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BOOK REVIEWS

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Manuel Alejandro Cardenete, Ana-Isabel Guerra, and Ferrán Sancho. (2012) *Applied General Equilibrium: An Introduction*. New York: Springer. 118+IX pp. ISBN: 978-3-642-24745-3. \$99.

Reviewed by *María Teresa Álvarez-Martínez*, Rutgers University

This mere 188-page book is a surprisingly valuable contribution to the literature since it covers a missing link in the literature on Applied (or Computable) General Equilibrium (AGE/CGE) modeling—a decent introductory text. Unlike other books on the topic, this one does not focus on the design of a large model or on the evaluation of specific policies. Instead it gets into basic details of the modeling process itself—the design of the model, the construction of the database (a Social Accounting Matrix better known as a SAM), the calibration process, and the GAMS computer code the authors used to model scenarios. Indeed, the authors develop a wide range of models, from the most basic—a closed economy without government—to the most complex, including ad-valorem taxes, foreign sectors, and endogenous unemployment. The integration of economic theory and data is systematically presented in every example. The authors, Alejandro Cardenete (University Pablo de Olavide), Ana-Isabel Guerra (University of Granada) and Ferrán Sancho (Autonomous University of Barcelona), have a broad knowledge in CGE models and their main fields of study are Environmental and Resource Economics and Fiscal Policy Analysis in regional and national economies.

The authors' aim is to provide readers with the tools needed to construct their own models. I applaud them for their success. After reading the book, students should be able to build an AGE model because they will have gained an understanding of its internal logic. They should also be able to properly interpret results obtained from the model as well.

Lately, the use of AGE models has been growing without pause. But, as the authors mention, it seems researchers have preferred to use prepackaged software and data rather than to develop their own models predicated upon data they have built up themselves (and thereby know well the data's strengths and weaknesses). In my view, this tendency seems to be motivated by the huge effort model construction entails—data reconciliation, calibration and programming code, etc.—but also by a lack of texts that might tell researchers how to deal with such issues when confronted by them. The authors clearly suggest that we reject this tendency toward using

off-the-shelf models. They therefore encourage readers to improve his/her skills by reading their book. I agree with them and also believe that what characterizes a good economist is that she ought to be able to understand, and explain, all that has been done step by step, leaving nothing aside.

The book is composed of seven chapters. Chapter 1 defines and describes AGE models and presents the objectives and the main contents of the book. In Chapter 2, we find an overview of the general equilibrium theory. The authors describe in a very concise way how the rational behavior of all economic agents leads to market equilibrium. They also provide additional bibliographical references for those readers more interested in theoretical issues.

Once the main concepts have been introduced, the authors go on to describe background theory as well as the empirical implementation of a very simple model. In Chapter 3, they start using very simple production functions with constant returns to scale. The equilibrium equations are clearly stated, and the authors established the procedure to calibrate the model with an ad hoc numerical example. The key role of the numéraire is fully explained, and they devote a large explanation to show how results should be interpreted. After reading this chapter, the modeler will know the basics that guide remaining chapters in the book. The GAMS code included at the end of every chapter helps the reader become familiar with the programming language and enables us to check how endogenous variables react to changes in parameters and exogenous variables.

Chapter 4 goes a step further and includes the role of the government in the model. The authors deal, on the one hand, with the introduction of taxes (lump-sum or ad valorem) and on the other hand with government spending on consumption and current transfers. They run several simulations to show the effects of shocks in indirect taxes on output, with lump-sum transfers, and on factor and income tax rates. Additionally, they include public deficit in the model and pay special attention to the equilibrium between investment and savings, typically termed a “closure rule.” These taxes and imbalances make it hard to find small mistakes that may affect results that are not detected by GAMS. In this regard, the book also offers some tips and advice to beginners, for instance the many different approaches to calculate GDP.

More realistic but also more complex models are displayed in Chapter 5. In this case, the authors include the foreign sector (imports, exports, and tariffs) and the existence of unemployment. Chapters 3, 4, and 5 constitute the core of the manual and at the end of each the reader can test their new-found skills by completing a section of exercises. All questions are graded by level of difficulty, and all of them can be solved using an advance microeconomics book. As an introductory text, however, it would have been helpful if it had provided solutions to at least all the most difficult questions.

