

← ————— 经济学前沿影印丛书 ————— →

理论计量 经济学精粹

〔美〕Badi H. Baltagi 编

A COMPANION TO
THEORETICAL ECONOMETRICS

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T H E O R E T I C A L E C O N O M E T R I C S



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丛书序言

应北京大学出版社之邀,为《经济学前沿影印丛书》写序。

中国现代主流经济学的教育开始于十多年前,那时,随着我国改革开放的深入,一批在海外卓有成就的学者回到国内,他们的归来对中国经济学教育与国际接轨具有重要意义。此间,各高校相继成立了现代经济学教育和研究的中心,如武汉大学高级研究中心(当时叫做武汉大学经济科学高级研究中心)完全按照国际著名大学经济学与金融学系的模式培养学生,取得了巨大的成就,大量的学生被送到世界知名的大学攻读博士学位,这在以前是不可想像的。北京大学中国经济研究中心也在北京大学开办了双学位班,对本科生教育起了巨大的推动作用。

通过这批海外归来的学者的介绍,国内的出版社开始引进当代经济学的主流教材,国内读者看到的有比较初级层次的 Samuelson 的《经济学原理》、Mankiw 的《宏观经济学》等和比较高层次的 Mas-Colell 的《高级微观经济学》、Varian 的《高级微观经济学》等,这些教材大多数以翻译的形式引进,他们为国内年轻的经济学者和学生的成长提供了重要的基础,很多青年学生在这一批引进教材的影响下,学习了现代经济学的主流理论。

十多年过去了,随着我国经济的高速增长,世界各国经济学者对中国经济的研究兴趣日益浓厚,中国经济发展的很多问题已经成为经济学界所关注的主流问题之一。因此,我们不仅需要大量的青年学生走出去,而且需要培养大量的既懂我国经济实际又对现代经济学研究具有较好掌握的学者。引进的翻译教材使得国内的青年学生掌握了现代经济学基本理论,但是要真正掌握现代经济学的研究方法还有很长的路。北京大学出版社引进的《经济学前沿影印丛书》就是在这个前提下产生的。

首先,这一系列引进的经典著作,可以使得大量的国内经济学者和青年学生在不走出国门的情况下就能了解相应领域的经典之作,从这些经典之作中探寻现代经济学的研究方法。

其次,北京大学出版社引进的这些经典著作可以为国内经济学者和青年学生节省大量的时间和金钱,一方面这些经典的著作都是出版社邀请众多有一定成就的学者直接推荐的,这样就可以大量地节省青年学生的搜寻成本,避免他们走弯路;另一方面,这些原版的经典著作定价一般很高,通过出版社的版权引进后可以为国内的读者节省 60% 以上的成本。我以为,这套丛书的推出将对中国的经济学研究产生不可估量的影响,是一件功德无量的事。

龚六堂

2005 年 7 月于北京大学光华管理学院

Contributors

Lee C. Adkins, Oklahoma State University
Luc Anselin, University of Illinois
Paul Bekker, University of Groningen
Anil K. Bera, University of Illinois
Herman J. Blerens, Pennsylvania State University
A. Colin Cameron, University of California – Davis
Russell Davidson, Queen's University, Ontario, and GREQAM, Marseilles
Juan Dolado, Universidad Carlos III de Madrid
Jean-Marie Dufour, University of Montreal
Denzil G. Flebig, University of Sydney
A. Flores-Lagunes, University of Arizona
John Geweke, University of Minnesota and University of Iowa
Eric Ghysels, Pennsylvania State University
Jesús Gonzalo, Universidad Carlos III de Madrid
Christian Gouriéroux, CREST and CEPREMAP, Paris
Clive W.J. Granger, University of California – San Diego
William E. Griffiths, University of Melbourne
Alastair R. Hall, North Carolina State University
R. Carter Hill, Louisiana State University
Daniel Houser, University of Arizona
Cheng Hsiao, University of Southern California
Joann Jasiak, York University
Michael Keane, University of Minnesota and New York University
Lynda Khalaf, University of Laval
Maxwell L. King, Monash University
Gary Koop, University of Glasgow
Lung-fei Lee, Hong Kong University of Science & Technology
Helmut Lütkepohl, Humboldt University
Esfandiar Maasoumi, Southern Methodist University, Dallas
James MacKinnon, Queen's University, Ontario

G.S. Maddala, Ohio State University
Roberto S. Mariano, University of Pennsylvania
Francesc Marmol, Universidad Carlos III de Madrid
Erik Meijer, University of Groningen
Denise R. Osborn, University of Manchester
M. Hashem Pesaran, Cambridge University
Benedikt M. Pötscher, University of Vienna
Gamini Premaratne, University of Illinois
Ingmar R. Prucha, University of Maryland
Paulo M.M. Rodrigues, University of Algarve
Aris Spanos, Virginia Polytechnic Institute and State University
Mark F.J. Steel, University of Kent
James H. Stock, Harvard University
P.A.V.B. Swamy, Department of the Treasury, Washington
George S. Tavas, Bank of Greece
Pravin K. Trivedi, Indiana University
Aman Ullah, University of California – Riverside
Tom Wansbeck, University of Groningen
Melvyn Weeks, Cambridge University
Jeffrey M. Wooldridge, Michigan State University

