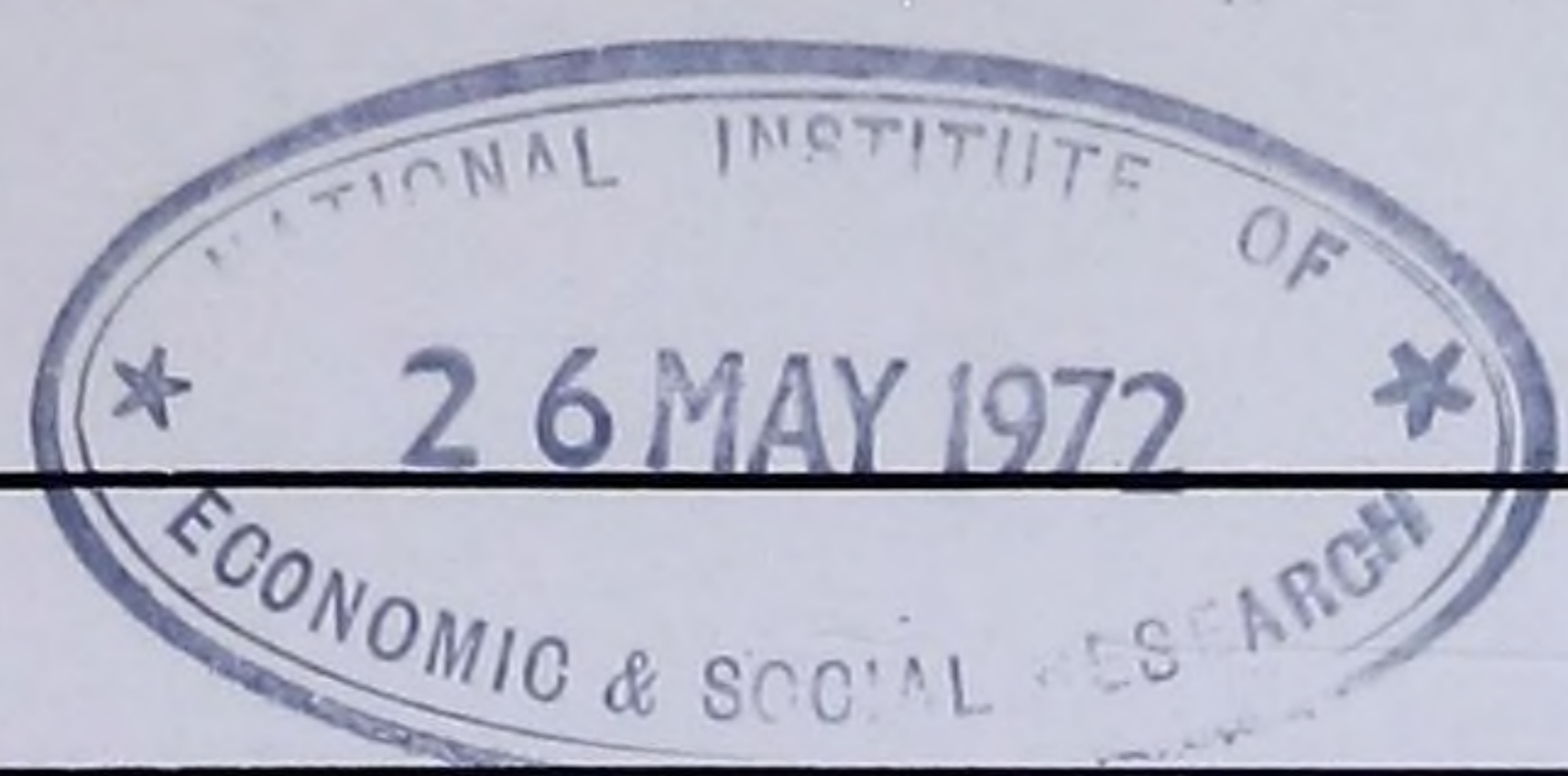


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STATISTICAL NEWS

Developments in British Official Statistics

A publication of the Government Statistical Service

Note by the Editor

The aim of *Statistical News* is to provide a comprehensive account of current developments in British official statistics and to help all those who use or would like to use official statistics.

It appears quarterly and every issue contains two or more articles each dealing with a subject in depth. Shorter notes give news of the latest developments in many fields, including international statistics. Some reference is made to other work which, though not carried on by government organisations, is closely related to official statistics. Appointments and other changes in the Government Statistical Service are also given.

A full, cumulative index provides a permanent and comprehensive guide to developments in all areas of official statistics.

It is hoped that *Statistical News* will be of service and interest not only to professional statisticians but to everybody who uses statistics. The Editor would therefore be very glad to receive comments from readers on the adequacy of its scope, coverage or treatment of topics and their suggestions for improvement.

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Notes by the Editor
MAY 1972

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The Survey of Personal Incomes

F. R. L'Aiguille, *Statistician, Board of Inland Revenue*

Introduction

The surveys of personal incomes were started after the war with the year 1949/50 which was the first of the series of quinquennial surveys. Since 1962-63 this series has been supplemented by smaller annual surveys in order to keep pace with the changing size and pattern of incomes. The detailed results of all the surveys, up to 1966-67, have been published in the Annual Reports of the Board of Inland Revenue; the 1967-68 and 1968-69 results were published in *Inland Revenue Statistics*, and the 1969-70 results will be published in a separate report this spring.

This article is designed to supplement the separate detailed report of the survey for 1969-70 but not to reproduce any of the statistics given there.

The main purpose of the income survey is to provide a firm basis for the budgetary forecasts and for estimating the effect on revenue of changes in the rates of tax and allowances. The surveys yield a considerable amount of detail such as analyses by region, by range and type of income and by family circumstances. All of these factors have considerable economic and social significance.

Coverage

The surveys cover only incomes as defined for tax purposes. This determines the income unit, and in turn the sampling unit, as well as the types of income covered. The income unit is not a household or a family as such, but consists of a single person or a married couple who count as one. A child with income of his own, not being investment income in 1969-70 or income derived from a parent in any earlier year, is treated as a separate unit and children are counted as dependants only if they qualify for child allowances. A part-year income - for example, on starting work, in year of death, or for a woman in her year of marriage - is counted as a whole unit. The survey does not cover incomes below the effective exemption limit. Moreover the income covered, being income as computed for tax purposes, excludes non-taxable income such as the first £15 (now £21) of Savings Bank interest, certain National Insurance benefits and income received in

kind. In general, the incomes covered relate to incomes earned or received in the year, but for business profits and professional earnings they normally refer to those arising in the trading account ending in the previous year.

The imperfections in the sampling frame are overcome by excluding selected cases where reports are unnecessary, such as cases limited to income from a subsidiary source, non-residents and where back duty enquiries are in progress. The next step is taken when completed reports are received from districts for analysis. On receipt at the computer centre all reporting forms are edited clerically to ensure that they belong to the stratum from which they have been selected; one error often found is the single female who ought to have been counted as a married woman for the whole year. Editing is also carried out on the board's computer at Worthing which is programmed to ensure that for each report the reliefs and deductions correspond with the income. Some 100 computer tests are applied systematically to separate the inconsistent cases (some 160,000 for 1969-70) which are then referred back to districts for amendment - 91 per cent of all these amended cases were subsequently accepted as valid for 1969-70.

The sample totals are first grossed up by the raw sampling fractions and these results are adjusted to the known totals such as the PAYE income and the income tax and surtax due for the year. There are, at this stage, two main deficiencies in the figures of income above the exemption limit, viz.

- a. A deficiency in the earnings of working wives. This deficiency is corrected by using a separate sample of working wives and matching these with their husbands' earnings. The ensuing two-way classification is used to estimate a correction for the deficiency in the original data.
- b. A deficiency in investment income, which is believed to be due partly to the reporting by districts of the previous year's dividends. This practice was thought to be the main reason for the excessive total investment income shown in the 1966-67 Income

Survey when the unusually large dividends paid in 1965–66 (in anticipation of the introduction of Sch. F) exceeded those paid in 1966–67. It is also known that nearly one-third of the net Building Society interest received is not reported, probably because it is free of income tax and therefore the recipients see no need to report it. These deficiencies were corrected somewhat arbitrarily in successive income surveys up to and including 1965–66 but because the adjustment was then found to be unsatisfactory it has not been made since. It must be borne in mind, however, that in the later uncorrected surveys, the deficiency resulting from non-reporting of investment income mainly affects the lower incomes for which a surtax return of total income is not required; whereas the deficiency from reporting the investment income of an earlier year affects all ranges and may be more important among the higher incomes.

Selection and processing

The population sampled consists of all units with incomes above the deduction card limit as defined for tax purposes. Income (which is not defined in the Statutes) is classified under various schedules, e.g. wages and salaries under Sch. E and trading profits under Sch. D. This classification provides a ready made frame for stratification. Reports are made by all the 750 tax districts of the Inland Revenue. The system of records held in the Surtax office (where all surtax payers have hitherto been assessed centrally) provides a separate but imperfect stratum and the resulting reports have to be corrected to exclude, for example, the income of non-residents and duplications, (e.g. subsidiary incomes) as the selection process proceeds.

The various strata differ both in size and in variability, which in the case of the surtax stratum, is very large. The sample is therefore drawn systematically from each stratum with variable sampling fractions. In a quinquennial survey these range from 1 in 1 in the higher surtax brackets to 1 in 60 in the lower Sch. E income brackets. The sample comprises approximately 1 million cases for a quinquennial survey and about 125,000 cases for an annual survey. The selection process starts in tax districts as soon as a financial year ends (e.g. on 6 April 1970 for the 1969–70 survey) at the same time as the district records are being counted for administrative purposes. A random start determines the first member of the sample for each stratum and all other members are selected at regular intervals determined by the sampling fraction. The total numbers selected are checked against known totals, the sampled records are marked, and a control list is kept under the super-

vision of a single officer in each local office. A form recording details of income and allowances is completed as soon as possible after figures are available or assessments agreed and then it is submitted to the computer section in Worthing to be edited, vetted and processed. Completion and submission of forms continues until February of the next year when nearly 96 per cent of the forms have been received, the remaining 4 per cent being mainly late returns or files not found. The reporting form (known as Form X) contained 54 items in 1969–70. These covered income and deductions, and all personal circumstances, such as the number of children and their ages, the taxpayer's marital status and his allowance for life assurance. These details were supplemented by a reference section giving the district serial number, the taxpayer's place of residence (in code showing his county and standard region) and whether the taxpayer (or his wife) was over 65 and thus qualified for the special reliefs for the elderly. The reference section is nearly all pre-coded and the name of the individual does not appear on the form which therefore becomes completely anonymous when it leaves the tax district.

Analysis

The basic unit of classification of personal incomes is the total net income, i.e., income from all sources subject to tax after making certain deductions but before deducting personal allowances and tax.

The incomes so classified are confined to those above the effective or actual exemption limit – which, for example, was £135 per annum in 1949–50, £180 per annum in 1959–60, £330 per annum in 1969–70.

Taxpayers are classified by marital status and by sex, distinguishing the married couples where both spouses earn. Special cases, like pensioners and aged people, are analysed separately.

A list of totals of all the items on the reporting form is the first analysis to emerge from the computer and this gives the distribution, by ranges of total net income, of all items of income and deductions analysed by status. A subsidiary analysis gives figures for the four countries and all standard regions and counties within the UK. The number of analyses varies from year to year, because certain breakdowns which cannot be attempted in an annual survey become statistically viable in the quinquennial surveys.

The total number of units and the tax payable shown in the final results are virtually correct as the non-response and non-coverage, both relatively small, are corrected by grossing to known control totals, but there

are sampling errors in the numbers in each range as well as in the amounts; these standard errors are published. They show that the error was probably less than 0.6 per cent in all the ranges below £3000 and less than 1.0 per cent in the higher ranges.

The detailed analyses of the composition and distribution of personal incomes are published elsewhere but certain interesting facets can be mentioned here. The figures quoted relate to 1969-70.

Total net income was made up of earned income and investment income in the ratio of 14:1. Eight-ninths of this earned income was income from employment, which explains the growing importance of the PAYE machine; but employment income is more complex in character than might at first be thought.

Out of the total 21.7 million, 18.3 million tax units had income from employment as their main source, yet only 10.6 million of these had another source of income either from a subsidiary employment, self-employment, a pension or in the case of a married couple, wife's earnings. The importance of wives' earnings over the years is highlighted by the fact that they have grown from 2.7 per cent of total gross income in 1949-50 to 8.3 per cent in 1969-70. One out of every three wives covered by the survey had earnings, the largest number being in the £1500-£2000 range of joint income. On average a wife with earnings supplemented her husband's income of £1310 by £480 and this average ratio varied little over the income ranges.

The proportion of tax units with investment income among the elderly, is three times the national average and among the single persons (many of whom are also elderly) the proportion for single females is twice that for single males. It should be noted that investment income in the survey covers all income that is not treated as earned income. It therefore includes annuities, income under covenant and maintenance payments as well as income from rents, dividends and interest.

The median total net income (excluding those below £330) was £1172 for the UK and not surprisingly it was higher than this in the West Midlands and the South Eastern Regions.

Appraisal of the Surveys

The distribution of money income among members of a community is a subject of widespread interest and is important for economic analysis because of its relevance to the patterns of consumers' expenditure and personal savings.

The Survey of Personal Incomes has been criticised, particularly by economists, on three main scores. First the unit used is the income unit for tax purposes which has a number of limitations; for example it can be affected by changes in the marriage rate, since two single people with low incomes can suddenly become one unit with a high income. This factor has grown particularly important with the increasing tendency of wives to go on working after marriage. The total income of a unit may be larger than shown because of unreported low earnings of dependent children or adolescents or of married women working part-time. Consequently it has been argued that a more useful unit for an income analysis would be the household. But most of the information missing from the income surveys is not available to the tax authorities and, in any case, it can be argued that the choice of unit depends primarily upon what use is to be made of the figures and there are a number of uses for which the income tax unit is the most appropriate.

