高等院校双语教学适用教材
经济学

Introduction to Microeconomics

Marc Lieberman
Robert E. Hall

微观经济学导论

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出版者的话

当前，在教育部的大力倡导下，财经和管理类专业的双语教学在我国各大高校已经逐步开展起来。一些双语教学开展较早的院校积累了丰富的经验，同时也发现了教学过程中存在的一些问题，尤其对教材提出了更高的要求；一些尚未进入这一领域的院校，也在不断探索适于自身的教学方式和方法以及适用的教材，以期时机成熟时加入双语教学的行列。总之，对各类院校而言，能否找到“适用”的教材都成为双语教学成功与否的关键因素之一。

然而，国外原版教材为国外教学量身定做的一些特点，如普遍篇幅较大、侧重于描述性讲解、辅助材料（如习题、案例、延伸阅读材料等）繁杂，尤其是许多内容针对性太强，与所在国的法律结构和经济、文化背景结合过于紧密等，显然不适于国内教学采用，并成为制约国内双语教学开展的重要原因。因此，对国外原版教材进行本土化的精简改编，使之变成更加“适用”的双语教材，已然迫在眉睫。

东北财经大学出版社作为国内较早涉足引进版教材的一家专业出版社，秉承自己一贯服务于财经教学的宗旨，总结自身多年的出版经验，同培生教育出版集团和汤姆森学习出版集团等国外著名出版公司通力合作，在国内再次领先推出了会计、工商管理、经济学等专业的“高等院校双语教学适用教材”。这套丛书的出版经过了长时间的酝酿和筛选，编选人员本着“品质优先、首推名作”的选题原则，既考虑了目前我国财经教育的现状，也考虑了我国财经高等教育所具有的学科特点和需求指向，在教材的遴选、改编和出版上突出了以下一些特点：

●优选权威的最新版本。入选改编的教材是在国际上多次再版的经典之作的最新版本，其中有些教材的以前版本已在国内部分高校中进行了试用，获得了一致的好评。

●改编后的教材在保持英文原版教材特色的基础上，力求内容精要，逻辑严密，适合中国的双语教学。选择的改编人员既熟悉原版教材内容，又具有本书或本门课程双语教学的经验。

●改编后的教材配有丰富的辅助教学支持资源，教师可在网上免费获取。

●改编后的教材篇幅合理，符合国内教学的课时要求，价格相对较低。

本套教材是在双语教学教材出版方面的一次新的尝试。我们在选书、改编及出版的过程中得到了国内许多高校的专家、教师的支持和指导，在此深表谢意，也期待广大读者提出宝贵的意见和建议。

尽管我们在改编的过程中已加以注意，但由于各教材的作者所处的政治、经济和文化背景不同，书中的内容仍可能有不妥之处，望读者在阅读中注意比较和甄别。

东北财经大学出版社

导 读

近年来，国内很多院校都在经济学的教学中采用了双语教学方式。双语教学可以有很多种形式，其最基本的形式是直接采用最新版本的外文原版教材，这种形式的最大优点在于可以使学生以最短的时间差接触到最新的当代经济理论。成功的双语教学不仅要求教师有较高的综合素质和学生们的积极配合，也需要有一本得心应手的合适教材。

我们荣幸地推荐马克·利伯曼和罗伯特·霍尔两位教授合著的这本当代经济学的基础教材。这本书之所以优秀，不仅在于两位作者杰出的才华，还在于他们珠联璧合的协作。

马克·利伯曼不愧是位成功的兼职剧作家，他的驾驭语言的娴熟技巧以及超乎寻常人的想象能力使他讲授的经济学教程在纽约大学、哈佛大学等名校一直极为叫座。在他的笔下，枯燥艰涩的经济学理论变得浅显易懂且趣味横生，干瘪的数学仿佛也被他赋予了生命，成为经济学百花园中一朵艳丽的小花。

而罗伯特·霍尔则是世界最著名的经济学大师之一。他对经济学的深邃目光以及严谨的治学态度使得本书虽为初级教材，却结构严谨，有足够的理论深度，并准确地把握住了当代经济学的发展脉搏。

本人从1988年起便在著名经济学家汪祥春教授的指导下在东北财经大学的硕士生、本科生、专科生的经济学教学中直接采用英文原版教材，先后采用过很多种不同的版本。根据我们的经验，本科生、专科生适用的英文原版经济学教科书需满足以下几个要求：

