test of Phillips and Ouliaris, which is irrelevant to the normalization case. Extension to a vector co-integrated autoregressive time series is obtained. Problems of determining the co-integration rank, structural break, testing of weak exogeneity and various restrictions are investigated for such series. The book ends with an appendix and a list of abbreviations and symbols. Lists of the tables that are used, the figures, the R code and references are located at the end of the book.

The book's material is valuable for econometrics but it has many typographical errors that may distort understanding. Also, some of the expressions in part 1 could be rewritten in a better style.

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Economic Capital and Financial Risk Management for Financial Services Firms and Conglomerates
B. PORTEOUS AND P. TAPADAR, 2005
Basingstoke, Palgrave Macmillan
344 pp., £125
ISBN 1-403-93608-0

The central message of this book is statistical, in the sense that it is stochastic. As the title makes clear, the book is aimed at risk managers in the financial services industry. There, high profile failures in recent years have prompted increased regulation—the first (1988) and second (2006) accords of the Basel Committee on Banking Supervision, representing the central banks of the G10 countries. Managers are now required to think in terms of a variety of scenarios rather than just one, to use stochastic rather than deterministic models, and so to quantify risks, and to use stress testing—testing to see how well a model withstands adversity. The book aims to assist managers in doing these and other necessary tasks.

The book contains 14 chapters. It discusses types of risk, types of capital (the economic capital of the title, for example, is the subject of Chapter 6), various types of firm, such as life-insurance with and without profits, pension funds, asset management firms and financial conglomerates. There is a final chapter on regulatory change, including a look forward to the third Basel Committee accord.

Chapter 4 is on stress testing to measure risk. Value at risk is mentioned, via economic value at risk, but extreme value theory is not. Multivariate aspects are treated, and copulas are mentioned but not used.

The most explicitly statistical, or stochastic, chapter is Chapter 7, on 'the stochastic model'. Various time series models, of autoregressive or generalized autoregressive conditional heteroscedasticity type, involving stochastic volatility and/or stochastic correlation are considered, and graphical models are used.

The text is largely prose, with a plentiful sprinkling of graphs and diagrams. There are few mathematical equations, almost all model equations of the models mentioned above and no mathematical analysis. There is a rather brief bibliography, including the work of the authors.

For managers in the financial services industry, the book is a useful overview of risk and a first step in the passage from the qualitative to the quantitative. For statisticians, the book offers a perspective on the needs of the financial services industry. It will be useful to both types of reader, as far as it goes. But it covers only a limited amount of ground; for those needing to go further, the first book I recommend for consulting next is McNeil *et al.* (2005).

Reference
McNeil, A. J., Frey, R. and Embrechts, P. (2005) *Quantitative Risk Management: Concepts, Techniques, Tools*. Princeton: Princeton University Press.

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Theory of Preliminary Test and Stein-type Estimation with Applications
A. K. E. SALEH, 2006
Chichester, Wiley
xxiv + 622 pp., £67.95
ISBN 0-471-56375-7

This book is a successful attempt to summarize many of the developments in the areas of preliminary test and Stein-type estimation that have been developed widely in the last few decades. An excellent feature is the way in which problems of point or confidence interval estimation, and testing hypotheses under different set-ups, are dealt with from several perspectives in the same chapter. Wherever possible, the estimators are derived by using frequentist and Bayesian approaches under parametric as well as non-parametric set-ups. The properties of the estimators are derived by using both finite sample theory and large sample asymptotic theory under normally and non-normally distributed random errors in various models. The reader is thus provided with a very detailed account of the performance of these estimators.

The book has 12 chapters. The first two give the motivation and explain various statistical concepts that are used later. Chapters Three and Four introduce the concepts and the theory of preliminary test and Stein-type estimation respectively. These estimators are developed in one sample, two samples and simple linear model set-ups. Further chap-

ters deal with the application of the estimators that have been developed so far in various models under different conditions. Chapters Five and Six look at estimation of parameters in analysis-of-variance and parallelism models respectively. Chapters Seven and Eight describe the application of estimation in multiple-regression models under exact and stochastic linear restrictions. Applications of preliminary test and Stein-type estimators in ridge regression and regression models with autocorrelated random errors are covered in Chapters Nine and Ten. The final two chapters deal with estimation in multivariate models and discrete data models, i.e. products of Bernoulli, binomial and multinomial models. The properties of the estimators are stated in each chapter with clear and detailed derivations, and comparisons are made under criteria such as bias, quadratic bias, mean-squared error matrix and risk. Every chapter has a separate section of problems.