Secondly, the definition of income 'as defined for tax purposes', leaves out all income exempt from tax. Some authors have contended that the undistributed profits of corporations (which they regard as belonging to the private sector) should be included in the distribution of incomes and others that the coverage should correspond to the personal sector as defined for national income purposes which includes a great number of other elements of total personal income. But, as with the definition of the unit, the figures come from the tax records and this determines the income covered. Attempts have been made in the past (e.g., in the National Income Blue Books) to add back some of the income omitted from the income survey into the distributions. The omitted elements include the non-taxable income and investment income mentioned above, and income below the exemption limit. However, the estimates of the amounts involved and where they belong in the distribution have gradually become less secure over the years. The missing elements of non-taxable income are made up, in large part, of non-taxable national insurance benefits and grants, both of which have increased substantially over the years thereby becoming more difficult to allocate to particular ranges of income. Moreover, the experience of 1966-67 (see above) threw a lot of doubt upon the adjustments made hitherto. A further difficulty is that the National Income Blue Book analyses related to the calendar year whereas the income survey related to a financial year and the translation from one to the other was not straightforward.

The treatment of a number of items of income (e.g., pensions) differs in the Blue Book from the treatment

for tax and adjustments cannot satisfactorily be made for this. Moreover, it is debatable whether the Blue Book definition of personal income is more appropriate in all cases than the Inland Revenue definition. For example, it may be more useful to treat pensions as income in the hands of the retired than accruals to the gainfully occupied. These considerations lead to the conclusion that, although there may be many possible definitions of income and of income units, it is only on the basis of income tax treatment that accrual figures of the income distributions exist. To produce an estimate of the distribution according to another set of definitions inevitably involves a great deal of arbitrary allocation in the absence of a firm base. Even when all adjustments had been made in the past, there was usually some 15 per cent of income which could not be allocated by ranges so that the resulting distributions may well not have been unbiased.

These were the reasons why the estimated income distributions were dropped from the Blue Book, leaving only the distributions published by the Inland Revenue. The concepts of the two distributions are different but the Blue Book distribution was not entirely satisfactory and was deteriorating. The Survey of Personal Incomes on the other hand gives results which are consistently defined over the years and which cover a large proportion of any reasonable concept of income. Different definitions of personal income may alter the shape of the distribution but they will not alter the conclusions that can be drawn from a statistical series which has suffered no major upheaval in twenty years. Consequently, the trends depicted by the surveys over the years are significant and valid. On the other hand it must be admitted that no account can be taken of the effects of large changes in the importance of non-taxable income that may result for example from a vast increase in unemployment.

The other main criticism of the income survey has been that taxpayers have usually been classified regionally by their place of work and not their residence. This has been altered in 1969-70. This change had the effect of altering the relative importance of different areas from that shown in the past but the new criterion is thought to be more appropriate for most uses.

Use of official statistics in firms and Profit from Facts

P. J. Stibbard, *Statistician, Central Statistical Office*

As regular readers of *Statistical News* will appreciate, the output of the Government Statistical Service, in terms of the acreage of published statistical tables and variety of subjects, is considerable. This output is of course primarily for the needs of government, and the day to day involvement of government statisticians in the work of departments keeps us in very close touch with these needs. However, users of our products outside central government – businessmen, local government, academics, the media – could, with some justification, feel that traditionally we have been, what is called in management consultant circles, a production-oriented organisation. In the last few years several steps have been taken to remedy this. The introduction of *Statistical News*; the setting up of a press and information service in the CSO; participation in exhibitions; the Statistics Users' Conferences – the third of which took place last month; the work that has started on a comprehensive guide to official statistics – all these developments and others should increase the benefits that a rather limited public receives from government statistics.

Increase in users

Perhaps three stages of development can be identified in the relationship between users of official statistics and the statistics themselves: first, knowledge that particular data exists; second, the use of data in 'desk' research to aid decisions; and third, feedback to government statisticians on the usefulness and interpretation of data for particular purposes. As far as the business community is concerned, probably several thousand people in the country are at the first two stages and perhaps a few hundred at the third. With the developments listed above, it is the aim of the Government Statistical Service to continue to improve the service given to all these people but another aim, just as important, is to see their numbers increased. This is not only because we presume to believe that businessmen would make better decisions if they made more use of available statistical information. Another reason is that among the business community, government statisticians are seen primarily as imposers of a burden of form-filling, rather than as providers of information.

We should like to see this balance redressed not merely for the sake of improving our image, but also because we believe better and more timely statistics will be forthcoming if businessmen can appreciate a connection between putting figures on forms and the provision of useful information from aggregated statistics.

It may well be that in the long run any substantial increase in the number of firms using official statistics will depend largely on the level of numeracy and the extent of the adoption of planning techniques. In the short term, however, we believe there exists a sizeable number of businessmen who would use these statistics if they were better informed on what is available – and where to find it. The CSO is exploring several ways of reaching these people but a start was made when *Profit from Facts* was launched in October last year. This is a 36-page booklet, free on request, intended to demonstrate some of the uses that can be made of official statistics in the day-to-day running of firms, and meant primarily for the proprietors and managers of small and medium sized firms. The booklet, based on a similar publication issued in Canada in the mid-60's, puts the case for using readily-available statistical material in planning and decision-making, shows by means of 13 case studies how firms have used official statistics, explains some jargon, and describes publications and services. Work started on it in 1969 when a programme of visits to firms was arranged to discover the uses they made of government statistics. Visits to about 25 firms were made and from these were developed the case studies which make up the core of the booklet.

Large demand

At the time of writing some 37,000 copies have been distributed. Nearly all have been accompanied by a copy of the revised edition of the leaflet *Government Statistics for Industry*, which indicates the departmental source for each major area of statistics, together with telephone numbers to call for further information and advice. From an analysis carried out in mid-January after 32,000 copies of *Profit from Facts* had been despatched, we estimated that about three-quarters found their way into the hands of people in

firms, the remainder going to individual members of the public, full-time students, public libraries, etc.

Various methods of publicity and distribution were used in the initial campaign. A leaflet with a tear-off application form was sent to 41,000 establishments on the Business Statistics Office's manufacturing register in the 25-499 employee range; this resulted in 8,500 requests (an analysis of a sample of these showed that requests came from firms of all sizes within this range - there was very little bias towards the larger firms). Over 1,000 sample copies were mailed to chambers of commerce, trade associations, professional and managerial organisations, and the trade press, and the publicity from this resulted in a further 7,800 requests by mid-January. Another 3,000 have been distributed by the regional offices of government departments, by Industrial Liaison Officers, by the Business Statistics Office itself and the Department of Trade and Industry's Statistics and Market Intelligence Library. A large demand came from educational establishments - by mid-January 5,700 had been distributed to colleges of further education, polytechnics and universities for use in courses in marketing, business studies and business administration.

It is our hope that the booklet has brought many thousands of people to the first of the three stages mentioned above by making them more aware of the possibilities of using government statistics in business decisions. However, how many have reached the second stage - the use of statistics - is a difficult thing to measure and any tangible results will be long-term. We shall be watching sales figures of *Business Monitors* although trends are masked by the effects of a wide circulation of sample free copies associated with the change-over to the new system of industrial statistics. Another service given prominence in *Profit from Facts* is the Bill of Entry Service of HM Customs and Excise. They have found in the past year a continued growth in demand for their services, although how much of this is due to the possibility of EEC entry is not known. Compared with a year ago, the number of telephone calls and letters reaching the CSO's enquiry service has increased by well over 50 per cent (there are now on average 70 telephone calls a day). Some of this increase is certainly due to the *Profit from Facts* operation.

Next edition

There is still scope for further distribution of the current edition and a second reprint of 20,000 copies has been ordered. Eventually it will be revised however and we welcome criticisms and suggestions to take

account of in the next edition. Copies of the booklet can be obtained from the Press and Information Service, Central Statistical Office, Great George Street, SW1P 3AQ. Telephone: 01-930 5422 Ext. 602.



The Government Statistical Service displays its wares at the *Infofair* exhibition in Imperial College, London. Statisticians from several departments answered questions over three days on the whole range of data available from government sources. Increasingly GSS staff are finding opportunities to meet users of official statistics at conferences and exhibitions of this kind.



Operators preparing punched paper tape for the 1906 computer complex at the new Business Statistics Office building in Newport.

Post-Census Survey on the Census of Production for 1970

S. R. Curtis, *Assistant Statistician, Business Statistics Office*

Background to the Post-Census Survey

The 1970 Census of Production was the first in a new series of censuses which will be held annually as part of the new system of industrial statistics outlined in an article by J Stafford in *Statistical News* 1.7; provisional results of this census were published in *Trade & Industry* for 23 December 1971 and final results will be published in a special series of *Business Monitors* during 1972. A census form was sent out at the beginning of 1971 which asked for summary information about employment, wages and salaries, stocks, capital expenditure, payments for work given out and for transport, purchases and sales. The census questionnaire was sent to about 50,000 manufacturing establishments; the provisional results were based on returns from 30,000 of them, accounting for over three-quarters of total employment in manufacturing industry.

An informal inquiry has now been conducted by the Business Statistics Office into the results of the census. This inquiry – the Post-Census Survey – was the first of its kind into a production census in this country. Its aim was to discover from a sample of firms who responded to the 1970 Census of Production whether they used the results of the census and other official statistics; to discuss with them whether the design of the questionnaire had succeeded in minimizing the burden on industry of providing the information asked for in the census; and to obtain guidance about the accounting conventions and the methods firms used in providing the census information. A sample of 101 firms for interview was drawn by selecting on each of 5 days, roughly 4 weeks apart from mid-May to mid-September 1971, about 20 of the firms returning questionnaires on that day. Thus the sample was stratified by speed of response. An element of stratification by size was introduced; about half the firms selected employed between 200 and 499 persons, and the remainder employed 500 or more; care was taken to see that a range of industries was represented. Of the sample of 101, 7 declined to take part in the survey. The remaining 94 between them employed some 110,000 people. The interviews were shared amongst 35 members of the Government Statistical Service and officers

in the regional offices of the Department of Trade & Industry. A briefing meeting preceded the programme of interviewing and interviewers were asked to follow a schedule of questions which had been drawn up with the assistance of the Office of Population Censuses and Surveys, and the Accountancy Services Division of the Department of Trade & Industry; and the Statistics Working Party of the Confederation of British Industry was consulted about the inquiry. The firms interviewed were given notice, before the visit, of the questions.

Use made of Official Statistics

The new system of industrial statistics, which includes the new series of annual censuses of production, is designed to provide information which will help industry as much as possible besides meeting government needs. Various recent publications, such as the Central Statistical Office's *Government Statistics for Industry* and *Profit from Facts* and the Business Statistics Office's *The 1971 Retail Census and You* have been brought out to encourage industry to make use of official statistics. In line with this it was hoped that the Post-Census Survey would throw light on the extent to which official statistics were used. The firms interviewed were asked what official statistics they used, and for what purpose; if no use was made of official statistics, they were asked why.

Answers to these questions reflected a problem commonly faced in the collection of official statistics. The demand for statistics from business comes mainly from sections engaged in market research, production control etc., but statistical questionnaires are usually completed by company accountants and secretaries who habitually make little use of official statistics and often look on statistical inquiries as a cost from which no direct benefit is derived. They are often unsure of the uses made of official statistics elsewhere in their organisation. While it seemed important where possible to hold the interviews with those who had signed the completed census of production questionnaires, 60 per cent of whom were accountants or financial directors and another 30 per cent secretaries of the firms concerned, in many cases they were not directly involved in

the use made by their firms of official statistics. In addition, the establishment covered by answers to the census questionnaire often formed part of a group of companies whose market research was conducted by the group's head office (or elsewhere in the group). In such cases those interviewed did not know what official statistics, if any, were used within the group. But to the extent that they had such knowledge, they said that the most used series were the retail price index numbers and earnings statistics (used in wage negotiations) and production statistics (used for market share analyses). Two firms used population statistics to forecast growth in markets. Of the 94 respondents interviewed, 38 knew that their firm used at least one source of official statistics. In 6 cases the use of census of production reports was mentioned, and the *Business Monitor* series was referred to on 17 occasions.

The remainder were asked why no use was made of official statistics. Among the comments made was that the statistics were insufficiently detailed or were too out of date. The new system of industrial statistics is designed to meet the first of these criticisms as it will provide much more detail about product sales of each quarter than has been available in the past. On the question of timeliness, the Government Statistical Service is seeking to speed up the time taken by firms to complete and return questionnaires; an article by C. A. Moser mentioning this problem appeared in *Statistical News* 16.1. The Business Statistics Office is looking at computerized methods of identifying key contributors whose returns it is most worth making an effort to collect, and at imputing figures for late responders.

Some comments were made that statistics published by trade associations were more relevant to the firm's needs than official series, though often of course trade association statistics are derived from official sources like the *Business Monitors* and the *Monthly Digest of Statistics*. Some firms – mainly smaller ones – felt no need to use statistics in an attempt to extend the market for their goods; for example, a firm making electronic equipment and one making heating appliances said that demand for their products was expanding faster than their capacity. It was sometimes said that official statistics were no help in the search for markets but it was clear that those interviewed were often not aware of official statistics which related to their industries. Occasionally the interviewer was invited by the firm to provide them with examples of such statistics and this has been done.

The costs of providing census information

The questions asked in the 1970 Census of Produc-

tion had been discussed at length in the Census of Production Advisory Committee (appointed under the Statistics of Trade Act 1947 under which the census was conducted). The membership of the committee includes, besides official statisticians, representatives of small and large firms, of the accounting profession, the universities and the trade unions. Care was taken to ensure that the questions asked could, as far as possible, be readily answered from the accounts which most firms keep in the normal course of their business. Also the questionnaires were kept as simple as possible to understand and to complete. Thus it was hoped that the cost to industry of providing information and to the Government Statistical Service of processing it would be kept to a minimum in relation to the value of the statistics provided. To obtain further information on this, the Post-Census Survey asked firms how long they had spent on the census questionnaire; what questions if any had caused them particular difficulty; and for comments on the design of the form.

Of the 94 firms interviewed more than one-third had spent less than one man-day in completing the census questionnaire and another quarter of them less than 2 days. Larger firms tended to spend rather longer than the smaller ones. Fifteen firms, of which 12 employed 500 or more persons, took 5 man-days or more. Amongst them, one firm found the questionnaire difficult because it was the first of its type and expected to be able to fill in subsequent forms more quickly. Two had submitted returns covering a number of production units and said that it was the collation of returns from these units which proved time-consuming, while one respondent thought the definitions used on the form were not appropriate to the industry in which the firm was engaged.

