**CHAPTER 1**

**The Principles and Practice of Economics**

**I. Key Ideas**

Economics is the study of people’s choices.

The first principle of economics is that people try to *optimize*: they try to choose the best available option.

The second principle of economics is that economic systems tend to be in *equilibrium*, a situation in which nobody would benefit by changing his or her own behavior.

The third principle of economics is *empiricism*—analysis that uses data. Economists use data to test theories and to determine what is causing things to happen in the world.

**II. Getting Started**

1. **The Big Picture**

The goal of this chapter is to introduce readers to economists’ perspective—we tend to envision a world populated by a variety of rational, self-interested people trying their best to make good decisions in the presence of numerous real-world constraints. These decision-making *economic agents* may be individuals, groups, or organizations, and they could be motivated by many different objectives, but they face a common problem: how to allocate *scarce* resources across competing ends, knowing that their choices will affect society.

The authors identify three principles (optimization, equilibrium, and empiricism) that characterize economic thinking and distinguish it from the approach other social sciences take. These three underlying themes provide a foundation for subsequent chapters and a way for beginning students to draw connections between seemingly different branches of economics. We will use insights from cost-benefit analysis to describe the world *(positive economics)* and offer advice *(normative economics)* on everything from simple decisions to complex public policies.

**Where We’ve Been**

Students probably have not previously read the material found in Chapter 1 in a typical textbook, so this chapter is their first exposure to ALL. However, while we haven’t been anywhere yet in ALL, your students have been other places. One could imagine a variety of possible student audiences who might take an economics course using this book. For instance, students may vary based on their experience with economics, math, or life (e.g., 18 year-olds, working thirty-somethings, retirees), citizenship, gender, religious preferences, or a host of other traits. It is often worthwhile to gather some basic information about your audience early in the term. A low-cost way to do this is by asking some of the following questions on a Student Information Card:

* Name (and how to pronounce it correctly)
* Phone number (to be used only in cases of academic emergencies, such as oversleeping for the final exam; this assumes the instructor can identify missing students, perhaps by labeling exams with student names)
* Hometown (and what is it known for)
* Anticipated major(s)/minor(s)/program(s)
* Previous economics or math courses
* Three interesting facts about you, the student
* Three favorite products, firms or industries
* Dream job
* Post-graduation plans
* Questions, concerns, comments, or topics you hope the class will cover

Most students are happy to volunteer such information (through a Google survey, on Facebook or in class) and collecting it can benefit an instructor in several ways. First, it signals that the instructor cares, regardless of whether there are 20 or 200 students. Second, it provides useful information about the level at which to pitch the material; if most students in the class have already taken a course in macroeconomics, then an instructor could proceed quickly through familiar topics such as supply and demand diagrams and welfare analysis, whereas if this is the first course for many, then one should expect to spend more time on the basics. Third, it helps the instructor tailor the course by using real world examples that will resonate with the class; for instance, one might discover that many students plan to move to New York to work on Wall Street, they like Under Armour or Lululemon clothing, or they frequent a local coffee shop. Fourth, it inspires conversations after class, during office hours, or by e-mail; students appreciate career advice, and some will likely ask for recommendations someday.

**Where We’re Going**

Chapter 1 sets the stage for the rest of the textbook by introducing the three principles of economics: optimization, equilibrium, and empiricism. Here’s a quick summary of the major topics of the first seven chapters, highlighting the presence and use of these three principles:

* Chapter 1 *The* *Principles and Practice of Economics*: introduction to the three principles, especially optimization and equilibrium; an empirical look at Facebook and the opportunity cost of your time
* Chapter 2 *Economic Methods and Economic Questions*: overview of empiricism; an empirical look at the returns to education
* Chapter 3 *Optimization: Doing the Best You Can*: the two major types of optimization (by levels and by differences); choosing apartment location based on commuting time and rent; an empirical look at why housing prices vary geographically
* Chapter 4 *Demand, Supply, and Equilibrium*: introduction to the competitive market equilibrium; an empirical look at why oil prices vary geographically
* Chapter 5 *Consumers and Incentives*: optimizing buyers generate demand curves (which are related to price-elasticity of demand and consumer surplus); an empirical look at how financial incentives affect the decision to quit smoking
* Chapter 6 *Sellers and Incentives*: optimizing sellers generate supply curves (which are related to costs, inputs, technology, and producer surplus); an empirical look at how ethanol subsidies affect ethanol producers
* Chapter 7 *Perfect Competition and the Invisible Hand*: in a competitive market, optimizing selfish individuals generate equilibrium with socially desirable characteristics; an empirical look at how markets function using experiments involving double oral auctions or open-air markets

Subsequent chapters also feature optimizing agents, equilibrium models, and the empirically minded sections entitled Evidence-Based Economics.

