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UNIVERSITY OF CAMBRIDGE

DEPARTMENT OF  
APPLIED ECONOMICS

EIGHTH REPORT  
ACTIVITIES IN THE PERIOD  
OCTOBER 1967 TO SEPTEMBER 1968



*March 1969*





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Director  
W.B.REDDAWAY

Committee of Management, September 1968

A.SILBERSTON (Chairman)  
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D.G.CHAMPERNOWNE              W.B.REDDAWAY  
Miss P.M.DEANE                      J.R.S.REVELL  
J.H.GOLDTHORPE                      Professor RICHARD STONE  
Professor H.A.TURNER

Secretary  
H.LOSHAK

K.E.BERRILL, C.H.FEINSTEIN, and Professor E.A.G.ROBINSON were also members of the Committee of Management during part of the period covered in this Report.

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## EIGHTH REPORT OF THE DEPARTMENT OF APPLIED ECONOMICS

(covering the year October 1967 to September 1968)

### I. RESEARCH ACTIVITIES

1. This section outlines the work done in 1967-68 on the twenty-four research projects being conducted, and lists the five new ones which started in the new academic year.

#### (a) Economics and Economic History

##### *Growth and Fluctuations in the British Economy*

2. Work on this project, under the direction of Professor Stone, has continued along lines described in previous Reports. A further volume, no. 8, entitled *The Demand for Fuel 1948-1975* has now been added to the series *A Programme for Growth* (London: Chapman and Hall) in which the main results of this research are published.

3. The research staff working with Professor Stone during the period covered by this Report was as follows: Mr A.G. Armstrong, Mr T.S. Barker, Mr M.J. Green, Mr O.T. Hooker, Mr J.R.C. Lecomber, Mr C.S. Leicester, Dr L.J. Slater, and Mr K.J. Wigley. During the period Mr T. Kivanc and Dr R. Leoni have also been associated with the project as visitors to the Department.

4. The main areas of research in the last year can be outlined as follows. Annual time series connecting many of the entries in the social accounting matrices have been established for the period since 1948 and index-numbers of inputs and outputs have been constructed and analysed. Plans have been made for setting up an automated data bank to contain this information with the immediate aim of ensuring easy access to the latest set of revisions over the whole field. Successful experiments have been made with improved methods of constructing tables of input-output coefficients and the changing pattern of these coefficients is being reviewed in the light of current statistics and direct contact with firms and trade associations. Now that vol. 8 has been published, work has begun on the supply side of the fuel and power industries. An interesting form of production function is described in a paper, 'Production Models and Time Trends in Input-Output Coefficients', by Kenneth Wigley, presented at a Conference on Input-Output held at the University of Manchester. Work has continued on the decomposition of the labour force by industry and occupation. New methods of analysing and generalizing the linear expenditure system have been followed up. A volume on the determinants of British imports is now in first draft and work has continued on the analysis of British exports by commodity and destination. This work on foreign trade, as far as it is now completed, has been incorporated in the general model of the economy and a new set of projections will appear in our next volume, *Exploring 1972*. A paper, 'Input-output and the Trading Economy', by Richard Lecomber, was presented at the Input-Output Conference referred to.

5. The following papers have been published since the previous Report:

*The Demand for Fuel 1948-1975: a Submodel for the British Fuel Economy*. A Programme for Growth, vol. 8, 1968.

Input-output Projections: Consistent Prices and Quantity Structures, by Richard Stone (L'industria, no. 2, 1968).

'Economic and Social Modelling', by Richard Stone. In *Mathematical Model Building in Economics and Industry*, London: Griffin, 1968.

'The Generation, Distribution and Use of Income', by Richard Stone, in *Review of the International Statistical Institute*, vol. 36, no. 2, 1968.

'Statistics for Medium Term Economic Planning', by Alan Armstrong and Richard Lecomber, in *Journal of the Royal Statistical Society, Series A (General)*, vol. 131, 1968.

'Devaluation and the Rise in U.K. Prices', by Terence Barker, in *Bulletin of the Oxford Institute of Economics and Statistics*, vol. 30, no. 2, 1968.

### *Financial Aspects of British Economic Growth*

6. The Bank of England, the Committee of London Clearing Bankers, and the British Insurance Association have made grants to continue this project for a period of three years from October 1967. An additional grant for three years from April 1968 has been received from the Central Statistical Office for the specific purpose of extending national balance sheets from 1961, the last year dealt with in *The Wealth of the Nation*, up to date.

7. The work of collecting data for national balance sheets, financial transactions tables, and revaluation tables for the years 1962-66 has been nearly completed and will be finished by December 1968. Further work on editing the estimates to remove discrepancies revealed by the checks on the system will take several months, but it is intended to publish a series of national balance sheets with supporting tables in the second half of 1969.

8. The studies on various aspects of the financial behaviour of the personal sector have continued, and a full-scale study of this behaviour for the period 1952-68 is in train. The distinguishing features of this work are that it relies on the recorded figures of financial transactions by type of asset instead of the Blue Book residual figure of personal savings, and that it seeks to distinguish new decisions on personal savings taken during the year from everything which is a result of decisions taken in previous years.

9. The detailed study of the operation of various types of financial institution has been continued. A paper by Mr Revell analysing the significance of a secondary banking system which has developed within the past seven or eight years was published during the year.

10. The research staff working under Professor Stone on the project have been Mr J.R.S. Revell, Mr A.R. Roe (who joined the project in March 1968), Mr J.P. Moyle, and Mr F.E. Townson.

11. The following were published during the year:

Jack Revell, *Changes in British Banking: Growth of a Secondary Banking System*, Hill Samuel Occasional Paper No. 3.

Jack Revell, 'A secondary banking system', *The Banker*, September 1968.