1. 作者应该是权威的经济学家。

2. 应该是最新版本。

3. 内容不要艰深，英文词汇不要生僻。

本书同时符合以上三个要求，非常适合作为本科生和专科生的经济学课程的双语教学用书。为了更好地帮助学生们理解，仅对本书作了如下几点工作：

1. 重要的、基本的经济词汇首次出现时，在页旁标出其中文译名以及简要解释。

2. 本书作者视经济学的基本原理为教学中的关键点，故当强调基本原理的应用时，页旁的小钥匙图形处给出了基本原理的内容。

3. 为了帮助学生更好地理解书中正文的内容，我在页旁采用楷体字或是给出一些有关的名言警句，或是对正文的内容作进一步的解释，供学生们参考。

我相信，凡是读过这本书的读者均会从中获得较大的收获，如果哪位读者有悔意的话，那他一定是后悔为何没能早些读到这本书。

程 坦

CHAPTER 1

What Is Economics?

第 1 章

什么是经济学

本章概要

Economics. The word conjures up all sorts of images: manic stock traders on Wall Street, an economic summit meeting in a European capital, a somber television news anchor announcing good or bad news about the economy. . . . You probably hear about economics several times each day. What exactly *is* economics?

First, economics is a *social science,* so it seeks to explain something about *society.* In this sense, it has something in common with psychology, sociology, and political science. But economics is different from these other social sciences, because of *what* economists study and *how* they study it. Economists ask fundamentally different questions, and they answer them using tools that other social scientists find rather exotic.

ECONOMICS, SCARCITY, AND CHOICE

A good definition of economics, which stresses the difference between economics and other social sciences, is the following:

Economics is the study of choice under conditions of scarcity.

Economics 经济学 研究稀缺条件下如何选择的学问。

This definition may appear strange to you. Where are the familiar words we ordinarily associate with economics: "money," "stocks and bonds," "prices," "budgets," . . . ? As you will soon see, economics deals with all of these things and more. But first, let's take a closer look at two important ideas in this definition: scarcity and choice.

Scarcity and Individual Choice

Think for a moment about your own life—your daily activities, the possessions you enjoy, the surroundings in which you live. Is there anything you don't have that you'd *like* to have? Anything you'd like *more* of? If your answer is "no," congratulations! You are well advanced on the path of Zen self-denial. The rest of us, however, feel the pinch of limits to our material standard of living. This simple truth is at the very core of economics. It can be restated this way: We all face the problem of scarcity.

Scarcity 稀缺性 指某物可供使用的数量不能充分满足对它的要求的情况。

At first glance, it may seem that you suffer from an infinite variety of scarcities. There are so many things you might like to have right now—a larger room or apartment, a new car, more clothes . . . the list is endless. But a little reflection suggests that your limited ability to satisfy these desires is based on two other, more basic limitations: scarce *time* and scarce *spending power*.

稀缺性即相对于需要而言的有限性。

As individuals, we face a scarcity of time and spending power. Given more of either, we could each have more of the goods and services that we desire.

The scarcity of spending power is no doubt familiar to you. We've all wished for higher incomes so that we could afford to buy more of the things we want. But the scarcity of time is equally important. So many of the activities we enjoy—seeing a movie, taking a vacation, making a phone call—require time as well as money. Just as we have limited spending power, we also have a limited number of hours in each day to satisfy our desires.

HTTP://

To make good use of the Internet, you will need the Adobe Acrobat Reader. It can be downloaded from **http://www.adobe.com/products/acrobat/readermain.html**. An economic question is: Why does Adobe give the Reader away free?

Because of the scarcities of time and spending power, each of us is forced to make *choices*. We must allocate our scarce *time* to different activities: work, play, education, sleep, shopping, and more. We must allocate our scarce *spending power* among different goods and services: housing, food, furniture, travel, and many others. And each time we choose to buy something or do something, we also choose *not* to buy or do something else.

Economists study the choices we make as individuals and also the *consequences* of those choices. For example, in 2002 and 2003, large numbers of consumers in the United States decided to spend less on air travel, due to concerns about safety and increased delays at airport security checkpoints. Many shifted their vacation spending toward home-improvement projects. Collectively, these decisions led to a contraction and layoffs in the airline industry, and in businesses associated with air travel (e.g., hotels and car rental firms). At the same time, businesses associated with home improvement (e.g., lumber mills, contractors, hardware stores) expanded, and hired additional workers.

Economists also study the more subtle and indirect effects of individual choice on our society. Will most Americans continue to live in houses or—like Europeans—will most of us end up in apartments? Will we have an educated and well-informed citizenry? Will traffic congestion in our cities continue to worsen or is there relief in sight? These questions hinge, in large part, on the separate decisions

of millions of people. To answer them requires an understanding of how individuals make choices under conditions of scarcity.

