BOOK REVIEWS

Corn Quality in World Markets, L. D. Hill (Ed.). Illinois: Interstate Printers and Publishers, Inc., 1975. Pp. ix, 270. $US8.95.

The application of technology to the corn industry has resulted in tremendous advances in the production of corn in the United States and the development of large export marketing systems. However, these developments have also brought with them considerable problems as a result of lowering the quality of corn being marketed and the inability of the current grading systems to correctly identify and market the various grades of corn that have been developed.

An International Conference was held at the University of Illinois in 1973 to review the current developments in the corn industry and to discuss the needs and problems of future grading and marketing systems. This book is the publication of the twenty-six papers presented at the Conference.

The first two sections deal with the importance of corn in the world markets and the identification of the quality and uses of corn. The third section covers the developments that have been made to production by genetic selection. This section deals extensively with the potential and successes of genetic changes, including the development of higher-yielding hybrids, superior protein quality (opaque-2) and different carbohydrate characteristics (waxy corn). It is also an interesting account of the problems that occur as a result of the development of new varieties —the need for separate crop isolation and identification, new grading standards, separate transport and storage systems, price differentials to compensate growers for any decrease in yield, and the need to promote and develop new markets for these new varieties.

The fourth section deals with measuring corn quality in the marketing system. The current grading systems are outlined and their deficiencies in defining the characteristics of new varieties of corn in terms of quality are discussed. The investigations that are being conducted in the search for new laboratory techniques that could be used to develop more comprehensive grading systems are presented.

The final section outlines what can be done to maintain and improve corn quality during harvesting, transportation and marketing. The causes of physical damage and the economics of alternative harvesting and handling systems are discussed. This section also presents the unexpected problems that may be caused by technological advances in the transport system.

Overall, this book contains a comprehensive cover of all aspects of corn quality, covering production, identification, transportation and marketing. It is a little disjointed in sections, with some authors making little attempt to relate their topic to the theme of the Conference, and there is some replication of subject matter. This, however, can be expected from an inter-disciplinary conference. The book should be of value to not only those people involved in the corn industry, but also to anyone who is interested in the production and marketing of cereals.

E. S. BATTERHAM

Agricultural Research Centre, Wollongbar

Your Guide to Estate Planning, D. F. Spence and P. F. Rose. Armidale: Agricultural Business Research Institute, University of New England, 1976. Pp. 34. $3 (RRP).

The authors of this booklet are, respectively, a senior lecturer in the Department of Accounting and Financial Management at the University of New England and a partner in a firm of public accountants in Armidale, N.S.W.

In the authors' words "this booklet explains some of the problems in Estate Planning and the methods that can be used by your accountant and solicitor to overcome them, to produce the plan, or scheme, best suited to cater for your own particular circumstances. It is not intended that this booklet will make you an expert on estate planning. However, it may alert you to possible deficiencies in your present arrangements and cause you to seek advice from your solicitor, accountant, and other advisers".

Using a clear and logical presentation, Spence and Rose have achieved their aim. The booklet is written in such a way that their defined audience, primary producers and other businessmen, will experience little difficulty in understanding the contents.

The authors use three empirical examples to illustrate the magnitude and effect of death duties on different types of estates—a primary producer estate, a small business estate and a doctor's estate. The authors then indicate how, by using careful estate planning, each of the estates concerned could have not only paid a smaller amount of death and estate duty but could also have avoided some of the inconvenience, hardship and unhappiness involved in "winding up an estate". The authors encourage the reader to calculate the net value of his own estate and then, by consulting the tables in the appendix, calculate the approximate duty payable on his own estate.

The next section of the booklet is devoted to a description of some of the more commonly used techniques in estate planning—gifting, partnerships, trusts, companies, and life assurance. The description of these techniques is well backed up by simple practical examples which illustrate quite effectively their workings.

The final section in the book outlines the importance of a Will and the necessity for a Will to be properly drawn up. The hardships which can be caused through either not having a Will at all or through having an inadequate Will are stressed.

The authors appear to have made a very brave assumption that their defined audience is reasonably conversant with the overall concept of death duties. The booklet may well have been more complete with the inclusion of discussion on

- the administration of death and estate duties,
- the exemptions from duty which are available,
- the availability of duty rebates.

However, despite this slight deficiency I found *Your Guide to Estate Planning* to be an excellently written booklet on a most important and often neglected topic. At a cost of only $3 this is an excellent introduction to estate planning and associated problems, which is recommended to anyone with little knowledge and experience in this field.

D. M. GILBERT

Department of Agriculture, Tamworth

Waste Recycling and Canadian Agriculture, C. Pequegnat (Ed.). Toronto: Agricultural Economics Research Council of Canada, 1975. Pp. 253. $C20.00.

