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to accompany Connect Master: Economics



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Principles of Economics

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Principles of Economics

*Print Companion to Accompany
Connect Master: Economics*

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Roger B. Butters
Hillsdale College

*With special contribution by
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PRINCIPLES OF ECONOMICS

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To my wife Kim, our children
Cristian, Kenedi, and Cloe,
and my parents Alberto and Clara.

—Carlos J. Asarta

To my wife, my children, my parents,
and my friends; because I knew you,
I have been changed for good.

—Roger Butters

To my wife, Sam, for having
more faith in me than I have in myself.
And to Carlos, Roger, and the amazing
team at McGraw-Hill, for allowing me
to be part of this incredible project.

—Dave Switzer



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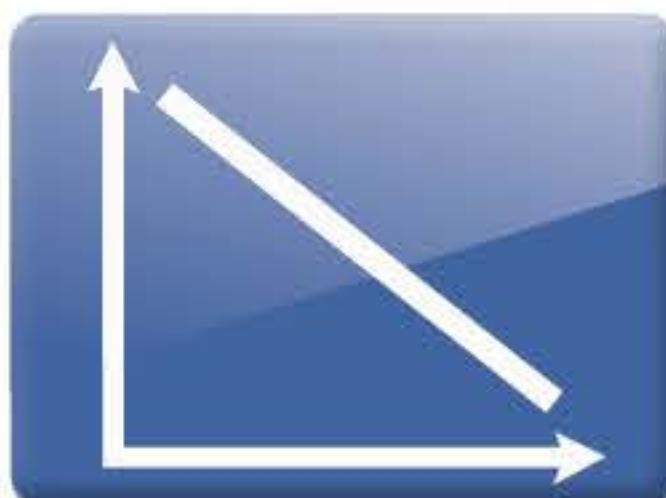
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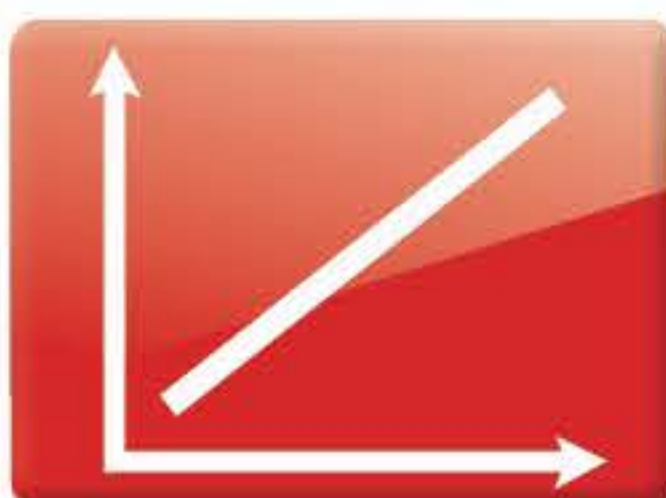
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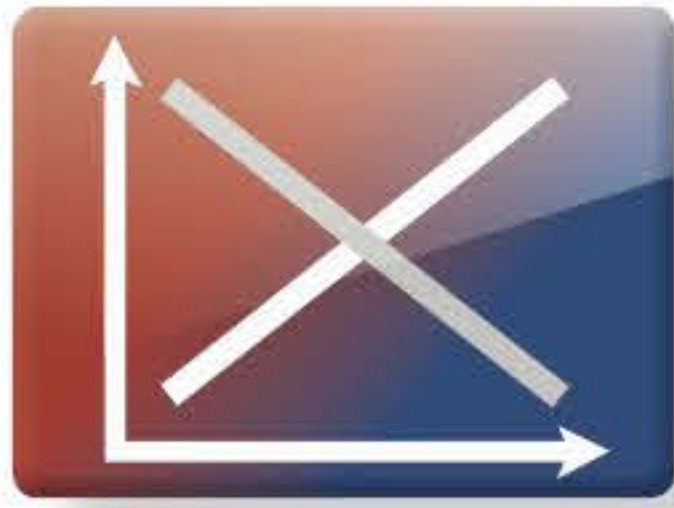


