opportunities all.

In calculating costs, it is important not to double-count. The time spent at the opera could have been used to go to the movies or to study for an exam, but not both. Therefore, it would not be correct to count both the forgone movie and the forgone studying as costs. The only activities that should be counted as costs are those you would have actually engaged in if you had not gone to the opera.

Dangerous Curve

How much does it cost your college to maintain a football team? The most obvious costs are those such as coaches' salaries and transportation to games. But other, less obvious costs can be equally important. What, for example, is the cost of using the football stadium? You might think it is zero if the college owns the football stadium, but this overlooks the forgone opportunity to put that land to other uses. If a developer who wants to build a shopping center would be willing to pay $500,000 for the land, then that forgone $500,000 is part of the cost of having a team.

It is sometimes argued that we should pay higher salaries to our elected officials in order to ensure that the most talented and creative individuals run for office. This argument also overlooks an opportunity cost: If a brilliant corporate executive becomes a brilliant U.S. senator, then the nation must make do with one less brilliant corporate executive. It is not obvious that a genius can do more good as 1 of 100 U.S. senators than as the chairman of the board of General Electric. Perhaps we should *lower* senate salaries precisely in order to avoid the cost of attracting talented people into politics!

Example: The Electrician and the Carpenter

Imagine an electrician and a carpenter, each of whom wants his house rewired and his den paneled. As shown in Table A of Exhibit 2.2, the electrician requires 10 hours to rewire his house and 15 hours to panel his den. The carpenter knows how to do his own rewiring, but because he is less skilled at it than the electrician, it takes him 20 hours instead of 10. And what about paneling? The electrician can panel his den in 15 hours, so you might expect a professional carpenter to be able to do it in a shorter time. But we forgot to tell you that this particular carpenter is a tad on the doltish side, and has some paralysis in his left arm to boot. As a result, paneling his den takes him 18 hours to complete. All of these numbers are summarized in Table A of Exhibit 2.2.

Because the electrician can both rewire and panel faster than the carpenter can, you might think that it is correct to say that he can perform both tasks at a lower cost than the carpenter can. But this is definitely not true. To see why not, we have to remember that costs are defined in terms of forgone opportunities. The electrician needs 10 hours to rewire his house. Alternatively, he could use that same 10 hours to complete $\frac{2}{3}$ of a 15-hour paneling job. That $\frac{2}{3}$ of a paneling job is the cost of his rewiring. Similarly, a paneling job costs him $\frac{3}{2}$ rewirings.

We can do the same kind of calculations for the carpenter. The results are displayed in Table B of Exhibit 2.2.

Exercise 2.2 Explain how we got the entries in the second column of Table B.

The electrician can produce a rewiring job more cheaply than the carpenter can because he rewires a house at a cost of $\frac{2}{3}$ of a paneling job, whereas the carpenter rewires at a cost of $\frac{10}{9}$ paneling jobs. We express this by saying that the electrician has a **comparative advantage** at rewiring. This simply means that he can do the job at a lower cost than the carpenter can. Another way to say the same thing is that the electrician is **more efficient** at rewiring than the carpenter is.

It is a bit more surprising, but equally true, that the carpenter is more efficient than the electrician at paneling. This statement may surprise you, since the carpenter takes 18 hours to do a paneling job that the electrician can do in 15 hours. Nevertheless, it is true. The cost to the carpenter of performing a paneling job is only $\frac{9}{10}$ of a rewiring job, whereas the cost to the electrician of performing a paneling job is $\frac{3}{2}$ rewiring jobs. This follows from our definition of cost as a forgone opportunity. The cost of paneling is not the number of hours devoted to the job, but the use to which those hours could have been put. The carpenter is therefore a more efficient paneler than the electrician. He has a comparative advantage at paneling.

Comparative advantage

The ability to perform a given task at a lower cost.

More efficient

Able to perform a given task at a lower cost; having a comparative advantage.

EXHIBIT 2.2	The Electrician and the Carpenter

	Table A				Table B	
	Electrician	Carpenter			Electrician	Carpenter
Rewiring	10 hours	20 hours		Rewiring	2/3 paneling	10/9 panelings
Paneling	15 hours	18 hours		Paneling	3/2 rewirings	9/10 rewiring

Table A shows the amount of time needed for the electrician and the carpenter to rewire and to panel. Notice that the electrician can complete either job in less time than the carpenter can. We express this by saying that the electrician has an absolute advantage at each task.

