

## TEN PRINCIPLES OF ECONOMICS (partial)

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N. Gregory Mankiw

There is no mystery to what an “economy” is. Whether we are talking about the economy of Los Angeles, of the United States, or of the whole world, an economy is just a group of people interacting with one another as they go about their lives. Because the behavior of an economy reflects the behavior of the individuals who make up the economy, we start our study of economics with four principles of individual decision making.

### PRINCIPLE #1: PEOPLE FACE TRADEOFFS

The first lesson about making decisions is summarized in the adage: “There is no such thing as a free lunch.” To get one thing that we like, we usually have to give up another thing that we like. Making decisions requires trading off one goal against another.

Consider a student who must decide how to allocate her most valuable resource— her time. She can spend all of her time studying economics; she can spend all of her time studying psychology; or she can divide her time between the two fields. For every hour she studies one subject, she gives up an hour she could have used studying the other. And for every hour she spends studying, she gives up an hour that she could have spent napping, bike riding, watching TV, or working at her part-time job for some extra spending money.

Or consider parents deciding how to spend their family income. They can buy food, clothing, or a family vacation. Or they can save some of the family income for retirement or the children’s college education. When they choose to spend an extra dollar on one of these goods, they have one less dollar to spend on some other good.

When people are grouped into societies, they face different kinds of tradeoffs. The classic tradeoff is between “guns and butter.” The more we spend on national defense to protect our shores from foreign aggressors (guns), the less we can spend on consumer goods to raise our standard of living at home (butter). Also important in modern society is the tradeoff between a clean environment and a high level of income. Laws that require firms to reduce pollution raise the cost of producing goods and services. Because of the higher costs, these firms end up earning smaller profits, paying lower wages, charging higher prices, or some combination of these three. Thus, while pollution regulations give us the benefit of a cleaner environment and the improved health that comes with it, they have the cost of reducing the incomes of the firms’ owners, workers, and customers.

Another tradeoff society faces is between efficiency and equity. Efficiency means that society is getting the most it can from its scarce resources. Equity means that the benefits of those resources are distributed fairly among society’s members. In other words, efficiency refers to the size of the economic pie, and equity refers to how the pie is divided. Often, when government policies are being designed, these two goals conflict.

Consider, for instance, policies aimed at achieving a more equal distribution of economic well-being. Some of these policies, such as the welfare system or unemployment insurance, try to help those members of society who are most in need. Others, such as the individual income tax, ask the financially successful to contribute more than others to support the government. Although these policies have the benefit of achieving greater equity, they have a cost in terms of reduced efficiency. When the government redistributes income from the rich to the poor, it reduces the reward for working hard; as a result, people work less and produce fewer goods and services. In other words, when the government tries to cut the economic pie into more equal slices, the pie gets smaller.

Recognizing that people face tradeoffs does not by itself tell us what decisions they will or should make. A student should not abandon the study of psychology just because doing so would increase the time available for the study of economics. Society should not stop protecting the environment just because environmental regulations reduce our material standard of living. The poor should not be ignored just because helping them distorts work incentives. Nonetheless, acknowledging life's tradeoffs is important because people are likely to make good decisions only if they understand the options that they have available.

## PRINCIPLE #2: THE COST OF SOMETHING IS WHAT YOU GIVE UP TO GET IT

Because people face tradeoffs, making decisions requires comparing the costs and benefits of alternative courses of action. In many cases, however, the cost of some action is not as obvious as it might first appear.

Consider, for example, the decision whether to go to college. The benefit is intellectual enrichment and a lifetime of better job opportunities. But what is the cost? To answer this question, you might be tempted to add up the money you spend on tuition, books, room, and board. Yet this total does not truly represent what you give up to spend a year in college.

The first problem with this answer is that it includes some things that are not really costs of going to college. Even if you quit school, you would need a place to sleep and food to eat. Room and board are costs of going to college only to the extent that they are more expensive at college than elsewhere. Indeed, the cost of room and board at your school might be less than the rent and food expenses that you would pay living on your own. In this case, the savings on room and board are a benefit of going to college.

The second problem with this calculation of costs is that it ignores the largest cost of going to college—your time. When you spend a year listening to lectures, reading textbooks, and writing papers, you cannot spend that time working at a job. For most students, the wages given up to attend school are the largest single cost of their education.

The opportunity cost of an item is what you give up to get that item. When making any decision, such as whether to attend college, decision makers should be aware of the opportunity costs that accompany each possible action. In fact, they usually are. College-age athletes who can earn millions if they drop out of school and play professional sports are well aware that their opportunity cost of college is very high. It is not surprising that they often decide that the benefit is not worth the cost.

## PRINCIPLE #3: RATIONAL PEOPLE THINK AT THE MARGIN

Decisions in life are rarely black and white but usually involve shades of gray. When it's time for dinner, the decision you face is not between fasting or eating like a pig, but whether to take that extra spoonful of mashed potatoes. When exams roll around, your decision is not between blowing them off or studying 24 hours a day, but whether to spend an extra hour reviewing your notes instead of watching TV. Economists use the term marginal changes to describe small incremental adjustments to an existing plan of action. Keep in mind that "margin" means "edge," so marginal changes are adjustments around the edges of what you are doing.

