

Panel Data Econometrics Manuel Arellano

Panel Data Econometrics: Theory introduces econometric modelling. Written by experts from diverse disciplines, the volume uses longitudinal datasets to illuminate applications for a variety of fields, such as banking, financial markets, tourism and transportation, auctions, and experimental economics. Contributors emphasize techniques and applications, and they accompany their explanations with case studies, empirical exercises and supplementary code in R. They also address panel data analysis in the context of productivity and efficiency analysis, where some of the most interesting applications and advancements have recently been made. Provides a vast array of empirical applications useful to practitioners from different application environments Accompanied by extensive case studies and empirical exercises Includes empirical chapters accompanied by supplementary code in R, helping researchers replicate findings Represents an accessible resource for diverse industries, including health, transportation, tourism, economic growth, and banking, where researchers are not always econometrics experts

In addition to econometric essentials, this book covers important new extensions as well as how to get standard errors right. The authors explain why fancier econometric techniques are typically unnecessary and even dangerous.

This outstanding introduction to microeconometrics research using Stata offers the most complete and up-to-date survey of methods available. The authors address each topic with an in-depth example and demonstrate how to use Stata's programming features to implement methods for which the application does not have a specific command.

Written by one of the world's leading experts on dynamic panel data reviews, this volume reviews most of the important topics in the subject. It deals with static models, dynamic models, discrete choice and related models.

This text presents modern developments in time series analysis and focuses on their application to economic problems. The book first introduces the fundamental concept of a stationary time series and the basic properties of covariance, investigating the structure and estimation of autoregressive-moving average (ARMA) models and their relations to the covariance structure. The book then moves on to non-stationary time series, highlighting its consequences for modeling and forecasting and presenting standard statistical tests and regressions. Next, the text discusses volatility models and their applications in the analysis of financial market data, focusing on generalized autoregressive conditional heteroskedastic (GARCH) models. The second part of the text devoted to multivariate processes, such as vector autoregressive (VAR) models and structural vector autoregressive (SVAR) models, which have become the main tools in empirical macroeconomics. The text concludes with a discussion of co-integrated models and the Kalman Filter, which is being used with increasing frequency. Mathematically rigorous, yet application-oriented, this self-contained text will help students develop a deeper understanding of theory and better command of the models that are vital to the field. Assuming a basic knowledge of statistics and/or econometrics, this text is best suited for advanced undergraduate and beginning graduate students.

The Handbook is a definitive reference source and teaching aid for econometricians. It

examines models, estimation theory, data analysis and field applications in econometrics. Comprehensive surveys, written by experts, discuss recent developments at a level suitable for professional use by economists, econometricians, statisticians, and in advanced graduate econometrics courses. For more information on the Handbooks in Economics series, please see our home page on <http://www.elsevier.nl/locate/hes>

Although the theme of the monograph is primarily related to "Applied Econometrics", there are several theoretical contributions that are associated with empirical examples, or directions in which the novel theoretical ideas might be applied. The monograph is associated with significant and novel contributions in theoretical and applied econometrics; economics; theoretical and applied financial econometrics; quantitative finance; risk; financial modeling; portfolio management; optimal hedging strategies; theoretical and applied statistics; applied time series analysis; forecasting; applied mathematics; energy economics; energy finance; tourism research; tourism finance; agricultural economics; informatics; data mining; bibliometrics; and international rankings of journals and academics.

This text provides a comprehensive treatment of finite sample statistics and econometrics. Within this framework, the book discusses the basic analytical tools of finite sample econometrics and explores their applications to models covered in a first year graduate course in econometrics.

Presents familiar elements of estimation theory from an analog perspective discussing recent developments in the theory of analog estimation and new results that offer flexibility in empirical research. Annotation copyrighted by Book News, Inc., Portland, OR

The present Special Issue collects a number of new contributions both at the theoretical level and in terms of applications in the areas of nonparametric and semiparametric econometric methods. In particular, this collection of papers that cover areas such as developments in local smoothing techniques, splines, series estimators, and wavelets will add to the existing rich literature on these subjects and enhance our ability to use data to test economic hypotheses in a variety of fields, such as financial economics, microeconomics, macroeconomics, labor economics, and economic growth, to name a few.

