

CHAPTER 1

WHAT ECONOMICS IS AND HOW IT HELPS YOU SUCCEED IN YOUR CAREER AND LIFE



What's in It for You?

Why are you taking this course? We suspect, most of you would say, “because it’s required.” OK. But how about the proven fact that learning economics actually helps you make good business and personal-life decisions? To see how, you first need to have a clear understanding of what economics is. Misconceptions about the subject of economics and its role in real world are widespread, with the perceptions ranging from “it tells you how to get rich quick” to “it’s all about government policies” to “it’s a bunch of abstract theories with dense math that have no use in real life.” In this chapter, and the whole course for that matter, we try to dispel these and other common misconceptions about economics and help you discover the power of economic thinking—an invaluable asset that helps you succeed in your career and life.

We first define the subject of economics in general and business-oriented applied microeconomics economics in particular. Then, we present key concepts and ideas of economics that we will discuss in more detail throughout the course. After this overview, we outline the methods used to examine economic relationships and recommend solutions for real-world problems. Finally, we explain how the knowledge and skills learned from this and other economics courses can open exciting career opportunities for you and help you succeed in your career and life.



Learning Objectives

At completion of this learning module you are expected to be able to:

- Define and explain the subject of microeconomics
- Define, explain, and apply (at a basic level) key concepts and principles of economics: opportunity cost, cost-benefit analysis, choice at the margin, gains from trade, and efficiency
- Explain what it means to think like an economist and how economists use models and data to examine real-world problems and help find solutions.
- Illustrate how economics is used in various organizations and outline career opportunities for college graduates skilled in economics

1.1 Applied Microeconomics in Perspective

Economics in general studies human behavior in most, if not all, of its manifestations. As such, it offers a way of thinking about how the world works and a framework for making choices and decisions of all kinds. Economics gives us a unique perspective on a wide variety of human activities and social institutions. A common thread running through all definitions of economics is that it is the study of how individuals, who have virtually limitless wants, choose to allocate scarce resources to best satisfy their wants. This leads us to what economists call “*the economic problem*.”

The Economic Problem

Think about all the things people consume: food, housing, clothing, transportation, healthcare, entertainment, and many more. The list is endless. We are never satisfied with what we have and will forever be lured by more tempting foods, more cleverly engineered electronic devices, more up-to-date fashions, etc. Why can't we have everything we want? The answer is, because for us to consume good or services, they first need to be produced. And to produce them, the economy needs **resources**, such as land, structures, machines, energy, and workers with certain skills. Economists call things used to produce goods and services **factors of production**.

Unlike our wants, society's resources are limited or, as economists say, scarce and therefore can produce only certain amounts of goods and services. **Scarcity** is an important general concept in economics. It means the resources available to individuals and society are not enough to produce the amounts of goods and services that would satisfy all the desires for them. All individuals, businesses, and societies—no matter how wealthy they are—face scarcity one way or another. The United States, for example, has 1.5 million sq. miles of land, much of which is rich in natural resources (such as natural gas, oil, iron ore, and gold), 960 million acres of agricultural land, more than \$51 trillion worth of capital stock (yes, 51 with twelve zeros!), and 160 million people in the labor force, many of which are highly skilled. Yet, these tremendous amounts of resources are far from being sufficient to produce all the goods and services that 320 million people resided in the United States would like to have. We want healthier food, bigger and more comfortable homes, faster and safer transportation, more effective health care, better schools, more security, and the list goes on.

So, all of us face the situation in which the limited resources we have cannot satisfy all our endless wants. This is ***the economic problem***. And this is what defines the subject of economics in general. Since we cannot satisfy all our wants, we must make economic choices, i.e. decide which wants to satisfy and which ones to do without. Families must decide whether to spend their money on a new car or a fancy vacation. Towns must choose whether to put more of their budget into police and fire protection or into the school system. Governments must decide whether to devote more funds to national defense or to protecting the environment. The role of economics is to explain how all these decisions are made and how we can get as much as possible of what we want. That is:

Economics is the study of how people make choices under the condition of scarcity and how to direct scarce resources in the way that best satisfies their wants.

The economic problem applies to all individuals, businesses, and societies. Methods of dealing with it differ depending on resource endowment, available technology, economic and legal systems, cultural traditions, and religious beliefs; but the fundamental problem is the same everywhere and at all times.

The Subject of Applied Microeconomics

You might remember from your introductory economics courses that economics has two branches, microeconomics and macroeconomics. **Microeconomics** focuses on individual units that make up the economy: households, firms, industries, and markets. **Macroeconomics** studies an economy as a whole, dealing with such issues as economic growth, unemployment, and inflation.

In this course we study applied microeconomics, which provides analytical frameworks for making individual and business choices. Those choices may be private, such as how much you should invest in getting your college degree, whether you should buy a new car or a used one, how to price your laptop on eBay, how much help to hire for a business you run and how to price your product, etc. Or they may be public choices, such as whether to impose a tariff on imports from China, whether to sign an international agreement on climate change, whether to raise the cigarette tax and use the additional budget revenue to increase the funding of higher education, etc. These are all economic choices and they are all important.