Table B shows the costs of rewiring and paneling jobs performed by each individual. The costs are measured in terms of forgone opportunities; thus the cost of a rewiring job must be measured in terms of paneling jobs and vice versa. All of the information in Table B can be derived from the information in Table A.

Notice that the electrician can rewire at a lower cost than the carpenter, but that the carpenter can panel at a lower cost than the electrician. We express this by saying that the electrician has a comparative advantage at rewiring, whereas the carpenter has a comparative advantage at paneling.

Suppose that each individual wants his house rewired and his den paneled. Table C below shows the total amount of time that each will have to work in order to accomplish both jobs. In the first column we assume that each does all of the work on his own house. For example, the electrician spends 10 hours rewiring and 15 hours paneling, for a total of 25 hours. In the second column, we assume that each specializes in the area of his comparative advantage: The electrician rewires both houses and the carpenter panels both dens.

It is apparent from Table C that trade makes both parties better off. In particular, the electrician can gain from trade with the carpenter, despite his absolute advantages in both areas. This illustrates the general fact that everyone can be made better off whenever each concentrates in his area of comparative advantage and then trades for the goods he wants to have.

	Table C	
	Without Trade	With Trade
Electrician	25 hours	20 hours
Carpenter	38 hours	36 hours

Students often make statements like "The electrician is more efficient at rewiring than he is at paneling," or "The electrician has a comparative advantage at rewiring over paneling." Such statements are not only wrong, they are without meaning. The correct statements are "The electrician is more efficient at rewiring than the carpenter is, and less efficient at paneling than the carpenter is," and "The electrician has a comparative advantage over the carpenter at rewiring, whereas the carpenter has a comparative advantage over the electrician at paneling." The comparative in comparative advantage refers to a comparison of two individuals performing the same task and never to a comparison of different tasks performed by the same individual.

Dangerous
Curve

Specialization and the Gains from Trade

We have chosen to define *efficiency* in such a way that the most efficient producer of a good is the one who produces it at the lowest cost, where costs are defined in terms of forgone opportunities. According to this definition, the carpenter is more efficient at paneling than the electrician is. Perhaps this definition strikes you as strange. Why

have we chosen it? The answer is that it is the only definition of efficiency that makes the following statement true:

Everyone in society can be made better off if each specializes in the area where he is most efficient, and then trades for the goods he wants to have.

We can illustrate this with the example of the electrician and the carpenter. Suppose that each of these individuals elects to make his own home improvements. Then the electrician spends 10 hours rewiring and 15 hours paneling, for a total of 25 hours. At the same time, the carpenter spends 20hours and 18 hours for a total of 38 hours.

Suppose, on the other hand, that each specializes in his area of comparative advantage and that they trade services. The electrician specializes in rewiring and does both his own house and the carpenter's. These two 10-hour jobs take him 20 hours. In exchange for this, the carpenter panels both dens. These two 18-hour jobs take him 36 hours. All of this is summarized in Table C of Exhibit 2.2.

As you can see, everybody in this society is better off when each exploits his comparative advantage by specializing in the area in which he is the more efficient producer.

When you first looked at Table A in Exhibit 2.2, you might have thought that the electrician could not possibly have anything to gain by trading with the carpenter. You might have thought that this was so because the electrician appeared to be better than the carpenter at everything. Now you know that the carpenter is actually "better" than the electrician at paneling, in the sense that he panels at a lower cost than the electrician does, giving him a comparative advantage. This is the reason that trade can be a profitable activity for both.

An individual's preferences are not sufficient (or even necessarily relevant) for determining what he should produce. The electrician wants both rewiring and paneling, but he is better off when he produces two rewirings than when he produces exactly what he wants. The same is true of groups of individuals. The people of Finland might collectively love grapefruit, but it would not be intelligent for Finland to specialize in domestic grapefruit production. The Finns can have more grapefruit by specializing in the areas of their comparative advantage (in this case, timber and timber products) and then trading for grapefruit and the other commodities they wish to consume.