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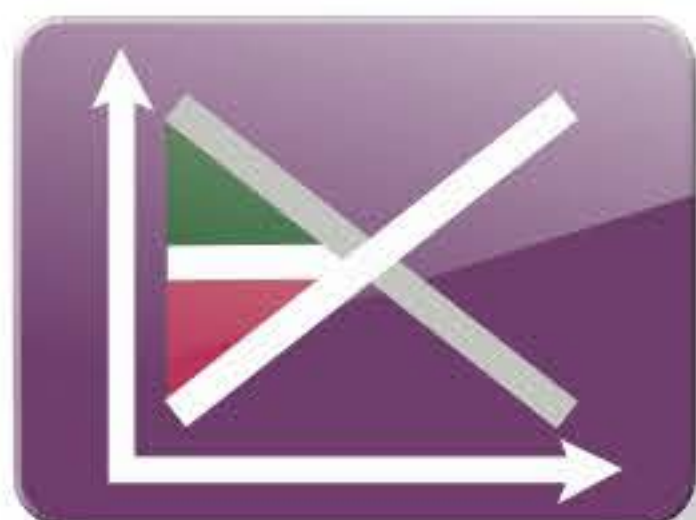
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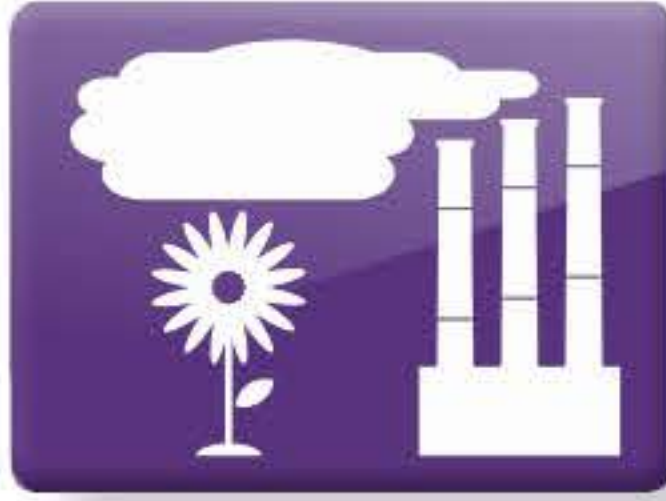
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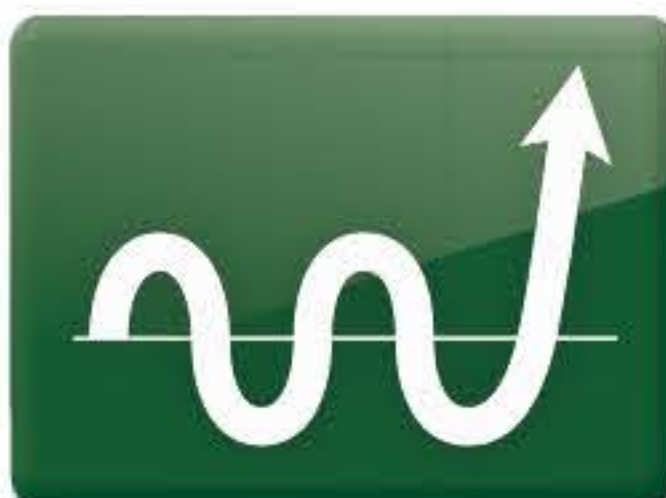
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This text is an accompaniment to the digital product that your instructor has chosen to use in your course. It is a print output of the various learning resources you will see in the digital platform and is intended to be used only as a supplement to the digital product. The videos live exclusively in a digital format.

What Is Economics? Why Study It?

What is economics? That's a great question, but not one with a simple answer.

A dictionary will say something like this: "Economics is the study of the production, distribution, and consumption of goods and services." A traditional textbook might define it like this: "Economics is a social science that studies people and the choices they make in the face of scarce resources." Our product is no dictionary, and it's definitely not a traditional textbook, so our definition differs a bit too.

Have you ever been in a dark room trying to find your way from one side to the other? We all have, and along the way we've stubbed toes, banged shins, and stumbled. That's a problem, and the way to solve it is to turn on a light so you can see the path to take, understand the obstacles, and make better choices. When you turn on a light, the world around you is illuminated, so instead of stumbling from one place to another, you can move with confidence to your final destination.

