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BOOK REVIEWS

Proceedings of A Symposium on Price Effects of Speculation in Organized Commodity Markets, Food Research Institute Studies, Supplement to Vol. VII, 1967, Food Research Institute, Stanford University, California, U.S.A., 1968. Pp. 194. \$ 4.00.

Price behaviour in commodity futures markets has been the subject of both extensive academic discussion and intense empirical investigation amongst economists and econometricians for almost half a century now. It was in the early 'twenties that the U.S. Federal Trade Commission on the Grain Trade suggested that the rise in the futures price during the expectation period of a futures contract may be partly ascribed to the payment of risk premium by hedgers. But Keynes was the first to present explicitly in 1930, the relevant "theory of normal backwardation," which attributes a definite behaviour pattern to the commodity futures prices. The theory was subsequently developed by Hicks, Kaldor and Dow. The theory assumes that hedgers, being holders of physical commodity, mostly sell in the futures markets to avert the risk of price decline. Since the speculators must hesitate to buy such risk unless they are assured of a positive return, it follows that the pressure of hedge sales during the pre-delivery months depresses the futures price to a level lower than the expected maturity price of the futures contract, the difference representing the remuneration paid to the speculators to induce them to absorb the "short" hedges. The payment of such remuneration or risk premium by hedgers necessarily results in the futures price being quoted, on an average, lower prior to the maturity month than during the maturity month, for, it is through the rise in the futures price till maturity that the speculators hope to earn their incomes.

Without access to the actual financial results of hedging and speculation for a representative sample of market operators, direct empirical verification of the Keynes-Hicks hypothesis regarding the payment of risk premium by hedgers to speculators was an impossible statistical task. Economists, therefore, attempted at verifying the theory of normal backwardation by gathering indirect circumstantial evidence. A few amongst them searched for the presence of 'seasonal bias' in the futures price behaviour during the expectation period of each futures contract. Others began to estimate the probable profits (or losses) of 'long' speculators, relying on the reported statistics of hedge and speculative positions and recorded price data.

As early as in 1924, Hardy doubted whether speculators as a class receive any compensation for their services. The subsequent empirical findings of Working and Blaire Stewart, though limited in scope, also showed that speculators in the aggregate seem to lose rather than gain. But in 1957, Houthakker almost resurrected the theory of normal backwardation. His analysis of three major U.S. commodity markets covering an extensive period showed that speculators could gain by adopting a consistent strategy of being 'long' in futures markets. Gray and Telser have since then attributed Houthakker's results to the presence of a long-term upward trend in the prices of the selected futures. Later, several other scholars also entered the fray drawing conflicting interpretations from the evidence gathered for different markets and different years. As a result, the great

debate remained as inconclusive as at the time it began more than four decades ago.

It was to resolve such conflicting interpretations and gaps in the evidence as were revealed from the growing literature on price effects of futures trading that the Food Research Institute of Stanford University sponsored in 1967 a symposium in which several leading American economists who had worked in this area participated. The volume under review which has been issued as a supplement to Vol. VII of the Food Research Institute Studies, is a collection of six interesting papers read at the symposium and revised thereafter in the light of stimulating discussions. While all the six papers investigate the problem of risk premium, three papers proceed to analyse the issue straightaway but the remaining three prefer to inspect it more indirectly through examination of some other issues which, of course, are no less important to the students of futures trading.

Charles Rockwell follows Houthakker's approach of estimating profits of different classes of reporting and non-reporting traders. He has, however, extended his analysis to cover 25 markets for 18 years and made use of as many as 7,900 semi-monthly observations as against only 324 monthly observations used by Houthakker on three markets for an approximate period of 10 years. His estimates of financial results for different classes of traders are revealing. Like Houthakker, he too finds that large speculators make substantial and consistent profits. But while in the three large markets (wheat and soyabeans at Chicago and cotton at New York), the large speculators earned their profits from the losses of hedgers, in the 22 small markets, the profits of large speculators came out of the pockets of small speculators, with hedgers making inconsequential but positive gains. Besides, a closer analysis of market behaviour disclosed that the gains accruing to the naive 'long' speculators when hedgers were net short, were so small as to seriously doubt the validity of the theory of normal backwardation. And, in fact, contrary to the said theory, prices were found to rise consistently when hedgers were net long, resulting in losses to naive speculators who happened to be then net short.

Lester Telser's efforts at discovering the expected upward 'seasonals' in futures prices, implied by the Keynes-Hicks hypothesis, supported Rockwell's conclusions. His analysis showed downward trends for corn, upward trends for soyabeans and 3 downward and 2 upward trends for wheat. A closer examination further revealed that the upward trends in soyabeans were fortuitous, and were mainly caused by few extreme observations. These apart, the discovery of conflicting 'seasonals' in different futures in the face of the distinct J-shaped seasonals observed in the spot prices of the respective commodities, clearly seemed to refute the theory that hedgers pay for price insurance. The results of a more refined test at estimating the relation between futures prices and short and long hedging positions were also inconsistent with the theory of normal backwardation. Contrary to the logical implication of that theory, Telser found that the regression coefficient of the seasonal futures price index on the seasonal short hedging index was positive and not negative. Telser's selection of a period of remarkably stable general prices and his use of deflated variables to remove the 'year effects' therefrom make his analysis, though restricted to only three commodities and relatively short period, more meaningful and perhaps less debatable than that of Rockwell.

In an endeavour to widen the agreement among the rival economists, Paul Cootner disputes the assumed general validity of the theory of normal backwardation. He admits that in markets where hedgers are net 'long,' the risk premium will be payable to 'short' speculators and will reflect in not only the futures price ruling at a premium over the spot price, but the former even declining steadily till maturity. Instead of testing the usual hypothesis that futures price necessarily rises till its maturity, therefore, he tests a weaker but apparently more plausible hypothesis, namely, "Prices of futures contracts rise on the average after the peak of net short hedging and fall on the average after the peak of net long hedging." (p. 87.) For his test, Cootner assumes with regard to the wheat futures that when reported net short hedging falls below 3000 contracts, actual net short hedging is markedly lower and hedging is probably 'long.' In soyabeans, he assumes that the peak of net long hedging is reached on April 30 every year with September 20 as the terminable date for liquidation of such hedging. With these assumptions, he proceeds to estimate profits of long and short speculators for two different time periods in each year. His average results showing net gains to both long and short speculators seem to confirm his hypothesis that both long and short hedgers pay a risk premium for hedging. Unfortunately, on his own admission, if the assumed cut-off points between net long and short hedging are not deemed as correct, "it is harder to determine if short hedgers as a group actually pay premiums and it is impossible to say anything substantial about long hedgers." (pp. 88-89.) Cootner adds, "The periods in which *reported* hedging is unqualifiedly long in all futures are brief and so few in number that no meaningful conclusions can be drawn." (p. 89.) And as if to forestall any unfavourable criticism, Cootner warily prefaces his empirical findings with the statement. "The question of the existence of risk premiums has had a long and controversial history Certainly, this paper will not settle the question and does not intend to." (p. 81.) That he has not deviated from this avowed intention is plain to discern.

Roger Gray develops Working's renowned concept that speculation in a futures market responds directly to variations in the amount of hedging. He tries to demonstrate with reference to the three active American wheat futures markets at Chicago, Kansas City and Minneapolis, that "the two latter markets, with low levels of speculation, are able to absorb the hedging positions which come to them only because substantial speculation is transferred from Chicago, through spreading." (p. 177.) It is surprising that Gray who has all along disputed the risk premium hypothesis, should now support a theory which views speculators as, not active price forecasters, but relatively passive hedge anticipators. If the supply of speculative services is directly dependent on the demand for hedging, and not on anticipated returns from price changes, it follows, *a priori*, that the magnitude of such supply would vary in direct response to the marginal hedging costs or risk premium. The latter will have an obverse (and not inverse) relation with the volume of hedging on any market. On *a priori* grounds evidently, it would be difficult to agree with Gray that hedging costs are lower on those markets having more speculation. For, precisely on such markets, the volume of hedging too would be very large if we agree with Gray's concept of speculation-hedging dichotomy on futures market. In fact, with both the reported net spreading and net hedging positions being largely short on the Kansas City wheat futures, the statistical evidence presented by Gray is *per se* inadequate to convince that spreading responds directly to meet hedging requirements.

In an obvious attempt to analyse the ability of speculators to predict prices, Arnold Larson in a short but neatly presented paper shows that speculators in the egg futures market at Chicago succeed at predicting seasonal price movements and even attempt at predicting the more long-term cyclical fluctuations. The spectral estimates for futures prices strengthen his conclusions. Apparently, though Larson does not explicitly say so, the egg futures market does not lend much support to the theory of normal backwardation. The chief limitation of his analysis is, however, that in the last 5 out of the 10 years selected by him, the seasonal and cyclical fluctuations in egg prices have greatly diminished as a result of several changes in the pattern of production of eggs in the U.S.A. Perhaps had he extended his analysis to other commodities, he would have drawn more meaningful conclusions having much wider application, in both theory and practice, to futures markets.

