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BOOK REVIEWS

Book Review Editor: Clifford A. Lipscomb, Greenfield Advisors LLC, Atlanta, GA

Miller, Ronald E. and Blair, Peter D. 2009. *Input-Output Analysis, Foundations and Extensions*. Cambridge University Press: Cambridge, U.K. ISBN 978-0-521-51713-2 hardback, ISBN 978-0-521-73902-3 paperback, ISBN 978-0-511-59020-7 eBook format. 782 pp. $147, $70, $56.

Reviewed by *William A. Schaffer*, Georgia Institute of Technology

The Second Edition of *Input-Output Analysis, Foundations and Extensions* comes 24 years after the First Edition and is in the same precedent-setting tradition: both record more than any one person could ever want to know about input-output analysis and both represent lifetime efforts for most mortals. Its arrival is made even more remarkable by the current status of the authors: Miller is long retired as Emeritus Professor of Regional Science and Blair has morphed from recent graduate to Executive Director at the National Academy of Science—positions from which they should be reading novels or frantically administering the world.

Physically, the books bear no similarity. The First Edition is 464-pages long and weighs one pound, three ounces; the Second is 750-pages long and weighs three pounds, five ounces.

Organizationally, the First contains nine chapters and two appendices while the Second contains 13 chapters and three appendices. The commodity-by-industry model, now used in all national studies and many regional studies, has its own separate chapter; a new chapter has been added to elucidate recent extensions of nonsurvey and partial-survey methods; a new chapter documents social-accounting matrices; and "Selected Topics" are now covered in three chapters rather than one. The chapters have been reordered slightly both to accommodate these relatively new developments and to improve the logical flow of the book.

In style, we see evidence that almost every retained sentence has been reviewed for relevance and economy of expression. For example, the sentence "Actually, it is very often the case that we are interested in inputs at the regional level" was rewritten as "Very often an analyst is interested in inputs at a regional level." The authors are to be commended for their ruthlessness. Many sections survived intact and integrate seamlessly with the new chapters and modern extensions.

Comparison of the chapters on nonsurvey and partial-survey methods for construction of input-output models illuminates the care taken by Miller and Blair in preserving the good, improving expression when useful, and extending content when needed. They transform Chapter 8 in the First Edition into Chapters 7 and 8 in the Second Edition. Since most economists applying input-output analysis to regional issues must address construction methods, I will focus on these two chapters.

Chapter 7 is devoted to the fundamentals of nonsurvey and partial-survey methods. Sections 7.1 through 7.4.6 are almost word-for-word Sections 8.1 through 8.4 of the First Edition with some tightening of expression and restatement of a couple of equations. Actually, little could be changed, for the First Edition was most adequate in addressing questions of stability of coefficients and their projection as well as in laying out in some detail the biproportional adjustment technique known as "RAS." The authors then append Sections 7.4.7 through 7.4.9 to

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cover recent developments in building hybrid models using RAS with additional information, in this procedure as a constrained optimization problem, and in nonconvergence problems.

Chapter 8 in the Second Edition is devoted to the remainder of Chapter 8 in the First Edition and almost triples its size. The conventional enumeration of location quotient-related procedures is repeated in section 8.2 as are comments on RAS in a regional setting in section 8.3 with a numerical illustration in section 8.4. Section 8.6 expands the authors' treatment of interregional flows to include comments on two-region, many-region, sub-state, and interstate models. In a keen display of our profession's fondness for acronyms, section 8.7 discusses hybrid models including GRIT (Generation of Regional Input-Output Tables, from Australia), DEBRIOT (Double-Entry Bi-Regional Input-Output Tables), and CMRIO (The Multiregional Input-Output Model for China, 2000). Section 8.8 covers international models, including Asia tables, European-Community models, the China-Japan "Transnational Interregional" Input-Output Model, and, finally, Leontief's World Model. We come back to solid ground in Section 8.9, repeating the treatment of reconciliation issues found in the First Edition.

