

## Section 2

# Opportunity Cost

### Preview

#### Objectives

After studying this section you will be able to:

1. **Describe** why every decision involves trade-offs.
2. **Explain** the concept of opportunity cost.
3. **Explain** how people make decisions by thinking at the margin.

#### Section Focus

All human decisions involve trade-offs. The next best alternative to any choice is called an opportunity cost. Decision-making grids can make it easier to identify the trade-offs and opportunity cost of a decision.

#### Key Terms

**trade-off**  
**guns or butter**  
**opportunity cost**  
**thinking at the margin**

**trade-off** *an alternative that we sacrifice when we make a decision*

**guns or butter** *a phrase that refers to the trade-offs that nations face when choosing whether to produce more or less military or consumer goods*

Several years ago, a few hotels in Washington, D.C., offered a special service to their guests. A popular art exhibit was in town, but the only way to get tickets was to wait in line for several hours. Many of the hotel's guests were unable or unwilling to do this. Instead, the hotels hired people to stand in line to purchase the \$5 tickets. The hotels then sold the tickets to guests for \$50 apiece. These guests spent money rather than time in order to get their exhibit tickets. Similarly, when we decide on one alternative, we gain one thing but lose something else.

### Trade-Offs

Economists point out that all individuals, businesses, and large groups of people—even governments—make decisions that involve **trade-offs**. Trade-offs are all the alternatives that we give up whenever we choose one course of action over another.

What are some of the trade-offs of buying a car? ▼



### Individuals and Trade-Offs

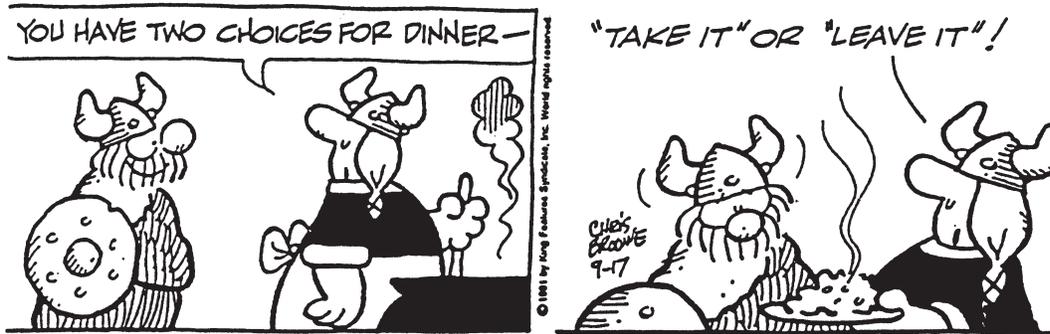
Every decision we make involves trade-offs. For example, if you choose to spend more time at work, you give up watching a movie or going to a baseball game. Choosing to play soccer might prevent you from working on the yearbook or having a part-time job.

### Businesses and Trade-Offs

The decisions that businesspeople make about how to use land, labor, and capital resources also create trade-offs. Farmers who plant broccoli cannot use the same land at the same time to grow cauliflower. A manufacturer who decides to use all her equipment to build chairs eliminates the possibility of building tables or desks at that same time.

### Society and Trade-Offs

Countries also make decisions that involve trade-offs. Economists simplify their explanations of the trade-offs countries face by using the example of **guns or butter**. In short, a country that decides to produce more military goods (“guns”) has fewer resources to devote to consumer goods (“butter”) and vice versa. (Remember, resources are limited!) The steel used to make a tank is no longer available for building the dairy equipment needed to make butter.



◀ Because decisions are not always as clear-cut as the one in this cartoon, economists encourage us to consider the trade-offs and opportunity cost of a decision before we make it.

## Defining Opportunity Cost

Whenever individuals, businesses, or governments decide on a course of action, they face many trade-offs. One alternative, though, is usually more desirable than all the others. The most desirable alternative given up as the result of a decision is called the **opportunity cost**.

