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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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Developments in British official statistics

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The statistical unit in business inquiries

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The various inquiries directed by the Government Statistical Service at businesses cover virtually the whole range of their economic activities. In very many cases, the whole of the activity of an undertaking is carried on at a particular location and falls in a limited and well-defined field. For example, a company will have its offices and its factory on the same site, and it will be engaged in the manufacture of a limited range of products; or an undertaking may consist of a single shop selling at retail within a well-defined kind of business. In such cases, whatever the nature of the statistical inquiry, it can be directed to the business as such and the information provided will cover the whole of its activities within the field of the inquiry. These single unit businesses account for the great proportion by number of all businesses: they constitute about three-quarters of the 140,000 manufacturing locations, and three-fifths of the 600,000 retail shops in the country.

The multi-unit businesses – that is, businesses which have units at more than one geographical location – are fewer in number, but they account for a substantially greater proportion of total economic activity than the single-unit businesses. For some statistical inquiries, information for each particular geographical location of a multi-unit business can be provided. Capital expenditure on buildings and most plant and machinery is specific to a particular site, although it is less meaningful to allocate expenditure on vehicles and, for example, plant used by the construction industry to a particular address. Employment, too, can generally be associated with a particular location, although local area statistics of employment have in recent years become less accurate because firms are centralising their records, and the national insurance cards, on which the main annual series of employment statistics is based, are not always exchanged in the areas where employees work.

But it is not possible to define a single statistical unit for which the complete range of statistical information can be supplied by all businesses; and some aggregates cannot sensibly be related to a particular location. A company's profits may depend to some extent on its accounting conventions – on how, for example, research and development expenditure of the group of companies of which it is one is allocated between units of the group located in the United Kingdom and those located overseas; in such a case, only a figure of profits for the consolidated group of companies as a whole may be economically meaningful. If an undertaking has a central purchasing organisation, it may not be possible to obtain figures of expenditure on materials and components by individual factories. This article discusses these problems of the statistical unit in the new system of industrial statistics, which was described in an article in the first issue of *Statistical News* (1). It reflects discussions which the Business Statistics Office (BSO) has had with the Statistics Working Party of the Confederation of British Industry and with representatives of some large industrial undertakings; we gratefully acknowledge the help and advice government statisticians receive from industry in connection with these and with other problems.

Like the old quinquennial censuses of production, the new system of industrial statistics seeks a variety of data. One of the main items of information derived from the old system which will continue in the new is the net output of an industry (2), and the data are also used for weighting the indices of production and wholesale prices, for compiling input/output tables, and for productivity studies and calculation of operating ratios and production functions. While the old system obtained a wide range of information for a census of production in a single inquiry once in every 5 years, the new system will obtain similar information but through a system of quarterly inquiries into product sales, coupled with a summary census of production each year. These inquiries will be supplemented by, on the one hand, monthly (generally summary) in-

(1) 'The development of industrial statistics', J. Stafford, *Statistical News*, No. 1, May 1968.

(2) Gross output is calculated as the sum of total sales (including merchanted goods etc.) the increase of stocks of finished goods and work-in-progress, and receipts for work done. Net output is arrived at by deducting from gross output the value of purchases, reduced by the increase of stocks of materials and fuel, and payments for work given out and for transport. For a detailed discussion see 'Some pitfalls in the use of net output statistics' by A. A. Sorrell in *Statistical News*, No. 12, February 1971.

quiries and on the other, inquiries perhaps at three-yearly intervals into, for example, detailed purchases of materials. As the periodicity of the various inquiries will differ, common reporting units will be essential if the different aggregates are to be related to each other. Equally, to secure consistent industrial and geographical statistics, the reporting unit should normally be the 'establishment' at a unique address (or more than one address within a limited radius) [3]. It has for long been recognised that many large multi-establishment enterprises cannot provide the range of statistics required for each of their geographical units; and returns have been accepted which have covered several, or all, of the physically separated units. Modern systems of management and of computerised recording tend to emphasise the problem for they make it unnecessary, and indeed uneconomic, to identify every transaction, every product and every process with a particular unit. Efficiency can be enhanced by maintaining the maximum degree of flexibility in operation. Specialised plant, like packaging machinery, and functional organisations, like selling departments, are best managed in relation to the total needs of the organisation rather than split among individual producing units. Similarly, intermediate products needed for use in making the principal end-products of an organisation (basic chemicals for chemical products, milk crumb for chocolate, body pressings for motor cars) are commonly produced in specialised units (when they are not bought in) and distributed internally as required.