Scarcity and Social Choice

Now let's think about scarcity and choice from *society*'s point of view. What are the goals of our society? We want a high standard of living for our citizens, clean air, safe streets, good schools, and more. What is holding us back from accomplishing all of these goals in a way that would satisfy everyone? You already know the answer: scarcity.

In society's case, the problem is a scarcity of **resources**—the things we use to make goods and services that help us achieve our goals. Economists classify resources into four categories:

Resources 资源 用于生产物品和劳务的土地、劳动和资本。

1. **Labor** is the time human beings spend producing goods and services.

Labor 劳动 人消耗在生产物品和劳动中的时间。

2. **Capital** is something produced that is long-lasting, and used to make *other* things that we value. Note the word *long-lasting*. If something is used up quickly in the production process—like the flour a baker uses to make bread—it is generally *not* considered capital. A good rule of thumb is that capital should last at least a year, although most types of capital last considerably longer.

Capital 资本 在生产物品和劳务中可以长期使用的工具。

It's useful to distinguish two different types of capital. **Physical capital** consists of things like machinery and equipment, factory buildings, computers, and even hand tools like hammers and screwdrivers. These are all long-lasting *physical* goods that are used to make other things.

Physical capital 实物资本 资本存量中由机器、设备和厂房等实物构成的部分。

Human capital consists of the skills and knowledge possessed by workers. These satisfy our definition of capital: They are *produced* (through education and training), they help us produce *other* things, and they last for many years, typically through an individual's working life.[1]

Human capital 人力资本 劳动力的技能以及所受到的训练。

The **capital stock** is the total amount of capital at a nation's disposal at any point in time. It consists of all the physical and human capital made in previous periods that is still productively useful.

Capital stock 资本存量 在未来的一些年中仍将提供有用的服务的所有物品的总价值。

3. **Land** is the physical space on which production takes place, as well as the natural resources found under it or on it, such as crude oil, iron, coal, or fertile soil.

Land 土地 发生生产活动的物质空间以及相关的自然资源。

4. **Entrepreneurship** is an individual's ability (and the willingness to *use* this ability) to combine the *other* resources into a productive enterprise. An entrepreneur may be an *innovator* who comes up with an original idea for a business or a *risk taker* who provides her own funds or time to nurture a project with uncertain rewards.

Entrepreneurship 企业家作用 把其他的资源——土地、资本和自然资源组合起来投入生产企业中的能力和想法。

Anything *produced* in the economy comes, ultimately, from some combination of these resources. Think about the last lecture you attended at your college. You were consuming a service—a college lecture. What went into producing that service? Your instructor was supplying labor. Many types of capital were used as well. The physical capital included desks, chairs, a chalkboard or transparency projector, the classroom building itself, and the computer your instructor may have used to

[1] An individual's human capital is ordinarily supplied along with her labor time. (When your instructor lectures or holds office hours, she is providing both labor time and her skills as an economist and teacher.) Still, it's often useful to distinguish the *time* a worker provides (her labor) from any skills or *knowledge* possessed (human capital).

大多数经济学家都对投入（inputs）、生产要素（factors of production）、资源（resources）这三个概念的内涵不加区分。本书作者视资源为投入的真子集的这种处理方法似无必要。

compose lecture notes. In addition, there was human capital—your instructor's specialized knowledge and lecturing skills. There was land—the property on which your classroom building sits. And some individual or group had to play the role of innovator and risk taker in order to combine the labor, capital, and natural resources needed to create and guide your institution in its formative years. (If you attend a public college or university, this entrepreneurial role was largely filled by the state government and the risk takers were the state's taxpayers.)

The scarcity of resources like these causes the scarcity of all goods and services produced from them.

> *As a society, our resources—land, labor, capital, and entrepreneurship—are insufficient to produce all the goods and services we might desire. In other words, society faces a scarcity of resources.*

This stark fact about the world helps us understand the choices a society must make. Do we want a more educated citizenry? Of course. But that will require more labor—construction workers to build more classrooms and teachers to teach in them. It will require more land—space for classrooms and natural resources to build them. And it will require more capital—cement mixers, trucks, and more. These very same resources, however, could instead be used to produce *other* things that we find desirable, things such as new homes, hospitals, automobiles, or feature films. As a result, every society must have some method of *allocating* its scarce resources—choosing which of our many competing desires will be fulfilled and which will not be.

