BOOK REVIEWS

M.A. COPPINI: *Incomes Redistribution Through Social Security*. Centro d'informazione e stampa universitaria (CISU) di Enzi Colamartini, Rome, ISBN 88 7975 201 4.

This is a recently published English translation (by David Giddings) of a book originally published in Italian 20 years ago. In spite of the time lapse, it does not appear to have been revised or updated and the references are all to work in the 1970s and earlier.

However, notwithstanding the fact that the basic principles of this work were presented as long ago as 1975 at the 6th ISSA Conference for Social Security Actuaries and Statisticians in Helsinki, it is likely that the methodologies will be unfamiliar to most actuaries, even to those working in the social security area.

The problems addressed are measuring the redistributive effects of a social security system and quantifying the effectiveness of the system in achieving redistributive objectives. The study of this sort of problem is perhaps more often associated with economists than actuaries, but the author has the advantage of being both an economist and an actuary.

Many readers may find the terminology and definitions somewhat hard to get to grips with. It may well be that some of the nuances are lost in translation, but it is often difficult to conceptualise what the notation is seeking to represent. The mathematics which follows is presented in full detail but requires careful study because of the definitional complexity.

Measuring the effects of redistribution presents many technical problems because of the complexity of the transfer of a social security system, which differ by branch (e.g. pensions, sickness, unemployment, health care, etc.) and have different impacts when looked at by individuals or by households, with effects which depend on earnings level, age, sex, duration of period of study, etc. The mathematics is complicated by the fact that most participants in the system are both contributors and beneficiaries, although not always at the same time. The author develops a generalised framework for examining and quantifying these effects and then elaborates a stochastic methodology, with conceptual roots in the insurance risk process and classical risk theory, as a way of providing practical solutions to a problem of rather daunting complexity.

Even more practical, perhaps, is the alternative approach of simulation which is offered by the author. However, dominant concerns in the book about the practicality of full simulation because of computing constraints more than anything serve to date the presentation. It seems unlikely that the application of these techniques would be much constrained today by

availability of computing power, although I suspect that availability of raw data on earnings distributions, contribution density and other factors will prove more of a constraint in practical applications of the techniques.

The author does present, in a final chapter, some examples of practical applications in the context of the Italian social security system. Since the ground-breaking work on this methodology has been developed by the author and colleagues and students of his in Rome, it is not clear from the book that any equivalent studies have been carried out elsewhere, and I am not aware of a wider literature having developed since the presentation of these ideas at the Helsinki Conference and at a subsequent ISSA meeting in Rome in May 1984. The author himself points out that this is very much "work in progress", rather than a definitive text-book on the techniques. The proof of whether these techniques can be applied to improve understanding of redistributive effects in social security (and, for example, to confirm or rebut charges made by World Bank economists that traditional social security schemes do not redistribute nearly as much as it might be thought, for reasons such as differential mortality between high and low earners) will inevitably depend on further research into practical applications, most likely using simulation techniques.

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