The masterpiece among the papers published in this volume is Holbrook Working's lucid exposition of a theory concerning floor trading on commodity exchanges. The evidence presented by Working, though restricted in both volume and time period, leads one to believe that most floor trading on futures market partakes the character of scalping. Scalping involves buying on price dips and selling on price bulges, and its success depends upon the ability of the scalpers to recognize dips and bulges. Price dips and bulges on futures markets are mainly occasioned by market orders of both speculative and hedging nature, and necessarily provide the chief source of income for scalpers. Working contends that the dips and bulges occasioned by hedging orders are commonly larger than those occasioned by speculative orders because the average transaction size of the former is much larger than that of the latter. The limited evidence gathered by Working also shows that floor traders tend to lose money on balance, to outside professional speculators, on trend-trading because of the superiority of the latter in price level as well as news trading. Consequently, the execution cost of hedging, paid by hedgers to speculators for prompt execution of hedging orders, indirectly constitutes a major source of income for speculators. Incidentally, according to Working, the open competition amongst the scalpers to absorb the market orders tends to restrict the amplitude of dips and bulges and thus reduce the execution cost of hedging.

If Working's analysis in all its sequences truly reflects the trading pattern on futures markets, there can be no doubt that it leads to an improved understanding of the *modus operandi* of the payment of risk premium by hedgers to speculators. Moreover, unlike Gray's paper which sheds little light on the motivation for speculation to be hedge anticipating, Working's analysis provides an answer to the hitherto unexplained question as to why the volume of speculation is often found to be closely dependent on the volume of hedging. A further merit of Working's analysis is that while it tacitly accepts the risk premium hypothesis, it also explains why the search for risk premium in the 'seasonals' of futures prices is often fruitless. The dips and bulges in futures prices which follow each other in close succession do not necessarily result in seasonals, though they may yield profits to speculators.

The chief drawback of Working's paper, however, lies in its manifold assumptions which Working treats as facts. Is the average transaction size of the specu-

lative orders smaller than the average transaction size of the hedging orders? Is it not likely that the execution cost of speculation may be as large as, if not larger than, the execution cost of hedging? If most hedging in futures markets is essentially anticipatory and selective in nature as Working believes, how such hedging really differs from price level and news trading speculation? And will not then scalpers lose money to hedgers in the same way as they lose to speculators? Unless these questions are answered satisfactorily and enough evidence is gathered in support of such answers, the results of Working's investigation must be treated as not more than a set of new hypotheses.

Its failure to resolve the conflicting interpretations about the price effects of hedging and speculation notwithstanding, there is no gainsaying that the volume under review provides many refreshing new insights into the theory and practice of futures trading. Most papers included in the volume, and especially those of Working, Cootner and Telser, boast excellent analytical accounts of the nature and operation of speculative and hedge trading, and their effects on both ready and futures prices. If their empirical investigations have been less fruitful, they have nevertheless helped to promote more improved understanding of the working and utility of futures market. As regards the vexed issue of risk premium which has baffled the economists for more than four decades, it seems, its search must wait till we have direct access to the actual financial results of both speculation and hedging for a large representative sample of market transactions. Or, may it not be that the search may still be in vain, for the risk premium, if any, payable by hedgers to speculators, is as much expected to reduce the losses of speculators as to increase their gains, so that neither such profits nor losses *per se* could reveal its being?

M. G. PAVASKAR

Land Control and Social Structure in Indian History, Edited by Robert Eric Frykenberg, the University of Wisconsin Press, Madison, Milwaukee, Wisconsin, U.S.A., 1969. Pp. xxi + 256. \$ 10.00.

To the students of Indian land system the collection of papers under review presents some 'significant new aspects' and 'approaches,' claims the editor in his introduction to this volume. The papers included are selected from those discussed at a colloquium on the Influence of Social Structure on Land Control in Indian History, held at the University of Wisconsin in 1964 and later in the same year at a symposium on Indian Land Tenure and Social Structure at California University, Berkeley, California.

The papers, "Land is to Rule" by Walter C. Neale and "Zamindars under the Mughals" by S. Nurul Hasan, provide the background to the whole discussion. Neale's paper is more of a theoretical nature, examining certain fundamental questions of definition of the concepts of land and land control. He would look at land not just as land, implying the physical aspects alone, but as what people hold in relation to it, *i.e.*, the rights that they hold, with a proper understanding of the cultural and economic elements involved.

Two main factors that influenced the land system in India were (a) the Mughal administration and (b) the British administration, that followed. Nurul Hasan's paper throws light on the role of zamindars and the changes that came about in their position during the Mughal rule. As a background paper it would have been desirable to examine the pre-Mughal and Hindu periods in some detail. Ainslie T. Embree's paper "Landholdings in India and British Institutions" complements the background drawn by the earlier papers and enables the reader to understand the subsequent papers in the proper perspective.

The next four papers have one thing in common, in that they deal with the changes in North India, where Permanent Settlement and its variations were enforced. In the unnecessarily lengthy paper "Structural Changes in Indian Rural Society" Bernard S. Cohn, examines the changes in the social structure in the Banaras region during the nineteenth century. It is claimed that much of the data used are new.

After the 1857 uprising the British adopted a policy of appeasement towards the *talukdars* of Oudh. Though their political power was smashed they were enabled to regain their authority in the rural areas through the settlement that started in 1859. In this process, the *talukdars* who originally claimed sovereign titles were systematically reduced to the status of landlords or zamindars. New responsibilities were given to them and by 1870 they were modified into a class of submissive, but, locally, highly powerful landlords. Thomas R. Metcalf brings out this in his first paper "From Raja to Landlord : the Oudh Talukdars, 1850-1870." In his second paper, Thomas Metcalf examines the social effects of British policy in Oudh. In this paper, he recounts the efforts of the British to convert the *talukdars* into improving landlords and a socially responsible aristocracy, in the model of the landed gentry back at home. Unfortunately, in spite of all the 'hot-house treatments,' they failed to rise to the full expectations of their patrons. All the same, they were sufficiently drawn away from the main stream that when the political upheaval arrived they found themselves in an unhappy situation, concludes Thomas Metcalf.

Tapan Raychaudhuri's paper, "Permanent Settlement in Operation : Bakarganj District, East Bengal" is very interesting, and is based partly on his personal observations in his home district.

The remaining three papers deal with South India. Burton Stein's paper "Integration of the Agrarian System of South India" starts with a definition for the term 'agrarian system.' According to him, the term "assumes a whole and developing complex of relationships among groups of people and the basic resource, land. Utilization of this concept demands recognition of the manifest dependence of power, livelihood, and status upon control of land; and any adequate analysis of dominantly agrestic societies must indicate the way in which political, economic and social institutions are related and integrated with the control of land." (p. 176.) He proceeds to delineate three phases of "agrarian integration" in the history of South India, starting with the 9th century. They are : (i) the Pallava-Chola integration (9th to 13th century), (ii) the Vijayanagar integration (14th and 15th centuries) and (iii) the British integration (from the 18th century onwards). During the first phase, he asserts, the agrarian region(?) consisted of the 'nuclear area' of early corporate institutions. "This is a region defined in terms of a set of social and cultural elements which provided a distinctive

character to landed communities over a substantial portion of South India at the time." (p. 206.) During the second phase, the agrarian region was defined by the "tributary arrangements among warriors." The agrarian region of this period encompassed more than one 'nuclear area' and the actual extent was never stable, as it depended on the fortunes of the warriors. "Urbanisation of three basic kinds—military, economic and religious—accompanied the development of these warrior-dominated regions and gave them a quality quite different from the older regions." (p. 207.) During the third phase, the agrarian region consisted of the revenue districts. They were formed prior to 1800, on the basis of military exigency and the particular treaty terms and actually they were groupings of "tribute territories." In short, his thesis in his own words is : "In general, the agrarian units changed from those based upon corporately organized social groups of the earliest period through the dominantly locality-centered kin-and-caste-organized system of the middle period to the atomized and formally organized system of the British." (p. 208.) A few questions arise. In the first place, the reader gets an impression that the author is using the term 'agrarian system,' as synonymous to the term 'agrarian region.' Secondly, an agrarian region as expounded by Burton Stein should be co-extensive with an area manifesting a "whole and developing complex of relationships among groups of people and the basic resource, land." This could be recognized only in respect of the 'nuclear areas' of the early period. Neither the 'tributary territories' of the middle period nor the revenue districts of the British period reveal such a complex relationship among groups of people and the basic resource, land, as a common feature of the 'region.' Perhaps, the only element that stands out is the political organization. One cannot say that a district was the same thing during the British period as 'nuclear area' was during the Pallava-Chola period. Another point that should be briefly noted here is the fact that for South India the Vijayanagar period was particularly significant, during which the bases of revenue administration and social classification were elaborately laid down and practised. This paper does not seem to have analysed this period adequately.

