

estimated using the LISA business registration—a longitudinal data set covering the entire Dutch firm population—for the South Holland region, consisting of 95,000 firms in the base year 1996. Regarding firms' location choice behavior, the authors propose the choice set parameter (spatial) dominance, with nearby alternatives dominating more distant ones, to affect the probability of a specific location being selected in a choice set consisting of possible alternatives. The location choices of firms in seven industrial sectors are then estimated, employing specifications with and without the spatial dominance parameter. Results show that the implementation of this parameter improves the model fit, suggesting that nearby alternatives are more likely to be taken into consideration by the decision maker. The estimated parameters are then implemented in the SFM model in order to evaluate whether the inclusion of spatial dominance can enhance the results of the simulation, and are found to improve the goodness-of-fit in six out of seven industrial sectors.

This book constitutes a highly welcome addition to the literature concerned with the modeling of the spatial distribution of employment. The editors have carefully assembled a collection of essays providing the reader with a comprehensive overview regarding the current state of the art in employment location modeling. The volume also stands out in the ways in which the various chapters combine detailed descriptions of particular models with their applications to specific cities or regions, thus making the book an interesting read for those with a focus on the design of comprehensive employment location models as well as those rather concerned with their applications in different contexts.

Kristin Kronenberg
*ILS – Research Institute for Regional and
Urban Development
Dortmund, Germany*

International Handbook of Globalization and World Cities, edited by Ben Derudder, Michael Hoyler, Peter J. Taylor, and Frank Witlox. 2012. Cheltenham, U.K. and Northampton, Massachusetts: Edward Elgar. 569 + xii. ISBN 978-1-84844-647-2, \$280.

The Connected City: How Networks are Shaping the Modern Metropolis, by Zachary P. Neal. 2012. New York: Routledge. 272. ISBN 978-0-415-88141-8, \$155.

Although traditionally the world cities literature has focused on the internal structure of individual world cities and comparing world cities, there has recently been an increasing interest in measuring and analyzing the relations between world cities. Since the seminal conceptual work of Friedmann (1986) and Sassen (1991), the literature on world city networks has extensively focused on the measurement of network relations between world cities (see e.g., Taylor, 2001; Alderson and Beckfield, 2004). Concurrently, one of the largest and most active academic communities working on the measurement of world city networks revolves around the Globalization and World Cities (GaWC) research network.¹ Recently, two new books have appeared that have strong ties to this research network.

The first book, entitled *The International Handbook of Globalization and World Cities* is an edited volume by Ben Derudder, Michael Hoyler, Peter Taylor, and Frank Witlox. It offers an extremely rich variety of (short) chapters on aspects of flows in network and knowledge societies, highlighting the evolutionary shift in focus from cities and states to places in urban networks and mosaics, in which urbanization and globalization themes are blended. The book is definitely a joyful read for all those researchers interested in urban networks and world cities. As this review started to remark, the purpose of this edited volume is to contribute to the rebalancing of the internal and external in urban studies. Does the volume succeed in its aim? We reflect on some critical issues that in the end may prevent the assembled research from completely achieving this objective.

¹For a recent overview of this literature, the reader is referred to Taylor (2013).

Nevertheless, as research on globalization and world cities is surging, new research is already on its way to fill in the blanks.

The handbook is divided in three parts that focus on themes of history, measurement, and case studies. The first group of papers (“antecedents”) focuses on the history of urban networks as a concept. Although Allan Pred in his pioneering work *City Systems in Advanced Economies* (1977, p. 11), introduced “the quest for processes underlying the past and present growth of post-industrial metropolitan complexes and economically advanced city systems to which they belong,” many definitions of urban complexes, systems, and networks are used in the literature. In his chapter on the interlocking network model (chapter 6, p. 51) Peter Taylor states that we are literally overwhelmed by choices of adjectives and synonyms for scale and structures: transnational, metropolitan, nodes, hierarchy, city region, urban network, grid, web, matrices—these are only a few examples of over 50 (!) ways of describing intercity relations in globalization. Also, the different chapters in the handbook use varying terminology. As Taylor himself rightly concludes: “choice is not always a good thing” (p. 51). From all these concepts, applied in slightly different meanings, the true history of the concept of urban systems, world cities, and globalization does not become entirely clear. This conceptual fuzziness has been criticized before (e.g., Parr, 2008)—but it is with the overwhelming richness of this handbook that it becomes a problem after reading yet another definition. Could the (short) introductory chapter have provided a more guiding role in this?

The other central issue pursued by Pred was the quest for processes underlying urban complexes. The first part of the handbook tries to present these processes in a historical perspective, but leaves us with a number of questions. After finishing part 1 (and part 2 and part 3 on empirical and methodological grounds), the processes appear to be as multiple and diverse as the conceptual definitions used. Path dependency, agglomeration, trade relations, consumption patterns, market functions, migration, imperialism, geopolitics, cultural differences, and even landmarks and star architects are presented as artifacts and causes of global city formation. Notwithstanding the highly interesting chapters on these issues (especially Herman van der Wusten’s chapter on geopolitics and chapters by John Beaverstock on skilled migration and Caroline Nagel on cultural diasporas), what we would have liked to see in this handbook is a ranking of processes that appear to be more important and persistent over time. This would have required a more overarching analysis of the enormous richness of all the chapters—a missed opportunity.