In this course, we focus on private choices made by firms and consumers. We start with examining how decisions made by consumers and producers determine prices and quantities of goods sold in competitive markets and how various events influence those decisions. Then, we look deeper into how individual consumers and firms make their choices. On the producer side, those choices depend to a large extent on what kind of market the firm operates in, so analyzing firms' decisions in various market structures, from perfect competition to monopoly, is an important part of this course. Government economic policies and regulations—such as taxes, subsidies, and price controls—surely affect producers' and consumers' choices, and we examine them from that perspective. Thus, we can define the subject of this course as

Applied microeconomics that studies how producers and consumers interact, how government policies affect their choices, and how optimal decisions can be made given certain market conditions and other constraints.



Checkpoint 1

The subject of this course is best defined as the study of which of the following?

- A. Various microeconomic theories
- B. How businesses can influence government policies in the way that best achieves their goals
- C. How consumers and producers make optimal decisions given certain market conditions.
- D. How firms respond to government macroeconomic policies

E. How a market economy works

Check your answer

1.2 Foundations of Economics

Before we dive deeper into the specific topics of applied microeconomics, let's outline five key concepts on which they are based: (1) opportunity cost, (2) cost-benefit analysis, (3) marginal thinking, (4) gains from trade, and (5) efficiency. We will use these concepts throughout the course, applying them from various perspectives.

True Cost Is Opportunity Cost

While it is customary to view costs as the money paid for goods or services, it is usually not an accurate measure of true costs. Often, the amount of money you pay to get something is only part of what it actually costs you and in some cases, only part of that amount is your true cost. How come?

Economists measure the cost of everything as opportunity cost. As we discussed above, scarcity forces us to make choices. And when we choose to get or do something, we almost always have to give up something else. The value of what we give up is the opportunity cost of what we get. That is:

The **opportunity cost** of what we get is the value of what we give up to get it.

Here are two examples that illustrate the concept of opportunity cost.

Example 1: How Much Does It Cost to Have a Break?

Polina is a freelance graphic designer. She earns on average \$40 per hour and has no problem getting new clients and take on more work. She's been working hard and has gotten tired, so she decides to take a break and go to a rock concert. She gets a ticket for \$55 and expects to spend \$10 on snacks and drinks. It will take her 5 hours and \$5 worth of gas to get to the venue, attend the concert, and come back. What is Polina's cost of going to the concert?

Let's calculate Polina's opportunity cost. Surely, the money she pays for the ticket, snacks and drinks, and gas ($\$55 + \$10 + \$5 = \70) is part of it because she is giving up something else she could buy for that money. But she is also giving up 5 hours of her time that she could spend working on her design project and earn $\$40 \times 5 = \200 . These forgone earnings together with the monetary costs associated with attending the concert amount to Polina's total opportunity cost of $\$70 + \$200 = \$270$.

Polina's \$270 cost of going to a rock concert might not look plausible, but it is actually a much more accurate estimate of what the concert will cost her than just the monetary cost of \$70. Since \$270 is what she actually gives up if she chooses to go to the concert, it is her true cost of it that she should take into account when making her decision. ♦

Example 2: The Opportunity Cost of Summer School

Bart, a Georgia Southern student, is considering taking courses this summer. Tuition and fees for the two courses he intends to take are \$1,890, and the estimated cost of books is \$200. Bart is renting an apartment near the campus for \$500 per month and will live in it no matter whether or not he goes to school in the summer. His other living expenses won't depend on whether or not he takes summer courses either. Further, Bart is offered a summer job that would pay \$2,000, but he would not be able to take it if he goes to school. How much will the summer school cost Bart?

To calculate Bart's true cost of the summer courses, let's see what he gives up if he decides to take them. That includes tuition, fees, and books—since by paying this money for the school, Bart is giving up something else he could buy for it. But what about the rent he pays for his apartment? Surely, Bart gives up this money too, but it has nothing to do with his cost of the summer school, as he pays the same amount no matter whether or not he attends it. The same is true about his living expenses. So, when calculating Bart's opportunity cost of the summer courses, we only include tuition, fees, and books: $\$1,890 + \$200 = \$2,090$. Further, to attend the school, Bart has to give up a job that pays \$2,000, which means these forgone earnings are part of his opportunity cost as well. Thus, Bart's total opportunity cost, i.e. his true cost of the summer school, is $\$2,090 + \$2,000 = \$4,090$. And that's the cost he should consider when deciding whether or not to take the summer courses. ♦

When determining the opportunity cost of a choice, it is important to keep in mind that:

When there are several alternatives to a choice and they are mutually exclusive, only one of them, the best one, should be used to determine the opportunity cost.

Back to our first example, suppose Polina is considering giving up freelancing and working for hire instead. She has two offers of a fulltime job: one at Stark Graphics, Inc., which pays \$35 per hour, and the other at Thor Images, Ltd., paying \$45 per hour. Recall that as a freelancer, she earns \$40 per hour. If she quits freelancing and accepts the job at Thor Images, what will be her opportunity cost?