Nilmani Mukerjee and Robert Eric Frykenberg, in their joint paper "The Ryotwari System and Social Organization in the Madras Presidency" point out that this system did not bring about great change in the social fabric. The last paper by R. E. Frykenberg titled "Village Strength in South India" makes very interesting reading. Here he analyses the working of the village leadership on the basis of data from one of the 547 villages investigated by the Elliot Commission in 1845. By the analysis he tries to strengthen "the principle of white ant" which postulates a simplified way of understanding the processes operating within the fantastic complexities of the agrarian system.*

The fact that there are too many gaps both spatial and linear leaves an impression that the title selected is too presumptuous. All the same, the volume is very thought provoking. It should be a very valuable addition to the meagre literature on this particular aspect of Indian history.

P. T. GEORGE

* For a discussion of this theory, see R. E. Frykenberg: *Guntur District, 1788-1848: A History of Local Influences and Central Authority in South India*, Oxford, 1965, 231-241.

Planning and Implementation in Agriculture: Studies in Intensive Cattle Development Programme, Michael Halse, V. K. Gupta, A. V. S. Narayanan and A. G. K. Murty, Indian Institute of Management, Ahmedabad, 1968. Pp. 165. Rs. 6.00.

The studies reported in this book comprise two 'surveys' and eleven case studies. The objective of these investigations was to study problems of planning and implementation of the Intensive Cattle Development Programme and to make suggestions for improvement of its working. The two areas covered by the studies were each of the size of a district with a breedable cattle population of about 2 and 2½ lakhs respectively. The conclusions reached in the studies and action suggested on the basis of these conclusions have been given in the first chapter of the book. The rest of the book is devoted to detailed reports of various studies and their summaries. While the surveys were statistical in nature, the case studies were based on discussions with Programme officials and information supplied by them. Factual data regarding cattle population and factors relating to the adoption of improved husbandry practices were collected in the surveys whereas the case studies related to various organizational aspects of the development activities, procurement, price, etc.

The studies reveal the need for a clear definition of the responsibilities of each component of the Programme organization and the targets aimed at, better integration of production, procurement and distribution activities and due attention to the crucial role of price in the success of co-operative milk procurement. It is observed that if the system is thus made self-supporting it will greatly facilitate the speedy expansion of the Intensive Cattle Development Programme which is essential for providing more ounces of milk per capita daily to our growing population. Apart from these conclusions, the utility of the studies lies in the amount of information thrown up by them on various aspects of cattle development and Programme organization in the Intensive Cattle Development Programme districts. The book will therefore be of great interest to all concerned with cattle development. Incidentally, the studies should impress upon the Programme authorities, the desirability of making regular achievement audit a part of the Intensive Cattle Development Programme as has been done in the case of the Intensive Agricultural District Programme.

S. D. BOKIL

Costs and Returns: A Study of Irrigated Winter Crops, Anwarul Hoque, Pakistan Academy for Rural Development, Comilla, Pakistan, 1968. Pp. ix + 105. Rs. 3.50.

The book under review by Anwarul Hoque gives the results of the survey on costs and returns of selected irrigated winter crops conducted by the author in 1967 at the Pakistan Academy for Rural Development, Comilla. This report is the third in the series of cost studies brought out by the Academy and it covers four rice varieties, namely, Taipei-177, I.R.8, Boro and Shaitta and Watermelon. It is neatly presented in eight chapters. The first two chapters deal with the objectives, design and specification of costs and returns components. In the next

five chapters are presented the analysis of costs and returns of the five selected crops. The last chapter presents the findings of the survey together with a comparative analysis on the profitability of individual crops. A number of useful tables and a specimen of the set of schedules used in the survey are presented in the Appendix.

As the title of the report would suggest, the objectives of the survey were to obtain information on the costs of production of selected crops, the cash and kind components of expenditure, and the output and return. The working of relative profitability of different crops and its trend over time are other important objectives of the study. The design of the study is quite different from the one that we are familiar with. The plots growing the selected crops have been taken as the basic units of study instead of the customary farm. The main reasons for this deviation were given in the report as follows : (1) The new improved varieties of crops were grown by farmers in a small portion of their land ; (2) the lack of resources precluded the possibility of carrying out the extensive farm study implied in the selection of farm as the basic unit ; and (3) the selected crops stand in the fields only for a part of the year. We can visualize a number of other factors which favour the selection of plot as the basic unit instead of the whole farm. Differences in fertility of plots within the same farm are quite common in Indian conditions. Locational advantages are not uniform for all the plots operated by a farmer. More often, the farmer makes his decisions with regard to the nature of crops, timing of operations and quantum of labour and material inputs, for each plot individually and not for all the plots growing the same crop.

Now, let us turn to the drawbacks inherent in the selection of plots instead of the whole farm as the basic unit. The enterprise cost studies involving the estimation of cost and return to different crops grown on a farm are themselves in a way unreal and do not show the economic position for the whole farm. A study at plot level takes the study farther away from the farm, which is the unit of operation. If the input-output analyses included in the Farm Management Studies are to be attempted at plot level, the computational work involved will increase immensely. Another serious deficiency of the procedure is the general non-availability of plotwise output data.

Thus, both the methods, plot and farm as the basic unit, have their own merits and demerits. Either of these may be chosen depending upon the objectives of the study and the resources, human and financial, time, available. The data for the Indian farm management studies are collected and, also tabulated, plotwise. But the analysis is carried out after aggregation of data for all plots growing a particular crop. Such aggregation conceals differences in yield and intensity of cultivation between the plots.

Now, reverting back to the design of the study under review, 12 villages were randomly chosen out of 43 villages having co-operative societies affiliated to the Kotwali Thana Central Co-operative Association. By random procedure, 15 plots (3 plots for each of 5 crops under study) were selected from each of the selected villages in such a way that not more than one plot is selected from one farm. In all, 160 plots were studied. The study was conducted by survey method and several interviews with farmers were made. It is interesting to note that farmers

were provided with note books to keep accounts of expenditures made on the plots, which was complied with by many of them.

Cultivation expenditures are classified into out-of-pocket and non-paid out costs and these are termed respectively as purchased costs and family costs. For family costs, apportionment was made on the basis of prevailing market rates of the inputs. While this method of valuation is well suited for material inputs like seed, it is doubtful whether this would be so in respect of family labour and owned bullock labour. However, for the purpose of expedience, the method adopted here is quite appropriate. All the cost items were classified further under two major heads—operating and overhead cost. It is stated : “Depreciation and repair cost of farm implements were not accounted as we studied only a portion of a farmer’s land for a part of the year.” Although this procedure may be adopted for expediency, it is doubtful whether such a significant item of expenditure like depreciation can be excluded without considerably under-estimating the cost of cultivation. If a particular crop was grown only on a portion of a farmer’s land for a part of the year, what is needed is apportionment of total depreciation to different plots on some basis like the area of the plot in relation to total cropped area or the proportional use of the machinery on the plot in relation to its total service, the method of allocation depending upon a number of factors like the availability of necessary data, objectives of the study and resources available. It is important to bear in mind that most of the Indian crops stand in the field for only a part of the year and most of the plots in the Indian sub-continent are of small size due to extreme fragmentation. Under the overhead cost, interest at 4 per cent per annum on the value of naked land for the crop growing period is worked out. No interest is charged for other fixed capital like machinery and equipment, farm building and livestock and this will again contribute to the lowering of cost of cultivation of crops. Interest on operating capital at 7 per cent per annum for the crop growing period is included under the overhead cost. Revenue tax is treated as overhead cost.

The following six types of costs have been worked out for each of the five crops studied in the report :

- (i) Operating purchased input cost.
- (ii) Operating family input cost.
- (iii) Operating cost-purchased and family inputs.
- (iv) Overhead purchased input cost.
- (v) Overhead family input cost.
- (vi) Overhead cost-purchased and family inputs.

These are in contrast with the nomenclature of costs (like Cost A₁, Cost A₂, Cost B and Cost C), that we are familiar in our country. The terminology of operating cost, overhead cost, purchased input cost, etc., in contrast to Cost A₁, Cost A₂, etc., is appealing in the sense that the reader can readily understand the meaning sought to be conveyed by these terms. Unlike the Farm Management Studies, clear demarcation has been made between the costs of purchased inputs

and family inputs. Such an analysis is useful to estimate the cash requirement of new high-yielding varieties (HYV) of crops which make a heavy demand on the limited cash resources of farmers. However, for a study of return from crops and of relative profitability of crops, it is doubtful whether such a classification into purchased and family input costs is very useful commensurate with the work involved.

The following four types of returns have been worked out for each of the selected crops.

- (i) Return over purchased cost (operating units).
- (ii) Return over purchased cost (all inputs).
- (iii) Return over operating cost.
- (iv) Return over total cost.