The benefits of specialization and trade account for most of the material wealth that you see in the world. Wherever you go in the United States, you will find small towns of 500 or 2,000 or 3,000 people. The residents of these towns consume fresh fruit and power tools and air-conditioning and comic books and Hollywood movies and catcher's mitts and artwork. None of the towns produces such a wide variety of goods on its own. Typically, the residents of the town specialize in a few areas of comparative advantage and acquire the goods they want to have by trading with people in other towns who have specialized in other areas. If a town of 2,000 people attempted to produce its own fresh fruit and power tools and Hollywood movies, very little of anything would be accomplished. The difference between the standard of living in that imaginary isolated town and the standards of living actually observed in the United States is due entirely to the principle of comparative advantage. The enormous magnitude of that difference is almost impossible to contemplate.

Example: Outsourcing

The New York Times recently carried an editorial by U.S. Senator Charles Schumer and former Assistant Treasury Secretary Paul Craig Roberts. Schumer and Roberts argued that the principle of comparative advantage is no longer relevant in the modern world and offered two examples.

First, a major New York securities firm plans to replace its team of 800 software engineers, each earning about $150,000 a year, with an equally competent team in India earning an average of over $20,000. (Hiring foreign professionals to provide services formerly provided by Americans is sometimes called outsourcing.)

Second, the number of radiologists in the United States is expected to decline significantly because M.R.I. data can be sent over the Internet to Asian radiologists capable of diagnosing the problem at a small fraction of the cost.

Schumer and Roberts view these developments as bad. But if Senator Schumer had talked to those of his constituents who purchase software and pay doctors' bills, he might have heard a different viewpoint. Indeed, Senator Schumer appears to be the only U.S. Senator in modern history ever to have complained about a dramatic reduction in medical costs.

If foreign professionals of equal quality work more cheaply than American professionals, it's because the foreign professionals have lower opportunity costs. When a New York securities firm hires Indian software engineers, it releases American engineers to do something more valuable—instead of providing a service that is available elsewhere for $20,000, they can now provide other services. Similarly, ambitious and talented Americans who would otherwise have become radiologists will now find other specialties (both in and out of medicine), providing new services to American consumers.

Why People Trade

People trade for two reasons, either one of which would be sufficient for trade to take place. They trade because they have different tastes and because they have different abilities.

Imagine a world with only two goods: apples and gasoline. In this imaginary world, each individual receives 5 apples and 5 gallons of gasoline as a gift from heaven once a week. In that world everyone has equal abilities in production—we each "produce" 5 apples and 5 gallons of gasoline per week and can do nothing to increase or decrease that production—but we might still trade with one another because of differences in tastes. If you preferred to stay home every night eating apples while your friend preferred to spend his evenings driving through the countryside, you would have an excellent opportunity for a mutually beneficial exchange.

At the other extreme, imagine a world where everyone has the same preferences regarding apples and gasoline, but some people only know how to grow apples while others only know how to manufacture gasoline. The apple growers will grow apples, the gasoline manufacturers will make gasoline, and then they will trade so that each has a mix of apples and gasoline that is preferable to what the individual could produce for himself.

In each of these imaginary worlds, trade takes place for a different reason. People with identical abilities might trade because of differing tastes, and people with identical tastes might trade because of differing abilities. In a world in which both tastes and abilities differ, people will trade for both reasons.

It Pays To Be Different

One moral to be drawn from this discussion is that to benefit from trade, *it pays to be different* from everyone else. If you and your neighbor have identical collections of baseball cards, and if you both have all the same favorite players, then you might as well not have a neighbor, at least for the purpose of improving your baseball card collection.

But if either your collection (that is, your *ability* to provide certain baseball cards) or your *taste* is unusual in any way, you and your neighbor should probably talk.

The more different you are, the more you have to gain. If you are the only person in your neighborhood who likes liver, you'll be able to buy it at a very low price and be happy. If you are the only one who hates liver, your neighbors' preferences will leave more prime rib for you. If you are the only person in your neighborhood who hates gardening, you'll be able to hire gardeners at a very low price; if you are the only one who loves it, you can be very happy in the gardening business. These benefits result from differences in tastes; the carpenter and the electrician benefited from differences in abilities. In trading, any difference is an opportunity for mutual gain.

This observation has an important consequence for international trade. All countries benefit from trade, but which countries benefit the most? The answer is: those countries whose citizens are most different from the rest of the world. By and large, these are the small countries. For purely numerical reasons, the average citizen of the United States is not too different from the average North American (counting U.S. and Canadian citizens as North Americans). There are just so many more people south of the U.S.–Canadian border that they dominate the continent-wide average. But the average Canadian may differ substantially, in both tastes and abilities, from the average North American. Because it pays to be different, the Canadians gain more from trade between the two countries.

