



## AP Economics



### Summer Assignment

2017-2018

Welcome to AP Economics! Understanding the economic way of thinking will change your world. It has changed mine for the better!

**Why study economics?** It can be useful at a personal level. You will understand how the world works. Most importantly, because it is **FUN!**

#### **What must you do for the summer to get prepared?**

1. You will read: “What’s to Love about Economics? *Virtues of the Economic Way of Thinking*” (attached) and answer the four questions at the end of the reading (type).
2. Examine N. Gregory Mankiw’s “Ten Principles of Economics” (attached)
3. Create a video montage of the 10 principles of economics. You will share with the class on the first day of school.

**YOU MAY WORK WITH A PARTNER TO COMPLETE THE VIDEO PROJECT** Just let me know via email with whom you are working

**ALL ASSIGNMENTS ARE DUE ON THE FIRST DAY OF CLASS**

Email me with any questions: [sskordalos@bcps.org](mailto:sskordalos@bcps.org)

## CHAPTER 1

WHAT'S TO LOVE  
ABOUT ECONOMICS?

## Virtues of the Economic Way of Thinking

Once a year, 100 fun-loving individuals descend on a college town for a week of work and play. The group includes surfers, Ironman triathletes, hula dancers, weight lifters, vegetarians, musicians, world travelers, and water polo coaches. They frequent local ballgames, racetracks, and karaoke nights, where songs such as "Sweet Transvestite" and "New York, New York" are belted out with gusto. They flood the sushi bars, bistros, and trendy cafés. What's the common denominator among this crowd of hip, talented women and men? They're all economics instructors like your own, gathered to grade a standardized national economics exam. What makes economics so exciting that it inspires all sorts of people to devote their lives to conveying its wisdom? There are many answers to that question; what follows is the tip of the iceberg.

## ECONOMICS IS EVERYWHERE

Economics doesn't simply appear in books or lurk in bank vaults. Economics is above you in airplanes, below you in coal mines, behind the fabric content of your clothing, and underpinning the politics of your nation. Economics is the study of limited resources and unlimited wants. The broad scope of this discipline results from the limits on virtually every human want. Beyond money, there are limited supplies of time, information, clean water and air, potential spouses, employers, employees, NCAA

Final Four basketball tickets, and everything you would buy if you won the lottery. Economics is behind your choice to go to school, the cinnamon in your latte, your adherence to laws (or lack thereof), and the public policies of your government. Economics is also the lens through which people who seek happiness should look before making decisions. Consider an example: Have you ever skipped class? Skipping is an option you confront daily, and you must decide how often to tempt fate with truancy. Economists explain that firms confront their production decisions by considering the additional cost and benefit of each unit and manufacturing more units until the additional benefit no longer exceeds the additional cost. If you're maximizing your happiness, you do the same thing when deciding whether to attend class.

Centre College student Adair Howell skipped class recently for a *Today Show* interview as the winner of the *Cosmo Cover Model Contest*. If skipping one class allows you to launch a new career, like Adair, or to get treatment for a deadly illness, the substantial benefit exceeds the limited cost of the first class missed, which might be a few hours of extra reading and note copying. The second most important reason to skip class might be that your sports team has a competition. The third best reason might be that you're simply not in the mood. As the reasons to skip become more trivial, the costs of additional misses mount. In running, they say that if you miss 1 day of training, only you know it; if you miss 2 days, the competition knows it; and if you miss 3 days, the crowd knows it. In education, an analogous story might be that missing 1 day of class affects your conscience; missing 2 days affects your grade; and missing many days affects your future.

In order to determine the number of skips that will make you as well off as possible, you should skip until the additional benefit no longer exceeds the additional cost. (Don't get the wrong impression; if you're not interviewing, ill, or bereaved, the optimal number of skips may well be 0.) With the additional benefit falling and the additional cost rising, any subsequent skips do more harm than good. Economists call the additional benefit from 1 more of something the *marginal benefit* and the additional cost of 1 more of something the *marginal cost*. Thus, you should skip until the marginal cost equals the marginal benefit.

You weigh marginal costs against marginal benefits every day. You know that eating too much pie can make you gain weight, but the first few bites create a lot of pleasure and not a lot of weight. As your hunger is satisfied, the benefit of each additional bite decreases and its cost (in terms of excessive caloric intake) increases. Eventually, the marginal cost of another bite of pie will exceed its marginal benefit, and it's time to stop eating. If it's the best pie you've ever tasted, the marginal benefit is higher, and you'll eat more of it. Sometimes even indigestion is well justified. In 2005, high marginal benefits led Timothy Janus to eat 6 pounds of shoofly pie in one sitting—he won \$2,000 and fame at the Alka-Seltzer U.S. Open of Competitive Eating.<sup>1</sup>

The study of where marginal benefit meets marginal cost leads to the efficient outcomes that economists cherish. How many hours should you spend in the library? How many laps should you swim in the pool? How much time should you spend in the shower? The answer is always the same: Just do it until the marginal benefit equals the marginal cost and you couldn't do any better.

