

Phillips curve, cost plus pricing equations and productivity equations depending upon GNP and time. The remaining chapters then investigate the dynamic properties of the MQEM model. Chapter 4 gives a preliminary investigation of dynamics by investigating the block structure of the dynamic matrix A in the linearised model, noting its movement from near recursiveness (a lower triangular block matrix) in period 1 to substantially non-recursiveness by period 5. Chapters 5 and 6 then apply the techniques developed in Chapter 2 to isolate the roots which are crucially involved in the wage-price-productivity behaviour of the model. Partly based on what is discovered here concerning the role of model parameters on the important aspects of the whole model dynamic behaviour, a reduced or compressed version of the model is derived. Dynamic solutions for the whole model and the compressed version for smoothed and actual historic exogenous processes are compared, and, by and large, a substantial measure of agreement appears between the two versions.

This is an interesting contribution to the analysis of econometric models. The exposition is admirably clear throughout, and although the subject matter is largely technical, the main arguments are presented clearly and lucidly. Reduced models have an important role for both pedagogic purposes and as aids in appraising model properties in ongoing model development. Reduced models also have a potential role in quantitative analysis of strategic policy. Examples of these are game-theoretic analyses of multicountry economic policies, and policy analysis based on implanting government-union strategies in macroeconometric models. The field is a lively one for methodological research and policy analysis, and the present volume is welcome as a valuable addition to the techniques of reduction methods.

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Harry V. Roberts, *Time Series and Forecasting with IDA* (Scientific Press/McGraw-Hill, New York, NY, 1984).

Time Series Forecasting with IDA has been written for students both with and without previous exposure to statistics. It is intended to be used at the undergraduate level but can also be used effectively at the graduate level. The text presents the material in the form of a question-and-answer dialogue, in the context of particular applications for which extended computer-aided analyses are developed, using IDA (Interactive Data Analysis and Forecasting System). There is a summary at the end of each chapter. Students are required to read more about certain issues, however. It would be helpful if the readers were referred to some text books which include the issues discussed in the chapter. Also, the book assumes that the reader is familiar with IDA. Although the book includes a brief background description of IDA in an appendix, those unfamiliar with IDA would probably have to obtain future information.

This text book helps the reader to understand model specification, model diagnostics, and the concept of the appropriateness of the model. The author illustrates the graphical capabilities of IDA, such as its ability to present data graphically, to plot the residual, and to determine model adequacy. However, it would be better to connect the consecutive points using the plotting routine rather than to do it manually.

The introductory chapter on time series and forecasting is limited and some issues such as leading indicators are not explained clearly. Chapter 2 covers regression; the author provides a thorough explanation in the question-and-answer format of the model, its adequacy, and many of the issues that may be of concern to the reader. The approach is a good one. However, at the beginning of the chapter, the author did not give the readers guidance on the use of IDA package. Rather, he states

that the readers should be familiar with it. The author could have used an approach similar to that at the end of Chapter 5 (see pp. 5–43). Such minor shortcomings could be improved in the next version, where simple introductions and more details in the appendix about how to access IDA could be included.

Chapter 3 discusses different statistical inferences used in checking certain properties and diagnostic checks such as auto-prediction to check the random behavior of the series, autoregression, and autocorrelation. Chapter 4 covers multiple regression, explaining model structure and fitting, adequacy of fit, and the issue of multicollinearity. The issues of seasonal and non-seasonal time series are discussed in Chapters 5 and 6 in which the author addresses the issues of trend and cycle analysis, autoregression fitting, predictive validation, seasonality, and direct fitting. The author needs to consider describing why the transform function is used (p. 5–2), however. The author sometimes gives opinions but does not clearly explain how he formed them.

Roberts discusses the Box–Jenkins techniques in Chapter 7 through Chapter 11, providing the readers with an introduction to ARIMA models and stationarity, autoregression analysis, models and the search for parsimony, model fitting and procedure, multiplicative seasonal ARIMA models, two stage fitting of multiplicative seasonal models, leading indicator of two variables, model selection, and intervention analysis. Having used the Durbin-ARIMA procedure in Chapter 9, the author needs to consider an introduction to explain why differencing is needed (and the use of the procedure). It may be even better to have explained Durbin-ARIMA in Chapter 8 along with the section on differencing.

Chapter 12 describes multivariate regression and provides an introduction to the use of more than one dependent variable. The author again explains univariate regression. In this chapter, however, the author discusses other issues such as transformation using lags but does not show why the readers should follow this approach. An introduction to the use of transformation is needed at the beginning of the chapter, this would help the readers to follow the presented materials.

The book's last chapter deals with multiple time series. The author explains the multivariate regression models and lagged variables. This is followed by a detailed explanation of two examples in which diagnostic checking, cross-correlation, and the use of the appropriate model are clarified.

There are two appendices. Appendix A consists of the 60 data files used throughout the text book. Appendix B contains a mini-manual for IDA, which is a brief introduction to how a user should start. However, section 5, 'A small data analysis for those with statistical background', listed in the 'Contents' for Appendix B, is not included.

Despite its limitations, the book is a useful contribution to the field of statistics and forecasting. It provides the readers with many examples and raises important questions and gives answers in the context of the issues presented. Thus the text is a useful tool for the introduction of time series and regression techniques to students.

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O.P. Kharbanda and E.A. Stallworthy, *Corporate Failure, Prediction, Panacea and Prevention* (McGraw-Hill, New York, NY, 1985) £16.50.

I have previously known the authors through their books on project management, including one entitled 'How to learn from Project Disasters'. This current book is an extension from looking at individual projects to corporations. The style is, not unnaturally, the same; highly readable, journalistic in its use of short sentences, paragraphs and sections, examples of failures drawn from a