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经济学经典教材·专业主干课系列

Economics Classics

城市经济学

（第八版）

Urban Economics

(Eighth Edition)

阿瑟·奥沙利文（Arthur O'Sullivan） 著

中国人民大学出版社

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出版说明

入世十年，我国已完全融入到经济全球化的浪潮中。党的十六大确立了“引进来，走出去”的发展战略，使得“国际化”复合型人才的需求不断增加。这就对我国一般本科院校多年来所采取的单一语言（母语）教学提出严峻挑战，经济类专业双语教学改革迫在眉睫。

为配合高校经济类专业双语教学改革，中国人民大学出版社携手培生、麦格劳-希尔、圣智等众多国际知名出版公司，倾情打造了该套“经济类双语系列教材”，本套教材包括：经济管理类专业开设的核心课程、经济学专业开设的主干课程以及财政金融专业和国际贸易专业的主要课程。所选教材均为国外最优秀的本科层次经济类教材。

我们在组织、引进和出版该系列教材的过程中，严把质量关。聘请国内著名经济学家、学者以及一线授课教师审核国外原版教材，广泛听取意见，努力做到把国外真正高水平的适合国内实际教学需求的优秀教材引进来，供国内广大师生参考、研究和学习。

本系列教材主要有以下特点：

第一，教材体系设计完整。本系列教材全部为国外知名出版公司的优秀教材，涵盖了经济类专业的所有主要课程。

第二，英文原版教材特色。本系列教材依据国内实际教学需要以及广泛适应性，部分对原版教材进行了全文影印，部分在保持原版教材体系结构和内容特色的基础上进行了适当删减。

第三，内容紧扣学科前沿。本系列教材在原著选择上紧扣国外教学前沿，基本上都是国外最流行教材的最新版本。

第四，篇幅合理、价格适中。本系列教材一方面在内容和篇幅上很好地适应了国内双语教学的实际需要，另一方面，低定价策略又避免了国外原版图书高额的购买费用。

第五，提供强大的教学支持。依托国外知名出版公司的资源，本系列教材为教师提供丰富的配套教辅资源，如教师手册、PPT 课堂演示文稿、试题库等，并配套有内容丰富的网络资源，使教学更为便利。

本系列教材既适合高等院校经济类专业的本科教学使用，也适合从事经济类工作和研究的广大从业者的阅读和学习。我们在选书、改编过程中虽然全面听取了专家、学者和教师的意见，努力做到满足广大读者的需求，但由于各教材的作者所处的政治、经济和文化背景不同，书中内容仍可能有不妥之处，我们真诚希望广大读者提出宝贵意见和建议，以便我们在以后的版本中不断改进和完善。

中国人民大学出版社

Preface

This book is on urban economics, the discipline that lies at the intersection of geography and economics. Urban economics explores the location decisions of utility-maximizing households and profit-maximizing firms, and it shows how these decisions cause the formation of cities of different size and shape. Part I of the book explains why cities exist and what causes them to grow or shrink. Part II examines the market forces that shape cities and the role of government in determining land-use patterns. Part III looks at the urban transportation system, exploring the pricing and design of public transit systems and the externalities associated with automobile use (congestion, environmental damage, collisions). Part IV explores the economics of urban education and crime, two factors that play key roles in household location decisions. Part V explains the unique features of the housing market and examines the effects of government housing policies. The final part of the book explains the rationale for our fragmented system of local government and explores the responses of local governments to intergovernmental grants and the responses of taxpayers to local taxes.

The text is designed for use in undergraduate courses in urban economics and urban affairs. It could also be used for graduate courses in urban planning, public policy, and public administration. All of the economic concepts used in the book are covered in the typical intermediate microeconomics course, so students who have completed such a course will be able to move through the book at a rapid pace. For students whose exposure to microeconomics is limited to an introductory course— or who could benefit from a review of the concepts covered in an intermediate microeconomics course—I have provided an appendix ("Tools of Microeconomics") that covers the key concepts.

