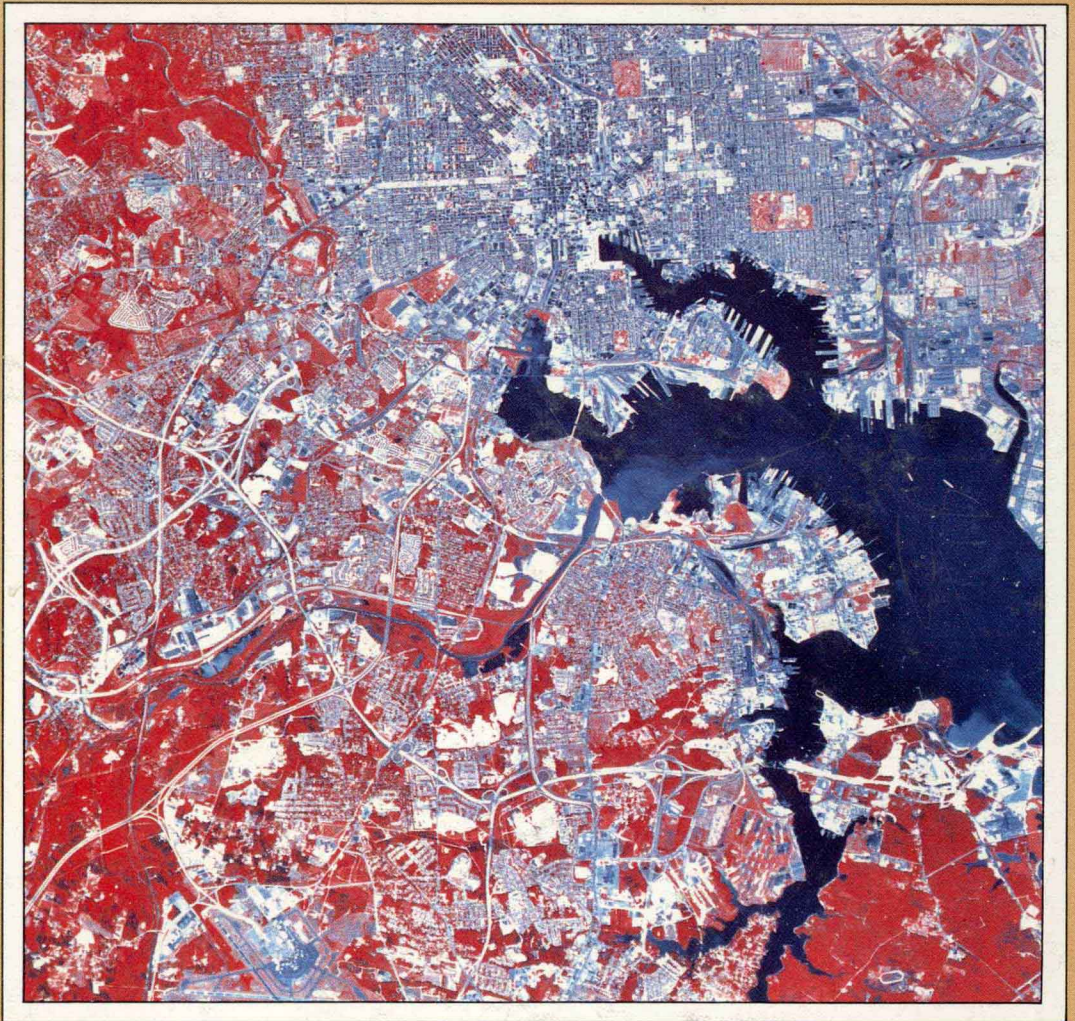


Urban Economics

Third edition



Edwin S. Mills
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URBAN ECONOMICS

Third Edition

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Preface

This book is primarily the offspring of Edwin S. Mills' 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*, but have added a great deal of material both in the Historical Background and Urban Problems sections of the book. 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 with the addition of two completely new chapters. The first is a critical examination of the theoretical model of urban form, including discussions of empirical evidence and of some of the assumptions in the basic model. The second addresses urbanization in developing countries.

As this book is intended for use as a core text in an upper-level course 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. She and Robert Schwab, the other reader of draft chapters, provided invaluable help in all parts of the book.

We extend our thanks to several reviewers who provided many useful suggestions:

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Part One

Basic Ideas and Historical Background



The Nature of Urban Areas

□ What are urban areas and why do they exist? is certainly the most fundamental question an urban specialist can ask. 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. The second part of the question is much harder to answer than the first, and answers that scholars in one academic discipline give are likely to be disputed by scholars in other disciplines. Nevertheless, ideas about the reasons for the existence of urban areas color all thoughts about their organization and functions, as well as about the causes and cures of their problems. It is important to ask to what extent economic concepts can be applied to account for the existence of urban areas. Then, after a review in the rest of Part 1 of historical and statistical trends in urbanization and urban size and structure, it will be possible to proceed to the theoretical analysis presented in Part 2.

□ **WHAT ARE URBAN AREAS?**

There are many urban concepts: town, city, urban area, metropolitan area, and megalopolis 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 important, 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 U.S. metropolitan areas, the largest city contains on the 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.