Input 投入品 用于生产产品或提供服务的任何东西。

Many of the big questions of our time center on the different ways in which resources can be allocated. The cataclysmic changes that rocked Eastern Europe and the former Soviet Union during the early 1990s arose from a very simple fact: The method these countries used for decades to allocate resources was not working. Closer to home, the never-ending debates between Democrats and Republicans in the United States about tax rates, government services, and even foreign policy reflect subtle but important differences of opinion about how to allocate resources. Often, these are disputes about whether the private sector can handle a particular issue of resource allocation on its own or whether the government should be involved.

DANGEROUS CURVES

Resources vs. Inputs The term *resources* is often confused with another, more general term—**inputs.** An input is *anything* used to make a good or service—including (but not limited to) a resource. *Resources,* by contrast, are the *special* inputs that fall into one of four categories: labor, land, capital, and entrepreneurship.

What's so special about resources? They are the ultimate source of everything that is produced. If you think about any good or service that you use—say, an automobile—it is made from the four resources and *other* inputs (such as steel). But any of these *other* inputs can be traced back to the resources used to produce it (steel is made from iron ore, labor, capital, etc.). Goods and services, and the inputs used to make them, are all made from resources. This is why a nation's capacity to produce goods and services is limited by the amounts of the four resources at its disposal.

Scarcity and Economics

The scarcity of resources—and the choices it forces us to make—is the source of all of the problems you will study in economics. Households have limited incomes for satisfying their desires, so they must choose carefully how they allocate their spending among different goods and services. Business firms want to make the highest possible profit, but they must pay for their resources; so they carefully choose *what* to produce, *how much* to produce, and *how* to produce it. Federal, state, and local

government agencies work with limited budgets, so they must carefully choose which goals to pursue. Economists study these decisions made by households, firms, and governments to explain how our economic system operates, to forecast the future of our economy, and to suggest ways to make that future even better.

THE WORLD OF ECONOMICS

The field of economics is surprisingly broad. It extends from the mundane—why does a pound of steak cost more than a pound of chicken?—to the personal and profound—how do couples decide how many children to have? With a field this broad, it is useful to have some way of classifying the different types of problems economists study and the different methods they use to analyze them.

Microeconomics and Macroeconomics

The field of economics is divided into two major parts: microeconomics and macroeconomics. **Microeconomics** comes from the Greek word *mikros,* meaning "small." It takes a close-up view of the economy, as if looking through a microscope. Microeconomics is concerned with the behavior of *individual* actors on the economic scene—households, business firms, and governments. It looks at the choices they make and how they interact with each other when they come together to trade *specific* goods and services. What will happen to the cost of movie tickets over the next five years? How many management-trainee jobs will open up for college graduates? How would U.S. phone companies be affected by a tax on imported cell phones? These are all microeconomic questions because they analyze individual *parts* of an economy rather than the *whole.*

Microeconomics 微观经济学 研究个别的家庭、企业和政府的行为，它们的选择，以及它们在特定市场中相互影响的学问。

微观经济学研究个量。

Macroeconomics—from the Greek word *makros,* meaning "large"—takes an *overall* view of the economy. Instead of focusing on the production of carrots or computers, macroeconomics lumps all goods and services together and looks at the economy's *total output.* Instead of focusing on employment of management trainees or manufacturing workers, it considers *total employment* in the economy. Instead of asking why credit card loans carry higher interest rates than home mortgage loans, it asks what makes interest rates *in general* rise or fall. In all of these cases, macroeconomics focuses on the big picture and ignores the fine details.

Macroeconomics 宏观经济学 把经济作为一个整体来研究。

宏观经济学研究总量。

Positive and Normative Economics

The micro versus macro distinction is based on the level of detail we want to consider. Another useful distinction has to do with our *purpose* in analyzing a problem. **Positive economics** deals with *how* the economy works, plain and simple. If someone says, "Recent increases in spending for domestic security have slowed the growth rate of the U.S. economy," she is making a positive economic statement. A statement need not be accurate or even sensible to be classified as positive. For example, "Government policy has no effect on our standard of living" is a false, but positive, statement. Whether true or not, it's a statement about how the economy works and its accuracy can be tested by looking at the facts—and just the facts.

Positive economics 实证经济学 研究是什么以及经济是如何运行的学问。

Normative economics concerns itself with what *should be.* It is used to make judgments about the economy, identify problems, and prescribe solutions. Rather

Normative Economics 规范经济学 研究应该是什么；通常要做价值判断，判定问题，给出答案。

DANGEROUS CURVES

Seemingly Positive Statements Be alert to statements that may *seem* positive but are actually normative. Here's an example: "If we want to reduce pollution, our society will have to use less gasoline." This may *sound* positive, because it seems to refer only to facts about the world. But it's actually normative. Why? Cutting back on gasoline is just *one* policy among many that could reduce pollution. To say that we *must* choose this method makes a value judgment about its superiority to other methods. A purely positive statement on this topic would be, "Using less gasoline—with no other change in living habits—would reduce pollution."