Canadian experience of waste recycling was discussed at a conference entitled *Commercial Uses of Wastes as Animal Feed* held in Toronto in April, 1975. This book faithfully reports the scientific and practical experiences of the participating scientists, farmers, consumers and politicians.

While the conference papers are interesting, Canadian experience with wastes as animal feed is not relevant to the Australian situation. The Canadian cattle industry, cattle finishing for instance, has had to face widely fluctuating grain prices and shortages, and is now looking towards wastes (both poultry litter and cellulosic) and forage. Their concern is with an increased pasture land requirement and longer production periods. The land is not cheap and there is increasing competition for land from urban, wildlife, recreation and other users. Australian agriculture will remain extensive in nature and will not suffer on any scale, from the problems inherent in Canadian agriculture. Canadian experience with manure disposal and utilization from intensive (especially controlled environment) livestock production could be relevant to Australia. However, the scale of the problem and the structure of our industries are quite different. Canadian experience is with 100 000 cage layer farms, a large number of piggeries with over 1 000 sows and 10 000 unit cattle feedlots; on the other hand Australia is concerned with 10 000 cage layer farms, 20–50 sow piggeries and purely opportunistic beef cattle feedlotting enterprises. There are a few notable exceptions, but not enough to justify government research expenditure in this area.

It was pointed out at the conference that research workers were asking for funds to solve problems that had already been solved by producers. In 1950 a turkey producer with 25 000 birds took raw litter from his turkey house to his feedlot, and fed it to his beef cattle. He had the lowest cost per pound of gain of any farmer in Elkhart County, Indiana. To be fair, research workers have other priorities, but management practices had already been established in various regions.

Commercial feed from waste is a product development problem which lends itself to commercial, not government, development. "Opportunity feeds" from waste have value to some farmers in certain communities, e.g. poultry manure, corn cobs, potato waste, but these will not alter the reliance on conventional feedstuffs.

Waste utilization is very much a regional problem. Processing and cartage costs preclude the wide distribution of this "resource" and profitability is so small that successful practice is very much dependent upon regional conditions.

The book is a good reference of empiric evidence for solving particular manure and animal waste problems, and problems of cellulosic waste (mainly forestry, but there is one paper on crop residues). However, some reference material is very hard to find. This is the book's greatest fault. It has a table of contents only; no listing of tables, diagrams or index. There is a wealth of up-to-date data in the tables of various papers but this can only be found by steadily ploughing through the book. The book also suffers from a lack of continuity and repetitive sentiments of authors.

On reading the evidence in this book, I feel there has been vast research done in this area—the technology is there, the potential and the quite incredible implications for solving (especially with single cell protein) the world's feed problems—but something is missing! Technology appears to have got ahead of the profit motive or society's priorities.

Technological solutions are not lacking in most cases, but rather economic and social solutions. The fundamental question is, who should pay and how?

GRAEME MOHR

Poultry Research Station, Seven Hills

Public Servants, Interest Groups and Policy Making: Two case studies, R. F. I. Smith and P. Weller. Occasional Paper No. 12, Department of Political Science, Research School of Social Sciences, Australian National University, Canberra, 1976. Pp. v, 88. $4.95 (RRP).

This monograph began as a submission to the Royal Commission on Australian Government Administration. It analyzes the formulation of the policy of wheat delivery quotas for the 1969/70 season, and the establishment of the Schools Commission in 1973. Both case studies examine the process by which policy is formulated: in particular "the identification and definition of problems; the selection and comparison of policy alternatives; the choice of policy; policy implementation".

Problems of policy making are not neat, compartmentalized problems; "they are often 'wicked' problems, where the process of defining them is itself the problem". For these reasons, disinterested spectators (particularly, I suspect, academic economists) tend to overrate the relevance of maximizing social welfare to the process of public policy making, and assume too often that policies emanating from the parliamentary process ought to conform with, say, perfect competition. Economists wishing rigorous treatment of the peculiar rationality of public decision making would do well to consult the works of Downs, Niskanen, Breton *et al.* Those wishing an informal, applied introduction to collective decision making in Australia could profit from examining Smith and Weller's case studies.

Since the establishment of the Schools Commission is of minor interest to economists only three comments are relevant. Firstly, this case study presents a reasonable summary of the general process by which policy is transformed into legislation. The process of departmental preparation of details of policy, legislative drafting, involvement of other departments *et cetera*, is outlined in some detail. Secondly the political role of the public service is noted: "The advice given by officials was often highly political as all officials readily admit. One declared that all second-division officers were partisans, because their role was to assist the minister in any possible way". Thirdly, the editing of this and other sections is inadequate—abbreviations creep in, persons of undesignated rank are assigned important roles, and some questionable assertions are made. This section in particular and the monograph in general, presupposes a relatively detailed knowledge of recent Australian federal politics.