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 effects of arrangements of local government jurisdictions. However, these jurisdictions 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 64 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 2,754 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 of whose population densities exceed those of surrounding rural areas by factors of 50 or 100. These are also urban areas.

Thus the fundamental and generic definition of an *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 whose population density is high 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 was 811 people per square mile in 1980. 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.

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 2,500 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 as to which metropolitan areas are integrated sufficiently to be thought of as 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

Many of the U.S. data available to the urban economist, as well as most of those that are comparable among urban areas on a nationwide basis, come from the U.S. censuses of population and housing, manufacturers, business, and government. Every student of urban economics should get to know these data sources. Despite their many inadequacies, there are no better sources in the world.

Most U.S. federal government data pertaining to urban areas now are based on the same set of definitions regarding the area covered. However, the federal government distinguishes among several urban concepts, depending on the way data became 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 2,500 people. Since an urban place is usually defined by political boundaries, however, 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 8,765 urban places containing 154 million people, about 68 percent of the country's population of 226.5 million at that time.

The concept that corresponds to the economist's notion of an urban area is called an *urbanized area* by the federal government. An **urbanized area** consists of one central city (or sometimes two) of at least 50,000 residents, as well as the surrounding closely settled area. An urbanized area thus is the physical city, defined without regard for political boundaries. In 1980 the U.S. census identified 366 urbanized areas in the United States. They contained 139 million people, or 61 percent of the country's population.

A geographically more inclusive concept is the **standard metropolitan statistical area** (SMSA). An SMSA includes one central city (or possibly two) of at least 50,000 residents, as well as one or more *contiguous counties that are metropolitan* in character, as determined by the percentage of the labor force that is nonagricultural and by the amount of commuting between the county or counties and the city. Thus SMSAs do not include parts of counties. Although the list of SMSAs is virtually the same as the list of urbanized areas, the SMSAs include nonurbanized parts of contiguous metropolitan counties. Not surprisingly, SMSAs have somewhat greater populations than urbanized areas, along with much more land. In 1980, around 169 million people, or 75 percent of the country's population, lived in 323 SMSAs—21.6 percent more people than in urbanized areas. However, the SMSAs contained about 11 times as much land. Some SMSA counties, particularly in the West, contain large amounts of land, although their nonurbanized parts contain few people. A dramatic example is the San Bernardino SMSA in California, which extends through the desert to the eastern boundary of the state.

The urbanized area corresponds much more closely to the generic concept of an urban or metropolitan area than does the SMSA. Why then should an economist be interested in SMSA data? The answer is easy: more data are available for SMSAs than for urbanized areas, because some data become available by county and therefore can be put together for SMSAs, but not for urbanized areas.

The largest urban concept recognized by the federal government is the **standard consolidated statistical area** (SCSA), which consists of several contiguous SMSAs. By 1980 the government had recognized 17 SCSAs. The largest were the New York–New Jersey–Connecticut and the Los Angeles–Long Beach–Anaheim SCSAs, which contained 16.1 million and 11.5 million people, respectively, in 1980. The smallest SCSAs were

the Providence–Fall River and Dayton–Springfield SCSAs, each containing 1 million people. The largest SCSAs are larger than the largest SMSAs, but many SMSAs are larger than the smallest SCSAs.

The term *megalopolis* sometimes is applied to the part of the Eastern Seaboard from Boston to Washington or Richmond. It also is applied to the Pacific coast of Japan from Tokyo to Osaka and to the stretch of England from London to Manchester. The term is popular and somewhat descriptive, but it is unofficial. It is also somewhat unreal. The three megalopolises do indeed contain many people. The Japanese megalopolis is the largest of the three, with more than 40 million residents. Yet the term is unreal in that the metropolitan areas within a megalopolis are not united by the usual criteria of people's commuting from one to another. The term is also unreal in that each of the three megalopolises, especially the U.S. one, contains large amounts of rural land.

Overall density data indicate that the urbanized area is a significant urban concept. In 1980 population density for the United States was 64 people per square mile. In urbanized areas it was 2,675. By contrast, in SMSAs it was 299.

In this book the term *urban area* refers generically to places of high population density. The term *city* refers to the legal city. The terms *urban place*, *urbanized area*, *SMSA*, and *SCSA* refer to the concepts used in federal government data sources.

□ WHY URBAN AREAS?

If an urban area is defined by dramatically high population densities relative to those found elsewhere, the next question is, Why do we have urban areas? There is no single answer. Historians, geographers, sociologists, political scientists, and economists tend to emphasize different sets of causes in explaining why urban areas exist. We can begin with the proposition that urban areas exist because people have found it advantageous to carry on various activities in a spatially concentrated fashion.

Most of the differences of opinion about the reasons for urban areas' existence result from the fact that these activities may be of very different kinds: military activities, religious practice or religion administration, government activities, and private production and the distribution of goods and services. At various times in history, many urban areas had defense as their major function. It was simply more economical and effective to defend a large group of people if they were spatially concentrated. (The word *was* is used intentionally, because weapons technology in the nuclear age may make it easier to defend a dispersed population than a concentrated one.) In such urban areas, people commuted out of the city to carry on the predominant economic activity, farming. Some urban areas began as cathedral towns or centers for religion administration. Finally, some