

The background of the cover is a high-angle, sepia-toned photograph of a city, likely New York City, showing a dense grid of buildings and streets. Overlaid on this image is a network of thin, dark lines that intersect to form a grid. Numerous black silhouettes of people in various walking poses are scattered across these lines, as if they are walking on a transparent surface high above the city. The overall composition suggests themes of urban movement, infrastructure, and the human element in city planning.

Economics of Urban Problems
An Introduction / 3rd Edition
Schreiber / Clemmer

ECONOMICS OF URBAN PROBLEMS AN INTRODUCTION

Third Edition

Arthur F. Schreiber

Georgia State University, Atlanta

Richard B. Clemmer

Washington, D.C.

Houghton Mifflin Company Boston
Dallas Geneva, Illinois Hopewell, New Jersey Palo Alto London

Copyright © 1982, 1976, 1971 by Houghton Mifflin Company. All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, except as may be expressly permitted by the 1976 Copyright Act or in writing by the publisher. Requests for permission should be addressed in writing to Houghton Mifflin Company, One Beacon Street, Boston, Massachusetts 02108.

Printed in the U.S.A.

Library of Congress Catalog Card Number: 81-82567
ISBN: 0-395-31742-8

Preface

This is a book about the economics of important problems facing urban areas, whether or not these are purely urban problems or are problems that fit into a preconceived definition of urban economics. While this book touches on all the subject areas in the field of urban economics, the emphasis is on the economics of urban problems rather than on the location theory and urban growth content of this field. We believe that this emphasis provides the student who is not specializing in urban economics with the material most important and most relevant to gaining an economic perspective on the problems besetting urban areas.

This text is intended for use in an introductory course in urban problems at the undergraduate level and in graduate programs in urban affairs and public administration. While we have endeavored to make it accessible to the student with no previous courses in economics, the student with such courses, particularly the “micro” part of the principles of economics sequence, will find the material easier to understand. The concepts developed early in the book are fundamental, and are applied throughout the remainder of the book. Our goal has been to minimize discussion of theories that do not find application later in the book. Also, we have tried to achieve a consistent level of analytical sophistication throughout the book. Too many textbooks intersperse chapters that are needlessly difficult with chapters that are needlessly unanalytical. Throughout, we have attempted to relate real world considerations to proposed policies by pointing out the difficulties inherent in their implementation.

The first chapter discusses the subject matter of urban economics and the emphasis of this book, as well as provides an overview of the contents of the text. Chapters 2, 3, and 4 serve as the background for the discussion of specific urban problems found in the remainder of the text. Of particular importance is the distinction between the concepts of equity and efficiency, both for determining the causes of urban problems and for evaluating potential solutions to these problems. The reader is encouraged to devote considerable time to understanding the theoretical framework of Chapters 3 and 4, since this will pay large dividends in later chapters. Chapters 5 through 15 deal with specific urban problems—poverty, housing, transportation, pollution, crime, urban public finance as well as their interrelationships. Suggested readings are included at the end of chapters.

The third edition represents a substantial revision of the second edition. About forty percent of the text has been rewritten. The sec-

tion on benefits or urban growth has been moved from Chapter 16 to Chapter 2. The concept of cost-effectiveness analysis is introduced and compared to cost-benefit analysis at the end of Chapter 4; it is then applied in several subsequent chapters. Chapter 6 contains a more comprehensive treatment of minimum wage laws. A section on rent controls has been added to Chapter 7. The analysis of housing programs in Chapter 8 has been significantly revised in light of recent changes in housing legislation and program emphasis. The discussion of alternative forms of rationing transportation facilities in Chapter 9 has been expanded and strengthened. Chapter 10 contains a more explicit and detailed discussion of bus rapid transit (BRT) systems as alternatives to rail transit systems. The impact of higher energy prices is addressed in greater detail in Chapters 9 and 10, as well as at relevant points in other chapters. Chapters 11 and 12 have been almost completely rewritten to achieve greater clarity and integration with the basic concepts used throughout the text, as well as to analyze recent legislative and regulatory changes in the environmental area. Results of recent research on the economics of crime are included in Chapter 13. Chapter 14 includes a new section on the growth and scope of local government. Chapter 15 contains a more comprehensive discussion of property taxation and related issues, such as Proposition 13. Chapter 16 is a new chapter that examines central city and SMSA population trends, the problems resulting from these urbanization trends, and the basic public policy options for dealing with these problems.

