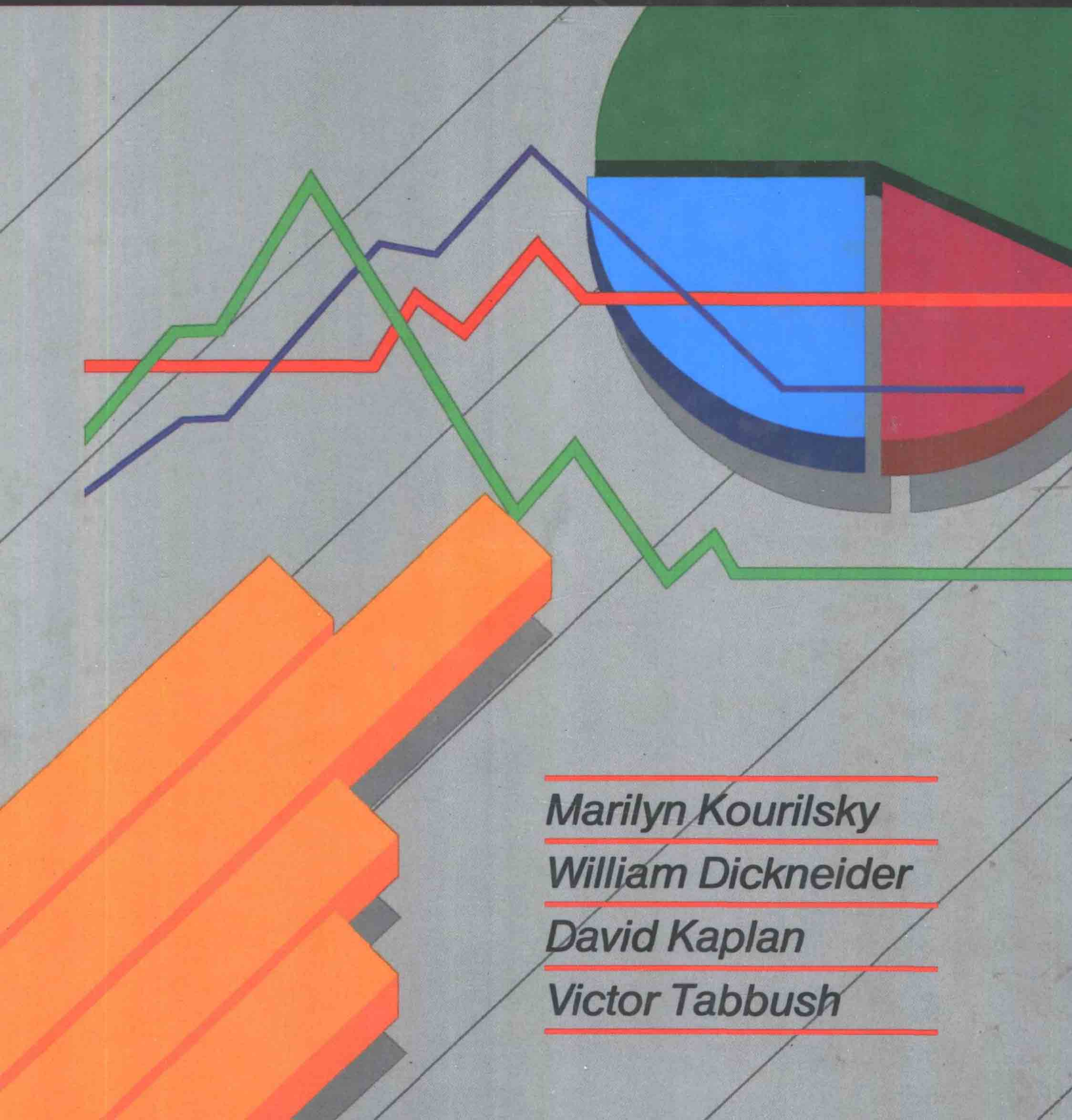
ECONOMICS
AND MAKING DECISIONS



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Unit

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