

BOOK REVIEWS

Editor: Clifford A. Lipscomb, Valdosta State University

Poot, Jacques, Brigitte Waldorf, and Leo van Wissen, eds. 2008. *Migration and Human Capital*. Edward Elgar: Cheltenham, UK, and Northampton, MA, USA. ISBN: 978-1-84720-084-6. 304 pp. \$125.

Reviewed by *Nancy E. White*, Bucknell University

This book is, in a word, instructive. Poot, Waldorf, and van Wissen have compiled a series of migration and human capital papers with the unifying objective of demonstrating current methods, both theoretical and empirical, and contemporary issues, with emphasis on Europe. The introduction states that the editors aim to show the complexity of migration and the need “for new integrative and interdisciplinary conceptualizations and tools of analysis.” I found that the editors did, in fact, deliver on their stated purpose. One of the refreshing aspects of the book is the clarity by which each author describes the theoretical underpinnings of their empirical model and the manner in which data limitations constrained the analysis. This makes the book a valuable resource for migration researchers. The contents are divided into four sections. Section one is a thorough introduction to the state of migration research and its relationship to human capital. Anyone seeking a clear, complete overview of migration in a global context would be well served by reading this chapter. The remaining three sections focus, respectively, on internal migration, human capital, and international migration.

Internal migration plays an important role in the spatial distribution of population. The three papers in the second section (Section B) demonstrate methods used in forecasting and explaining inter-regional migration. John Stillwell introduces readers to empirical approaches that help to explain and predict migration in Europe using both gravity variables and economic variables. Of likely interest to researchers both within and outside of demography is his modeling of labor markets, housing markets, and public policy measures on migration propensities and the decoupling of the migration process into two parts: out-migration and destination choice. In the second of the three papers, Leo van Wissen, Nicole van der Gaag, Phil Rees, and John Stilwell offer alternative approaches to projecting migration in the Netherlands, Sweden, and the U.K. It yields comparisons of the models using purely demographic variables and other models that include non-demographic variables to explain and predict internal migration flows in the short term. The authors conclude that a purely demographic model better predicts out-migration and destination choice in the short term; however, they are keenly aware that their results may be sensitive to factors such as choice of spatial unit, economic opportunity for the young, and long term trends that might be included in non-demographic approaches to migration modeling.

In Chapter 4, authors Gunther Maier and Michael Vyborny apply social network analysis to the study of U.S. internal migration. Social network analysis is a tool for showing a visual representation of migration patterns, especially the connectedness of the states and the role each plays in the network of internal migration. Groups of states are generated using hierarchical clustering to create regions based on migration, which the authors compare to the nine Census regions. For some regions of the U.S., the groupings are very similar; for the New England region, the two are identical. It is well known that regional growth may be mitigated or

accelerated depending on the location decisions of those with high amounts of human capital. Education, particularly in knowledge-based economies, is one element of human capital.

The third part of the book (Part C) focuses on the location choices of the well educated in Finland and the Midwestern U.S. The first of the studies (Chapter 5 by Signe Jauhiainen) uses data from Finland to analyze the spatial concentration of highly educated couples. The hypothesis is that more highly educated individuals choose to live in larger cities with greater concentrations of well-educated individuals and that individuals tend to choose spouses who are also well-educated through assortative mating; therefore, highly educated couples should tend to locate in larger cities. Jauhiainen subsequently estimates a multinomial logit model using Finnish micro data and shows that the education level of both spouses has an interactive effect in the location decisions of the highly educated. That is, highly educated migrants married to similarly educated individuals tend to locate in the Helsinki metropolitan area and university cities rather than other cities and small regions.

Chapter 7 examines knowledge spillovers arising from the location decisions of highly educated high technology workers in Finland. Kirsi Mikkala first presents descriptive data showing that the spatial distribution of highly educated, high-technology workers is concentrated in urban areas. A binary logit model of the migration decision for highly educated high-technology workers is estimated using Finnish longitudinal census data; the author finds that workers who are highly educated in this sector are more likely to change working location from non-urban to urban. This suggests that non-urban regions in Finland have difficulty in retaining human capital.