With regard to the introduction of wheat quotas in the 1969/70 season Smith and Weller deftly expand one section of Connor's book on the wheat industry [1]. They outline the general process by which agricultural policy has been made under recent Federal Liberal-Country Party governments. Publicly, the Country Party was committed to instituting policies agreed upon by the relevant farm industries; privately, the Party brought considerable pressure to bear upon farm leaders to ensure that the recommended policy was acceptable to the Party. The background to the wheat quota decisions is well known: falling international demand for wheat in the late 1960s, a renegotiated five-year wheat agreement in 1968 in which the proposals of the Federal Government were severely criticized by the wheat industry, and a wheat crop in 1968/69 which severely taxed available storage. The Government, the Country Party and the Minister for Primary Industry all adopted a low public profile while the Australian Wheatgrowers' Federation took public responsibility for formulating a quota scheme and recommending it to the Federal Government. The problems inherent in such a quota scheme surfaced after its inception; by and large, however, the wheat industry bodies and the state governments bore the brunt of the resulting criticism rather than the Federal politicians.

Sandwiched between Government and the wheat industry in the negotiations for delivery quotas was the Commonwealth Department of Primary Industry. Smith and Weller claim that the role of this Department has been understated in the development of wheat quotas given the Department's intimate role in providing advice to the responsible Minister. The contributions of academic economists are noted in passing.

Too often, government decisions are evaluated as if they were instituted in the quest for maximizing some well-defined and well-behaved social welfare function. As Smith and Weller show, collective choice in the Australian context is closely connected with the utility functions of interest groups and political parties. If he is to assist in effecting better economic decisions, the economist requires a full understanding of the process by which government decisions are made and policies are implemented. Smith and Weller's monograph is an important contribution to furthering that understanding.

DAVID GODDEN

Agricultural Research Centre, Wollongbar

REFERENCE

[1] CONNORS, T., *The Australian Wheat Industry: Its economics and politics.* (Armidale: Gill Productions, 1972).

Welfare Economics: A Liberal Restatement, C. K. Rowley and A. T. Peacock. London: Martin Robertson & Co., 1975. Pp. viii, 198. $8.80 (paper) (RRP).

". . . we charge those who deal in Paretian welfare economics with . . . presenting a value-based dogma as value-free, immutable and incontestable . . ."

With that battlecry, Rowley and Peacock launch an excellent destructive attack on Paretian (welfare) economics. Unfortunately, however, their attempt to provide a "liberal restatement" of welfare economics is rather confused.

Rowley and Peacock elaborate the assumptions of Paretian welfare economics: a static economic system; solipsist utility functions with each individual the best judge of her own welfare; mathematically satisfactory utility and production functions; profit and utility maximization; and a social welfare choice criterion that, if a change leaves at least one person better off and no-one worse off, then social welfare has increased. These assumptions are attacked on three grounds:

(i) the first four assumptions are an inadequate model of the real world —the economy is not static; individuals are both benevolent and malevolent and often inadequate judges of their own welfare; utility and production functions (if they can be identified) are not necessarily twice differentiable; and profit and utility maximization are frequently in conflict with individuals' motivations;

(ii) the fifth assumption above is a sufficient, but not necessary, condition for an increase in social welfare and, more importantly, identifies an *infinite* number of top-level Paretian optima depending on the distribution of property rights;

(iii) the five assumptions taken together are generally assumed by Paretian welfare economists to infer the unmolestable virtue of perfect competition. However, perfect competition (which Rowley and Peacock suggest is incompatible with a modern complex industrial State) is only a sufficient, not a necessary, condition for *each* of the infinite number of top-level Paretian optima.

The attempts of latter-day Paretians to escape the straitjacket of naive Paretianism are also reviewed. The related problems of externalities and public goods and the consequent problem of appropriate public choice mechanisms are reviewed. The Kaldor-Hicks-Scitovsky-Little compensation test is given an airing. Interdependent utility functions are also discussed. The review of Paretian welfare economics is concluded with Harberger's "Final Solution" [1]. Rowley and Peacock conclude that the latter-day Paretians fail to rehabilitate their brand of welfare economics. Indeed, they suggest that Paretians in general fail to recognize the basic ethical problems which confront their particular conception of economics.