1. **Number of Lectures**

Of all of the chapters an instructor ponders whether to cover, this is probably the one that s/he would trust students to read on their own, although it introduces some material, particularly the concept of opportunity cost, that is essential for beginning students to understand. There is little math—just the annual opportunity cost of spending an hour each day on Facebook—and the essence of the chapter is introducing the three principles of optimization, equilibrium, and empiricism, which are covered in more detail in the next few chapters, and which will appear consistently throughout the ALL text. Depending on the students’ backgrounds, anticipated pace of the term, and instructor’s faith in the ability of students to grasp nuances by reading, one could spend up to one 60-minute lecture presenting Chapter 1.

Many instructors use the first class meeting to distribute the syllabus, describe what material the course will cover, explain how students will be evaluated, and answer general questions, there may not be a lot of extra time. Nevertheless, some find it worthwhile to set the stage on the first day, jump right into the material, and begin interacting with the class. Some students may be on the fence about whether to stick around, so in some sense, the first day of class and the first chapter of the book may push the folks one way or another. It’s a great opportunity to demonstrate the value of viewing the world through the eyes of an economist.

1. **Opening Question and Evidence-Based Economics**

“What is the cost of using Facebook?” This is a terrific way to open the textbook for many reasons. First, it is a topic to which today’s students can easily relate; many of them may have been on Facebook shortly before reading this chapter! Second, it introduces a clear choice about how students use their time. Third, it immediately forces them to ponder the meaning of the word “free”—should it refer only to out-of-pocket costs (direct cash outlays) or should it include the opportunity cost of time spent on Facebook? Finally, it gets them thinking about how one might compute the true cost of spending hours on Facebook and prepares them to start thinking mathematically about such matters.

* The way the authors start the book is often a good way to start class: presenting an interesting, accessible, real-world problem to motivate the lecture and continually reinforce the idea that there is a compelling reason to learn what’s about to be taught.
* It is hard to produce a one-size-fits-all book, so if a particular example is not familiar or it is possible to find a similar example that students will find more accessible or interesting, by all means adapt the material to appeal to the audience. For instance, the essence of the Facebook scenario is the student would be spending an hour on an activity with no explicit cost; s/he could just as easily be reading a library book, watching videos on YouTube or Netflix, playing the latest hit video game, taking a long walk, or attending a weekly meeting.

**III. Chapter Outline**

* 1. ***The Scope of Economics***
* When told to wash the family car, the teenage daughter has several options, including “she can move out (a drastic response, sure, but still an option).” One may find that dramatic—yet feasible—responses can launch fruitful discussions in or after class. For example, if a student needs a truck and two helpers in order to move from campus to an apartment, there are numerous interesting ways to get a truck (buy it, rent it, build it, steal it) or truck-loading labor services (pay cash, barter, use guilt, use physical threat); modern society frowns on the more controversial of these, but one can see how someone may have justified them using cold-hearted cost-benefit analysis. Indeed, plenty of laws are designed to prevent economics from becoming an over-riding concern in issues, such as euthanasia for the terminally ill.
* *Teaching Idea:*Ask your class the following question: What are some of the choices you made today leading up to this minute? A: Breakfast (whether to eat, what to eat, how much to eat), clothing (bring an umbrella?), attend class, transportation (walk, run, bike, bus, drive, hitchhike).
* Continuing the list of choices related to the sports car: How often to change the oil and bring the car in for maintenance, whether to use original or third-party replacement parts, whether to park outside or pay more for a covered parking spot.

**Economic Agents and Economic Resources—**A wide variety of individuals, groups, and organizations make choices regarding scarce resources; the most common economic agents are households, firms, and governments. Because we have unlimited wants but resources are limited, we face interesting choices about how to allocate these scarce resources.

