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BOOK REVIEWS

Price Theory: A Provisional Text. By M. FRIEDMAN. (Chicago: Aldine Publishing Company, 1962.) Pp. 285, 50/-.

Friedman is well known for the strong positivist orientation of his writings. Price theory is an area in which this approach can be very effectively applied. The objective throughout is to derive a logically consistent set of theories which are capable of explaining relative price levels. The tools which he develops are invaluable in solving economic problems and Friedman suggests the kind of problems for which it is useful. A number of very interesting policy questions are posed at the end of his book as suggested topics for discussion and we must agree that well developed theories are necessary before we are equipped to discuss problems of resource allocation.

The rigour with which he approaches the subject is refreshing and satisfying. But this is, by Australian standards at any rate, a fairly advanced text. In his introduction he states that a knowledge of elementary price theory is assumed. As a text then, it is not suitable for a first price theory course but could be very valuable for the more able students, or for students in advanced price theory courses. It makes very few concessions to the reader who approaches price theory with some knowledge of the real world and expects to find his experience reflected in the theory. It uses diagrams extensively but depends only to a limited extent on elementary algebra and calculus.

Ideally, all students taking courses in agricultural economics should be familiar with price theory at this level. But it is not likely that we will ever attain this ideal. Friedman shows that rigorous theory can be applied but ordinary pass students can probably learn more price theory if some sacrifice is made in rigour in the interests of appealing to experience and if more time is spent showing the application of the tools to policy questions at an early stage.

It is characteristic of the Chicago School of Economics that they put little emphasis on the developments in price theory associated with the name of Chamberlin. Friedman uses the term monopoly to cover all situations in which competition is less than perfect, and treats it quite briefly. In fact the concept of a firm is only introduced as a concession to reality and for the purpose of explaining some of the laws of production. His explanation of the size of firms is, as he admits, less rigorous than most of his analysis. Much of his analysis of production theory is based on a homogeneous production function of the first degree which he justifies by a rather artificial argument.

The reason often given for encouraging teaching members of university staff to do research is that their teaching gains in interest and stimulation when they are teaching in fields in which they are also doing research. It is well worth changing a course to permit a teacher to cover his research interests. Friedman obviously does this. A number of chapters and substantial sections of other chapters are reprinted directly from published articles. Some of them, like the Friedman-Savage article on the utility analysis of uncertainty, should probably find a place in a course like this anyway, but others, like the chapter

devoted to the size distribution of income are probably not well enough established for this purpose. One man's research is not another man's teaching.

The two great areas where the text is strong are in demand theory and distribution theory. Demand theory is Friedman's special interest and, for example, his comparison of the Hicks and Slutsky analyses of the substitution and income effects of a price change is extremely lucid. It does seem to make demand theory much clearer to develop, as Friedman does, the utility theory of demand before introducing indifference curves. Although, throughout, he puts forward his own interpretations of theory, he does not exclude conventional interpretations. Often he compares alternative approaches.

The strength of the section on distribution theory is, perhaps, somewhat surprising. Since Walras showed us that the price of factors of production is essentially like any other price and can be determined by supply and demand, the theoretical analysis of distribution has been losing favour. But Friedman starts from the theory of derived demand and analyses the demand for and supply of factors of production in considerable detail.

It is not surprising, in a price theory text, to find few references to the work of Keynes and his followers. What is rather surprising is to find a chapter on the theory of capital and the rate of interest which is frankly classical. This chapter is more interesting for the way in which one can develop a pure theory of capital for a non-monetary economy than for the value of the tools developed. His analysis is transferred from a barter to a monetary economy at the end of the chapter.

Although he approaches general equilibrium statements at times he does not cover the theory of general equilibrium. Nor is there any general treatment of the welfare economics of resource allocation. However a chapter on "The 'Welfare' Effects of an Income Tax and an Excise Tax" shows how powerful the tools provided are in examining welfare questions.

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Studies on the Planning Environment of the Agricultural Firm. By U. RENBORG. (Uppsala: Almqvist and Wicksell, 1962.) Pp. 257, 20 Kr.

The difficulties associated with effectively incorporating risk and uncertainty in linear programming models are well known. Accordingly this programming study of the effect of variability in the farm environment on optimum farm plans and their stability is particularly welcome.

The investigation tested the following hypotheses:

- (a) That "there often exists for the agricultural firm a number of plans that show important deviations in technical character from the anticipated optimal plan and yet give realized financial results that make the plans financially equivalent to (or better than) the anticipated optimal plan".
- (b) That "despite the variable planning environment of the agricultural firm, plans usually contain stable elements which are so important that they can form the fixed core of a plan".

These hypotheses seem reasonable if only in the light of the various parametric programming studies which have reported either considerable stability of particular plans over wide ranges of parameter values or substantial financial equivalence of several plans over quite significant ranges of parameter values. Renborg himself developed the hypotheses upon conclusion of a brief preparatory study which is reported in Chapter 2.

Data series relevant to two Swedish model farms were available over a 30 year period. These provided estimates of probability distributions of various parameters which were used in the generation of sets of values (simulated sampling) which were injected into the programming matrices developed for each farm. Not all the coefficients in either problem were subjected to such variation.

While concluding that both hypotheses were supported, Renborg also found that the anticipated financial result of a particular optimum plan could still be a poor indication of the eventual realized outcome and that an element forming a stable component of plans over one time period could become unstable in subsequent periods with changes in prices and technology.