#### *The Growth of Public Companies and its Finance*

12. Mr A. Singh, Dr H.T. Burley, and Mr G. Whittington have continued work on this project, of which the inception, aims and earlier progress were described in the Fifth, Sixth, and Seventh Reports. The results of the project up to October 1967 appeared in January 1968 as Occasional Paper no. 7: *Growth, Profitability and Valuation. A Study of United Kingdom Quoted Companies*, by A. Singh and G. Whittington, in collaboration with H.T. Burley.

13. The basic analysis described in the Occasional Paper has been extended to cover all quoted companies engaged in manufacturing and distribution, for the period 1948-60. The full interpretation of the results of this analysis will, however, be a lengthy process. It has been deferred to allow time for two special studies on which work was resumed during the year: Mr Singh's study of Take-over Bids, and Mr Whittington's study of Trade Credit.

#### *The Economics of Developing Countries*

14. The inception and earlier progress of this project were described in the Sixth and Seventh Reports. Mr Bennathan left the Department in 1967 to become Chief of the Survey and Special Analysis branch of E.C.A.F.E. in Bangkok, where he is completing his investigation of ocean transport in its relation to the structure of Asian Trade. The research involves collecting shipping statistics, and data on Government shipping policies, freight rates, shipping law, etc., in Bangkok, Singapore, Bombay, and Hong Kong. The analysis and study of these data in relation to the international shipping between the four ports have now reached an advanced stage.

15. Dr A.R. Jolly continued work on education and manpower in developing countries in the Department until the end of February 1968, and afterwards at the Institute of Development Studies at the University of Sussex. He contributed a chapter on Education and Manpower to a book on development prepared by the Institute, and a paper analysing trends in the costs of African education to the 1968 African Studies Association of the United Kingdom Conference, the volume of which he edited. He has been on technical assistance missions to Kenya and Trinidad,



advising on manpower, and to Addis Ababa where he served as consultant to the I.L.O. workshop on African employment. At the Institute of Development Studies, he directed a six week study seminar on employment, education, and manpower. Since May 1968, he has served as a part-time economic consultant to the Ministry of Overseas Development, which has recently established a manpower planning unit to advise on its programme of manpower aid, covering the whole field of technical assistance, education, and training.

16. Since September 1967 Mr Ward has been seconded to Fiji for two years as Government Statistician. He has produced a set of national accounts for Fiji, and has published two official reports, one on capital investment in the colony, and one on its tourist trade. In April 1968 he delivered a paper on 'National Accounts and Input-Output Tables in Developing Countries' to a staff and research students seminar of the University of Canterbury in New Zealand. An article by Mr Ward, 'The Effects of the United Kingdom Devaluation of Sterling on the Fiji Economy', is to be published shortly.

#### *The Economy of Zambia since 1964*

17. Mr M.L.O.Faber has been investigating the development of the Zambian economy during the five years since the break-up of the Central African Federation in January 1964. The period covers the change from colonial status to independence, and from a European-dominated Government to complete African rule.

18. The inquiry will consider the reasons for taking the main economic decisions and assess their success or failure. It will also deal with the effect of the Africanization of Government on the growth rate, the rate of inflation, capital inflows, the distribution of trade, the relative responsibilities of the public and private sectors, the distribution and extent of government expenditure, and the distribution of income and employment levels.

19. Mr Faber, who is at present on secondment to the University of Zambia, has written a paper on 'Constraints upon the Development of the Manufacturing Sector in Zambia' for a book, edited by Dr C.Elliott, to be published by the Oxford University Press; and *Zambia: the Moulding of a Nation*, published by the Africa Bureau. He has delivered two papers: 'Zambia, the United Kingdom and the Common Market' for a conference held by the Africa Centre; and 'A Future for the Mining Industry in Zambia?' for the Zambian Economic Society.

#### *The Effects of United Kingdom Direct Investment Overseas*

20. Work on this project continued under the direction of Mr Reddaway. It reached completion at the beginning of September 1968, when the manuscript of the Final Report was sent to press. The book was published in November 1968 as Occasional Paper no. 15: *Effects of U.K. Direct Investment Overseas. Final Report*, by W.B.Reddaway in collaboration with S.J.Potter and C.T.Taylor.

21. This *Final Report* does not supersede, but is rather a sequel to, the *Interim Report* (Occasional Paper no. 12: *Effects of U.K. Direct Investment Overseas. An Interim Report*, by W.B.Reddaway in collaboration with J.O.N.Perkins, S.J.Potter, and C.T.Taylor). In addition to elaborating effects on the U.K. balance of payments and discussing the conceptual and statistical approaches of the study at some length, it provides a full assessment of effects on the U.K.'s national income. The main new feature of the work is a presentation and analysis of information on the interchange of technical knowledge between U.K. parents and their overseas subsidiaries. It was found that benefits arise principally through the utilization in overseas production of research and know-how developed as part of a group's U.K. operations. Returns from such knowledge-sharing accrue to the U.K. largely in the form of higher profits from the overseas subsidiaries, and account for a substantial proportion of such profits in the 'technology-based' industries.

22. One major disappointment of the research was the failure of the oil companies to co-operate in producing figures for an 'alternative position'. The study consequently contains no assessment of the effects of investment in this important field.

23. Mr S.J.Potter left the Department at the end of January to take up a post at O.E.C.D., but did further work on overseas investment in his spare time. Mr C.T.Taylor continued to be engaged full time on the project until its completion.

#### *Current Economic Assessments*

24. The quarterly assessments of the current economic position continued to be published during 1967-68 in the London and Cambridge Economic Bulletin. Formerly, the Bulletin appeared as one whole page of *The Times Business News*, but since April the Bulletin has been published as the leading article on two consecutive days in *The Times Business News*. Since April 1968 the Department has also taken over the responsibility of reprinting the articles in a form suitable for filing. The Department continued to undertake much of the statistical and secretarial work, and provided the additional clerical assistance needed to deal with the subscription list for the reprints. Mr S.J.Potter acted as Secretary to the Service until January 1968, when Mrs T.Liesner took over.