We would like to thank the following, who provided helpful comments on the plan for this revision: Joseph DeSalvo (University of Wisconsin), Arthur Kartman (San Diego State University), Abraham Kidane (California State College), Frank Maurer (Pace University), Richard Palfin (Northern State College), Bart Smith (University of Houston), and Charles Zeck (Villanova University). Our appreciation is extended to users of the previous edition and to the many students we have taught and learned from over the years. They have provided valuable feedback regarding the strengths and weaknesses of the second edition; the improvements in this edition are largely attributable to them. Any errors remain the responsibility of the authors.

A. F. S.
R. B. C.

ECONOMICS OF URBAN PROBLEMS

Contents

Preface xiii

1 / Introduction	1
2 / Land Use: The Location of Jobs and People in Urban Areas	6
Definition of an Urban Area	7
The Benefits of Urban Economic Growth	10
<i>Demand Economies / Supply Economies / Interrelation of Demand and Supply Economies</i>	
Changing Technology and the Decentralization of Jobs and People	17
<i>The Rise and Decline of the Core-Dominated City: The Impact of Changing Transportation Technology / The Future of the Central Business District / Decentralization Trends in Urban Areas</i>	
Current Land-Use Patterns in Urban Areas	27
<i>An Example of Present Land-Use Patterns in Urban Areas / Qualifications of the Land-Use Example</i>	
Urban Spatial Form and Urban Problems	33
3 / Economic Efficiency	37
The Efficient Allocation of Resources	38
<i>The Efficiency Criterion / Costs and Benefits over Time / Incorrect Resource Allocation Criteria</i>	
The Private Market System and Efficient Resource Allocation	53
<i>Market Prices and Maximization of Net Private Benefits / Marginal Private Benefits and Costs: Relationship to Market Demand and Supply</i>	

4 / Analysis of Urban Problems: Efficiency and Equity	64
Private Market Failure: Inefficient Allocation of Resources	65
The Problem of Externalities / The Problem of Monopoly Power / The Problem of Imperfect Information	
Income Distribution and the Efficient Allocation of Resources	76
An Example / Cash Versus In-Kind Income Redistribution	
Equity in Government Programs	82
Horizontal and Vertical Equity / The Benefit Principle / The Ability-to-Pay Principle	
Equity Versus Efficiency: A Concluding Note	88
Benefit-Cost Analysis	88
The Basic Procedure / Definition and Calculation of Present Value / An Example / Problems in Benefit-Cost Analysis / Cost-Effectiveness Analysis	
5 / Poverty: The Problem and the Long-Run Approach	98
Money Income: A Measure of Poverty	99
Money Income as a Measure of Standard of Living / Determination of the Poverty Cutoff / Official Poverty Statistics	
Scope of U.S. Poverty	104
Causes of Poverty	107
Inadequate Human Capital / Discrimination / Other Causes of Poverty	
Long-Run Approaches to Reduce Poverty	110
Increasing the Stock of Human Capital / Family Planning and Child Care / Combating Discrimination	
6 / Poverty: The Short-Run Approach	121
Cash Versus In-Kind Transfers	122
Minimum Wage Laws—A Poverty Program?	124