Slightly more than halfway through the book, we now find updated chapters on energy and environmental analysis followed by four new chapters. Chapter 11 explains the evolution of social accounting matrices (SAM) from the System of National Accounts promoted by the United Nations sufficiently to make us wary of analyses based on SAM multipliers. Chapter 12 includes comments on those strange supply-side models, a good and expanded treatment of linkages, and a new section on identifying important coefficients. Chapter 13 introduces structural decomposition analysis and expands discussion of new industry impacts and dynamic considerations. All of this leaves the final chapter of "Additional Topics" at 19 pages, half the number of pages devoted to "Selected Topics" in the First Edition.

Appendix A on matrix algebra has been cleansed of geometry and remains one of the best summaries available. And, new to the Second Edition, Appendix C is an historical note on the development of input-output analysis, of interest to the rare professor who teaches both the history of economic thought and regional economics. The book is associated with an amazing free Internet website containing supplementary appendices, problem solutions, and numerous other datasets that will be most useful in the learning process.

This book is almost encyclopedic, making it hard to say where an interested neophyte should start. Perhaps it would be best to begin with one of the many simple texts available in a college library or even with the free sources at the *Web Book of Regional Science* at West Virginia University. For practicing regional economists, the chapters on foundations, commodity-by-industry models, regional models, multipliers, nonsurvey techniques, and social accounting would be good starting points. As an aging practitioner, I still find these chapters and many others stimulating. But some parts I will never read, and some parts I cannot read with enthusiasm.

This Second Edition is a most welcomed resource and an outstanding update. A. C. Pigou was fond of telling his students at Cambridge that "it is all in Marshall." I can confidently paraphrase Pigou and say "it is all in Miller and Blair."

Carr, Patrick J. and Kefalas, Maria J. 2009. *Hollowing Out the Middle: The Rural Brain Drain and What It Means for America.* Beacon Press: Boston, ISBN: 978-0-8070-4238-0. 239 pp. $ 26.95 (cloth) or $16 (paper)

Reviewed by *Sarah A. Low*, U.S. Dept. of Agriculture, Economic Research Service[1]

The Heartland of America faces an ongoing crisis as its talented young people are one of its largest exports. *Hollowing Out the Middle* examines this phenomenon through the case of 'Ellis'. Ellis is a pseudonym for a real community of 2,000 people in northeast Iowa. Like so many other small, rural towns, Ellis faces myriad problems associated with hollowing-out, including a lack of teachers, physicians, service businesses, taxpayers, consumers, and even workers. Historically, communities like Ellis struggled to adapt to failing family farms, the growing dominance of agribusiness, and failing factories. Today, they continue to face job losses and shrinking wages and benefits. The authors—Patrick Carr and Maria Kefalas, sociologists who specialize in urban issues—interviewed graduates of Ellis High School in the late 1980s and early 1990s who lived across the country and those who lived in Ellis in the summer of 2002 to learn about the experiences of young adults from non-metropolitan America.

Carr and Kefalas conclude that small towns play a role in their own demise by grooming the best students to leave town and not return while not investing enough in the students who do stay. I think the latter should have been emphasized in the book. The authors find that the decision for young people to either stay or leave is the product of years of grooming, or neglect, by parents, teachers, and community-members. The authors identify four groups of Ellis High graduates—Achievers, Stayers, Seekers, and Returners. Each group has its own storyline and serves as the focus of a chapter. The authors conclude the book with a chapter discussing why this all matters and how each group could slow the hollowing-out of America.

The Achievers

In high school, the Achievers are ambitious, college-bound students, who often leave and never return. The Achievers have the highest GPAs and standardized test scores, and actively participate in extra-curricular activities. They often receive the most support from parents, teachers, and coaches, and frequently come from families with the highest socioeconomic status. Carr and Kefalas adequately describe the Achievers but, as a one-time Achiever who grew up in Iowa, I think two of their defining characteristics are amiss—the authors' focus on socioeconomic standing as a determinant of being an Achiever and their notion that Achievers are not held to the same rules other schoolchildren were. First, it would be interesting to more fully consider parental education levels, and its consequences for academic success, rather than socioeconomic status as a driver of achiever-status. Second, Carr and Kefalas maintain that communities and schools had different rules for Achievers—that they were not held to the standard other schoolchildren were—but the authors fail to give an example of this behavior. Both of these viewpoints may arise because of the authors' unfamiliarly with rural America, or may be unique attributes of Ellis.

