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BOOK REVIEWS

Agricultural Economics, Principles and Policy. By CHRISTOPHER RITSON. (London: Crosby Lockwood Staples, 1977.) Pp. 409, ISBN 0 258 96938 5.

Ritson has written a textbook for British university students in agricultural economics. Although it deserves to be a successful textbook in the United Kingdom, this reviewer doubts whether Australian teachers of agricultural economics would wish to recommend it for purchase by their students because the illustrative examples chosen and literature cited are so biased towards its intended audience. This *Journal* is mentioned once in over two hundred references. Probably, some English readers as well might regard the choice of material as excessively biased towards Ritson's own institution, the University of Reading.

The book is divided into two parts. The first part consists of four chapters: The Demand for Agricultural Products, The Supply of Agricultural Products, The Market Mechanism for Agricultural Products and Agricultural Resource Use. This is the less satisfactory part of the book because much of the treatment is standard and readily available elsewhere. One must envy British teachers who have available to them the excellent data on household food consumption and expenditure collected by the Ministry of Agriculture, Fisheries and Food. This material is used judiciously in the first chapter of the book. Ritson believes that 'an understanding of the way the demand for food products is likely to respond to changes . . . is one of the most important pieces of equipment possessed by agricultural economists'. Any student who masters Ritson's lucid treatment of demand theory would be so equipped.

The conflict between Ritson's objective of writing a comprehensive textbook and the existence of several other textbook treatments is especially obvious in chapter 2 which is an extremely condensed account of the theory of production and agricultural supply. Some topics are introduced but not treated exhaustively enough to satisfy the inquiring student. The considerable Australian contribution to the study of decision-making under risk and uncertainty is virtually ignored. This feature of the book may increase its attraction in some quarters! Some elaborate diagrams describe the geometry of the elasticity concept as applied to supply although it is not clear what aspect of the economic behaviour of agricultural producers is revealed thereby.

Chapter 3 discusses short-term fluctuations in agricultural product prices, longer term changes in the prices of agricultural products relative to other prices and some issues in agricultural marketing. The juxtaposition of the 'world food problem' and the 'farm problem' is particularly interesting and well-balanced. The treatment of futures markets is rather cursory and could leave the unfortunate and antiquated impression that futures markets exist essentially for insurance purposes. Part I of the book is concluded with a discussion of factor markets in agriculture. This chapter inevitably contains the greatest cross-cultural differences with the antipodes where little hired labour is employed on farms and urban versus rural land-use conflicts do not loom large. The treatment in this chapter does seem idiosyncratic at times. A brief discussion of sociological factors in the adoption of new techniques by

farmers is included in a section labelled 'capital inputs' although discounting, an issue most teachers would raise in a discussion of capital theory, is treated in a section entitled 'the economics of size in farming'.

For these and other reasons the reviewer was not enthralled on reaching the end of Part I. In some ways the frustration at the faults of Part I was heightened by the quality of Part II which consists of a further four chapters: The Economics of Welfare and Policy, Social Cost-Benefit Analysis (With Special Reference to the Appraisal of Agricultural Projects), Agricultural Trade Policy, and Methods of Agricultural Support. It is somewhat galling to be told after 225 pages of familiar information that 'space must limit what can be included of an extremely extensive subject'. Ritson limits his discussion of welfare economics to two important problems for agricultural policy: the meaning of economic efficiency and the measurement of the welfare effects of policy changes. The discussion of chapter 5 on The Economics of Welfare and Policy and Social Cost-Benefit Analysis is extremely thorough and will be useful to teachers and students attempting to distil the essential ideas in these difficult areas. One would hope that in any subsequent edition of this text, Ritson relaxes his 'space limit' to expand further this section of the book. The space limit was self-imposed by the inclusion of well-worn topics in Part I of the book.

The final two chapters of the book explore Agricultural Trade Policy and Methods of Agricultural Support. Both chapters contain material that could be useful to Australian teachers of comparative agricultural policy. There is a systematic and clear treatment of trade and price policies using partial equilibrium analysis. Reading between the lines of Ritson's comments on European price policies one can recognise that as many euphemisms exist in the rhetoric surrounding agricultural policy in Europe as in Australia. Indeed, it seems true the world over that public relations specialists have been busy in devising such gems as 'Bacon Market Sharing Understanding', 'restitutions', 'Food for Peace', 'underwriting', and 'Beef Industry Incentive Payments'. The treatment in Ritson's book emphasises the limited steps that can be taken to support and/or stabilise agricultural prices however grandly they are described.

The book is well-written and generously illustrated and would be a useful addition to the bookshelves of most readers of this *Journal*, especially at the English price.

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Pengantar Ekonomi Pertanian (Introduction to Agricultural Economics).

By MUBYARTO. (Jakarta: LP3ES, Revd Edn, 1977.) Pp. 243.

The initial edition of this book, published in 1973, constituted the first attempt to produce a modern introductory agricultural economics text for Indonesian students. As such, it was widely adopted in Indonesian universities and had a most significant influence.