The Negative Income Tax: Basic Features	125
Incentives to Work and the Negative Income Tax	130
Current Short-Run Poverty Programs	132
Welfare Programs / Social Security / In-Kind Redistribution Programs	
Maintaining a Tight Labor Market	141
 7 / Urban Housing Problems	 144
Measuring Housing Consumption	145
Measuring Housing Adequacy / A Conceptual Measure of <i>Housing Consumption</i>	
The Housing Problem: Equity Versus Efficiency	151
The Operation of the Private Housing Market / Inadequate Housing Consumption: Equity Versus Efficiency	
Barriers to Efficient Allocation of Resources in the Housing Market and Some Potential Solutions	155
Externalities and Housing Maintenance and Improvement / Housing Finance Costs / Rent Control / Zoning / Building Codes and Housing Construction Practices / Housing Codes / Racial Discrimination / Eliminating Market Failure and Reducing Housing Costs: Concluding Note	
 8 / Analysis of Housing Programs	 177
The U.S. Housing Policy	178
The Turnover Process: Construction Standards and Subsidies / Income Tax Subsidies to Homeowners / The Turnover Process and its Relationship to Housing Segregation and Poverty in Urban Areas	
Neighborhood Redevelopment Programs	187
Urban Renewal / Community Development Block Grants	
Explicit Housing Subsidy Programs	191
Public Housing / Section 8 Housing / Section 235 Housing / An Alternative to Existing Low-Income Housing Subsidies: Housing Vouchers / A Concluding Note	

9 / Urban Transportation: The Short Run	201
An Overview of Transportation in Urban Areas	202
Public Transit / Auto Transportation	
The Short-Run Problem: Efficient Use of Existing Transportation Facilities	205
The Congestion Problem / The Efficient Level of Congestion	
Achieving Short-Run Efficiency: Rationing Use of Existing Transportation Facilities	213
Rationing by Prices / Other Forms of Rationing / Efficient Pricing of Other Modes of Transportation	
 10 / Urban Transportation: The Long-Run	 229
Estimating the Social Benefits of Transportation Investment	230
The Private and Social Costs of Alternative Transportation Modes	233
Rail Transit / Highways for the Use of Autos / Bus Rapid Transit / Summary of Comparative Costs	
Transportation Subsidies	247
Efficiency Aspects / Equity: Distribution of Costs and Benefits from Transportation Investments	
The Low-Income Transportation Problem	253
A Proposal for Public Transit in Urban Areas	255
 11 / The Urban Pollution Problem	 258
Inefficient Pollution Levels: A Case of Market Failure	259
Definition of Pollution / The Efficient Level of Pollution	
Effluent Discharges: Types, Sources, and Trends	262
Air Pollutant Emissions / Water Pollutant Emissions / Other Pollutants	
The Benefits of Reducing Pollution	266
Relationship Between Reduced Effluent Discharges and Improved Ambient Environmental Conditions /	

Relationship Between Changes in Ambient Effluent Concentrations and Resulting Physical Effects / Valuing the Physical Effects: Benefits Stated in Dollars	
The Costs of Reducing Pollution	270
Rising Marginal Social Costs / Basic Alternatives for Reducing Ambient Effluent Concentration Levels	
The Efficient Level of Environmental Quality	273
Equity Aspects of Improved Environmental Quality	275
Distribution of Benefits / Distribution of Costs	
 12 / Urban Pollution:	
Evaluation of Alternative Policies	278
 Achieving Improved Environmental Quality by Cost-Effective Means	279
Establishing the Ambient Standards / The Least-Cost Form of Rationing: A Numerical Example / The Regulation-Enforcement Approach to Rationing / The Economic Incentives Approach to Rationing	
Automobile Air Pollution Policy	288
Efficiency of Ambient Standards / Cost-Effectiveness of Achieving Auto Emissions Standards / Alternative Policies: Economic-Incentives Approaches	
Air Pollution Policy	293
Efficiency of Ambient Standards / Cost-Effectiveness of Achieving Ambient Air Quality Standards / Alternative Policies: Economic-Incentives Approaches	
Water Pollution Policy	297
Efficiency of Ambient Standards / Cost-Effectiveness of Achieving Ambient Water Quality Standards / Alternative Policies: Economic-Incentives Approaches	
The Benefits and Costs of Government Regulation	300
 13 / Crime	302
 Crime as an Economic Problem	303
Amount and Types of Crime / The Efficient Amount of Crime: Social Benefits and Costs	