We examine the interest rate elasticity of housing prices, advancing the empirical literature in two directions. First, we take a commonly used cross-country panel dataset and evaluate the housing price equation using a consistent estimator in the presence of endogenous explanatory variables and a lagged dependent variable. Second, we carry out a novel analysis of determinants of residential housing prices in a cross-section of countries. Our results show that the short-term interest rate, and hence monetary policy, has a sizable impact on residential housing prices.

The third volume of edited papers from the Tenth World Congress of the Econometric Society 2010.

Even minute increases in a country's growth rate can result in dramatic changes in living standards over just one generation. The benefits of growth, however, may not be shared equally. Some may gain less than others, and a fraction of the population may actually be disadvantaged. Recent economic research has found both positive and negative relationships between growth and inequality across nations. The questions

raised by these results include: What is the impact on inequality of policies designed to foster growth? Does inequality by itself facilitate or detract from economic growth, and does it amplify or diminish policy effectiveness? This book provides a forum for economists to examine the theoretical, empirical, and policy issues involved in the relationship between growth and inequality. The aim is to develop a framework for determining the role of public policy in enhancing both growth and equality. The diverse range of topics, examined in both developed and developing countries, includes natural resources, taxation, fertility, redistribution, technological change, transition, labor markets, and education. A theme common to all the essays is the importance of education in reducing inequality and increasing growth.

In many disciplines of science it is vital to know the effect of a 'treatment' on a response variable of interest; the effect being known as the 'treatment effect'. Here, the treatment can be a drug, an education program or an economic policy, and the response variable can be an illness, academic achievement or GDP. Once the effect is found, it is possible to intervene to adjust the treatment and attain a desired level of the response variable. A basic way to measure the treatment effect is to compare two groups, one of which received the treatment and the other did not. If the two groups are homogenous in all aspects other than their treatment status, then the difference between their response outcomes is the desired treatment effect. But if they differ in some aspects in addition to the treatment status, the difference in the response outcomes may be due to the combined influence of more than one factor. In non-experimental data where the treatment is not randomly assigned but self-selected, the subjects tend to differ in observed or unobserved characteristics. It is therefore imperative that the comparison be carried out with subjects similar in their characteristics. This book explains how this problem can be overcome so the attributable effect of the treatment can be found. This book brings to the fore recent advances in econometrics for treatment effects. The purpose of this book is to put together various economic treatments effect models in a coherent fashion, make it clear which can be parameters of interest, and show how they can be identified and estimated under weak assumptions. The emphasis throughout the book is on semi- and non-parametric estimation methods, but traditional parametric approaches are also discussed. This book is ideally suited to researchers and graduate students with a basic knowledge of econometrics.

This new edition of this established textbook reflects the rapid developments in the field covering the vast research that has been conducted on panel data since its initial publication. The book is packed with the most recent empirical examples from panel data literature, for example, a simultaneous equation on Crime will be added to chapter 7, which will be illustrated with STATA. Data sets will be provided as well as the programs to implement the estimation and testing procedures described in the book on the web site. Additional exercises will be added to each chapter and their solutions will be provided on the web site. The text has also been fully updated with new material on dynamic panel data models and recent results on non-linear panel models and in particular work on limited dependent variables panel data models.

Large Dimensional Factor Analysis provides a survey of the main theoretical results for large dimensional factor models, emphasizing results that have implications for empirical work. The authors focus on the development of the static factor models and on the use of estimated factors in subsequent estimation and inference. Large

Dimensional Factor Analysis discusses how to determine the number of factors, how to conduct inference when estimated factors are used in regressions, how to assess the adequacy of observed variables as proxies for latent factors, how to exploit the estimated factors to test unit

This is the second of three volumes containing edited versions of papers and commentaries presented at invited symposium sessions of the Tenth World Congress of the Econometric Society, held in Shanghai in August 2010. The papers summarize and interpret key developments in economics and econometrics, and they discuss future directions for a wide variety of topics, covering both theory and application. Written by the leading specialists in their fields, these volumes provide a unique, accessible survey of progress on the discipline. The first volume primarily addresses economic theory, with specific focuses on nonstandard markets, contracts, decision theory, communication and organizations, epistemics and calibration, and patents.