Preface

This companion in theoretical econometrics is the first in a series of companions in economics published by Blackwell. The emphasis is on graduate students of econometrics and professional researchers who need a guide, a friend, a companion to lead them through this exciting yet ever growing and expanding field. This is not a handbook of long chapters or exhaustive surveys on the subject. These are simple chapters, written by international experts who were asked to give a basic introduction to their subject. These chapters summarize some of the well known results as well as new developments in the field and direct the reader to supplementary reading. Clearly, one single volume cannot do justice to the wide variety of topics in theoretical econometrics. There are five handbooks of econometrics published by North-Holland and two handbooks of applied econometrics published by Blackwell, to mention a few. The 32 chapters in this companion give only a sample of the important topics in theoretical econometrics. We hope that students, teachers, and professionals find this companion useful. I would like to thank Al Bruckner who approached me with this idea and who entrusted me with the editorial job, the 50 authors who met deadlines and page limitations.

I would also like to thank the numerous reviewers who read these chapters and commented on them. These include Seung Ahn, Paul Bekker, Anil Bera, Herman Bierens, Erik Biorn, Siddahrtha Chib, James Davidson, Francis Diebold, Juan Dolado, Jean-Marie Dufour, Neil Ericsson, Denzil Fiebig, Philip Hans Franses, John Geweke, Eric Ghysels, David Giles, Jesús Gonzalo, Clive Granger, William Greene, William Griffith, Alastair Hall, Bruce Hansen, R. Carter Hill, Cheng Hsiao, Hae-Shin Hwang, Svend Hylleberg, Michael Keane, Lynda Khalaf, Gary Koop, Lung-fei Lee, Qi Li, Oliver Linton, Helmut Lütkepohl, Essie Maasoumi, James MacKinnon, G.S. Maddala, Masao Ogaki, Denise Osborn, Pierre Perron, Peter Phillips, Ingmar Prucha, Peter Schmidt, Mark Steel, James Stock, Pravin Trivedi, Aman Ullah, Marno Verbeek, Tom Wansbeek, Rainer Winkelmann, and Jeffrey Wooldridge.

On a sad note, G.S. Maddala, a contributing author to this volume, died before this book was published. He was a leading figure in econometrics and a prolific researcher whose writings touched students all over the world. He will be sorely missed.

Finally, I would like to acknowledge the support and help of Blackwell Publishers and the secretarial assistance of Teri Bush at various stages of the preparation of this companion.

BADI H. BALTAGI
Texas A&M University
College Station, Texas

Abbreviations

2SLS	two-stage least squares
3SLS	three-stage least squares
a.s.	almost sure
ACD	Autoregressive Conditional Duration
ADF	Augmented Dickey–Fuller
AE	asymptotically equivalent
AIC	Aikake’s information criteria
AIMA	asymptotically ideal model
AIMSE	average integrated mean square error
AR	autoregressive
AR(1)	first-order autoregressive
ARCH	autoregressive conditional heteroskedasticity
ARFIMA	autoregressive fractionally integrated moving average
ARIMA	autoregressive integrated moving average
ARMA	autoregressive moving average
BDS	Brock, Dechert, and Scheinkman
BIC	Bayesian information criteria
BKW	Belsley, Kuh, and Welsch
BLUE	best, linear unbiased estimator
BMC	bound Monte Carlo
CAPM	capital asset pricing model
CALS	consistent adjusted least squares
CDF (or cdf)	cumulative distribution function
CES	constant elasticity of substitution
CFI	comparative fit index
CG matrix	matrix of contributions to the gradient
CI	confidence interval
CLT	central limit theorem
CM	conditional moment
CME	conditional mean encompassing