While the last type indicates the net profit earned from the crop, the third one consists of return for overhead cost and the profit; the return over purchased cost is the return for the family cost and the profit. The return over total cost corresponds to the net income (gross income—Cost C) concept used in the Indian Farm Management Studies. In the report under review, there are no returns corresponding to the family labour income (gross income—Cost B) and farm business income (gross income—Cost A) concepts employed in the Farm Management Studies. For analytical purposes, the above measures of income are more useful than those employed in the Comilla study. However, the income measures found in Comilla study may be employed with advantage in addition to those found in Farm Management Studies.

The analysis tables presented in the report are concise, clear and quite informative. An important feature of the report is the treatment of each variety of a particular crop as an individual crop unlike the earlier Farm Management Studies which had more or less gathered and analysed data cropwise rather than varietywise. In the study under review, the five selected crops are, Taipei-177 and I. R. 8, two improved rice varieties, Country Boro and Shaitta, two local rice varieties and Japanese variety of Watermelon. Thus, in a way, this report is more than the usual farm management report as it brings out vividly the relative profitability of the high-yielding varieties of rice vis-a-vis local varieties of rice.

It is found that of all the four rice crops, I.R. 8 incurred the highest cost of production and it is about 1.5 times the cost incurred on the local varieties. It is nearly 2 times if only the purchased costs are taken into consideration, implying that the farmers have to provide greater amount of scarce cash resources in order to grow the new high-yielding varieties of crops. The increased purchased costs were spent mostly in buying the labour and material inputs like fertilizers. Because of the high labour intensive character, the labour requirement for the HYV crops was higher by 50 to 100 per cent than that for the local varieties and much of the additional labour required had to be hired. The grain yield of I.R. 8 was more than double the yield obtained from the local varieties. The author has concluded that 'the yield rates of improved varieties will increase while that of local varieties

will remain more or less static' in the coming years. The per acre net profits earned from I. R. 8 and Taipei-177 are Rs. 982.80 and Rs. 832.48 respectively while those of Boro and Shaitta are Rs. 289.87 and Rs. 298.69 respectively. The higher returns from the HYV crops were also due to the high market price which existed for the HYV crops through policy decisions.

This study though concise makes an interesting reading and it is a valuable addition to the existing literature in the field of farm management.

C. MUTHIAH

Some Aspects of the Structure of Indian Agricultural Economy, 1947-48 to 1961-62, P. V. John, Studies in Economic Growth, No. 1, Institute of Economic Growth, Delhi, Asia Publishing House, Bombay, 1968. Pp. xi + 325. Rs. 35.00.

The book seeks to present certain aspects of the 'structure' of Indian agricultural economy during the 15 years since Independence, 1947. By structure, the author means the nature, composition and magnitude of the key variables in agriculture, viz., output, land, labour and capital and the inter-relationship among these. These aspects which constitute the central points of inquiry are examined in detail. As far as examining them through building up statistical relationships, the author succeeds in a good measure.

First the backdrop : Between 1900 and 1945 agricultural output rose by only 12.6 per cent whereas population rose by as much as 40 per cent putting economic development as it were in reverse gear. In contrast to this, since 1950-51 a new era started with substantial doses of investment in all sectors of the economy as a result of planned development. The author seeks to know how the agricultural sector has responded to the requirements of economic growth. But in his model he confines to the examination of agriculture as a sector and does not attempt to link it with economic development such as technological advance that resulted in the industrialised sector. Hence though he enters into some theoretical discussion on agriculture and economic development he does not carry his point further. The weakness of his theoretical exposition is on account of the fact that he does not himself cogently formulate certain hypotheses, an art which is the basis of any scientific inquiry.

Let us now proceed with his theme. Between 1947-50 and 1959-62, the output of all agricultural commodities put together increased by 39.3 per cent, showing an annual average rate of increase of 3.3 per cent per annum. The agricultural sector thus appears to have acquired a momentum compared to the earlier period of stagnation. The author does not rightly consider these improvements to be substantial and attributes this to a relatively unchanging structure of land, labour and capital inputs. As for land use, the area under forests increased by 1.1 per cent per annum, net sown area by 0.4 per cent and total cropped area by 0.8 per cent between 1951-52 and 1958-59. An increase of 37 million acres in gross sown area from 335.2 million to 372.2 million acres in a period of seven years was, according to the author, a remarkable change. But remarkable in respect of what requirements? Was it so with respect to population growth or with reference to labour employed

in agriculture? The second conventional input is labour though it is increasingly felt these days that labour is embodied human capital and hence it is difficult to demarcate a line between labour and capital. As per the author's calculations, 34.57 million man-days of labour were employed—visibly employed—in agriculture (excluding plantations) in 1954-55. Labour applied on gross sown area in 1960-61 was of the order of 38.78 million man-years. The author arrives at this figure on the basis of a full employment norm of 305 days. Data collected in farm management surveys undertaken in 1954-55 are weighted with area under each crop in respective samples in order to arrive at regional averages and an all-India average of 29.64 days per acre is worked out. The all-India gross sown area in 1954-55 is then multiplied with the average number of man-days per acre. Dividing the total man-days thus obtained by the norm of 305 days, the number of man-days of labour visibly employed in Indian agriculture is arrived. The two districts selected in each of the farm management surveys were typical of the soil-crop complex and not representative. To build the whole edifice of labour days employed in the entire country on the basis of this data is rather far fetched.

Having dispensed with the two, we come to the third input, *viz.*, capital. The value of gross capital formation works out at 1.9 per cent of the existing stock of fixed capital in the private sector of Indian agriculture.

Having presented these magnitudes, the author examines some simple relationships that are found to exist in the behaviour of (i) output per unit of land, (ii) output per unit of labour, (iii) output per unit of capital, (iv) capital per unit of land, (v) capital per unit of labour and (vi) manpower per unit of land. Taking the period 1948-49 to 1960-61 as a whole, productivity per acre of foodgrains showed appreciable tendencies to increase, the index being 123 in 1960-61 with 1948-49 = 100. The following statement presents the trend value of area, productivity and output of foodgrains.

TREND VALUE OF AREA, PRODUCTIVITY AND OUTPUT OF FOODGRAINS, 1948-49 TO 1960-61

Crop group	Trend values (annual percentage change)		
	Productivity	Area	Output
Cereals	+ 2.4	+ 1.8	+ 4.3
Pulses	+ 1.5	+ 1.6	+ 3.3
Total	+ 2.2	+ 1.8	+ 4.1

Increase in productivity of foodgrains cannot be explained merely by an extension of area under cultivation. It was the joint result of increase in area and increase in yield per acre as will be seen from the above trend values. Let us also recognize the fact that the price ratio between these periods changed in favour of foodgrains by about 8.5 per cent per annum. This analysis is significant.

Analysing output per unit of labour, the author observes that whereas output of crops as a whole has been increasing at an average annual rate of about 3.7

per cent, output per man-year has been increasing at a rate of only 1.06 per cent per annum. This indicates low productivity of labour. The amount of capital associated with an acre of cultivated land is about Rs. 153. This low capital is attributed as the main reason for the low output per acre.

What is the fundamental reason for a rather low output per unit of land, per unit of labour and per unit of capital? To the author, the determination of agricultural produce in a developing economy takes place as much or perhaps more, outside the agricultural sector as within this sector. But he is not explicit. Is it the investment in experimental research stations, or schooling to equip the farmer better management-minded or production of fertilizers or steel for agricultural machinery? Anyway, for a transformation of subsistence to modern agriculture, the basic requisite should be that investment opportunities in agriculture should improve, that agriculture as an industry should not remain depressed. Rightly D.W. Jorgenson has said that it is not only necessary but sufficient condition for economic development that agriculture generates sustained surplus. Further, the author's observations that it is commercial farming that is responsive to favourable changes in prices flies in the face of many recent investigations done by T. W. Schultz, Sol Tax, John Mellor, Raj Krishna, Dharam Narain, etc., asserting that a traditional farmer is as well responsive to favourable price changes. And it is this belief that has led to world-wide efforts to develop traditional agriculture by offering price incentives as engine of growth. Again, the author's observations that it is the large and middle sized farmer who are profit-motivated (why not the small farmer or for that matter any producer following an economic activity?) and both their output and marketed surpluses increase when prices rise (not of the small farmer). More work on the behaviour of small farmer is called for before one reaches such conclusions. The author's conclusion (p. 242) that in Indian agriculture especially among non-cash crops there is a low or even negative response of output to prices is likely to be challenged. The experience of high-yielding varieties crops in respect of wheat has amply established favourable response to prices. Does the author attribute absence of such relationships to what he says, "in general, farmers in India do not as a rule choose larger incomes, mainly because of subsistence character of agriculture"? (p. 297.) The question that elasticity of substitution of more profitable crops for less profitable ones has not yet really come into its own (the picture is fast changing) calls for further research in the area of risk bearing, infra-structure facilities, mobility of resources and factor inputs, etc. Examining the author's own reasons for low productivity which he attributes to low capital per acre, he is inconsistent when he says (p. 298) that there is no overall shortage of resources in Indian agriculture. After dubbing subsistence farmer not producing for the market, the author finds that even the large and middle farmers are not incentive-oriented as they do not carry out input intensification compared to the small farmer. Thus the author is lost in the circle. One might question the author's observations that 'farmers do not go all out to get even greater incomes or sell more surplus or plough back larger volumes of profits.' (p. 301.) Indian experience has shown that the support and procurement prices introduced after 1965 have gone a long way in offering incentives to farmers to intensify their inputs for higher production and sales. A recent Ludhiana study has shown that Punjab farmers ploughed back 55 per cent of their increased incomes (18 per cent) in fixed and (37 per cent) working capital.

