



RESOURCES FOR THE FUTURE LIBRARY COLLECTION

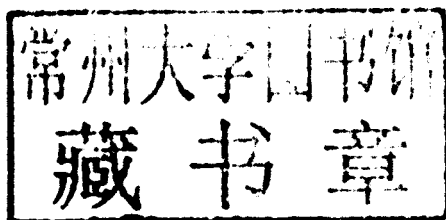
URBAN AND REGIONAL ECONOMICS

# **Metropolis and Region**

**Otis Dudley Duncan, William Richard  
Scott, Stanley Lieberman, Beverly Davis  
Duncan, and Hal H. Winsborough**

# Metropolis and Region

**Otis Dudley Duncan, William Richard Scott, Stanley  
Lieberson, Beverly Davis Duncan, and Hal H.  
Winsborough**



Washington, DC • London

First published in 1960 by The Johns Hopkins University Press for Resources for the Future

This edition first published in 2011 by RFF Press, an imprint of Earthscan

First edition © The Johns Hopkins University Press 1960

This edition © Earthscan 1960, 2011

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, except as expressly permitted by law, without the prior, written permission of the publisher.

Earthscan LLC, 1616 P Street, NW, Washington, DC 20036, USA

Earthscan Ltd, Dunstan House, 14a St Cross Street, London EC1N 8XA, UK

Earthscan publishes in association with the International Institute for Environment and Development

For more information on RFF Press and Earthscan publications, see [www.rffpress.org](http://www.rffpress.org) and [www.earthscan.co.uk](http://www.earthscan.co.uk) or write to [earthinfo@earthscan.co.uk](mailto:earthinfo@earthscan.co.uk)

ISBN: 978-1-61726-075-9 (Volume 2)

ISBN: 978-1-61726-008-7 (Urban and Regional Economics set)

ISBN: 978-1-61726-000-1 (Resources for the Future Library Collection)

A catalogue record for this book is available from the British Library

### **Publisher's note**

The publisher has made every effort to ensure the quality of this reprint, but points out that some imperfections in the original copies may be apparent.

At Earthscan we strive to minimize our environmental impacts and carbon footprint through reducing waste, recycling and offsetting our CO<sub>2</sub> emissions, including those created through publication of this book. For more details of our environmental policy, see [www.earthscan.co.uk](http://www.earthscan.co.uk).

**RESOURCES FOR THE FUTURE LIBRARY COLLECTION**  
**URBAN AND REGIONAL ECONOMICS**

Volume 2

**Metropolis and Region**

**Full list of titles in the set**  
**URBAN AND REGIONAL ECONOMICS**

- Volume 1:** Suburban Land Conversion in the United States
- Volume 2:** Metropolis and Region
- Volume 3:** Financing the New Federalism
- Volume 4:** Issues in Urban Economics
- Volume 5:** Cities and Space
- Volume 6:** Public Economics and the Quality of Life

First published in 1960 by The Johns Hopkins University Press for Resources for the Future

This edition first published in 2011 by RFF Press, an imprint of Earthscan

First edition © The Johns Hopkins University Press 1960

This edition © Earthscan 1960, 2011

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, except as expressly permitted by law, without the prior, written permission of the publisher.

Earthscan LLC, 1616 P Street, NW, Washington, DC 20036, USA

Earthscan Ltd, Dunstan House, 14a St Cross Street, London EC1N 8XA, UK

Earthscan publishes in association with the International Institute for Environment and Development

For more information on RFF Press and Earthscan publications, see [www.rffpress.org](http://www.rffpress.org) and [www.earthscan.co.uk](http://www.earthscan.co.uk) or write to [earthinfo@earthscan.co.uk](mailto:earthinfo@earthscan.co.uk)

ISBN: 978-1-61726-075-9 (Volume 2)

ISBN: 978-1-61726-008-7 (Urban and Regional Economics set)

ISBN: 978-1-61726-000-1 (Resources for the Future Library Collection)

A catalogue record for this book is available from the British Library

### **Publisher's note**

The publisher has made every effort to ensure the quality of this reprint, but points out that some imperfections in the original copies may be apparent.

At Earthscan we strive to minimize our environmental impacts and carbon footprint through reducing waste, recycling and offsetting our CO<sub>2</sub> emissions, including those created through publication of this book. For more details of our environmental policy, see [www.earthscan.co.uk](http://www.earthscan.co.uk).