All of Chapter 6 is devoted to explaining how to build a SAM and how to calibrate the model. The authors use a SAM for Spain’s economy (the model’s base year is not mentioned, however) and start calibrating the model elaborated in the previous chapter. The authors spare no effort in identifying numerical values for all parameters involved. This should be particularly interesting for beginners, who tend to have trouble calculating ad-valorem tax rates in nested production functions.

Finally, Chapter 7 presents real-world examples and shows how AGE models have been widely used to evaluate very different sorts of economic issues (fiscal reforms, trade and stabilization policies, and environmental analysis) during the last 20 years. This chapter

summarizes the theoretical origins of AGEs and how empirical applications of them have been moving forward with the development and adoption of more efficient algorithms and other forms of software. The authors acknowledge that this chapter does not completely survey the entirety of the relevant literature. It simply highlights the potential use of these models and their flexibility via very recent example papers in order to encourage readers to keep moving on the AGE “road.”

In my view, this is a very useful book that should be on the shelf of any student of AGE modeling. The authors’ broad knowledge and capabilities are evident throughout the book. Even the most complicated issues are tackled in an easy-to-understand way, which makes the book quite accessible.

Lisa A. Keister. 2011. *Faith and Money: How Religion Contributes to Wealth and Poverty*. New York: Cambridge University Press. (Hardback) ISBN 978-0521-89651-1 \$99. (Paperback) ISBN 978-0521-72110-3 248 +xii pp. \$27.99.

Reviewed by *Michael Lahr*, Rutgers University

Wealth is generally negatively correlated with the intensity of religious fervor. At least this is the finding across countries. Using her background in sociology, Duke University’s Professor Keister probes into this association within the confines of the United States. Religion poses an important cultural divide among America’s citizenry. Thus, there is no reason to believe that, as a sociological institution, religion would not reveal differential effects on wealth here. Keister’s prior tomes grounded in status attainment and life course traditions of social research—*Wealth in America* and *Getting Rich: America’s New Rich and How They Got That Way*—clearly lead her down an investigative path that wound up as the book I review here. Thus, it is easy to deduce that religion regularly pops up as an apparent mitigating factor in the wealth of Americans.

In the U.S., religion and wealth are inextricably intertwined; well, our nation’s early history practically demands it. Western Europe Protestants, who sought religious freedom either from papist rule or from the Church of England, were key to the serious, early settlement of land that is now the northeastern part of the United States. Land in the more rural South, on the other hand, was owned by people with a different amalgamation of Protestant religions, both Anglican and Presbyterian sects dominated. Indeed, among the original thirteen American colonies, only Maryland was settled by Roman Catholics early on. And while Louisiana and Florida were first settled by French and Spanish and, hence, largely Roman Catholic populations, the density of settlement outside of New Orleans during their control was rather sparse. So we know landownership in early American history was dominated by a group that Keister identifies as “Mainline/Liberal Protestants.” As a consequence, the association of this group with wealth today should not be so surprising. In a similar vein, it is no surprising that populations not permitted to accumulate wealth in early America (e.g., Black Americans) lack association with current relative wealth. From a historical perspective, at least, the relative positional wealth in the American society of people with Catholic, Jewish, Mormon, and Conservative Protestant religious convictions are, therefore, most interesting since these groups emerged as significant populations in the U.S. more or less during the same period.

It is a bit curious that few researchers prior to Professor Keister have probed the relationship between wealth and religion very thoroughly. A smattering of publications do exist,

and she acknowledges them in a section entitled “The American Religious Landscape,” where she surveys the current state of religious diversity in the U.S. as well as recent trends in each denomination’s internal structure and strength of religious conviction. They also appear in abnormal density in Chapter 7 entitled “Notable Achievement” where Keister summarizes differences by denomination and relates them to prior research findings. Most interesting to me here was the general lack of conviction among Hispanic Catholic populations, which was by far the lowest among all twelve groups examined. Also the extreme detail in prior literature on people who identify as being Jewish was notable. The rest fell in line with expectations, with Mormon’s and Conservative Protestants (both Whites and Blacks) revealing very strong rates of religious conviction. And fewer shares of people (less than 50%) who identify themselves as Mainline/Liberal Protestants, Catholics, and Jewish faiths also tend to identify themselves as having strong religious conviction.