Trade Without Differences

The great nineteenth-century economist David Ricardo was the first to recognize the importance of comparative advantage and to analyze its consequences for mutually beneficial trade. Earlier, the great eighteenth-century economist Adam Smith had described another, completely different, way in which trade can benefit all parties.

Sometimes goods can be produced more effectively when they are produced in large quantities. You might be able to bake two dozen cupcakes in less than twice the time that it takes you to produce just one dozen. If you bake alone, you spend an hour producing a dozen cupcakes and another hour making frosting. If you trade with your neighbor, you can spend 1½ hours making two dozen cupcakes while your neighbor spends 1½ hours making a double recipe of frosting. After the appropriate trade, you each have a dozen frosted cupcakes and you have each worked only 1½ hours instead of 2 hours.

This gain from trade is quite different from the others we have discussed in this chapter, because it does not arise from any differences in tastes or abilities. Instead, it is a consequence of the increased productivity that can result when goods are produced in greater quantities. Trade enables each partner to expand the scale of his activities and take advantage of this phenomenon.

What's Next

Despite the example of the cupcakes, you should not lose sight of our main theme: Trading is beneficial whenever people differ in their abilities or in their tastes. In this chapter we have explored the meaning of *differing abilities* and have made the term more precise through the concept of comparative advantage. We have seen quite explicitly how individuals with different comparative advantages can gain from trade. Our next task is to make a thorough study of tastes and to incorporate them into our study of market behavior. That will be the subject of Chapter 3.

Summary

In microeconomics, the word *price* is always used to refer to the *relative price* of a good. Thus, the price of a potato is the quantity of some other good or collection of goods that can be exchanged for a potato. The relative price must be distinguished from the *absolute price,* which measures the number of dollars that can be exchanged for a potato. Nevertheless, we often measure relative prices in "dollars." In doing so, we must remember that these dollars are not pieces of green paper but simply a convenient shorthand for referring to collections of other goods in the economy.

The price of a good or of an activity is typically only one component of the cost of acquiring that good or participating in that activity. The full cost of participation is the totality of all alternative opportunities that must be forgone. In calculating this cost, we must be careful to count only those alternatives that we would have actually pursued.

An individual is said to perform a task more efficiently than another if he performs it at a lower cost. An individual is said to have a comparative advantage at a task if he performs it more efficiently than anyone else. In determining who is the most efficient producer of a good, we must keep in mind that all costs are forgone opportunities. Thus, we do not count, for example, time and raw materials, but instead the alternative uses of that time and those raw materials.

Everyone benefits when each person specializes in his area of comparative advantage and then engages in trade. Therefore, an individual's preferences need not enter into his decisions about what to produce.

Differences in ability (in other words, differences in comparative advantage) are one reason for trade. Another reason is differences in taste, which will be examined in Chapter 3.

Author Commentary   www.cengage.com/economics/landsburg

AC1.   Read this article for more information on the gains from trade.

Review Questions

R1.   Suppose that in 2007 the absolute price of bread is $2 per loaf and the absolute price of wine is $6 per bottle. In 2008, the absolute price of bread is $4 per loaf and the absolute price of wine is $8 per bottle. Has the relative price of bread risen or fallen? What about the relative price of wine?

R2.   List some of the costs of going to college.

R3.   Suppose it takes you 2 hours to paint a picture and 8 hours to write a song; it takes your roommate 4 hours to paint a picture and 100 hours to write a song.

Which of the following statements are true, which are false, and which are meaningless:

a. You have a comparative advantage over your roommate at painting pictures.

b. You have a comparative advantage at painting pictures over writing songs.

c. Your roommate has a comparative advantage over you at writing songs.

d. If you and your roommate each want to have one original picture to hang on your wall and one original song to call your own, you can both gain from trade.

e. It is more efficient for your roommate instead of you to write the songs.

R4. Why might a person who loves potatoes and hates squash nevertheless choose to grow squash in his garden?

R5. Why do people trade?

