

THE ECONOMIC JOURNAL, November 2002, F596-597.

Bargaining Theory with Applications. By MUTHOO (ABHINAY). (Cambridge and New York: Cambridge University Press, 1999. Pp. xv+357. £45.00 hardback, US\$69.95 hardback, £16.95 paperback, US \$24.95 paperback. ISBN 0 521 57225 8, 0 521 57647 4.)

Over the last decades bargaining theory has attracted much attention by researchers working in the fields of game theory and (applied) microeconomics. This should come as no surprise given the prevalence of negotiations in real-world settings. In fact, it is more the rule than the exception to find that some interaction which is of interest to economists can be best described as one of bi- or multi-lateral negotiations. While the most important example may be individual or collective wage bargaining, even some 'fixed-price' offers tend to be highly negotiable, as everybody intending to buy a new car will soon find out.

If negotiations are an important part of our economic reality, it is essential to study them both in isolation and, in particular, as building blocks for wider theories on price determination and market equilibrium. If we take a mainstream view, this requires a formal modelling approach. The approach in Abhinay Muthoo's book is that of non-cooperative game theory, which relies on two steps. First, a particular bargaining situation must be described in all details, including its participants, their payoffs, and their possible strategic moves. Second, appealing in particular to optimality, one derives predictions by imposing a concept of equilibrium.

There is one immediate verdict on the book: it is long overdue. Besides from the coverage in standard game theory books and the noteworthy chapters in Osborne and Rubinstein (*Bargaining and Markets*, 1990), an overview over non-cooperative bargaining theory as presented in Muthoo's book is welcome news both to researchers and, in particular, to those teaching courses on bargaining theory. The presentation of the material is well-informed and accessible. Focussing entirely on two-party negotiations, it treats both important strands of the literature, that on complete and that on incomplete information. Given the breadth of the material, it would be easy to spot omissions. This unavoidable shortcoming is recognised by the author, who briefly discusses the major omissions in the final chapter. My plan in reviewing the book is to treat separately the two main purposes which the book may serve: research and teaching.

1) Making use for research. The book is very clear about the implications of particular modelling decisions, e.g., the timing of moves in alternating-offer bargaining games, which is the workhorse of the theory. Relevant proofs or at least their intuition are clearly spelled out. The coverage of bargaining with complete information is very broad and detailed. Most noteworthy, the book offers an extensive treatment of the role of inside and outside options to which the two parties have access if agreement fails. Summing up, when setting up a model of bilateral bargaining with complete information, this book proves helpful in considering the appropriate modelling details.

Unfortunately, the author does not find sufficient space to treat the case of incomplete information with similar care. This is a pity as many key insights have been obtained in this area, for example, how delay may be used as an instrument for screening and signalling or how strategic posturing may occur to build a reputation of having high costs or a low valuation.

2) Making use for teaching. The book contains adequate material both for undergraduate and graduate teaching. It combines a thorough and rigorous treatment of the main modelling issues with a wealth of examples and applications. For future revisions it may be helpful to elaborate more on particular applications. For instance, a detailed treatment of the application of bargaining models to explain strike duration and strike patterns may help to convince students of the value of formal modelling.

With regards to the coverage and treatment of the material, a similar verdict as previously applies. The case of complete information is covered thoroughly. It is moreover introduced in a thoughtful way, starting with the basic model and discussing thereafter modifications and their implications. In contrast, the treatment of the case with incomplete information is again put in second place. In particular, the case of negotiations with alternating offers, which was the main workhorse under complete information, receives only very limited attention.

There is one particular change which I would advise to make in future revisions. From my own teaching I find the Coase conjecture both a very interesting but also a very demanding issue for students. The fact that having all formal bargaining power may be of little value to a seller if the buyer has private information about his valuation is one of the key insights of bargaining theory and may help to justify the role of formal modelling. A detailed treatment of the two-type case would therefore be much appreciated.