* In several pages, the authors will discuss optimization, the idea that each of the economic agents makes choices to pursue a particular objective. To the current list in Exhibit 1.1 one might add government, regulatory agency, or bureaucrat, and ponder what it is that motivates each of these decision makers.
* Economic agents are the players in our fanciful world of economic theory, in which economists can pretend to be Zeus, throwing lightning bolts at the mere mortals just to see how they respond and react to the changing environment.
* *Teaching Idea:*Ask your class: Which different types of economic agents does one find at a college or university? A: The institution (usually a non-profit), various schools or divisions, departments, faculty, students, administrators (president, provost, deans), support staff
* “…if sports cars were given away at a zero price, there would not be enough of them to go around. So how does society determine who gets the limited supply of sports cars?” A good answer for many communities is prices from markets. Immediately we have arrived at the issue of fairness. For now, one might refer students to the discussion of fairness in Chapter 18 (Social Economics).
* One might highlight the statement, “Economists don’t want to impose our tastes … on you,” and introduce the Latin phrase *De gustibus non est disputandum*, which means there is no accounting for taste: Economists are more interested in the fact that you prefer Lady Gaga’s music to Katy Perry’s music, rather than the reasons behind that preference.
* “Sometimes economists simplify their analysis by treating these groups as a single decision maker, without worrying about the details of how the different individuals in the group contributed to the decision. For example, an economist might say that Apple prices the iPhone to maximize its profits, glossing over the fact that many employees participated in the analysis…” We revisit the issue of collective decision making in the context of externalities and public goods (Chapter 9). There are many times in economics when it makes sense to (temporarily) assume away real world complications, such as voting and decision making within complex organizations. It is useful to think of Apple as a decision making entity, rather than focusing on CEO Tim Cook’s role in setting the price of the 10-year anniversary iPhone model and the firm’s internal discussions about competing with the latest model of the Android-based Samsung Galaxy smartphone.

**Definition of Economics**—Economics is the study of how agents choose to allocate scarce resources and how those choices affect society. Agents may not be aware of all of the ways their choices affect other agents.

* The phrase “and how those choices affect society” suggests that we are going to need a way to keep score and compare various outcomes. Future chapters will introduce measures such as consumer surplus and producer surplus to do just that.

**Positive Economics and Normative Economics**—Economists describe the choices agents actually make (positive economics) and prescribe or recommend the choices that agents should make (normative economics).

* Economists are well equipped to offer advice on public policy, such as ongoing legislation to tax sugary sodas in order to curb obesity. It is important to remember that economists have no moral authority on such matters. Furthermore, it may be difficult for an economist to remain fully objective because his/her personal opinions and values are likely to affect such advice.
* Public policies create winners and losers, so there may be much to gain by agents who can influence the political process—or economists’ advice—to their advantage. Hence, policy analysis naturally inspires the appearance of lobbying.
* The terms *should* and *ought to* typically indicate a normative statement. Similarly, words such as *better* or *worse* project a subjective opinion, whereas words like *increase* and *decrease* seem more objective.
* Students will appreciate the complications involved in giving and receiving advice. E.g., some might really want advice on which courses to take next term, but really not want advice on their choice of a significant other!
* The authors’ example about helping a worker choose how to invest her retirement savings highlights the fact that people often have heterogeneous preferences, such as the ability to tolerate risk. Hence, it is very important to carefully listen to clients before dispensing prescriptive advice. This is true for small decisions such as retirement savings portfolios and large decisions, such as national health care policies.

**Microeconomics and Macroeconomics**—Microeconomists study small pieces of the economy, such as the output, pricing, and hiring decisions of a single firm, or of several firms in a particular market, whereas macroeconomists study the economy as a whole, which consists of many firms in many markets.