Some of the items requested ran counter to the accounting practices of some of the firms interviewed which were therefore unable to provide figures directly from their accounts and had to make estimates. Twenty-one firms had estimated the split of transport payments between road and other services, and 14 had estimated their total purchases or the amounts payable for work given out. Half of the firms were able to get all the figures asked for directly from their summarized accounts, and no firm had to make more than 2 or 3 estimates. Where estimation was necessary, most firms thought that any errors involved would be below 5 per cent.

There was general approval for the design of the questionnaire and of the treatment of notes about the questions. These were included in the body of the form and were not separated from them at the end of the

form or in a separate booklet. Nearly everyone approved of this and 77 of the 94 respondents had found them clear and easy to follow; but 6 had thought the opposite.

Technical aspects of questions in the Census of Production 1970

Another aim of the Post-Census Survey was to throw light on the accounting methods and conventions firms used, since knowledge of these factors is important for the interpretation of the statistics. Among the technical questions discussed during the interviews were the extent to which head offices and other non-production departments had been covered by the answers to the 1970 Census of Production questionnaire; methods used in the valuation of stocks (including the treatment of jigs, dies and loose tools); the period covered by the return; the allocation of output between different factories when a single return covered two or more of them; and problems of providing details of materials purchased.

The notes to the census questionnaire stated 'You should *exclude* from all sections details of any department *not* engaged in production, (e.g. merchanting, transport, warehousing etc.) for which you keep a separate set of accounts. If, however, there are any non-production activities for which you do not keep separate accounts, you should *include* details of all these activities in *all* sections of the return'. When asked which non-production departments (other than head offices) they had included in their return, a number of those interviewed said that the return covered all their activities, while others specifically named transport and sales departments as ones whose activities were included. There were 14 firms which had excluded the activities of non-production departments (excepting head offices) including 3 which had excluded their retail outlets, 3 their sales departments, and 2 their laboratories. The Post-Census Survey revealed that the note on the census form about the treatment of head offices has sometimes led to an inconsistency in the way their activities have been dealt with in the census. This note read: 'If your head office staff are mainly engaged in the administration of the establishment(s) for which you are making one or more returns, *all* details of your head office should be included; otherwise these particulars should be excluded from all sections of the return'. The interviews revealed that in some cases the activities of the head office engaged solely in administering production establishments may have been omitted from the census; this may have occurred when separate census questionnaires were sent to a number of establishments all belonging to a

single group of companies engaged mainly or solely in manufacturing and administered by the head office of the group.

The important part played by changes in the quantity and value of stocks in short term movements in the economy is often difficult to interpret because little is known about the effect on stock data of the various methods of valuation used by manufacturers. When questioned on this 25 of the 94 respondents said they used methods of standard costing to value their stocks, a method by which items in stock and used in production are valued at a fixed rate for a period predetermined by the firm. Commonly the policy was to retain this fixed rate for a period of the accounting year, subject to any violent fluctuations that may occur. A number of those interviewed said that at the end of each accounting year they adjusted the value of stocks where prices had varied markedly from the prices used in standard costing calculations. The majority of the remaining firms said that they adopted the policy of valuing their stocks at the lower of cost or market value on the basis of 'first-in, first-out', to the extent that this was practicable.

In one of the early interviews, the view was expressed that in asking for jigs, dies and loose tools to be included in stocks, the census questionnaire was contrary to the practice of the firm; subsequently interviewees were asked to include a question on this subject. Of the 53 firms asked about their treatment of jigs, dies and loose tools, 32 said their practice was not in line with the treatment called for in the census questionnaire; of these, 7 firms had adjusted their accounting figures to provide the information asked for. The majority of firms whose census returns had not complied with the note on treatment had entered major purchases of jigs, dies and loose tools in their capital account. A firm in the tailoring industry explained that expenditure on patterns is written off as soon as the patterns were created and that it would be unrealistic to include any value for them in stocks.

A note in the census questionnaire gave respondents the choice of making a return for their financial year where this did not correspond with the calendar year 1970. Of the 94 firms interviewed 33 made returns for a calendar year; of the remainder, 14 could have done so if pressed, although presumably this would have meant more work and possibly necessitated estimating some sections of the return. Most of the firms with an accounting year differing from the calendar year saw the difficulty of providing calendar year figures continuing into the future. There was evidence in some cases that figures might have been provided for a

period closer to a calendar year than was actually used without great difficulty if the notes had asked for this to be done. One firm, for example, could have made a return for 12 months to mid-January 1971 instead of the 12 months to July 1970.

An article by M. C. Fessey and H. E. Browning in *Statistical News* 13.1 discussed the increasing difficulty of obtaining regional statistics as firms introduce integrated accounting and production systems which cover a number of factories in different locations. This explained that where the Business Statistics Office receives a return covering several factories it will allocate the calculated net output – that is, the value-added to materials by the process of production – between the different locations in proportion to employment. Firms interviewed during the Post-Census Survey were invited to comment on this method if this question was applicable. Of the 19 firms asked to comment, 9 thought the method valid. The most commonly suggested alternative was apportionment in proportion to the turnover of each location covered. While some respondents did not keep complete accounts for each location, it appears that they could have supplied separate turnover figures; however, the questionnaire asked only for information about employment and capital expenditure at individual factories. Other methods suggested were that allocation should be in proportion to the employment of operatives (rather than total employment); in proportion to wages and salaries paid; or on a basis which combined employment and capital expenditure information. Many firms were apparently not aware of how the information asked for in census of production is used to calculate net output – for weights for the Index of Production – for example. It was thought that if the notes to the questionnaire had defined the concept of net output they would have been able to adjust their figures of purchases, sales and stocks to bring them more closely in line with what was required.

The Business Statistics Office is at present planning to hold an inquiry into details of materials purchased by firms in 1974. This information is needed for input/output tables, for weighting the wholesale price index numbers of materials used by manufacturing industry, and to help with the analysis of industrial structure, transport policy etc. It is known that many firms find it difficult to provide information about the value of their purchases of materials under the headings on a statistical questionnaire, and during the interviews firms were asked whether detailed records of purchases were maintained for the establishment covered by the census return (one aim of the new system is to provide a consistent basis of reporting for the various

inquiries – quarterly, annual and triennial). Twenty-one firms kept no commodity details of their purchases themselves; in some cases this was because purchasing was done by a central purchasing department. While two-thirds of the firms said they could provide details of their purchases fairly easily, there were many warnings that the ease with which this could be provided would depend on the amount of detail required. Clearly it will be important to give industry early warning of what is wanted in an inquiry into purchases of materials, so that they can maintain the necessary records.

Conclusions

Those interviewed welcomed the opportunity of talking to officials of the Government Statistical Service about the statistical questionnaires they are asked to complete. Such exchanges not only make it possible for those who design the surveys to understand the problems of those who have to complete them but also provide an opportunity to discuss what help official statistics can give to business. Thus the interviews were a useful follow-up to the attempts by the Government Statistical Service to promote this aspect of its work.

Questions in the 1970 census followed closely similar questions in the quinquennial censuses for 1968 and earlier years, and no 'pilot' inquiry was held in connection with the 1970 census. The Post-Census Survey drew attention to some ways in which the questionnaire could be improved, to keep in step with changes in the institutional pattern of industry; but generally it showed that the new pattern of annual censuses presents little difficulty for those in industry who have to complete the forms. The inquiry highlighted some problems, and in particular the methods used to value stocks which need further investigation so that these key statistics to an understanding of the economy may be better interpreted.

The cost of the Post-Census Survey is estimated at £3,000. This includes the cost of drawing the sample, the cost of conducting the interviews (including an estimate of the cost of the time spent by representatives of firms giving the interviews) and the analysis of the results. It is thought to have been a very useful exploration of a technique in industrial surveys new to this country. It is planned to hold a similar inquiry for the 1971 Census of Distribution.

The Business Statistics Office wishes to thank all those in industry who took part in the survey and to assure them that all the comments they made have been noted and discussed, whether or not they are mentioned in this article.

Qualified manpower: statistical sources

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The new Unit on Qualified Manpower set up within the Department of Employment is concerned with the need for, recruitment and employment of qualified manpower in all fields and other related problems. This note sets out some of the main source material and problems relating to it*.

Definitions and stock estimates

(i) General

Qualified manpower is defined in the 1966 sample Census of Population as all persons holding recognised degrees, diplomas, associateships or other professional and vocational qualifications usually obtained after the age of 18. Whether or not a qualification is 'recognised' depends mainly on the academic content of the course leading to it, a full list of qualifications is given in the introduction to the Census volume. As will be seen in the discussion of deployment below, defining a field of interest solely in terms of qualifications rather than occupations is too restrictive but for the time being the discussion will be confined to the qualified as defined in the Census.

Within this field three different levels of qualification are recognised. These together with the grossed up numbers of the stock in the 1966 Census are shown in the table below.

Numbers qualified (in thousands)
1966

	Total	Males	Females
a. Higher degree	74.8	63.6	11.2
b. First degree or equivalent	857.4	657.3	200.1
c. Other qualifications gained after the age of 18	1,216.2	478.4	737.8
Total a. and b.	932.2	720.9	211.3
Total all	2,148.4	1,199.3	949.1

These numbers are given in considerably more detail and discussed in the CSO publication *Qualified Manpower in Great Britain: the 1966 Census of Population* (2). The Sample Census volume *Qualified Manpower Tables* (3) contains further very detailed tables with a full occupational and industrial breakdown and

*Some of the statistics are also discussed in 'Highly Qualified Manpower in the UK; Relevant Official Statistics' (1).

a subject by age analysis as well as classification of subjects into smaller groups than the ten major ones and a regional summary.

Levels a. and b. are often considered jointly as highly qualified manpower. Level c. includes a wide range of qualifications and there is evidence that a significant proportion were under-reported in the Census (see page ix of Census volume *Qualified Manpower Tables* (3)). This under-reporting was particularly marked among those with nursing qualifications. Level c. data needs handling with particular care, though even for other levels the quality check carried out after the Census suggests an under-reporting of qualifications, especially where these qualifications are not in use.

The number available for employment at any point in time consists of the total stock of qualified manpower less those who are economically inactive i.e. not even seeking a job. At the time of the 1966 Census 22.6 per cent of the qualified people including those above the normal retirement age were economically inactive.

The General Household Survey begun in 1971 will provide some information on occupations, qualifications (defined as in the Census), income and other household characteristics. It cannot however be regarded as a major source of statistical information on the characteristics of qualified manpower as a survey of 15,000 households is unlikely to include many more than 2 to 3,000 qualified people in any one year.

(ii) Scientists and technologists

The census tabulations are the only comprehensive source on the stock of qualified manpower and they relate only to 1966 (though the questions were repeated in the 1971 Census). Questions were asked in the 1961 Census to seek out those with qualifications in science and technology. These were grouped in fifteen subject classifications and the usual break-downs by age, industry, occupation and activity were published in *Census 1961 Great Britain: Scientific and Technological Qualifications* (4). Comparable tabulations for the 1966 Census have been published in 1971 (*Census 1966 Great Britain: Scientific and Technological Qualifications* (5)).

These tabulations on science and technology qualifications while consistent between 1961 and 1966 are not directly comparable with the comprehensive tables for 1966 discussed above. The differences stem from three sources. First, under the full subject classification for educational studies surveying is counted under 'technology' in the main Census volume but not in the science tabulations. This involves 16.3 thousand degree level qualifications. Secondly the science tables do not include some qualifications which are not accepted for membership of some professional institutions. Some 12.5 thousand people are involved. Thirdly, where people have more than one qualification in the main census volume they are classified according to the most recent highest attainment listed, whilst in the science tables they are classified according to the first science or technology qualification obtained at degree or equivalent level. This involves 13.3 thousand more people in the science and technology tables than appear under this heading in the Census volume; see the Science, Engineering and Technology section in *Qualified Manpower in Great Britain* (2).

Apart from Censuses the other major sources of available data on employment of such people are the Triennial Manpower Surveys. These covered a wide cross section of those with qualifications in science, engineering and technology (QSE's) and were surveys of employers of such people, carried out every three years between 1956 and 1968. The results of the latest such survey conducted in 1968 have been published as Part IV of *Persons with Qualifications in Engineering, Technology and Science 1959 to 1968* (6). This volume incorporates material from earlier manpower surveys. It presents for the first time an attempt at producing a coherent system of stock and flow statistics from 1959 to 1968. It demonstrates how the QSE population has changed over the period as a result of past and current flows, new supply, migration and natural wastage. The data assembled for migration remains incomplete (see below) so there is a considerable weakness in this series and it is in this area in particular that an element of judgement has been used. The volume explains (pages 130-132) how the synthesis provides the basic data for a set of manpower flow models. The flow data assembled comes from annual returns made by university Appointments Officers and by the twenty-four professional, scientific, engineering and technological institutions.

Scientists and technologists are the only groups of qualified people, predominantly employed in the private sector, who have been studied in much depth by Whitehall departments.

(iii) Teachers, doctors and other groups

Several departments have interests in the supply and deployment of those with qualifications in other fields. The best published source work in the educational field is *The Demand for and Supply of Teachers 1963-1986, Ninth report of the National Advisory Council on the Training and Supply of Teachers* (7). The assumptions then made about the outflow of teachers from maintained schools (which included some leavers who subsequently return to teaching) and about numbers of pupils in school have not been reflected in experience. A committee under Lord James has recently reported on the whole question of teacher training, *Teacher Education and Training* (8).

In the health field the relevant department (DHSS) has a clear picture of the numbers of qualified doctors and dentists and of others employed in the public health services. The main published attempts at predicting future requirements in the area relate to doctors. In 1957 the Willinck Committee's *Report of the Committee to consider the future number of medical practitioners and the appropriate intake of medical students* (9) was published; the findings of this have now been superseded by the *Report of the Royal Commission on Medical Education 1965-68*. (The Todd Commission) (10). Chapter 6 of the latter report is particularly relevant. The situation regarding nurses is currently being reviewed by the Briggs Committee.

In the wider field of welfare the *Report of the Committee on Local Authority and Allied Personal Social Services* (The Seebohm Report) (11) contains much useful information particularly in the appendices.