The answer is \$40 per hour. To see why, note that Polina's choices are mutually exclusive: she is quitting freelancing, and she cannot work two fulltime jobs at the same time. Thus, only the best alternative to her choice—continuing freelancing and earning \$40 per hour—counts. So, that's her opportunity cost.



Checkpoint 2

Dan is calculating the opportunity cost of getting his college degree. If he goes to college, each year, he'll pay \$9,000 for tuition, \$1,500 for textbooks, \$4,500 for housing, and \$2,500 for food. If he decides not to go to college, his parents will let him live at home for free, and he will spend only \$1,000 per year on food. The rest of his expenses won't depend on whether or not he goes to college. While deciding whether to go to college, Dan is offered a job paying \$30,000

per year, which he won't be able to take if he goes to college. What is Dan's opportunity cost of four years in college?

Check your answer

Benefits vs. Costs: Choice at the Margin

Now you know how to determine the true cost of an action. The question, however, is whether that action should be taken. Should Polina go to the concert? Should Bart take the summer courses? To answer these questions, we need to know the person's benefit from taking the action along with her opportunity cost of it. That is, we need to determine the value the person gains by taking the action and compare that value with the person's opportunity cost.

How can we evaluate a person's benefits? Can we, for example, attach a dollar value to Polina's enjoyment of the rock concert? Economists measure a person's benefit—i.e. the value received from consuming a good or a service—by the highest price she is willing to pay for it, which is called **willingness to pay**. That is:

The **benefit** (or **value**) received by a person from enjoying a good or a service is the highest price the person is willing to pay for it.¹

Is Polina willing to pay \$270 for the rock concert? One way to find it out is to ask her (or she can ask herself) whether she would give up going to the concert if offered that amount in cash instead. If she would, then her benefit from the concert is less than \$270. If she would not, that means she values enjoying the concert at higher than \$270.

The decision-making rule then is:

Compare the benefit of taking an action with the opportunity cost of it. If the benefit exceeds the cost, take the action; if the cost exceeds the benefit, don't.

So, Polina will go to the concert if the value she places on enjoying it is higher than her opportunity cost of \$270, and she won't go if she values it below \$270.

The same principle is used to make business decisions. In that case, the benefit is the revenue received from selling a product and the cost is the opportunity cost of producing and selling it (which is not necessarily, and usually not, the same as the firm's accounting cost).² Let's consider another example.

Example 3: Can an Economist Make a Good Manager?

Elizabeth, a student majoring in economics at a small college, is running a student theater, called Actonomics, which plays sketches illustrating how economics principles work in the

¹ We discuss how to evaluate the benefits (utility) received by consumers in more detail in Chapter 5.

² We address the difference between economic costs (i.e. opportunity costs) and accounting costs in more detail in Chapter 6.

real world. The theater becomes so popular that there is not enough room on campus to satisfy the demand for its shows. So, Elizabeth is looking for an external venue for an all-day festival.

As a good economist, she estimates the Actonomics's opportunity cost of such a festival, compares it with the expected revenue from the ticket sales, and figures out that the most Actonomics is willing to pay to rent an auditorium is \$400.

A recently built concert hall in town, called Midtown Hall, is a perfect venue for the festival. So, Elizabeth approaches Dwight, an account manager at Midtown Hall, and asks him if she could rent the auditorium for the whole day on the upcoming Monday. Dwight says yes, as no other event is scheduled for that day, and tells Elizabeth that the rent will be \$1,300.

Surprised, Elizabeth asks Dwight to explain why the rent is so high and here is what he says: "Midtown Hall is still repaying a bank loan taken to help pay for its construction, which is \$600 per day. Also, we pay \$100 per day for the building insurance and \$200 per day in property taxes. The extra cost of electricity and janitorial services for a one-day event is \$250. So, the total cost we would need to cover is \$1,150. With our usual profit margin added, the charge is \$1,300."

Elizabeth suspects that Dwight did not do well in his economics classes when he was in college. She says, "Well, I'm offering you \$300, which is a pretty generous offer, and you'll make a profit if you accept it." Dwight thinks Elizabeth is kidding him. Fortunately, his supervisor, Jan—who has a degree in economics—happens to be around and overhear the conversation. She agrees with Elizabeth and even offers her a job as a financial manager at Midtown Hall. Elizabeth accepts the offer. Later, she uses her adventure at Midtown Hall to write a new sketch for Actonomics.



Elizabeth's sketch ends with the scene where Jan explains puzzled Dwight why she has agreed with Elizabeth. Try to figure it out yourself before reading the explanation below.

Can you see why Jan agreed with Elizabeth? As economists, they both used the decision rule we've stated above: compare the opportunity cost of renting out the facility with the benefit of it, and if the benefit exceeds the cost, accept the offer. Midtown Hall's opportunity cost is only the *additional* costs associated with the festival, i.e. the extra cost of electricity and janitorial and other services (\$250). And the benefit is the revenue received, i.e. the amount of rent that Elizabeth would pay (\$300). Since the benefit from renting out the auditorium exceeds the cost, Dwight should have accepted Elizabeth's offer. In fact, he should have accepted any offer above \$250 (that's why Elizabeth said her offer was generous). By refusing to accept \$300 to cover the additional costs of \$250, Dwight was about to lose the opportunity for Midtown Hall to make an extra profit of \$50.

