

is a simulation method used to approximate the marginal and joint posterior distributions of parameters and unobserved states. The Gibbs-Sampler allows one to consider problems in which directly integrating conditional distributions would not be tractable. In chapters 8 and 9, Kim and Nelson apply the Bayesian approach with Gibbs-sampling to state-space models and Markov regime-switching models individually, while in chapter 10 they examine the combined Markov switching-state space model. Finally, in chapter 11 they examine a Bayesian approach to mean reversion in time series with Markov-switching heteroskedasticity.

Each chapter has roughly the same format. Each begins with a general presentation of the model. This is typically followed by a step-by-step derivation of key estimating and filtering equations. After presentation and discussion of the general model, several applications/examples are examined. These applications range from models of business cycle phases to dynamic factor coincident indicator models to reaction functions for money growth to models of the persistence and variability of stock returns. Nearly all of the applications have been published elsewhere which allows one to compare the Kim and Nelson results to those in the originally published versions. For each application, the model is carefully laid out; issues pertaining to specification and estimation are discussed; and estimation results are presented in detail. In addition, the data and Gauss programs used in the applications are available from Professor Nelson's web site. Thus, one could take this book and data and replicate every one of the examples.

There are some topics that I wish the authors had addressed more fully. There is very little in the book about model specification and model evaluation. How does an analyst know that the estimated model is a good one? How many states should one include in the state-space model or how many regimes to include in the Markov switching model? Economic theory can sometimes guide in model specification, as Kim and Nelson point out in their applications; however, practitioners could still benefit from a more formal statistical evaluation of model adequacy. Is-

ues in testing the linear state-space model against the Markov switching state space model were not discussed. Inference in this case is nonstandard as the Markov transition probabilities are not identified under the null of linearity. The authors also do not provide much guidance on choice of priors in their Bayesian analysis. In their applications, they start with relatively non-informative priors and, as a result, the Bayesian approach yields much the same results as the Classical approach. Yet the exclusive use of non-informative priors seems to lessen one of the appeals of the Bayesian approach which is its ability to incorporate non-sample information.

Nonetheless, there is much to recommend in this book. In the course of developing and exposing the state-space model with regime switching, Kim and Nelson provide an excellent review of both the basic state-space model and the Markov regime switching model. Generally, their presentation is so clear that researchers could take the formulae directly from the text and use them to develop their own computer programs. While some familiarity with linear time series methods is assumed, no prior experience with either state-space models or Markov-switching models is required to appreciate the potential of the methods surveyed. Overall, the book is an excellent resource for applied time series practitioners and would be a particularly useful reference in an applied time series course.

NATHAN S. BALKE

*Southern Methodist University*

*Bargaining Theory with Applications.* By Abhinav Muthoo. Cambridge; New York and Melbourne: Cambridge University Press, 1999. Pp. xv, 357. \$69.95 cloth; \$24.95 pbk. ISBN 0-521-57225-8 cloth; 0-521-57647-4 pbk.

*JEL 2000-0417*

This book deals entirely with micro-economic or game theoretic models of bargaining and their (many) applications to economic and political theory. In this approach the negotiating parties are treated as players in a game of chess or bridge who explicitly think ahead to evaluate the future reaction(s) of their opponent to their own actions. Furthermore, negotiators are assumed to be

unboundedly rational, meaning that each negotiator has the skills to “calculate” the so-called equilibrium outcome and no party is influenced by emotions. These assumptions delimit the scope of this book.

This strand of literature has its origins in the pioneering work of Nobel laureate John Nash, and its current state of affairs is based upon the seminal contributions of Ariel Rubinstein (and others) in which the equilibrium of the alternating offer model was first characterized and connected to Nash’s results. The alternating offer model is a “chess” game with rigid moves in which two negotiators alternate in making proposals to each other until one of the parties accepts the last proposal made. This model’s unique equilibrium features immediate and efficient agreement.

The first part of the book (chapters 2–4) explains and discusses the contributions of Nash and Rubinstein. An elegant method proposed by Avner Shaked and John Sutton is also discussed. The author’s style is logical and clear, and topics are introduced in a relaxed manner. A seemingly minor omitted detail is the modification of Shaked and Sutton’s method in the book *Game Theory* by Fudenberg and Tirole (1991, MIT Press). This modification consists of checking whether or not the proposing player should make an acceptable offer to his opponent. In almost all (but not all!) models in the literature the proposing party is better off by making an acceptable proposal.

As the author admits, the first part of his book inevitably overlaps with the first half of *Bargaining and Markets* by Osborne and Rubinstein (1990, Academic Press). Osborne and Rubinstein’s book is somewhat richer in discussing the broader issues involved and alternative approaches, whereas Muthoo narrows his discussion to the topics addressed in later chapters, dismissing Kalai-Smorodinsky’s solution and fixed costs versus discounting. However, Muthoo’s book is more accessible and contains more applications.