In 1970 a Committee chaired by Dr Rosenbaum of the CSO produced a summary of the existing information on the actual and forecast employment of staff of various types in the social services. The study was published as an article in *Social Trends No. 2* (12). The Unit will be responsible for assembling this material in the future and for preparing an updated report on it. The report shows a labour force in the social service of some 2 million (including all types of staff) and a forecast annual growth rate of around 3 per cent.

Studies have also been published of the employment and education or training of lawyers *Report of Committee on Legal Education* (the Ormorod Report) (13) and biologists *Report of the Working Group on Biological Manpower* (the Keynes Report) (14).

Future supply

The sources mentioned above have been chosen pri-

marily because they contain estimates of the *stock* of qualified people in employment in total and in particular fields at a more or less recent date. Some of the more specific studies mentioned also contain statements of future needs and projected stocks.

No comprehensive estimates of future stocks have been published. Obviously such estimates are heavily dependent on the age structure of the existing stock and on the scale of provision of higher education. The Census of Population gives detailed information on the former and a possible pattern of development of the latter was set out in the Department of Education and Science's Planning Paper Number 2. This paper entitled *Student Numbers in Higher Education in England and Wales* (15) contains projections up to 1981 of places needed in universities, colleges of education and other centres of advanced further education (figures for Scotland are contained in *Student Numbers in Higher Education in Scotland* (16)).

By combining these sources DES have produced some estimates of their implications for the growth in the stock of people with a. and b. level qualifications. These show a doubling of the overall stock between 1966 and 1981 and a much faster increase among women than among men. The recent subject choices of those entering higher education would suggest that the increase will be faster among those with qualifications in science than among those with arts qualifications but the fastest increase will be in social science qualifications.

The forecasts of future stock make no assumptions about migrations but are not very sensitive to changes in this element. Figures showing past provisions for graduates and undergraduates are published in *Statistics of Education, Volume 6, Universities (United Kingdom)* (17).

Migration

Migration is a subject which arouses considerable interest in its own right. The fullest treatment of the issues relating to QSE's is in a report entitled *The Brain Drain* (18). The report was prepared for the Committee on Manpower Resources for Science and Technology by a sub-committee chaired by Dr F. E. Jones. One of its conclusions was that existing statistics were inadequate for an assessment of the migration of qualified manpower. Since this report the results of the 1966 Census question on address one year ago have become available. The revised estimates for QSE's migration described in Section 3 of *Persons with Qualifications in Engineering, Technology and Science 1959 to 1968* (6) draw on specially designed tabulations relating to this

question. In addition the annual estimates for the inter-censal period were aggregated and checked against the net growth of stock between 1961 and 1966. Estimates of QSE migration are based on data provided by the professional institutions, by the immigration authorities of Australia, Canada and USA and by the University Grants Committee. Despite these sources the coverage remains incomplete as regards overseas scientists and engineers who are not members of institutions.

The only available series on migration with reasonably full coverage comes from the International Passenger Survey (IPS) (19). In this a 4 per cent sample of passengers (until April 1971 it was 7 per cent of outgoing passengers) are interviewed about a wide range of questions including age, occupation and intended country of residence. Smaller samples are used on cross channel services but movement across the Irish Channel or on certain small ferries is not covered. The questions do not include qualification and the margins of error inherent in sampling are very large in relation to occupations forming a small proportion of total movement. Even before the reduction in the sample size of the outgoing passengers the margin of error around the IPS estimates of immigrant scientists was invariably greater than the net balance between the immigrant and emigrant flows. The figures for the survey are published in the *Registrar General's Quarterly Return* and contain a very limited amount of occupational detail.

Attempts at improving the data on migration have run up against the unwillingness of the airlines to make themselves responsible for the collection of cards asking for details of occupation, qualification and residence intentions, and there is no statutory obligation on the carrier to do so. The Office of Population Censuses and Surveys has a unit which specialises in migration statistics.

Deployment of the stock

Certain features of the deployment (or location) of qualified people in occupations, industries or sectors have important implications for the study of qualified manpower. One order of the occupational classification, 'Professional, Technical Workers, and Artists', accounts for 76 per cent of the economically active qualified people. Within that order qualified people account for 54 per cent of the total number employed. In particular occupations the proportion of people who are qualified ranges from effectively 100 per cent for medical practitioners through 61 per cent for electrical engineers, 39 per cent for technologists not elsewhere classified (n.e.c.) to 0.1 per cent for labourers

n.e.c. Except for medical practitioners the proportion qualified varies with age – tending to be higher among the 25–34 age group than elsewhere. This reflects increasing provision of facilities for obtaining qualifications in recent years. This variation in the proportion qualified raises the issue of ‘substitutability’ i.e. the extent to which particular jobs can be done by people with no qualifications or with qualifications more or less relevant to the job. This is a very complex question but it means that any work must focus not just on the qualified but also on those jobs for which the usual entry requirement now is a qualification.

Just under half of all qualified people are qualified in education and health – among women the figure is 80 per cent. These two subjects are mainly used in the social services or parts of the public sector. This in part explains the interest in social services manpower (see above). Both DHSS and DES publish regular manpower series e.g. the *Digest of Health Statistics* (20) in addition to information on the available services and their financing, includes analyses by age, speciality, grade, place of birth, occupation and deployment of medical, dental, professional and nursing staff in hospitals and general practice. The *Statistics of Education* series (21) which comes out in six volumes includes information on school teachers by region; qualifications obtained by students in further education; the age, qualifications, deployment and salaries of teachers; level of qualifications obtained for University students; age, subject and some salary information for University teaching staff. In general these sources present historical data with little attempt at projection. The Scottish Home and Health Department and Scottish Education Department produce counterpart statistical publications.

Initial and subsequent employment of the newly qualified

The public sector employs a high proportion of all qualified people. In the late sixties it also took a large share of the new supply of the best graduates. The figures on this are shown in the report on *The Flow into Employment of Scientists, Engineers and Technologists* (the Swann Report) (22). However the picture which emerges from considering the first employment of first degree graduates during this period is significantly different from that obtained by looking at the substantive employment (i.e. settled as opposed to initial) of all graduates. Details of first employment* of all graduates including higher and first degrees by

industry, subject and class of degree as well as country of employment for those emigrating have been published annually since 1962 by HMSO for the UGC (University Grants Committee) in a volume entitled *First Employment of University Graduates* (23). The 1968–69 volume was published in 1970. The figures do not cover CNAA degrees or Diplomas in Technology. For those with degrees in science and technology some first employment information prior to 1962 is published in the *Statistics of Science and Technology* series (24). Information on subsequent employment is less readily available though a study by R. K. Kelsall and others entitled *Six Years After – a Follow up of 10,000 Graduates of British Universities in 1960* (25) contains some useful information on patterns of job change after graduation by subject of qualification and on subsequent employment by subject and class of degree. It shows among other things that subsequent employment was higher than first employment in both education and commerce but considerably lower in industry. The biggest switches were women into education and men out of industry.

In 1966 more detailed information on substantive employment was collected for all those post graduates who entered such training in British Universities in 1957–58. This was published in 1968 as *Graduate Study and After* (26) by Rudd and Hatch. It covered those who *entered* all such training whether or not they successfully completed it and while it excluded higher doctorates (such as D.Litt. and D.Sc.) it covered other academic training of more than six months duration. Information was collected on success, length of study, mode of attendance, employment category (broad industry groups), type of work (function), employment history (including migration) and salary. This group again exhibited the switch into teaching in this case at the expense of employment in scientific research and development.

Apart from these national cohort studies individual colleges or universities occasionally do a survey among a group of their ex-students. Two such studies are ‘A Survey of Graduate Engineers of Cambridge University’ (27) by R. W. Morgan and ‘Some changes occurring during the Careers of Science Graduates’ (28) by R. P. R. Tilley of Imperial College, London. The former which was carried out in 1968 was based on a sample of thirty-two people graduating each year from 1948 to 1967. It covered employment history (including migration) area of work and level of responsibility, occupation and salary. The latter was carried out at the same time and covered all those UK born or registered students who had graduated from Imperial College between 1929 and 1963. Again a great deal of

*What is in fact recorded is not ‘employment’ but ‘destination’ – this may be a job, further academic study, or research in a full-time training establishment.

information on job histories was collected, and it illustrated very clearly the switch from research and development into general administration and to a lesser extent into teaching during the careers of science graduates.

Earnings information

It has been argued by some, in particular Mark Blaug (see for example M. Blaug 'Approaches to Educational Planning') (29) that the true demand for qualified people is reflected in the wages and salaries paid to them and that it does not make sense to consider demand in isolation from other factors such as cost to employer. Data on earnings of qualified people however are available only for certain disciplines.

There are several separate sources, the most useful of which for *all* qualified people is probably the follow-up questionnaire to the 1966 Census which went to 1 per cent of the active stock of qualified people in England and Wales and asked for details of their employment income. The results of this have been published as Volume 3 in the Special Series of Statistics of Education, under the title *Survey of Earnings of Qualified Manpower in England and Wales 1966-67* (30). It shows earnings distributions by age and level of qualification for all qualified people covered as well as for a small number of unqualified people in high level jobs who were included in the survey for control purposes. Average earnings are also shown by qualification, occupation, industry, and employment status (employed or self employed). Most tables show men and women separately. Some analyses based on this material were contained in an article called 'The economic return on investment in higher education' (31) by Vera Morris and Adrian Ziderman in *Economic Trends*, May 1971. This article is quite meticulous in mentioning the shortcoming of some of the assumptions fundamental to rate of return analysis. Earlier rate of return calculations can be found in 'The rate of return on investment in education in Great Britain' (32) by M. Blaug, and 'How profitable is engineering education?' (33) by L. Maglen and P. R. G. Layard.

The Department of Employment's New Earnings Survey contains some information on earnings of people in some twenty or so jobs which might be expected to demand qualifications. Results of the surveys for 1968 and 1970 are now available in two separate volumes *New Earnings Survey* (34). Those for 1971 have been published in a series of articles in the *Department of Employment Gazette* (35) starting in November 1971. Comparisons between the first two dates are affected by differences in the occupational classifications adopted, and numbers are very small.

The DTI have carried out several surveys of earnings in conjunction with professional institutes. These surveys which are confined to members of the institutions cover a number of subjects other than earnings e.g. the 1968 survey of professional engineers asked questions on age, retirement or overseas working, level, subject and class of any degree held, post experience training during year preceding survey, main and secondary employer, field of employment (fairly close to industry classification), area of activity in which employed (administration, production, research design, teaching etc.), size of works (establishment) unemployment, level of responsibility (7 point scale covering duties, decisions, supervision etc.), area of technology or science in which working (approximately 200 separate areas specified). The results of the 1966 and 1968 surveys of professional engineers were published jointly by the then Ministry of Technology and the Council of Engineering Institutions (CEI) in *The Survey of Professional Engineers 1966 and 1968* (36). Further results of the 1966 Survey of Professional Engineers were published in *Statistics of Science and Technology 1968* (37). In 1971 the CEI carried out its own survey and published it as *The 1971 Survey of Professional Engineers* (38). The survey in general maintained comparability but dropped the question on level of responsibility. In 1968, a parallel survey of professional scientists, covering similar topics though in less detail, was carried out in conjunction with the Council of Science and Technology Institutes (SCTI) *The Survey of Professional Scientists 1968* (39). This was repeated in 1971. The data from these surveys do not cover the whole population of QSE's, only those who are members of professional institutions within the CEI and CSTI. It is estimated that 80 per cent of engineers come within the sample frame but the coverage does not nearly reach this in the science survey where it is known that the teaching profession is under-represented. The reports compare the incomes of graduate and non-graduate scientists and engineers in a series of charts (page 18 of the science report and page 26 of the 1968 engineering report).

Demand forecasting or projection

The problems associated with demand forecasts for qualified people are manifold. They have been given a very full airing in a forthcoming book *An Evaluation of Manpower Forecasting* (edited by Ahamad and Blaug) (40). As will be apparent from earlier sections some attempts at predicting future employment (or requirements) have been made for some parts of the field e.g. doctors, QSE's, and teachers. These attempts are however unrelated to each other and to other developments. Discussion in this area often suffers from imprecision of concepts used, for example between 'de-

mand' and 'need' 'requirements' or simply 'projected employment'. One of the jobs of the Unit will be to increase the co-ordination of and clarify the concepts used in these forecasts.

Some of the concepts are discussed briefly in the next few paragraphs. 'Demand' at any point in time cannot be considered in isolation from an employer's willingness and ability to pay on existing scales. 'Need' can only be expressed in relation to a set of implied or stated objectives such as 'economic growth' 'technology' or 'cultural development' 'better industrial relations'. 'Requirements' is a very similar concept to 'needs' except that the objective is both more explicit and easier to interpret e.g. requirements for some groups such as teachers may be derived from stated pupil-teacher ratios. 'Projected employment' involves the projection of past employment patterns which can be done by a range of methods from the very simple to highly complicated econometric models. 'Expected employment' allows for the fact that employers will not always be able to (a) pay for all of the people they need or require in a particular occupation, or (b) recruit all of those they could pay for at going rates.

None of these concepts is inherently preferable to the others, each has different uses. Demand forecasts and expected employment imply taking a view on future pay relativities which in turn will be influenced by other factors determining relative supply and demand e.g. substitution of different types of labour and qualification, hence such forecasts can probably only be built up by a process of successive approximation. Needs and requirements are normative concepts and very dependent on the statement of the objectives to which they are related. Projected employment – which is probably a better term for what often passes as a manpower demand forecast – suffers from the fact that it must have its foundation somewhere in existing or past employment relationships which may themselves be supply determined or far from optimum for other reasons. Thus the important thing is to be aware of the various distinctions and the type of prediction needed for policy purposes.

For many policy purposes the main interest is in 'needs' and qualifications are made to figures relating to the other concepts to ensure that they more nearly approximate to 'needs', but there is also interest in how many people will find jobs and at what level.