Carr and Kefalas conclude that Achievers receive too much of a small town's resources and small town leaders need to re-think what best serves their community and their youth. They conclude that these communities should not invest so much in the youth who leave, that it occurs

[1] The views expressed here are those of the author, and may not be attributed to the Economic Research Service or the United States Department of Agriculture.

to the detriment of those who stay. Finally, the authors make the point that small towns are too good at nurturing students. However, until small towns create more economic opportunities and thereby enhance their ability to retain their best students, there will continue to be a detrimental amount of brain-drain.

The Stayers

The authors describe the Stayers as the working-class youth who suffer from stagnating wages and diminishing job opportunities in today's global economy. Unlike the achievers, Stayers rely on the familiarity and security family and friends bring. They tend to marry and start families relatively young, and do not wish to leave places like Ellis. Some Stayers do not graduate from high school and the authors note these students' dismay that their parents, teachers, and school administrators did not encourage them to stay in school. Stayers reported feeling hurt by a relatively limited amount of attention or care. For this reason, Carr and Kefalas argue that the Stayers need and deserve some of the attention lavished upon the achievers.

As teens, Stayers tend to look like and act like grown-ups. It is not uncommon for Stayers to begin working full-time in high school and find themselves working in the same job 10 years later, making only a dollar or two more per hour while trying to maintain their own household and care for children. Carr and Kefalas note that the Stayers believed that determination and hard-work would be enough to earn a decent-living and job security—beliefs that held a generation ago, but are less true today. Carr and Kefalas correctly conclude that the Stayers are a vital part of the solution to the hollowing-out problem. Vocational education could provide an important component in better preparing these students for future success, more so than taking college prep courses with attention-getting achievers. Tailoring instruction to meet the needs of Stayers could offer them confidence in the classroom and stability in life.

The Seekers

"Of the young people armed only with a high school diploma who ever do manage to leave Iowa, precious few get very far without enlisting in the military first" (p. 85). A disproportionately large share of the active military come from rural America and the authors correctly ask, is being in the military serving America's young people? Carr and Kefalas note that the Seekers often join the military to see what the world offers beyond places like Ellis. The military offers a chance to start life over, anonymously and without student loan debt—which the authors noted terrified many seekers. The authors portray the motivation to enlist in the military as a way to get out of Ellis and learn new skills, more than a desire to serve one's country.

Seekers recognize that there is more to life than Ellis and, like college, the military offers them structure, goals, and a place to go before entering the real world. The military also provides education, training, and tuition assistance. The authors point out that many enlistees receive training; however they do not receive the credentials or certifications necessary to apply those skills when they leave the military. For instance, the authors interviewed one Navy nurse who had 6-years' experience, but upon leaving the Navy she would not even qualify as a nurse's aide without a 6 week certification course. Additionally, frequent transfers and job duties prevented many of the interviewed enlistees from taking college-credit courses and completing a degree. Regardless of whether recruits receive a college degree, their return to places like Ellis, and the skills that they bring back often benefit those communities. But, as the authors note, many enlistees never return.

The Returners

Even though many Achievers leave rural areas, some do return with more education and experience and thereby ensure that rural communities receive some kind of return on the investment made in educating and nurturing these students. For instance, recent research on brain-drain and brain-gain shows that the flow of human capital between developing and developed countries can be a positive sum game, provided that a sufficient amount of the human capital returns and does not permanently migrate to the developed world (Haupt et al., 2010). The findings are germane to the flow of talent between urban and rural regions, and the authors address this issue extensively in this chapter.

The authors discuss two types of Returners; returnee-achievers are dubbed "High-Flyers," and other returnees, "Boomerangs." High-Flyers return home in search of stability, perhaps because they like to be the big fish in a small pond, or because their ambitious dreams failed to realize. In Iowa, High-Flyers have been the target of several state policy initiatives—the success of which are open to debate—which hope to recruit educated former-Iowans back to the state with the promise of low-cost housing and a great place to raise children, not necessarily jobs. The Boomerangs, the second group of returnees, were hungry to experience life someplace else but then return home, often in a hurry to marry, start a family, and begin their "real" life. The Boomerangs may possess skills like a community college degree, military training, or even just a view of the world outside of Ellis, but the authors lament that the Boomerangs are reabsorbed back into the community without much notice or fanfare and are not the target of state tax incentives.