The second part (chapters 5–7) adds several features to the alternating offer model. Chapter 5 is excellent and successfully synthesizes the multiplicity of models with outside options in the literature, including take-

it-or-leave-it proposals and search during negotiations. This chapter should be compulsory reading for labor economists. The role of the rigid structure of moves associated with the “chess” game—such as bargaining procedure, retractable proposals and surplus destruction—are critically examined in chapter 7.

I have a problem with lemma 6.3, section 6.6, on endogenous inside options. As in earlier chapters, the author insists on allowing for different time preferences across negotiators. However, as is shown in Bolt (1995, *Amer. Econ. Rev.* 85, pp. 1344–47), in this context one of the parties might be better off by not making an acceptable proposal in case time preferences differ across parties. Shaked and Sutton’s method fails here and its modification mentioned earlier should be applied instead. As a consequence, lemma 6.3 should be restricted to identical time preferences across negotiators.

The third part of the book (chapters 8–10) focuses on three advanced topics. Chapter 8 analyzes bargaining situations in which each party partially commits itself prior to negotiations to a target level, for example, a union that publicly announces its target wage level in order to attain a more favorable deal. The major issues are clearly presented. Chapter 9 deals with private information. The assumption that both parties possess the same information underlies the immediate and efficient agreement result in most bargaining models. Muthoo’s approach is to derive the conditions under which private information rules out any efficient outcome in any bargaining procedure. The author nicely explains difficult topics such as direct revelation mechanisms and incentive compatibility without losing depth and generality. Since variants of the alternating offer model dominate the earlier chapters, it is a pity that this model does not return here. In the final chapter, repeated bargaining situations are analyzed and the difference between short-term and long-term contracts is made clear. This chapter also marks the current frontier of bargaining theory, which means that the complete picture is still under construction.

The reader of this book learns how several important forces affect negotiations and that

one should pay close attention to how one models negotiation situations. The results are either a unique equilibrium with immediate and efficient agreement or multiplicity of equilibria where a lot can happen. The author concludes with a motivated and stimulating view of the direction bargaining theory could be heading. Abandoning rationality to incorporate experimental evidence and psychological factors seems a challenging but difficult road to take.

To conclude, despite the reported minor omissions, this book successfully synthesizes a large part of the vast game-theoretic literature on bargaining. Its scope is somewhat narrow, but this is more than compensated for by a clear analysis of great depth. Furthermore, the book is very clearly written and logically ordered, and it skillfully addresses many complicated topics. This book provides a very good survey of the literature and is suitable for a course on bargaining theory for (under)graduates. It contains a large number of nice applications and should be compulsory reading for economists and political scientists who want to become familiar with this field.

HAROLD HOUBA

*Vrije Universiteit, Amsterdam*

## **D Microeconomics**

*Utility of Gains and Losses: Measurement-Theoretical and Experimental Approaches.* By R. Duncan Luce. Mahway, N. J. and London: Lawrence Erlbaum, 2000. Pp. 331. ISBN 0-805-83460-5. *JEL 2001-0051*

In recent decades, economists have become increasingly aware that the model they traditionally use to model decision making under uncertainty, subjective expected utility, does not describe these decisions well. Psychologists have presented evidence that an important reason why people deviate from subjective expected utility is that choices are among increments (gains) or decrements (losses) of wealth and not among absolute amounts of wealth as subjective expected utility postulates. Inspired by these empirical findings, formal models have been developed, primarily by mathematical psycholo-

gists, that incorporate sign-dependence, i.e., the distinction between gains and losses. Duncan Luce is one of the main contributors to this new class of sign-dependent models. His latest book provides an overview of his current thinking.

There are at least two reasons why Luce's book should appeal to economists. First, psychologists have repeatedly shown that the distinction between gains and losses is important in such decision making under uncertainty. In particular, aversion to losses seems to do more to explain attitudes to risk than the traditional economic explanation, utility curvature. Notwithstanding this evidence, economists have largely ignored the impact of sign-dependence. Luce's book shows how it can be modeled and may help economists to build more descriptive models of economic behavior under uncertainty.

A second reason why Luce's book is important is that it is based on a different paradigm for decision making under uncertainty than the one traditionally adopted in economics. Economic analyses are typically based on the framework developed by Savage (1954) in "The Foundations of Statistics." As Luce points out, Savage's paradigm has some drawbacks, including its static nature and the impossibility of modelling certain empirical phenomena within it. These problems make Luce's paradigm more appropriate in some decision contexts, for example in repeated choices and the evaluation of multi-stage lotteries.

Chapter 1 describes Luce's paradigm for decision making under uncertainty, followed by a discussion of the meaning of preferences and the axiomatic approach to modeling them. Chapter 2 discusses a number of elementary choice principles, based on three distinct concepts of rationality. Chapter 3 focuses on numerical representations of gambles with two-gain outcomes. Evidence shows that in evaluating gambles people deal differently with the best and the worst possible outcome. Luce characterizes two models that reflect this rank-dependence. Rank-dependence implies that people do not evaluate probabilities linearly, as in subjective expected utility, but transform probabilities. Luce gives an excellent discussion of the modeling of probability transformation, and he characterizes through an intuitive