Economics, then, really *is* about people and the choices they make in a world of scarce resources. But it's also more: It's a way of thinking and of viewing the world that turns on the lights. Economics illuminates your world because it shows you how decisions are connected to outcomes. It connects you to the world by giving you the tools to understand the choices you and those around you make.

When you understand how and why choices are made, you can extend that knowledge to understand the economic phenomena around you—what determines the price of a good or service, how a tax might affect the price and the quantity available of a good, or why some businesses charge different prices to different customers for the same products. Economics gives you insight into issues like pollution, taxation, government purchases, incentives, international trade, the job market, and economic growth.

As economist John Maynard Keynes said, economics is "a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions." In short, economics gives you the ability to observe the world around you, providing the tools you need to think through difficult issues and draw your own conclusions.

As you use economics to observe the world around you, that world becomes less confusing and much more interesting. Economics empowers you to proactively shape your own world instead of reactively responding to it. The economic way of thinking allows you to think two moves ahead—to anticipate the intended and unintended consequences of an action.

We can guarantee you that as you study, learn, and master the economic content in this class, you will develop an economic way of thinking. That new way of thinking will turn on the light. That light is powerful: It will change how you see the world and will empower you to succeed in it. It will help you choose the path that goes where your talents and resources can take you.

Why Is This Product Unlike My Other Textbooks?

We've been teaching economics for years, and much has changed. Most classrooms now come with wireless Internet, and students use smartphones, laptops, and tablets for learning and completing their coursework. For quick access to information, you probably turn

to Google, YouTube, and other online resources as much as your textbooks, if not more. You and your classmates are the most digitally oriented learners we've ever seen!

What we've done with our materials is that instead of sending you through page after page of text, we've broken down each economic principle into small, manageable portions and delivered them through a digital platform. We know you want to learn any time or any place, so that's why our materials were created for the digital environments you use most.

Students in focus groups told us that they search YouTube whenever they need help understanding something. And they prefer short videos focusing on one concept at a time. Their feedback matches our vision. Here you'll find many short videos covering the concepts in microeconomics or macroeconomics that your instructor wants you to master. Play and replay each video at the pace that works best for you.

We've also created step-by-step examples to show you how to work through economic problems; helpful hints to help you steer clear of common mistakes; real-world applications that tie economic principles back to your life; and questions that measure your understanding of each concept and help you prepare for exams.

All of this is powered by *Connect Master*, a revolutionary, adaptive learning product that identifies the exact areas where you are struggling and provides precisely the learning resources that offer you the greatest result. This personalized, focused experience identifies your unique path so you can progress through the course more efficiently, productively, and confidently. All of this and more can be found within your *Connect Master: Economics* course.

So this isn't just a textbook forced into an ebook format. This is a learning application built for how you actually live and learn. Our goal is to provide you with a highly rewarding educational experience, probably unlike any you've ever encountered. Around the country (and, in fact, the world), students like you have been testing and using our learning resources in this new application and have responded with enthusiasm to the innovative approach. We trust you will too!

Enjoy this class. For us, economics is more than just a college credit or a grade. It's a way of life that rewards and satisfies. It's a way of seeing the world. We hope that what we've created will leave you feeling the same.

Carlos J. Asarta

Roger Butters



This product contains a feature set specifically tailored to its concept-based approach. Each concept contains a set of features that relate solely to that specific concept, so you can learn economics in manageable pieces. The various features that are included in this product are detailed below.

Videos

Each concept in this product focuses on a very specific learning objective, and each concept is anchored by a 2- to 4-minute video. These videos are written by and star the authors, Carlos Asarta and Roger Butters, who walk you through the concepts using graphs, tables, animation, and thorough but simple explanations.

Key Terms & Formulas

Key terms and/or formulas are presented wherever they are relevant to a concept. Key terms are defined, and sometimes they are used in context in a paragraph. Key formulas you'll need to know for any math related to the concept are conveniently located in one place.

Helpful Hints

These may be an explanation of a concept that is known to be particularly troublesome to students or a tip for remembering certain economic terminology. This feature is meant to help you understand even the trickiest parts of economics. It's important to know that the Helpful Hints are located at the back of the text, arranged by topic and alphabetically within each topic. Concepts will call out Helpful Hints by name for easy reference.