* Different types of problems require different types of models. In general, a macroeconomy can be thought of as an aggregation of many microeconomic parts, but in order to construct working models of national economies, macroeconomists need to make simplifying assumptions (e.g., imagining a representative household or firm instead of millions of heterogeneous individual actors). For example, in the well-known Keynesian model, total spending in a macroeconomy could be decomposed into nation-wide spending by households, businesses, governments, and those involved in international trade; in contrast, a microeconomist might model a household’s demand for a laptop, the local market for laptops, or the effect of an educational policy that subsidized the purchase of laptops by families with high school students.
* *Common Mistakes or Misunderstandings:*The division between macroeconomics and microeconomics is not always clear. We tend to analyze the minimum wage and hiring decisions in microeconomics but focus on broader labor market issues, such as the labor force participation rate and the unemployment rate, in macroeconomics. For example, the national market for low-skilled workers could be thought of as either a particular labor market (microeconomics) or a national labor market (macroeconomics). Macroeconomic fiscal policy, such as an income tax cut, works by altering the budget constraints of millions of individual households, each of which is solving a microeconomic optimization problem. The division is useful for beginning students, but by the time economics majors are seniors, we hope that they see the two branches of economics are closely linked.

***1.2 Three Principles of Economics***

Economics is a social science, but economists look at the world differently than do anthropologists, historians, political scientists, psychologists, and sociologists. In particular, economists highlight three key concepts: optimization, equilibrium, and empiricism.

* It’s useful to point out that a well-read student can view the world through several perspectives, and no single perspective is right or wrong, though we are confident that the economist’s perspective is particularly useful because of our explicit, up-front assumptions, (mostly) mathematical models, and use of data to continually test whether the models help us make real world predictions.
* One might contrast economics and history to get a better sense of the economist’s perspective. An economist might try to model and understand my lunchtime dining optimization problem, and once s/he understands my incentives and behavior, then s/he can better understand how my colleagues behave. That is, economists like to set up generalizable problems that can be used to solve a variety of similar, related problems. In contrast, historians may focus on a particular event and argue that unique circumstances generated a noteworthy outcome. In short, economists seem more likely to try to answer a range of similar questions, whereas historians (stereotypically) are more likely to claim that each unique question has a unique answer.

***1.3 The First Principle of Economics: Optimization***

* It is useful to break down the definition of optimization into its parts. “Optimization means picking the best feasible option, given whatever (limited) information, knowledge, experience, and training the economic agent has.” We see that optimization requires an economic decision maker, a set of feasible options, a way of determine which of these options is best, and some real world constraints on the actor’s decision making abilities, usually in the form of information, or lack thereof. When any of these elements change, the choice may logically change.
* A fun exercise is to make a list of all of the things one could be doing right now instead of sitting in class. Optimization means choosing the highest ranked option out of a menu of options.
* “…evaluating the rationality of a decision means examining the quality of your initial decision, not the outcome.” Economists tend to be forward-looking: if you made the best decision at the time, given limited information and other constraints, then you did the best that you could.
* “…what we optimize varies from person to person and group to group.” If someone makes a very different choice from what you would do, it could be due to different preferences or different constraints. Also, “most governments are trying to optimize a complex mix of policy goals.” If it seems difficult to understand government, remember that it’s likely that there is much more going on than meets the eye.
* Armed with insights from solving simple optimization problems, we can turn our attention to more complex problems.
* *Teaching Idea:* Several important concepts are covered in this section, and the order of presentation in the book—budget constraints before opportunity costs—may not be ideal for everyone. Another approach is to start with resource scarcity, then introduce the necessity of making choices, which requires thinking about trade-offs, and for every choice there is an alternative forgone (an opportunity cost); finally, we use a budget constraint (in an intuitive, algebraic, and/or graphical form) to help with our analysis of how to make these trade-offs.
* *Common Mistakes or Misunderstandings:* Warn students not to go too far in assuming that households try to maximize income and firms try to maximize profit. It is usually easier to convert payoffs into dollars, but economics isn’t preoccupied with making money. In the upcoming discussion of opportunity cost, it is convenient to dollarize options such as working locally at a family restaurant or moving to New York to work in finance, but the fundamental issue is that one person cannot be in two places at one time, so the resource constraint (scarce time) forces the decision.

**Trade-offs and Budget Constraints—**In order to get one thing, we must give up something else; we illustrate this simple trade-off concept with a budget line, which shows all of the combinations of goods that are affordable with one’s current income.