Too be frank, however, I was disappointed by the general pedantic nature of the remainder of this fact-filled book. It reminds me more of a consulting report than of a trade or academic reference book. Through Chapter 5, table after table is displayed on differences by denomination on things like self-worth, tithing, home equity, homeownership, hours worked, various financial investments, debt, and so on are detailed ad nauseum during the 1991-2006 period. Still, some semi-sophisticated forms of analysis (logit and generalized least squares regressions on parental education levels, whether inheritance was received, and net worth) were performed too. Nonetheless, the results by denomination are remarkably similar across most of them. Jews and Main Stream/Liberal Protestants are generally the wealthiest groups with tendencies for intergenerational distribution of assets, and Black Conservative Protestants and Hispanic Catholics are the poorest.

The most interesting chapter is Chapter 6, which focuses on upward mobility. But this also is the one chapter that was developed from Keister (2007, 2008), two journal articles. Most of the results show the well-documented rise in wealth of the period, but they also identify the relative advance of White Catholics.

Faith and Money is the first of its kind, it is likely to be a standard reference since it provides so many stylized facts (grounded theories) that will undoubtedly be tested in future research. Indeed, I have already suggested it as a reference to a couple of colleagues who are doing research in which controlling for individual’s religiosity seems critical to their analyses. I strongly recommend this book to people who use regularly use data from the General Social Survey, the National Longitudinal Survey of Youth, and other data sets in which religious affiliation is identified.

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Cathy Macharis and Sandra Melo, eds. 2011. *City Distribution and Urban Freight Transport: Multiple Perspectives*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar. 263 and ISBN: 978-0-85793-274-7. \$125.

Reviewed by *Zhenhua Chen*, George Mason University

This book is one of the series on transportation and communications network research sponsored by the Network on European Communications and Transport Activities Research (NECTAR). The focus of the book is three fold: first, it addresses pivotal questions of urban goods distribution (UGD) that relates to freight mobility and sustainability; second, it discusses methodologies for the freight distribution system performance assessment and economic impact evaluation, and third, it provides best practices on the inclusion of stakeholder perspectives and expectations on evaluated outcomes through the case studies that cover different types of transportation modes, geographic location and stakeholders' points of view. The book is written in the context of Europe as the contributors are all economists and engineers from the Netherlands, Belgian, Germany, Italy and Portugal.

The book includes an introduction and 11 chapters, which are compiled of 11 independent research studies by different authors. Part I addresses some of the key problems of UGD and discusses possible solutions. *Laetitia Dablanc* from the French institute of science and technology for transport, development and networks (IFSTTAR), provides general guidelines of urban freight transport through the discussion of its major features in chapter 1. Policy recommendations for urban freight transport practitioners and decision-makers are elaborated from multiple perspectives. In chapter 2, *H.J. (Hans) Quak* from the Delft University of Technology discusses challenges of sustainability of urban freight transport. A conceptual model is proposed and discussed in the respects of logistics, policy and technology. Chapter 3 which is contributed by *Roel Gevaers, Eddy Van de Voorde and Thierry Vanelslander* from University of Antwerp primarily discusses the question of which aspects should be taken into account when implementing innovative concepts in last-mile logistics. The question is analyzed in a systematic way from providing the definition to assessing its characteristics and typology.

Part II of the book, contains chapter 4-6, provides three types of methodologies to understand practical issues relating to urban freight policy evaluation. The first method is an in-depth interview conducted by an Italian research team including *Amanda Stathopoulos, Eva Valeri, Edoardo Marcucci, Valerio Gatta, Agostino Nuzzolo and Antonio Comi*, investigating the perceptions of problems and the positions of key stakeholders in the Roman city logistics sectors. The second method presented in chapter 5 by a Belgium research team including *Cathy Macharis and Ellen Van Hoeck, Sara Verlinde, Wanda Debauche and Frank Witlox*, uses the Multi-Actor Multi-Criteria Analysis (MAMCA) with integration of both multiple stakeholders and multi-criteria assessment. After a theoretical introduction to the methodology, a case of night-time delivery in Belgian cities is provided as an example to demonstrate how a better understanding of transport decision problems that involve various stakeholders can be found.