<sup>1</sup>See [www.ifoc.com/eaters.php?action=detail&sn=81](http://www.ifoc.com/eaters.php?action=detail&sn=81).

## ECONOMIC TOOLS CAN ADDRESS WEIGHTY ISSUES

It's no secret that economic theory helps businesspeople make decisions about prices, production levels, and manufacturing methods that maximize profits. The economic way of thinking also applies to the most difficult dilemmas facing society. Economic theory can address troubling problems with poverty, crime, pollution, education, health care, the legal system, child care, transportation systems, water shortages, population growth, biodiversity loss, sustainable development, and energy, to name a few.

Consider the issue of how to punish people who break the law. Suppose that each song illegally downloaded from the Internet costs society \$1 in lost wages for sound mixers, CD store employees, advertisers, musicians, and others in the recording industry. As mentioned in the preceding truancy example, efficiency dictates that each activity should continue until the additional (or marginal) benefit equals the additional (or marginal) cost. For simplicity, we're assuming that the marginal cost of downloading a song remains constant at \$1 and that the value of the time spent downloading is negligible. If the benefit to the recipient from downloading another song exceeds the cost to society, the download creates a net gain for society and it is efficient (although still illegal) to carry it out.

How can we bring about the efficient level of downloading? One way would be to successfully enforce a penalty of \$1 for each download. If music lovers had to pay a \$1 fine per download, they would download only songs that were worth at least \$1 to them. Inefficient downloads that were worth less than the \$1 cost to society would not occur. The trouble is that it would be dreadfully expensive to provide the level of policing required to detect every download.

Economic theory can help with that problem, too. Suppose that downloads were monitored only half the time, but only the monitors knew which half, meaning that half of all downloads were caught. With a fine of \$2 that was paid half the time, downloaders would expect to pay an average of \$1 per song downloaded. That is, with a 50 percent chance of having to pay \$2, the expected fine per song downloaded would be one-half times \$2, or \$1. Music lovers who made decisions on the basis of the expected fine would still download only when their benefit from a song exceeded the cost to society.

The expected fine would also be \$1 if there were a 1-in-10 chance of paying \$10, a 1-in-100 chance of paying \$100, or a 1-in-1,000 chance of paying \$1,000. For music lovers who don't have a particular preference for, or aversion to, risk taking, any of these combinations would provide the proper incentive to limit downloads to the efficient number. With this in mind, law enforcement costs can be reduced without altering the incentives to obey the law by charging higher fines and only spending enough on enforcement to catch a smaller number of offenders. You'll read more about the economics of risk and uncertainty in Part 8.

## ECONOMIC FINDINGS CAN BE SPECIFIC AND COMPELLING

What special powers do people trained in economics have that allow them to make strong arguments and precise recommendations? They may not be superheroes, but they brandish advanced quantitative tools, detailed methods of reasoning, the high-road goal of maximizing social welfare, and the use of assumptions to leap tall complexities in a single bound. Let's look at each of these powers in turn.

lar person would receive from the higher-paying jobs to which education provides access, such as more job security, lighter physical burdens, and cleaner working conditions. For comparison, the direct costs of going to school for another year are readily available—typically about \$25,000 for each year of college. These costs can be combined with the cost of forgoing work to go to school and with the nonfinancial burdens of school to determine the appropriate educational goals for a particular student.

### Clear and Defensible Objectives

Economic analysis can be applied in myriad contexts to pursue objectives ranging from profit maximization to everlasting bliss. When economists consider public policy, the default goal is the greatest possible net gain to society. This goal is achieved by addressing questions of what, how, and for whom to produce with an eye on *efficiency*. Think of efficiency as maximizing the size of the “pie” that represents social well-being, profit, personal happiness, or any other particular objective. As we’ll discuss in greater detail in Part 6, efficient outcomes exhaust all opportunities for net gains.