Numerical Exercises

N1. Suppose that the amount of time required for the electrician or the carpenter to complete a job of rewiring or paneling is given by the following table:

	Rewiring	Paneling
Electrician	5 hours	10 hours
Carpenter	10 hours	15 hours

a. Compute the costs of performing each of these tasks for each individual.

b. Who has the comparative advantage at rewiring? At paneling?

c. Suppose that the more efficient rewirer does all of the rewiring and the more efficient paneler does all of the paneling. Does this trade benefit the electrician? Does it benefit the carpenter?

d. Suppose that a different trade is worked out whereby the electrician rewires the carpenter's entire house in exchange for the carpenter's doing $3/5$ of the electrician's paneling job. Now how much time does each spend working? Do they each benefit?

Note: This problem illustrates the fact that when different parties have different comparative advantages, there is always some trade that will benefit both. However, not *any* trade will benefit both; the trade must take place at an appropriate relative price.

Problem Set

1. In 2010, the absolute price of tea was $12 a pound and the absolute price of a Honda Civic was $16,000. In 2011, the absolute price of tea rose to $15 per pound and the absolute price of a Honda Civic rose to $24,000. Did the relative price of tea in terms of Civics increase or decrease? What about the relative price of Civics in terms of tea?

2.   If somebody tells you that all of the relative prices in the economy have increased over the past year, what can you conclude?

3.   Suppose that there is a fall in the cost of shipping goods by railroad. What will happen to the difference between the average quality of oranges sold in Florida and the average quality of oranges sold in New York?

4.   Where would you expect to find a larger percentage of childless couples: at a cheap movie or at an expensive show? (*Hint:* Childless couples don't have to hire babysitters.)

5.   In the 1920s, it was illegal to manufacture or sell whiskey in the United States. Nevertheless, much whiskey was produced and sold, though at higher prices that reflected the cost of evading law enforcement. **True or False:** The average quality of whiskey sold in the United States was probably higher in the 1920s.

6.   **True or False:** If Americans can produce both agricultural and industrial products with less effort and fewer raw materials than Mexicans can, then there can be no advantage to the United States in trading with Mexico.

7.   Suppose that an acre of land in Iowa can yield either 50 bushels of wheat or 100 bushels of corn, while an acre of land in Oklahoma can yield either 20 bushels of wheat or 30 bushels of corn.

   a.   What is the cost of growing 200 bushels of wheat in Iowa? What is the cost of growing 200 bushels of wheat in Oklahoma? Which state has a comparative advantage in growing wheat?

   b.   Which state has a comparative advantage in growing corn?

   c.   Suppose that the residents of Iowa eat 200 bushels of wheat and 360 bushels of corn, and that the residents of Oklahoma also eat 200 bushels of wheat and 360 bushels of corn. If there is no trade between the states, how many acres must each state devote to agriculture?

   d.   In part c, suppose that the states begin to trade, with each specializing in its area of comparative advantage. How many acres of Iowa farmland are freed up for other uses? How many acres of Oklahoma farmland?

8.   Dell computers contain hard drives made by other manufacturers. **True or False:** If Dell made its own hard drives, Dell computers would be cheaper.

9.   **True or False:** If George types 50 words per minute and Mary types 120, then it certainly makes more sense for Mary to be employed as a secretary than for George to be.

10. **True or False:** A farmer with a lot of children will find it less costly to harvest his crops than a farmer with no children, since he can put his children to work without pay.

11. **True or False:** It would be a good thing if only those students with the most talent for medicine were allowed to become doctors. (Assume that there are enough such students so that we could still have the same number of doctors that we have today.)

12. **True or False:** A small country with widespread starvation would be well advised to concentrate its resources in the production of food rather than in the production of decorative jewelry.

13. **True or False:** A country that is poor in natural resources and has an unskilled population may be unable to trade profitably because it has no comparative advantage at anything.

14. Suppose that the Winkies and the Munchkins are initially identical in terms of their abilities to produce a wide variety of goods, including food and automobiles. One day, the Munchkins discover a new, cheaper way to make automobiles. **True or False:** This puts the Winkies at a comparative disadvantage and therefore makes them worse off.

15. Explain exactly where the following argument goes wrong: The Anderson-Little clothing store buys clothes directly from the manufacturers, whereas Brand X clothing stores buy from middlemen. In each case, there are the same costs of producing, shipping, and marketing the clothes, but with Brand X's system there is also the additional cost of supporting the middlemen. Therefore, clothes will be cheaper at Anderson-Little.

16. **True or False:** If everyone had the same income, substandard housing would disappear.