CHANGES FOR THE EIGHTH EDITION

The eighth edition improves on the previous edition in two ways. First, I've rewritten Chapter 11 (Urban Transit) to incorporate the most recent developments in economic theory, empirical results, and practical experience with transit systems. Included in the revised chapter is a thorough analysis of the rationale for transit subsidies and a discussion of the size of the socially efficient subsidy. In addition, the chapter has a full accounting of the relative costs of light rail versus buses.

The second improvement is a new chapter on education (Chapter 12). This chapter uses the education production function as a framework to explore the economics of K–12 education. The chapter identifies the key inputs to the production process—teachers, the home environment, and classroom peers. One of the insights from the production function is that teacher productivity varies significantly across teachers. For example, if we replace an average teacher with an above-average teacher for one year, the benefit is roughly $210,000. At the other end of the productivity scale, if we were to replace the bottom 8 percent of teachers with average teachers, aggregate earnings in the national economy would increase by roughly $112 trillion. The education chapter also looks at spending inequalities

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across schools and evaluates the effects of intergovernmental grants on spending and achievement inequalities.

WEB SITE

The Web site for the book (www.mhhe.com/osullivan8e) has the following resources.

- Color versions of the maps in the book
- Maps for other cities
- For each chapter
  - PowerPoint presentations, which include all the figures and tables from the text
  - Lecture notes
- A chapter, "The Core-Periphery Model of Regional Development," that presents some key ideas from economic geography
- A list of corrections. The author has a typo-bounty program that pays $5 to the first person to identify a particular error.

The instructors' version of the Web site also has model answers to the exercises in the book.

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CHAPTER 1

Introduction and Axioms of Urban Economics

Cities have always been the fireplaces of civilization, whence light and heat radiated out into the dark.

—THEODORE PARKER

I'd rather wake up in the middle of nowhere than in any city on earth.

—STEVE MCQUEEN

This book explores the economics of cities and urban problems. The quotes from Parker and McQueen reflect our mixed feelings about cities. On the positive side, cities facilitate innovation, production, and trade, so they increase our standard of living. On the negative side, cities are noisy, dirty, and crowded. As we'll see in the first part of the book, firms and people locate in cities because the obvious costs of being in a city are more than offset by subtle benefits of producing in close proximity to other firms and people. As we'll see later in the book, policies that combat urban problems such as congestion, pollution, and crime are likely to increase the vitality of cities, causing them to grow.

WHAT IS URBAN ECONOMICS?

The discipline of urban economics is defined by the intersection of geography and economics. Economics explores the choices people make when resources are limited. Households make choices to maximize their utility, while firms maximize their profit. Geographers study how things are arranged across space, answering the question, Where does human activity occur? Urban economics puts economics and geography together, exploring the geographical or location choices of utility-maximizing households and profit-maximizing firms. Urban economics also identifies inefficiencies in location choices and examines alternative public policies to promote efficient choices.

Urban economics can be divided into six related areas that correspond to the six parts of this book.

1. **Market forces in the development of cities.** The interurban location decisions of firms and households generate cities of different size and economic structure. We explore the issues of why cities exist and why there are big cities

and small ones.

2. **Land use within cities.** The intraurban location decisions of firms and households generate urban land-use patterns. In modern cities, employment is spread throughout the metropolitan area, in sharp contrast to the highly centralized cities of just 100 years ago. We explore the economic forces behind the change from centralized to decentralized cities. We also use a model of neighborhood choice to explore the issue of segregation with respect to race, income, and educational level.
3. **Urban transportation.** We explore some possible solutions to the urban congestion problem and look at the role of mass transit in the urban transportation system. One issue is whether a bus system is more efficient than a light-rail system or a heavy-rail system like BART (San Francisco) or Metro (Washington).
4. **Crime and public policy.** We look at the problem of urban crime and show the links between crime and two other urban problems, poverty and low educational achievement.
5. **Housing and public policy.** Housing choices are linked to location choices because housing is immobile. We'll discuss why housing is different from other products and how housing policies work.
6. **Local government expenditures and taxes.** Under our fragmented system of local government, most large metropolitan areas have dozens of local governments, including municipalities, school districts, and special districts. In making location choices, households consider the mix of taxes and local public goods.