Crime as an Urban Problem	309
Costs and Benefits of Crime from the Criminal's Viewpoint	312
Economic Approaches to Crime Prevention	315
Private Crime Prevention / Public Crime Prevention: The Criminal Justice System	
"Victimless Crimes" and Organized Crime	326
Heroin Addiction and Drug-Related Crimes	329
Equity Aspects of Crime and Crime Prevention	332
The Probability of Being a Victim / Types of Crime and Punishment by Income Group	
 14 / The Urban Public Sector: Part One	 337
Local Government: Growth and Scope	338
The Role of the Urban Public Sector in Achieving Equity and Efficiency Objectives	339
Income Redistribution: A Role that Should Not be Performed by Urban Government / Resource Allocation: A Role for the Urban Public Sector	
Criteria for Efficient Provision of Local Public Outputs	346
<i>Registering and Satisfying Effective Demands of Consumer-Voters / Criteria for Efficient Production of Local Public Outputs</i>	
 15 / The Urban Public Sector: Part Two	 367
Provision of Private-Benefit Outputs: The Role of User Charges	368
An Example: The City Zoo / Marginal Cost Pricing: A Dilemma	
Provision of Mixed-Benefit Outputs: Elementary and Secondary Education	371
Mixed-Benefit Outputs and Benefit Financing / Evaluation of Present Methods of Providing Education / Possible Methods for Improving the Provision of Education / Provision of Local Public Outputs: Conclusion	

Local Tax Revenue Sources	381
The Property Tax / Alternatives to the Property Tax	
The “Plight of the Central City”: Equity Versus Efficiency	395
 16 / Urbanization: Trends, Problems, and Policies	 397
Central City and SMSA Population Trends	398
The Basic Components of Population Change / Population Changes in SMSAs Due to Net Migration	
Problems Resulting from Urbanization Trends	402
Public Policy Options	403
The Role of Federal Grants / Moving People to Jobs Versus Moving Jobs to People	
 Index	 409

1

Introduction

One of the most striking trends in modern economies during the past century has been the increasing physical concentration of people and economic activities, the process of urbanization. Some 70 percent of the population now lives on about 2 percent of the total land area—the urban areas. In contrast, a century ago the United States was predominantly rural. Sometime between 1910 and 1920, urban population passed rural in total numbers, and this trend continues.

Although the population trend has been toward centralization (concentration of population in urban areas), most of the population growth in major urban areas in recent years has been in the suburbs—a trend toward decentralization within these urban areas. Both of these trends in the urbanization process have proceeded so rapidly that we have yet to make many major adjustments required by the process. Accordingly, many of the most pressing economic and social issues of the day, which affect the majority of the population, are related to living in urban areas.

There are advantages to be gained (increases in the standard of living) from concentrating economic activities in close proximity to each other, and the costs of moving goods and people within urban areas are a major determinant of the land-use patterns in these areas. (Chapter 2 discusses these determinants in detail.) The present degree of urbanization and land-use patterns are primarily the aggregate result of decisions made by producers and consumers in the private market. At the same time, this concentration of jobs and people in urban areas and their spatial arrangement within these areas have created many problems (such as traffic congestion and pollution), which exist primarily because markets are not very satisfactory in resolving them.

This book analyzes the economic problems that stem from urbanization and evaluates potential solutions to these problems. An understanding of the historical trends in the location of jobs and people and the underlying reasons for these trends (Chapter 2) is necessary for a discussion of urban problems, because many of these problems are caused by the spatial separation of jobs and people within urban areas. For example, it is difficult to discuss traffic congestion and potential solutions to that problem without an understanding of the spatial distribution of jobs and people within urban areas—the cause of the problem. No matter how large the urban area, if most people lived very close to their jobs, then urban transportation problems would be significantly reduced. However, for most people in urban areas the place of residence and place of employment are a considerable distance apart. Many people consider the only urban transportation problem worth discussing to be traffic congestion associated with people commuting to jobs located in the central business district (CBD) of the urban area, and they presume that this will

get much worse over time as the number of jobs in the CBD increases. But there may be forces at work that are more likely to decrease than to increase the number of jobs in the CBD during the rest of this century. The magnitude of the problem and potential solutions to it (should we spend billions on rail systems?) critically depend on these locational forces.