Chapters 6 and 8 seek to explain, respectively, knowledge agglomeration in Indiana, and rural-urban income disparities among the highly educated. The contribution of Chapter 6 by Brigitte Waldorf is its substate level analysis of spatial sorting by intellectual capital in Indiana from 1970-2000. The paper first introduces an index of relative education deprivation showing considerable county-level variation between the most and least educationally deprived locations; however, overall, Indiana counties' relative education deprivation has been stable over the study period. A series of models is then estimated, all of which demonstrate spatial and temporal mobility patterns of the college educated in Indiana. The findings are insightful. Waldorf shows that the spatial concentration of the highly educated is near Indianapolis and then explains that the growth of the college-educated population is inclined toward proximity to knowledge agglomeration.

In Chapter 8, Audrey Muhlenkamp and Brigitte Waldorf attempt to determine whether "brain drain" from four Midwestern states (Illinois, Ohio, Indiana, and Iowa) is related to rural-urban income disparities. Specifically, the authors ask: What is the effect of urban-rural work location on income earned? Are there urban-rural differences in the influence of well-known determinants of income earned? The empirical analysis is based on a subsample of individuals who worked at least 30 hours and lived in one of the four states, have a bachelor's degree or greater, and are between the ages of 25-34. The authors find that the effect of rurality on earned income for young knowledge workers, *ceteris paribus*, varies considerably by occupation and education attainment.

The final section of the book is on the economics of international migration. Several of the five chapters discuss the mobility of the highly educated/highly skilled. The first chapter in this section by Simonetta Longhi, Peter Nijkamp, and Jacques Poot is a meta-analysis of the

research on the impact of immigrants on natives' employment. The authors use nine studies from which 165 parameter estimates on the effect of immigration on employment were collected, showing first the distribution of elasticities of local employment of natives with respect to changes in the immigrant share of employment for the sample. Forty eight of the elasticities were from U.S. data, with the remaining data from Europe and Israel. The elasticities form the dependent variable in the meta-regressions. The authors find that the overall impact of immigrants on natives' employment is small, but the impacts vary across countries and between men and women.

Chapter 10 by Thomas de Graaff, Cees Gorter, Henri L.F. de Groot, and Peter Nijkamp is a study of ethnic network externalities and labor market integration in the Netherlands. The authors are particularly interested in understanding the assimilation of second-generation immigrants into the labor market. The authors model a dual labor market, where immigrants do not typically qualify for high quality jobs that are occupied by native workers. Immigrants' education attainment is assumed to be influenced by immigrant networks and public policies aimed at schooling. Dynamic simulations results suggest that selective immigration policies might accelerate integration if network externalities are limited and certain types of network externalities can dampen integration.

In Chapter 11, Daniela L. Constantin, Valentina Vasile, Diana Preda, and Luminita Nicolescu perform a descriptive study of trends and consequences of economic integration and migration in Romania. Of interest to the authors is the accession of Romania to the EU and the influence it has had on the legislative and institutional design of migration policies. The chapter is interesting in that it offers guidance to Romania's own unique migration policies, especially with regard to migration and national economic development. The chapter by *Jesús Clemente*, Gemma Larramona, and Fernando Pueyo that follows contributes theoretically to understanding the effect of immigration entry quotas on illegal immigration and the underground economy. The central conclusions are that reducing immigration quotas has no long-run effect on the composition of immigration and is likely to facilitate growth of the underground economy.

Natasha Duncan's overview of "Brain Drain, Brain Gain, and Migration Policies" is the subject of the final chapter. The chapter discusses the determinants of international migration, including social, economic, psychological, political factors. She follows with a survey of recent studies of brain gain, brain drain, and immigration policies. The final sections of the paper offer policy recommendations for developing countries that experience brain drain, such as development policies to attract return migration, remittances, and create diasporas connections.

Overall, the editors have accomplished their objective of demonstrating current methods and topics on migration and human capital. The results of the well-crafted case studies are instructive, all of which suggest future research on the causes and consequences of migration and the concentration of human capital. There are two noticeable omissions. First, the editors did not include a paper on the spatial redistribution of human capital to locations other than urban knowledge centers, such as the natural amenity rich locations that experienced considerable immigration over the past three decades. Second, the topic of mobility for those with low levels of human capital was not addressed. The concentration of the urban poor in "hollowed out" cities in the U.S. poses great challenges for policymakers in the 21st century.