If a family buys a computer, family members cannot use the same money to pay for their second choice, going on a trip. The trip, then, is the opportunity cost of buying the computer. The farmer who chose to grow broccoli instead of cauliflower experienced the opportunity cost of planting cauliflower. If a government decides to produce more “guns,” then having less “butter” is the opportunity cost.

Similarly, every ordinary decision that we make every day involves an opportunity cost. For each of the following choices, which alternative would you choose?

- Sleep late or wake up early for a ski trip?
- Sleep late or wake up early to eat your breakfast?
- Sleep late or wake up early to study for a test?

Most likely, you did not choose “sleep late” for all three decisions. Your decision depended on the specific opportunity cost—whatever you were willing to sacrifice.

### Using a Decision-Making Grid

At times, a decision’s opportunity cost may be unclear or complicated. Using a decision-making grid like the one in Figure 1.2 can help you determine whether you are willing

to accept the opportunity cost of a choice you are about to make. In this particular grid, Karen is trying to decide whether to sleep late or get up early to study for a test. Karen likes to sleep. Getting up early is tough. However, getting up early to study would probably improve her test score.

Karen knows that she is choosing between her two top alternatives: sleeping late and waking up early to study. Because of scarcity, she cannot do both. The time can only be occupied in one way.

To help her decide, Karen lists the benefits of each alternative on the grid. Waking up early to study will probably result in a better grade. Also, she will receive teacher and parental approval and experience the personal satisfaction that comes with doing well on a test. However, she knows she would enjoy sleeping later and that the extra sleep would give her more energy during the day.

**opportunity cost** *the most desirable alternative given up as the result of a decision*



## Global Connections

**Global Trade-Offs** The same decision made in two different countries can have vastly different opportunity costs. Malaysia bought two warships in 1992, paying a price equal to the cost of providing safe drinking water for the 5 million Malaysians lacking it. In other words, the opportunity cost of the warships was safe drinking water for 5 million people. The opportunity cost of building warships in wealthier countries is not nearly so high. However, there are still costs to consider. In the United States, the number of people employed by the military decreased dramatically following the end of the cold war. In response, the Pentagon developed a new program, “Troops to Teachers,” to help former soldiers get jobs teaching in schools. The switch from army duty to teaching reminds us that the opportunity cost of a soldier may be a teacher and vice versa. **Why does the opportunity cost of a decision vary from one situation to another?**

**Figure 1.2 Karen's Decision-Making Grid**

	Alternatives	
	Sleep late	Wake up early to study
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Enjoy more sleep</li> <li>• Have more energy during the day</li> </ul>	<ul style="list-style-type: none"> <li>• Better grade on test</li> <li>• Teacher and parental approval</li> <li>• Personal satisfaction</li> </ul>
<b>Decision</b>	Sleep late	Wake up early to study for test
<b>Opportunity cost</b>	Extra study time	Extra sleep time
<b>Benefits forgone</b>	<ul style="list-style-type: none"> <li>• Better grade on test</li> <li>• Teacher and parental approval</li> <li>• Personal satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>• Enjoy more sleep</li> <li>• Have more energy during the day</li> </ul>



Using a decision-making grid can help us see what we gain and lose when we have to choose between alternatives.

**Opportunity Cost** What benefits will Karen forgo if she chooses to sleep later?

**thinking at the margin**  
*deciding whether to do or use one additional unit of some resource*

### Making the Decision

Karen is a practical person. After considering the opportunity cost, she decides that waking up early to study offers the most desirable benefits. She is willing to accept the opportunity cost: extra sleep time. She knows that she is giving up the benefits of sleeping late, namely the pleasure of more sleep and the extra energy it provides.

Karen might have made a different decision when choosing between sleeping and breakfast or sleeping and getting up early to study on a Saturday. With each new situation, the opportunity costs and benefits change.