#### *Economic Effects of Selective Employment Tax*

25. The Department has been asked by the Government to undertake an impartial investigation into the effects of S.E.T., with the following terms of reference:

'To examine and report on the effects of the selective employment tax on prices, margins and productivity in industries on which the tax falls as a net burden, and the consequent effects on the economy.'

It is part of the understanding with the Government that the Director will play much the same role as in the impartial investigation of the effects of U.K. direct investment overseas.

26. As the project had to be launched in the middle of an academic year, the staff has had to be brought together gradually, and assistance has been secured in many ways. By combining work on this project with that on Productivity in Distribution it was possible to bring in the people engaged on that work, including Mr K.D.George (University Lecturer). Mr A.B.Atkinson worked full time on the project until the beginning of his appointment as University Assistant Lecturer (on 1 October 1968) and continues to give great help; Mr C.H.Fletcher, Mr P.M.Croxford, and Mr D.E.Moggridge have been specially recruited for the project.

27. The problem will have to be tackled trade by trade, and in most cases two independent approaches will be used. First, we shall do what we can with published (or unpublished) statistics which already exist, usually on an aggregate basis for the trade—giving, for example, movements in employment and sales. And secondly, we are collecting special information from selected firms in each trade, which will be supplemented where necessary by interviews with the firms, and also by information from Trade Associations.

28. Work began on the distributive trades, for which a special questionnaire with statistical tables was prepared, after elaborate consultation with firms and Trade Associations, to go to the larger retail businesses. This has been supplemented by simplified forms for the smaller businesses, where the approach has been largely by means of interviews. In the wholesale field different forms have been necessary for different types of business, especially the firms dealing with raw materials or industrial requisites.

29. Since 30 September, active preparations have been put in hand for approaching trades allied to distribution, such as motor repairers, hotels and catering, and shoe repairers. In addition, the unsolicited approaches by representatives of trades which wish to make 'representations' have led to some rather long-range advance preparations against the time when it will be possible to tackle these trades properly.

30. It seems most likely that a First Report on the distributive trades will be prepared some time in 1969, but the completion of the whole task would require several years of work, and it may be necessary to restrict the field somewhat. The approach *via* aggregate statistics—which takes much less time—is being largely left on one side at present, so that more of the statistics may be available, and provisional figures replaced by final ones.

#### *Productivity in Distribution*

31. The inquiry into the role of investment in increasing productivity in the retail trades, which was mentioned in the Seventh Report, was completed in March 1968. The results of this research were published as Occasional Paper no. 16: *Productivity and Capital Expenditure in Retailing*, by K.D.George in collaboration with P.V.Hills. Some of the results of this work together with



an analysis of productivity changes at the macro-economic level are also to be published as an article in *Business Ratios*.

32. Mr Hills left the Department at the end of December 1967, and Mr C.F. Pratten took over the position of the research officer engaged on the project until September 1968.

33. Work on the distributive trades is now concentrated on a study of channels of distribution, and Mr T.S. Ward has been specially recruited for this project. Particular attention is being paid to the effect which the Selective Employment Tax is having on the methods by which goods are distributed. This work is, therefore, closely related to that being done on the Economic Effects of the Selective Employment Tax (see last section). To avoid unnecessary duplication and to make the fullest use of the available staff, the information for the channels of distribution inquiry is to be obtained mainly from the manufacturers. A questionnaire has been prepared for a pilot study and it is hoped that the main enquiry will commence early in 1969.

#### *Capital, Employment, Output, Productivity, and Technical Change in Transport and Communication*

34. This project, which was undertaken by Mr B.M. Deakin and Miss T. Seward (now Mrs T. Liesner) under the general direction of Mr W.B. Reddaway, has been completed. The objectives of the research and its progress were set out in the Sixth and Seventh Reports. The results will appear in Occasional Paper no. 17: *Productivity in Transport* by B.M. Deakin and T. Seward, and in a paper 'Towards a Freight Transport Function' by B.M. Deakin in a forthcoming ASEPELT (Association Scientifique Européenne pour la Prévision Economique à Moyen et à Long Terme) volume: *Europe's Collective Needs*, edited by J.H.P. Paelinck.

#### *International Freight Transport and Shipping Conferences*

35. This research is being undertaken by B.M. Deakin and Mrs T. Liesner under the general direction of Mr W.B. Reddaway. The long-term objective of the project is to throw light on the factors which facilitate or hamper the efficient working of international freight transport by sea.

36. The first phase of the research is concerned with a study of the development of the current system of international overseas freight transport. This is being undertaken in relation to a limited number of routes covered by existing shipping conferences. The policies, including particularly the pricing policies, of shipping conferences are being subjected to detailed and in part comparative study. The financial performance and physical operations of specified shipping companies are being examined for the light such an examination may shed upon some of the economic consequences of conference operation. Attention is being directed particularly towards profitability and to the extent to which conference shipping services meet the demand for international overseas freight transport services as a whole.

37. The project will also include a review of the policies of governments towards shipping conferences and towards the users of the services provided by the conferences.

38. During 1967-68 research has been chiefly concerned with a study of the administered price system operated by conferences and with demand and supply trends in international overseas shipping services on particular routes.

#### *Nationalized Industries*

39. This project, which started as an investigation, by Mr R.W.S. Pryke under the direction of Mr M.V. Posner, of the nationalized industries' investment policies, has developed into a broad survey of their economic performance. The book, by R.W.S. Pryke, incorporating the results of the research is now in its final stages. It covers the nationalized industries' investment policies (chapters 3-5), and examines their production (chapters 1-2), their productivity (chapters 6-10), their prices, profits, and losses (chapters 11-13), and the general problem of whether resources have been misallocated on a significant scale (chapter 14). A feature of the book is the use of international comparisons to throw light on economic performance. In the productivity chapters, for instance, international comparisons are made for coal, electricity, railways, and air transport. It is hoped that the book will be in the printers' hands by the middle of 1969.