This is the essential companion to the second edition of Jeffrey Wooldridge's widely used graduate econometrics text. The text provides an intuitive but rigorous treatment of two state-of-the-art methods used in contemporary microeconomic research. The numerous end-of-chapter exercises are an important component of the book, encouraging the student to use and extend the analytic methods presented in the book. This manual contains advice for answering selected problems, new examples, and supplementary materials designed by the author, which work together to enhance the benefits of the text. Users of the textbook will find the manual a necessary adjunct to the book.

As conceived by the founders of the Econometric Society, econometrics is a field that uses economic theory and statistical methods to address empirical problems in economics. It is a tool for empirical discovery and policy analysis. The chapters in this volume embody this vision and either implement it directly or provide the tools for doing so. This vision is not shared by those who view econometrics as a branch of statistics rather than as a distinct field of knowledge that designs methods of inference from data based on models of human choice behavior and social interactions. All of the essays in this volume and its companion volume 6A offer guidance to the practitioner on how to apply the methods they discuss to interpret economic data. The authors of the chapters are all leading scholars in the fields they survey and extend. Handbook of Econometrics is now available online at ScienceDirect — full-text online from volume 1 onwards. *Part of the renowned Handbooks in Economics Series *Updates and expands the existing Handbook of Econometrics volumes *An invaluable reference written by some of the world's leading econometricians.

A volume that celebrates and develops the work of Nobel Laureate Robert Engle, it includes original contributions from some of the world's leading econometricians that further Engle's work in time series economics

This book, by one of the world's leading experts on dynamic panel data, presents a modern review of some of the main topics in panel data econometrics. The

author concentrates on linear models, and emphasizes the roles of heterogeneity and dynamics in panel data modelling. The book combines methods and applications, so will appeal to both the academic and practitioner markets. The book is divided in four parts. Part I concerns static models, and deals with the problem of unobserved heterogeneity and how the availability of panel data helps to solve it, error component models, and error in variables in panel data. Part II looks at time series models with error components. Its chapters deal with the problem of distinguishing between unobserved heterogeneity and individual dynamics in short panels, modelling strategies of time effects, moving average models, inference from covariance structures, the specification and estimation of autoregressive models with heterogeneous intercepts, and the impact of assumptions about initial conditions and heteroskedacity on estimation. Part III examines dynamics and predeterminedness. Its two chapters consider alternative approaches to estimation from small and large T perspectives, looking at models with both strictly exogenous and lagged dependent variables allowing for autocorrelation of unknown form, models in which the errors are mean independent of current and lagged values of certain conditioning variables but not with their future values. Together Parts II and III provide a synthesis, and unified perspective, of a vast literature that has had a significant impact on recent econometric practice. Part IV reviews the main results in the theory of generalized method of moments estimation and optimal instrumental variables. This book provides a comprehensive, coherent, and intuitive review of panel data methodologies that are useful for empirical analysis. Substantially revised from the second edition, it includes two new chapters on modeling cross-sectionally dependent data and dynamic systems of equations. Some of the more complicated concepts have been further streamlined. Other new material includes correlated random coefficient models, pseudo-panels, duration and count data models, quantile analysis, and alternative approaches for controlling the impact of unobserved heterogeneity in nonlinear panel data models. This is the first of three volumes containing edited versions of papers and commentaries presented at invited symposium sessions of the Tenth World Congress of the Econometric Society, held in Shanghai in August 2010. The papers summarize and interpret key developments in economics and econometrics and they discuss future directions for a wide variety of topics, covering both theory and application. Written by the leading specialists in their fields, these volumes provide a unique, accessible survey of progress on the discipline. The first volume primarily addresses economic theory, with specific focuses on nonstandard markets, contracts, decision theory, communication and organizations, epistemics and calibration, and patents. Seven previously published, classic essays, and a cogent new essay on the history of the subject.