We always face an opportunity cost, though. When we select one alternative, we have to sacrifice at least one alternative and forgo its benefits. By recognizing what we are sacrificing, we can decide whether the decision is worth it. An economist might say, “Choosing is refusing.”

### Thinking at the Margin

When economists look at decisions, they point out one more characteristic in addition to opportunity cost. Many decisions involve adding one unit or subtracting

one unit, such as one minute or one dollar. From an economist’s point of view, when you decide how much more or less to do, you are **thinking at the margin**.

To understand what it means to think at the margin, you might picture a piece of paper with a line drawn down the left side. That line separates the space used for writing from extra space on the paper. You could use some of that extra space or you could leave it blank. Similarly, thinking at the margin means you are thinking about using one additional unit.

### Making a Decision at the Margin

When deciding whether or not to study, Karen used the “all or nothing” approach as shown in Figure 1.2. She was either going to wake up early to study or sleep late and not study at all that morning.

In reality, Karen could have decided from among several options rather than just two. She could have decided to get up one, two, or three hours earlier to study or to sleep instead. She could have made her decision by looking specifically at how many extra hours to study that morning. Making a decision about each extra hour would mean that she was thinking at the margin.

To make a decision at the margin, Karen should look at the opportunity cost of each extra hour of studying and compare it to the benefit. In Figure 1.3, we can see that one hour of studying means an opportunity cost of an hour of sleep and a benefit of probably passing the test with a C. Two hours of studying “cost” two hours of sleep and perhaps getting a B. Three hours of studying mean sacrificing three hours of sleep and probably getting only a slightly higher grade of B+.

What should Karen decide? At three hours, the cost is no longer worth the benefit to Karen because her grade will improve only slightly. Thus, Karen decides to awaken two hours earlier.

### Cost and Benefit at the Margin

Comparing opportunity costs and benefits at the margin enabled Karen to decide how many hours to study. Such a comparison could help someone decide how much money to spend on a car, how many hours to work, and how much time to spend watching television. Employers think at the margin when they decide how many extra workers to hire. Legislators think at

**Figure 1.3 Decision Making at the Margin**

Options	Benefit	Opportunity cost
1st hour of extra study time	Grade of C on test	One hour of sleep
2nd hour of extra study time	Grade of B on test	2 hours of sleep
3rd hour of extra study time	Grade of B+ on test	3 hours of sleep



This person has to decide how many extra hours to study. By comparing the opportunity cost to the benefit of each extra hour, she can decide how much is the right amount. **Opportunity Cost** At what point is this person paying an added cost with little extra benefit?

the margin when deciding if a government program should include more of a particular benefit. This decision-making process is sometimes called cost/benefit analysis.

Deciding by thinking at the margin is just like making any other decision. Decision makers just have to compare the opportunity costs and the benefits—what they will sacrifice and what they will gain. Once the opportunity cost outweighs the benefits, no more units should be added.

## Section 2 Assessment

### Progress Monitoring Online

For: Self-quiz with vocabulary practice  
Web Code: mna-1016

### Key Terms and Main Ideas

1. Present three examples that illustrate how all decisions involve **trade-offs**.
2. Why must the **opportunity cost** of a decision always be something desirable?
3. How do economists use the phrase “**guns or butter**”?
4. What does it mean to “**think at the margin**”?

### Applying Economic Concepts

5. **Problem Solving** Suppose that you can save \$50 by buying your car in a different city. If the trip requires only \$10 in gasoline, is the trip worthwhile? Why or why not?
6. **Decision Making** Determine an opportunity cost for each of the following. (a) eating pizza (b) going to see a movie on a Tuesday (c) going to see a movie on a Saturday (d) watching television

7. **Try This** Create a decision-making grid like the one in Figure 1.2 to defend a decision you will make today.
8. **Critical Thinking** Decide whether to work 2, 4, or 6 hours at an after-school job by comparing the opportunity cost and benefit of each alternative.
9. **Decision Making** Which factors would an employer consider if he or she were trying to decide whether to hire an additional worker?

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