#### *Analysis of Patent Statistics*

40. Under the direction of Mr Aubrey Silberston, Mr J.P.P. Higgins has been engaged on the statistical and historical analysis of patents of invention. The data for the project, referred to in

the Seventh Report, have been collected and reclassified for the sample of British industries over the last hundred years.

41. The investigation has involved analysing the relationships between output, investment and profits, and inventive activity (as measured by patents) in the agriculture, paper, railway, and textile industries. These industries have also been examined on the basis of the particular firms and individuals producing new techniques.

42. The results of a quantitative study of a wider range of industries are the subject of a comparative analysis with the studies which have been conducted in this field by research workers in the United States. It is hoped to incorporate this material in an Occasional Paper, now being written, together with the same detailed disaggregative investigations into those particular firms and industries selected as case studies.

#### *Economic Impact of the British Patent System*

43. Work continued on this project under the direction of Mr A. Silberston, in preparation for a second volume on patents in the Department Monograph series. The research is being carried out by Mr C.T. Taylor, who was joined in January 1968 by Miss J.M.P. Bradley. Before her departure in September 1968 Miss Bradley produced a review of the extensive American literature on patenting, industrial structure, etc., which will be valuable material for the forthcoming study.

44. The main feature of the study will be an intensive inquiry into patenting and licensing in five British industries where these activities are of particular significance. Through a combination of questionnaire and interview, a detailed factual picture will be built up of the patent system and the key industrial activities affected by it ('R and D', innovation, patent-based production, licensing, etc.). Furthermore, an assessment will be made of the economic advantages and disadvantages associated with having a U.K.-style patent system. Work on the questionnaire is now at an advanced stage and it is hoped that about fifty selected companies of varying size will have been approached before the end of the year.

#### *Capital Formation and the Stock of Assets in Britain 1830-1960*

45. The object of this inquiry is to explore some of the relationships between capital formation and economic growth in Britain since the beginning of the railway age. It has involved compiling new annual estimates of gross and net capital formation and stock, and gross and net national product for the period 1830-1914, and also of the distribution of the labour force based on the nineteenth-century occupation censuses. An article by Phyllis Deane, 'New Estimates of Gross National Product for the United Kingdom 1830-1914', was published in the *Review of Income and Wealth*, September 1968. It is hoped that it will be possible to publish the results of the labour force analysis in 1969. The analytical results are expected to form the subject of a monograph. Miss P.M. Deane, who is in charge of the inquiry, is undertaking its completion and will be writing up the results in collaboration with the people formerly engaged on the project—Miss B.A. Mercer, Mr M.P. Ward, and Dr B.R. Mitchell.

#### *(b) Industrial Relations and Sociology*

##### *Demarcation Rules and Related Practices*

46. The Sixth and Seventh Reports outlined the aims and progress of this research project, and referred to publications to date. Professor H.A. Turner and Mr G. Roberts expect to have a book ready for publication during the coming year which will contain the final results of this study. The book will survey demarcation practice in the building, shipbuilding, and printing industries, together with controls over 'dilution' in engineering, and will contain some general analysis and comment.

##### *Management Organization and Industrial Relations*

47. This study began in 1967 and is being undertaken by Mr G. Roberts under the general direction of Professor H.A. Turner. It had its origins in other studies recently in progress in the Department which have indicated great divergencies in the labour relations experience of firms operating under broadly similar technical and economic conditions, and also considerable variations in the ways the managements of these firms are organized to deal with labour questions.



48. The initial aim of the study is to obtain a representative picture of how the managements of large firms in private industry are organized for labour relations purposes. An attempt will then be made to compare this information systematically with differences in the labour relations experience of individual firms, in terms of such aspects as disputes, labour turnover, etc. The task of obtaining details of the management organizations of a selection of large private firms is under way, and some preliminary investigation of potential indicators of the state of labour relations at the enterprise level has been made.

#### *Job Evaluation*

49. The aim of this project is an assessment of possible use of job evaluation techniques for national wage and incomes policies. During the year the study was carried forward by Mr Michael Fores under Professor H. A. Turner's supervision: Mr Fores left the Department in September 1968.

50. Accounts of previous studies made in connexion with the project were contained in the Seventh Annual Report, which also noted that since the project was initiated the whole question of the use of job evaluation techniques in British industry had been referred by the Government to the National Board for Prices and Incomes. Much of the data collected for the Cambridge inquiry was supplied to the Board in this connexion, and this assistance is acknowledged in the Board's Report No. 83 ('Job Evaluation'). The Board's Report examines, and makes various proposals for, the use of job evaluation at the level of individual enterprises and industries, but does not investigate closely the feasibility of a standard or universal system. It is anticipated that a publication from the Cambridge survey will relate to this issue, but final conclusion of the inquiry was delayed by the postponement (owing to last summer's events in Czechoslovakia) of certain necessary visits to examine the national wage structure of the communist economies. It is expected that these visits will be made during the early part of 1969.

#### *Labour Problems in Underdeveloped Countries*

51. This study, which began in 1967, is being undertaken by Mr D.A.S. Jackson under Professor Turner's direction. It is being supported by the Ministry of Overseas Development. The broad aim of the study is to consider two questions: first, the relationship between the rate of increase in wages and the level of employment in underdeveloped countries, with a view to assessing the merits of alternative wage and employment policies; secondly, to examine the relationship (if any) between the degree of inequality in pay in underdeveloped economies and the latter's respective rates of economic growth.