This last finding led to the suggestion that the role of programming in farm planning should be the determination of the optimum direction of farm development and the definition of any "stable core" which might exist. Subsequent deviation from either of these which may be desirable could be detected by the use of "control" devices less formal and onerous than programming, ranging from budgeting to price ratios or yield relationships. While he suggests that simulation may be used in the initial stage of planning, Renborg does not really indicate the practicality of the procedure except to warn that it would inevitably be expensive and time consuming. He also emphasizes the inadequacy of conventional parametric programming techniques because too few parameters can be studied at one time.

This reviewer cannot share Renborg's surprise at the inability of simulated sampling of expectations to provide variance minimizing estimates of outcomes. After all, it is well known that random selection of past events may double expected variance. It is doubtful whether Renborg's method is very much different from such a procedure. Under his assumptions a set of past events merely constitutes another sample which could have been drawn from his estimated probability distribution.

When this is appreciated it becomes clear that Renborg is commenting on the suitability of simulation based on historical data for generating expectations. Despite a belated plea in the concluding section for more study of the way in which expectations are developed, he nowhere indicates an awareness of the implications of his procedure. Anyhow, such an investigation must be regarded as being incomplete without comparison with alternative, more sophisticated, and more purposive prediction models.

The main purpose of the work was the development and testing of the above hypotheses. The satisfaction which this reviewer felt at seeing this done was marred by the above-mentioned foray into discussion of simulation as a device for predicting future events and by a failure to present results in a more concise and probabilistic framework. It would be hoped that a simulation study of the farm environment would

have far more to report on the probability and variance of outcomes. Of particular relevance would be estimates of the probability of achieving results disastrous to the firm.

One can only be awed by the amount of sheer hard work which must have gone into this monumental study. The coupling of simulated sampling and linear programming represents a mile-stone in the development of farm management methodology and as such this book could become a collectors' item which should be a candidate for departmental libraries. However, the potential reader must be warned that presentation is both exhaustive and exhausting while the style, perhaps because Renborg is not writing in his mother tongue, is tortuous with details being spelt out with an absence of subtlety which would exasperate most.

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Farm Management Decisions. By T. R. HEDGES. (Englewood Cliffs: Prentice Hall Inc., 1963.) Pp xi + 628, \$10.60

Farm Management Decisions is aimed primarily "to help college and university students understand the principles and procedures for making optimum farm management decisions". It is organized into five parts: Problems and Procedures in Farm Management Decisions, Evaluating Farm Resources and Problems, Analysing and Budgeting the Farm Business, Planning for Profitable Crop and Livestock Production, and Planning for Efficient Resource Use. It will be noted that analysis and planning of a farm business is illustrated before the student acquires all the necessary skills—a back-to-front organization that is quite commonly accepted in farm management texts. But that is not the major problem with this book.

Professor Hedges chooses to illustrate the process of analysing and planning the farm business in true Quixotic fashion. The windmill he sets up takes the form of a hypothetical "Senneval farm". In planning Senneval farm it appears that counting all combinations of soil types and enterprises, there are some twenty-seven different activities worthy of consideration. Mr. Senneval wants to combine these in optimum proportions to achieve maximum profits.

The weapons Professor Hedges chooses are the "technical unit test" and budgeting, both whole farm and partial. In preparing the basic information for applying these techniques some excellent work is done. Farm resources restrictions are listed and input-output coefficients and prices ("normals" or "standards") determined for all the alternatives. These take account of all the factors that it is necessary to consider in making them realistic guides to decision making by this farmer on this farm.

Applying the unit test is the first step of the analysis. It is of course the same as "gross margins analysis" or gross returns less variable costs per unit of activity. Enterprises are ranked, for the exercise, on net profit per acre. For instance for one acre of Grade I soil, sugar beets yield, net, \$158, tomatoes \$152, alfalfa hay \$106, beans \$89, milo \$72, barley \$43, and non-legume hay \$23. The ranking on Grade II soil is the same but profits are lower.

This unit test is to indicate the changes that should be investigated by budgeting. Unfortunately, Senneval is confused. Despite the great differences in "profitability" between crops, he answers the request for a reorganized programme for these soils by merely dropping non-legume hay and allocating equal areas of the available land to the remaining six crops. The other soil types are treated similarly.

Given that it is not too naive to assume that land is the sole limiting resource, this approach has the advantage, for exhortatory purposes, of allowing the optimum programme to be approached by numerous examples of the partial budgeting technique. After two attempts Professor Hedges tires of this and we are left with a farm programme that is not the answer to Senneval's dreams. The windmill's sails are tattered but it still stands. Poor Senneval! The painstaking listing of costs, prices, input-output coefficients and farm resources must have involved a massive consultant's fee. The pity is that he has to pay so much for such a mediocre product when the same information, with little extra cost, could have been used in a linear programming analysis to yield an optimum plan.

It seems that Hedges is not aware of the relative simplicity of this technique. In the preface he states, "I leave to more specialized works the more elaborate and complicated tools of analysis that are the special domain of the researcher". Yet in this reviewer's opinion, reorganization of Senneval's farm plan by linear programming would be easier to follow and could be more concisely reported. It would certainly give better results. Use of linear programming would also have allowed better articulation of the complex factor-factor and product-product relationships that were involved in Senneval's problem. Farm management workers who do not have linear programming in their tool kit should, it seems, avoid tackling a problem as big as that established by Hedges.

The valuable part of *Farm Management Decisions* is clearly the experienced and thorough approach to establishment of the farm resource situation and input-output coefficients as seen in the second chapter. With this exception, the discourse ranges from the unexceptional first, fourth and fifth chapters, to the confusing third chapter that was discussed in detail above. In this reviewer's opinion Professor Hedge's book is not a satisfying text for its stated purpose.

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