The authors note that young people in Iowa report the lack of shopping, nightlife, and recreational and cultural amenities can often make rural communities unattractive place for relocation, which aligns with some of the broad conclusions surrounding research about the creative class. The authors, however, nicely follow this discussion with the idea that Iowa must first give young people an economic reason to stay—good jobs—and the shopping and nightlife will follow. The authors note that underemployment is an issue in Iowa—there are not enough jobs requiring college degrees for existing Iowans, let alone high flyers looking to return to Iowa. Additionally, the authors note that the boomerangs are not courted or encouraged to return home like the high-flyers, but their skill set may be a better fit for the type of workers local employers need—skilled manufacturing, certified healthcare assistants, and more.

Conclusion

Carr and Kefalas' principal conclusion is that civic leaders fail to see how their own actions have created the hollowing out problem. Carr and Kefalas state that the heartland's most valuable export is its young people, and heartland communities need these young people to be parents, workers, home owners, voters, and taxpayers. Even so, these communities simply cannot provide the educational opportunities, work experiences, and exposure to the broader world that people need to succeed in an ever expanding world. I think that parents, teachers, and community leaders should not stop preparing bright and talented youth to leave but they should also give greater consideration to the skills that will allow to the Stayers and Boomerangs to thrive. For instance, this may require greater emphasis on vocational education. It may also necessitate incorporating entrepreneurial education into all levels of education, so as to better prepare students to create economic opportunities that will provide people with jobs that are challenging, rewarding, and worth sticking around for. The authors could have given greater discussion to the role of entrepreneurship in addressing many of the issues addressed in the book.

The authors bring a non-rural perspective to the issues discussed in this book. They add value with some interesting comparisons between rural and urban areas: a decaying Main Street is comparable to a forgotten urban neighborhood, decrepit barns are comparable to burned-out or boarded-up urban buildings, and youth cooking meth in abandoned barns is comparable to youth dealing drugs in front of vacant urban buildings. In rural America guns proudly displayed next to the family's china while in the inner-city those guns tend to be illegal.

This book is a fun read, a good contextual piece, and an interesting contribution to the conversation on the consequences of outmigration and brain-drain for rural communities. The book's finding may have been strengthened by spending more than three months in Ellis as would comparing Ellis to other rural communities struggling with outmigration. For undergraduates, this book might drive interesting class discussions as students from the heartland may consider how their communities have been affected by outmigration, and the extent that they and their siblings, neighbors, and friends can relate to the different groups identified in the book. Students from more urban and suburban communities might learn a little bit about growing up in rural America, and as a result the book might make for an effective discussion piece when utilized within a broader set of readings.

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Haupt, Alexander, Tim Krieger, and Thomas Lange. (2010) "A Note on Brain Gain and Brain Drain: Permanent Migration and Education Policy," *CESifo Working Paper No. 3154*. August.

Karlsson, Charlie, Roger R. Stough, and Börje Johansson. 2010. Entrepreneurship and Innovations in Functional Regions. Edward Elgar Publishing Inc.: Northampton, MA. ISBN: 978-1-84720-074-7. 428 pp. $155

Reviewed by *Heike Mayer*, University of Bern, Switzerland

This book presents a collection of articles that discusses the role of innovation and entrepreneurship in functional regions. The editors define a functional region as "a geographical area for knowledge creation, appropriation, diffusion, and absorption, as well as for transformation of knowledge to innovations via entrepreneurial initiatives" (p. 1). In functional regions, interactions between economic actors are frequent and can happen with ease. It is also an area that is economically integrated through labor market dynamics and inter-firm relationships, interactions through which knowledge spillovers occur and contribute to innovative and entrepreneurial dynamics. The editors discuss the positive implications of the size of a functional region and note that the larger a functional region is, the more successful it will be in terms of innovation and entrepreneurship. This observation is very relevant especially at a time when policymakers discuss the growing importance and role of metropolitan regions (as well as their connections) and devise appropriate policy approaches for this geographic scale. In Europe, for example, ideas about functional regions have influenced current thinking about metropolitan areas and many regions have formed entities that devise economic development policies for this geographic level. While the book does not present a definite answer about the ideal size of a functional region with regards to innovation and entrepreneurship, the contributions present empirical evidence (qualitative and quantitative) for the various innovative and entrepreneurial dynamics in functional regions.