Borrás, Susana and Dimitrios Tsagdis. 2008. *Cluster Policies in Europe: Firms, Institutions, and Governance*. Edward Elgar Publishing Inc.: Northampton, MA. ISBN 978-1-84542-304 pp. \$125.

Reviewed by *Mark Henry*, Clemson University

Borrás and Tsagdis provide a focus on two “learning by doing” issues that they say have been neglected in the literature on clusters. They want to know, “does multilevel governance (MLG) exhibit any learning dynamics?” and “does MLG support cluster-learning dynamics?” To many regional analysts, this set of research questions probably seems to be of limited interest. Fortunately, the authors offer much more than answers to these questions making the book attractive to anyone interested in clusters and regional development.

The authors have compiled an extensive data set across six EU countries, each with two carefully chosen clusters. A comparative study across these dozen clusters is achieved by employing a consistent set of working “subquestions” designed to answer the two overarching issues regarding clusters and MLGs. The research methods used are discussed in detail revealing extensive primary data collection efforts across the 12 clusters, along with secondary data and focus groups.

Chapters 3 through 9 provide cluster case studies across Germany, the UK, Italy, Slovenia, the Czech Republic and Romania. Extensive primary data are collected from cluster firms and institutions in each cluster. The clusters range from “low tech” textile and clothing to “high tech” automotive clusters. Cluster members provide rankings of the importance of cluster activities, constraints to expanding their businesses and the value of a range of institutional initiatives. Thirteen policies are considered, ranging from new firm recruitment, education, research, and labor recruitment to environmental policies. From these rankings, the authors are able to document what is most useful to firms in the cluster and what institutional members consider to be most important. This exercise yields insight into the relative value of the activities of chambers of commerce, banks and venture capital, universities and other institutions to cluster firms. Results vary in interesting ways across types of clusters and countries.

Focus groups of cluster members are used to “validate” the empirical findings from the rankings exercises. The MLG research questions are evaluated in the concluding section of each of these chapters. To this reviewer, answers to the MLG questions are less interesting than findings on what firms say is valuable (and not) about cluster activities and institutional initiatives.

Each chapter presents a well-organized depiction of the historical, geographical, and economic setting of the two clusters in each of the sample countries. This is followed by a kind of SWOT analysis with cluster strengths and weaknesses revealed. The institutional setting focuses on the role of key government agencies. After discussion of the ranking results, the authors provide conclusions about the efficacy of the cluster activities, and make recommendations to improve the cluster’s economic performance, often with a focus on improving institutional efforts.

The final chapter compares the findings from the rankings across all twelve clusters drawing conclusions about the importance of cluster institutions, the most effective policy initiatives for cluster development, and answers to the “MLG learning” questions. The authors have provided a valuable resource for students of clusters. The rich database and comparative

analysis of the importance of activities and institutions across an array of clusters provide policy makers with insights needed to make informed decisions on new cluster initiatives.

Farschi, Mahtab A., Odile E. M. Janne and Philip McCann, eds. 2009. *Technological Change and Mature Industrial Regions: Firms, Knowledge and Policy*. New Horizons in Regional Science. Edward Elgar Publishing Inc.: Northampton, MA. ISBN 978-1-84720-089-1. 400 pp. \$160.

Reviewed by *Mark Henry*, Clemson University

Technological change is the positive force needed to offset diminishing returns to capital accumulation and thus sustain economic growth. There are two broad questions addressed in this book related to this conventional view of regional dynamics. First, how does technological change play out across regions that are dominated by mature industries? Second, how can public policy be evaluated and improved from a better understanding of regional dynamics in mature regions. Do the contributions by the analysts in this edited volume answer these, perhaps unfairly posed, questions? It's a mixed bag.