52. The study is being made in two main stages. The first stage consisted in a general statistical analysis of the available relevant data from underdeveloped countries, and some comparison with similar data from advanced economies. The second stage will consist largely in a group of case studies in individual countries. As part of the first phase, Mr Jackson has also spent a period working with the International Labour Office in Geneva on the effects of minimum wage-fixing on actual wage levels in underdeveloped countries, and some results of statistical analysis in this respect are to be published as an appendix to a forthcoming Report of the I.L.O. on minimum wages. Arising from the first stage of the inquiry, a paper on comparative trends in wage structure and on the effects of certain varieties of wage-policy in advanced and less advanced economies is to be published in the *British Journal of Industrial Relations* for March 1969.

53. In connexion with the second stage, Professor Turner visited Zambia during the summer, and it is intended that Mr Jackson will visit certain Central American and Caribbean countries in the near future.

#### *Labour Relations in Mining*

54. The objects of this inquiry, which is being conducted by Mr L.J. Handy under Professor Turner's supervision, were outlined in the Sixth and Seventh Reports of the Department, which also refer to the studies and publication already made in connexion with the project.

55. The project is now at an advanced stage, and it is expected that its conclusions will be written up in book form during 1969.

#### *Conditions of Employment of Manual and Non-manual Workers*

56. This is a large-scale study of the nature and extent of differences in terms and conditions of employment among men in manufacturing industry, and is the fact-finding part of the wider

project described in the Fifth and Sixth Reports. The work has been undertaken by Mrs J.C. Craig under the general direction of Mr W.B. Reddaway and Dr R.M. Blackburn in the Department and of Mrs D.E. Wedderburn, now Lecturer in the Industrial Sociology Unit at Imperial College, who acts as a research consultant for the project.

57. A postal questionnaire was sent to a random sample of 815 establishments in manufacturing industry early in the year. 451 questionnaires were completed, a response rate of 55 per cent. Analysis of the replies has produced some interesting descriptive material, showing the kind of variation which exists in the treatment of different grades of worker. A report on these results is now being prepared, and preparations are being made to interview a small sub-sample of firms to fill in some gaps in information.

58. Mrs D.E. Wedderburn has read two papers arising out of the research: 'Are White Collar and Blue Collar Jobs Converging?', in Germany, March 1968, and 'The Conditions of Employment of Manual and Non-manual Workers' to the S.S.R.C. Conference on Social Stratification and Industrial Relations, in Cambridge, September 1968.

#### *Attitudes to Work in Relation to Production Systems and Community Structure: The New Working Class*

59. The results of this project, which has now been completed, appear in the three books mentioned in paragraph 67 of this Report (*Cambridge Studies in Sociology*).

#### *A Comparative Study of Factory Organization*

60. This was a cross-national project carried out in collaboration with colleagues in France, Germany, Italy, and the U.S.A., as described in the Seventh Report. The British team consisted of Dr R.M. Blackburn, Mr J.H. Goldthorpe, and Mr J.M. Mann. Due to the U.S. Government's severe cutting back of research expenditure abroad, it has not been possible to finance the field-work stage on the scale that would have been necessary, and the project is now being concluded with the preparation of a set of essays by the participants. During the year Dr Blackburn, Mr Goldthorpe, and Mr Mann visited Munich for a meeting with the other teams, and Dr Blackburn also attended a meeting in Paris.

#### *Variations in Trade Union Organization Among White-Collar Workers*

61. Dr R.M. Blackburn, Dr K. Prandy, and Mr A. Stewart are engaged on this project, which began in October 1967. The first stage, designed to provide wide-ranging information on the nature and coverage of non-manual occupational associations, is now almost complete, and analysis of the results of questionnaires to associations and a sample of employers has begun. The next stage will involve a more detailed examination of the causes of unionism among white-collar workers as an aspect of their general involvement in employment.

62. An article, 'Those Militant White-Collar Unions', by R.M. Blackburn, has appeared in *Personnel*, 1968. The following conference papers have resulted from the project:

'White-Collar Associations: Organizational Character and Employee Involvement', R.M. Blackburn, K. Prandy, and A. Stewart; delivered to S.S.R.C. Conference, Cambridge, 1968.

'White-Collar Unionization', R.M. Blackburn; delivered to International Conference of Personnel Managers, Cambridge, 1968.

'Developments in Staff Associations', R.M. Blackburn; delivered to I.P.M. Conference, Harrogate, 1968.

#### *(c) New Research Projects*

63. The following new research projects were planned to begin in October 1968, the principal investigators being given in brackets:

*Influence of British Government Policies on Economic Development in the Regions* (Mr W.B. Reddaway).

*Comparative Structure and Scale* (Mr A. Silberston).

*Effects of E.E.C. Entry on the Pattern of British Industry* (Mr H.H. Liesner).

*Economic Implications of Seasonality for Agricultural Development Policies* (Dr T. King).

*Economic Growth and Fluctuations in East Europe* (Dr J. Goldmann and Dr J. Flek).

*Social and Industrial Determinants of Workers' Attitudes* (Dr R.M. Blackburn).



## II. PUBLICATIONS

### Monograph Series

64. This series, which is published by the Cambridge University Press, contains reports of investigations which have been carried out by members of the Department's research staff and others directly collaborating in its work. The titles of the first fourteen volumes were listed in previous reports. No further volumes were published during 1967-68, but the following are expected to appear during 1969:

No. 15. *Planning, Programming and Input-Output Models: Selected Papers with application to Indian planning.* By A. GHOSH.

No. 16. *Biproportional Matrices and Input-Output Change.* By MICHAEL BACHARACH.

### Studies in the National Income and Expenditure of the United Kingdom

65. This series is published by the Cambridge University Press under the joint auspices of the Department and the National Institute of Economic and Social Research. It contains the results of research undertaken in both institutions under the general direction of Professor Richard Stone. Five volumes have appeared and were listed in previous Reports. The sixth and final volume will be published as:

*National Income, Expenditure and Output of the United Kingdom, 1855-1964.* By CHARLES FEINSTEIN.