Colin Leicester in an introductory chapter to *Manpower Planning – a Bibliography* (41) edited by C. G. Lewis discusses four approaches to 'projecting manpower needs' with many detailed references. His four

approaches are (a) Time series extrapolations involving either one or many variables and either simple or complicated time trends. (b) Cross section comparisons. This involves assuming that the pattern in one country (or firm) will be repeated in another in the course of economic or technological progress. (c) Survey questionnaires. These involve the pooling of separate estimates made by individual firms or sectors of the economy. (d) Models. In their simple form these are rather like multivariable time trends analyses – however, they differ by incorporating some postulated relationships between the variables. The variables may cover the whole spectrum of the economic system and may be pushed forward not just as time trends but as a result of the future orientation of the economy.

These various methods all have weaknesses e.g. time trends may not reflect desirable developments; cross section comparisons suffer from the possibilities of various stages of development being missed, of production techniques of one country being irrelevant for another, and of the employment patterns among the qualified being supply determined; aggregation from employer surveys is only valid where consistent assumptions have been made about the future developments in the economy or industry; models can involve the compounding of errors made in estimating one or more of the incorporated relationships. In the end it may be necessary to approach the problem from various directions and compare the results.

It is these drawbacks, among others, that lead to the conclusion that there is no overwhelmingly obvious way of establishing a relationship between national needs and the output of highly qualified manpower. However, an approach which has been widely adopted in the member countries of OECD and on which a certain amount of work has been done in the UK is to convert a forecast pattern of demands for goods and services firstly into an occupational employment pattern and finally into a qualifications pattern. This approach essentially involves an employment projection conditional on economic developments. In an extreme form it implies that occupational and educational employment patterns are technologically determined which even the limited evidence on substitutability in the Census of Population suggests cannot be the case. This means that the approach has at least to be complemented by attempts to define areas of limited substitutability and to identify the economic justification for the existing deployment of the qualified between different jobs.

Some such complementary work has been done on this by P. R. G. Layard and others and published as

Qualified Manpower and Economic Performance – a study in the Electrical Engineering Industry (42). Layard also discussed it in an article 'Educational and Occupational Characteristics of Manpower – an international comparison' (43). A summary and discussion of this work together with some original analysis has been published by OECD as *Occupational and Educational Structures of the Labour Force and Levels of Economic Development* (44).

Mobility

Early indications of changes in employment or demand trends, insight into the working of the labour market and of career development and indications of areas within which substitutability may operate are all dependent on information on labour mobility. Such mobility may have many dimensions e.g. occupational, industrial, regional and functional and as any one move may involve any combination of these dimensions it is very difficult to describe and evaluate. Until very recently however problems of description and evaluation have been overshadowed by the paucity of data on moves.

Apart from one report covering the years 1945–49 *Labour Mobility in Great Britain 1945–1949* by Geoffrey Thomas (45) the major source of such data is the *Social Survey of Labour Mobility 1953–63* (46) which was published in 1966. One of the variables in the analysis contained in the report is qualification held at three of the eleven levels identified (Degree, Diploma/Membership of Professional body, and Minor Professional) fall within the field covered by this paper.

The report only analysed a few factors in terms of qualification but various tables in the report show that the qualified are more likely than any other group to move house for job reasons, they are also more likely to express a willingness to move, but they also tend to have more stable job histories than other groups i.e. to have spent an above average time in their existing job. The report contained little on occupational mobility but had some interesting tables on qualifications held by immigrants and on the regional distribution of qualified people who had worked in the ten-year period covered by the survey.

Some of the job history information referred to above e.g. Kelsall, Rudd and Hatch, Morgan, and Tilley give details of occupational, industrial, regional and international mobility among certain groups of the qualified. Kelsall for example showed 15 per cent of men graduates were working overseas 6 years after graduating. The proportion being much higher for science and technology graduates than for arts and social

sciences. The studies also show a higher propensity to work overseas among those with post-graduate qualifications. The 1966 Census of Population collected information on address one year and five years before the Census which allows analysis of inter-regional mobility. This data was not linked up with that on qualifications held and the only relevant tabulations are terms of regional-mobility by occupation or industry at time of the Census. Some thirty census occupations can however be identified as containing a high proportion of the qualified. The 1971 Census contained a question on address one and five years prior to the Census and also asked all those in employment in the week prior to the Census about their occupation one year earlier. This will facilitate the first comprehensive estimates of occupational mobility for large sectors of the working population (though not those who retired in the year preceding the Census or who were otherwise out of work in the week preceding the Census). Analyses will also be possible in terms of occupational movement by the qualified, of occupational and regional mobility in relation to the industry of employment at the time of the Census and of regional mobility by the qualified.

In addition to this Census source, for which results will not be available for at least eighteen months, the Department of Employment's New Earnings' Survey which used matched samples in April, 1970 and 1971 contains information on flows between industries, occupations and regions and while no qualification data is available the scheduled tabulations will allow the identification of flows between some twenty occupations which might be expected to require qualifications. The value of this data may be limited by sample size but its link with earnings information and the possibility of continuing matched samples on an annual basis adds much to its potentiality as an addition to the sources helping the detection and understanding of movements in the Labour market for qualified people.

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Notes on current developments

POPULATION AND VITAL STATISTICS

1971 Census of Population – England and Wales

Publication has now begun of the detailed results. The first of the county leaflets giving the advance analysis produced from the enumerator-marked documents appeared in early March and the whole country should be covered by early May. These leaflets give the populations of local authority areas by sex, marital condition, year of birth and economic position (economic activity status). It is hoped to publish a national summary of these figures together with some information on country of birth.

The first of the main tabulations to appear will be the County Report for Dorset. This is now at the printers and, at the time of writing, it is expected it will be published at the end of May. Other county reports will follow at short intervals and this part of the publication programme should be complete by the end of the year.

(*Statistical News* 16.16 gave details of the methods of analysis used in each of these publications and a description of their contents, together with an outline of the remainder of the publication programme).

References

Census 1971, England and Wales, Advance Analysis, Dorset (HMSO) March 1972 (Price 16p) (and similar for other counties).

Census 1971, England and Wales, County Report, Dorset (HMSO) forthcoming.

Household projections

A set of household projections for the English regions and Wales calculated by the Department of the Environment has been published in issue No. 24 of *Housing Statistics, Great Britain*. The South East region is further divided to show London separately. The projections are derived from the 1969 based population projections, prepared by the Office of Population Censuses and Surveys, which were published in the *Registrar General's Quarterly Return for England and Wales No. 486*, and are consistent with the 1969 based household projections for England and Wales, published in issue No. 20 of *Housing Statistics*, which are again shown.

Married couple households has been added to the household categories shown and the projections have been extended to 1991. Readers are invited to apply to the Department of the Environment, 2 Marsham Street, SW1P 3EB, for the corresponding projections for sub-divisions of regions.

Reference

Housing Statistics, Great Britain, No. 24 (HMSO) March 1972 (Price 95p net).

1971 Census in Scotland

The first county reports have now been published, and the remainder will appear in the course of this year. The explanatory notes are being separately issued. The Second Preliminary Report for Scotland was published earlier this month. It contains an appendix table (based on the first preliminary count) giving the enumerated and resident populations of the latest proposed local government regions and districts; and tables derived from the advance analysis of computer-read documents marked by the field enumeration force. Two advance analysis tables are produced for all areas of over 15,000 population, and a third table (featuring country of birth) for Scotland and the Clyde-side Conurbation only.

A brief comment on the main advance analysis results follows:

Age distribution of the population of Scotland

Comparison of the advance analysis distribution of population by years of birth (adjusted to an age basis) with that found in the 1966 sample census and with birth records indicates that net migration from Scotland was greatest for males aged, in 1971, 0 to 4 and 15 to 24, and for females aged 0 to 4 and 20 to 24. In each of these five five-year age/sex groups there was a net migration loss of the order of 10 thousand over the whole period 1966–71, but there was little net change above age 40 for males and 50 for females. This net migration loss is broadly consistent with that estimated for the purpose of preparing the Registrar General's annual estimates of the population of Scotland.

Males not working in the week before Census

For reasons explained in the notes to the second preliminary report, the number of males 'not working'

is rather greater than the Department of Employment 'registered unemployed'. Similar differences were noted in earlier censuses.

The proportion of economically active males (those employed, self-employed, seeking work or prevented from seeking work by temporary illness; but excluding any who would be students next term) who were not working in the week before census averaged 8.2 per cent for Scotland (compared to 4.4 per cent in 1966); ranged from 8 to 14 per cent in Glasgow, the large industrial burghs in Dunbarton, Renfrew and Lanark counties, and in Dundee; and was least in Border and South-Western counties and the Eastern counties from Perth to Nairn.

The age distribution of economically active males who were not working in the week before census differs quite markedly from that found in 1966, when there was a minimum in the twenties and a steady increase with advancing age. In 1971 the numbers not working were highest at ages 15 to 24, were around ten thousand in each five year age group from 30 to 59, and were still less than the 15 to 24 level at ages 60 to 64. The 'not working' form over 10 per cent of the economically active male population aged 15 to 24, decreasing from 8 per cent around age 30 to 7 per cent around age 50.

Student population

In the 1971 census nearly 30 per cent of the males and females born in the years 1951-55 indicated that they would be in full-time study next term. The comparable figure in 1966 was 22 per cent. Of those born in 1946-50 inclusive, 9 per cent of males and 6 per cent of females were students; compared to 6 per cent and 4½ per cent respectively of those aged 20 to 24 in the 1966 census.

Scottish statistics

The Registrar General's annual estimates of the population of Scotland, 1971, are to be published this month. These take the provisional results of the 1971 census into account, but they give rise to no serious discontinuity.

The Registrar General's fourth quarterly return for 1971 will be published shortly. It contains the provisional return for the year 1971, estimated migration for the first half of 1971, an analysis of the 1971 births by parents' countries of birth and of deaths by the country of birth of the deceased; in addition to the standard quarterly tables.

HEALTH

Medical statistics

A number of analyses in this field have recently been published by the Office of Population Censuses and Surveys.

Cancer incidence

The twenty-third report in the series *Studies on Medical and Population Subjects* relates to oral cancer in England and Wales and deals with its incidence and the survival of patients who have contracted cancer of the lip, mouth and pharynx. Regional, occupational and causal aspects of the disease are discussed.

The twenty-fourth report in the same series is entitled *Cancer Incidence in Great Britain 1963-1966* and was prepared jointly with the Scottish Home and Health Department. Throughout the period covered by the report all patients with cancer treated at a National Health Service Hospital should have been recorded in the registry for the hospital region (of which there are 5 in Scotland and 15 in England and Wales). The experience of the whole of Great Britain has been aggregated in a table giving incidence rates for each cancer by sex and age group. This shows, as is well known, that the incidence of cancer increases rapidly with age. It also shows, as is not generally realised, just how common the common cancers are; lung cancer cases form nearly one-third of the cancer registrations of males, and breast cancer nearly one-quarter of those of females.

The twenty hospital regions are combined to give nine areas for the major part of the report - a study of regional variations in cancer incidence. The results are presented both in tables and in stylised diagrams shaded to show areas of high and low incidence. In the search for causes of cancer, such studies of regional variation have been a fruitful source of hypotheses. Cancer of the stomach, with its high incidence in Wales and the North and West of England, is perhaps the best example of this and has been much studied; even so, many of the factors influencing its distribution can only be guessed. For other cancers, for example those of the tongue and of the small intestine, the lack of significant variation can be an important way of excluding suspect causes.

Hospital In-patient Enquiry

The Hospital In-patient Enquiry Tables for 1968 and *Preliminary Tables for 1969* have been published, and a volume of *Historical Tables 1949, 1957-67* is soon to be published. This Enquiry is organised jointly by the Department of Health and Social Security and the

Office of Population Censuses and Surveys to provide information about the illnesses and characteristics of National Health Service patients in all hospitals in England and Wales, excluding psychiatric hospitals and departments (which are the subject of the Department's separate Mental Health Enquiry). For this purpose a sample of approximately one-in-ten is taken from among the patients discharged from those hospitals during the period. The results are normally published in annual reports containing tables which analyse the sample figures by sex, age, diagnosis, surgical operation, hospital region and department, duration of stay, area of residence, etc. The 1968 Report is the latest in this series. The 1969 Preliminary Tables revive the practice followed in the early years of the Enquiry of publishing, in advance of the Annual Report, a set of preliminary tables. The object is to make the basic results available both earlier, and in a form more convenient for wider circulation, than is possible for the main volume. The historical tables volume will bring together in a condensed and re-arranged form data published in earlier annual reports; it will also provide easy comparison of figures for the whole period during which the 7th Revision of the International Classification of Diseases was in use.

The Registrar General's Statistical Review of England and Wales for 1970

Part I (Medical Tables)

This has now been published and is the latest volume to appear in this series – begun as long ago as 1838 with Dr Farr's classic analyses. The Tables consist primarily of analyses of deaths, including still births and infant mortality, together with some information on infectious diseases and an analysis of population and live births by individual local authorities. As in recent years the Statistical Review also has a separate *Supplement on Abortion*. New features include a serial table covering the period from April 1968, when the Abortion Act 1967 came into force; further analysis of cases involving sterilization; details of the main countries of residence and age-groups of women not resident in England and Wales; and a table indicates cases where a previous abortion under the Act is recorded. The Supplement also gives a detailed statement of medical grounds, analyses of environmental and other factors, and number of operations by such factors as marital status, age, area of residence, occupation, number of previous births, gestation period, length of stay and type of premises.

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Registrar General's Statistical Review of England and Wales, 1970, Part I (HMSO) April 1972 (Price £4.10).

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SOCIAL SERVICES

Social security research

Statistical News 12.18 described some of the research studies in progress. Studies on which work has commenced since then include:

A survey into sickness and disability (CPCS)

This survey will look, primarily, into the circumstances of people who are absent from work for four weeks or more because of a sickness or industrially caused disablement. Additionally, information will also be sought about 'disabled housewives' (i.e. women suffering from sickness or disability who are unable to carry out all or most household duties), and in respect of disabled men and women who are in full-time work the survey will study the extent to which their handicaps reduce their earning capacity or increase their working expenses. Field work is expected to begin later this year.

A survey of sick and disabled men receiving a supplementary allowance (DHSS)

This survey into the circumstances of some sick and disabled men and their families is being conducted by the social security research branch (as is the item below). The survey will augment the statistical data and analyses provided for the purpose of administering the social security schemes. It has been designed to permit the maximum degree of replication in subsequent surveys into other segments of the population of social security beneficiaries.