## ***Metropolis and Region***

***METROPOLIS***

***AND***

***REGION***

---

OTIS DUDLEY DUNCAN

W. RICHARD SCOTT

STANLEY LIEBERSON

BEVERLY DUNCAN

HAL H. WINSBOROUGH

Published for *Resources for the Future, Inc.*

By *The Johns Hopkins Press, Baltimore*



© 1960 by The Johns Hopkins Press, Baltimore 18, Md.

Second printing, 1961

Distributed in Great Britain by Oxford University Press, London

Printed in the United States of America

Library of Congress Catalog Card Number 60-10656

## **RESOURCES FOR THE FUTURE, INC., WASHINGTON, D. C.**

**BOARD OF DIRECTORS**, Horace M. Albright, Chairman, E. J. Condon, Joseph L. Fisher, Reuben G. Gustavson, Otto H. Liebers, Leslie A. Miller, William S. Paley, Laurance S. Rockefeller, Stanley H. Ruttenberg, John W. Vanderwilt, P. F. Watzek

**PRESIDENT AND EXECUTIVE DIRECTOR**, Joseph L. Fisher

**ASSOCIATE DIRECTOR**, Irving K. Fox

**SECRETARY-TREASURER**, John E. Herbert

Resources for the Future is a nonprofit corporation for research and education in the development, conservation, and use of natural resources. It was established in 1952 with the co-operation of The Ford Foundation and its activities since then have been financed by grants from that Foundation. Part of the work of Resources for the Future is carried out by its resident staff, part supported by grants to universities and other nonprofit organizations. Unless otherwise stated, interpretations and conclusions in RFF publications are those of the authors; the organization takes responsibility for the selection of significant subjects for study, the competence of the researchers, and their freedom of inquiry.

This book is one of RFF's regional studies, which are directed by Harvey S. Perloff. The principal author, Otis Dudley Duncan, is associate director of the Population Research and Training Center, University of Chicago; his associates also are connected with the Center. The study was made under a Resources for the Future grant to the University of Chicago.

**STAFF EDITORS**, Henry Jarrett and Vera W. Dodds

## **PREFACE**

---

What the metropolis of forty years hence will be like no man can truly foretell. But there is a surfeit of somber prophecies and apocalyptic visions of its future. Prime targets for aerial bombardment, the great cities may be splattered into the hereafter within two-score years—or less. Escaping this fate, they may yet be splattered over the countryside by the rush of their inhabitants to the suburbs. From some descriptions of this movement one might suppose it is as irresistible as the migration of lemmings. Already we have adumbrations of “megapolitan” belts, amorphous and sprawling regions of quasi-urban settlement stretching along coast lines or major transportation routes. Current concepts of the community stand to be challenged. What will remain of “local” government and institutions if locality ceases to have any historically recognizable form? The situations described in this book pertain to the mid-century United States of some 150 million people. What serviceable image of “metropolis and region” can we fashion for a country of 300 million? The prospect for such a population size by the end of the twentieth century is implicit in current growth rates, as is the channeling of much of the growth into areas now called “metropolitan” or in process of transfer to that class.

Facing a future that seems certain to produce novelty and to bring forth drastic transformations, we may be tempted to question the value of meticulous analysis of present structures and arrangements—or, rather, those of the recent past, for the complex information required to describe metropolitan communities only becomes available some years after the dates to which it refers. Indeed, if our curiosity is only

about the future, the justification for studying the recent past must be that it contains some seeds of developments to come. To this continuity argument we may perhaps add the thought that to understand the future will require tools for understanding—and these tools can be tested now only against what now exists.

If the prophet becomes impatient when we limit inquiry to the present, the historian may complain that understanding is partial, at best, if analysis of the here and now is not guided by knowledge of antecedents, both recent and remote. We must agree that the investigator lacking a full grasp of trends and directions of change readily falls into the error of mistaking a transient conjecture of circumstances for a basic structural pattern. But before there can be historical explanations of present realities, there must be adequate descriptions of that which is to be explained.

The studies reported in this volume, therefore, provide some “cross-sectional” views of the metropolis in the United States at about the middle of the twentieth century. Numerous earlier monographs on metropolitanism have dealt with the circumstances attending the rise of the metropolitan community and have analyzed the patterns and causes of metropolitan growth. *Metropolis and Region*, by contrast, tries to depict a system of metropolitan communities as it was functioning at a particular point in time. If the former approach can be likened to a cinematic representation of the evolution of the metropolis and the growth of metropolises, our contribution is a “still photograph” of the present metropolises of the nation. Actually, however, the picture is blurred because the subject moved during the period of exposure: our data do not all refer to the same point in time but rather to various dates more or less proximate to the middle of the century. Moreover, each of the several “exposures” was made with a different “filter”—to preserve the analogy.