Math Coach

This feature is intended to help you refresh the basic math skills you'll need for this course, whether it's calculating the area of a triangle, solving for variables, or doing other calculations. All Math Coach items are located at the back of the text. Concepts will call out math coaches by name for easy reference.

Worked Examples

These examples walk you through an application of the concept, step-by-step. The worked examples take the conceptual ideas and put them into practice. They typically mirror the types of questions you'll be asked in quizzes or on homework. This feature is intended to help guide you through a problem before you are assessed on it.

Why This Matters

This feature links economics to your life by providing real-world examples of the economic concepts you're studying. This type of application will help you go beyond a baseline understanding of the concept, into understanding *why* the concept is important.

Making Connections

Although this product presents economic concepts in small, granular pieces, some concepts in economics naturally relate to each other. The Making Connections feature discusses the connection between two or more concepts in economics—whether they're in the same or different topics—so you can understand the bigger picture.



When we first imagined building a product like this, we knew it would be a lot of work, but we had no idea what was in store for us. It's been a long road, one we are extremely thankful for having the opportunity to travel, and we couldn't have done it without the support of many talented individuals.

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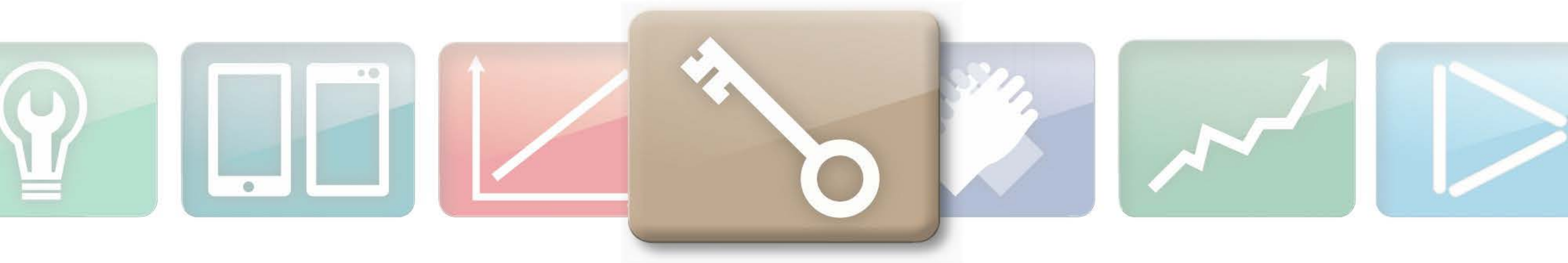
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Fundamentals



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The Rolling Stones is one of the most famous, and most successful, rock bands of all time. If you've listened to their music, you've probably learned one of the most fundamental ideas in economics, "You can't always get what you want." Most people associate the word *economics* with words like *prices*, *money*, or *profits*. Actually, though, economics is really about how people, like you, make choices in a world of scarcity.

Scarcity simply means that resources like labor, land, machinery, and entrepreneurial skill are limited, so as the Stones have taught us, we can't satisfy the unlimited wants we all have. For example, you might want a car, a house, food, clothing, medicine,

education, and a thousand other things. But since the resources at your disposal are limited (scarce), you have to make choices: Do you buy a car now or an education? Do you rent a large apartment or enjoy nicer clothing and higher-quality food? To quote Mick Jagger, "You can't always get what you want." Or, as an economist would put it, you can't get something you want without giving up something else.

Understanding how people make choices, and how resources and scarcity affect the costs and benefits of those choices, is the first, fundamental, step in learning the economic way of thinking. Once you understand how choices are made, you'll be able to see where prices come from, how money fits into the grand scheme of things, and what drives profits. So, although prices, money, and profits are a part of studying economics, the real lesson to be learned is about the choices people make. You'll find economics at work anytime you find someone making a choice; that's why economists say, "Economics is everywhere." As a parting note, Mick Jagger chose to study at the London School of Economics, so it's no surprise that we find economics in the music he wrote.

