

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

A Concise Introduction to Econometrics

In this short and very practical introduction to econometrics Philip Hans Franses guides the reader through the essential concepts of econometrics. Central to the book are practical questions in various economic disciplines, which can be answered using econometric methods and models. The book focuses on a limited number of the essential, most widely used methods, before going on to review the basics of econometrics. The book ends with a number of case studies drawn from recent empirical work to provide an intuitive illustration of what econometricians do when faced with practical questions. Throughout the book Franses emphasizes the importance of specification, evaluation, and implementation of models appropriate to the data.

Assuming basic familiarity only with matrix algebra and calculus, the book is designed to appeal as either a short stand-alone introduction for students embarking on an empirical research project or as a supplement to any standard introductory textbook.

PHILIP HANS FRANSES is Professor of Applied Econometrics and Professor of Marketing Research at Erasmus University, Rotterdam. He has published articles in leading journals and serves on a number of editorial boards, and has authored several textbooks, including *Non-Linear Time Series Models in Empirical Finance* (2001, with Dick van Dijk).

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

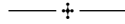
Philip Hans Franses

Frontmatter

[More information](#)

A Concise Introduction to Econometrics

An Intuitive Guide



Philip Hans Franses

*Econometric Institute,
Erasmus University, Rotterdam*



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Edinburgh Building, Trumpington Street, Cambridge CB 2 1RP, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge, CB 2 2RU, UK
40 West 20th Street, New York, NY 10011-4211, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain
Dock House, The Waterfront, Cape Town 8001, South Africa

<http://www.cambridge.org>

© Philip Hans Franses 2002

This book is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without
the written permission of Cambridge University Press.

First published 2002

Printed in the United Kingdom at the University Press, Cambridge

Ty pefaces Meridien 10.5/16 pt and Stone Sans *Sy stem* L^AT_EX 2_ε [TB]

A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication data

Franses, Philip Hans, 1963–

A concise introduction to econometrics : an intuitive guide / Philip Hans Franses.
p. cm.

Includes bibliographical references and index.

ISBN N 0 521 81769 2 – ISBN N 0 521 52090 8 (pb.)

1. Econometrics. 2. Econometrics – Case studies. I. Title.

HB 139 .F722 2002

330'.01'5195 – dc21 2002067380

ISBN N 0 521 81769 2 hardback

ISBN N 0 521 52090 8 paperback

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

Contents

<i>List of figures</i>	<i>page</i> vii
<i>List of tables</i>	viii
<i>Preface</i>	ix
1 Introduction	1
What is econometrics?	1
Why this book?	7
Outline of the book	11
2 A few basic tools	13
Distributions	14
The linear regression model	19
Inference	24
Some further considerations	30
To summarize	33
3 Econometrics, a guided tour	36
Practical questions	37
Problem formulation	39
Data collection	46
Choice of an econometric model	62

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

Contents

Empirical analysis	66
Answering practical questions	77
4 Seven case studies	81
Convergence between rich and poor countries	82
Direct mail target selection	86
Automatic trading	89
Forecasting sharp increases in unemployment	93
Modeling brand choice dynamics	97
Two noneconomic illustrations	101
5 Conclusion	108
Always take an econometrics course!	108
Econometrics is practice	110
<i>References</i>	111
<i>Index</i>	115

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

Figures

2.1	A probability density function: a normal distribution	<i>page</i> 16
2.2	A cumulative density function: a normal distribution	18
4.1	Monthly US total unemployment rate (January 1969–December 1997)	93
4.2	Percentage of undecided voters (1978–1996), weekly observations	103
4.3	Weekly temperatures in The Netherlands (1961–1985)	105

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

Tables

4. 1	Clusters of countries for various indicators of living standards	<i>page 85</i>
4. 2	Estimation results for a model consisting of an equation for response and one for gift size	88
4. 3	Testing whether transaction costs are different	92
4. 4	Dynamic effects of marketing instruments on brand choice	101
4. 5	Parameter estimates for a GARCH model for weekly temperatures	107

Preface

This book is targeted at two distinct audiences. The first audience concerns novices in econometrics who consider taking an econometrics course in an advanced undergraduate or a graduate program. For them, this book aims to be an introduction to the field, and hopefully such that they do indeed take such courses. It should be stressed, though, that this is not a condescending book – that is, it is not something like “econometrics for dummies.” On the contrary, the reader is taken seriously and hence some effort is required. The second audience consists of colleagues who teach these courses. It is my belief that many econometrics courses, by zooming in on theory and less on practice, are missing the most important aspect of econometrics, which is that it truly is a very practical discipline.

Therefore, central to this book are practical questions in various economic disciplines such as macroeconomics, finance, and marketing, which might be answered by using econometric tools. After a brief discussion of a few basic tools, I review various aspects of econometric modeling.

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

Preface

Along these lines, I also discuss matters which are typically skipped in currently available textbooks, but which are very relevant when one aims to apply econometric methods in practice. Next, several case studies should provide some intuition of what econometricians do when they face practical questions. Important concepts are shown in *italic* type; examples of practical questions which econometricians aim to answer will be shown in **bold** type.

This book might be used prior to any textbook on econometrics. It can, however, never replace one of these, as the discussion in this book is deliberately very sketchy. Also, at times this book has a somewhat polemic style, and this is done on purpose. In fact, this is the “personal twist” in this book. Therefore, the book should not be seen as the ultimate treatment of the topic, but merely as a (hopefully) joyful read before one takes or gives econometrics classes. Hence, the book can be viewed as a very lengthy introductory chapter.

Finally, as a way of examining whether a reader has appreciated the content of this book, one might think about the following exercise. Take a newspaper or a news magazine and look for articles on economic issues. In many articles are reports on decisions which have been made, forecasts that have been generated, and questions that have been answered. Take one of these articles, and then ask whether these decisions, forecasts, and answers could have been based on the outcomes of an econometric model. What kind of data could one have used? What could the model

Cambridge University Press

0521817692 - A Concise Introduction to Econometrics: An Intuitive Guide

Philip Hans Franses

Frontmatter

[More information](#)

Preface

have looked like? Would one have great confidence in these outcomes, and how does this extend to the reported decisions, forecasts, and answers?

I wish to thank Clive Granger and Ashwin Rattan at Cambridge University Press, for encouragement and helpful comments. Also, many thanks are due to Martijn de Jong, Dick van Dijk, and in particular Christiaan Heij for their very constructive remarks. Further comments or suggestions are always welcome. The address for correspondence is Econometric Institute, Erasmus University Rotterdam, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands, email: franses@few.eur.nl

PHILIP HANS FRANSES
Rotterdam