Written in a comprehensive yet accessible style, this Handbook introduces readers to a range of modern empirical methods with applications in microeconomics, illustrating

how to use two of the most popular software packages, Stata and R, in microeconomic applications.

Monte Carlo Simulation for Econometricians presents the fundamentals of Monte Carlo simulation (MCS), pointing to opportunities not often utilized in current practice, especially with regards to designing their general setup, controlling their accuracy, recognizing their shortcomings, and presenting their results in a coherent way. The author explores the properties of classic econometric inference techniques by simulation. The first three chapters focus on the basic tools of MCS. After treating the basic tools of MCS, Chapter 4 examines the crucial elements of analyzing the properties of asymptotic test procedures by MCS. Chapter 5 examines more general aspects of MCS, such as its history, possibilities to increase its efficiency and effectiveness, and whether synthetic random exogenous variables should be kept fixed over all the experiments or be treated as genuinely random and thus redrawn every replication. The simulation techniques that we discuss in the first five chapters are often addressed as naive or classic Monte Carlo methods. However, simulation can also be used not just for assessing the qualities of inference techniques, but also directly for obtaining inference in practice from empirical data. Various advanced inference techniques have been developed which incorporate simulation techniques. An early example of this is Monte Carlo testing, which corresponds to the parametric bootstrap technique. Chapter 6 highlights such techniques and presents a few examples of (semi-)parametric bootstrap techniques. This chapter also demonstrates that the bootstrap is not an alternative to MCS but just another practical inference technique, which uses simulation to produce econometric inference. Each chapter includes exercises allowing the reader to immerse in performing and interpreting MCS studies. The material has been used extensively in courses for undergraduate and graduate students. The various chapters all contain illustrations which throw light on what uses can be made from MCS to discover the finite sample properties of a broad range of alternative econometric methods with a focus on the rather basic models and techniques.

This monograph presents a brief overview of the literature on the difference-in-difference estimation strategy and discusses major issues mainly using a treatment effect perspective that allows more general considerations than the classical regression formulation that still dominates the applied work.

Information and Entropy Econometrics - A Review and Synthesis summarizes the basics of information theoretic methods in econometrics and the connecting theme among these methods. It will benefit researchers looking for a concise introduction to the basics of IEE and enable applied researchers to learn new methods, and applications for extracting information from noisy and limited data and for learning from these data.

Panel Data Econometrics Oxford University Press

This paper analyzes the relationship between oil price shocks and bank profitability. Using data on 145 banks in 11 oil-exporting MENA countries for 1994-2008, we test hypotheses of direct and indirect effects of oil price shocks on bank profitability. Our results indicate that oil price shocks have indirect effect on bank profitability, channeled through country-specific macroeconomic and institutional variables, while the direct effect is insignificant. Investment banks appear to be the most affected ones compared

to Islamic and commercial banks. Our findings highlight systemic implications of oil price shocks on bank performance and underscore their importance for macroprudential regulation purposes in MENA countries.