The other costs that Dwight included in his calculations were *not* opportunity costs and therefore should not have been taken into account. Can you see why not? The concert hall has to repay the bank loan and pay the insurance premium and property taxes no matter whether or not Actonomics rents the facility. That is, those costs are irrelevant when making

the decision whether to accept Elizabeth’s offer. And the “usual profit margin” is irrelevant here either. Since no one else wants to rent the auditorium on that day, Midtown Hall would not receive any profit on it at all if it refused Elizabeth’s offer. ♦

Sunk Cost

The analysis in Example 3 leads us to a related important principle of decision making. Note that repaying the bank loan, paying for insurance premium, and property taxes are costs that the Midtown Hall could not avoid. It has already invested the money to construct the facility, signed a contract with the insurance company, and is obligated to pay property taxes by law. These are what economists call sunk costs.

A **sunk cost** is a cost that has already been paid—or must be paid due to an unavoidable commitment—and that cannot be recovered or refunded.

Another illustration of a sunk cost would be if Bart in Example 2 rented his apartment for the whole year and the lease agreement obligated him to pay the rent for twelve months—no matter whether or not he lives in the apartment—and forbade subletting. In that case, the amount of rent Bart pays for the apartment would not influence his opportunity cost of taking summer courses even if he could, say, live in his parents’ house for free during the summer in case he decided not to go to school. In general:

Sunk costs are *not* opportunity costs and therefore should *not* be taken into account when making decisions.

The notion that rational decision makers only consider the opportunity cost of a choice and ignore sunk costs—or as economists call it **think at the margin**—is one of the key themes in economics. In reality, however, people—consumers, firm managers, and government officials alike—are often influenced by sunk costs when making decisions. In behavioral economics, this is known as the **sunk cost fallacy**. We discuss it in more detail in Chapter 5.



Checkpoint 3

Suppose Sony has decided to develop a new digital camcorder. The project costs 22 billion yen to complete. The company's managers expected that the new camcorder would bring 28 billion yen in additional sales. When Sony has already invested 12 billion yen, it suddenly finds out that Canon is introducing a similar camcorder, which is expected to reduce Sony's revenue from its new camcorder to 9 billion yen. Would you advise Sony to finish the project and launch the new camcorder or discontinue it?

Check your answer

Marginal Analysis

The choices in our examples above are all “*yes-or-no*” decisions: to go or not to go to a concert, to take or not to take summer courses, to accept or not to accept an offer. But the principle of thinking at the margin also applies to “*how-many*” (or “*how-much*”) type of choices, which individuals and firms have to make even more frequently. In this case, the decision maker compares the marginal benefit of increasing the activity (e.g., selling one more unit of a product) with its marginal cost.

The **marginal benefit** is the additional benefit received from an increase in an activity. The **marginal cost** is the additional cost resulting from an increase in an activity.

The decision-making rule then is:

Continue to increase the level of the activity as long as the marginal benefit exceeds the marginal cost. Stop before the marginal cost becomes greater than the marginal benefit.

Our next example illustrates how marginal analysis works.

Example 4: The Barbershop is Open Until...?

Hannah, a student living in a college town, runs a small barbershop at her home. The barbershop is pretty popular among students, so Hannah has no problem with getting clients. She charges \$8 per haircut and gives on average 3 haircuts per hour. Her only significant cost is the opportunity cost of her time. The longer her barbershop stays open, the more of other, increasingly valuable, activities she must forgo. For example, if Hannah is working at her barbershop for two hours a day, she has to give up some time she would spend watching TV; if she works for another hour, she must also give up some of her study time, which she values more highly; if her barbershop stays open for one hour more, she must forgo more study time and also some of her sleep time, which is even more valuable to her, and so on.

The opportunity costs of each additional hour of Hannah’s time are her marginal costs. We can express them in dollar terms by determining the lowest amount of money that Hannah would be willing to accept in order to forgo her best alternative to working for each additional hour. These marginal costs are shown in Table 1.

The table also shows Hannah’s marginal benefits from staying open for an additional hour, which are the monies she receives from clients during that time. Economists call it **marginal revenue**. Since Hannah gives three haircuts per hour and charges \$8 per haircut, her marginal revenue from each additional hour of work is $18 \times 3 = \$24$.

Hannah’s barbershop opens at 5:00 pm (after she and most of her clients are done with their classes). For how long should it stay open?

Table 1 Hanna’s Marginal Costs and Marginal Revenue

Hour	Marginal Cost (\$)	Marginal Revenue (\$)
First	6	24
Second	12	24
Third	22	24
Fourth	36	24
Fifth	54	24

Let's use the marginal analysis to figure it out. As the numbers in the table show, for the first three hours, Hanna's marginal cost is below her marginal revenue. This means, up to that point she is better off staying open. For example, staying open for the third hour brings her an additional benefit of $\$24 - \$22 = \$2$. The marginal cost of the fourth hour, however, exceeds the marginal revenue. That is, if the barbershop continues to stay open for another hour, Hannah will be worse off (by $\$36 - \$24 = \$12$). Thus, her best decision is to stay open for three hours, i.e. from 5:00 pm to 8:00 pm.



