

Contributions to Economics

Deep Mukherjee *Editor*

Applied Econometric Analysis Using Cross Section and Panel Data

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Contributions to Economics


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Applied Econometric Analysis Using Cross Section and Panel Data

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In loving memory of Riddhiman Mukherjee

Preface

Economic data collecting has increased dramatically during the last three decades. However, economic data frequently have special traits. So, in the same time frame, econometricians have created a variety of methods for processing vast amounts of data and enhancing empirical economic research. This reference volume is a collection of 20 chapters on chosen advanced topics from cross-section and panel data econometrics. With the motto “keeping things simple,” this book explores both theoretical and practical aspects of selected cutting-edge econometric techniques which are gaining popularity among applied economics. Each chapter, written by experienced applied researchers, in the book, combines a brief review of a particular econometric method with fresh application and practical aspects of empirical model estimation.

Why Another Book?

There are already some high-quality general textbooks and advanced textbooks on special topics “teaching” econometric theory. Also, there are a number of excellent reference books for graduate students and practitioners interested in continuing education in econometrics. From my experience of teaching econometrics courses and as an applied researcher, I have observed three facts.

First, the field of econometrics is evolving very fast and leading general textbooks are trying to cover some of the recent developments in revised editions. There are not many books, which can offer the reader an opportunity of learning the state of the art in econometrics in a simple manner, not just the theoretical one, but from the point of view of practitioners. However, if an instructor is looking for one book, which offers a basic introduction to state-of-the-art techniques and software guide with interesting detailed applications from various developing and developed countries, such a reference material is hard to find.

Second, although there are empirical illustrations in popular and leading textbooks, those model demonstrations are short and without any background behind

the empirical model presented. These books are designed more around theoretical results by following theorem-proof style. In an applied econometrics course, if the instructor wishes to talk about application of a cutting-edge model or method, he/she has to refer to a journal article. My experience says that graduate students and applied researchers in general prefer reference books with a simple introduction to an advanced method or model with no theorems but with a longer discussion on empirical application, including software use.

Third, if the instructor relies on journal articles to teach advanced topics, even the smartest student in the class sometimes finds it difficult to assimilate analytically rich concepts, which are not explained well in student-friendly language. Moreover, a journal article often does not come with relevant software codes to reinforce the learning. So, journal articles also have their own limitations from the perspective of teaching.

Hence, in my humble assessment, there is still a vacuum for a reference book for one semester-long applied econometrics course for second year Ph.D. students and practitioners of econometrics. Ideally, that book shall cover various state-of-the-art methods and/or models in sync with the current research trends but still not discussed in typical graduate-level textbooks. I am editing this volume to fill such a void.

Plan and Organization of the Book

This reference book is designed to bridge the gap between advanced textbooks on theoretical developments in econometrics and the journal articles presenting applied econometric research. However, this volume does not aim at providing a comprehensive coverage of state-of-the-art econometric methods. The 20 chapters in this edited book give only a sample of the important topics in modern econometrics. There are 14 chapters in the category of Microeconometrics. Rest are in the area of Macroeconometrics.

This book is divided into two parts: the first segment is devoted to methods and models based on cross-sectional data, and the second one is dedicated to methods and models involving panel data. Each part consists of 10 chapters. All chapters are written to be as self-contained as possible. Each chapter is structured to begin with a discussion on theory. Authors introduce a cutting-edge model or method in the simplest possible manner and provide a little bit more details and explanation of what is found in typical journal articles using those techniques. More or less standard notations are used in all chapters. Each chapter provides a brief literature review on the empirical topic at hand and presents a fresh application in detail. Authors also show how to estimate the empirical models using various software. For most chapters, data and code files are available on the companion website.

Many chapters make student-friendly presentations of advanced theoretical models that are not presented in leading textbooks. Real-life applications cover many sub-fields like agricultural economics, development economics, environmental economics, and program evaluation. In addition, these empirical cases come from

more than a dozen countries spread over all continents. Given these aspects, I hope that this volume's scope and contents ought to be appealing to a broad audience.

Possible Use of the Book

The book is relatively advanced in places. Therefore, the volume assumes prior training in statistics and econometrics. The main target group of this reference book is Ph.D. students of Economics, Public policy, and Management. Those who want to continue learning advanced econometrics, after completing at least one course on econometric theory or planning to apply advanced econometric models for research, may find this volume useful. Although the book includes only selected topics and will not serve as a textbook for an econometric theory course, it can be used as an easy-to-read reference for a semester-long "Applied Econometrics" or "Microeconometrics" course. The extensive coverage of this volume provides an instructor a lot of flexibility in choosing 10–12 chapters from this book for such a one-semester course. The most salient feature of the volume is that, for most of the chapters, data, and codes are available to get hands-on experience with econometric modeling. This book can also be used as a complementary reference along with other advanced-level econometrics textbooks.

Acknowledgements

Last but not the least, I would like to thank the authors of the volume for the excellent chapters they produced. This book would not have been possible without the kind contribution from these scholars. I greatly appreciate their patience in dealing with the requests and comments of the editor.

Kanpur, India

Deep Mukherjee

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