### Occasional Papers

66. This series, published for the Department by the Cambridge University Press, is designed for the rapid publication of research results which have a topical interest. The following three titles were added in 1967-68 to the twelve listed in previous Reports:

No. 7. *Growth, Profitability and Valuation. A Study of U.K. Quoted Companies.* By A. SINGH and G. WHITTINGTON in collaboration with H. T. BURLEY.

No. 14. *Demarcation Rules in Shipbuilding and Shiprepairing.* By G. ROBERTS.

No. 16. *Productivity and Capital Expenditure in Retailing.* By K. D. GEORGE in collaboration with P. V. HILLS.

### Forthcoming titles:

No. 15. *Effects of U.K. Direct Investment Overseas: Final Report.* By W. B. REDDAWAY in collaboration with S. J. POTTER and C. T. TAYLOR (published in November 1968).

No. 17. *Productivity in Transport. A Study of Employment, Capital, Output, Productivity and Technical Change.* By B. M. DEAKIN and T. LIESNER.

No. 18. *Poverty in Britain and the Reform of Social Security.* By A. B. ATKINSON.

### A Programme for Growth

67. This series, published by Chapman and Hall Limited, describes the progress of the work on economic growth undertaken at the Department under the direction of Professor Richard Stone. Seven volumes were listed in previous Reports. An eighth volume was published in December 1968:

*The Demand for Fuel 1948-1975. A Submodel for the British Fuel Economy.* By K. J. WIGLEY.

### Cambridge Studies in Sociology

68. The Cambridge University Press is publishing this series of monographs, on subjects of both theoretical and social interest, and based on the findings of empirical sociological investigations. The first volume appeared during the year as:

*The Affluent Worker: Industrial Attitudes and Behaviour.* By J. H. GOLDTHORPE, DAVID LOCKWOOD, FRANK BECHHOFFER, and JENNIFER PLATT.

### Forthcoming volumes:

*The Affluent Worker: Political Attitudes and Behaviour.* By J. H. GOLDTHORPE, DAVID LOCKWOOD, FRANK BECHHOFFER, and JENNIFER PLATT (published in December 1968).

*The Affluent Worker in the Class Structure.* By J. H. GOLDTHORPE, DAVID LOCKWOOD, FRANK BECHHOFFER, and JENNIFER PLATT.

### Cambridge Papers in Sociology

69. This series, to be published by the Cambridge University Press, is intended to provide rapid publication of works which are between journal articles and monographs in length. The first two volumes will be:

*Perceptions of Work: Variations within a Factory.* By R. M. BLACKBURN and H. BEYNON.

*Workers' Attitudes and Technology.* By DOROTHY WEDDERBURN and ROSEMARY CROMPTON.

### Reprint Series

70. These are selected papers which members of the Department's research staff and others working in direct collaboration with the Department have contributed to learned journals and other publications. During the year the following sixteen titles, which are listed in alphabetical order of authors, have been added.

ARMSTRONG, A. G. The Motor Industry and the British Economy (*District Bank Review*, September 1967; Reprint no. 275).

BURLEY, H. T. A Programming Language for Linear Algebra (*Computer Journal*, vol. 10, no. 1, May 1967; Reprint no. 270).

EDGE, STEPHANIE. Repayments of Capital on Building Society Mortgage Loans (*Building Societies' Gazette*, December 1967; Reprint no. 280).

GEORGE, K. D. Changes in British Industrial Concentration 1951-1958 (*Journal of Industrial Economics*, vol. xv, no. 3, July 1967; Reprint no. 276).

HANDY, L. J. Absenteeism and Attendance in the British Coal-Mining Industry: An Examination of Post-war Trends (*British Journal of Industrial Relations*, vol. vi, no. 1; Reprint no. 283).

HARCOURT, G. C. Cash Investment Grants, Corporation Tax and Pay-out Ratios (including correction) (*Bulletin of the Oxford Institute of Economics and Statistics*, August 1966; Reprint no. 272).

LEICESTER, C. S. The Causes of the Shoe Trade Cycle; The Cure of the Shoe Trade Cycle; The Consumer and the Shoe Trade Cycle (*Journal of the British Boot and Shoe Institution*, February 1963, November 1963 and May 1964; Reprint no. 278).

LEICESTER, C. S. The Shoe Trade Cycle (*Journal of the British Boot and Shoe Institution*, June 1965; Reprint no. 279).

POTTER, S. J. and TAYLOR, C. T. Foreign Investment: A Reply (*Westminster Bank Review*, November 1967; Reprint no. 277).

REDDAWAY, W. B. Higgledy Piggledy Growth (*Economic Journal*, vol. LXXVII, no. 307, September 1967; Reprint no. 282).

REVELL, JACK. The National Balance Sheet of the United Kingdom (*Review of Income and Wealth*, series 12, no. 4; Reprint no. 271).

ROTH, G. J. An Economic Approach to Traffic Congestion (*Proceedings of the Second International Symposium on the Theory of Road Traffic Flow*, Paris, 1965; Reprint no. 274).

WARD, MICHAEL. Towards a Cashless Society—A Note on Credit Cards (*South African Journal of Economics*, vol. 35, no. 2, June 1967; Reprint no. 273).

WARD, MICHAEL. Credit Card Delinquency (*Bankers' Magazine*, vol. CCIV, November 1967; Reprint no. 284).

WARD, MICHAEL. Economic Independence for Lesotho? (*Journal of Modern African Studies*, vol. 5, no. 3; Reprint no. 285).

## III. OTHER ACTIVITIES

### Seminars

71. During the year eight research papers, of which three were given by visiting economists, have been read at seminars held under the joint auspices of the Department and of the Faculty of Economics and Politics.

72. Eleven papers were given in the series of seminars on Mathematical Economics and Econometrics. Visiting economists contributed five of these.

