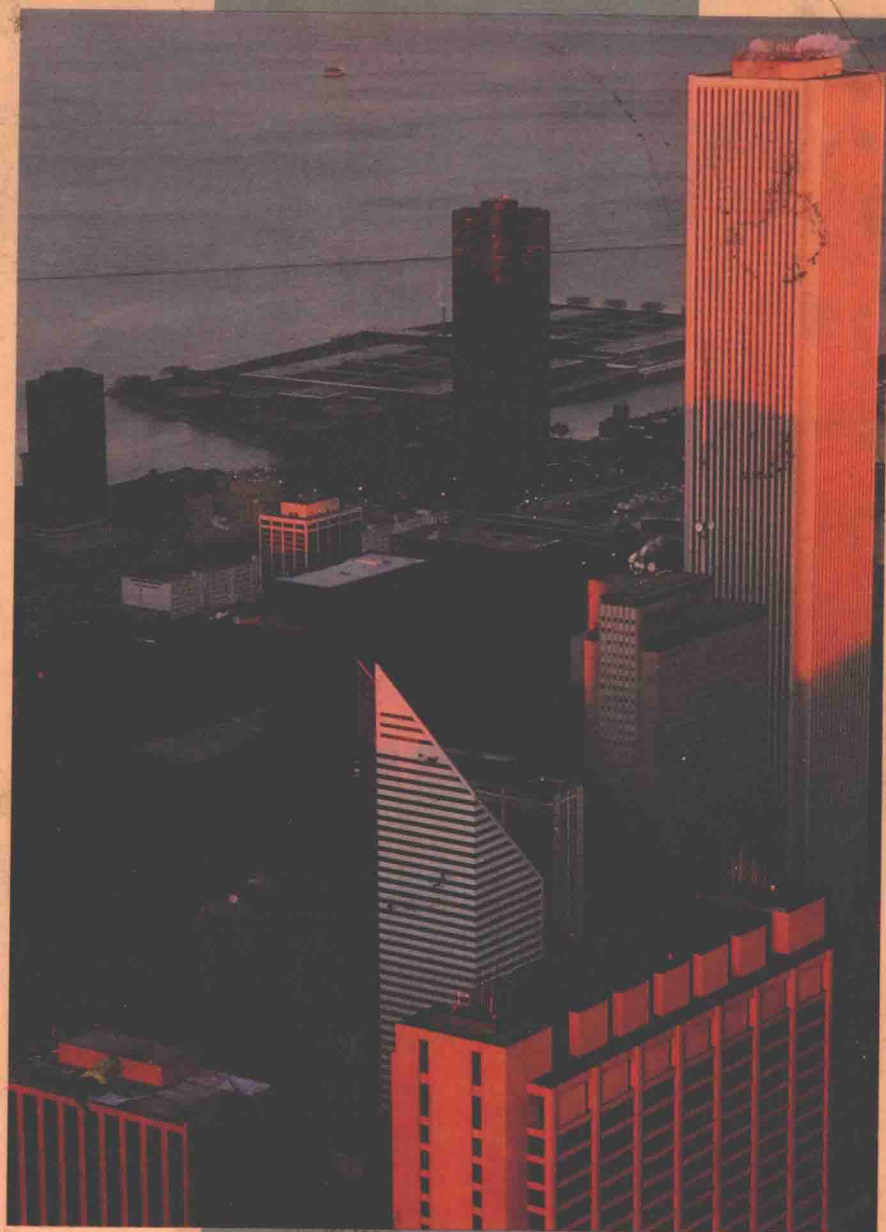


URBAN ECONOMIC

FOURTH EDITION



EDWIN S. MILLS
BRUCE W. HAMILTON

URBAN ECONOMICS

Fourth Edition

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Northwestern University

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Preface

This book is primarily the offspring of Edwin S. Mills's text, *Urban Economics*, and Bruce W. Hamilton's urban economics course offered for the past several years at Johns Hopkins University. As will be seen, however, the book claims several other parents as well.

We have preserved almost intact the theoretical section from *Urban Economics, Second Edition*, as well as the new chapters from the third edition that contain a critical examination of the theoretical model and urbanization in developing countries. In the fourth edition, we have significantly expanded discussion of the historical context in which cities and cities' systems developed. This edition also contains new material on the changing economic function of central cities, particularly the dramatic recent shift from manufacturing to high-tech services. Although the book remains a text on urban—rather than regional—economics, we have substantially increased the depth of treatment of interactions among cities and among regions.