Similarly, be alert to statements that use vague terms with hidden value judgments. An example: "All else equal, the less gasoline we use, the better our quality of life." Whether you agree or disagree, this is *not* a positive statement. Two people who agree about the facts—in this case, the consequences of using less gasoline—might disagree over the meaning of the phrase "quality of life," how to measure it, and what would make it better. This disagreement could not be resolved just by looking at the facts.

than limiting its concerns to just "the facts," it goes on to say what we should *do* about them and therefore depends on our values.

If an economist says, "We should cut total government spending," she is engaging in normative economic analysis. Cutting government spending would benefit some citizens and harm others, so the statement rests on a value judgment. A normative statement—like the one about government spending above—cannot be proved or disproved by the facts alone.

Positive and normative economics are intimately related in practice. For one thing, we cannot properly argue about what we should or should not do unless we know certain facts about the world. Every normative analysis is therefore based on an underlying positive analysis. But while a positive analysis can, at least in principle, be conducted without value judgments, a normative analysis is always based, at least in part, on the values of the person conducting it.

Why Economists Disagree. The distinction between positive and normative economics can help us understand why economists sometimes disagree. Suppose you are watching a television interview in which two economists are asked whether the United States should eliminate all government-imposed barriers to trading with the rest of the world. The first economist says, "Yes, absolutely," but the other says, "No, definitely not." Why the sharp disagreement?

The difference of opinion may be *positive* in nature: The two economists may have different views about what would actually happen if trade barriers were eliminated. Differences like this sometimes arise because our knowledge of the economy is imperfect or because certain facts are in dispute.

More likely, however, the disagreement will be *normative*. Economists, like everyone else, have different values. In this case, both economists might agree that opening up international trade would benefit *most* Americans, but harm *some* of them. Yet they may still disagree about the policy move because they have different values. The first economist might put more emphasis on benefits to the overall economy, while the second might put more emphasis on preventing harm to a particular group. Here, the two economists have come to the same *positive* conclusion, but their *different values* lead them to different *normative* conclusions.

In the media, economists are rarely given enough time to express the basis for their opinions, so the public hears only the disagreement. People may then conclude that economists cannot agree about how the economy works, even when the *real* disagreement is over goals and values.

WHY STUDY ECONOMICS?

Students take economics courses for all kinds of reasons.

To Understand the World Better

Applying the tools of economics can help you understand global and catastrophic events such as wars, famines, epidemics, and depressions. But it can also help you understand much of what happens to you locally and personally—the worsening traffic conditions in your city, the raise you can expect at your job this year, or the long line of people waiting to buy tickets for a popular concert. Economics has the power to help us understand these phenomena because they result, in large part, from the choices we make under conditions of scarcity.

经济学与其说是一种学说，不如说是一种方法，一种思维工具，一种构想技术。

J.M.凯恩斯

Economics has its limitations, of course. But it is hard to find any aspect of life about which economics does not have *something* important to say. Economics cannot explain why so many Americans like to watch television, but it *can* explain how TV networks decide which programs to offer. Economics cannot protect you from a robbery, but it *can* explain why some people choose to become thieves and why no society has chosen to eradicate crime completely. Economics will not improve your love life, resolve unconscious conflicts from your childhood, or help you overcome a fear of flying, but it *can* tell us how many skilled therapists, ministers, and counselors are available to help us solve these problems.

学习经济学，主要是从中学习一种思考社会问题的方法，这可以使我们在观察无限丰富而又多变的社会现象时有了一套可以依赖的工具。

To Gain Self-Confidence

Those who have never studied economics often feel that mysterious, inexplicable forces are shaping their lives, buffeting them like the bumpers in a pinball machine, determining whether or not they'll be able to find a job, what their salary will be, whether they'll be able to afford a home, and in what kind of neighborhood. If you've been one of those people, all that is about to change. After you learn economics, you may be surprised to find that you no longer toss out the business page of your local newspaper because it appears to be written in a foreign language. You may no longer lunge for the remote and change the channel the instant you hear "And now for news about the economy. . . . " You may find yourself listening to economic reports with a critical ear, catching mistakes in logic, misleading statements, or out-and-out lies. When you master economics, you gain a sense of mastery over the world, and thus over your own life as well.

To Achieve Social Change

If you are interested in making the world a better place, economics is indispensable. There is no shortage of serious social problems worthy of our attention—unemployment, hunger, poverty, disease, child abuse, drug addiction, violent crime. Economics can help us understand the origins of these problems, explain why previous efforts to solve them have failed, and help us to design new, more effective solutions.