In this revised edition, Dr Mubyarto has kept the number of chapters and sections much as they were in the first edition but has provided additional illustrative material encompassing livestock, fisheries and forestry (which were not touched in the first edition), while also presenting more detail on the estate sector. Most of the data presented have

been updated, in some cases to 1976. This new edition is also better referenced with relevant citations. However, as the author recognises by his suggestion that the book be used in conjunction with economic theory texts, relevant economic theory is not as thoroughly presented as one would hope even in an introductory text. Further, the author has apparently sought to avoid mathematical presentation as much as possible. Indeed, the only algebraic representations are of the usual marginal criteria for profit maximisation under perfect competition (which are not adequately explained) and of elasticity. Extensive use is made of tables and graphs, often without any adequate explanation in the text. Overall, this reviewer would have hoped for a more theory-oriented version in this revised edition. As it stands, the main value of the book is as a starting point for those interested in an overview of Indonesia's agricultural economy, rather than as an Indonesian-oriented introduction to agricultural economics as a professional discipline.

Surprisingly, the general presentation of this revised edition is worse than its predecessor. There are many more printing errors; the presentation is rather unsystematic (especially that of chapter 2); some repetition is evident; some sentences are incomplete and difficult to understand; tables are sometimes presented without indication of relevant units and in some cases have been updated while the text has been left in its original form; two diagrams are unnumbered (p. 58 and p. 62) and some other diagrams are improperly drawn or incomplete. In all, this revised edition leaves much to be desired and fails to live up to the promise of the first edition. While the effort to update and widen the book's coverage to include fisheries, livestock and forestry must be applauded and value must be seen in Mubyarto's overview of the Indonesian agricultural economy, the market still remains open for an Indonesian-oriented introductory agricultural economics text along the lines of such standard English-language texts as those, for example, of Bishop and Toussaint, Ritson, or Doll, Rhodes and West.

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Quadratic Programming Models Applied to Agricultural Policies. By A. D. MEISTER, C. C. CHEN and E. O. HEADY. (Ames: Iowa State University Press, 1978.) Pp. 124, ISBN 0 8138 1930 X.

Many large-scale linear programming models of national agricultural sectors have been developed. The models have been effectively conditional supply models, giving estimates of aggregate supplies of commodities conditional on stipulated prices. A desirable extension of such models is that product prices be specified as functions of quantities demanded. This is particularly so for models of countries for which product prices are determined more by domestic than foreign demand and supply conditions. However, endogenous price determination requires non-linear programming techniques and in particular quadratic programming (QP) techniques if demand schedules can be assumed to be linear. The successful search for improved QP algorithms and the availability of greater computing power mean that now large-scale QP models of agriculture are feasible. This disarmingly slim book impressively demonstrates the realisation of such potential.

The rationale for QP models is explained rather repetitively in the Preface, Introduction and chapter 1, before the compact presentation of alternative ways of formulating the QP problem in chapter 2. The ultimate formulation, a self-dual formulation, is the one recommended, on the ground that it works with half the data required for the general simplex method of QP and can handle a non-symmetric matrix of slope coefficients of the demand schedules. The authors show particular enthusiasm for the latter capability because a symmetric matrix implies theoretically unlikely constraints on income elasticities and because symmetric matrices are not usually obtained in practice using non-constraining estimation. There is not as yet a proof that the required sequence of iterations converges to the optimal solution. However, there is no problem in recognising the optimal solution if it is reached. So far, the authors have not found any problems in reaching the optimal solution. A possible problem which is hinted at in the final chapter is the lack of a guaranteed optimal solution if equality constraints are imposed.

The remainder of the book describes the development of and experimentation with a large-scale spatial equilibrium model of agriculture in the USA, using the self-dual QP formulation. The derivation of demand and production data for 10 consuming regions and 103 producing regions covering 27 agricultural commodities for 1980 is concisely described, and implies a considerable work input. Interdependent linear demand schedules are obtained for each region using 1961 estimates of national price and income elasticities, adjusted for regional population, income and time trends. A rough check on the credibility of the model is made by comparing model predictions for 1980 input-output levels with actual levels for 1965. The final model is impressive for its power, interactiveness and aggregate consistency, and promises potential for all sorts of policy experimentation. As an illustration, the model is run for the following three policy scenarios: a large increase in grain and soybean exports for balance of payments or aid purposes; the introduction of minimum prices for wheat, corn, soybeans and cotton for farm income maintenance purposes; and the setting of maximum fertiliser application rates on various crops to reduce pollution from fertiliser run-off.

The final chapter is a welcome one on the limitations of the model and data. However, there are still fundamental questions about the interpretation and use of the results of the model which are not raised. Perhaps most importantly, to what extent is the model indicating socially desirable allocations of resources in agriculture given particular policy settings, as against predicting the outcome for agriculture of alternative policies after allowing market forces to work themselves out? If the demand matrix is not symmetric, the authors admit that the model is not used to maximise a social objective function. There are various elements in the model designed to reflect 'likely' rather than 'optimal' decisions, such as the modelling of the fertiliser input decision, regional livestock capacity constraints and rotation activities. On the other hand, if the model is meant to be predictive, it would have been expected to include more expectational and institutional factors. Another fundamental question which deserves discussion is the length of time for

the model equilibrium to be reached. There must be some constraints on the year that can be nominated for which data are then estimated, the model run, and results taken to apply to that year.

The authors are direct and honest in their description of the model. The book is well presented, and succeeds in describing very concisely the theory and potential of large-scale agricultural QP models. It deserves a wide readership.

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