### University Relationships

73. Many teaching officers of the Faculty of Economics and Politics have directed, or otherwise taken part in, the research projects carried out by the Department. Members of the Department's staff have given lectures or taken classes for the Faculty, and nearly all of them supervise undergraduates studying economics, economic history, or sociology. The Department has provided



Faculty teaching officers with secretarial and computing assistance, as well as advice on electronic programming and data analysis. It has also assisted Research Students attached to the Faculty.

74. The Department has been afforded much-valued computing facilities by the University Mathematical Laboratory, the Financial Board, and the Institute of Theoretical Astronomy.

*Relationships with Other Bodies*

75. Financial assistance which the Department has received from outside bodies is dealt with in Section iv. Help of other kinds has come from many sources, including the National Economic Development Office, the Central Statistical Office, the Ministry of Overseas Development, the Ministry of Labour, the Department of Economic Affairs, the Board of Trade, the Social Science Research Council, the National Coal Board, the Bank of England, the Imperial Institute, and a large number of industrial, shipping and business firms, trade and professional associations, and trade unions.

*Visitors from Abroad*

76. The following economists from abroad have worked in the Department during the year under review:

- Miss Z. Cvijovic of the Federal Planning Bureau, Belgrade, Yugoslavia.
- Mr T. Kivanc of the University of Ankara, Turkey.
- Dr R. Leoni of the University of Florence, Italy.
- Mr B.J. Szybisz of the Central Statistical Office, Warsaw, Poland.

IV. FINANCE

77. The Department's annual expenditure has risen from £96,777 in 1966-67 to £101,568 in 1967-68. Almost 90 per cent. of the expenditure, in both years, was on stipends, wages, and related payments.

78. The annual grant which the University makes to the Department is not increased to take account of increased activities or higher costs. It is increased to allow for higher scales of stipends and wages, but only to the extent of eleven-eightieths of the additional cost of a notional establishment based on that which existed in 1956. Accordingly the University grant rose from £43,183 in 1966-67 to £43,529 in 1967-68, an increase of £346, while expenditure rose by £4,791.

79. The University grant covered only 43 per cent. of the Department's expenditure in 1967-68, as against 45 per cent. in 1966-67.

80. The following are the principal new payments by outside bodies which have been accepted during the year, for payment over various periods; in most cases these payments come as grants in support of specific projects, but in some cases as donations to the Department's Research Account (which can be used for a wide range of purposes, not necessarily connected with any specific project):

	£
Social Science Research Council	24,012
H.M. Treasury	20,000
Central Statistical Office	9,000
British Insurance Association	6,000
11 Clearing Banks	6,000
Engineering Employers Federation	4,500
Columbia University in the City of New York	4,167
Other donors	2,370
TOTAL	<u>£76,049</u>

V. STAFF

81. The permitted number of University posts in the Department has been increased, with effect from 1 October 1968, from thirty-three to thirty-nine, in addition to the Directorship, with the corollary that the Department will no longer be permitted to employ any additional graduate research workers on an unestablished basis. The authorized establishment of assistant staff remains at thirty-three.

*Research Staff*

82. The research staff at September 1968 was as follows:

*Director:* Mr (now Professor) W.B. REDDAWAY, M.A. (Cantab.), F.B.A., Fellow of Clare College.

*Special Appointments:* Mr M.L.O. FABER, M.A. (Cantab.), B.A. (Oxon.); Miss L.J. SLATER, Sc.D., Ph.D. (Cantab.), D.Litt., Ph.D., M.A. (London), Fellow of Lucy Cavendish College.

*Senior Research Officers:* Mr R.M. BLACKBURN, M.A. (Cantab.), Ph.D. (Liverpool), Fellow of Clare College; Mr B.M. DEAKIN, M.A. (Cantab.), M.A. (Oxon.), Fellow of Magdalene College; Mr J.R.S. REVELL, M.A. (Cantab.), B.Sc. (Econ.) (London), Fellow and Senior Tutor of Fitzwilliam College.

*Research Officers:* Mr A.G. ARMSTRONG, M.A. (Cantab.), Fellow of Selwyn College; Mr H.T. BURLEY, Ph.D., M.A. (Cantab.), B.Econ. (Adelaide); Mrs J.C. CRAIG, M.A. (Cantab.), B.Sc. (London); Mr M.J. FORES, B.A. (Cantab.); Mr O.T. HOOKER, M.A. (Cantab.), B.Sc. (Econ.) (London); Mr J.R.C. LECOMBER, B.A. (Oxon.), Research Fellow of Clare College; Mr C.S. LEICESTER, M.A. (Cantab.); Mrs T. LIESNER, M.A. (Cantab.), B.Sc. (Econ.) (London); Mr K. PRANDY, M.A. (Cantab.), Ph.D. (Liverpool), B.Sc. (Econ.) (London), Fellow of Fitzwilliam College; Mr C.F. PRATTEN, B.A. (Bristol), Fellow of Trinity Hall; Mr G. ROBERTS, M.A. (Econ.), B.A. (Comm.) (Manchester); Mr A.R. ROE, M.Sc. (Wales), B.Comm. (Leeds); Mr C.T. TAYLOR, M.A. (McGill); Mr M.P. WARD, M.A. (Cantab.), B.A. (Exeter); Mr G. WHITTINGTON, M.A. (Cantab.), B.Sc. (Econ.) (London), Fellow of Fitzwilliam College; Mr K.J. WIGLEY, M.A. (Cantab.).

*Junior Research Officers:* Mr T.S. BARKER, M.A. (Cantab.), M.A. (Edin.), Fellow of Downing College; Mr C.H. FLETCHER, B.A. (Exeter); Mr M.J. GREEN, M.A. (Cantab.), B.A. (Exeter); Mr L.J. HANDY, M.A. (Cantab.), B.A. (Leeds); Mr J.P.P. HIGGINS, B.Sc. (Econ.) (London); Mr D.A.S. JACKSON, B.A., B.Phil. (Oxon.), Mr J.M. MANN, B.A. (Oxon.); Mr A. STEWART, B.Sc. (Econ.) (London).