In (too briefly) reviewing the recent challenge of the New Left to Paretian orthodoxy, Rowley and Peacock note their agreement with New Left writers in criticizing Paretianism. In particular, they draw attention to their agreement with the New Left as to the utter conservatism of Paretian welfare economics, and the latter's false dichotomy of "economic" and "other" welfare. Rowley and Peacock also share the New Left's suspicion of monolithic economic and political organizations which, they claim, Paretian welfare economics implicitly supports. However, Rowley and Peacock part company from the New Left in postulating alternative economic systems and models. The New Left is claimed to support "nirvana" economics, whereas Rowley and Peacock accept the essential imperfectibility of man.

Finally, Rowley and Peacock review liberalism and postulate "liberalist welfare economics". Liberalism—"that condition of mankind in which coercion of some individuals by others is reduced to the minimum possible degree"—is argued to be entirely distinct from Paretianism, and of infinitely greater virtue. The particular freedoms espoused by liberals are detailed, as is the problem of conflict between freedoms.

"Liberalist" welfare economics is explained by contrasting the approaches of orthodox Paretians, the Paretian heretics and liberalist welfare economists in three areas of major concern to welfare economists. In the area of collective choice, Rowley and Peacock argue for alternatives to the public provision of goods in those cases where Paretians usually suggest intervention by a benign and neutral State. In the area of distributive justice, Rowley and Peacock argue that the Rawlsian conception of justice is riddled with philosophical objections, and that the orthodox Paretians are content with predatory *laissez-faire*. The liberal's simple solution is "equality before the law". Lastly, the liberal approach to market regulation is outlined, particularly as it concerns the rule of law.

Although their attack on Paretian welfare economics is successfully pressed home, Rowley and Peacock fall into an error similar to that of the Paretians in attempting to postulate an alternative. The authors demonstrate that the Paretian's model is totally inadequate in describing, and predicting outcomes in, the real world. However, Rowley and Peacock frequently appear to be arguing that liberalist welfare economics is a better tool for analyzing the real world—whereas it is patently obvious from their own analysis that the real world is far from liberal. Indeed, it would seem that the best models for discussing the *contemporary* real world are the economic theories of representative government advanced by Downs, Niskanen and Breton. Hence Rowley and Peacock's "liberalist welfare economics" is a reasoned plea for a liberal real world and a preliminary description of how liberalist welfare economics might analyse that world.

The value of *Welfare Economics: A Liberal Restatement* lies in its masterly attack on Paretian welfare economics; this attack should be compulsory reading for complacent "scientific" economists. Rowley and Peacock's philosophical challenge to Paretian welfare economics is a thought-provoking plea for old-fashioned but relevant liberalism. As to liberalist welfare economics? . . . its future depends upon the success of Rowley and Peacock's missionary zeal in spreading the gospel of liberalism in a hostile, illiberal world.

DAVID GODDEN

Agricultural Research Centre, Wollongbar

REFERENCE

[1] HARBERGER, A. C., "Three basic postulates for applied welfare economics: an interpretative essay". *Journal of Economic Literature.* (September, 1971), pp. 785–97.

Farm Planning and Control, C. S. Barnard and J. S. Nix. London: Cambridge University Press, 1973. Pp. viii, 549. Bibliography, index. This book is a farm business management text which gives an emphasis to mathematical planning and control techniques for use in farm management. It is well presented as an undergraduate text. It is also a useful reference for persons servicing agriculture.

Both authors are university lecturers. C. S. Barnard is Lecturer in Land Economy at the University of Cambridge. J. S. Nix is Senior Lecturer in Farm Management at Wye College, University of London. The authors present their book "primarily as an intermediate text for students in Universities and Colleges". The sequence of subject matter presentation is from theory to example. The emphasis given to theory is apparent from the first two sentences of the text.

> The first question which arises is why farm planning should be regarded as necessary. The answer may be sought by turning to the tenets of production economics embodies in what is known as the "theory of the firm" . . . (p. 3)

The book is divided into four parts comprising twenty chapters. There are appendices to some individual chapters "to elaborate particular points or to add detail to them".

> The book is divided into four parts: the organisation of resources, the organisation of enterprises, the combination of enterprises and the control of resources and enterprises. These parts follow one another in logical sequence, the general theme being that, in order to make the most economic use of the resources at his disposal, the farmer has to decide what resources to use, how to organise their use within individual enterprises and how to combine the enterprises into an integrated farming system. Lastly, if these efforts are not to be largely wasted, he must initiate the keeping of suitable records to provide both planning data and a system of checks and controls when his plans are put into practice. Throughout, detail is subordinated to principle so that the reader may gain a clear insight into the processes involved in farm planning and control . . . (p. viii)

From this description of the book's structure, it is a reasonable conclusion that the book has a relatively strong emphasis on mathematical planning and decision-making techniques. Production economic theory is linked to computerised programming techniques. Chapters 14 to 17 respectively are entitled, Budgeting and Programme Planning, Linear Programming, Further Programming Techniques, and Matrix Construction.