Checkpoint 4

Viola gives private piano lessons. She is a good music teacher, so she has no problem with getting customers. Viola charges \$30 per hour for her lessons. Her only significant cost is the opportunity cost of her time. The more time she spends giving her piano lessons, the more of other, increasingly valuable, activities she must forgo. The table shows the costs of each additional hour of Viola's time during a day. How many hours per day should Viola devote to giving piano lessons?

Check your answer

Trade Creates Value

You might be surprised by the title of this subsection, which we claim to be one of key ideas of economics. Is not trade a zero-sum game? That is, when a buyer gets a good or a service of a certain value, doesn't the seller who parts with that good or service get the same value in money so that no new value is created? To see why the answer to these questions is "no," let's revisit our discussion of benefits and costs.

Recall that:

The benefit that a buyer receives from a good she gets is the highest price she would be willing to pay for it. And the value of that good to seller is his opportunity cost of providing it.

In our Example 3, the highest price Actonomics was willing to pay to rent the auditorium was \$400, so the value it placed on being able to use it was \$400. And Midtown Hall's opportunity cost of providing the facility for the festival was \$250. Thus, when Elizabeth rented the auditorium for \$300, Actonomics received a value of \$400 while giving up only \$300. And Midtown Hall received \$300 while giving up only \$250. That is, the transaction generated an additional value of $\$400 - \$300 = \$100$ for Actonomics and $\$300 - \$250 = \$50$ for Midtown Hall—a total gain of $\$100 + \$50 = \$150$.

Hour	Cost (\$)
First	16
Second	20
Third	24
Fourth	28
Fifth	32
Sixth	36

Note that both parties in our example entered the transaction voluntarily. As a student of economics, Elizabeth could clearly see the gain from it for her company, and Jan could see the gains for hers. If one of the parties did not benefit from the transaction, it would simply not take place. Thus:

Trade creates value because voluntary transactions generate gains for both buyers and sellers.

Further, the possibility to gain from trade gives people the incentive to specialize. In the modern world this is done by setting up business firms that produce certain goods or services. And when we specialize, we focus on certain activities, develop expertise in them and therefore become more productive, thus creating more value.

Gains from trade, however, can only be realized if potential buyers and sellers are brought together in some way so that they can transact. Such arrangements are called markets.

A market is any arrangement that enables buyers and sellers to interact with each other.

Modern economies, therefore, are essentially collections of markets. Nearly everything, from goods and services to resources and raw materials to real estate, financial assets, trademarks, and intellectual property, is traded in various kinds of markets, from bazaars and farmers' markets to Walmart and auto dealerships to law firms and insurance agencies to Amazon and eBay to mercantile and stock exchanges and financial intermediaries.

In the modern world where billions of voluntary transactions occur every day, market making has become an important business itself. Companies such as Walmart, eBay, Amazon, Alibaba, and many others specialize in facilitating markets for billions of buyers and sellers around the world. More than 2 billion transactions per day take place on eBay alone. Can you imagine how much value is generated by all those transactions?



Checkpoint 5

Suppose you were willing to pay \$140 for a textbook to use it for the semester, but you bought it for \$90 at the bookstore. Now you have completed the course and the book is worth only \$30 to you. You can keep it or sell it back to the bookstore. The bookstore will pay you 50% of the original price. Should you keep the book or sell it? If you make your best choice, how much value will you get from the textbook overall?

Check your answer

Efficiency

In our everyday life, when we say a person or a company is *efficient*, we mean they work with little waste or unnecessary effort. This is what economists generally mean by efficiency too. More specifically, in economics efficiency means the absence of lost opportunities to generate

value. As we've noted above, in today's world, billions of value-creating transactions take place every day.

Economic efficiency is achieved when all transactions that can potentially generate value for their participants are fully consummated.

In reality, however, not all opportunities to create value are effectuated. Some of them are completely lost and others are not fully realized. Economists call these unrealized opportunities *inefficiencies*. Consider the following example.

Example 5: Can you find your perfect match?

Cindy, a college student living in Georgia, is looking for a laptop computer that she could use to edit videos. She is willing to pay \$500 for it. Suppose this is the highest price that any potential buyer of such a computer is willing to pay. At the same time, Zach, a video game designer living in Ohio, just got a new powerful computer, so he is willing to sell the laptop he used before—which has all the features that Cindy wants—for as low as \$300. Suppose this is the lowest price that any potential seller of such a computer is willing to accept. If Cindy buys the computer from Zach (e.g., on eBay), this transaction will generate a value of \$200. (Can you see how?)

But what if Cindy and Zach never meet (in the cyberspace or otherwise)? If Cindy never finds a laptop she wants offered for less than \$500 and if Zach is never able to sell his laptop for more than \$300, the opportunity to generate that value of \$200 will be completely lost. And if, for example, Zach sells his laptop to someone who places a lower value on it (say, \$450 instead of Cindy's \$500), then the value gained from the transaction will be smaller (\$150 instead of \$200), i.e. the potential gain from trade will be partially lost.