The book is a product of considerable and conscientious labour and this reviewer welcomes it for its methodological value. Prompted by W. W. Leontieff's work on the structure of the American economy covering a longer period 1919-39, this may be taken as a pilot attempt to study the structure of Indian agricultural economy. The reviewer would like to caution that such studies confining to the study of a sector does not explain or even give insights into the dynamic process of change. There is interdependence between the traditional and the advanced sector. The present study only unfolds the difficulties of interpretation of data. Basic data are not available from one source and it would require a very rigorous analysis of unlike material to logically interpret their results. Otherwise, judgment is likely to go astray. John's work indicates what a vast amount of work is required for arriving at basic research findings at aggregative level, on say, distribution of cultivation holdings, number of days spent on employment in agricultural operations, capital employed in agriculture, etc. Without such important material, necessary for planning purposes, it is even difficult to intelligently interpret the trends.

S. M. SHAH

Economics of Smallholder Farming in Rhodesia—A Cross-Section Analysis of Two Areas, Benton F. Massel and R. W. M. Johnson, Supplement to Vol. VIII, 1968, *Food Research Institute Studies in Agricultural Economics, Trade and Development*, Food Research Institute, Stanford University, California, U.S.A., 1968. Pp. ix + 74. \$4.00.

The major concern of this monograph is to conduct "an analytical and empirical examination of the factors responsible for low productivity and of the problems of raising productivity in African agriculture." Even though the study covers two small areas of Rhodesia only, the authors' claim that "much of the analysis is relevant to agricultural problems throughout Africa, and possibly to other parts of the under-developed world" is legitimate because, as in Rhodesia, intra-season variations in rainfall accompanied by a correspondingly high degree of variability of crop yields from one year to another and the resulting subsistence orientation of agriculture are characteristics of many under-developed areas.

The study concentrates on African agriculture only and excludes the European agricultural sector in Rhodesia. Within the former, data for two samples of farmers, one each from the two types of areas, viz., reserves and purchase areas, have been collected for analysis. The authors call both these areas "smallholder" agriculture "as techniques of production are labour-intensive and non-mechanized and the scale of production is small." Though this simplified definition of small farming is unlikely to find favour with many agricultural economists (the hitherto popular acreage criterion of defining small farming is now giving way to a more rigorous but rather elusive criterion of viability of enterprise), it is well suited for the purpose of the monograph—analysis of factors responsible for low productivity in African agriculture. The data of the sample from a reserve (Chiweshe) pertain to the 1960-61 crop year while that of the sample from a purchase area (Darwin) are for the 1961-62 crop year; both these years were comparable with each other in terms of amount and distribution of rainfall.

A comprehensive and illuminating discussion of the economic profile of the sample farmers in the two types of areas followed by a searching analysis of the attitudes of farmers towards farming in general and use of inputs in particular bring out the factors affecting agricultural productivity in the two areas so well that a non-econometrician does not have to lament his ignorance of the mechanics of the production function analysis conducted later.

In Chiweshe, the land is held in tribal trust according to customary law; the farmers do not have freehold tenure. The average holding of a farm family is nine acres of arable land *plus* the right to graze cattle on communal grazing land. In contrast, holdings in Darwin which are held on free hold tenure have an average cultivated area of 23 acres. Even though the Darwin soils are more fertile than the Chiweshe soils, the difference is marginal. In both Chiweshe and Darwin, farm income is derived principally from the production of corn, millet and peanuts, but the proportion of area devoted to the commercial crop, peanuts, is larger in Darwin.

There are significant differences in the inputs and outputs in the two areas. The value of per acre output in Darwin is nearly three and a half times that in Chiweshe. The percentage of output marketed in Darwin is 55.7 against the mere 3.2 in Chiweshe. The Darwin farmer uses larger quantity of manure, uses fertilizer more intensively and have more sophisticated and varied implements than the Chiweshe farmer. But, still, the technique of production in both the areas is labour-intensive.

The authors hypothesize that differences in productivity in the two areas are attributable not to different production techniques but to difference in inputs. They argue that the differences in "exogenous variables" (acreage at the farmer's disposal, the quality of the soil and the type of tenure) which are qualitatively different in the two areas lead to a difference in economic opportunity (such as availability of credit) between Darwin and Chiweshe. Because of the difference in the economic opportunity, the attitude to farming in the two areas is also different, which, in turn, affects the use of "decision variables" (such as manure, fertilizer, etc.). The Chiweshe farmer whose rights in land are not marketable does not feel committed to farming and hence fails to use the needed quantities of manures and fertilizers to maintain soil fertility and invest in land improvement activities. Due to the relatively high ratio of labour to other inputs, the marginal productivity of labour tends to be low which compels the Chiweshe farmer to migrate to cities to find wage-paid employment for a good part of the year. On the other hand, the greater security to tenure in Darwin favourably affects the farmer's willingness to improve his holding, his allocation of land among crops, his use of fertilizer, manure, labour, etc. The Darwin farmer also finds it worthwhile to spend a large part of his time on his farm from which he hopes to earn a large enough income. These differences explain the subsistence nature of the Chiweshe farming and commercial orientation of the Darwin farming.

A substantial part of the monograph is devoted to the production function analysis of the data of the samples. The value of analysis consists in the useful light it throws on the methodological issue of inclusion or exclusion of some inputs, such as harvesting labour, in the production function analysis. However, the

assumption of complementarity between planting and weeding would not always hold true. Further, the use of government rating as an index of managerial ability of farmers does not appear to be very dependable, as the further analysis of data does not reveal significant differences in physical yields of crops and economic efficiency among the various categories of the Chiweshe farmers, at least. Finally, the fact that the variables included in the production function used fail to account for a substantial part of the variation in the dependent variable suggests that the result should be interpreted with great caution. The authors rightly suggest multicollinearity as a probable reason for the low level of significance of elasticities of individual inputs, but one wonders why the authors did not clear their doubts by use of zero order correlation matrix between independent variables. On the basis of the analysis, appropriate policy conclusions and implications have been derived, but in view of the limitations of the analysis, the authors rightly want them to be "phrased in terms of questions for further study rather than firm statements."

The monograph is a valuable addition to the studies in the economic problems of small farmers and small farming and deserves to be read by research scholars and students of agricultural economics.

MAHENDRA DESAI

A Comparative Study of the Economics of Minor Sources of Irrigation in Uttar Pradesh—Report, Shridhar Misra, Sponsored by the Research Programmes Committee of the Planning Commission, Government of India, Oxford and IBH Publishing Co., Calcutta, 1968. Pp. xxiii + 269. Rs. 20.00.

The book is the outcome of a field investigation in the Meerut and Faizabad divisions of Uttar Pradesh conducted by the author, with the specific objective of studying the relative economics of the minor irrigation sources (Government and private tube-wells, tanks, surface wells, etc.) *inter se* as well as in comparison with canals, a category of major irrigation works. The basic data for the study, financed by the Research Programmes Committee of the Planning Commission, were derived from a sample of 511 cultivators from the Meerut division and 412 from the Faizabad division, stratified according to the size of farms and the source of irrigation. Farm business data collected from the sample of cultivators relate to the year 1962-63. Based on the sources of irrigation, the sample is divided into four classes : (i) those using canals to the exclusion of other sources, (ii) those using a single minor source, (iii) those using more than one minor source and (iv) all those using minor sources, *i.e.*, the total of classes (ii) and (iii). In the analysis of data, comparisons have often been made between the users of canals on the one hand and all users of minor irrigation sources on the other.

The elaborate data presented in the text as well as in Appendix III of the book tell the reader very little about the relative economics of the minor works *inter se* or in comparison with the major irrigation works. The data on crop pattern, intensity of cropping, crop output, costs of cultivation and net value of crop output indicate the post-irrigation situation. Since the sampling procedure adopted for the study did not provide for a control group of dry farmers in each division,

the data do not reveal what changes in the crop-mix, intensity of cropping, net value of crop output, etc., took place due to the introduction of irrigation from different sources. In other words, the book provides no idea as to the primary, direct benefit (increase in crop production) due to irrigation from each source. Curiously, the information that has already been furnished reveals that, within each division, there was no appreciable difference in the crop pattern, intensity of cropping and the net value of crop output per acre as between farms irrigated from the various minor and major works.