The eighteen chapters are divided into three sections, each with six chapters. Section one provides an overview of regional challenges from world trade and from technological changes in "mature industrial areas." In section two, six case studies are drawn from the UK, USA, Australia, Germany and Italy. The intent is to differentiate between regional idiosyncrasies and general forces affecting mature industrial regions. Policy development comprises the final six chapters starting with an excellent review of cost benefit principles in the context of regional policy making. This is followed by an examination of influences on the location of FDI while mixing in pragmatic discussions of political problems in formulating regional development policy in mature industrial areas in Europe.

An overview in Chapter 1 is followed in Chapter 2 by a call to blend old strengths with new responses to the dynamics of the market place, given a region's endowments, if regional regeneration is to be successful. The author, Nick von Tunzelmann, suggests that policy will need to forego the temptation to jump on the latest bandwagon—biotech, nanomaterials, etc. Instead, it should blend old competitive advantages with new opportunities on the demand side and in technological innovation. Government can play a role in this blending prescription for ailing, mature industrial regions, though it is not clear that current cluster and related policies are the best approach in assisting mature regions.

The interplay of MNEs, innovation and clusters is examined by Simona Iammarino, Odile E.M. Janne, and Philip McCann in Chapter 3 and the role of technology in forming policy for mature industrial regions is emphasized. Echoing the blending theme, the argument is made that a mature region's old skill base needs to be married to emerging global opportunities. Core-periphery, product life cycle, cluster and "bandwagon" based policies are deemed inadequate for regeneration of mature industrial regions. Both new taxonomies and theories are needed to reveal the nuances of the transmission of the forces of technological change to regions from MNEs and other agents.

Oddly, the discussions in Chapters 4 (Fernando Perobelli, Eduardo Haddad, and Edson Domingues) and 5 (Geoffrey J.D. Hewings and John B. Parr) focus on regional interdependencies (in Brazil and the U.S. Midwest, respectively). The descriptions of how to use

input-output analysis for identifying backward and forward linkages as well as regional trade flows are innovative and useful, and some empirical evidence is presented on structural change from 1980 to 2000 in the U.S. Midwest. However, the role of technological change in influencing the regeneration of mature industrial regions is not the focus of these chapters. Chapter 6 (by Josep-Maria Arauzo-Carod and Elisabet Viladecans-Marsal) returns to the “restructuring process” using Spain as a case study. It reviews regional trends since 1970 in mature industrial regions (as well as providing a definition of the term), and provides insights on potential forces for successful restructuring.

In Part Two of the book, the discussion turns to case studies of particular industries within mature industrial regions. Each of these chapters offers a useful understanding of the problems and prospects for these industries. The challenges facing regions where the auto industry has been dominant are exposed in four chapters. In Chapter 7, Peter Clark provides an analysis of the evolution and decline of the auto industry in Birmingham, UK. With views from sociology, economics and the organizational psychology of production in this region, the reader gains an appreciation of the forces in a mature industrial region that can cause an important industry to fade away. In Chapter 8, David Bailey and Seiji Kobayashi focus on the collapse of MG Rover to show that the auto cluster in the West Midlands, UK, was a victim of key technological and structural changes in the industry but of poor management and public policy blunders as well. Along the way, important coordination problems in cluster policies are revealed in a mature industrial region. In Chapter 10, Andrew Beer and Holli Thomas move the auto industry discussion to South Adelaide, Australia, and focus on the exit of Mitsubishi Motors Australia Limited (MMAL). The response by the public sector, in over a dozen studies, is described with some searching for the roles of a university and education in meeting the regional restructuring challenges.

Odile E.M. Janne and Mahtab Akhavan Farshchi produce perhaps the most useful pieces of the book in the form of Chapter 12. It revisits the auto cluster in the West Midlands, adding the German auto cluster in Saxony to the mix. The sources of new technical knowledge in both regions are documented at the firm level, along with empirical summaries of firm and regional characteristics—all in an attempt to understand what drives innovation in the auto industry in these regions. This is, in part, a test of competing hypotheses about the nature of externalities in geographical clusters. Pecuniary, static externalities versus local knowledge spillovers (LKS) that are “dynamic” are the two broad categories of externalities considered. These concepts are operationalized for the auto sector and the performance of the West Midlands auto cluster (static externalities dominate) is compared with that of the Saxony cluster (dynamic externalities dominate). Importantly, the kind of externalities that are most prevalent in a region shapes the ability of these mature industrial regions to grow.