A survey of men receiving the family income supplement (DHSS)

This is a survey into the circumstances of men and their families in receipt of the family income supplement. It is expected that the field work will begin shortly.

Homeless single persons (Institute of Psychiatry)

An 'action research' project began in September 1971 in which the St Mungo Community Trust (director Mr J. Fraser-Horne) provides accommodation and support for homeless men found wandering in London with the object of encouraging them to adopt a more settled way of life. A research team from the Institute of Psychiatry is monitoring and evaluating the effectiveness of the services provided by the Trust.

A national survey of hostels and lodging houses and their users (OPCS)

This survey will be similar in scale to that carried out by the National Assistance Board in 1965 (see *Homeless Single Persons* HMSO 1966). It is expected that the fieldwork will be carried out later this year.

Statistical and research report series (DHSS)

The statistical report series published by HMSO for the Department of Health and Social Security has been re-titled and is now the statistical and research report series. The first publication under the new title contains the report of a study by Rosalind Marshall, Social

Security Research Branch DHSS, on *Families Receiving Supplementary Benefit*. This compares the circumstances of some fatherless families and families of the long-term sick and unemployed.

Attendance allowance

In an answer to a Parliamentary question on 22 February 1972 (Hansard cols. 247 and 248), Mr Paul Dean gave the following information on applications for attendance allowance.

At 4 January about 121,000 claims had been received, 38,400 applicants had initially failed to satisfy the medical conditions, over 10,000 had applied for a review, and nearly 1,400 of the 6,200 whose applications for review had been dealt with had failed to satisfy the conditions at the review stage. The corresponding figures for 15 February are 135,500, 49,600, 14,500 and 2,400 respectively. A breakdown for Scotland and Wales and for each of the 10 English regional centres can only be given in respect of the number of claims received and the number of applicants who initially failed to satisfy the medical conditions.

The figures are as follows:

Regional Centre	Number of claims received (approximate)		Number of applicants who initially failed to satisfy medical conditions (approximate)	
	4 January, 1972	15 February, 1972	4 January, 1972	15 February, 1972
Scotland	10,700	11,900	4,200	5,200
Wales	10,400	11,800	3,700	5,100
Northern	7,900	8,800	2,600	3,100
Yorkshire and Humberside	10,700	11,900	3,800	4,600
East Midlands and East Anglia	11,600	13,100	2,800	3,800
London North	9,700	10,900	2,500	3,400
London South	13,400	14,900	3,200	4,200
London West	10,600	11,800	2,700	3,900
South Western	8,900	10,000	3,100	4,000
West Midlands	9,600	10,700	4,000	5,200
North Western (Manchester)	8,600	9,700	2,500	3,300
North Western (Liverpool)	8,900	10,000	3,300	3,800
TOTALS	121,000	135,500	38,400	49,600

Supplementary allowances for unemployed persons

The following information on entitlement to supplementary benefits of unemployed persons was given by Sir Keith Joseph in reply to a Parliamentary question on terminations and reviews under the Four Week Rule. The arrangements were suspended from 14

February, 1972, in view of the employment situation arising from the fuel crisis. Figures for the period from 18 January to 11 February have not yet been received. Following are the figures requested in so far as they are available:

Table A.—Supplementary allowances issued initially for a limited period

Statistical period	Allowances limited initially to maximum of 4 weeks	Number of allowances renewed at 4 weeks	Allowances not renewed		
			All refusals	Appeals to Tribunal Claimant successful	Appeals to Tribunal Claimant not successful
20 October to 23 November, 1971 (5 weeks) ...	3,730	419	81	5	28
24 November to 14 December, 1971 (3 weeks) ...	2,496	344	52	9	22
15 December, 1971 to 18 January, 1972 (5 weeks) ...	2,848	596	48	8	44
TOTAL	9,074	1,359	181	22	94

Table B.—Supplementary allowances reviewed after three months*

Statistical period†	Allowances on which a limit of a further four weeks benefit was imposed	Appeals against cessation of benefit	
		Claimant successful	Claimant unsuccessful
22 September to 14 December, 1971	367	6	8

*Total number reviewed not recorded.

†Quarterly returns.

Table C.—Cumulative totals of supplementary allowances issued for limited periods October 1968 to January 1972

Awards made initially for four weeks at outset of claim	244,166
Awards reviewed after three months and at that point limited to a further four weeks (to December, 1971)	14,304
Allowances extended at end of four weeks without appeal	10,245
Appeals against curtailment of allowances:	
Claimant successful	401
Claimant unsuccessful	2,419

Reference

Hansard 28 February 1972, columns 52 and 54.

HOUSING AND CONSTRUCTION

Housing surveys

A report on the 1969 West Yorkshire Conurbation Housing Survey has been published by the Department of the Environment. The report, prepared for the Department by the Centre for Urban and Regional Studies, University of Birmingham, gives the results of a sample survey designed and supervised by the Statistics Branch of the former Ministry of Housing and Local Government and carried out in May–July 1969. Some 2,700 households were interviewed (who were living in housing inspected in the house condition survey conducted during April 1969, see *Statistical News* 10.18) in the conurbation and certain neighbouring local authority areas. The interviews covered households' size, type, income, socio-economic group, tenure and recent or intended movement, and the size, type condition and gross value of their accommodation, the amenities available, and housing costs. Information was also obtained about the possession of second dwellings and about the journey to work of the heads of households. The report contains a descrip-

tion of the survey and a short commentary on the results, which are tabulated under 20 subject headings.

Reference

Housing Survey Report No. 7, *West Yorkshire Housing Survey 1969*. (Obtainable only from the Department of the Environment, 83/91 Victoria Street, SW1H 0EZ) February 1972 (price 90p net).

Housing in Northern Ireland

The Ministry of Development publishes a quarterly *Housing Return for Northern Ireland* which includes figures of dwellings completed, under construction, approved, demolished, converted and improved, information as to the type of dwellings being built and the number of contracts and tenders being submitted, as well as details of new housing by each housing agency.

The Housing Executive Act (NI) 1971 provided for the establishment of a new regional housing organisation which would progressively take over the housing functions of the Northern Ireland Housing Trust, the local authorities and New Town Commissions, and the form of the Return will subsequently reflect these developments.

The Northern Ireland Housing Executive will publish in 1973, and thereafter annually, a report which will describe its activities and progress each year. Under the Economic Plan for Northern Ireland 1965-70 targets of 64,000 houses in the six-year period ended 31 March 1970 rising to an annual output rate of 12,000 were set and both of these were achieved.

The Development Programme 1970-75 provides for a greatly accelerated programme of 73,500 houses from all sources in the 5-year period - a 30 per cent increase in output. In the first year up to 31 March 1971, 13,147 houses were completed, almost 1,000 above the best previous figure for any twelve month period and during the subsequent 9-month period up to 31 December 1971 9,876 houses have been completed. This augurs well for the attainment of the target by the end of the 5-year period.

Reference

Housing Return for Northern Ireland (HMSO, Belfast) quarterly (Price 18p).

Floorspace

A bulletin showing the stock of floorspace in industrial, warehouse, shopping and office use at 1 April 1967 and changes in floorspace from 1967 to 1968 was recently published by the Department of the Environment. The stock of floorspace is given for each region, sub-division and local authority area in England and Wales in each of the classes mentioned; for region and sub-division the amount of floorspace in various size bands is also tabulated.

The bulletin is based on the results of a special floorspace census carried out for the Department of the Environment by Inland Revenue Valuation Offices. Subsequent publication will show annual changes in floorspace for the same use classes and a second floorspace census will provide a corrected set of stock figures for publication in 1974 or 1975.

Reference

Statistics for Town and Country Planning, Series II *Floorspace No. 2, Floorspace in industrial, warehouse etc., shopping and office use: Total stock as at 1 April 1967 and changes April 1967 to March 1968* (HMSO) forthcoming.

MANPOWER AND EARNINGS

Census of employment

The first results of the annual census of employment will be published in 1973 when employment figures for both 1971 and 1972 will become available from this source. The 1971 figures will provide links with the series of employment statistics from 1948 to 1971

which were based mainly on counts of national insurance cards.

As soon as possible afterwards, it is hoped to produce analyses of the census figures by size of census unit. The census unit is most frequently an individual address and includes all employees at that address. Exceptionally, where more than one distinct business activity is carried on at the address, each will be treated as a separate unit. In addition, there are a substantial number of other cases where there are two units for a single address and occasionally even three (e.g. representing staff paid monthly, weekly or from Headquarters) and it will not be practicable to group together these separate units.

Regional and sub-regional projections of labour supply

An article in the *Department of Employment Gazette*, March 1972, includes projections of the civilian labour force (working population excluding HM Forces) for each Standard Region of Great Britain and the standard sub-divisions of these regions. This is the first time that sub-regional projections have been published; regional projections were last published in September 1965 and then related to employees only. The new projections are consistent with the national 1970-based projections of the working population up to 1986, at constant pressure of demand, published in August 1971 (*Statistical News* 15.16).

Projections for 1976, 1981 and 1986 are given for regions and for 1981 only for sub-regions. They are obtained by applying activity rates to the latest projections of the home populations, aged 15 and over, provided by the Office of Population Censuses and Surveys. The activity rates used, for males and females separately, for particular years are based on the corresponding national activity rates in the national projections, on the assumption that the ratio between a regional (or sub-divisional) rate and the corresponding national rate remains constant throughout the period. These ratios were derived from the 1966 Sample Census of Population. Revised projections will be made when the results of the 1971 Census of Population become available.

Reference

Department of Employment Gazette March 1972 pages 247 to 253 (HMSO. Price 52½p).

Seasonal adjustment of unemployment and unfilled vacancy series

In 1970, the Department of Employment adopted a new method of obtaining seasonally-adjusted series of unemployment and unfilled vacancies (*Statistical News*

14.7). That method has since been further developed by the CSO. The revised method was recently adopted by the Department. It has however been applied only to the national monthly series of the total numbers of persons, other than school leavers, registered as wholly unemployed in Great Britain and from July 1968 onwards. For the other unemployment series and the vacancies series, the method introduced in 1970 has been replaced by a version of the X-11 variant of the United States Bureau of the Census method II (which is used for many other United Kingdom statistical series) and also applied retrospectively from July 1968. The revised series have been published in the Department's *Gazette* from February 1972 (tables 104 to 117 and 119).

Reference

Department of Employment Gazette February 1972 page 174 (HMSO Price 52½p)

National census of staff in librarianship and information work

When the Library Advisory Councils of England and Wales presented their report on the supply and training of librarians in 1968, it was recognized that there was a need for a more detailed study of library and information service manpower needs.

The Department of Education and Science is now carrying out a census of manpower in libraries and information departments in the United Kingdom to establish a necessary basis for assessing the demand for trained staff. Information is being collected on the manpower stock at 31 March 1972, by qualification, whether full-time or part-time, age group and sex, and on posts vacant at that date.

A report will be produced later in the year.

Year-to-year variations in the earnings of individuals

A paper on 'Year-to-year variations in the earnings of individuals' by Mr A. R. Thatcher, Director of Statistics, Department of Employment, has been published by the Royal Statistical Society. The data obtained by the Department of Health and Social Security in connection with the administration of earnings-related social security benefits (*Statistical News* 4.29) are shown to be well fitted by the model of regression towards the mean published by Sir Francis Galton in *Natural Inheritance*, 1889. Further studies are being made based on the matched sample in the New Earnings Surveys 1970 and 1971 (*Statistical News* 16.21).

Reference

Journal of the Royal Statistical Society, Series A (General) Vol. 134, No. 3, 1971.

A new index of salaries

The indices of salaries hitherto published by the Department of Employment were based on the results of the annual enquiries into the earnings of administrative, technical and clerical workers in a wide but incomplete range of industries each October from 1959 to 1970. These enquiries have since been discontinued and the New Earnings Survey is now the Department's source of information about earnings of non-manual workers in all industries. Accordingly the Department has now introduced a new index of salaries based on April 1970=100. The new all non-manual workers index is obtained by combining data for males and females using fixed 1970 weights. The series has been carried back to 1959 by assuming the results of the earlier October enquiries reflected the movements in average earnings of non-manual workers in all industries.

There are separate series for manufacturing industry and an index of average earnings of all employees in this sector has been compiled by combining the information relating to manual and non-manual employees using fixed 1970 weights.

Reference

Department of Employment Gazette May 1972 (HMSO. Price 52½p).

INDUSTRIAL STATISTICS

1968 Census of Production

Tables providing lists of the separate parts of the Report on the Census of Production for 1968 which had been published and were available from Her Majesty's Stationery Office were given in *Statistical News*, November 1971 (15.17) and February 1972 (16.22). The following table provides a list of the further parts which have now been published.

Available parts of the Report on the Census of Production for 1968:

Report Part No.	Description	Standard Industrial Classification Minimum List Heading
3	Stone and slate quarrying and mining	102
7	Grain milling	211
8	Bread and flour confectionery	212
13	Cocoa, chocolate and sugar confectionery	217
15	Animal and poultry foods	219
25	Mineral oil refining	262
33	Soap and detergents	275
39	Explosives, fireworks and matches	279(3)
43	Photographic chemical materials	279(7)
47	Aluminium and aluminium alloys	321
52	Pumps, valves and compressors	333
55	Construction and earth moving equipment	336
58	Mining machinery	339(1)

Report Part No.	Description	Standard Industrial Classification Minimum List Heading
60	Refrigerating machinery (except domestic type refrigerators)	339(3)
69	Surgical instruments and appliances	353
73	Telegraph and telephone apparatus and equipment	363
76	Electronic computers	366
77	Radio, radar and electronic capital goods	367
81	Wheeled tractor manufacturing	380
89	Cutlery, spoons, forks and plated table-ware, etc.	392
90	Bolts, nuts, screws, rivets etc.	393
91	Wire and wire manufactures	394
95	Drop forgings etc.	399(5)
96	Metal hollow-ware	399(6)
		399(7)
105	Lace	418
112	Miscellaneous textiles	429(2)
116	Weatherproof outerwear	441
122	Corsets and miscellaneous dress industries	449(1)
		(3) (4)
123	Gloves	449(2)
137	Paper and board	481
139	Packaging products of paper and associated materials (other than board)	482(2)

Reorganisation of industrial statistics

The new system of quarterly sales enquiries which has been fully reported in earlier issues of *Statistical News*, will be extended to cover a further six industries in the second quarter 1972. This brings the total number of enquiries operative in the system to 105.