To Help Prepare for Other Careers

Economics has long been a popular college major for individuals intending to work in business. But it has also been popular among those planning careers in politics, international relations, law, medicine, engineering, psychology, and other professions. This is for good reason: Practitioners in each of these fields often find themselves confronting economic issues. For example, lawyers increasingly face judicial

rulings based on the principles of economic efficiency. Doctors will need to understand how new technologies or changes in the structure of health insurance will affect their practices. Industrial psychologists need to understand the economic implications of workplace changes they may advocate, such as flexible scheduling or on-site child care.

To Become an Economist

HTTP://

The Federal Reserve Bank of Minneapolis asked some Nobel Prize winners how they became interested in economics. Their stories can be found at **http://www.minneapolisfed.org/pubs/region/int.cfm**.

Only a tiny minority of this book's readers will decide to become economists. This is welcome news to the authors, and after you have studied labor markets in your *microeconomics* course you will understand why. But if you do decide to become an economist—obtaining a master's degree or even a Ph.D.—you will find many possibilities for employment. Of 16,780 members of the American Economic Association who responded to a recent survey,[2] 62 percent were employed at colleges or universities. The rest were engaged in a variety of activities in the private sector (19 percent), government (8 percent), and international organizations (3 percent). Economists are hired by banks to assess the risk of investing abroad; by manufacturing companies, to help them determine new methods of producing, marketing, and pricing their products; by government agencies, to help design policies to fight crime, disease, poverty, and pollution; by international organizations, to help create aid programs for less developed countries; by the media, to help the public interpret global, national, and local events; and even by nonprofit organizations, to provide advice on controlling costs and raising funds more effectively.

THE METHODS OF ECONOMICS

One of the first things you will notice as you begin to study economics is the heavy reliance on *models*. Indeed, the discipline goes beyond any other social science in its insistence that every theory be represented by an explicit, carefully constructed *model*.

You've no doubt encountered many models in your life. As a child, you played with model trains, model planes, or model people—dolls. In a high school science course, you probably saw a model of an atom—one of those plastic and wire contraptions with red, blue, and green balls representing protons, neutrons, and electrons. You may have also seen architects' cardboard models of buildings. These are physical models, three-dimensional replicas that you can pick up and hold. Economic models, on the other hand, are built not with cardboard, plastic, or metal but with words, diagrams, and mathematical statements.

What, exactly, is a model?

Model 模型 真实事物的一种抽象表示。

*A **model** is an abstract representation of reality.*

The two key words in this definition are *abstract* and *representation*. A model is not supposed to be exactly like reality. Rather, it *represents* the real world by *abstracting* or *taking from* the real world that which will help us understand it. In any model, many real-world details are left out.

[2] *American Economic Review,* Table of Employment, 2003 (*http://www.vanderbilt.edu/AEA/Tbl. Employ.htm*).

The Art of Building Economic Models

When you build a model, how do you know which details to include and which to leave out? There is no simple answer to this question. The right amount of detail depends on your purpose in building the model in the first place. There is, however, one guiding principle:

A model should be as simple as possible to accomplish its purpose.

This means that a model should contain only the *necessary* details.

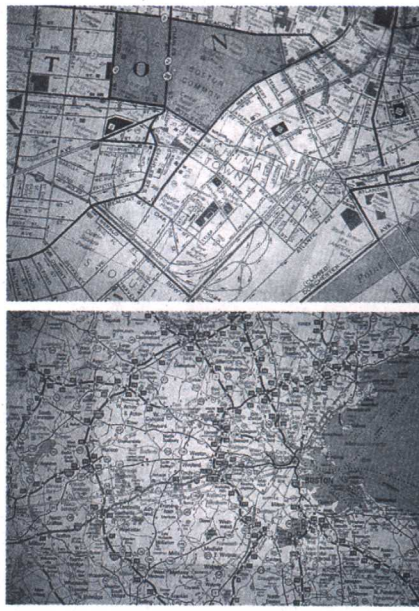
To understand this a little better, think about a map. A map is a model—it represents a part of the earth's surface. But it leaves out many details of the real world. First, maps are two-dimensional, so they leave out the third dimension—height—of the real world. Second, maps always ignore small details, such as trees and houses and potholes. Third, a map is much smaller than the area it represents. But when you buy a map, how much detail do you want it to have?

Let's say you are in Boston, and you need a map to find the best way to drive from Logan Airport to the downtown convention center (your *purpose*). In this case, you would want a very detailed city map, with every street, park, and plaza in Boston clearly illustrated and labeled. A highway map, which ignores these details, wouldn't do at all.