* *Teaching Idea:* Students could revisit the list of choices they have already made today and make a corresponding list of things they didn’t choose. A student who had cereal for breakfast may have chosen not to have pancakes, fresh fruit, or an omelet.
* The two easiest budget constraints to think about involve dollars and hours. $100 could be spent on smartphone apps or food, and 24 hours in a day could be allocated to sleeping, studying, exercising, or other activities.
* If you can exactly afford something then you have a *binding* budget constraint, whereas if something is affordable and you still have leftover resources, then that budget constraint is *non-binding*. For example, Exhibit 1.2 shows six different combinations of hours web-surfing and hours working at a part-time job; in all six cases, the two types of hours sum to five, so they are exactly affordable and the five-hour time constraint is binding.
* *Teaching Idea:* A fun exercise is to make a list of the real world constraints that make choices interesting. For instance, constraints might be financial (just $20 in my wallet), chronological (just 24 hours until the final exam), physical (can’t dunk a basketball), legal (can’t buy ecstasy at CVS), social (may be shunned for nonconformance), spiritual (that food, clothing, language or behavior is against my religion), mental (can’t understand phrenology or quantum physics), philosophical (during the Vietnam War, one was a conscientious objector), ethical, guilt-based, etc. Cultural differences also go a long way in explaining why people from different backgrounds may act differently in a given situation—and these different actions may be perfectly rational!

**Opportunity Cost**—For every option chosen, there is at least one option not chosen, and we refer to the best of these forgone options as the opportunity cost. It is often useful to use the value of the best alternative forgone, and if we conservatively value a set of hours spent on one activity, we can imagine those hours spent on a part-time job earning the going wage.

* *Teaching Idea:* A useful exercise is to ask students to identify the costs of attending college for a fifth year. Students are quick to list the explicit costs of tuition and books, but they tend to overlook the implicit cost of a year’s forgone salary. An important insight is that opportunity costs are often hidden and easily overlooked.
* The opportunity costs of using a resource are often the income one could obtain by selling or renting out that resource; this is true whether the resource is a building, a vehicle, or a person’s time.
* “And postponement is not an escape hatch from this economic logic.” Procrastinators beware!
* *Teaching Idea:* Throughout this textbook and course, students will be exposed to economic reasoning that might come across as common sense. Each culture has a collection of familiar sayings that include nuggets of economic wisdom. One can often ask students to come up with a saying that captures the economic concept *du jour*. E.g., when talking about tradeoffs, a good relevant saying is “You can’t have your cake and eat it too.”

**Cost-Benefit Analysis**—To compare two or more alternatives we identify all of the relevant costs and benefits, compute net benefit (equal to that alternative’s total benefit—total cost) for each option, and then identify the alternative(s) with the highest net benefit. Maximizing net benefit is equivalent to optimizing.

* *Common Mistakes or Misunderstandings:* Again, the fact that economists tend to dollarize various options does not mean that we are obsessed with making money, but instead reveals that we use this convenience to avoid comparing apples to oranges. It is hard to value an 8-hour day at Six Flags, but if we know that the person can earn an hourly wage of $12, then those 8 hours could be used to generate an income of (8)($12) = $96, and we have a sense of what $96 can buy. Analogously, we might focus on dollars in the U.S., but we could use exchange rates to convert dollars to foreign currencies, which may be more natural for foreign students to use.
* It can be tricky to assign dollar values to some activities. One could use an hour on Sunday evening to do homework, watch Netflix, read a book, or go to bed early. Here, it makes sense to think of the one hour expended as the cost and then pick the activity that makes one happiest, rather than trying to convert the hour of time and the happiness into dollars.
* The authors write, “Economists are not popular for making some of these ‘cold-hearted’ calculations.” One could add that people needn’t follow the advice of economists, but our perspective does provide a starting point for discussions on how to proceed.
* Cost-benefit analysis (CBA) can be simple, such as making a static decision based on today’s certain costs and benefits. It can also get very complicated, such as when we must base our decision on forecasts of risky cash flows in the distant future. E.g., we might have to design a federal budget and make assumptions about future tax revenues and expected health care costs, without knowing whether the Affordable Care Act is going to be modified, repealed, or left as is. We will revisit these issues in Chapter 15, which addresses the time value of money.
* The book’s example of whether to fly or drive to Miami focuses on the cost savings and the value of the time spent driving (the opportunity cost). One could ask a class what other things should be taken into consideration. For example, the analysis omits whether one enjoys hitting the open road in a fast convertible, listening to music, chatting for hours, eating at small town diners, visiting the world’s largest ball of twine and other roadside attractions, etc. The point is that we should identify and count all relevant costs and benefits.
* “To an economist, cost-benefit analysis and optimization are the same thing.” It is good to remind students that when we ask them to solve an optimization problem, we are asking them to put themselves in the shoes of an economic actor who will make the best choice in the circumstances by employing the tool of cost-benefit analysis, given the feasible options and real world constraints.