The 6 industries are:

- *Salt mines, brine pits and salt works – MLH 109/3
- Brewing and malting – MLH 231
- Spirit distilling and compounding – MLH 239/1
- *†British wines, cider and perry – MLH 239/2
- Wheeled tractor manufacturing – MLH 380
- Motor vehicle manufacturing – MLH 381
- Separate enquiries for:
 - 1 Motor vehicle manufacturing
 - 2*†Caravans, trailers and freight containers.

In each of the above industries the enquiry will cover all establishments with 25 or more employees. The results will be published on a regular basis, subject to safeguards on confidentiality in the Business Monitor series in due course.

*These enquiries will replace existing monthly enquiries into sales and stocks of white salt (MLH 109/3); production of new cider and new perry (MLH 239/2); deliveries of trailers, commercial vehicle orders (MLH 381).

†These enquiries will replace the existing quarterly enquiries into sales and purchases of cider and/or perry and perry based alcoholic drinks (MLH 239/2); and production of caravans (MLH 381).

The following short period enquiries will continue:

Wheeled tractor manufacturing – MLH 380

Monthly enquiry into production, deliveries and orders-on-hand has been revised to collect total production information only.

Motor vehicle manufacturing – MLH 381

Monthly enquiry into car and commercial vehicle production

Monthly enquiry into car production by model

Monthly enquiry into deliveries of road vehicle components

Monthly enquiry into motor vehicles (value) has been revised to collect deliveries of spare parts, components, etc. only.

Returns by members to the Society of Motor Manufacturers and Traders

Return by members to the National Caravan Council.

Further information on the government enquiries listed above can be obtained from:

- a. Ministry of Agriculture, Fisheries and Food, Statistics Division 1, Great Westminster House, Horseferry Road, London SW1P 2AE
(Tel: 01-834 8511 Ext. 6418)
for enquiries into MLH's 231, 239/1 and 239/2.
- b. Department of Trade and Industry, Economics and Statistics Division 3, Dean Bradley House, Horseferry Road, London SW1P 2AG
(Tel: 01-799 5688)
for enquiries into MLH 109/3 (Ext. 331); and for MLH's 380 and 381 (Ext. 29).

Engineering industries – sales and orders

Economic Trends for April 1972 contained an article giving the background to the new monthly enquiry into statistics of deliveries (sales) and orders in the engineering industries. The article describes the enquiry which has been in operation since 1958 and gives the results of an investigation into its methods and defects. It also sets out the way in which some of the findings of the investigation have been implemented in the new enquiry.

FOOD AND AGRICULTURE

Food supplies moving into consumption

Estimates of food consumption in the United Kingdom are prepared annually by the Ministry of Agriculture, Fisheries and Food and are published in June or July of each year. In order to meet requests for more up-to-date statistics a shortened version giving preliminary estimates for 1971 and revised estimates for 1970 has been prepared and published in *Trade and Industry* (Vol. 6, No. 13, page 578) on 30 March 1972. Revised figures with more detailed nutritional analyses will be published in July.

Mobility of farm workers and changes in rural employment in Scotland

The results of a survey of workers leaving farm jobs from 1967/8 to 1969/70 are published by the Department of Agriculture and Fisheries for Scotland in the latest issue of *Scottish Agricultural Economics*. Details include reasons for leaving, and the type of subsequent occupation. The information has been used in conjunction with new statistics of recruitment in a supplementary note on labour mobility and turnover.

The same volume contains an article which analyses changes in basic and service employment in rural Scotland between the 1951 and 1966 Censuses of Population, assesses the degree of dependence of rural counties on agriculture, and estimates the repercussions of the decline in agricultural employment.

Reference

Scottish Agricultural Economics Vol. XXII March 1972 pages 103, 147 and 153 (HMSO Edinburgh. Price 57p).

Scottish farm rents and land values

The latest volume of *Scottish Agricultural Economics* contains articles giving statistical series on farm rents and sales of farm land in Scotland.

The data on rents were obtained from annual sample surveys which in 1970-71, the latest year, covered nearly 1,200 tenanted or partly tenanted full-time farms throughout Scotland. Rent changes are compared with the two preceding years, and the aggregate sample for 3 years gives figures by type of farm, including a comparison of new rents with old rents on the farms where changes took place. A percentage distribution by size of rent change is given and rent changes for sitting tenants are contrasted with those accompanying the start of a new tenancy.

The Inland Revenue supply particulars of each sale of farm land of 20 acres and over, and additional

information is provided by the local Inspectors of the Department of Agriculture and Fisheries for Scotland in order to exclude from the analysis such sales as land unequipped with buildings, land going to non-agricultural uses, and transactions between related parties. It also permits a distinction to be made between sales with and without vacant possession, and the article gives series of price per acre up to 1969-70 for these categories, both individually for 5 types of farm and for the types weighted together.

Reference

Scottish Agricultural Economics Vol. XXII March 1972 pages 144 and 156 (HMSO Edinburgh. Price 57p).

OVERSEAS FINANCE

Overseas sterling area balance of payments

In the March issue of *Economic Trends* the presentation of the tables which accompany the quarterly article on the balance of payments of the overseas sterling area has been altered. There are two main changes. First, preliminary estimates of the general balance of payments of the overseas sterling area are now included for the latest quarter, thus bringing the timing of publication into line with that of the United Kingdom balance of payments. These preliminary estimates are for the most part prepared from information available in this country, rather than from data made available by the countries concerned which form the basis of the subsequent estimates. Secondly, tables are no longer being published showing separately transactions of the overseas sterling area with the sterling area and with the non-sterling areas; the derived table of the balance of payments for the sterling areas as a whole has also been discontinued. The area allocation of the transactions of overseas sterling area countries needed for these tables is no longer being made because of the amount of work involved.

HOME FINANCE

Monthly money stock and banking statistics

New monthly series of money stock were described in an article in *Economic Trends*, March 1972. They relate to the banking make-up day (the third Wednesday in each month except December) and are available for M_3 (the broad definition of money stock) from 16 June 1971 and for M_1 (narrow definition) from 20 October 1971. At the same time the quarterly series of M_2 (intermediate definition) has been discontinued and seasonally adjusted estimates of quarterly M_1 have

been introduced. Also described in the article are a number of changes, introduced in March 1972, in the presentation of the monthly banking statistics in *Financial Statistics* and the *Bank of England Quarterly Bulletin*. The main change is that the statistics relating to all the different groups of banks are now shown on a uniform basis.

PUBLICATIONS

List of Principal Statistical Series and Publications

As part of its programme of work designed to help users of statistics find their way around the publications of the Government Statistical Service (see *Statistical News* 14.15) the CSO published in April a new *List of Principal Statistical Series and Publications*, Studies in Official Statistics No. 20 (HMSO 1972).

This is to some extent a revision of the previous *List of Principal Statistical Series* (Studies in Official Statistics No. 11, HMSO 1965) which had sections on economic statistics, financial statistics and regional statistics. However, the opportunity has been taken to expand its scope by including also the principal series of social statistics; also indication of those series for which regional analyses are available is included in the main text and not allocated to a separate section.

Other features new to the present List are an alphabetical list of publications, and a subject index with cross-references which should aid users wishing to know where to find statistics overlapping two or more subject fields.

One difficulty with publications of this kind is that they can quickly become out-of-date because of changes in statistical series or in publications themselves. To deal with this problem it is intended to have in future issues of *Statistical News* a section devoted to changes in series and publications which will enable subscribers to maintain an updated copy of the List.

Facts in Focus

Unlike most industrial countries, Britain has never had a pocket-compendium type book of official statistics. The Government Statistical Service puts out numerous specialist publications and the *Annual Abstract of Statistics* brings many of the series together in one weighty volume. Up to now, however, there has been nothing to match this in a more popular format and price range.

The gap was filled last month with the publication by Penguin of a new paperback *Facts in Focus*, price 50p. Prepared in co-operation with the Government Statistical Service, it contains over 200 tables and charts relating to all areas of general interest. In most cases, the tables provide a run of figures over three years in the last decade whereas the charts are intended to illustrate a much longer-term picture.

There has been a need for a book which provides a handy source of statistics for a wider audience than is reached by the present range of publications. This new venture should satisfy this need and thereby contribute to informed discussion of public affairs in this country.

Reprints from Economic Trends

Many issues of *Economic Trends* containing articles of lasting interest are out of print. A further collection of these articles covering the issues between November 1969 and November 1971 has therefore been published as the Sixth series of *New Contributions to Economic Statistics*.

The articles included in this reprint are grouped as follows:

National accounts

The investment intentions inquiry in manufacturing industry

Allocation of taxes on expenditure and subsidies by type of expenditure for the national accounts

Preliminary estimates of exports and imports of goods and services at constant prices

Commodity analysis of central government current expenditure on goods and services

Input-output and production

The dependence of industry on final demand and on imports in 1963

An index of industrial production for Wales

The relation between primary inputs, final demand and industry output for 1963 and 1968

Investment matrices for plant and machinery: 1963 and 1968

Agriculture and food

The index of agricultural net output in the United Kingdom: Rebasings on 1964/65–1966/67

Measuring self-sufficiency for food and drink in the United Kingdom

The cost of processing and distributing food in the United Kingdom

Financial

- A note on the definitions of the money supply
- Role of the personal sector in the flow of funds in the United Kingdom
- National balance sheets and national accounting – a progress report

Social and environmental

- An index of housing land prices
- The economic return on investment in higher education in England and Wales

Methodological

- New method for seasonal adjustment of unemployment series

Reference

New Contributions to Economic Statistics (Sixth Series), Studies in Official Statistics No. 19 (HMSO) April 1972 (Price 80p).

The Business Monitor Series

Over the last two to three years the Business Monitor series has expanded substantially both in number of monitors and in their content.

Publication started in 1962. By the end of that year 48 titles had been issued, all in the Production series. The number now exceeds 120 spread over four series – Production, Civil Aviation, Service and Distributive, and Miscellaneous – and is expected to increase further to about 350 within the next twelve months as the results of the growing number of quarterly sales inquiries, and the annual censuses of production, introduced within the new system of industrial statistics, come forward for publication. Monitor sales are increasing correspondingly and at present about 300,000 individual copies are sold per year. The Production series is by far the largest of the four and at present contains about one hundred monitors. As the series title implies, these give the latest figures of manufacturers' sales or production but a large and increasing proportion include a variety of additional data such as exports, imports, employment, price index numbers, stocks, etc., thus bringing together a range of information about individual industries in one publication.

The Civil Aviation series contains eight monitors giving the movement of aircraft, passengers and freight at reporting airports in the United Kingdom, passenger flows on the main domestic and international routes, traffic carried by United Kingdom airlines and also statistics on airline finances.

The Service and Distributive series also consists of eight monitors containing statistics of movements in

turnover of various sectors of the retail and catering trades, and instalment credit business of retailers and finance houses and assets and liabilities of finance houses.

Lastly, the Miscellaneous series comprises seven monitors at present, providing detailed statistics on motor vehicle registrations, cinemas, finance and overseas travel and tourism.

All monitors are available on annual subscription only. Full details about the content of individual monitors and order forms can be obtained from Department of Trade and Industry, Sanctuary Buildings, 20 Great Smith Street, London SW1P 3DB. Telephone: 01-799 5688 Ext. 67.

New Business Monitors

Fifteen new Business Monitors have recently been issued in the Production Series. Fourteen of these present the results of new quarterly inquiries into manufacturers' sales. These inquiries have been designed to fit into a new system of industrial statistics being introduced by the Government Statistical Service. The fifteenth (P113) gives the results, in index number form, of the monthly inquiry into sales and orders by firms classified to the mechanical, instrument and electrical engineering industries (Orders VII, VIII and IX of the Standard Industrial Classification – Revised 1968).

The new titles are as follows:

- P 2 Motor cycles and pedal cycles
- P 9 Carpets
- P 10 Narrow fabrics
- P 18 Paint
- P 32 Cutlery, spoons, forks, tableware and safety razors
- P 48 Photographic and document copying equipment
- P 49 Watches and clocks
- P 96 Cocoa, chocolate and sugar confectionery
- P 97 Pharmaceutical chemicals and preparations
- P100 Bread and flour confectionery
- P102 General chemicals
- P107 Glass
- P113 Engineering (volume indices of sales and orders)
- P118 Spinning and doubling on the cotton and flax systems
- P124 Ball and roller bearings

The first seven Business Monitors listed above replace existing Business Monitors and, in general, the new publications contain greater product detail than hitherto. In addition, the new P32 incorporates statistics for

safety razor sets and blades previously published in P54 which has now been discontinued.

In many cases, the new quarterly Business Monitors also include – in addition to sales data – other related statistical information e.g. statistics of imports, exports, employment and prices.

Each title is obtainable by subscription only from Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH at 37½p per annum for the quarterly issues and £1 per annum for the monthly issue (i.e. P113).

Government Economic Service Occasional Papers

The first three of this new series of papers on economic subjects have now been published. The primary purpose of the series is to enable members of the Government Economic Service to publish the results of suitable pieces of research work carried out in the course of their official duties. From time to time outside research workers may be invited to contribute to this series or to the companion series 'Government Economic Service Monographs' in which the results of longer pieces of research will appear.

The three papers already published are:

No. 1 The profitability of United Kingdom exports by J. D. Gribbin, Department of Trade and Industry, price 40p (by post 44½p)

No. 2 The economics of size in dry bulk carriers by R. Goss and C. Jones, Department of Trade and Industry, price 80p (by post 84½p)

No. 3 The determinants of United Kingdom imports by R. D. Rees and P. R. G. Layard, HM Treasury, price 65p (by post 69½p)

The papers are published by HMSO and copies can be obtained from Government Bookshops (post orders to PO Box 569, London SE1 9HN) or through booksellers. Single copies may be purchased or a standing order placed with HMSO for the series.

Housing and Construction Statistics

A new quarterly publication *Housing and Construction Statistics* is being prepared by the Department of the Environment, which will bring together a selection of the main official statistical series on housing, construction and building materials. The first issue of this new publication, and a supplement containing notes and definitions, should be available from HMSO about August 1972.