For further indications of content and approach, the reader is referred to the summary chapter, which is placed at the beginning of the volume. We only wish to add some notes about how the book came to be.

For the past several years the Population Research and Training Center at the University of Chicago has been pursuing a broadly delineated and flexible program of comparative research on American communities. This program is conceived as a contribution to the field of human ecology—the discipline whose task, in Hawley’s phrase, includes “the study of the form and the development of the community in human population.” The progress of the research program, however, has demonstrated (if proof were needed) the advisability of taking

advantage of contributions from a variety of disciplines. An earlier monograph, *Social Characteristics of Urban and Rural Communities, 1950* (Duncan and Reiss, 1956), emphasized demographic analysis. Our more recent studies have entailed closer contact with the work of economists, geographers, and others who are sometimes called "regional scientists," and we have come to share their preoccupations more fully than before.

Some of the work reported in this volume (specifically, in chapter 3) was begun as early as 1955-56 with the aid of a grant from the Social Science Research Committee of the University of Chicago. In 1956-57 a project dealing with regional variation in levels of living and spatial patterns of economic activity was undertaken with the financial support of Resources for the Future, Inc., the Regional Studies Unit of which was carrying out parallel research. Results obtained in the course of our project are partially reported in Part II. The study completed by the RFF group (Harvey S. Perloff, Edgar S. Dunn, Jr., Eric E. Lampard, and Richard F. Muth, *Regions, Resources, and Economic Growth*) is complementary in many ways to the present monograph and may be regarded as virtually a companion volume. (While our study is cross-sectional, the RFF book treats of growth and secular trends. Where we look at the economy primarily from the viewpoint of its metropolitan nodes, the companion volume focuses on the region, broadly conceived, and provides much regional description that is omitted here.) In 1957-58, again at the instance of and with the financial support of Resources for the Future, Inc., we carried out the project which produced the materials included in Parts III and IV. In 1958 our program of comparative urban and metropolitan research was placed on a more secure long-run basis with the receipt of a grant from The Ford Foundation providing financial resources for the ensuing five years. One major category of studies envisioned in this extension of our work is addressed to the problem of "strengthening the urban economy and gearing it to the economic development of the nation." The initiation of work under The Ford Foundation grant afforded the opportunity to carry out the research reported in Part I and thus to develop a conceptual framework and to execute some statistical analyses which, together with the investigations already completed, would constitute an integrated and reasonably comprehensive treatment of metropolitan structure in the United States.

Our first indebtedness, therefore, is to the organizations which, while leaving us wholly free to work in the way we judged to be most rewarding, provided the indispensable resources for our work; in particular, we are most grateful to Resources for the Future, Inc., for

sponsoring the publication of this volume. A less tangible but no less important contribution was made by our mentor at RFF—Harvey Perloff. The ideas which ultimately crystallized in this study were in large measure initially his. Without seeking in any way to shift responsibility for the research to other shoulders, we must gratefully acknowledge the suggestions and criticisms received from Donald J. Bogue, Donald L. Foley, Leo A. Goodman, Philip M. Hauser, Amos H. Hawley, Richard F. Muth, Albert J. Reiss, Jr., Leo F. Schnore, and Lowdon Wingo, Jr. We also want to acknowledge the indispensable help of our cartographer and draftsman, Karel J. Kansky, our statistical assistants, Nathaniel Hare, Philip M. Marcus, and Erwin Stein, and our competent and faithful typist, Mary Thomas.

In this final paragraph, the director of the research leading to the completion of *Metropolis and Region* exercises the prerogative of speaking for himself alone in order to speak more enthusiastically about the work of his collaborators than would be modest in a collective statement. For at least one participant observer, this research has shown that under favorable circumstances teamwork can be personally gratifying and also—and more important—scientifically productive. The “favorable circumstances” seemingly have to do more with intellectual congeniality and temperamental compatibility than with whether the collaborators are co-equals in academic status. In any event, the parts and the whole of this volume are probably better than, and certainly different from what they would have been, had any one of us borne the entire responsibility. It is symbolic of our success in putting heads together that we can no longer say precisely whose suggestions are embodied in many paragraphs. The general distribution of effort, however, can be indicated. The procedures outlined in Part III were in good part developed by Scott, who then painstakingly applied them in the preparation of four-fifths of the individual city reports in Part IV. The remainder of these reports were prepared by Lieberman, to whose initiative and persistence much of chapters 5 and 6 is also attributable. Part II is largely a contribution by Beverly Duncan, being based on her unpublished dissertation (1957). Chapter 3 draws heavily on the unpublished thesis by Winsborough (1959). Throughout the volume will be found evidence of idiosyncracies which these four companions in a research adventure were good enough to tolerate.