The data presented in Chapter VIII on the comparative costs of irrigation are both inadequate and faulty. Thus, we do not know the capital cost per irrigated acre of farm under the different irrigation works. The estimated per acre cost of irrigation for sugarcane and wheat from canals and Government tube-wells does not represent the true cost of irrigation from these sources. The water charge payable in respect of irrigation from these works may be a cost to that extent to the individual farmer but the real cost to the economy may be higher or lower depending upon the element of subsidy or profit in the water rates. Even if it is assumed that the water charge reflects the true cost to the economy (that is to say, if the pitch of the water rate is such that it just reimburses the annual project costs—depreciation, operation and maintenance and interest on capital), comparability between the Governmental water rate and the cost of irrigation under a minor work may be vitiated if the respective works were put up at different times. Thus, the construction cost per acre under a Governmental irrigation work put up, say, in 1930 is likely to be much lower than the corresponding cost under a minor work constructed, say, in 1960. It is, therefore, essential that the costs of irrigation under non-contemporaneous works are first made comparable. Two additional shortcomings can also be observed in respect of the cost-estimates relating to private tube-wells. Firstly, an important item of cost, namely, the expenditure on consumption of electricity/fuel for operating the tube-wells appears to have been ignored. Secondly, one of the components of the cost of irrigation from private tube-wells is "irrigation charges." If these charges represent the amount paid by some of the cultivators in respect of tube-well water purchased from others, both the amount paid as well as the area irrigated through the purchase arrangements should have been ignored for arriving at the cost-estimate of irrigation from tube-wells.

How should one proceed to study the relative economics of complementary and competitive works? Should the complementary works be treated as different stages in a programme for the development of water resources in a given region and the benefit-cost ratios as also the levels of net benefit calculated for each stage? Even when one has to study the comparative economics of different irrigation works, treated as distinct alternatives, what tools of analysis should be employed? Should these be the benefit-cost ratios and the levels of net benefit relating to the different possible works? How to make adjustments for (i) differences in the capital costs of non-contemporaneous works when the required empirical data are derived from the areas benefiting from such works and (ii) for the difference in risks associated with various types of works? Finally, if the planning authorities are to lay down priorities on the basis of empirical studies, should not the analysis of benefits and costs be at the macro level, *i.e.*, benefits and costs to the economy, irrespective of the agency who owns the works?

Nowhere in the book does the reader find any discussion of these and allied methodological problems so intimately associated with the objective of the study. The utility of the book—both to the reader and the planners—would have been enhanced if the author had attempted to give an array of benefit-cost ratios and the levels of net benefit associated with the major and minor irrigation works, even disregarding the secondary and indirect effects of major irrigation works.

In sum, the book does not contain anything on the comparative economics of major and minor works. At best, it can be said to be a comparative study of the farm business under some major and minor irrigation works in the two divisions of Uttar Pradesh.

These fundamental limitations apart, the book abounds in illiteracies and errors. Here are some examples :

- (1) “. cultivators depend considerably on natural rain water for irrigation” (p. 41).
- (2) “. paddy requires a lot of irrigation water, but, being a Kharif or monsoon crop, there may not be much of irrigation from artificial sources of water” (p. 49).
- (3) “There is more irrigation in Meerut than in Faizabad” (p. 42) (what the author intends to say is that a larger proportion of the farm area in Meerut was under irrigation as compared with Faizabad).
- (4) The statement on p. 37 that “the position of relatively greater irrigation under minor sources may be ascribed to supply of irrigation water from minor sources being more assured and convenient to cultivators” contradicts another on p. 39 that “intensity of irrigation is higher under canals than under minor sources.”

M. V. GADGIL

Opinion Leadership in India—A Study of Interpersonal Communication in Eight Villages, Lalit K. Sen, National Institute of Community Development, Hyderabad, 1969. Pp. iii + 61. Rs. 4.50.

The pace at which a new technique in agriculture is diffused depends on the existence of appropriate media of communication which informs farmers of its availability and technological feasibility and which propogates its profitability and acceptance. Knowledge of communication media used by the farmers would obviously aid in clarifying the procedures to ensure fast enough and wide enough adoption of innovations.

In this monograph, the author attempts to identify the most important channel of communication in contemporary Indian villages. The research reported in the monograph is part of a larger study entitled “Diffusion of Innovations in Rural Societies” directed by Dr. E. M. Rogers of the Department of Communication, Michigan University under contract with the U. S. Agency for International Development, which included besides India, two other countries, namely, Brazil

and Nigeria. The project was jointly carried out by the National Institute of Community Development, Hyderabad and the Department of Communication, Michigan University. The basic framework adopted for the study is developed from a review and synthesis of previous research studies particularly those undertaken by American Rural Sociologists. A brief review of selected studies on opinion leadership given in the introductory chapter has helped the author to formulate and then empirically examine a few meaningful research problems in the Indian context. The study is based on the information provided by a sample of 680 farmers on opinion leadership in eight villages selected from Andhra Pradesh, Maharashtra and West Bengal. Opinion leaders were selected with the help of socio-metric questions which were put to all respondents regarding farming, credit, marketing and health. Throughout the study it is assumed that opinion leadership in Indian villages is a function of the village society as a whole with its systems of stratification, authority, legitimacy and so on and also of its level of modernization. The main problems studied in various chapters are differential socio-economic characteristics of opinion leaders and non-leaders, degree of specialisation of opinion leadership, the role played by village norms in the level of acceptance of new ideas by opinion leaders and structural location of opinion leadership in the village power system.

Some of the impressions gained by the reviewer of this stimulating research enquiry will bear brief mention.

The existing communication links in Indian villages are predominantly interpersonal. A close understanding of the social relation of most of the farmers in Indian villages would explain the need for personal communication between the communicator and communicatee. To get acquainted with and adopt anything new in the absence of credible Government agencies and proper mass media, illiterate farmers obviously need exchange of experience with each other. It is also not implausible that evaluation of profitability of innovations and checking of their local adaptability and technical compatibility would be effectively accomplished from the field experience of fellow farmers through direct personal contacts and observations.

Sen distinguishes three levels of such interpersonal communication. First, horizontal channels of communication connect castes and kin groups across village boundaries. Second, trade centres connect a number of villages in mutual communication. Third, change agencies direct the flow of message into the village. The message is effectively transmitted in the villages along all the three channels through interpersonal interaction. The intensity of interpersonal interaction and its influence on farmers' decision-making depend largely on the legitimising role played by the opinion leaders. The opinion leaders in Indian villages are thus "the *gatekeepers* of communication emanating from other systems."

The cross-sectional comparison of the characteristics of opinion leaders and the non-leaders by the author has revealed that opinion leaders have higher socio-economic status, are more literate and educated and hold more formal positions. Their unit of farming is larger with a higher level of specialisation, commercialization and labour efficiency. They also use more improved farm practices than their followers. Because of these and other characteristics, their access to and ability to use institutional and other outside agencies is considerably higher.

The power relationship between the opinion leader and followers, according to the author, is crucial in communication process in Indian village system. The fact that opinion leaders belong to upper socio-economic strata of the village society reflects *de facto* power advantage of opinion leaders over the non-leaders. Opinion leadership in Indian villages is thus found to be "polymorphic." Opinion leaders dominate not only the political life of the villages but also other important spheres of village life. "They are literally in control of practically the whole range of village life." Leadership in modern villages are more innovative than leaders in more traditional villages. Leadership in traditional villages is, however, more ascribed than in modern villages and that is why their deviation from the village norms and customs is also greater. "The deviation of the leaders becomes less as the community norms become more progressive." In other words, ascriptive element in village leadership becomes relatively less important as the village societies become more modernized.

The communication flows vertically from leaders who are at the top of the village power hierarchy to the lower strata. The status "heterophily" is the determinant factor in the communication process. "There are indications to show that in Indian villages the formal and institutionalized leadership very slowly give way to more informal and more achievement oriented leadership which is more sensitive to the group's approval." Contrary to general belief, caste cliques and factions neither hinder nor help the flow of information. Farmers usually seek advice on problems of farming from economically prosperous and progressive farmers and not just from the people of their own cliques and castes.

Some of the findings of this stimulating research study are thus quite interesting and revealing. In fact, they provide some explanation why our technological revolution in agriculture has not gone farther and faster than what has taken place. Community Development and National Extension Administration responsible for the task of diffusion of technological change in agriculture has given more emphasis on formal leaders and institutional media of communication. This study has evidently shown us that any attempt to completely institutionalize the communication process as it was assumed in community development and national extension programmes is likely to be inoperative and unpromising in Indian village situation. It is because most of the farmers look mostly to informal opinion leaders as their main source of information. It is only too easy to attack them but in the existing village social setting, they perform certain essential functions that cannot be looked after by formal leaders sponsored by the Government agencies. The importance of opinion leaders, therefore, should be recognized and the Government agencies should streamline their functions to become complementary in their efforts to achieve speedy transmission of innovations among the farmers.