In Chapter 1, the editors present an overarching discussion of the themes innovation, entrepreneurship, knowledge, and creativity as they relate to functional regions. The authors argue that opportunities for innovation and entrepreneurship depend on the size of the region. Functional regions with a large home market and regions with easy access to other regions offer better opportunities for innovators and entrepreneurs than smaller regions. In larger regions, entrepreneurs have better exposure to customers and therefore can access new ideas more quickly than their counterparts in small (and/or remote) regions. Large functional areas also provide a wealth of ideas and information, benefits that arise from urbanization economies. They also have good national and international networks. Summing up the benefits, the editors' note that large functional regions will expand their economic prowess and develop their competitiveness. This introductory chapter sets the stage for the following contributions.

In Chapter 2, *Jack A. Goldstone* discusses the determinants of regional growth and argues that the development of a unique engineering culture—developed through interactions between engineers who conceive and develop ideas and entrepreneurs who bring these ideas to market—propels the growth of regional economies. The chapter concludes with a plea to not separate occupational groups or economic agents in "sterile isolated residential communities" (p. 43).

Several chapters in the book broach the issues of firm heterogeneity and variation in terms of products, strategies, age, and size. In Chapter 3 for example, *Olof Ejermo* and *Astrid Kander* discuss the so-called 'Swedish paradox', which describes the Swedish lack of translating high levels of R&D investments into economic growth. They show that, in Sweden, R&D investments are concentrated in a few multinational companies indicating that it is important to differentiate by firm size and industry structure. Similarly, *Börje Johansson*, *Amy Ryder-Olsson*, and *Hans Lööf* present evidence in Chapter 4 that multinational enterprises (MNEs) have higher R&D intensity and are therefore more likely to participate in regional innovation systems. Large functional regions—as shown in the study of Sweden for Stockholm—have a higher probability of being innovative. Chapter 5 discusses the relationship between firm age and R&D. The author, *Krystina Nystöm*, presents evidence for the Swedish manufacturing industry and finds that size and age matter especially for firms that carry out both product and process R&D. Chapter 7 by Martin Andersson presents evidence for the effect of product variety and finds that firms with larger export variety export more. Chapter 8 by Raquel Ortega-Argilés and Rosina Moreno discusses results of a study of the relationship between firm survival rates and competitive strategy. Altogether these chapters point to the importance of differentiation in terms of products, firm characteristics and industry structure.

Chapters 11 to 14 take a macro perspective by discussing the evolution of certain industries and their regional economies. In Chapter 11, for example, *Waldemar Pfoertsch* and *Reha Tözün* discuss the development of the optics industry in East Württemberg, Germany. In Chapter 12, *Gary A.S. Cook* and *Naresh R. Pandit* examine the broadcasting industry in three UK cities and find that knowledge flows and interactions vary substantively between the cities. Chapter 13 focuses on China's telecommunications industry. Here, *Lei Ding* and *Kingsley E. Haynes* focus on critical conditions that support this industry. *Roger R. Stough* discusses the role of entrepreneurship in the development of the US capital city region in Chapter 14. The chapters highlight the importance of industry dynamics and geographical proximity.

Overall, the book contains a wealth of material on the topic of innovation and entrepreneurship. While the authors present leading-edge empirical evidence on innovation and entrepreneurship, they often miss the opportunity to discuss the role of geography in the form of functional regions. Specific insights into the nature and extent of innovation and entrepreneurship in functional regions are missing because most of the chapters` analyses do not take the functional region into account. It would have also been useful to present a concluding chapter in which the empirical evidence is summarized and in which research and policy implications would be presented. Yet despite this shortcoming, the essays are valuable for graduate students and scholars of regional economic development.