Once the net gains from government policies are maximized, society must grapple with the *equity* consideration of how to divide the pie among potential recipients. For example, public lands could be opened to loggers, sold to developers, maintained as parks for tourists, or donated to the homeless. It would be efficient to use the land for the purpose that provides the greatest overall net benefits, but the most efficient outcome often conflicts with equity considerations. The greatest net benefits might come from a park, but interests in equity point toward helping the homeless. Economists study taxes, subsidies, and entitlement programs that can distribute the gains from efficiency in a more equitable manner. For example, if a particular tract of public land would be more valuable to park visitors than to the homeless, the best solution might be to create a park on the land, impose a tax on visitors, and use the tax revenues to pay for homeless shelters elsewhere.

In 2006, the U.S. Forest Service sought the sale of 200,000 acres of public land to raise about \$800 million for schools and road maintenance in underprivileged rural areas.<sup>4</sup> The Wilderness Society argued that the land would be more valuable to the country if it remained in public hands.<sup>5</sup> Suppose the land is worth \$800 million to the private individuals who would purchase it and \$1 billion to the broader U.S. citizenry. In that case, the efficient solution is to maximize the size of the pie—the benefits from this land—by maintaining public ownership. With creative slicing of the pie, the goals of the land sale can be achieved even if the land is not sold. For example, the public beneficiaries of the \$1 billion worth of land could be taxed \$800 million to pay for rural schools and roads. In this way, the land would be used for its most valued purpose, the rural areas would benefit as under a land sale, and the U.S. public would receive a \$200 million net gain equal to the \$1 billion in benefits from the land minus the \$800 million in new taxes.

<sup>4</sup> See [www.msnbc.msn.com/id/11257181/](http://www.msnbc.msn.com/id/11257181/).

<sup>5</sup> See <http://action.wilderness.org/campaign/forestselloff>.

## Simplifying Assumptions

Sometimes less is more. Just as it's easier to follow a map that isn't muddled with markings for every tree, telephone wire, and parking space, researchers find simplifications useful when studying cause and effect. Consider the common assumption of *ceteris paribus*, a Latin phrase meaning that influences other than the one being studied remain unchanged. Suppose Lance Armstrong is biking down a mountain at 40 miles per hour (mph) and gets a flat tire. How will his speed be affected? Admittedly, many elements might come into play. If the tire blew out as Lance flew over a guardrail and went into a free fall, his speed would increase. Wet roads, a collision, or fatigue would all reduce his speed and reinforce the influence of the flat tire. Some people might throw up their hands and say it's impossible to determine for sure what would happen to Lance's speed when his tire went flat.

An economist is more likely to say, "*Ceteris paribus*, the bike will slow down." The economist is assuming that, except for the blowout, all elements of the situation—the weather, the biker's upright position, and so on—will remain the same. The *ceteris paribus* assumption allows the economist to address the issue in question without being hampered by complexities. Rather than neglecting other influences while making an estimate of speed, the economist can study each influence independently, with the assumption that the others remain unchanged. Economists use the *ceteris paribus* assumption when studying, for example, the effect of consumer demand on prices or the effect of labor unions on employee benefits. In reality, demand changes often coincide with changes in production costs that also affect prices, and unionization is one of many determinants of employee benefits; however, it is useful to isolate influences and assess them one at a time. In the end, economists can combine their data on individual influences to determine the result of several simultaneous changes, whereas skeptics who don't like to make assumptions are in free fall with a headache.

Another noteworthy and controversial assumption is that individuals behave rationally. In Chapter 2, we consider compelling evidence and implications of rational responses to incentives. Associated with the rationality assumption are expectations that people prefer more of a good thing, have goals, learn, and are consistent enough in their behaviors to exhibit *transitive preferences*. Suppose you prefer jazz to reggae music and you prefer reggae to classical music. Given a choice between jazz and classical, which type of music would you select? If the answer is jazz, you are exhibiting the rationality of transitive preferences because your response is consistent with your preference ordering of jazz first, then reggae, and then classical music. An answer of classical music would violate that rationality. More generally, economists assume that individuals will make the appropriate decisions to maximize their happiness and that firms will likewise act to maximize their profits.

Is it rational to assume that people behave rationally? Economists think so for several reasons. Without transitive preferences it would be painfully difficult to make common decisions. If you liked cola better than water, juice better than cola, and (in violation of transitivity) water better than juice, you would cycle through these choices endlessly and spend far too much time in the beverage aisle of the grocery store. Firms with managers who behave irrationally are unlikely to last long, and the same could be said of people. Anyone who eats nails and sleeps in swimming pools is unlikely to

survive to pass his or her irrational genes on to the next generation. Do business managers study the graphs and equations that indicate profit-maximizing prices and quantities? Sometimes they do, and other times they may use less formal analyses to derive similar conclusions. Likewise, Nobel laureate Milton Friedman notes that although expert pool players don't really measure all the angles and distances between billiard balls on a pool table or make complex mathematical calculations to find the speed and trajectory with which to strike the ball, they often take their shots as if they did.