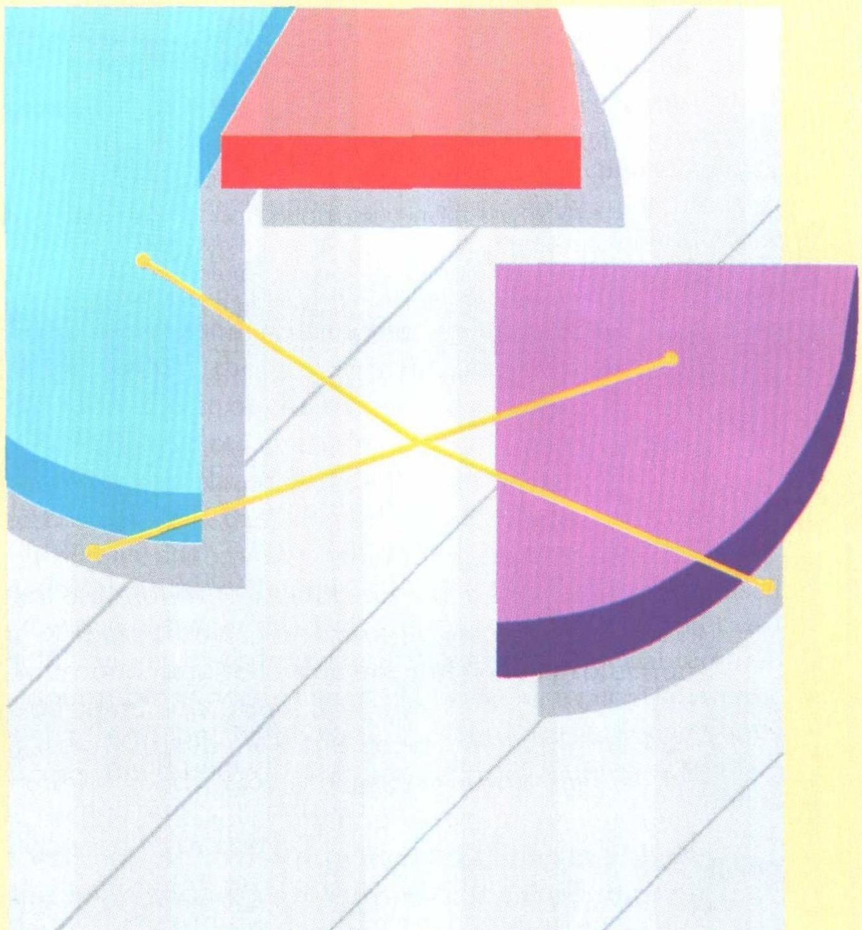
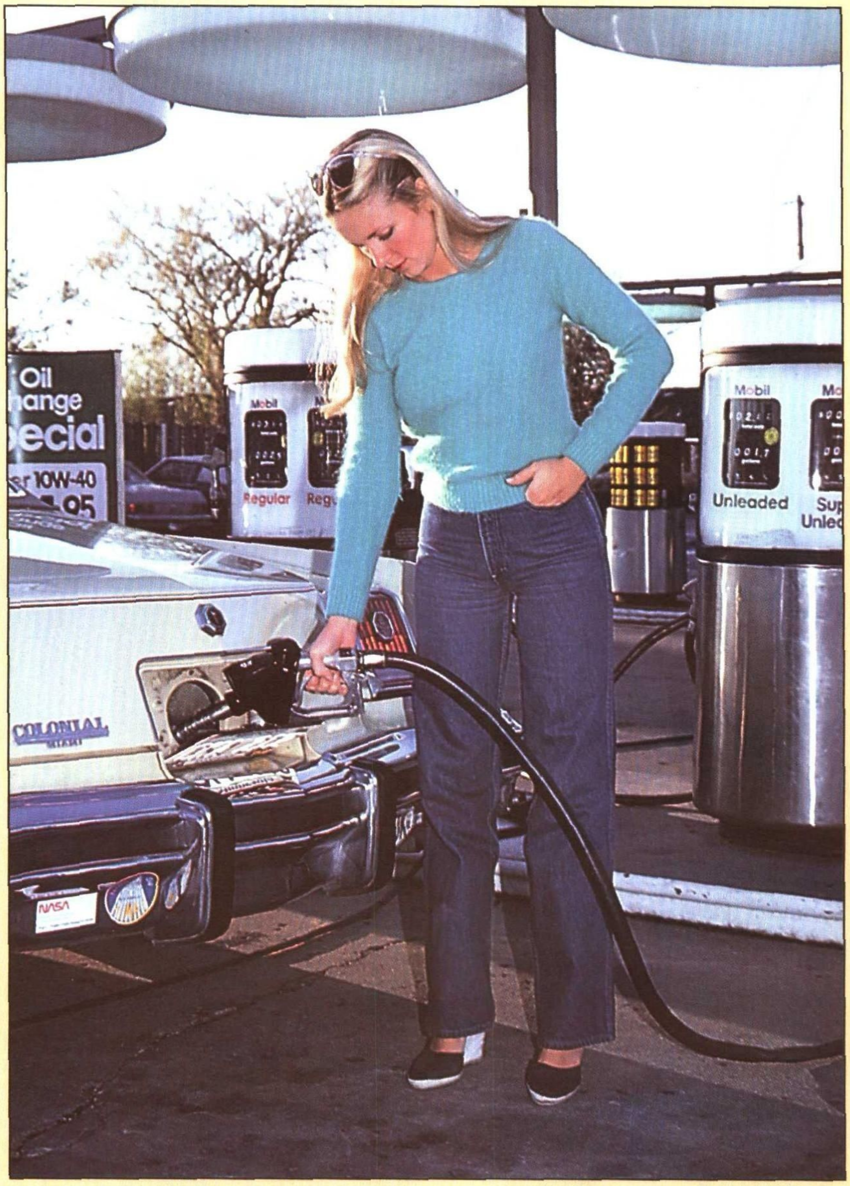




How does purchasing gasoline illustrate scarcity and opportunity cost?