Karlsson, Charlie, Börje Johansson, and Roger Stough, eds. 2009. *Innovation, Agglomeration and Regional Competition*. Edward Elgar. ISBN: 978-1-84542-526-5. 405 pp. $180.

Reviewed by *Daniel C. Monchuk*, University of Southern Mississippi.

The book *Innovation, Agglomeration and Regional Competition* by Karlsson, Johansson, and Stough makes a number of important contributions towards understanding growth at the regional level. The book is organized into two parts with the first part covering location, agglomeration, and innovation (Chapters 1-8) and the second part dealing with regional competition (Chapters 9-15).

The emergence of the knowledge age has seen a shift away from traditional factors of production in favor of new technology, R&D, and human capital. Technological advances and innovation have become the new driving forces of growth. At the same time, the emergence of a global economy and globalization has brought with it important challenges that are particularly relevant at the regional level. In Friedman's view the "world is flat" where transactions are anonymous and products are sourced from anywhere in the world where they are cheapest. Of course, this notion of globalization can be particularly worrisome for regions whose traditional production sectors might be facing stiff competition from new producers overseas. However, Leamer (2007) reminds us that while mechanization and computerization may lead to anonymity and dispersion of activity worldwide, innovation and knowledge create opportunities that strengthen relationships between agents, agents whose interaction are heavily influenced by their location as well as by their by their cultural and educational background.

Although there are a few chapters whose contributions are theoretical, the majority is empirical applications testing a variety of hypotheses spanning a range of issues. For example, one topic that has been the subject of lengthy discussion, but for which limited empirical evidence exists, is whether ensuring internet access can support regional development. The fourth chapter, by *Roberta Capello*, examines the link between policies to support the use and provision of the internet and regional disparities among EU countries with the hypothesis being that telecommunications technologies are key to remaining competitive. The author finds that while targeting such policies would be more efficient, this also leads to greater regional disparity. Capello concludes by noting that the best policy might be one that targets regions whose industrial composition is most conducive to adapting the new technologies.

Some contributions also cover topics that are somewhat outside the usual realm of the regional literature. One of these is discussed in the chapter by *Bjuggren* and *Wiberg*, who look at how the resulting transfer of firm ownership – succession – is influenced by different market characteristics and ownership structure using data from south central Sweden. Among the results, the authors find that succession for larger firms is less problematic than for smaller firms and that succession seems to improve the competitiveness of firms.

Of the contributions contained in this book, the chapter by *Paul Cheshire* was particularly notable. This chapter should be read by graduate students as well as regional economists and policy makers. In short, Cheshire argues that despite the fact that very little is known about the complexities and intricacies of cities, policies have been developed and implemented on a "foundation of ignorance and with a glorious disregard for the law of unintended consequences" (p.107). Following a recount of urban development policies, Cheshire analyzes predominantly European city data to reach his main conclusion - that despite the attempts to shape the development of cities, very little of what actually happens in cities is actually attributable to policy. The broader message is not that policy is ineffective, but that there is still much more to be learned about the urban growth process.

Finally, one area of innovation and regional growth that has yet to be adequately addressed in the literature concerns the treatment of intellectual property rights. The Schumpeterian view that institutions, like a patent system, are required to induce innovation is being challenged by recent work showing that monopolizing intellectual property can seriously limit growth (see Boldrin and Levine, 2010). To the credit of the text, the contribution by *Philip Cooke* does address regional and global innovation networks and *Urban Gråsjö* looks at R&D and innovation as measured by patents. Both of these chapters provide insight into how companies might organize themselves to generate as well as protect their innovations. However, what role regions might play in the absence of legal monopolies to protect innovations (i.e. patents) is still an area to be researched.

Overall, the book conveys that understanding how the specific knowledge-age factors of production, market structure, and institutional environment work together is arguably the most important consideration in supporting and sustaining regional economic growth. With a variety of geographic perspectives, this book will appeal to researchers, students, and policymakers in a range of fields including urban and regional economics, economic geography, international trade, and entrepreneurship and innovation policy.

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