In Chapter 2, we explain in detail how competitive markets help eliminate inefficiencies such as in the example above and why market making has become an important business.

The concept of efficiency also applies to organizing production and managerial decision making within a firm, from buying raw materials and parts from suppliers to managing capital and human resources to selling finished products. From this perspective, an efficient manager is one who can spot unrealized value-generating opportunities and take full advantage of them by moving the company's resources from lower-valued to higher-valued uses.

Back to our Example 3, what would happen if Jan was not around and Dwight refused Elizabeth's offer? The potential gains of \$100 for Actonomics and \$50 for Midtown Hall would be lost. And since Dwight did not see the opportunity to generate value for his company and would lose it, he was an inefficient manager. Elizabeth, on the other hand, was an effective manager, as she could see right away how both Actonomics and Midtown Hall could gain value from renting the auditorium for the festival and made her offer accordingly (so, no wonder that Jan offered her a job!).



Checkpoint 6

Maura, a photography hobbyist, is looking for a DSLR camera. She is willing to pay \$700 for it. At the same time, Steven, a professional photographer who just got a new high-end camera, is willing to sell his old camera—which has all the features that Maura wants—for \$400. Maura and Steven never meet. Maura never finds a camera she wants offered for less than \$750, and Steven sells his camera for \$450 to someone who values it at \$560. In this scenario, how much value was created by the transaction that actually happened? Assuming that Maura is the potential buyer of the camera who are willing to pay the highest price and Steven is the seller who is willing to accept the lowest price for it, how much value was lost due to inefficiency?

Check your answer

1.3 How Economists Examine Problems and Help Find Solutions

Building Economic Models

Economists develop and use economic theories to analyze real-life situations. To organize their thoughts, they build **models**, which can be expressed in verbal, graphical, or mathematical form. To be useful in helping economic agents—individuals, firms, and governments—make decisions, economic models must be practical, focused on the purpose at hand, and empirically tested against real-world data.

To serve its intended purpose well, an economic model must abstract from factors that are either irrelevant or won't change the results of the analysis significantly. We must abstract from unimportant factors to isolate and examine most relevant influences because, as one economist has put it, people's minds are limited and nature's riddles are complex. Humanity has never progressed very far in understanding anything—be it biology, physics, or economics—without abstracting from many factors that are not essential to a given problem. Thus:

An economic model that performs and predicts well must present a simplified reflection of the real world that makes the problem we are addressing easier to analyze.

To build such models economists make **assumptions**. It is tempting to judge an economic model based on how realistic its assumptions are. We could reason that we should view with skepticism the conclusions drawn from a model based on unrealistic assumptions, such as “there are only two goods that a consumer can choose from,” “the only two factors of production that a firm uses are plain labor and homogeneous capital,” or “a firm produces only one generic product.” We make such assumptions not because we think they are true but because they make a model easier to follow and do not change any of the important insights we can get from it.

Note that economics is not the only science that models real-world relationships using simplifying assumptions. Consider, for instance, what takes place in the chemistry lab. Various chemicals are tediously measured, combined in a sterile beaker, and placed over a Bunsen burner—all to learn about the properties of the chemicals involved. How realistic is such a process? What takes place in the chemistry lab may never take place in nature, so we could call virtually all chemistry experiments “unrealistic.” However, chemists learn from these experiments and are able to apply what they have learned to the “real world.” Likewise, economists make simplifying assumptions to learn about essential relationships (e.g., between the price a firm charges for its product and the quantity of the product demanded) and then apply what they have learned to real life (e.g., to help firms make their pricing decisions).

The important point here is that models should be judged on the accuracy of their *conclusions*, not on the accuracy of their assumptions. Remember this every time when you think an economic model presented in this course is practically useless because its assumptions are “ridiculous.”

The purpose of economic models presented in this principle-level course is mainly educational, i.e. to help you understand the essential relationships underlying optimal decisions made by individuals and firms. Keeping our models simple makes it easier for you to see these economic relationships at work and use that knowledge later, when studying more elaborate economic models and applying them in practice.

On the other hand, oversimplified economic models, especially when their assumptions are not stated clearly, can be misleading. This kind of “economics” is habitually exploited by politicians and companies to promote their hidden agendas. For example, you might hear opponents of government regulations referring to the notion of economics that unregulated competitive markets provide the most economically efficient outcomes. But they “forget” to mention that it is only true under certain conditions, which in many real-world situations don’t hold.

Albert Einstein once said, “Everything should be made as simple as possible, but not simpler,” and that’s the adage we strive to follow in this course. Throughout the course, we try to avoid both unnecessary complications and oversimplifications to the extent possible. And we hope studying economics with us will help you learn not only how economic analysis works, but also think critically and be able to detect unstated assumptions and hidden purposes behind illusory political and business promises propped by simplistic populist economics.



Checkpoint 7

“An good economic model is one that is based on realistic assumptions and therefore can make accurate predictions.” True or false? Explain.