A brief outline of the findings and their implications indicated above would suffice to speak the importance of the book particularly in the context of the New Strategy for agricultural development embodied in the introduction of high-yielding varieties of improved seeds, chemical fertilizers and pesticides. The book is highly stimulating and each part of it demonstrates the author's care and competence.

Land Reform in Principle and Practice, Doreen Warriner, Clarendon Press, Oxford University Press, London, 1969. Pp. xx + 457. 63s.

This study of land reform from an author whose continuous concern has been with problems of land is a weighty contribution to the literature on the subject. The most significant feature of the book is its attempt to study land reform in relation to economic development—a theme which holds universal interest. Warriner's book should be a real help in furthering our understanding of this intricate subject. After devoting the First Part to the discussion of principles and motivation behind land reform in a general manner, the author in the Second Part discusses recent land reform experience in Iraq, Persia, India, Brazil, Chile and Venezuela. These countries, although they are the principal focal points of study, are not the only ones covered in the book. In various other contexts, particularly while dealing with the Latin American background, reform experience in Mexico, Bolivia and Cuba has been briefly presented. The last chapter brings all the strands together and comprehensively reviews the question of relation between land reform and economic development. In this last chapter, again, the record of agrarian reform in Denmark, Italy, Egypt and Yugoslavia has been utilized to shed further light on the subject in hand. Discussion of land reform in the main countries of study has been enriched by on the spot observations of reform at work in 1964-65. A very useful bibliography at the end is a helpful guide for the land reform student. Judged thus by its comprehensiveness this is surely a major endeavour in its field. One misses Taiwan, significant for a variety of reasons, which has not been even once mentioned in this book, but surely one can't have all. Another merit of the book is its complete frankness which would be a corrective to understanding obtained from official reports, not excluding those of the United Nations.

The argument could be summarised by saying that the effects of land reform (defined as redistribution of property or rights in land) are primarily social, *i.e.*, they contribute to greater equality, social as well as economic. Although the author at least in one place (p. 373) appears to deny *any* role to land reform in bringing about economic development, her real thesis is more subtle and that is that land reform *alone* will not do much. In fact, it will do even less if redistribution ignores aspects of scale of farming. Where, however, reform legislation is quickly and efficiently implemented and adequate farm sizes have been prescribed, a lot more needs to be done by means of investment, price policy, marketing, etc., before its fruits can be garnered. On the whole, therefore, a good land reform is *one* among many encouragements to agricultural development. (p. 382.) Moreover, it is not always a case of one-way relationship, it is also reciprocal. (p. 383.) The relation between reform and development might in some cases be derived rather than direct, *i.e.*, greater equality would help progress of such institutions as co-operatives and co-operatives would help development. (p. 380.) Warriner's analysis mercilessly dispels a number of myths surrounding land reform and shows it up as it really works in a variety of economic and political contexts. The value of this analysis has increased because in respect of each country its salient agricultural problems have been interwoven with it. So in many cases the book serves not merely as a critique of land reform but also of agricultural policy. The economic basis of land reform is usually family farming but Warriner, by bringing in the question of peasant—or labour—attitudes, shows that it may not always succeed if proper attitudes and traditions of independent farming don't exist. (pp. 48-49,

52-53.) She believes that generalized prescriptions of land reform, based on their supposed effects on development are of little value and what kind of land reform works in any given situation is a matter generally enmeshed in the local context and should therefore be worked out in an empirical setting.

It is rather sad that in considering the economic aspects of land reform Warriner almost exclusively dwells on the incentives offered by ownership and the role played by economic-sized holdings, although there are some stray references to expansion of rural markets as a result of equalization. The chief lacuna is the absence of any consideration given to problems of market supplies which arise or would arise in the wake of a redistribution, particularly in countries characterized by subsistence agriculture. It might perhaps be urged that the author is more concerned with *agricultural* development than total economic development; but if that is so the analysis of development will have to be considered partial.

Indian readers will find the long chapter on India, the longest in the book, quite rewarding as it gives a bird's eye-view of reform efforts in this country and their legislative, administrative and political pitfalls. Emphasis on investments, particularly irrigation is pertinent. However, doubts arise as to the characterization of the agrarian structure in India, attempted by the author. "The agrarian structure of India encloses a world of its own, since it is neither a large estate nor a peasant system, but a system of caste. At the bottom of the rural hierarchy there is a mass of poverty; at the top comparatively well-to-do non-working landowners; in between a broad range of working peasant owners and tenants. Relationships between these groups are still determined mainly by castes." (p. 141.) Warriner also approvingly mentions Thorner's classification between *Malik Kisan* and *Mazdoor*. (pp. 147-148.) This treatment of the social structure is obviously too simplified to be applicable from one end of the country to the other. Whatever we know from the National Sample Survey data tells us that the picture is far more complicated. Most landlords are also working peasants. Most tenants also are owners. Pure rent-receivers are not a large entity, certainly not in the former Ryotwari areas. Half the agricultural labourers, according to the Agricultural Labour Inquiry, own or lease in some land. Reality, therefore, defies the neat pigeon-holes of this class-stratification. Nor do castes always run parallel to economic class divisions. In fact, there is reason to suppose that horizontal class unities are marred by vertical caste groupings. It is not surprising, therefore, that the author's effort at establishing the uniqueness of the agrarian structure in terms of caste does not prove very illuminating.

The eulogy of Gandhian (?) co-operative farming experiments (p. 176, 178) is difficult to understand in the light of her own adverse judgment about this experiment in a previous chapter. (Chapter III.) There are, inevitably, other slips too (not to mention mis-spellings of Indian names). The Bombay Tillers' Day was 1st April, 1957 and not 18th April. (p. 167.) The statement that the tenants, under the Bombay legislation, were deemed to have purchased the land, 'provided that they held an area larger than the economic holding' (p. 167) is factually incorrect. (If the implied reference is to exclusion of tenants of small landlords, this was remedied by a later amendment.) The 'bogus' co-operative farming societies cannot be exclusively fathered on the Working Group (p. 177); they have had a longer lineage.

REVIEWS IN BRIEF

Reorganisation of the British Consumer Movement: A Guideline for India, G. S. Kamat, Vaikunth Mehta National Institute of Co-operative Management, Poona, 1969. Pp. vii + 127. Rs. 6.00.

This monograph is an outcome of an on the spot study of the British consumer co-operative movement made by the author in 1966-67. It examines the extent to which the ideas of rationalization developed by the consumer co-operative movement in Britain could be applied to its counterpart in India. The monograph starts with a survey of consumer co-operation in India. The survey reveals that the growth of the consumer movement in India when compared to that of the other aspects of the co-operative movement has been very slow. It is only after the introduction of the planned economy in India in 1951, as a matter of policy and programme that special efforts have been made to create conditions for its growth. However, the problems of structural organization, management and control, trading and production activities of the consumer movement pose challenges that need to overcome. It is in this context that the study of the British consumer movement, problems faced by it from time to time and its efforts to solve these through either adjustment, rearrangement or reorganization acquires significance for indicating certain guidelines to shape the newly emerging consumer structures in developing countries like India. These form the subject-matter of the succeeding four chapters. It is observed that the British movement is functioning in an affluent society, faced mainly with the problem of distribution whereas in the case of India, production has to precede distribution. Both these aspects constitute integral parts of the overall plan. There is a large number of small one shop societies in India today, many of which are very weak units. Those existing in factories and workshops for the employees are reported to be working well. But one of their limitations has been, till recently, that these were not linked to other co-operative societies or their federations. They were completely dependent on the management of the concerned organizations for supplies and finance. Alternative choices available for the new consumer movements in developing countries like India, to be able to enjoy advantages of scale and to exploit the potential fully would be either to organize the structure on unitary basis or federal basis. For various reasons, a unitary structure is declared to be unfit for India. Since India has accepted a federal pattern of the consumer co-operative sector, ideas and principles underlying the present reorganization in Britain could be quite relevant to Indian conditions. Particularly, developments relating to (a) restatement of wholesale-retail relationship, (b) regional grouping and (c) demarcation between direction and management within the co-operative organizations should be of considerable significance to the co-operative consumer movement in India. It is observed that strengthening of the wholesale-retail relationship on a "contractual obligation" basis within the federal structure is commendable. The regional warehousing scheme is a step complementary to co-ordination. Like the Co-operative Union in Britain, the National and State Co-operative Unions in India, in spite of their more broad-based affiliations, can actively and closely assist the emerging integration of processing and marketing at all levels. Reorganization in the British movement is expected to secure connotation of planning, covering such fields as regional warehousing, concentration in purchases and stocks along with standardization and restriction of assortments, common services to retail

units by the wholesale or the Union, centralization in managerial, financial and personnel decisions to the extent possible, setting up specialised chain organizations, concentration of various commercial measures (e.g., brands, joint ventures, vertical integration in production, processing and marketing, etc.), including training and education. It retains sovereignty of the retail society, only limiting it by certain federal obligations required in the interest of the movement as a whole. The framework promises all the above-mentioned benefits through a partial renunciation of local autonomy. A regional approach for setting up primary retail societies in India as in Britain, which could be co-operatively and economically efficient, would improve the prospects of implementing consumer co-operation development plans on sound and scientific lines. In India, the increasing trends towards concentration and integration make the problem of the management of co-operatives which are inadequately and improperly staffed all the more serious in the absence of clear-cut demarcation of duties and responsibility between directors and management officials. The separation of direction from management both at retail and wholesale levels would enable the units to introduce a thorough going modernization of old fashioned shops, low price policies reflecting skilful buying, drastic rationalization of merchandise and strict application of commercial standards throughout. It is stated that the acceptance of these principles and facts as emerging from the process of structural reorganization in the British consumer movement would enable the consumer co-operatives in developing countries not only to defend the interests of their limited groups but to make a positive contribution to the welfare of the participants in an expanding economic system.