This book is a very good source for those who want to start research in the area of preliminary test and Stein-type estimation. The stepwise derivation of the properties of the same estimator under different set-ups gives a clear insight into the intricacies that are involved. The whole book could be used for a graduate course. Readers may note that the techniques of preliminary test and Stein-type estimation have been applied to various other models beside those presented in this book, but presenting all developments in a single book would be a huge task.

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Introduction to Nonparametric Regression
K. TAKEZAWA, 2006
Hoboken, Wiley
xviii + 538 pp., £64.95
ISBN 0-471-74583-9

This is an English version of the first volume of the second edition of a two-volume publication, which was originally written in Japanese. The first edition appeared in 2001 whereas the second appeared in 2003.

The main objective is an introductory treatment of non-parametric regression. In the words of the author

'. . . this book aims at helping readers to understand the basic concepts underlying nonparametric regression in order to utilize it practically. . .'.

The author emphasizes basic techniques for non-parametric regression estimation and discusses some useful applications including pattern recognition.

The book consists of seven chapters. Chapter 1 is a brief introduction of the goal of non-parametric regression and some typical misconceptions of smoothing methods are discussed. Chapter 2 and Chapter 3 represent the core of univariate smoothing. Chapter 2 deals with the simplest form of smoothing where a single response variable is described by a predictor variable with values that are equally spaced. Many time series data are described by such models.

Chapter 3 continues with irregularly spaced data. The basic methods like Nadaraya–Watson kernel estimation, local polynomial regression, LOESS and LOWESS are discussed. Chapter 4, 'Multidimensional smoothing', is presented more technically. However, the methods are a natural extension of those from previous chapters. Chapter 5 and Chapter 6 are devoted to non-parametric distribution estimation, considered as a special case of non-parametric regression. Chapter 7 is especially valuable for those who are interested in the concepts and techniques of pattern recognition that use non-parametric regression.

However, in the author's words, the contents

'. . . do not go far beyond an introduction of basic concepts and simple methods'.

Each chapter is supplied with S-PLUS objects for the graphic examples. These sections are of particular benefit to students for running procedures on the author's data or on their own data. Small sections with study problems are also included. The conversion of S-PLUS code to R code is included in a separate appendix. The book is designed for undergraduate or graduate level statistics courses.

The non-technical treatment of essential concepts and techniques and clear examples allow students to follow the general ideas of non-parametric regression. Only basic knowledge of algebra and statistics are assumed.

This book will be an excellent starting-point for those who have recently become interested in the topic. I recommend it as a reference book for researchers and for practitioners, and as a text-book for an undergraduate or special topics course.

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Statistical Analysis of Cost-effectiveness Data
A. R. WILLAN AND A. H. BRIGGS, 2006
Chichester, Wiley
xii + 198 pp., £45.00
ISBN 0-470-85626-2

The authors describe recent statistical methods for cost-effectiveness analysis in health economic

In finance, mainly for financial services firms, economic capital is the amount of risk capital, assessed on a realistic basis, which a firm requires to cover the risks that it is running or collecting as a going concern, such as market risk, credit risk, legal risk, and operational risk. It is the amount of money that is needed to secure survival in a worst-case scenario. Firms and financial services regulators should then aim to hold risk capital of an amount equal at least to economic capital. Financial conglomerates. The EBA cooperates regularly and closely with the other two European Supervisory Authorities (ESAs), EIOPA and ESMA, through the ESAs' Joint Committee. The aim of this cooperation is to ensure cross-sectoral consistency of work and to reach joint positions in the area of supervision of financial conglomerates, under the Financial Conglomerates Directive (FICOD, 2002/87/EC). Financial Conglomerates and Emerging Markets. The interest in financial conglomerates is not confined to developed economies. Financial conglomerates are important features of the financial landscape in emerging markets as well, as Stijn Claessens of the University of Amsterdam reported in his paper. Historically, banks have been regulated because of their inherent fragility—they are highly leveraged with highly liquid liabilities and illiquid assets—and because of their importance to the real economy. In principle, risk should fall as firms diversify their services. If it does, then financial conglomerates may need less capital than financial firms engaged in one or a few lines of financial business.