Within this topic, we address the following learning objectives:

- » Define microeconomics and macroeconomics.
- » Identify the various resource categories used in economics.
- » Define scarcity and explain its importance in economics.
- » Identify the opportunity cost of a choice.
- » Explain rational decision making.
- » Define marginal benefit and marginal cost.
- » Describe the relationship between marginal benefits and costs in equilibrium.
- » Explain how resources are combined to produce output.
- » Construct and interpret a production possibilities frontier.
- » Calculate and explain opportunity cost using a production possibilities frontier.
- » Identify comparative advantage using opportunity costs.
- » Identify patterns of specialization using comparative advantage.
- » Identify the terms of trade using comparative advantage.
- » Illustrate the gains from trade in a production possibilities frontier model.
- » Illustrate how increasing opportunity costs affect the production possibilities frontier.
- » Model the flow of resources, output, and monetary transactions in a simple economy.



Introduction to Microeconomics and Macroeconomics

LEARNING OBJECTIVE: Define microeconomics and macroeconomics.

The subject of economics can be divided into two main categories: microeconomics and macroeconomics. In fact, you may be taking a course right now that focuses on only one of them, so it's important to know the difference between the two.

Microeconomics typically deals with individual households and markets, like the market for gasoline. In microeconomics, you'll explore how market prices are determined and how they will adjust to a variety of different events, like the weather or even government regulation.

Macroeconomics examines the entire economy of a state, a country, or even the world. It deals with large-scale issues of an economy, like total output, average price levels (and inflation), and unemployment. In macroeconomics, you'll learn how the whole economy can be affected by important national and global events, like wars, natural disasters, and technological innovation, as well as by the decisions made by government policy makers.

KEY TERMS

microeconomics The study of the economy at the small-scale level, examining individuals and specific markets.

macroeconomics The study of the economy at the large-scale level, examining total output, the price level, and other aggregate measures of the economy.



See the following Helpful Hint for information that will help you avoid common errors or misconceptions about this concept:

Aggregate = Total

WORKED EXAMPLE

Each of the following topics could be studied in economics. Determine whether each is better categorized as microeconomics or macroeconomics.

PART A: The effect of rent controls, or regulated rent prices, on tenants.

Solution: Since this is dealing with one market, the market for rental housing, it is an issue for microeconomics.

PART B: The effect of an increase in the federal minimum wage on unemployment.

Solution: Since the federal minimum wage affects the entire U.S. economy, it is an issue for macroeconomics.

PART C: The effect that gasoline taxes have on the amount of miles driven by automobile owners.

Solution: This topic deals with one specific market: gasoline. Thus, it would be an issue studied in microeconomics.

PART D: The effect on federal tax revenues of a proposed plan to simplify the tax code with just two rates: 10% on all income up to \$100,000 and 25% on all income above \$100,000.

Solution: Federal taxes affect everyone in the United States, so this would be an issue for macroeconomics.

PART E: The effect of the North American Free Trade Agreement (NAFTA) on output and unemployment in the three countries involved: Canada, Mexico, and the United States.

Solution: This issue involves imports and exports of all products traded among these three countries, so it would be an issue for macroeconomics.

Generally speaking, if the issue affects one or two markets, like the market for doctors and hospitals, it's a micro issue. If the issue is one that affects all markets or all people, like income taxes or inflation, it's a macro issue.

SUMMARY

The two main branches of economics are microeconomics and macroeconomics. Microeconomics studies the economy at the small-scale level, examining individuals and specific markets. Macroeconomics studies the economy at the large-scale level, examining total output, the price level, and other aggregate measures of the economy. Both branches deal with issues of trade and government intervention, but they do so at different levels.

Microeconomics deals with how imports and exports affect one existing market, while macroeconomics looks at total imports and exports for the entire country. Similarly, microeconomics deals with how government regulation can impact prices and output in one specific market, while macroeconomics deals with large-scale policy issues, like a change in defense spending or an increase in income taxes.



Resources

LEARNING OBJECTIVE: Identify the various resource categories used in economics.

Economics is the study of how individuals and societies allocate scarce resources among many competing uses. For example, a tree that is used to make a table cannot be used to build a house. So how we choose to employ the resources that are available to us ultimately determines which goods and services get produced. In this section, we'll explore the different types of resources used in production and lay the foundation for understanding how markets transform resources into the goods and services we consume every day.