**Evidence-Based Economics: What is the cost of using Facebook?** A straightforward approximation of the annual opportunity cost of spending one hour per day on Facebook multiplies a reasonable after-tax wage for 16- to 24-year-old students by the number of hours on Facebook per day, and by the number of days in a year:



The authors suggest alternative ways of spending $3,650 and ask whether 365 hours of Facebook is indeed preferable to the alternatives (such as leasing a sports car or taking short trips to Paris and the U.S. Virgin Islands). To launch an entertaining and useful discussion, one might ask whether students are aware of this cost, what benefits they get from using Facebook, and whether we should use this reasoning to evaluate a daily hour of exercise, reading, or personal hygiene.

* “Here’s how we did the calculation.” This is a great example of being upfront with assumptions rather than just waving one’s hands and claiming something is true. A good economist does the math for you! You might not like the answer or the assumptions made, but you can’t argue with the logic.
* Straying into the realm of normative economics, ask your students whether they think that they *should* spend an hour each day on Facebook. Is that a healthier choice than going to the gym? Some research suggests that people are less happy after using Facebook because they are only exposed to the glamorous side of their friends’ lives and they feel pressure to always look and sound good. Then again, there may be social benefits to participating in a social network; one wouldn’t want to feel left out of important ongoing conversations! A useful point to make is that cost-benefit analysis is only as good as the numbers that go into it; if we are systematically under- or over-valuing the benefits or costs, then our answer may be misleading. Sure, having an extra $3650 may allow you to lease a sports car, but who will you drive it with if you have no (Facebook) friends?!

***1.4 The Second Principle of Economics: Equilibrium***

Whereas optimization is about economic agents making self-interested choices in complex environments, equilibrium is the idea that an economy consists of an aggregation of many such agents who are simultaneously optimizing.

* The book’s presentation of equilibrium prepares students not only for the equilibrium in a competitive market, but also for the Nash equilibrium covered in Chapter 13. In equilibrium, no single player believes s/he would benefit by changing his or her own behavior, so the economic system reaches a point of stability.
* *Alternative Teaching Examples:* Some modest variations on the example of shoppers picking checkout lines are cars on a tollway queuing up to pay tolls, fans picking turnstiles at a major sporting event, or hungry customers picking lines at all-you-can-eat buffet restaurants such as the Golden Corral or Old Country Buffet.
* One should go through the three conditions that must be satisfied for there to be equilibrium in the gas market, as this does a great job of establishing price as a rationing mechanism. In particular, one could highlight the fact that as gas prices rise, more and more wells around the world become profitable for producers to operate, whereas higher prices discourage buyers from using gas for low-value activities. In later chapters on supply and demand, the equilibrium price effectively chops off the upper right part of the market supply curve and the lower right part of the market demand curve, thereby eliminating those sellers and buyers who are not willing and able to transact at the going market price.

**The Free Rider Problem—**Given human nature, it would not be a surprise to find situations in which one can enjoy benefits without bearing one’s share of the cost. The authors use lazy roommates (nobody wants to clean up) and turnstile jumpers (who enjoy using the subway without paying) as examples of free riders.