Check your answer

1.4 Why Study Economics?

Given what you've learned so far about the subject, key ideas, and methods of economics, you might already have a good answer to this questions. Economics can help you succeed in your career and life in many ways. The main advantage of studying economics is that by doing so you develop valuable analytical, quantitative, and problem-solving skills that equip you to successfully pursue various careers paths. Click on the box below to play the video about different career opportunities for people skilled in economics.



As a business major, you probably plan to become a manager or business analyst. Economics will provide you with powerful tools for making various kinds of business decisions. As you could see from our examples, it teaches you how to spot value-generating opportunities everywhere and take full advantage of them by directing resources from lower-valued to higher-valued uses. Although those examples are fictional, they are not far from reality. Billions of dollars are lost each year because business managers fail to properly use the methods and tools of economic analysis when making pricing and output decisions, optimizing production processes, choosing resources, or designing incentives for the employees.

In the modern world of “big data” and powerful computers, companies are seeking employees who have quantitative and problem-solving skills necessary to make use of those data and computer technology to perform accurate and meaningful analysis and make evidence-based decisions. And to acquire such skills, studying economics is a must.

Here is a question a real student got when interviewing for a marketing internship position at Compaq. “I am the product manager for the new X type server that is to be launched next month at a cost of \$5,500. Dell launched their new Y type server last week; it has the same features (and even a few more) for a cost of \$4,500. To date, Compaq has put over \$2.5 million in the development process for this server, and as such my manager is expecting above normal returns for the investment. What advice would you give to me on how to approach the launch of the product? Do I go ahead with it at the current price, if at all, even though Dell has a better product out that is less expensive, not forgetting the fact that I have spent all the development money and my boss expects me to report a super return?” Later, the student wrote to his economics professor: “I laughed at the question... He wanted to see if I got caught worrying about all the development costs in giving advice to scrap the launch or continue ahead as planned. I ...could see that coming a mile away ... thanks to economics, right?!!!”³

Now, if you were asked this question when interviewing for a job, how would you answer it?

³ Adapted from Luke M. Froeb, et al. “Managerial Economics: A Problem Solving Approach.” 4th ed., p. 9–10.



Imagine that you are getting ready for a job interview and the interviewer will most likely ask a question like the one above. Try to prepare your answer and then compare it with the one suggested below. Hint: Review the key ideas of economics that we've discussed in this chapter; the answer is right there!

All right, here is how an economist would answer the question. First, as the author of the e-mail points out and as we explain earlier in this chapter (p. 8), you should ignore the \$2.5 million that Compaq has already invested. This is a sunk cost. Now, following the principle of marginal cost-benefit analysis (which we discuss on p. 6-8), Compaq should launch the new server only if the projected revenue from its sales—i.e. Compaq's *marginal benefit*—is greater than (or at least equal to) the additional costs of producing and selling it—i.e. the *marginal cost*.

Note that the position in our example was in marketing, which you might think has little to do with economics. Well, apparently the employer thought otherwise. In fact, college graduates skilled in economics are in high demand in any field where analytical thinking and problem solving skills are important.

Table 2 show top ten jobs for economics majors with brief descriptions. What is common about the skills that employers expect you to have to be a successful candidate for those positions—from market, credit, and policy analysts to financial consulting to law and business journalism—is critical thinking and the ability to conduct in-depth research with quantitative analysis using the methods and tools of economics.

Table 2 Top Ten Jobs for Economics Majors

Market research analyst	Gather data and analyze market trends to assess how products or services might fare under various economic conditions, quantify results and present them to clients.
Economic consultant	Use analytical and research skills to carry out studies considering various economic scenarios to help organizations in a variety of industries—including business, finance, health care, education, government, and more—improve their performance.
Compensation and benefits manager	Evaluate options for pay and benefits, study trends in the labor market and assess supply and demand for various classes of jobs, establish an efficient structure for the company's pay and benefits.
Actuary	Apply advanced mathematical and statistical skills to determine the likelihood of insurable events like fires, deaths, illnesses, and business failures, analyze risk profiles to establish a profitable structure for insurance policies.

Table 2 (Continued)

Credit analyst	Conduct microeconomic analyses to assess the risks involved with loaning funds to individuals and businesses, examine economic trends and factors impacting the regions, industries, and competitors of prospective clients, suggest interest rates that are appropriate given the risk profile of clients.
Financial analyst	Use advanced quantitative methods to research companies, industries, stocks, bonds, and other investment instruments, write reports and prepare presentations for colleagues and clients to help make decisions about investments, stock/bond offerings, and mergers/acquisitions.
Policy analyst	Analyze issues regarding legislation and government economic policies, such as healthcare, taxes, energy, the environment, and international trade; present these research results to legislators and the public.
Lawyer	Use critical thinking and analytical skills to prepare and try cases. Many areas of law such as corporate law, tax law, antitrust law, personal injury, and medical malpractice involve the application of economic analysis.
Management consultant	Analyze business problems and research possible solutions to present to clients.
Business reporter	Research, write, and broadcast stories about companies, industry trends, business leaders, economic developments, and financial markets.
Source: https://www.thebalance.com/top-jobs-for-economics-majors-2059650	