In Chapter 9, Michael H. Best analyzes how a cluster emerges and then grows rapidly analyzed for the medical devices cluster in Massachusetts. Using a new company-level, multi-products database, called vTHREAD, the author provides a perspective on cluster dynamics that is not possible with public data categorized by SIC or NAICS codes. Challenges confronting the firms (led by Boston Scientific) as they introduced new products are documented. However, the most useful story, from a mature industrial region perspective, is how the medical devices cluster grew rapidly while the regional mini-computers industry was in decline. In Chapter 11, Ivana Paniccia looks at Italian industrial districts (IDs). She provides a thorough look at the diversity of IDs in Italy, developing a typology that helps the reader understand the economic and social

forces shaping the current IDs and their outlook. As might be expected, she argues that policy needs to recognize the range of external and organizational issues across different types of IDs.

Part Three entitled “Regional Policy and Mature Regions” begins with *Kim Swales’s* review of how the fundamentals of cost benefit analysis (CBA) can be applied to an evaluation of regional policy. With a view that regional problems may be associated with market failures or distributional concerns, he provides a concise treatment of CBA and welfare economics that should be of keen interest to policy makers and research staff in regional development institutions. Students of regional analysis should be required to read this chapter to understand how CBA, and shadow prices in particular, can play a key role in determining the advisability of a wide range of public development policies.

The nuts and bolts of some regional development programs in Italy, the UK and the Netherlands are described by Ilaria Mariotti in Chapter 14 using a discussion of the old (top down) and new (bottom up) approaches. Surveys of firms reveal the impact that the various programs have had on location choices. In Chapter 15, Declan Jordan and Eoin O’Leary take a critical view of Irish innovation policy in the “After the Celtic Tiger” era. Using survey data from 189 firms, the authors document the kinds and depth of interactions (or lack thereof) between firms in high tech industries, their suppliers, competitors, and local colleges and public agencies. Information and Communications Technology (ICT) and Chemicals are the two industry clusters of interest.

Do grants affect the location of FDI in the UK? This is the issue examined in Chapter 16. A thorough literature review of the determinants of the location FDI is augmented by some empirical work that together yield mixed results for the impacts of grant programs on attracting FDI to lagging regions in the UK. Chapter 17 provides a detailed accounting of the rise and fall of the cluster program in Slovenia. In the final chapter, regional development problems in Greece provide the framework for analysis of how government programs have failed to adequately promote development of lagging regions.

In sum, the timing of this book is fortuitous as mature regions around the world struggle through the Great Recession of 2008-2009. Many of the chapters inform the reader about how regions with important manufacturing industries have responded to longer term forces of change from globalization to technological advances. Political constraints and limitations of regional development policy across a diverse set of mature industrial regions are revealed. Policy wonks, development bureaucrats, and academics will each find chapters that help them think about new directions for public development initiatives. One lesson that can be taken away from this book concerns the source of success of the medical cluster in Massachusetts: that it is (p. 161) “a process of industrial renewal as fast growing companies reallocate resources in pursuit of new market opportunities by tapping the region’s production and technological capability heritage.” Importantly, a region’s production and technological heritage can be shaped by long term public commitments to the basics: infrastructure, education and the transparency of government institutions. In turn, these commitments enable the region to adapt to evolving economic forces.

Capello, Roberta and Peter Nijkamp, eds. 2009. *Handbook of Regional Growth and Development Theories*. Edward Elgar. ISBN: 978-1-84720-506-3. 529 pp. \$250 (hardback). \$70 (paperback).

Reviewed by *Laura Lamb*, Thompson Rivers University

This book is a collection of theories explaining various aspects of regional growth and development with contributions by academics and researchers spanning the globe from Australia and Japan to Europe and North America. In addition to the theoretical models, most chapters provide insightful discussion of policy implications and forward-looking discussion identifying areas for new research.