This emphasis of the text is further accentuated by the absence of any detailed consideration of aggregate supply and demand analysis, and of the prediction of future prices as an input to farm planning.

The authors have achieved an aim of keeping the mathematical treatment of topics to a minimum. The presentation of more involved planning techniques is well done for readers of average mathematical ability.

For example, the development of an understanding of matrix construction is done by arithmetic rather than algebraic example.

On the other hand, the book is a good reference on production economics and is a useful introductory text for students proceeding to in-depth study and use of mathematically involved planning and control techniques. The book is quite readable. There is liberal use of examples to elaborate principles. Brevity of writing has presumably been traded off against giving detailed examples to increase relevance of subject matter. The examples used are drawn from English agriculture.

In conclusion, this reviewer considers that the book is worthy of inclusion in libraries of institutions offering tertiary level courses in farm business management; for same courses it would be a useful text.

G. J. BUGGIE

Department of Agriculture, Sydney

Economic Theory of Regulatory Constraint, E. E. Bailey. Lexington, Massachusetts: Lexington Books, D. C. Heath and Co., 1973. Pp. xviii, 200. $A17.95. (Review copy supplied by ANZ Book Co., Brookvale.)

The regulation by an agency or tribunal of a firm's monopolistic behaviour, for the purpose of passing on to the consumer an increased share of profits in the form of a lower price, is gaining prominence in market orientated economies. As well, a fund of folklore is developing around the performance of the firm under the constraint on earnings. And if one judges the importance of the problem in terms of published articles, then the regulation of industry is a weighty problem. Furthermore, Elizabeth Bailey is conspicuous among those who have contributed to the discussion. It is appropriate therefore that she should prepare this book reporting the economic theory of regulatory constraint in a concise form.

Dr Bailey chose to organize the material in two, largely self-contained parts. The first part is an introduction to the general structural framework employed. For the most part the models are neo-classical; the firm seeks to maximize profits in a static, deterministic environment and in a partial equilibrium setting. The focus of the discussion is an explanation of the firm's behaviour in face of the regulatory constraint which effectively reduces profits from the monopoly level to some lower, but still positive, level. The analytical approach adopted uses the Kuhn-Tucker conditions. A detailed statement of the Kuhn-Tucker theorem is contained in Chapter 2 for those who do not have a familiarity with the approach. (At book's end, familiarity with the Kuhn-Tucker conditions is assured.) As well, for the most part the results are described using the traditional graphical approach.

Also in Part One, the likely behaviour of the firm with regard to operating off the production frontier is examined. The standard folklore suggests that a regulatory constraint will tend to lead to wasteful production practices. The theory described in Chapter 3 does not wholly conform with the established views.

A distinction is made in Chapter 4 between symmetric and asymmetric regulatory constraints. A symmetric constraint is one in which marginal increases in expenditure on each productive variable result in identical changes in the profit ceiling, e.g. markup over total costs. The analysis suggests that symmetric constraints are superior in allocative efficiency terms to asymmetric constraints, such as rate-of-return regulation.

Part Two is devoted to the Averch-Johnson rate-of-return regulation model which Dr Bailey describes as "the most theoretically intriguing interpretation of the general structure" (p. xvii). In this model the firm is assumed to seek an extreme positive value of profits subject to a regulatory constraint that limits the firm's earnings to being not in excess of a fair return on its capital investment. In a two productive variable (labour and capital) model we have

$$\underset{L,K}{\text{Maximize}} \quad \pi(L,K) = R(L,K) - wL - rck$$

$$\text{Subject to} \quad \frac{R(L,K) - wL}{cK} \leqslant s, \text{ with } s > r,$$

where L and K are units of labour and capital, respectively, w is the wage rate per unit of labour, c the acquisition cost per unit of capital, r market cost of borrowing funds, s the fair rate of return on investment set by regulator and $R(L,K)$ is the revenue received by the firm as determined by the firm's demand and production functions. The constraint encourages the firm to maximize its use of capital. The analysis draws attention to an affinity between the behaviour of the regulated firm and the classical revenue-maximizing firm.