KEY TERMS

resource Any item, whether a gift of nature, the result of production, or the result of human effort, that is used to produce goods and services.

land All natural resources used in production; sometimes referred to as “gifts of nature.”

labor All physical and mental activity devoted to producing goods and services.

capital The tools, machinery, infrastructure, and knowledge used to produce goods and services. Capital is sometimes divided into “physical” and “human” capital. *Physical capital* refers to tangible items that are created to increase productivity; *human capital* refers to the knowledge and skills that people acquire in order to increase productivity.

entrepreneurial ability The talent or ability to combine land, labor, and capital to produce goods and services. Entrepreneurial ability is different from human capital in that it primarily involves assuming risk and organizing resources into a productive process.



See the following Helpful Hint for information that will help you avoid common errors or misconceptions about this concept:

Using the Word *Capital*

WORKED EXAMPLE

Julia has decided to fulfill her lifelong dream of running her own bakery. For each of the following, determine whether the item mentioned is an example of land, labor, capital, or entrepreneurial ability or whether it is not a resource at all.

PART A: The oven used by Julia to produce cupcakes.

Solution: The term *capital* describes anything we produce that is then used to make other goods and services. The key point is that capital does not end up in the good or service itself. The oven that Julia uses to produce cupcakes is capital: The oven is necessary to produce the cupcakes, and at the end of the day, the oven is still there to help produce more cupcakes tomorrow. If we wanted to be more specific, we would say that the oven is *physical capital*, as it is a tangible resource used in the productive process.

PART B: The wheat used by Julia to produce flour, which goes into her cupcakes.

Solution: *Land* refers not just to physical land but also to the oil, water, and minerals under the land; to the flora and fauna that live on the land; and to the air or water above it. Thus, anything that grows from the land is categorized as land, so wheat and other edible ingredients would fall in the category “land.”

PART C: The money Julia used to buy the land and construct the building that houses the bakery.

Solution: Money is not a resource. It was used to purchase land (wheat) and capital (the building), but because money itself is not used in production, it is not a resource.

PART D: The education Julia received that taught her how to be a pastry chef.

Solution: Remember, *capital* is anything we produce that is then used to make other goods and services. Education is *human capital*, as it makes Julia more productive and allows her to produce more cupcakes than before.

PART E: The effort Julia uses when she mixes her batter, bakes her cakes, and puts icing on them.

Solution: The term *labor* describes all human effort in production, whether physical or mental. Examples include mixing batter by hand, operating a stand mixer to mix even more batter, and thinking of and implementing ways to improve the taste of the batter.

PART F: The talent that Julia has to efficiently produce cupcakes.

Solution: The term *entrepreneurial ability* is the ability and vision to combine land, labor, and capital into a productive process, taking on the risks and rewards that are inherent in any new venture. Entrepreneurial ability is necessary to develop new productive processes that are better, faster, or cheaper or to make a previously unknown product, hoping consumers will think it's great. Sometimes this works out spectacularly, as Steve Jobs found out when he helped bring the iPod, iPhone, and iPad to market. Sometimes it doesn't, as Dean Kamen, the inventor of the Segway, discovered after numerous failed attempts to get people to give up walking and ride around on his two-wheeled invention. Julia's talent would fall under the category of *entrepreneurial ability*.

WHY THIS MATTERS . . . TO EVERYONE

Resources are the foundation of all productive activity. Indeed, they are the foundation of all human activity. So how resources are used is one of the most important issues any society faces. If a society uses resources too quickly, wastes resources, or destroys them, its ability to produce needed goods and services is permanently reduced—or its people are permanently poorer than they could have been. Issues such as deforestation, pollution, extinction, and education are all important and must be carefully considered, since they affect the quality and quantity of resources that will be available today and in the future. Every person's and, ultimately, every economy's standard of living depends on the effective use of resources.

SUMMARY

The goods and services you consume every day are produced using scarce resources. In economics we classify a resource into one of four categories: land, labor, capital, and entrepreneurial ability. Land includes all natural resources, or “gifts of nature.” Labor is human effort, both physical and mental. Capital consists of the tools, machinery, infrastructure, and knowledge used to produce goods and services. Finally, entrepreneurial ability is the talent to assume risk and combine the land, labor, and capital into a productive process.



Scarcity

LEARNING OBJECTIVE: Define scarcity and explain its importance in economics.

The term *scarcity* reflects the fact that unlimited wants cannot be completely satisfied with limited resources. For example, the aluminum used to produce a can of soda cannot simultaneously be used to create the hood of a car. Because resources are scarce, individuals and societies must allocate them among competing uses, sacrificing one want or need in favor of another. Just how such choices are made is one of the key contributions of economics to human understanding. Economics is, in fact, a powerful science that can open a world of understanding, and it all begins with understanding scarcity.