*Research Consultants:* Mr D.E. MOGGRIDGE, B.A. (Toronto), Research Fellow of Clare College; Mr J.P. MOYLE, B.Sc. (Manchester), F.R.I.C.S.; Mr F.E. TOWNSON.

83. The following, although not formally holding University posts in the Department, are closely associated with the Department's research activities:

*Faculty Teaching Officers*

- Mr P. ABRAMS, Ph.D., M.A. (Cantab.), Fellow of Peterhouse, University Lecturer in Sociology.
- Mr A.B. ATKINSON, B.A. (Cantab.), Fellow of St John's College, University Assistant Lecturer in Economics.
- Miss P.M. DEANE, M.A. (Cantab.), M.A. (Glasgow), Fellow of Newnham College, University Lecturer in Economics.
- Mr C.H. FEINSTEIN, Ph.D. (Cantab.), B.Comm. (Witwatersrand), Fellow of Clare College, University Lecturer in Economics.
- Mr K.D. GEORGE, M.A. (Cantab.), M.A. (Wales), Fellow of Sidney Sussex College, University Lecturer in Economics.
- Mr J.H. GOLDTHORPE, M.A. (Cantab.), B.A. (London), Fellow of King's College, University Lecturer in Sociology.
- Mr T. KING, M.A. (Cantab.), Ph.D. (California), Fellow of Queens' College, University Lecturer in Economics.
- Mr H.H. LIESNER, M.A. (Cantab.), B.A. (Bristol), Fellow of Emmanuel College, University Lecturer in Economics.
- Mr R.L. MARRIS, Sc.D., M.A. (Cantab.), Fellow of King's College, University Lecturer in Economics.
- Mr B.R. MITCHELL, Ph.D. (Cantab.), M.A. (Aberdeen), Fellow of Trinity College, University Lecturer in Economics.
- Mr A. SILBERSTON, M.A. (Cantab.), Fellow of St John's College, University Lecturer in Economics.
- Mr A. SINGH, M.A. (Cantab.), M.A. (Howard), B.A. (Punjab), Fellow of Queens' College, University Lecturer in Economics.



Professor RICHARD STONE, C.B.E., Sc.D., M.A. (Cantab.), F.B.A., Fellow of King's College,  
P.D. Leake Professor of Finance and Accounting.

Professor H.A. TURNER, Ph.D. (Manchester), M.A. (Cantab.), B.Sc. (Econ.) (London), Fellow  
of Churchill College, Montague Burton Professor of Industrial Relations.

#### *Other Research Associates*

Mr F. BECHHOFFER, M.A. (Cantab.).

Professor D. LOCKWOOD, M.A. (Cantab.), Ph.D. (Econ.) (London), B.Sc. (Econ.) (London).

Miss B.A. MERCER, M.A. (Toronto), B.A. (McGill).

Miss J.A. PLATT, B.A. (Cantab.), M.A. (Sociology) (Chicago).

Mr E.J. ROBERTSON, M.A., M.Ed. (St Andrews).

Mrs D.E. WEDDERBURN, M.A. (Cantab.).

84. During the period covered by this Report the following members of the research staff  
left the Department to take the posts mentioned in brackets:

Mr E. BENNATHAN, M.A. (Cantab.), M.Com. (Birmingham), Senior Research Officer. (Chief  
of the Survey and Special Analysis branch of the Economic Commission for Asia and the  
Far East.)

Mr B.R. MITCHELL, Ph.D. (Cantab.), M.A. (Aberdeen), Senior Research Officer. (University  
Lecturer in the Faculty of Economics and Politics.)

Mr D.R. GRAY, M.Sc. (Econ.) (London), Research Officer. (Lecturer in Economics, City  
University, London.)

Mr P.V. HILLS, B.Sc. (Econ.) (Southampton), Research Officer. (Principal at Department of  
Economic Affairs.)

Mr A.R. JOLLY, M.A. (Cantab.), Ph.D. (Yale), Research Officer. (Post at the Institute of  
Development Studies, University of Sussex.)

Mr S.J. POTTER, M.A. (Cantab.), Research Officer. (Economic adviser at the Organization  
for European Co-operation and Development.)

Mr R.W.S. PRYKE, B.A. (Oxon.), Research Officer. (Lecturer in Economics, University of  
Liverpool.)

Miss J.M.P. BRADLEY, B.A. (Oxon.), Junior Research Officer from 1 January 1968 to 31  
August 1968. (Sub-editor at Cambridge University Press.)

#### *Assistant Staff*

85. The following is a list of the assistant staff at September 1968:

*Secretary:* Mr H. LOSHAK.

*Administrative Officer:* Mr R.C. LAWRENCE.

*Librarian:* Miss O.E. HICKSON.

*Secretarial and Clerical Staff:* Mrs L.E. SILK (Senior Typist); Miss J.S. BURSEY; Miss J.M.  
CHAPMAN; Mrs J.R. CONNOR; Miss C.A. HUDSON; Miss L.M. NEWMAN; Miss P. RAYMENT;  
Mrs J.E. REITTER; Miss V.A. SHATFORD; Miss A.C. TWYMAN.

*Computing and Statistical Staff:* Miss M.R. CLARKE (Senior Computer); Mrs J.G. BOTTRELL;  
Mr E.D. BOUGOURD; Mrs L.J. CAMERON; Miss C.M. COUSINS; Miss D.M. DAY; Mrs M.J.  
GRIBBIN; Miss R. LEVERETT; Mr J.S. O'DONNELL, B.A. (Cantab.); Mrs P.A. POLLITT, B.A.  
(Melbourne); Miss S.D. SEAL; Mr B.A. SEWELL, B.A. (Cantab.); Mrs U.D.W. SURIYAARACHCHI,  
B.A. (Econ.) (Ceylon); Miss T.A. WARREN.