Naturally, high demand for such skills leads to high earnings for those who possess them. Table 3 shows the median starting and mid-career salaries of college graduates with majors in various business disciplines. As you can see, ranked by the mid-career salary, economics majors are at the top. The table also shows salaries for some specific economics majors—economics with mathematical methods and economics for business (which is basically a BBA in economics, such as the one offered here at Georgia Southern). As evident from these numbers, economics and mathematics is the most valuable mix of skills. Keep in mind that the numbers in the table show the median salaries by major regardless of what the person's occupation is. For instance, the starting salary of an economics major is \$54,100 no matter whether that person works as an economic consultant or, say, a marketing specialist. Thus, it is likely that with a degree in economics, you will be earning more in any, even seemingly unrelated, specific area of business than a graduate with a degree in that specific subject will.

Table 3 Bachelor Degrees in Business by Salary Potential

Major	Median Salary	
	Early Career*	Mid-Career**
Economics	\$54,100	\$103,200
Economics and mathematics	\$60,000	\$122,900
Economics and business	\$53,900	\$104,900
Economics and finance	\$56,600	\$103,300
Information Systems	\$55,800	\$96,900
Finance	\$53,300	\$93,200
Marketing	\$45,200	\$84,900
Accounting	\$48,400	\$82,800
Management	\$45,400	\$76,500
Logistics	\$51,700	\$75,300

*0–5 years of work experience; **10 or more years of work experience.
Source: College Salary Report 2017-18 by PayScale (<https://www.payscale.com/college-salary-report/majors-that-pay-you-back/bachelors>).
PayScale surveyed 2.3 million graduates of more than 2,700 colleges and universities.

Notice also that the salary of economics majors almost doubles throughout the period from early career to mid-career, rising markedly faster than the salaries of other business majors. That is, the skills acquired when studying economics are growing even more valuable with the work experience. New BBA's in economics often start out in positions such as research analyst, research assistant, or junior consultant, where they support the work of more experienced employees, but they move up pretty fast to more highly paid positions such as economic, financial, or management consultant.

We hope that now you can see more clearly what economics is about and how it can help you succeed in your career and life. So, let's embark on our exciting journey into the world of applied microeconomics. We will try and do our best to make it useful and enjoyable experience for you.



Checkpoint Answers

1

How consumers and producers make optimal decisions given certain market conditions. As defined above, the subject of this course is how producers and consumers interact and make their choices given the constraints they face under certain market conditions.

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2

Dan's opportunity costs are what he gives up *if* he goes to college. This includes tuition (\$9,000), textbooks (\$1,500), housing (\$4,500) (since otherwise he'd live at home for free), and the additional amount he'd spend on food when in college ($\$2,500 - \$1,000 = \$1,500$). Dan's opportunity costs of college also include the earnings from the job he would have to give up (\$30,000). Thus, his opportunity cost of a year in college is $\$9,000 + \$1,500 + \$4,500 + \$1,500 + \$30,000 = \$46,500$, so his opportunity cost of four years in college is $\$46,500 \times 4 = \$186,000$.

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3

Discontinue the project. The additional revenue from the new product (9 billion yen) is expected to be less than the additional cost of finishing the project (10 billion yen). Therefore, Sony should discontinue the project. The 12 billion yen already invested is a sunk cost, which should not be taken into account when making the decision.

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4

Viola should give piano lessons for four hours a day. Viola should continue to give piano lessons as far as her marginal cost, i.e. the costs of an additional hour of her time shown in the table, is below her marginal revenue, i.e. \$30 received for each additional hour of her work. This is the case up to the fourth hour, for which the marginal cost is \$28 while the marginal revenue is \$30. Viola's opportunity cost of the fifth hour, however, is \$32, which is greater than her revenue of \$30. Therefore, Viola should not continue to work for the fifth hour.

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5

You should sell the book. If you do, your overall value gain will be \$65. If you sell the book at the end of the semester for $\$90 \times 0.5 = \45 , you will gain an additional value of $\$45 - \$30 =$

\$15. At the beginning of the semester, you were willing to pay \$140 for the text, but you got it for \$90, so you gained $\$140 - \$90 = \$50$. Thus, your overall gain is $\$50 + \$15 = \$65$.

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6

The value gain from the actual transaction is \$160. The value lost due to inefficiency is \$140. When Steven, who is willing to accept \$400 for the camera, sells it for \$450 to someone who values it at \$560, Steven gains $\$450 - \$400 = \$50$ and the buyer gains $\$560 - \$450 = \$110$. Thus, the value gain from the transaction is $\$50 + \$110 = \$160$. If Steven sold the camera to Maura, she would receive a value of \$700 while Steven would part with a value of \$400, so the value gain would be $\$700 - \$400 = \$300$. Thus, the potential value gain is $\$300 - \$160 = \$140$ greater than the actual value gain, which means \$140 is lost due to inefficiency.

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7

False. An economic model should be judged on the accuracy of their conclusions, not on how realistic its assumptions are. A good economic model is a simplified picture of reality that eliminates irrelevant or unimportant factors and hence allows us to focus on the essential relationships we want to examine.

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