CMT	conditional moment test
CPI	consumer price index
CPs	current population survey
CUAN	consistent and uniformly asymptotic normal
DEA	data envelopment analysis
DF	Dickey–Fuller
DGLS	dynamic generalized least squares
DGM	data generating mechanism
DGP	data generating process
DHF	Dickey, Hasza, and Fuller
DLR	double-length artificial regression
DOLS	dynamic ordinary least squares
DW	Durbin–Watson
DWH	Durbin–Wu–Hausman
EBA	elimination-by-aspects
ECM	expectation conditional maximization
EM	expectation maximization
EPE	estimated prediction error
ESS	explained sums of squares
ESS _R	restricted sum of squares
ESS _U	unrestricted error sum of squares
EWMA	exponentially weighted moving average
FCLT	functional central limit theorem
FGLS	feasible generalized least squares
FIML	full information maximum likelihood
FIVE	full information instrumental variables efficient
FM-OLS	fully modified ordinary least squares estimator
FSD	first-order stochastic dominate
FWL	Frisch–Waugh–Lovell
GARCH	generalized autoregressive conditional heteroskedastic
GEV	generalized extreme value
GHK	Geweke, Hajivassiliou, and Keane
GHM	Gouriéoux, Holly, and Montfort
GIS	geographic information systems
GL	generalized Lorenz
GLM	generalized linear model
GLN	Ghysels, Lee, and Noh
GLS	generalized least squares
GML	generalized maximum likelihood
GMM	generalized method of moments
GNR	Gauss–Newton regression
GSUR	generalized seemingly unrelated regression
HAC	heteroskedasticity and autocorrelation consistent
HEBA	hierarchical elimination-by-aspects
HEGY	Hylleberg, Engle, Granger, and Yoo
H-K	Honoré and Kyriazidou

HRGNR	heteroskedasticity-robust Gauss–Newton regression
i.p.	in probability
IC	information criteria
ID	independently distributed
IIA	independence of irrelevant alternatives
IID	independently identically distributed
IIV	iterated instrumental variable
ILS	indirect least squares
IM	information matrix
IMSE	integrated mean square error
INAR	integer autoregressive
IP	industrial production
IV	instrumental variable
JB	Jarque–Bera
KLIC	Kullback–Leibler information criterion
KPSS	Kwiatkowski, Phillips, Schmidt, and Shin
KS	Kolmogorov–Smirnov
KT	Kuhn–Tucker
LBI	locally best invariant
LCLS	local constant least squares
LEF	linear exponential family
LI	limited information
LIML	limited information maximum likelihood
LIVE	limited information instrumental variables efficient
LL	local linear
LLS	local linear least squares
LLN	law of large numbers
LLS	local least squares
LM	Lagrange multiplier
LMC	local Monte Carlo
LMP	locally most powerful
LMPU	locally most powerful unbiased
LPLS	local polynomial least squares
LR	likelihood ratio
LS	least squares
LSE	least squares estimation
LSTAR	logistic smooth transition autoregression
M2SLS	modified two-stage least squares
MA	moving average
MA(1)	first-order moving average
MC	Monte Carlo
MCMC	Markov Chain Monte Carlo
MD	martingale difference
MDML	multivariate dynamic linear regression
MIMIC	multiple indicators-multiple causes
ML	maximum likelihood

MLE	maximum likelihood estimation
MLR	multivariate linear regression
MM	method of moments
MMC	maximized Monte Carlo
MML	maximum marginal likelihood
MNL	multinomial logit
MNP	multinomial probit
MP	most powerful
MS	maximum score
MSE	mean square error
MSFE	mean squared forecast error
MSL	method of simulated likelihood
MSM	method of simulated moments
MSS	method of simulated scores
NB	negative binomial
NFI	normed fit index
NLS	nonlinear least squares
NMNL	nested multinomial logit
NN	neural network
N-P	Neyman-Pearson
NPRSS	nonparametric residual sum of squares
N-W	Nadaraya-Watson
NYSE	New York Stock Exchange
OLS	ordinary least squares
OPG	outer-product-of-the-gradient
PDF	probability distribution function
PLS	predictive least squares
PML	pseudo-ML
PP	Phillips-Perron
PR	probabilistic reduction
PRSS	parametric residual sum of squares
psd	positive semi-definite
PSP	partial sum process
QML	quasi-ML
QP	quadratic programming
QRM	qualitative response model
RCM	random coefficient models
RESET	regression error specification test
RIS	recursive importance sampling
RLS	restricted least squares
RMSE	root mean squared error
RMSFE	root mean squared forecast error
RNI	relative noncentrality index
RRR	reduced rank regression
RS	Rao's score
RSS	residual sum of squares

<i>s/n</i>	signal-to-noise
SA	simulated annealing
SAR	spatial autoregressive
SD	stochastic dominance
SEM	simultaneous equations model
SET	score encompassing test
SMA	spatial moving average
SML	simulated maximum likelihood
SNP	semi-nonparametric
SP	semiparametric
SSD	second-order stochastic dominate
SSE	<i>sum of square error</i>
SSR	sum of squared residuals
STAR	smooth transition autoregression
SUR(E)	seemingly unrelated regression
SVD	Stochastic Volatility Duration
TAR	transition autoregression
TSD	third-order stochastic
UI	union intersection
UL	uniform linear
ULLN	uniform law of large numbers
UMP	uniformly most powerful
UMPI	uniformly most powerful invariant
UMPU	uniformly most powerful unbiased
VAR	vector autoregression
VECM	vector error correction model
VIF	variance-inflation factor
VNM	von Neumann–Morgenstern
W	Wald
WET	Wald encompassing test
wrt	with respect to

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