The remainder of the second part of the book extends the Averch-Johnson model in a number of ways: Chapter 6 looks at the firm's response to changes in the level of the fair rate-of-return parameter; Chapter 7 reports that lagged regulation tends to mitigate the incentive for the firm to adopt an overly capital intensive technology and thereby encourage the firm to choose a more optimal resource combination; the effects of changes in the cost of capital, the prices of capital inputs, the expenses of the firm, and various types of taxes are dealt with in Chapter 8; Chapter 9 is concerned with the problem of a rising cost of capital and points to the possibility of the firm choosing to operate off the production frontier; in Chapter 10 the assumption of a uniform demand over time for the firm's output is relaxed and peak-load pricing is incorporated into a model of regulatory constraint.

This is a technical book as is intended by the author. The discussion is pedantic with no frills. The material is organized in a consistent manner throughout the book with the main results in each chapter highlighted in a series of propositions. The approach tends to be somewhat repetitive, though the graphical analysis provides some relief. Nonetheless, the book not only is an excellent reference for students of the economic theory of regulatory constraint (the bibliography is extensive), but, as the book is, in effect, a collection of constrained maximization problems, it is also a source of examples for students of the non-linear programming techniques. A disappointing feature of the book is the focus on models that are static, deterministic, and in a partial equilibrium setting. But this feature is not unique to a text of economic theory of regulatory constraint.

D. R. GALLAGHER

University of New South Wales

Fisheries Resources of the Sea and their Management, David Cushing. London: Oxford University Press, 1975. Pp. 87. $11.20.

This book is one volume in the Science and Engineering Policy Series. The series is intended to provide a medium for the discussion of various aspects of the impact of scientific discovery and technological development on society. This book admirably fills this requirement.

Fisheries management is concerned with the natural history and development of fisheries and fishes as an integral part of establishing models of the dynamics of fish populations. This information is used at international commissions to establish the need for conservation, and to devise regulations to cause recovery of fish stocks.

This book establishes the need for biological control and conservation. It also produces ample evidence of various regulations in action and their effect on fish stock in the world's fishing grounds. Biological sciences come under the microscope with the observation that, if international commissions fail to practice conservation, it is a failure of science or a failure to fully demonstrate science. The author feels that models and their implications should be simple and understood by all. There is of course a concealing art in simplification but to carry conviction, models should be simple.

The economic content of this book is quite small. Management is discussed in terms of regulations, quotas and international commissions concerned with fish stock, recruitment and maximum yield. Economic management at the international level and local level is in its infancy. The author quite rightly feels that, with the availability of sophisticated simulation models and models describing the dynamics of a fish stock, attention should be focused on economics research.

International fishing commissions came into being when, firstly, profits and, secondly, stock densities declined. In the 1930's the shelf seas off northwest Europe and off the northwest coast of North America showed signs of exhaustion; today it is the world ocean that might be limited in yield. It has been estimated that the limiting catches of about 100 million tons per year might be reached in a decade or so.

Control is necessary because outside territorial waters fish are common property and are not rentable. Because they are not rentable, market forces cannot operate and it is therefore necessary to control entry. The problem used to be how to obtain a maximum or optimum yield on average, but with catch quotas the new problem is how to predict catches. The consequence of this change of outlook is to demand much more precision in assessment and to place greater strain on the methods of data collection and on the basic biological material; simulation models are used to forecast the timing and quantity of a run. Such information is useful to the economic management of a fishery.

The commissions' concern for economic management is demonstrated in the example of the Pacific halibut and the Baltic plaice, the first fish to be conserved internationally. The result of conservation was that both total catch and the stock density recovered by factors of 1.5 and 3.0 respectively; profit was expected to increase! However there were economic disadvantages; firstly, the closed season was extended and boats spent only a short time at sea, and secondly, the licensing system perpetuated the old methods of fishing. Also there were disbenefits in having to maintain the gear and to keep cold stores running longer than need be. The real issue raised here was that the fisheries biologist could well devise regulations to cause recovery of the stock, but that they might not see all the economic consequences of their actions.

For someone contemplating entering the field of economics and fisheries resources management, this book provides a good starting point especially for people whose bent is population dynamics modelling. The author discusses recent developments, but does not provide enough model detail. There is a selected bibliography.

GRAEME MOHR

Poultry Research Station, Seven Hills

An Introduction to Applied Econometric Analysis, R. F. Wynn and K. Holden. London: MacMillan Press, 1974. Pp. x, 245. $12.25 (paper) (RRP).

In their opening comments, the authors state their principal aim as the provision of an introductory text in the field of econometric modelling at the advanced undergraduate level. The emphasis is on maintaining relevance to the student by illustrating the use of the techniques in practical models. The authors have achieved their aim with a concise and useful book.