The second part of the book focuses on the analysis and governance of world city networks, its measurement and interpretation as well as policies that foster network formation and its economic advantages. Let us discuss some general issues that play a role in practically all chapters. It is remarked in the introduction (p. 2) that in world city research, theory is generally ahead of empirics. This evidential deficit was signaled already early in the development of the world city literature, leading to skeptical methodological valuations like “the dirty little secret of world city research” (Short et al., 1996). This is exactly why the GaWC-tradition started to focus intensively on data and networks of linkages between cities. By now, we can conclude from the handbook that there is a huge amount of information about economic intercity relations, but the question is whether the analyzed functional networks of multinationals, migrants, and knowledge workers contribute enough to our understanding of local development opportunities. Allan Pred (1977, p. 11) remarks that the second main question of city-systems research after the identification of its underlying processes is, “identification of the implications of on-going growth for efforts to reduce interregional inequalities and employment opportunities.” Most chapters in the book suggest that a stronger embeddedness in world city networks strengthens local development. But what exactly are the spillover, multiplier, and leakage effects? What advantages do which firms have from regional and urban connectedness? These important questions are unanswered. Although the dominant interlocking network model uses firm relations in order to identify the relations between cities (p. 54), there generally is no feedback loop from cities and city systems to firms (compared to Jacobs et al., 2013). We think this is a crucial missing link in the world-city research.

After browsing through the remainder of the second part (including a wonderful overview on global city-region governance by John Harrison in chapter 27; there is definitely much to gain in good identification and evaluation studies on urban [network] policies!) and the case studies of part 3 of the book, the reader may be left a bit puzzled on the central goal of the book: to contribute to the rebalancing of the internal and external in urban studies. There is plenty of material on

urban networks in the book; that is for sure. But we already remarked above that the effects for firms and the wider region, central issues in the times before GaWC, are not very well covered here. By stressing the international networks, the local constellation is rather poorly treated. Instead of rebalancing, the book works towards over-emphasizing the interregional network aspects.

But how about the local development opportunities and inequalities stressed by Pred? According to McCann and Acs (2011), this multilevel relationship is much more complex than often suggested. Some chapters take note of this complexity. Peter Taylor on p. 69 shortly introduces Jane Jacobs, Ed Glaeser, and Paul Krugman as advocates of agglomeration theory, yet fails to provide a full account of the relation between city networks and local agglomeration. Ed Malecki in chapter 11 does make this link in the case of Internet networks, and links cyber hub positions to local agglomeration. Harald Bathelt in chapter 16 makes the interesting case of temporary versus permanent clusters, linking the geography of trade fairs to local development opportunities. Roger Keil (chapter 37) discusses suburbanization in global cities, linking planning to agglomeration and urban networks.

This issue of linking scales is to some extent taken up in the second book we discuss in this review by Zachary Neal, entitled *The Connected City: How Networks are Shaping the Modern Metropolis*. This book can best be seen as an undergraduate and graduate textbook for city network analysis, in which the author intuitively shows how networks within and between cities help us to better understand contemporary urban agglomerations. The increasing popularity of the network perspective in sociology, geography, and economics has provided Neal with widespread opportunities to conduct fruitful research on urban networks. The book consists of 10 chapters divided over three main sections: Micro-urban Networks: Networks within Cities (section I), Meso-urban Networks: Cities as Networks (section II), and Macro-urban Networks: Networks of Cities (section III), in which world city networks are also extensively discussed. Whereas sections I and II deal with personal networks and networks that bind the many different parts of the city respectively, section III predominantly focuses on city networks at the regional, national, and global scale. A major strength of the book is that it provides not only an overview of city network theory, but also discusses methodologies for measuring city networks. Since the book includes both main text and method notes, it is also accessible to students not interested in the methodological aspects of city networks.

Overall, both books show that considerable advances have recently been made with respect to the measurement of city networks in general and world city networks in particular in terms of research methodology and data collection. Whereas the *International Handbook of Globalization and World Cities* stands out in giving an excellent bird's-eye view of the field of research, *The Connected City: How Networks are Shaping the Modern Metropolis* provides a profound theoretical and methodological introduction to the study of city networks for both undergraduate and graduate students. At the same time, both books also highlight some weaknesses and lacunae within world city networks research that deserve more attention. More specifically, we believe that future empirical work on world city networks would benefit from focusing more on analyzing the causes and consequences of the organization of these network constellations. Although these questions are at the heart of city network theory (see also Friedmann, 1986; Sassen, 1991), they have received limited attention in empirical research on world city networks.