The market is the primary allocator of resources in our economy; yet it may be incapable of resolving many of the problems resulting from urbanization. Two economic criteria underlie the analysis of all urban problems. The first criterion is *efficiency*, or optimal use of resources. Even in an affluent society, resources are always scarce relative to the wants of the members of that society. Given this scarcity, resources must be used in the most productive way if society wants to maximize the satisfaction it receives from their use. This is the basic efficiency concept, defined in a benefit-cost framework in Chapter 3 with a discussion of conditions under which the market can allocate resources so as to achieve efficiency. In many cases, the conditions necessary for the market to achieve efficiency do not exist (Chapter 4), and this situation is the source of many urban problems.

Society may consider some economic outcomes undesirable or "unfair." If these outcomes are not attributable to an inefficient use of society's scarce resources, then they are attributable to the distribution of income (purchasing power) among members of society. The term *equity* is used here to refer to the fairness of the distribution of income. Most urban problems arise because of either inefficiency or inequity. The treatment of urban problems in this book emphasizes the distinction between these two causes of urban problems, because it is critical to determine the cause of a problem in order to arrive at a rational solution. Many proposals for solving urban problems are couched in terms of equity when the real problem is a matter of resource misallocation (inefficiency).

After completing the development of a theoretical benefit-cost framework, Chapter 4 discusses the use of benefit-cost analysis as a tool in real-world analysis of resource allocation decisions. The authors' intent was to make the material in Chapters 3 and 4 comprehensible to students and general readers without a background in economics, but the reader with such a background will find his or her understanding broadened. The reader is encouraged to devote considerable time to understanding this economic framework, since the remaining chapters apply its concepts to various urban problems.

Poverty is not found only in urban areas; in fact, the proportion of the rural population in poverty is greater than the proportion in urban areas. However, poverty in urban areas seems to be interwoven with other economic problems that are primarily urban in nature—problems of housing, transportation, crime, and local govern-

ment finance. A reduction in poverty in urban areas would have a large impact on such problems; therefore, the magnitude, causes, and potential solutions to poverty (Chapters 5 and 6) are discussed before other urban problems.

Defining "inadequate housing" is similar to defining poverty. Inadequate housing may be a symptom of poverty (low income) or may be a result of inefficiencies in the housing market. Confusion over these two causes has led to many ill-conceived housing policies. Problems inherent in housing markets that lead to inefficiency must be analyzed in order to evaluate present and potential housing programs as solutions to the housing problem (Chapters 7 and 8).

Urban transportation and pollution problems and policies are grouped together in Chapters 9 through 12, because they have conceptual similarities that will become apparent to the reader as he or she covers this section of the book. It might be worth noting now that the similarities have nothing to do with the fact that transportation is a source of pollution (although this and other sources of pollution will be discussed). Some forms of pollution are primarily the result of urbanization; others may be unrelated to urbanization. Peak-hour congestion is the urban transportation problem of concern to most people; however, the traditional solution of building more transportation facilities (expressways, rapid rail systems) is usually not the efficient solution to the congestion problem.

Crime has always existed in society, whether urban or rural, but crime rates in urban areas are much higher than in rural areas and crime is a major concern to many urban residents. Economic reasons for higher urban crime rates and the economic motivation to engage in criminal activity differ significantly from the more traditional legal and moral approaches to crime. Reducing crime requires the use of society's scarce resources; therefore, the goal is to achieve the efficient level of crime, not to eliminate it (Chapter 13).

Because of the concentration of economic activity in urban areas, the provision of public services by local governments is more complex and difficult in urban areas than it is in a nonurban setting. For example, animal control (rounding up stray and rabid dogs, etc.) is a service that some local governments in rural areas might not provide at all because the low population density and the small total population do not warrant it. However, in large urban areas animal control is essential because a large number of people are affected by failure to provide such a service. Chapter 14 develops economic criteria for the efficient use of resources in providing public services and analyzes alternative means of determining demands for, financing of, and production of public services. These criteria are applied in Chapter 15 to public services such as education and to the property tax and alternative sources of local government revenues.