Of course, all of us have those mornings when we start to brush our hair with our toothbrushes and pour orange juice into our cereal. Economic theory can endure a few missteps by individuals or even a few people who never get things right. Economic theory yields useful conclusions as long as, on average, people's decisions are more rational than random, and that's true for most of us even on a bad day.

There are a number of schools of thought in economics that place different emphases on potential limits to human rationality. The institutionalists, inspired by the likes of Thorstein Veblen and Wesley Mitchell, emphasize social, institutional, and historical constraints on rationality, including predatory and acquisitive drives and instincts for workmanship and parenting. They argue that many decisions are made on the basis of rules of thumb and that there are bounds on rationality. In contrast, the Chicago school, whose current patriarchs include Milton Friedman and Gary Becker, is more optimistic that humans can reliably be treated as rational actors. Chicago school economists defend the rationality of everything from family dynamics to drug addiction. As usual, each side makes valid points, and the truth probably lies somewhere in the middle. Either way, rest assured that the importance of economic theory does not require humans to be perfect.

## CONCLUSION

Thanks for giving economics a try. With these readings and this course under your belt, you will become more adept at making wise decisions, allocating resources, and maximizing the satisfaction of yourself and society. Regardless of whether you choose to join the surfers, singers, jocks, and karaoke singers who have devoted their professional lives to the science of economics, it's a good bet that the benefits you receive from this course will exceed the costs, and that makes it a most efficient and worthwhile undertaking.

## DISCUSSION STARTERS

1. Do law enforcement agencies really seek an efficient amount of lawbreaking rather than no lawbreaking? Consider some illegal activities that might sometimes create more good than harm. How do the penalties for these crimes compare with the penalties for crimes that are less likely ever to be efficient? How much should people be fined for doing something that we really want to prohibit from ever happening?

2. Is it common for marginal costs to increase and marginal benefits to decrease? What is the marginal benefit from the first, second, and third practices for the swim team in a day? What is the marginal cost of the first, second, and third swim practices? (It is important to remember that costs and benefits are not strictly financial.) How are you at carrying out activities until the marginal cost equals the marginal benefit?
3. How would economists go about analyzing the likely influence of a forecast of heavy snow on the quantity of tickets sold for the *Nutcracker* ballet? What other changes could influence ticket sales? What assumptions should be made? Why?
4. Is it rational for some people to end their formal education with high school degrees, some to finish with college degrees, and some to obtain graduate degrees? Beyond the ability to pay tuition, what are some other reasons why different people stay in school for different lengths of time? How might the nonmonetary cost of college differ among individuals? How might the benefits differ?



## N. Gregory Mankiw's Ten Principles of Economics

### People Face Tradeoffs.

- To get one thing, you have to give up something else. Making decisions requires trading off one goal against another.

### The Cost of Something Is What You Give Up to Get It.

- Decision-makers have to consider both the obvious and implicit costs of their actions.

### Rational People Think at the Margin.

- A rational decision-maker takes action if and only if the marginal benefit of the action exceeds the marginal cost.

### People Respond to Incentives.

- Behavior changes when costs or benefits change.

### Trade Can Make Everyone Better Off.

- Trade allows each person to specialize in the activities he or she does best. By trading with others, people can buy a greater variety of goods or services.

### Markets Are Usually a Good Way to Organize Economic Activity.

- Households and firms that interact in market economies act as if they are guided by an "invisible hand" that leads the market to allocate resources efficiently. The opposite of this is economic activity that is organized by a central planner within the government.

### Governments Can Sometimes Improve Market Outcomes.

- When a market fails to allocate resources efficiently, the government can change the outcome through public policy. Examples are regulations against monopolies and pollution.

### A Country's Standard of Living Depends on Its Ability to Produce Goods and Services.

- Countries whose workers produce a large quantity of goods and services per unit of time enjoy a high standard of living. Similarly, as a nation's productivity grows, so does its average income.

### Prices Rise When the Government Prints Too Much Money.

- When a government creates large quantities of the nation's money, the value of the money falls. As a result, prices increase, requiring more of the same money to buy goods and services.

### Society Faces a Short-Run Tradeoff Between Inflation and Unemployment.

- Reducing inflation often causes a temporary rise in unemployment. This tradeoff is crucial for understanding the short-run effects of changes in taxes, government spending and monetary policy.