KEY TERMS

scarcity A condition that results from the inability of limited resources to satisfy unlimited wants.

Because your time is subject to **scarcity**, you have to decide whether you're better off studying for your economics exam or going to a movie with friends. Similarly, due to the **scarcity** of natural resources, we can't have all the housing and all the forests we may want, since cutting down a tree to build a house means less forest.

relative scarcity The comparison of the scarcity of one good, service, or resource to that of another.

A major problem faced by developing countries is the **relative scarcity** of drinkable water as compared to water in general.

allocation The process of assigning a good, service, or resource to one use instead of another.

At a local town council, people debated a proposal that would change the **allocation** of public space for recreational use by demolishing a skating park and building an arboretum.

WORKED EXAMPLE

Using your understanding of scarcity, for each pair of items, determine which is relatively more scarce.

PART A: Water versus drinkable water.

Solution: While approximately 70% of the earth's area is covered with water, most of it is saltwater and therefore not drinkable. Thus, drinkable water is relatively more scarce.

PART B: Automobiles versus Chevrolet Camaros.

Solution: Chevrolet Camaros represent a small subset of the number of automobiles in existence, so there are far fewer Camaros than automobiles; Camaros are relatively more scarce.

PART C: Energy versus wind energy.

Solution: Energy can be provided from a wide variety of sources, such as coal, natural gas, nuclear power, and solar power. Wind energy represents a small subset of the types of energy available. (In 2012, only 3% of U.S. energy was derived from wind.) So wind energy is relatively more scarce.

PART D: Food versus tomatoes.

Solution: Tomatoes represent a small subset of food, so tomatoes are relatively more scarce than food in general.

WHY THIS MATTERS . . . TO YOU

In a world without scarcity, we could have everything we wanted. What would that world look like? There would be unlimited time to do all the things you could ever want to do. There would be an unlimited amount of resources, so we could produce cars, homes, food, computers, and everything else in unlimited quantities. Although it sounds ideal, this description clearly does not apply to the world in which we live. Everyone, even the very rich, faces scarcity. If you won hundreds of millions of dollars from the lottery, you might be able to afford everything you had ever wanted—but you also might find that now you would want things you had never before even considered purchasing, such as a private plane or a yacht.

Even with your hundreds of millions of dollars, you—and everyone else in the world—still would face a scarcity of time. A day spent flying from Australia to Paris is a day that you couldn't spend cruising on your yacht. If you hadn't won the lottery, you might be deciding between two different “free” activities: a day at the park or a day at the beach. Since you can't be in two places at once, you still have a choice to make. So even “free” activities aren't really free, since you have to give up something, or pay a cost, to participate in them.

That's where economics is helpful. Economics teaches you how to weigh the costs and benefits of the decisions you make, so you can spend your time and money in a way that makes you as happy as possible. By recognizing that your time is limited, you are forced to consider the things you could be doing with your time—in a way that some people never consider before they study economics. You may learn to see your time as a more valuable resource and find, as a result, that you're more productive with your time.

Economics provides tools that describe how people make choices when faced with scarcity. If you can master the tools that explain how and why people make choices, you'll have insight into what drives decision making by individuals, businesses, and governments. Knowing how and why choices are made gives you the ability to influence and shape your world, instead of just letting the world shape you.

SUMMARY

Scarcity is a condition of existence in which unlimited wants cannot be satisfied by the limited resources that are available. Since resources are scarce, they must be allocated among competing uses. Generally, when a resource is used to satisfy one want, it is not available to satisfy another. Although all resources are scarce, some are more scarce than others. The term *relative scarcity* is used to describe the scarcity of one item relative to another.



Opportunity Cost

LEARNING OBJECTIVE: Identify the opportunity cost of a choice.

Because the world is characterized by scarcity, people must allocate the resources at their disposal to many competing uses. Time spent with a friend means less time spent studying. Time spent cleaning your room can't be used for cleaning your car. So every time you choose to use resources for one activity, you are choosing to not use them for another. The activity or opportunity you gave up is the cost of your choice, and in economics we call that cost the *opportunity cost*.