The book is organized into five parts. The first part examines growth theories and their relation to space beginning with a brief historical review of regional growth theory by Philip McCann and Frank van Oort, who trace the analytical developments of the quantitative revolution and advances in the microeconomics of regional science. The authors draw attention to the crucial role of agglomeration with a focus on local knowledge generation, the connectivity between regional nodes and international nodes, and the geographic scale over which knowledge spillovers operate. The chapter by Roberto Capello provides a relatively comprehensive historical overview of various theoretical contributions relevant to the area of regional economics, the different interpretations of growth stemming from the theories, and the distinction between growth and development theories. The chapter is a must read for those new to the field of regional economics.

Gunther Maier and Michaela Trippel analyze the implications of regional growth theories on the spatial distribution of economic activities with neoclassical, endogenous growth, and New Economic Geography (NEG) models. They find that more recent models emphasize the function of externalities in the growth process, particularly in the long-run. Then, in the following chapter, Kieran P. Donaghy analyzes the relationship between trade and regional growth. The analysis includes a contemporary model focusing on the trade in parts and tasks associated with increasing globalization. In the last chapter of part one, Alfredo Minerva and Gianmarco I.P. Ottaviano investigate the role of infrastructure on growth and inequality by proposing a theoretical model grounded in NEG with endogenous growth and capital mobility. They find that a trade-off between growth and inequality emerges when infrastructure is developed and that improvements in interregional connections tend to increase regional inequality.

The second part of the book focuses on regional production factors in development theories, beginning with a chapter by Jeffrey P. Cohen and Catherine J. Morrison Paul, who examine the potential of production theory for modeling and measuring agglomeration economies. In the next chapter, Roberto Camagni discusses a cognitive approach to regional development with the concept of territorial capital encompassing such elements as localized externalities, localized production activities, proximity relationships, cultural elements and values, and a local system of rules and practices.

The impact of human capital on regional development is discussed in the following chapter by Alessandra Faggian and Philip McCann. They discuss the link between human capital and regional growth and the interregional migration behavior of human capital. Based on a review of recent empirical results they confirm the significance of human capital and its mobility to regional growth and development. Next, Johannes Bröcker and Piet Rietveld, in their chapter

on the spatial distribution of infrastructure impacts, stress the importance of a temporal perspective to distinguish between short-term effects and long-term effects. In addition, they use a welfare orientation to study the optimal provision of infrastructure and assess the use of computable general equilibrium (CGE) methods for regional evaluation. In the final chapter of part two, Manfred M. Fischer and Peter Nijkamp review the entrepreneurship literature with a focus on the determinants of the level of entrepreneurship in a region and spatial aspects of entrepreneurship including a discussion of the significance of networks and ethnic entrepreneurship.

Part three covers topics related to development theory issues in the knowledge-based economy. David B. Audretsch and Taylor Aldridge contend that the comparative advantage provided by knowledge-based activities at the country level leads to changes in the organization of economic activity at the regional level, particularly to the spatial concentration of knowledge activities to advance knowledge spillovers. A discussion of the spillover theory of entrepreneurship is incorporated whereby entrepreneurship plays the critical role as a conduit between investments in knowledge creation and economic growth. In the following chapter, Daria Denti's examination of the composition of the link between research and development (R&D) and economic growth reveals heterogeneous results due to numerous factors including differences in methodologies, time periods, and types of specifications, to name a few.

In the next chapter, Börje Johansson and Charlie Karlsson review models and empirical work to examine the role of knowledge in regional development. They discuss the concept of a "functional region", a place for knowledge assets, where knowledge can be appropriated and absorbed and where knowledge is transformed into innovations. In addition, they describe an application of product cycle theory to explain the location of the production of new products. In the chapter by Henri L.F. de Groot, Jacques Poot, and Martijn J. Smit, a meta-analysis is conducted to evaluate the statistical robustness of evidence for agglomeration externalities based on published articles providing empirical evidence on the impact of agglomeration and innovation on urban growth. It is shown that different types of externalities influence economic growth in different ways and must therefore be specified.

The final chapter of part three, by Amitrajeet A. Batabyal and Peter Nijkamp, discusses sustainable development issues related to regional growth, a topic that is sure to gain momentum. They note two significant trends in recent social science research: the recognition that many outstanding problems contain an environmental component and that effective renewable resource management and environmental externality regulation must embrace considerations of space. The chapter restricts discussion to five themes of research: regional economic development, natural resources, environmental regulation, geographic information systems (GIS), and regional climate change.