Given the criteria for performance evaluations of UGD including mobility and sustainability, *Sandra Melo and Álvaro Costa* from the Faculty of Engineering of University of Porto (FEUP) in chapter 6 present an objective methodology to define, select and validate the relevant indicators for the performance initiatives. The methodology makes a fundamental contribution to the field of urban freight transportation as it enables decision-makers and

practitioners to operationalize and quantify mobility and sustainability of UGD with considerations of stakeholders' concerns and priorities.

Part III of the book, chapters 7 to 11, provides five concrete research and evaluation practices of UGD with case studies from different European cities and different types of transportation modes. In chapter 7, *Carlo Vaghi and Marco Percoco* from Bocconi University in Milan present a comparative analysis of the logistics systems in Italian cities and an in-depth cost-benefit analysis on one Italian city. The study reveals the environmental performance and factors that lead to the success of city logistics system. *Tom van Lier and Cathy Macharis* from Vrije Universiteit Brussel in chapter 8 provide another comparative analysis to estimate the environmental impacts of barge transport as opposed to truck transport in the case of Brussels. The study finds that barge is more sustainable and cleaner than trucks through a comparison of their external costs under different scenarios of congestion.

Julius Menge from Berlin's Senate Department for Urban Development and *Paul Hebes* from German Aerospace Center Institute of Transport Research in chapter 9 discuss constraints affecting the optimization of the urban delivery project named 'Smart Truck' implemented by DHL Express in Berlin in Germany. The case study demonstrates a technological application in UGD evaluation. *Jochen Maes and Thierry Vanelslander* from University of Antwerp in chapter 10 present a special case of UGD which uses rail transport as the main part of the supply chain. Through the analysis of environmental cost, the study argues that rail transport can be used as a possible solution to achieve sustainability for urban freight distribution. The final chapter is written based on the Ph.D. thesis of *Sandra Melo*. With the focus on a specific urbanized area in Porto in Portugal, the study evaluates the 'good practices' of UGD based on a simulation technique and survey data. One attractive part of the case study is that the evaluation indicators of UGD is selected based on the methodology discussed in chapter 6, thus the simulation results gives valuable information on the best practices of UGD and helps reveal policy implications for decision-makers.

The book is well structured and edited with extensive contents of both theoretical discussion of urban freight distribution and practical applications. While the problem situation and possible solutions in Part I and the evaluation methodologies in Part II are well presented and discussed, some of the case studies in Part III have a few methodological weaknesses. For instance, the case study of city logistics in Italy presented in chapter 7 adopts cost-benefit analysis (CBA) for the evaluation of environmental performance in both *ex ante* and *ex post* scenarios. It is known that the result of CBA is sensitive to the evaluation contents and deflators. Unfortunately the analysis appears to suffer from these issues as none has been explicitly discussed in the chapter. The authors admit that several evaluation contents are not considered such as "value of time for delivery", "time cost benefits" and cost of congestion. It is also unclear that how values of external costs ("air pollutants, global warming, noise pollution and accidents") are calculated and what deflator rate is used when calculating the social net present values of the logistic project. Without the relevant discussion, the conclusion of case evaluation may be problematic.

Another methodological weakness exists in the case study of barge transport in Brussels presented in chapter 8. In order to calculate how much more sustainable the mobility by barge is compared to truck in the year of 2007, the authors compare the external costs of barge transport and truck transport by assuming they deliver the same amount and types of cargos between the ports of Antwerp and Brussels in Belgian. The calculation is based on the amount of ton-

kilometers and the marginal average external costs. Since the marginal external costs are based on a study completed in 2004, it is highly doubtful that how reliable the results are given the fact that the value of marginal external costs of barge and truck from various environmental aspects may vary substantially in different years. Without adequate discussion about how these initial external costs are constructed and why they are adopted, the conclusion of the case study may be of concern.

Despite these methodological weaknesses, the authors' use of a relatively wide range of case studies and innovative methods as well as the clarity with which the analysis is presented makes this book a valuable reference for planners and policymakers. It provides an understanding of the key issues of urban freight distribution in modern cities. The book also appeals to academic scholars and graduate students in the field of either urban planning or public policy, who can also benefit from the extensive and solid foundation laid for future research. Given the fact that this book is written in the context of European cities, some of the conclusions and findings may only reflect the patterns of those specific regions or systems. Generalization or implication to other countries or systems may be difficult.