But now suppose your purpose is different: to select the best driving route from Boston to Cincinnati. Now you want a highway map. A map that shows every street between Boston and Cincinnati would have *too much* detail. All of that extraneous information would only obscure what you really need to see.

Although economic models are more abstract than road maps, the same principle applies in building them: The level of detail that would be just right for one purpose will usually be too much or too little for another. When you feel yourself objecting to a model in this text because something has been left out, keep in mind the purpose for which the model is built. In introductory economics, the purpose is entirely educational. The models are designed to help you understand some simple, but powerful, principles about how the economy operates. Keeping the models simple makes it easier to see these principles at work and remember them later.

Of course, economic models have other purposes besides education. They can help businesses make decisions about pricing and production, help households decide how and where to invest their savings, and help governments and international agencies formulate policies. Models built for these purposes will be much more detailed than the ones in this text, and you will learn about them if you take more advanced courses in economics. But even complex models are built around very simple frameworks—the same frameworks you will be learning here.



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These maps are models. *But each would be used for a different purpose.*

当代经济学研究的一般程序：观察——抽象——模型——结果——检验。

Assumptions and Conclusions

Every economic model begins with *assumptions* about the world. There are two types of assumptions in a model: simplifying assumptions and critical assumptions.

A **simplifying assumption** is just what it sounds like—a way of making a model simpler without affecting any of its important conclusions. The purpose of a simplifying assumption is to rid a model of extraneous detail so its essential features can stand out more clearly. A road map, for example, makes the simplifying assumption, "There are no trees," because trees on a map would only get in the way. Similarly, in

Simplifying assumption 简化性假设 任何使得模型得以简化又不影响其重要结论的假设。

an economic model, we might assume that there are only two goods that households can choose from or that there are only two nations in the world. We make such assumptions *not* because 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.

Critical Assumption 关键性假设 以重要的方式影响一个模型结论的任何假设。

A **critical assumption**, by contrast, is an assumption that affects the conclusions of a model in important ways. When you use a road map, you make the critical assumption, "All of these roads are open." If that assumption is wrong, your conclusion—the best route to take—might be wrong as well.

任何一种理论（无论是科学理论还是荒谬的理论）都必须要有若干假设。假设是展开理论的基础。

In an economic model, there are always one or more critical assumptions. You don't have to look very hard to find them, because economists like to make these assumptions explicit right from the outset. For example, when we study the behavior of business firms, our model will assume that firms try to earn the highest possible profit for their owners. By stating this assumption up front, we can see immediately where the model's conclusions spring from.

Two Fundamental Assumptions

The economy is complex. In the twenty seconds or so that it takes you to read this sentence, America's 250 million people will produce about $5 million worth of goods and services, the U.S. government will collect about $1 million in taxes and spend about the same, and U.S. firms will buy about $600,000 worth of goods and services from foreign firms in more than a hundred different countries.

Economists make sense of all this activity—and more—in two steps. First, the decision makers in the economy are divided into four broad groups: households, business firms, government agencies, and foreigners. In *micro*economic models, the focus is on the behavior of *individual* households, firms, and government agencies and how they interact with each other. In *macro*economic models, we group these decision makers into sectors—the household sector, the business sector, the government sector, and the foreign sector—and study how each interacts with the others.

The next step in understanding the economy is to make two critical assumptions about decision makers. These two assumptions are so universal in economic models that we may fairly consider them part of the foundation of economic thought.

First Fundamental Assumption. The first assumption has to do with *what* it is that individual decision makers are trying to accomplish. It can be stated as follows:

经济学中所研究的人，经济人，即理性的人。

Every economic decision maker tries to make the best out of any situation.

Typically, making the best out of a situation means *maximizing some quantity.* Business firms, for example, are usually assumed to maximize profit. Households maximize utility—their well-being or satisfaction. In some cases, however, we might want to recognize that firms or households are actually groups of individuals with different agendas. While a firm's owners might want the firm to maximize profits, the managers might want to consider their own power, prestige, and job security. These goals may conflict, and the behavior of the firm will depend on how the conflict is resolved.

While economists often have spirited disagreements about *what* is being maximized, there is virtually unanimous agreement that any economic model should begin with the assumption that *someone* is maximizing *something*. Even the behavior

of groups—like the decision makers in a firm or officials of the federal government—is assumed to arise from the behavior of different maximizing individuals, each pursuing his or her own agenda.