WHAT IS A CITY?

An urban economist defines an urban area as a geographical area that contains a large number of people in a relatively small area. In other words, an urban area has a population density that is high relative to the density of the surrounding area. This definition accommodates urban areas of vastly different sizes, from a small town to a large metropolitan area. The definition is based on population density because an essential feature of an urban economy is frequent contact between different economic activities, which is feasible only if firms and households are concentrated in a relatively small area.

The U.S. Census Bureau has developed a variety of geographical definitions relevant to urban economics. Since much of the empirical work in urban economics is based on census data, a clear understanding of these definitions is important. The appendix to this chapter provides the details of the census definitions. The key census definitions, some of which are new for the 2000 Census, are as follows.

1. **Urban area:** A densely settled geographical area with a minimum population of 2,500 people and a minimum density of 500 people per square mile. In 2000, there were 3,756 urban areas in the United States.
2. **Urban population:** People living in urban areas. In 2000, the urban population was 79 percent of the total population.
3. **Metropolitan area:** A core area with a substantial population nucleus, together with adjacent communities that are integrated, in an economic sense, with the core area. To qualify as a metropolitan area, the minimum population is 50,000

people. In 2000, there were 361 metropolitan statistical areas in the United States.

4. **Micropolitan area:** A smaller version of a metropolitan area with a concentration of 10,000 to 50,000 people. In 2000, there were 559 micropolitan statistical areas in the United States.
5. **Principal city:** The largest municipality in each metropolitan or micropolitan statistical area. A municipality is defined as an area over which a municipal corporation exercises political authority and provides local government services such as sewage service, crime protection, and fire protection.

This book uses three terms to refer to spatial concentrations of economic activity: *urban area, metropolitan area,* and *city*. These three terms, which will be used interchangeably, refer to the economic city (an area with a relatively high population density that contains a set of closely related activities), not the political city. When referring to a political city, we will use the term *central city* or *municipality*.

WHY DO CITIES EXIST?

This is the fundamental question of urban economics. People need land to produce food and other resources, and living in dense cities separates us from the land where food is produced. As Bartlett (1998) points out, no other creatures in the animal world form anything like cities. Herbivores such as wildebeests and bison form larger herds but constantly migrate to fresh land to ensure a steady supply of food. Coral is concentrated in stationary reefs, but ocean currents provide a steady supply of food to the stationary coral. Perhaps the closest thing to a city in the natural world is a bee hive or an anthill. Eusocial insects such as bees and ants form colonies with thousands of inhabitants, with highly specialized castes—soldier ants, drones, breeders, nurses, and cleanup crews. In contrast with human cities, these insect agglomerations are closed to non-natives and not based on voluntary exchange.

Cities exist because human technology has created systems of production and exchange that seem to defy the natural order. Three conditions must be satisfied for a city to develop.

1. **Agricultural surplus.** People outside cities must produce enough food to feed themselves and city dwellers.
2. **Urban production.** City dwellers must produce something—goods or services—to exchange for food grown by rural workers.
3. **Transportation for exchange.** There must be an efficient transportation system to facilitate the exchange of food and urban products.

Figure 1–1 shows the share of people living in cities in the United States from 1800 to 2010. Over this period, the urban share increased from 6 percent to 82 percent, a remarkable transformation that also occurred in other parts of the world. As we'll see in the next three chapters of the book, the transformation of a rural society into an urban one occurred because technological advances increased the agricultural surplus (condition 1), increased the productivity of urban workers (condition 2), and increased the efficiency of transportation and exchange (condition 3).

Figure 1–2 shows urbanization rates for different regions around the world, with projections for the year 2030. In 1950, urbanization rates were relatively low in Africa and Asia, and highest in Oceania and North America. Between now and the year 2030, urbanization rates are expected to increase everywhere, with the larg-

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