In many situations, people make the best decisions by thinking at the margin. Suppose, for instance, that you asked a friend for advice about how many years to stay in school. If he were to compare for you the lifestyle of a person with a Ph.D. to that of a grade school dropout, you might complain that this comparison is not helpful for your decision. You have some education already and most likely are deciding whether to spend an extra year or two in school. To make this decision, you need to know the additional benefits that an extra year in school would offer (higher wages throughout life and the sheer joy of learning) and the additional costs that you would incur (tuition and the forgone wages while you're in school). By comparing these marginal benefits and marginal costs, you can evaluate whether the extra year is worthwhile.

As another example, consider an airline deciding how much to charge passengers who fly standby. Suppose that flying a 200-seat plane across the country costs the airline \$100,000. In this case, the average cost of each seat is  $\$100,000/200$ , which is \$500. One might be tempted to conclude that the airline should never sell a ticket for less than \$500. In fact, however, the airline can raise its profits by thinking at the margin. Imagine that a plane is about to take off with ten empty seats, and a standby passenger is waiting at the gate willing to pay \$300 for a seat. Should the airline sell it to him? Of course it should. If the plane has empty seats, the cost of adding one more passenger is minuscule. Although the average cost of flying a passenger is \$500, the marginal cost is merely the cost of the bag of peanuts and can of soda that the extra passenger will consume. As long as the standby passenger pays more than the marginal cost, selling him a ticket is profitable.

As these examples show, individuals and firms can make better decisions by thinking at the margin. A rational decision maker takes an action if and only if the marginal benefit of the action exceeds the marginal cost.

#### PRINCIPLE #4: PEOPLE RESPOND TO INCENTIVES

Because people make decisions by comparing costs and benefits, their behavior may change when the costs or benefits change. That is, people respond to incentives. When the price of an apple rises, for instance, people decide to eat more pears and fewer apples, because the cost of buying an apple is higher. At the same time, apple orchards decide to hire more workers and harvest more apples, because the benefit of selling an apple is also higher. As we will see, the effect of price on the behavior of buyers and sellers in a market—in this case, the market for apples—is crucial for understanding how the economy works.

Public policymakers should never forget about incentives, for many policies change the costs or benefits that people face and, therefore, alter behavior. A tax on gasoline, for instance, encourages people to drive smaller, more fuel-efficient cars. It also encourages people to take public transportation rather than drive and to live closer to where they work. If the tax were large enough, people would start driving electric cars.

When policymakers fail to consider how their policies affect incentives, they can end up with results that they did not intend. For example, consider public policy regarding auto safety. Today all cars have seat belts, but that was not true 40 years ago. In the late 1960s, Ralph Nader's book *Unsafe at Any Speed* generated much public concern over auto safety. Congress responded with laws requiring car companies to make various safety features, including seat belts, standard equipment on all new cars.

How does a seat belt law affect auto safety? The direct effect is obvious. With seat belts in all cars, more people wear seat belts, and the probability of surviving a major auto accident rises. In this sense, seat belts save lives.

But that's not the end of the story. To fully understand the effects of this law, we must recognize that people change their behavior in response to the incentives they face. The relevant behavior here is the speed and care with which drivers operate their cars. Driving slowly and carefully is costly because it uses the driver's time and energy. When deciding how safely to drive, rational people compare the marginal benefit from safer driving to the marginal cost. They drive more slowly and carefully when the benefit of increased safety is high. This explains why people drive more slowly and carefully when roads are icy than when roads are clear. Now consider how a seat belt law alters the cost-benefit calculation of a rational driver. Seat belts make accidents less costly for a driver because they reduce the probability of injury or death. Thus, a seat belt law reduces the benefits to slow and careful driving. People respond to seat belts as they would to an improvement in road conditions—by faster and less careful driving. The end result of a seat belt law, therefore, is a larger number of accidents.

How does the law affect the number of deaths from driving? Drivers who wear their seat belts are more likely to survive any given accident, but they are also more likely to find themselves in an accident. The net effect is ambiguous. Moreover, the reduction in safe driving has an adverse impact on pedestrians (and on drivers who do not wear their seat belts). They are put in jeopardy by the law because they are more likely to find themselves in an accident but are not protected by a seat belt. Thus, a seat belt law tends to increase

the number of pedestrian deaths.

At first, this discussion of incentives and seat belts might seem like idle speculation. Yet, in a 1975 study, economist Sam Peltzman showed that the auto-safety laws have, in fact, had many of these effects. According to Peltzman's evidence, these laws produce both fewer deaths per accident and more accidents. The net result is little change in the number of driver deaths and an increase in the number of pedestrian deaths.

Peltzman's analysis of auto safety is an example of the general principle that people respond to incentives. Many incentives that economists study are more straightforward than those of the auto-safety laws. No one is surprised that people drive smaller cars in Europe, where gasoline taxes are high, than in the United States, where gasoline taxes are low. Yet, as the seat belt example shows, policies can have effects that are not obvious in advance. When analyzing any policy, we must consider not only the direct effects but also the indirect effects that work through incentives. If the policy changes incentives, it will cause people to alter their behavior.