The first fundamental assumption seems to imply that we are all engaged in a relentless, conscious pursuit of narrow goals—an implication contradicted by much of human behavior. As you read this paragraph, are you consciously trying to maximize your own well-being? Perhaps. You may be fully aware that reading this will improve your grade in economics; that, in turn, will help you achieve other important goals. But most likely, you aren't thinking about any of this. In truth, we only rarely make decisions with conscious, hard calculations. Why, then, do economists assume that people make decisions consciously, when, in reality, they often don't?

This is an important question. Economists answer it this way: The ultimate purpose of building an economic model is to *understand and predict behavior*—the behavior of households, firms, government, and the overall economy. As long as people behave *as if* they are maximizing something, then we can build a good model by *assuming that they are.* Whether they *actually, consciously* maximize anything is an interesting philosophical question, but the answer doesn't affect the usefulness of the model. Thus, the belief behind the first fundamental assumption is that people, for the most part, behave *as if* they are maximizing something.

One last thought about the assumption that people maximize something: It does not imply that people are selfish or that economists think they are. On the contrary, economists are very interested in cases where people take the interests of others into account. For example, much economic life takes place in the family, where people care a great deal about each other. Our first fundamental assumption would then be applied to the family as a whole. That is, we would assume that the entire family, rather than any one individual within it, is trying to make the best out of any situation.

Economics also recognizes that people often care about their friends, their neighbors, and the broader society in which they live. Useful economic models have been built to explore charitable giving by individuals and corporations, volunteer activity, and ethical behavior such as honesty, fairness, and respect for fellow citizens.

Second Fundamental Assumption. A second critical assumption underlying all economic models is a simple fact of life:

Every economic decision maker faces constraints.

Society's overall scarcity of resources constrains each of us individually in much the same way as the overall scarcity of space in a crowded elevator limits each rider's freedom of movement. Because of the scarcity of resources, households are constrained by limited incomes, business firms are constrained by requirements that they pay for all of the inputs they use, and government agencies are constrained by limited budgets.

Together, the two fundamental assumptions help define the approach economists take in answering questions about the world. To explain why there is poverty, illiteracy, and crime, to explain the rise and fall of industries and the patterns of trade among nations, or to explain why some government policies succeed while others fail, economists always begin with the same three questions:

1. Who are the individual decision makers?
2. What are they maximizing?
3. What constraints do they face?

This approach is used so heavily by economists that it is one of the *basic principles of economics* you will learn in this book.

Math, Jargon, and Other Concerns . . .

HTTP://

An online inroduction to the use of graphs can be found at **http://syllabus.syr.edu/cid/graph/book.html.**

Economists often express their ideas using mathematical concepts and a special vocabulary. Why? Because these tools enable economists to express themselves more precisely than with ordinary language. For example, someone who has never studied economics might say, "When used textbooks are available, students won't buy new textbooks." That statement might not bother you right now. But once you've finished your first economics course, you'll be saying it something like this: "When the price of used textbooks falls, the demand curve for new textbooks shifts leftward."

Does the second statement sound strange to you? It should. First, it uses a special term—a *demand curve*—that you haven't yet learned. Second, it uses a mathematical concept—a *shifting curve*—with which you might not be familiar. But while the first statement might mean a number of different things, the second statement—as you will see in Chapter 3—can mean only *one* thing. By being precise, we can steer clear of unnecessary confusion.

If you are worried about the special vocabulary of economics, you can relax. All of the new terms will be defined and carefully explained as you encounter them. Indeed, this textbook does not assume you have any special knowledge of economics. It is truly meant for a "first course" in the field.

But what about the math? Here, too, you can relax. While professional economists often use sophisticated mathematics to solve problems, only a little math is needed to understand basic economic *principles*. And virtually all of this math comes from high school algebra and geometry.

Still, you may have forgotten some of your high school math. If so, a little brushing up might be in order. This is why we have included an appendix at the end of this chapter. It covers some of the most basic concepts—such as interpreting graphs, the equation for a straight line, and the concept of a slope—that you will need in this course. You may want to glance at this appendix now, just so you'll know what's there. Then, from time to time, you'll be reminded about it when you're most likely to need it.

THE BASIC PRINCIPLES OF ECONOMICS

As you learn economics, you will encounter a variety of different theories, ideas, and techniques, each suited to analyzing a particular problem. But a few of these ideas are so central that they are used again and again in a variety of different contexts. And these ideas are not only useful in their own right; they also form the foundation on which the rest of economic theory is built. In this book, we call these ideas *basic principles of economics:*

> *The* ***basic principles of economics*** *are methods or conclusions that appear again and again in analyzing economic problems. They form the foundation upon which economic theory is built.*

Basic principles of economics
经济学的基本原理 在分析经济问题时反复使用的少数几个基本思想。