Scarcity and Opportunity Cost

Chapter 1

Student's Goals

1. Define and give examples of *scarcity*.
2. Define and give examples of *resources*.
3. Explain the importance of *opportunity cost* when making choices.
4. Analyze a decision in terms of its *marginal costs* and *marginal benefits*.
5. Distinguish between *marginal cost* and *sunk cost*.

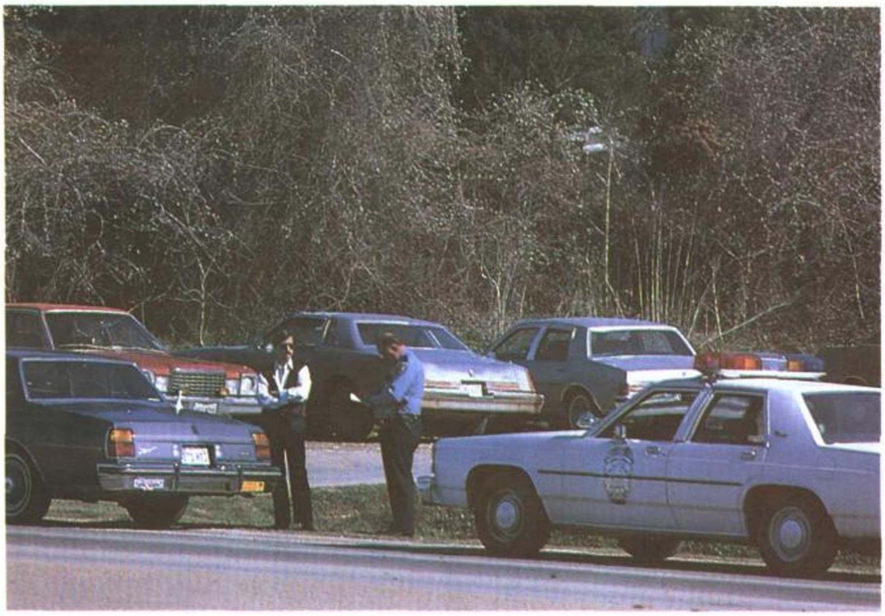
Statistics show that many highway accidents occur because motorists drive at different speeds on the same road. This suggests that we could reduce the number of accidents if vehicles on a particular highway moved at a uniform speed. Because a lower speed limit not only slows traffic but also produces a more uniform driving speed, it is strongly supported as a way of reducing highway injuries and fatalities. For example, the National Research Council estimated that each year the federal 55-miles-per-hour speed limit saved between 2,000 and 4,000 lives.[1]

These benefits cannot be obtained without sacrifice, however. As an extreme example, consider the sacrifice if *all* motor vehicles were banned in order to reduce the maximum driving speed to *zero* miles per hour. Although such a ban would eliminate all highway injuries and deaths, it would severely restrict mobility and vastly increase the time it takes us to get from one place to another. Even if driving were not banned, a lower speed limit would still mean we would have to spend more time driving. A study of the 55-miles-per-hour speed limit concluded that the extra time everyone spent on the highway in a given year added up to more than 400,000 years.[2]

Because of the additional driving time required, many drivers in rural areas have strongly opposed the "double nickel" speed limit. As a result, legislators changed the maximum permissible driving speed in 1987. In that year, Congress passed a law that allows states to raise the speed limit to 65 miles per hour on rural stretches of interstate highways. Although many drivers applauded the change, others opposed it because they predicted it would result in more highway deaths and injuries.

Proposals to raise or lower the speed limit illustrate two important economic principles presented in this chapter. The first principle is *scarcity*. Time is scarce because there are not enough hours in a day to do everything we would like to do. When you must choose between doing homework and visiting friends, you know your time is scarce. Similarly, income is

[1]Damon Darlin, "Does 55-MPH Speed Limit Save Lives? More Drivers Are Doubtful," *The Wall Street Journal,* April 28, 1986, p. 25.
[2]Thomas H. Forester, Robert F. McNown, and Larry D. Singell, "A Cost-Benefit Analysis of the 55 MPH Speed Limit," *Southern Economic Journal* (January 1984): 631–41.