The text is structured into two definite though closely related sections. Chapters 1 to 4 (which include the introduction) comprise the first section and cover basic econometric techniques, and investment, production-function and wage-price models. The second section, chapters 5 and 6, extend the discussion and look at macro-economic models, their structure, estimation and use in forecasting. The authors have adopted a standard format for the first section (loosely followed for the final two chapters). They review theory relating to the specification of each model; ways the model may be tested; examples of published empirical results; and, to complete the chapter, a section on further reading and an excellent bibliography.

It is unusual for a reviewer to mention, more than in passing, the introduction of the book in question. Perhaps the introductory chapter in this case has been misnamed. Certainly however, it warrants a special comment. This chapter is in fact a brief summary and explanation of the basic tools of econometrics and is particularly concise and lucid. As a refresher for the reader who has knowledge of the techniques, and for the student who has just been introduced to them, it is excellent.

The second chapter (the first in which the authors look at a specific model) deals with the perennial investment model. The authors look at various models used to test investment behaviour in respect to net additions to capital stock and replacement of capital items in the private sector. Problems of specification, especially those resulting from the time structure of investment, and methodology for coping with them are covered. Having dealt with the main theories in outline, the authors look at seven successively more complex models that incorporate the techniques discussed and apply them to macro data (U.K. data for 1955–70) and micro data (15 U.S. corporations for 1949–63). The performance of each model is then ranked and the reasons for its ranking carefully analysed. An interesting conclusion in this analysis is the consistently good performance of the neo-classical models.

Production-function models are handled next in what is, perhaps, the most disappointing chapter in the text. Using the Cobb-Douglas and Constant Elasticity of Substitution models, the authors develop the basis for maximization of profits and examine the constraints in each of the cases. The performance of the models in handling both time series and cross-sectional data is given particular attention and illustrated by two recent studies; a cross-sectional study (Griliches and Rungstad,

1971) and a time series study (Woodfield, 1972). Bearing in mind that it is an introductory text, the inclusion of a short section dealing with methods of allowing for uncertainty would nevertheless have been welcome. A brief analyses of other models of production functions would also have rounded off the chapter.

The fourth and final chapter in this section covers models that relate wages, prices and unemployment. It is particularly important as it serves as a prelude to the final two chapters where larger macro models are considered. Basically, this chapter deals with the "Phillips curve", tracing its development and modification by Lipsey, Friedman and Bowen. In particular, the authors examine modifications to allow the inclusion of several employment markets and for a wage transfer mechanism between non-leading markets. Following the same format of earlier chapters, the various Phillips curve models are estimated using, in this case, annual data for the U.K. for periods 1950/66. The interesting point of this chapter is the relatively poor showing of the several markets and the wage-transfer versions of the Phillips curve, and the overall good performance of the basic model. To this point, the book does not consider two way causality between wages and prices, and the rest of the chapter deals with this. Again, a model is presented and empirically estimated using OLS, 2SLS and ILS regression.

The final two chapters are entitled "Macro-Economics". Here, the authors bring together the lessons and techniques of the earlier chapters in a well planned development to describe large macro-economic models. Again, clarity and conciseness are the keynotes of this section.

In the first of the chapters, the authors deal with basic construction and estimation of macro models. They begin with the wage-price micro-economic model developed in the previous chapter and build up to large macro models covering problems associated with aggregation of data, identification, and the relative advantages of OLS, 2SLS and ILS techniques. With this basis established, the authors move to their main task for the chapter, the review of seven important macro-economic models that have been developed for explanatory and predictive purposes. The models have been selected on the grounds that they should show a progressive and logical development of econometric technique and are, therefore, presented in a largely chronological order. Attention is focused on the way they have been extended over time by subsequent work rather than a detailed examination of each and every variable and equation. The models considered illustrate progress from the Klein model developed in 1950 to the model developed by Klein and Evans for the U.S. Econometric and Forecasting Unit in 1969. Although taking it slightly out of chronological order, the authors conclude with a special discussion of the Brookings model, partly because of its sheer size and partly because of its method of formulation.

The final chapter of the book is an extension of the previous discussion of macro models, though attention is turned towards the use of these models for various kinds of prediction. After briefly tracing the distinction between ex-ante and ex-post prediction, the authors discuss the solution of linear and non-linear sets of equations using Taylor series and the Gauss-Siedel method, the former with reference to the Wharton E.F.U. and Brookings models. The authors then take a short, but interesting digression to discuss problems in using provisional data for estimating exogenous variables. The main point, however, of the chapter is the analysis and discussion of multipliers and their performance and interpretation in several of the models already discussed. This includes a careful comparison of performance of the models, as well as brief discussion of similar comparisons by other workers in the field. The chapter is completed with perhaps the best section on further reading in the book and the usual excellent bibliography.