* Students are likely familiar with free riders in the context of group projects. The free rider problem is defined and explained further in Chapter 9’s presentation of public goods. One might say that there can be good equilibria and bad equilibria. As the authors point out, if everybody jumped the subway turnstiles (i.e., nobody paid to ride the train), then the subway system would run out of cash. To prevent this from happening, authorities might intervene in a way that alters incentives, such as installing jumper-frustrating turnstiles, patrolling the area, installing security cameras, or otherwise raising the cost of turnstile-jumping.
* *Teaching Idea:* Ask students how they deal with potential free rider problems that could arise when one has roommates, such as doing dishes, taking out the garbage, cleaning the room, etc. Do they have a cleaning schedule? Did they ever sit down with their roommate(s) and discuss these issues? How did their families deal with such issues before college?

***1.5 The Third Principle of Economics: Empiricism***

Economists gather data and use statistical analysis to evaluate whether economic theories do a good job of explaining and predicting real world human behavior. They also try to understand causality—whether one event causes another to occur. This topic is covered well in Chapter 2.

***1.6 Is Economics Good for You?***

Students who master the principles of economics will be better prepared to make decisions, both large and small.

* *Teaching Ideas:* At the beginning of the term, an instructor could ask a class for specific economic questions they would like to answer. It is surprising how many questions one can address in a term if one classifies them by lecture. For example, gather questions about labor markets, externalities, profit-maximizing firms, etc., and at the beginning or end of the labor market lecture, mention some of these questions and at least sketch out how one would go about answering them.
* Here are some situations in which knowing some economics can save (or make) one a lot of money:
	+ Deciding if/when/where to attend graduate school
	+ Negotiating a labor contract with a potential employer
	+ Choosing whether to buy or lease a living space
	+ Investing for retirement
	+ Shopping for a loan to buy a vehicle or living space
* Students new to economics sometimes cannot see the forest for the trees, so it can be helpful to reassure them that all of these topics in microeconomics are indeed related and can be connected quite nicely with the three themes.

**VI. Active Learning Exercises**

1. (Trade-offs; Opportunity Cost; Cost-Benefit Analysis) A person in the community calls and asks you to babysit for four hours on Friday night. You know the job will pay $10 per hour. You are currently planning to hang out with your friends on Friday night. If you accept the offer to babysit, what can your friends determine about how much you would have valued the time spent with them?

*Solution: If you are willing to accept a job for $10 per hour and we assume you are optimizing, then we can say that you value the time with your friends less than $10 per hour. In other words, the opportunity cost of babysitting is the time you are giving up with your friends, and you must value this at less than $10 per hour or you would turn down the job.*

2. (Trade-offs; Opportunity Cost; Cost-Benefit Analysis) Your friend Charles asks you to drive him to the airport. He says that he will reimburse you for the cost of going to the airport. It is a two-hour roundtrip to the airport, and you will use $15 of gas. If Charles pays for the cost of gas, has he paid your full cost of taking him to the airport? What other costs is Charles forgetting?

*Solution: The opportunity cost of driving Charles to the airport includes the direct cost of $15 for gas for driving to the airport. However, it also includes the depreciation in the value of the car used to drive to the airport (the car is now worth less with the additional miles) and the value of the best alternative use of the two hours you spent driving. It might have been working a part-time job, studying, or exercising. The opportunity cost of driving Charles to the airport is clearly more than the $15 in gas.*

3. (Free rider problem) Professors sometimes assign group work so that students develop their ability to work in teams. In a few sentences, discuss the free-rider problem in the context of group work. Is the problem likely to be more or less significant in a group of students who are close friends when compared to a group of students who do not know each other?

*Solution: In group work, students have an incentive to let their peers do the work. The free rider problem is often less of a problem when the students know each other. This would be true if the friends were able to punish each other (if they do not do the work) with social pressure or in future interactions. If the students do not know each other and are not likely to interact in the future, then there may be less social pressure and the students could not punish a free-riding peer if the group will not be seeing the free rider again after the assignment.*

4. (Economic Agents; Optimization). Exhibit 1-1 shows some examples of economic agents.

1. Make another list of economic actors representing the future roles you expect to play. For example, you might decide to save for retirement and become an investor.
2. For several of the actors in your list, describe an objective or goal they probably pursue. For example, the investor might try to save enough money in a retirement account that s/he is able to retire comfortably.
3. For some of these actors and objectives, describe a fundamental choice they make. For example, the investor might decide how to allocate these dollars across stocks, bonds, real estate, gold, and other assets.
4. For some of these actors, objectives, and choices, describe some of the most important real-world constraints the actor faces. For example, the investor might face a limited set of investment vehicles (assets), a fixed number of dollars to invest, a certain number of years before retirement, and laws about reporting investment income for taxes.