The separate publications will be discontinued after the issue of *Housing Statistics, Great Britain* No. 24,

February 1972, and the *Monthly Bulletin of Construction Statistics*, June 1972.

Of the information which has appeared in the separate publications but is not in the new regular tables, some will be given once a year among the supplementary tables which are to be included in each issue. Those statistics which no longer appear in the publication will be made available by the Department on request, at a charge covering cost of production and distribution.

Britain and International Tourism

A new Central Office of Information reference pamphlet *Britain and International Tourism* records the growth in international tourism, which is now the largest single item in world trade, during the 1960s. It covers in greater detail the development of tourism, both inwards and outwards in Britain, which has been one of the major beneficiaries of the increase in the numbers of international tourists, the number of overseas visitors having risen from 1.7 million in 1960 to over 6.7 million in 1970, and shows the importance of the tourism contribution to the balance of payments.

A separate section deals with the administration of the industry, including the work of the BTA, Tourist Boards, trade associations and the Economic Development Committee, and also covers government assistance to hotel and tourism development following the Development of Tourism Act.

Statistical information is provided both in the text and by 24 tables and there are two appendices detailing customs concessions and tourist organisations respectively. A reading list is also included.

Reference

Britain and International Tourism RP102 (HMSO) January 1972 (Price 31½p by post 34p).

Education Statistics (Northern Ireland)

The latest information about education statistics in Northern Ireland which relates mainly to schools, pupils and teachers and also includes sections on scholarships and awards is contained in the booklet *Education Statistics No. 13*.

These statistics reflect the continuing growth in the number of pupils at school and the number of full-time teachers in employment. The aggregate total of almost 352,000 school pupils at January 1971 represents an increase of more than 8,000 over the preceding year. There has been a further increase in the number of pupils remaining on at school beyond the compulsory

school age and the latest figures show that 61 per cent of the 15 year olds, 33 per cent of the 16 year olds, 24 per cent of the 17 year olds and 11 per cent of the 18 year olds are at school. The effect of raising the school leaving age in 1972/73 is demonstrated in a table of forecast school population in which it is estimated that the total secondary school population will be increased by about 11 per cent in 1973/74.

The number of teachers employed in the schools continues to more than keep pace with the rising enrolment; the total of 14,750 at January 1971 – over 500 more – meant that the pupil teacher ratio decreased from 24.2 in January 1970 to 23.8.

Reference

Northern Ireland Education Statistics No. 13 (HMSO) February 1972 (Price 87½p).

Official economic statistics

The *Journal of the Royal Statistical Society, Series A (General)*, Volume 134, Part 4, 1971, contained an article by L. S. Berman, an Assistant Director of the CSO, on 'Recent improvements in official economic statistics'. This article reviews the development of official macro-economic and micro-economic statistics during the last five years or so.

Progress which has been made with problems of timeliness and reliability in the macro-economic field is outlined, and the experimental CSO data-bank project is discussed. In the micro-economic field important developments are recorded in the field of business statistics, with the new system of quarterly and annual enquiries; employment statistics, with the introduction of a census of employment; and incomes, where the New Earnings Surveys have yielded much new and up-to-date information. An interesting Appendix lists the major landmarks in the development of official economic statistics since 1940.

Income taxes outside the United Kingdom

Her Majesty's Stationery Office have published a new edition of this work which has been prepared by the Board of Inland Revenue.

The whole work contains summaries of the income taxes in force in 80 states, arranged in alphabetical order in eight volumes of approximately 400 pages each. These summaries have been revised and re-written, where necessary, to take account of new legislation which became effective during 1970, and the new edition describes the position as at 31 December 1970.

All states having comprehensive double taxation agreements with the United Kingdom are included and the fairly extensive summaries contain references to the position obtaining in previous years – in most cases up to six or more years back. Although the summaries have not been scrutinised by the authorities of the countries concerned and are not official expositions of the relevant laws, they are based on readings of the original legislation and every care has been taken to ensure their accuracy. These volumes are revised and reprinted annually. Intended primarily for the use of Her Majesty's Inspectors of Taxes, this is a useful work of reference for those concerned with the impact of income taxes and taxes of a similar character imposed by Commonwealth and foreign countries.

The eight volumes are paper-bound and supplied in a single carton; they are not available separately. The price for the whole work is £18.50 (£18.97 including postage).

GLC Bulletin

Social Statistics

In an article published in the December *Quarterly Bulletin* of the GLC Intelligence Unit, Mrs. Catherine M. Firth writes of 'Local government need for social statistics'.

The article stresses the necessity for an integrated system of data collection to supply the needs of central government, academic and private institutions as well as those of local government. The writer deals separately with the requirements of departments with responsibility for specific services as opposed to those of planning departments. Most of the statistics now available to local authority departments which supply specific services are based on the needs of central government though local authorities' own records are a supplementary source. The article draws attention to some surprising gaps in available information. Deficiencies in information on housing, employment and education are instanced as examples.

Even for present purposes the available data are inadequate. The problem is accentuated by the rapid development in management techniques in local authority departments. The standards of quantified assessment towards which local authorities are working are then stated. The present position is compared with the required standard. Work done or already in progress in London and elsewhere is mentioned. The need for closer co-operation between central and local government is constantly emphasized. The data needs of planning departments are then considered

under three main headings. The paper closes with a plea for better consultation between interested parties and a greater allocation of resources to the collection of information.

Data for Town Planning

Also appearing in this publication is an article by D. E. Weald 'Data for town planning and development in Greater London'. The writer discloses some of the effects of sheer size on the information systems of local authorities. The advantages and disadvantages of decentralisation are discussed. In the conclusion the author notes that the problems of size, once exclusive in the United Kingdom to London, have already begun to emerge elsewhere. The advantage of speed produced by the modern computer is often lost by the slower methods necessarily employed in preparing the computer input. The benefits, to the planner, of detailed up-to-date information are large and the challenge of producing an economically viable information system remains.

Mrs. Firth's paper was presented to a conference on social statistics organized by the Social Science Research Council in October 1971. Mr. Weald presented his paper to the 13th International Congress of Surveyors held in West Germany in September 1971.

Reference

GLC Intelligence Unit *Quarterly Bulletin* No. 17, December 1971. Obtainable from the Information Centre, The County Hall, London, SE1 7PB (Price 50p, postage extra).

Abstract of Statistics for the County of Cheshire

So far as is known this recently published volume is the first Statistical Abstract produced by an English County Council. It is designed primarily for handy reference and as a source of background information for elected members, council officers and laymen alike. It is not meant to supersede the various county departmental reports which contain much valuable statistical material but which tend to describe the activities of individual departments. Wherever possible the Abstract provides matching statistics for England and Wales.

Reference

Cheshire County Abstract of Statistics 1970-71, compiled by the Research and Intelligence Unit, Cheshire County Council (Price £2.00).

OUTSIDE ORGANISATIONS

The Organisation of Professional Users of Statistics

The Industrial Marketing Research Association, The Institute of Statisticians, The Market Research Society, The Society of Business Economists and The Society

of Investment Analysts have set up a joint body called The Organisation of Professional Users of Statistics (OPUS). Its objectives are:

1. To improve and extend liaison among the member organisations on matters concerning statistical and other information, particularly in relation to government and other information sources.
2. To promote the interchange of information among member organisations.
3. To act as an independent pressure group in negotiating with government over the provision of statistics on behalf of members.
4. To organise joint discussions with government departments on subjects of interest to members.

The elected representatives to OPUS for 1972 are

E. Barnsley (IMRA) Chairman
L. J. Marchant (IS) Secretary
W. Benjamin (MRS)
P. C. Millsom (SBE)
P. M. D. Gibbs (SIA)

GOVERNMENT STATISTICAL SERVICE

The Bolton Report: Form-filling

The Report of the Committee of Inquiry on Small Firms (the Bolton Report) made a number of recommendations on statistical form-filling; proposed government action in the light of these has been the subject of two recent Parliamentary Questions.

The Prime Minister answered on 14 March as follows: 'The Bolton Committee made a number of recommendations on statistical forms and procedures aimed at reducing the burden on firms of official form-filling. The Government substantially accept these recommendations and my hon. Friend the Under-Secretary of State for Trade and Industry will be making an announcement shortly.'

Two of the recommendations - Report of the Committee of Inquiry on Small Firms, paragraph 15.34, numbers 2 and 3 - ask for a strengthening of existing arrangements for the scrutiny of statistical surveys. Although these arrangements, based on the Survey Control Unit at the Central Statistical Office, have operated with some success and were in fact favourably commented on by the Bolton Committee, the Government accept that they could be strengthened.

I have therefore asked all Ministers to ensure that no new statistical surveys or significant alterations to

existing surveys are proposed without first consulting the Central Statistical Office. I have also asked them to ensure that the central record of existing surveys remains comprehensive.

These arrangements cover all statistical surveys carried out either by, or on behalf of, all Departments and public bodies whose activities are the direct responsibility of a Department. All surveys collecting information wholly or primarily for statistical purposes, and inquiries conducted for other purposes containing questions which are solely for statistical purposes, are to be reported to the Central Statistical Office. Surveys directed to all types of respondents, other than those within the central Government service, are to be reported, provided that they are directed to 10 or more respondents.

The Central Statistical Office will consider all these proposals together with existing surveys; and where necessary will propose changes to the Departments concerned.

I believe that these arrangements will enable us to exercise closer scrutiny over statistical form-filling; and that they will contribute further to the Government's efforts to cut out unnecessary and time-consuming paper work.*

Mr Ridley, Under-Secretary of State for Trade and Industry, answered a further Question on 29 March as follows: 'In the debate on the Address on 3rd November last, my right hon. Friend said that the Government accepted the philosophy underlying the Bolton Committee's proposals about form-filling. Study has now shown that while it is not possible to accept them all in the precise way they were framed, the objectives of most of them should and can be met.

The committee strongly commended the development of a central register of businesses. We recognise that such a register could be of great value in removing unnecessary duplication in statistical inquiries: it should lessen the burden of form-filling by making possible the more intensive use of sampling techniques and the exemption to an increased extent of smaller firms from inquiries as the committee recommended. A central register could lead to improvements in the coverage and consistency of statistical series and go a long way towards providing comprehensive information about enterprises as recommended by the committee. The Business Statistics Office is actively exploring the possibility of developing a central register of businesses. My right hon. Friend the Prime Minister answered a Question from my hon. Friend on 14 March about the procedures to be followed for strengthening the scrutiny

of statistical surveys, which was recommended by the committee.

The report comments on the use of statutory powers for collecting statistics. Wherever possible the Government Statistical Service seeks voluntary co-operation of businesses in supplying information but it has been asked to formulate more explicit criteria for the use of statutory collecting powers and all statutory inquiries will be reviewed to see if they meet these criteria. It will review all statistical forms to ensure that statutory and non-statutory forms are clearly distinguished.

The committee considered the question of the passage of information between different Departments. It is in general accepted that maximum use should be made of information from which business statistics can be derived and that to this end there should be close co-operation between statisticians and administration branches of Government, both in making good use of information and in adapting administrative arrangements to improve its value to the Government generally. Substantially there is a free flow of aggregated statistics between Departments of Government. Where barriers exist they are against the free passage of information about individual businesses or people – or about small groups of businesses or people. The availability of Inland Revenue information must continue to be subject to the overriding requirements of confidentiality.

Several of the committee's recommendations are concerned with the cost of surveys. The Government accept the principle that in reaching a decision about whether to conduct a survey some assessment must be made of the burden it will impose on respondents. Further, it is proposed to extend to other inquiries the practice of making man-hour estimates which has been pioneered in some recent statistical surveys wherever good results without undue costs seem possible.†

*Hansard 14 March 1972, columns 87 and 88.

†Hansard 29 March 1972, columns 97 and 98.

Appointments and changes

CENTRAL STATISTICAL OFFICE

Mr R. E. Beales' post of Deputy Director of the Central Statistical Office has been regraded to Deputy Secretary level with effect from 1 January 1972.

CIVIL SERVICE DEPARTMENT

Mr R. F. A. Hopes was promoted to the grade of Chief Statistician on 1 May 1972 and became the Head of Statistics 3, a new Division in the Civil Service Department. This Division has been created to share the work hitherto the responsibility of Statistics 1 Division, and the increasing range of tasks associated with Civil Service manpower planning and management.

BUSINESS STATISTICS OFFICE

Mr. M. C. Fessey, Director of the Business Statistics Office, has now moved from Eastcote to the BSO's new building at Cardiff Road, Newport, Monmouthshire, NPT 1XG.

GENERAL REGISTER OFFICE FOR SCOTLAND

The post of Registrar General has been regraded to the Middle Executive Directing Band (M.E.D.B.) and the post of Deputy Registrar General has been regraded to Assistant Secretary, both with effect from 1 November 1971.

LATE ITEM

Scottish secondary schools – staffing survey

A comprehensive investigation into the organisation and staffing of secondary schools in Scotland was initiated by the Scottish Education Department in January 1970 with the primary aim of establishing more objective criteria for assessing staffing requirements. The investigation took the form of (a) a factual enquiry into organisation and staffing of all education authority and grant-aided secondary schools in Scotland at January 1970 and (b) theoretical studies of staffing requirements using modelling techniques. A full report on the studies will be published in the course of the next few months but, in advance of the report, 2 volumes of statistics derived from the survey are being issued. The first volume *Scottish Educational Statistics – Secondary Schools – Staffing Survey 1970* was published on 13 March 1972 and is available from HMSO (price £1.90 net). It contains mainly information relating to schools, teaching periods and classes. The second volume, which should be available about the end of May, will deal with statistics about teachers.

Alphabetical Index

The index to *Statistical News* covers the last nine issues. Page numbers are prefixed by the issue number e.g. 11.31 signifies issue number 11, page 31.

Generally speaking articles relating to United Kingdom, Great Britain, England and Wales or covering several geographical groups are not indexed under these groups, but topics with a significant regional interest are indicated e.g. regional earnings. Articles and notes dealing particularly with Scottish statistics are indexed under 'Scotland' as well as the topic, e.g. 'Scotland, population projections', and similarly for Wales and Northern Ireland.

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