Economics of Food Retailing, Daniel I. Padberg, New York State College of Agriculture, Cornell University, Ithaca, New York, U.S.A., 1968. Pp. xi + 297.

This book makes an excellent attempt to study the organization of the food industry and the types of competition which stimulate the decisions of retailers as well as consumers in the United States. It also attempts to measure and evaluate the economic performance of the current food retailing system. The author has largely drawn on and sifted the economic data collected by the National Commission on Food Marketing in the U.S.A. The book is divided into three parts, consisting of 18 chapters. Part I is concerned with the basic organizational characteristics of food retailing and discusses the general patterns of concentration of sales and purchases by wholesalers and retailers in the food industry, the role of mergers in the changing market structure, vertical integration in food manufacturing and processing, private label activity, entry and growth of small firms and exit of small grocery stores and physical efficiency, cost behaviour and scale economies in the food industry. In Part II, the nature of competitive behaviour in food retailing is analysed and related to the structure of the market, the setting of the individual store, and the increasing supermarket saturation within most markets. The role of price as a dimension of competition is appraised. The role played by trading stamps in the development of non-price competition in food retailing over the past fifteen years is highlighted. The performance of the food retailing industry as measured by gross margin, cost of retailing, innovations or progressiveness, profit rates, and selling costs is discussed in Part III. In the light of these market performance results, the viability of competition in food

retailing industry is appraised in the last part. It also discusses the implications of the performance of food retailers for public merger policy. A few important conclusions of this study may be noted. The level of retail concentration is intermediate with a market share of 50 per cent for the four largest food retailers in the United States Metropolitan areas. There is no significant trend in concentration and the growth patterns in the retail food industry suggested no relative advantage for the locally largest firm. There are no significant technological or merchandising advantages of large organizations in food retailing. Vertical integration is not extensive nor is it changing rapidly. Private label programmes including products manufactured by the retailer and by other manufacturers are an important part of the merchandising strategy of large food retailers, and represented an example of price competition. The supermarket growth period following World War II provided an example of relatively easy entry for all types of food retailers. Large firms tended to have lower prices than small firms and this price advantage is supported by the superiority of chain wholesaling operations. The smaller retail organizations are able to compensate for most of this disadvantage because of lower retailing costs. Local market concentration has little effect on consumers. During the decade from the middle 'fifties to the middle 'sixties, gross margins went up approximately 4 percentage points, but expenses have also gone up. Increased promotion expense, including trading stamps, labour and occupancy expenses accounted for about 80 per cent of the increase in operating expenses during this period. Profits in food retailing industry have ranged between 1 and 2 per cent of sales and are about comparable with other industries. The industry has made major adjustments in response to changes in technology and consumer preferences. There is much evidence that the nature of the wholesale market places some market power in the hands of buyers. The costs of competition in food retailing are substantially higher than they were in the early 1950's. Economic performance in the retail selling market is adjudged to be excellent. An unsolved problem of the industry is how to make this generally high level of performance available in low income areas. Performance in procurement of merchandise has probably resulted in lower than optimal prices and returns in the processing industries, suggesting that consumers are to some extent subsidized by these industries and ultimately the farmer. This book is an invaluable addition to the meagre literature on the subject.

Electricity and Economic Development of Madras State, K. S. Sonachalam, Research Programmes Committee, Planning Commission, Government of India, New Delhi, Annamalai University, Annamalainagar, 1969. Pp. xxiv + 256. Rs. 22.50.

This report is a pioneering study of the evaluation of the impact of electricity on the economic development of Madras State. This study was sponsored and financed by the Research Programmes Committee of the Planning Commission and was undertaken in 1964-65. The report is divided into ten chapters. The theoretical approach to the evaluation of the import of electricity project on all the major sectors of the economy is discussed in Chapter I. The place of Madras State in the electricity map of India is highlighted in Chapter II. The origin and development of the Madras State Electricity Board which is a statutorily monopolist in electric power generation and distribution are reviewed in Chapter III. It also reviews the role of eight private companies and five local authorities in the

supply of electricity under licence. In Chapter IV, the impact of electricity on the industrial sector is assessed from three angles : (i) fuel-use by factories, (ii) industrial output and (iii) State economy. The next two chapters appraise the impact of electricity on the agricultural and rural sectors. Chapter VII presents the history of electricity tariff in Madras State and Chapter VIII contains a critical review of the rationale of electricity tariffs in the last six decades. The next chapter is devoted to an evaluation of the benefit-cost of the Madras State Electricity Board on an electric project. The last chapter presents an aggregate picture of the benefits flowing from the project to itself and to all the sectors of the economy. Historically, industrial development in the State has two phases. Till 1930, the pace of industrialization was extremely sluggish. The next three decades and a half witnessed rapid industrialization which has synchronized with the growth of electricity industry. Productive capital in industry increased from Rs. 26.50 crores in 1946 to Rs. 145.55 crores in 1961, yielding an annual linear rate of growth of 30 per cent. Gross output rose from Rs. 46.7 crores to Rs. 206.2 crores during the corresponding period, with an average annual rate of growth of 31 per cent. The annual rate of growth in the value added by manufacture amounted to 40 per cent and the annual rate of growth in employment in the organized sector was 6 per cent. Industrial consumption of electricity increased seven-fold between 1950 and 1965. A new facet of industrial development is the emergence of electricity-intensive industries such as aluminium, cement, chemicals and fertilizers. The contribution made by electricity to the development of agriculture in the State is remarkable. Of the 780 thousand masonry wells in the State, 296 thousand have pump sets of which 256 thousand are energized by electric motors. The area irrigated by electric pump sets is estimated at 750 thousand acres, accounting for nearly half of the entire area irrigated by them in the country. Nearly 43 per cent of the towns, villages and hamlets were electrified by October, 1966. The cost-benefit analysis revealed that the investment made on the generation and distribution of electric power has been more than justified. For the 30 years ending 1962-63 covered by this evaluation study, the average percentage of gross revenue to capital-at-charge of the State Electricity Board worked out to 13.9. The average net revenue to capital-at-charge during this period was 6.2 per cent and the net yield 2.3 per cent. Electricity is supplied to agriculturists at a concessional rate of 8.25 Paise per unit which is less than the standard rate of 9 Paise specified by the Central Water and Power Commission. The rates charged are somewhat low and a rise in the rate for industrial consumers to 11.6 Paise per kWh as recommended by the World Bank would bring about an increase in revenue of Rs. 5.5 crores per annum from industries. When calculated on the basis of the costs that would have been incurred for the same development without electric power, the benefits are much greater than that shown by the application of merely financial criteria to the investment. The indirect benefits resulting from the increase in power supply are also most significant.

Quarterly Journal of Indian Studies in Social Sciences, Vol. I, No. 4, October 1967, combined with Vol. II, Nos. 1 & 2, January-April, 1968—*India : A Decade of Destiny*, Edited by M. R. Sinha and published by the Indian Institute of Asian Studies, Bombay, 1969. Pp. 181. Annual subscription: Rs. 50.00.

In this volume are presented 24 papers dealing with various aspects of the Indian economy contributed by experts specialised in various fields. The con-

tents of this volume are presented in 12 chapters. The introductory chapter on "A decade of sustained take-off" by L. A. Hoffman reviews the basic problems of the Indian economy and discusses the essential conditions for achieving self-sustained take-off in the next decade. Chapter II is devoted to a discussion of economic planning in developing countries. M. Mukherjee in his paper on "Planning in poor countries" examines the essential features of planning with particular reference to low income countries. In the paper entitled "Planning and balance in regional development," J. N. Sinha examines the impact of planning on regional development in India, using the indicators of value of commodity production in the different sectors of the economy and per worker in 1951 and 1961 and expenditure per worker on infra-structural facilities in different States. S. C. Jha in his paper examines the relation between the theory of welfare economics and evaluation of production efficiency in agriculture. D. H. N. Gurtoo discusses the tools and techniques of export promotion. Rest of the chapters deal with foreign aid administration, industrial labour, urbanisation in India, language problem, political, social, cultural and sociological changes in India.



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