*Solutions:*

1. *Actors: This exercise encourages students to think of economics as being broadly useful any time choices are made. Lists probably include some of the following: grocery shopper, job-hunter, taxpayer, voter, investor, parent, producer/worker/employee, entrepreneur, debater, house- or car-buyer, bill-payer, manager/employer, neighbor, student, teacher, philanthropist, civil servant, juror, advisor/consultant, adaptor to technological change, significant other/spouse/partner, or athlete/coach.*
2. *Objectives: These will vary considerably, but one can show that decisions are often complex because preferences may involve trade-offs. E.g., a job-hunter tries to find the best job, thinking about compensation (wage, salary, benefits), working conditions (collegiality, danger, good match for skills, business hours vs. weekends or nights), opportunities for professional advancement (mentors, training, development), location (short commute, work from home, required travel), etc.*
3. *Choices: A grocery shopper who wants to feed his/her family must choose what items to put into the shopping, knowing that foods vary in terms of price, nutrition (does it contain fat, sugar, carbs, allergens, or controversial ingredients?), ease and speed of preparation, texture, etc. The teaching goal is think about what matters are exogenous (given), and which are endogenous (chosen).*
4. *Constraints: We face numerous real-world constraints. A basketball coach deciding which players to have on the court must be aware of rules (must have exactly five players on the court and cannot use players who have amassed too many fouls) and the players’ well being (are they healthy, rested, and in a good mindset?).*

5. (Real-world optimization) Describe how you make these decisions:

1. What to wear today
2. Whether to go out tonight
3. Which flight to book in anticipation of traveling home during break
4. Choosing whether to drive or fly to spring break

*Solutions: These decisions may involve numerous pros and cons.*

1. *The choice of clothing depends on the weather (it is hot, cold, windy or rainy?), your clothing availability (have you done your laundry recently?), today’s activities (do you have Pilates or a spinning class later?), other clothing you plan to wear today (do the pieces complement each other?), what you wore recently (am I the “blue shirt guy”?!), whether today is a holiday (Leap Day?), etc.*
2. *Can you afford to go out tonight? Do you have sufficient time, energy, and money? Do you have exams to study for or papers to write? Will an outing be good for morale, relaxation, socializing, or making connections? Are you conducting a market analysis of local restaurants?*
3. *Your preferences probably include something about airlines, time of the flight, number of stops, total travel time, the window/aisle/middle seat, whether you need to pay for bags, and the quality of service. There will be a number of trade-offs you will consider; how much more are you willing to pay for a first-class ticket on a non-stop flight at an ideal time?*
4. *The textbook emphasizes the value of the additional time you would spend driving. Other downsides to driving include the cost of gasoline, wear and tear on the vehicle, the dangers of driving, and the fatigue that comes with many hours on the road. You also cause a bit of congestion for other drivers and impact the environment. But there may be some upsides: you might also have a new vehicle that you are excited to drive, you want to take selfies at odd roadside attractions, or want to spend many hours singing along to songs and bonding with your road trip-mates.*

6. (Opportunity Costs; Trade-offs) Describe the costs of making the following choices. Be sure to remember not only explicit costs, but also implicit (opportunity) costs!

1. Attending Lollapalooza, a weekend music festival
2. Taking a principles of economics course
3. Studying abroad in Europe for a term
4. Accepting a job as White House Press Secretary

*Solutions:*

1. *Buy tickets and ear plugs, arrange for transportation and accommodations, forgo work or several days of best alternative plans*
2. *Pay tuition, buy textbook, forgo the best other course you could have taken instead*
3. *Explicit costs include travel, room, board, tuition and books; opportunity cost is a forgone term at your usual college (and all of the activities back home that you will miss)*
4. *You will have to incur the costs of moving to Washington, buying some press-friendly attire, taking a crash course in public speaking, and missing out on that best other gig, whether it is farming in Iowa, singing in Nashville, trading on Wall Street, acting in Hollywood, coding in Silicon Valley, fracking in North Dakota, or staying in college.*