Measurement methods for regional growth and development are discussed in part four. Ryohei Nakamura and Catherine J. Morrison Paul cover the measurement of agglomeration in the context of the clustering of regional economic activity. Discussion includes an overview of direct measures of industrial localization and regional specialization, and indirect measures, which are appropriate when the goal is to measure sources or effects of agglomeration.

Next Roberto Ezcurra and Andrés Rodríguez-Pose provide an overview of the major developments in the measurement of the regional divide. They review numerous measures of dispersion, address the measurement of regional polarization with the work of Esteban and Ray

(1994) and Esteban, Gradín, and Ray (2007) utilizing per capita income, and review a non-parametric method to measure regional divide. They then illustrate the various measurement approaches with EU data and show that a combination of different approaches is needed to create a complete assessment of regional divide. In the following chapter Robert J. Stimson, Alistair Robson, and Tung-Kai Shyy, review endogenous growth factors and propose measures of regional endogenous change. The authors trace through the shift from exogenous to endogenous growth theory with a discussion of the numerous variants of endogenous growth theory and their impact on regional economic planning. In addition, they propose an approach for measuring and modeling regional endogenous growth using shift-share analysis to create a proxy for a dependent variable representing endogenous growth.

Cem Ertur and Julie Le Gallo discuss spatial econometric approaches for analyzing regional growth and convergence in the next chapter. They present the main econometric specifications capturing spatial heterogeneity with a focus on structural instability and specific forms of heteroskedasticity, and examine how these specifications may be extended to allow for spatial autocorrelation in models of heterogeneous reaction. While the authors note that the toolbox of the applied growth researcher has been expanded in recent years, they call for further research to develop spatial structural theoretical growth models at the regional level. Then, in the following chapter, Kieran P. Donaghy is called upon again, this time to survey the spatial modeling (spatial computable general equilibrium [CGE]) literature, which he organizes into five streams. Finally, Jan Oosterhaven and Karen R. Polenske review regional input-output theory and the main methodological debates surrounding its use. The authors review applications of regional and multiregional impact analysis and developments in the applicable computer programming packages with a discussion of modern impact analysis and its effects on social accounts and intersectoral CGE models.

The final section, part five, covers regional growth and development policy issues beginning with a chapter by T.R. Lakshmanan and Kenneth J. Button on the role of institutions in coordinating regional economic activities. They trace the evolution of institutions with a focus on old institutional economics, new institutional economics (NIE), and the emerging role of transaction costs. The authors consider the basic institutions of economic governance, the changing role and diversity of institutions, the function they provide in shaping regional development, and call for a multi-institutional view for regional development. The next chapter, Jouke van Dijk, Henk Folmer, and Jan Oosterhaven briefly encapsulate regional policy theory and instruments with an emphasis on the measurement of policy effects. The authors observe that while theories differ in their predictions of either convergence or divergence over time, they are mostly unified in their contention that different conditions lead to different outcomes. Their discussion on policy measurements includes an overview of micro approaches identifying a growing interest in controlled experiments and a survey of regional approaches.

Maria Abreu and Maria Savona follow with a review of empirical literature on regional policy in less-developed countries and find that effectiveness of a regional policy varies with differences in the policy-making process, sectoral specialization, and initial endowments of the region. They review regional policy in India and find that state level policies can complement or neutralize the impacts of national development policies as in the onset of India's trade liberalization policies in 1991.

In the final chapter, Peter Friedrich and Chang Woon Nam discuss the under-theorized concept of economic decline and its effect on regional growth and development policy. They

focus on the development strategy of free economic zones (FEZs), provide a microeconomic theory of FEZs, and illustrate that they are not an appropriate policy instrument against economic decline using the case of North Korea.

On the whole, the book contains a wealth of leading-edge material on regional growth and development issues and provides a good historical review of the dominant mainstream theories. This handbook would be a valuable asset to any graduate student, researcher, regional planner, or policy-maker interested in regional economic issues. It should be noted that some of the models are described in fairly technical terms and may be beyond the reach of those without a strong background in economics.

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