As this book is intended for use as a core text in urban economics, a reasonably solid foundation in microeconomic principles is a prerequisite. We found it necessary to describe the results of regression analysis at a few points in the book. The discussion is fairly basic, and we believe it is accessible to students who are unfamiliar with regression techniques. However, we have included an Appendix on the rudiments of regression to help students with these passages.

A final observation about the flavor of the book is this: We hope it represents the state of the discipline as it is, warts and all. We believe that economics contributes greatly to an understanding of how cities function and hope students will share this view after studying the book. But at the same time, there are poorly understood phenomena and facts that are at odds with our theoretical predictions. We discuss many of these uncomfortable facts. This ought not to leave the students confused; rather, we hope to convey the message that there are important questions that remain to be studied.

As is always the case in such a venture, we have received generous help from many quarters. Foremost among these is Molly Macauley, who served in the multiple roles of research assistant, consultant, and first reader of draft chapters for the third edition. She and Robert Schwab, the other reader of draft chapters, provided invaluable help in all parts of the book. For the fourth edition, Mohamed Elhage provided excellent research assistance.

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Bruce W. Hamilton

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Part One

Basic Ideas and Historical Background



The Nature of Urban Areas

□ The city is one of humanity's earliest and most productive inventions. The first true cities arose along the Nile, the eastern Mediterranean, and the Fertile Crescent, approximately 5500 years ago. By 2000 B.C. cities had spread throughout the Mediterranean basin and the Arabian peninsula, and on to the Indus River valley in India and the Yellow River valley in China.

Since that time, the advances and declines of civilization have been intimately connected with advances and declines in urbanization. The episode of urbanization that began along the Nile and the Fertile Crescent reached its apex with the Roman Empire. With the sacking of Rome in A.D. 476, both urbanization and the quality of life went into a steep decline throughout southern Europe. Recovery from this decline began in approximately the tenth century, with the emergence of the medieval city. With some setbacks, urbanization and economic progress proceeded slowly until the beginning of the nineteenth century and the Industrial Revolution.

At this point it is useful to ask two questions: first, what conditions are necessary for the formation of cities, and second, what is to be gained from urban life? The answers to these questions cannot be arrived at without an understanding of the types of economic activities that always take place in cities.

From earliest times onward, the city has been the home of specialists—in particular, specialists in nonagricultural activities. Dating from these earliest times, these specialists could not survive without the produce of the land, so the first prerequisite for a city was the presence of an agricultural sector which produced a surplus—more than enough food to sustain itself. Second, urban dwellers had to induce farmers to part with their surplus—either by exchange or by force.

Both before and after the initial formation of cities, one of the crucial requirements for urbanization was the improvement of agriculture.

Techniques of irrigation and metal implements were among the first such innovations.

In order to thrive in an economy based on exchange rather than force, cities had to be productive—to provide something for the agricultural sector which the latter could not provide as well for itself. This ability of cities to provide something with which to trade for produce is dependent on scale economies, for *large scale* is a city's unique attribute. In other words, a city is distinguished from its *hinterland* (the rural region served by the city) in that a city concentrates large numbers of people, and large amounts of physical capital, in a confined area. As will be seen, this concentration has proved to be a most productive way of providing many of the fruits of civilization; but it also has created problems that are virtually absent in rural areas and small villages.

This book is concerned with the economic opportunities which cities present to people. In addition, attention is focused on the economic problems which arise with the existence of cities, and possible ways of handling these problems.

Most people make intuitive distinctions between urban and rural areas and between big cities and small towns. For many purposes, the intuitive distinctions are adequate. Nevertheless, it is worthwhile to start with some careful definitions and distinctions, because data sources depend on them.

municipalities: Self-government
city
megapolis

☐ WHAT ARE URBAN AREAS?

There are many urban concepts: town, city, urban area, metropolitan area, and megapolis are examples. Some have legal definitions: towns, municipalities, and cities are built-up areas designated as political subdivisions by states, provinces, or national governments. Practices in designating urban government jurisdictions vary greatly from country to country and, in the United States, from state to state. What one country or state designates a city, another may designate a town. More importantly, the part of an urban area included in a city or other political subdivision varies from place to place and from time to time. In 1980 the city of Boston contained only 20 percent of the 2.8 million people in its metropolitan area, whereas the city of Austin contained 64 percent of the 537,000 people in its metropolitan area. In America's metropolitan areas, the largest city contains, on average, less than half the residents of the metropolitan area. Other countries tend to expand city boundaries as the metropolitan area expands so that the city includes all or nearly all of the metropolitan area. city < metr

To the political scientist studying local government, the legal definitions of local government jurisdictions are of primary importance. They are also important to the economist studying economic aspects of local government. Much of Chapter 13 is about the causes and ef-

fects of arrangements of local government jurisdictions. These jurisdictions, however, were chosen largely for historical and political reasons, and they have little to do with the economist's notion of an urban area. They are therefore of secondary concern in urban economics.