This text is an introduction to the basic techniques of econometric modelling. In this respect it provides a concise and interest-maintaining guide through the field. I am confident that, on completing the book, the student or reader will feel stimulated to pursue the subject further. A most worthwhile and useful text.

G. A. RANCE

Department of Agriculture, Wagga

Agricultural Marketing and Prices, K. O. Campbell. Melbourne: Cheshire Publishing Pty Ltd, 1973. Pp. x, 148. $3.95 (RRP).

This book, by Keith Campbell, Professor of Agricultural Economics at the University of Sydney, ". . . is intended as a short introduction to the factors influencing agricultural prices and to public policies affecting pricing and marketing arrangements in the rural sector . . . (it) is written essentially for the reader who has a reasonable understanding of basic economic principles and who wishes to learn how they apply in a rural context". It is not concerned therefore with detailed explanations of the theoretical basis of pricing or marketing, the vast quantity of empirical work available, or the Australian marketing systems to which reference is made.

There are ten chapters in the book. The Introduction sets the scene by examining the contributions of agriculture to the economy, and outlining briefly the characteristics of the agricultural production and marketing environments. Topics covered include the competitive structure of Australian agriculture, the characteristics of agricultural resources, the biological nature of agricultural production, the influence of the "family farm", and the nature of the market place.

The "Demand for Farm Products" is the subject of the second chapter. In it Campbell discusses the standard set of factors which influence the demand for food and fibre commodities, i.e. price, income, population, tastes and preferences, and advertising and promotion. He also briefly comments on the export demand for some of Australia's agricultural commodities.

Chapter 3 is entitled "Supply Responses in Agriculture" and concentrates primarily on the factors which influence the supply response of producers, such as producer objectives, self-employment effects, the long-run nature of agricultural production, differences in cost structures, and the peculiarities of the decision-making environment in agriculture. In addition, the concept of supply elasticity rates a separate section, as does the role played by such factors as technological change and changes in the prices of inputs and related outputs in shifting supply.

Supply and demand effects are combined in Chapter 4 where the behaviour of agricultural prices is discussed. Reference is made to the causes of instability in agricultural prices, to cyclical and seasonal price movements, and to the relationship between agricultural and non-agricultural prices.

Chapter 5 begins the discussion of agricultural policy by providing some background material on the objectives of government intervention in agricultural marketing. The conflicts between market efficiency and welfare, and between price stabilization and price support, are emphasized, and some of the factors which have helped to mould the development of agricultural policy in Australia are discussed. These are the place of agriculture in the economy, the effect of agricultural exports on trade, the relationships between price and production instability, the effects of growth in secondary industries, and the political and constitutional constraints operating.

Methods of stabilizing and supporting agricultural prices and incomes are examined in Chapters 6 and 7 respectively. The commodity price *stabilization* schemes discussed are buffer funds, buffer stocks and equalization funds, and a large section is given over to income stabilization schemes. *Support* schemes are outlined with reference to three commonly used methods—supply management (input or output quotas, import or blending restrictions); discriminative marketing through home consumption price schemes; and financial support, directly by subsidies or deficiency payments, or indirectly by exchange rate manipulation. Campbell concludes Chapter 7 by outlining a set of criteria for establishing actual guaranteed price levels.

"The Role of Marketing Boards" is the subject of Chapter 8. Here discussion revolves around how historical and constitutional constraints have effected the activities, structure and administration of both Federal and State Marketing Boards. Mention is also made of the effects of marketing boards in increasing producers' bargaining power and in increasing market efficiency, and the changing role of governments in coping with changes in production and marketing technologies.

Chapter 9 briefly outlines the application of the agricultural policy instruments discussed in previous chapters to the marketing of three livestock products—wool, meat, and butter and cheese—while Chapter 10 concludes the book by doing the same for three crop products—

wheat, sugar, and rice. In each case the discussion covers marketing channels, institutions and statutory marketing authorities where relevant, and government policies relating to the product.

I found Campbell's book extremely digestible, and feel it should be put to good use as an introduction to the complex subject of agricultural marketing in Australia. For its target audience, it has succeeded in achieving its objectives.

On the other hand I sometimes got the feeling of being teased. The book is essentially descriptive—there is little comment on the efficiency of currently used marketing methods or on the efficacy of various policy instruments in satisfying a range of objectives. Further, the complete lack of references and empirical work limits the comparisons which can be drawn between the desirable and the actual. I guess this "skimming" feeling is an essential feature of any introductory text however, so maybe our expectations should not be too high.

G. R. Griffith

Department of Agriculture, Sydney