Macroeconometric models, in many ways the flagships of the economist's profession in the 1960s, came under increasing attack from both theoretical economist and practitioners in the late 1970s. Critics referred to their lack of microeconomic theoretical foundations, ad hoc models of expectations, lack of identification, neglect of dynamics and non-stationarity, and poor forecasting properties. By the start of the 1990s, the status of macroeconometric models had declined markedly, and had fallen completely out of, and with, academic economics. Nevertheless, unlike the dinosaurs to which they often have been likened, macroeconometric models have never completely disappeared from the scene. This book describes how and why the discipline of macroeconometric modelling continues to play a role for economic policymaking by adapting to changing demands, in response, for instance, to new policy regimes like inflation targeting. Model builders have adopted new insights from economic theory and taken advantage of the methodological and conceptual advances within time series econometrics over the last twenty years. The modelling of wages and prices takes a central part in the book as the authors interpret and evaluate the last forty years of international research experience in the light of the Norwegian 'main course' model of inflation in a small open economy. The preferred model is a dynamic model of incomplete competition, which is evaluated against alternatives as diverse as the Phillips curve, Nickell-Layard wage curves, the New Keynesian Phillips curve, and monetary inflation models on data from the Euro area, the UK, and Norway. The wage price core model is built into a small econometric model for Norway to analyse the transmission mechanism and to evaluate monetary policy rules. The final chapter explores the main sources of forecast failure likely to occur in a practical modelling situation, using the large-scale model RIMINI and the inflation models of earlier chapters as case studies.

Until recently, researchers in economics and finance paid relatively little attention to household portfolios. Reasons included the tendency of most households to hold simple portfolios, the inability of the dominant asset pricing models to account for household portfolio incompleteness, and the lack of detailed databases on household portfolios in many countries until the late 1980s or 1990s. Now, however, the analysis of household portfolios is emerging as a field of vigorous study. The eleven chapters in this collection provide an overview of current theoretical knowledge about the structure of household portfolios and compare predictions with empirical findings. The book describes the state-of-the-art tools of analytical, computational, and econometric investigation, as well as some of the key policy questions. It provides an original comparative analysis of household portfolios in countries for which detailed household-level data are available (the United States, the United Kingdom, Italy, Germany, and the Netherlands). Finally, it uses microdata for an in-depth study of the portfolio composition of population groups of special policy interest, such as the young, the elderly, and the rich.

Panel Data Econometrics with R provides a tutorial for using R in the field of panel data econometrics. Illustrated throughout with examples in econometrics, political science, agriculture and epidemiology, this book presents classic methodology and applications as well

as more advanced topics and recent developments in this field including error component models, spatial panels and dynamic models. They have developed the software programming in R and host replicable material on the book's accompanying website.

This important collection brings together leading econometricians to discuss advances in the areas of the econometrics of panel data. The papers in this collection can be grouped into two categories. The first, which includes chapters by Amemiya, Baltagi, Arellano, Bover and Labeaga, primarily deal with different aspects of limited dependent variables and sample selectivity. The second group of papers, including those by Nerlove, Schmidt and Ahn, Kiviet, Davies and Lahiri, consider issues that arise in the estimation of dynamic (possibly) heterogeneous panel data models. Overall, the contributors focus on the issues of simplifying complex real-world phenomena into easily generalisable inferences from individual outcomes. As the contributions of G. S. Maddala in the fields of limited dependent variables and panel data were particularly influential, it is a fitting tribute that this volume is dedicated to him.

This is the third of three volumes containing edited versions of papers and commentaries presented at invited symposium sessions of the Tenth World Congress of the Econometric Society, held in Shanghai in August 2010. The papers summarize and interpret key developments in economics and econometrics, and they discuss future directions for a wide variety of topics, covering both theory and application. Written by the leading specialists in their fields, these volumes provide a unique, accessible survey of progress on the discipline. The first volume primarily addresses economic theory, with specific focuses on nonstandard markets, contracts, decision theory, communication and organizations, epistemics and calibration, and patents.

This book is intended to provide a somewhat more comprehensive and unified treatment of large sample theory than has been available previously and to relate the fundamental tools of asymptotic theory directly to many of the estimators of interest to econometricians. In addition, because economic data are generated in a variety of different contexts (time series, cross sections, time series--cross sections), we pay particular attention to the similarities and differences in the techniques appropriate to each of these contexts.

The main features of this text are a thorough treatment of cross-section models--including qualitative response models, censored and truncated regression models, and Markov and duration models--and a rigorous presentation of large sample theory, classical least-squares and generalized least-squares theory, and nonlinear simultaneous equation models.

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