Scarcity is the reason why people disagree about raising the speed limit on our nation's highways. The scarcity of time requires us to choose between spending more time driving at slower speeds in order to reduce accidents and driving faster in order to have more time for other activities we enjoy. This motorist would probably agree that the 55-miles-per-hour speed limit should be raised.

scarce because you don't have enough to purchase everything you want; you must often choose between one item and another. The scarcity of both time and highway safety also makes us choose between slower speeds that cut automobile accidents and faster speeds that reduce driving time.

The second principle explained in this chapter is *cost*. Because your time and your income are scarce, you must decide how to use them. When you use them to do one thing, you sacrifice something else. This sacrifice is your cost. If we want a lower speed limit in order to reduce traffic injuries and fatalities, then we must pay the cost of spending more time on the highway. On the other hand, if we want a higher speed limit in order to cut driving time, then we must pay the cost of having more traffic injuries and deaths. We bear a cost no matter what we do.

Is Anything Really Free?

Whether it is promoting highway safety, sleeping later in the morning, or purchasing new clothes, everything we enjoy seems to be scarce. **Scarcity** is the inability of limited means to satisfy all of everyone's wants. It means that all of us want more than we have. Although a selfish person and a generous person may want different things for different reasons, they both seek to satisfy additional wants. No matter what we want, however, we cannot be satisfied without the use of something limited. If we spend money for new clothes, we have less money to spend for food, gasoline, and other items. Even watching a sunset or meditating requires the use of our limited time. So, too, do we use limited time to produce more kindness and friendship. These items are scarce, even though they are not material goods.

Scarcity: The inability of limited means to satisfy all of everyone's wants.

Since you cannot have everything you want, you must choose among various opportunities. You can't be in two places at once, for example, so you must choose how to use your limited time. If you watch television, then you have made a choice not to do other things with your time, such as visiting friends or doing homework. When you choose to do one thing rather than another or to buy one item instead of another, you bear an unavoidable cost: You give up something in order to get something else. Because your cost is the most valuable *opportunity* you give up, the cost of any choice is called an opportunity cost. **Opportunity cost** is the best opportunity given up when a choice is made.

Opportunity cost: The best opportunity given up when a choice is made.

You make choices and pay opportunity costs every day when you spend your money. As an illustration, suppose you spend $5 to buy gasoline for your car. When you make that choice, you sacrifice the opportunity to spend your $5 on other things you want. Perhaps you also want a cassette that is on sale, a lunch, and a new hairbrush, each of which costs $5. If *you* value the cassette more than the other two items sacrificed when

Scarcity means that no matter what we want, we cannot be satisfied without the use of something limited. In order to purchase these sunglasses, this teen-ager must give up some of her limited income which could have been used to buy something else.

Scarcity also means that we must choose how to spend our limited time. By choosing to spend time talking and eating pizza, these individuals sacrifice other uses of their limited time.

buying the gasoline, then the cassette is your cost of buying the gas.

Since $5 will not purchase the cassette, the food, *and* the hairbrush—which together are worth $15—all three of these cannot be considered the opportunities you sacrifice. Only the option you most value among those given up—in this example, the cassette—is your cost.

The Costs We Bear

A cassette, a lunch, and a hairbrush are only a few of the possible alternatives sacrificed when buying $5 worth of gasoline. You might think there are other, more important opportunities you would sacrifice, and your friends might see other possible opportunities they would give up if they were to purchase the gasoline. People have different likes and dislikes, so they do

What is the opportunity cost of spending $5 to buy gasoline? Suppose you could have used the $5 to purchase either a new hairbrush, a blank cassette, or a lunch. Since each of these items would have required an expenditure of $5, all three are not your opportunity cost. Instead, your opportunity cost is whichever one you value the most.

not all identify the cost of a particular choice in the same way. But if you spend $5, you can't avoid giving up $5 of something. Whatever *you* think is the most valuable opportunity given up is the cost of your choice.

However, $5 is not necessarily the total cost of the gasoline. You might also spend time waiting in line at the gas station. Since time is scarce, you must consider the most valuable option sacrificed when you take time to obtain the gas. Perhaps your next best use of this time would have been walking your dog. If so, walking your dog is also part of your cost of purchasing the gasoline.

If you have ever waited in a long line to buy gasoline, tickets, groceries, or some other item, you know that some costs, like your time, might not have money price tags. Lacking money price tags, these costs are sometimes ignored. Other costs are ignored because someone else besides the person making the choice bears them. Take this illustration. A writer who works at home was bothered by the noise of her neighbors' barking dogs. Although her neighbors made the choice to have dogs, they ignored the cost suffered by the woman when her scarce peace and concentration were sacrificed.

You can think of other examples that show how individuals involuntarily bear the costs of someone else's choice. In fact,