Much more fundamental for urban economists than legal designations is variability in population and employment density from one place to another. A country's average population density is the ratio of its population to its land area. In 1980 the average population density in the United States was about sixty-four people per square mile. It is conceivable that every square mile in the country might have about the same number of residents. The study of urban economics begins with the observation that population density varies enormously from place to place.

In 1980 there were about 300 places in the United States where the population density reached extremely high levels relative to the average level and relative to levels a few miles away. In New York City, to take the most dramatic example, the population density was more than 23,000 people per square mile. Fifty miles away, in Sussex County, New Jersey, it was 160. A less dramatic, but instructive, example is Wichita, Kansas. In 1980 its population density was 2754 people per square mile. The remainder of Sedgwick County, which contains Wichita, had a population density of 56. The adjoining county of Kingman had a density of only 10. New York City and Wichita are clearly urban areas. Such places contain more than half the country's population and constitute the popular image of a metropolitan area, but they do not exhaust the list of urban areas. There are hundreds of small cities and towns, many with population densities exceeding those of surrounding rural areas by factors of 50 or 100. These are also urban areas.

Thus the fundamental and generic definition of urban area, or metropolitan area, is a place with a much higher population density than elsewhere. At least a few urban areas have existed since the beginning of recorded history, and they now are found in every country in the world. For some purposes, this crude definition is adequate. For purposes of data collection and analysis, however, more careful definitions are needed.

The generic definition of an urban area is a relative concept. A place with a high population density relative to the average density in one region or country might not be high relative to the average density in another region or country. To take an extreme example, the average population density in Japan in 1980 was 811 people per square mile. This is higher than the densities of many metropolitan areas in the United States. Thus a minimum density that would define an urban area needs to be higher in Japan than in the United States. Similar situations arise within the United States. The average population density in the Phoenix metropolitan area is just slightly more than one-third that of the entire state of New York. Thus urban areas cannot be defined exclusively by population density.

人口密度的相对性。

To be designated urban, a place must have not only a minimum population density but also a minimum total population. An isolated half-acre lot lived on by a trapper's family in Alaska may have as great a density as many urban areas, but no one would call it a one-family urban area. Many small places have densities that are high relative to surrounding areas. Official statistics necessarily employ an arbitrary population cutoff in defining urban areas, usually between 2500 and 25,000 people.

A final problem arises in counting urban areas. As urban areas grow, they frequently come to encompass places that were formerly separate urban areas. Metropolitan areas encompass what were formerly separate small towns. On a larger scale, metropolitan areas gradually grow together. The New York-northeastern New Jersey area encompasses several metropolitan areas, and the Chicago-Gary area encompasses two metropolitan areas. Such amalgamations create no problems in counting the urban population, but they do cause problems in counting the number of urban areas. When metropolitan areas grow together, the U.S. Census Bureau wisely presents data separately for each metropolitan area so that users can put the data together as they please. The Census Bureau also uses its criteria to determine which metropolitan areas are integrated sufficiently to be considered one large area, and it publishes the combined data. For example, several metropolitan areas across the Hudson River from New York City are closely related to the New York metropolitan area, although they are in some ways distinct.

□ NOTE ON STATISTICAL DATA

Most of the U.S. data available to the urban economist, as well as most data used to compare urban areas nationwide, come from the censuses of population and housing, manufacturers, businesses, and government. Every student of urban economics should get to know these data sources. Despite their many inadequacies, there are no better sources.

Most federal government data pertaining to urban areas now are based on the same set of definitions regarding the area covered. The federal government distinguishes between several urban concepts, however, depending on the way data become available and the purposes for which measures are intended.

An urban place is any concentration—usually in an incorporated town, borough, or city—of at least 2500 people. Since an urban place is usually defined by political boundaries, it does not correspond to the economist's notion of an urban area. Data pertaining to urban places are therefore of relatively little value to the urban economist. In fact, an urban area usually contains many urban places. In the 1980 U.S. census of population, there were 8765 urban places containing 154 million people, about 68 percent of the country's population of 226.5 million at that time.

市辖区? Urban place.