Such a shift from the measurement of world city networks to the causes and consequences of world city networks would also require a further expansion of the methodological toolbox. For example, the unanswered question why some cities manage to become globally connected while others are confined to the periphery of the world city network brings to mind not only gravity models to analyze the geography of corporate networks (e.g., Wall et al., 2011), but also discrete choice models (e.g., Head and Mayer, 2004) or exponential random graph models (e.g., Liu et al., 2013). At the same time, the insights from international business and strategy can be valuable to the development of world city network analysis (see also Beugelsdijk et al., 2010). In recent work by Goerzen et al. (2013) it is shown that the reasons why multinationals locate in world cities can be broadly grouped under three different categories: (1) global interconnectedness and accessibility, (2) cosmopolitanism or presence of amenities in world cities, and (3) abundance of advanced producer services. At the same time, the researchers indicate that multinational choices to locate in global cities are strongly linked to firm and establishment level factors such as investment motives, proprietary capabilities, and business strategy. As Neal suggests, such an approach would perfectly fit within the study of

city networks, in which one of the main questions is to address “how do little individual behaviors give rise to big urban phenomena” (p. 2).

On another front, how the position of a city in the world city network affects the performance of cities should also be further studied. Although world city network development may result in the pooling of resources and the development of complementarities between the cities within the network, it is unclear to what extent networked cities really outperform nonnetworked cities. Here, the world city network analysis can link up with modern urban economics, in which networks of cities provide a substitute for the benefits of agglomeration (Johansson and Quigley, 2004). Along these lines, it is also unknown *which* networks are relatively more important for urban development (trade, knowledge, or corporate). Using a multilevel framework (see Van Oort et al., 2012), it is possible to analyze to what extent the performance of firms is dependent on their location in global networks.

Overall, it remains a serious challenge to link city networks to economic performance at both the city- and firm-level. These two books very well document and synthesize the existing research on urban networks. However, much work remains to be done to understand the determinants and effects of such network constellations.

Martijn J. Burger
Department of Applied Economics
Erasmus University Rotterdam
 Frank G. van Oort
Department of Economic Geography
Utrecht University

REFERENCES

- Alderson, Arthur, and Jason Beckfield. 2004. “Power and Position in the World City System,” *American Journal of Sociology*, 109: 811–851.
- Beugelsdijk, Sjoerd, Philip McCann, and Ram Mudambi. 2010. “Introduction: Place, Space and Organization—Economic Geography and the Multinational Firm,” *Journal of Economic Geography*, 10, 485–493.
- Friedmann, John. 1986. “The World City Hypothesis,” *Development and Change*, 17, 69–83.
- Goerzen, Anthony, Christian G. Asmussen, and Bo B. Nielsen. 2013. “Global Cities and Multinational Enterprise Location Strategy,” *Journal of International Business Studies*, 44, 427–450.
- Head, Keith, and Thierry Mayer. 2004. “Market Potential and the Location of Japanese Firms in the European Union,” *Review of Economics and Statistics*, 86(4), 959–972.
- Jacobs, Wouter, Hans Koster, and Frank G. Van Oort. 2013. “Co-agglomeration of Knowledge-Intensive Business Services and Multinational Enterprises,” *Journal of Economic Geography*, DOI: 10.1093/jeg/lbs055.
- Johansson, Börje, and John M. Quigley. 2004. “Agglomeration and Networks in Spatial Economies,” *Papers in Regional Science*, 83, 165–176.
- Liu, Xingjian, Ben Derudder, and Yaolin Liu. 2013. “Regional Geographies of the Intercity Corporate Network: Exponential Random Graph Models of Regional Network Formation,” *Papers in Regional Science*, DOI: 10.1111/pirs.12060.
- McCann, Philip, and Zoltan Acs. 2011. “Globalization: Countries, Cities and Multinationals,” *Regional Studies*, 45(1), 17–32.
- Parr, John B. 2008. “Cities and Regions: Problems and Potentials,” *Environment and Planning A*, 40(12), 3009–3026.
- Pred, Allan R. 1977. “City Systems in Advanced Economies,” *Past Growth, Present Processes and Future Development Options*. London: Hutchinson.
- Sassen, Saskia. 1991. *The Global City: New York, London, Tokyo*. Princeton, NJ: Princeton University Press.
- Short, John R., Yeong-Hyun Kim, Merje Kuus, and H. Wells. 1996. “The Dirty Little Secret of World Cities Research: Data Problems in Comparative Analysis,” *International Journal of Urban and Regional Research*, 20, 697–717.
- Taylor, Peter J. 2001. “Specification of the World City Network,” *Geographical Analysis*, 33, 181–194.
- Taylor, Peter J. 2013. “A Research Odyssey: from the Interlocking Network Model for Cities towards a Bi-Layered Model of the Global Space-Economy,” *Tijdschrift voor Economische en Sociale Geografie*, Forthcoming.
- Van Oort, Frank G., Martijn J. Burger, Joris Knobben, and Otto Raspe. 2012. “Multilevel Approaches and the Firm-Agglomeration Ambiguity in Economic Growth Studies,” *Journal of Economic Surveys*, 26, 468–491.
- Wall, Ronald S., Martijn J. Burger, and Bert Van der Knaap. 2011. “The Geography of Global Corporate Networks: the Poor, the Rich and the Happy Few Countries,” *Environment and Planning A*, 43, 904–927.