O.D.D.  
W.R.S.  
S.L.  
B.D.  
H.H.W.

## ***Metropolis and Region***

## CONTENTS

---

Preface . . . . .	xv
-------------------	----

Chapter 1. Metropolis and Region: A Mid-Century Bench Mark . . . . .	1
---	---

### *Part I. The Metropolis and Its Functions*

Chapter 2. Urban Location and Function . . . . .	23
Classical principles of urban location . . . . .	23
Economic base and functional specialization . . . . .	31
City and region: Preliminary considerations . . . . .	36
Chapter 3. The Urban Hierarchy . . . . .	46
Alternative approaches . . . . .	48
Industry distribution and city size . . . . .	56
Urbanization of industry groups . . . . .	72
Chapter 4. Metropolitanism and Metropolitan Areas . . . . .	82
Criteria of metropolitanism . . . . .	82
Metropolitan community areas . . . . .	90
Chapter 5. Major Economic Functions . . . . .	105
Bank loans . . . . .	105
Commerce and manufacturing . . . . .	123
Chapter 6. Interregional Flow of Funds . . . . .	133
Data and models . . . . .	134
Results . . . . .	137
Examples . . . . .	144

*Part II. Metropolitan Dominance: Hinterland Activities*

Chapter 7. Manufacturing Outside Metropolitan Areas . . . . .	159
Manufacturing: Major patterns . . . . .	161
Manufacturing: Detailed analysis . . . . .	166
Chapter 8. Extractive Activities in Nonmetropolitan Areas . . . . .	177
Coal mining . . . . .	177
Agriculture: Major patterns . . . . .	180
Agriculture: Detailed analysis . . . . .	184

*Part III. Industry Structure and Regional Relationships*

Chapter 9. Industry Structure: Overview . . . . .	199
Industry categories . . . . .	200
Variation in industry structure . . . . .	209
Chapter 10. Industry Profiles and Regional Relationships . . . . .	227
Outline of procedures . . . . .	227
Illustrative analysis for Milwaukee . . . . .	233
Inputs and supply areas for Milwaukee's profile industries . . . . .	238
Outputs and service areas of Milwaukee's profile industries . . . . .	242
Summary for Milwaukee . . . . .	246
Chapter 11. Regional Relationships and Metropolitan . . . . .	
Functions . . . . .	248
Varieties of regional relationships . . . . .	248
An approach to classification . . . . .	259

*Part IV. Fifty Major Cities and Their Regional Relationships*

Chapter 12. Metropolitan Centers . . . . .	279
Diversified manufacturing with metropolitan functions . . . . .	279
Boston . . . . .	280
Pittsburgh . . . . .	292
St. Louis . . . . .	302
Cleveland . . . . .	313
Buffalo . . . . .	319
Cincinnati . . . . .	327
Regional metropolises . . . . .	334
San Francisco – Oakland . . . . .	335
Minneapolis – St. Paul . . . . .	344
Kansas City . . . . .	352
Seattle . . . . .	357



**Contents**

vii

Portland (Oregon) . . . . .	363
Atlanta . . . . .	368
Dallas . . . . .	372
Denver . . . . .	375
Chapter 13. Regional Capitals . . . . .	381
Houston . . . . .	382
New Orleans . . . . .	386
Louisville . . . . .	392
Birmingham . . . . .	397
Indianapolis . . . . .	402
Columbus . . . . .	407
Memphis . . . . .	414
Omaha . . . . .	417
Fort Worth . . . . .	420
Richmond . . . . .	423
Oklahoma City . . . . .	427
Nashville . . . . .	433
Jacksonville . . . . .	437
Chapter 14. Manufacturing Centers . . . . .	443
Diversified manufacturing with few metropolitan functions . . . . .	443
Baltimore . . . . .	444
Milwaukee . . . . .	451
Albany-Schnectady-Troy . . . . .	451
Toledo . . . . .	455
Hartford . . . . .	461
Syracuse . . . . .	465
Specialized manufacturing . . . . .	468
Providence . . . . .	469
Youngstown . . . . .	475
Rochester . . . . .	479
Dayton . . . . .	485
Allentown-Bethlehem-Easton . . . . .	490
Akron . . . . .	494
Springfield-Holyoke . . . . .	499
Wheeling-Steubenville . . . . .	508
Charleston (W. Va.) . . . . .	513
Chapter 15. Special Cases . . . . .	517
Washington . . . . .	518
San Diego . . . . .	520
San Antonio . . . . .	525
Miami . . . . .	528