The result is that the volume of transfers within an enterprise are substantially greater than would be the case in a unitary organisation; but these transfers need not be accounted for in an aggregative way. Obviously the consignment of a quantity of work in progress from one factory to another of an enterprise is duly recorded and checked; but these consignments need not be individually valued or added together as long as the final costs of the end product can be accumulated and appropriate efficiency checks applied to the different stages of operation. The cost-accummulation can be independent of local factors; local control can be effected independently of product-costing. In the result, the system becomes flexible enough for an entire process to be shifted from one location to another in response to limitations of staff and supplies.

In a system of this kind it may become extremely difficult (sometimes impossible) to measure the output of a given production unit in terms of quantities of specific commodities. Where output is recorded in some such way, it remains difficult to assign a realistic value to the output. Where internal transfers are recorded, it is commonly at an arbitrary fixed value, which may bear some relationship to direct costs of production but is often deficient of indirect costs, largely incurred at head office and not apportioned, and of any profit element; and practices vary in the treatment of such items as depreciation of plant and buildings in regard to the valuation of output. The instructions for completing questionnaires for the 1968 Census of Production provided that transfers should be valued as though sold to an independent customer, i.e. at a market price. But for many intermediate products or work in progress there is no market price. Where an intermediate product is sold, the price charged may relate to a very minor part of total production, and is fixed with regard to the special circumstances; it is unlikely to reflect the economic value of the output of the intermediate product within the organisation.

It is often the case that the final output of the various production units within the organisation is marketed through a central selling organisation, which may or may not be established as a separate unit, or registered as a separate company. For a large organisation distribution is normally country-wide, and depots are commonly set up to serve different parts of the market. Stocks may be held in production units as well as depots. Supplies from a given production unit are often dispersed among a number of depots. In these circumstances it becomes impracticable to trace the stocks held at a particular point in time back to the points of origin.

From all these considerations it is clear that a complex organisation often lacks the accounting basis for the completion of census returns on the basis of separate production units. This militates against the provision of geographical analysis of census results – even the separate results for Scotland and Wales for which the Statistics of Trade Act 1947 makes provision. To an increasing extent, moreover, large organisations are becoming mixed organisations, with activities which straddle a number of industries. If separate particulars are not obtainable for separate units, those units may not be classifiable otherwise than by reference to the

(3) The establishment is the unit taken for the purpose of the Standard Industrial Classification 1968 (HMSO). The introduction to the Classification takes account of the problems discussed in this article in its definition of an establishment. 'An establishment is the smallest unit which can provide the information normally required for an economic census, for example, employment, expenses, turnover, capital formation. Usually the principal activities carried on in an establishment fall within a single heading of the Classification (e.g. steel-making or sugar refining). Typically the establishment embraces all the activities carried on at a single address.... [In the case where the activities of a business are carried on at a number of addresses but are] integrated to such an extent that they constitute a single establishment ... the establishment is defined to cover the combined activities at these addresses, which in the case of manufacturing establishments would normally be in close proximity'.

balance of activities in the enterprise. Even the possibility of a reasonably fine industrial analysis is jeopardised.

In considering the effect on statistics of these factors, it needs to be remembered that three-quarters of all manufacturing locations are single-establishment enterprises; and of the one quarter which are multi-establishment, a good many account for their affairs on a basically unitary system. The difficulties arise in a minority of large firms which account for a considerable proportion of total output; while they are better able to analyse their records and often have a more direct interest in the statistical results than smaller firms, their integrated production and accounting systems make it impossible to obtain from each of the locations at which they have production units the full range of information asked for in an economic census. In many cases very large enterprises are organised internally in separate production divisions so that returns can be made on a basis intermediate between the enterprise as a whole and the individual locations.

On the whole it is usually possible to assign employment and remuneration to individual locations. Capital expenditure is more difficult but generally not impossible provided some arbitrariness is acceptable in apportioning of general service items like vehicles and computers. The main difficulties relate to sales, purchases and stocks – the elements from which net output calculations are derived. If output cannot be valued, this basis of estimation is not available. In this article the problem is discussed in terms of evaluating sales for an individual factory, but similar problems will arise in evaluating purchases and stocks.

Given this background to the problem of the statistical unit, it seems that the new system of inquiries must proceed in one or other of two directions. One choice would be to seek to persuade each multi-unit enterprise to provide for each of its geographical units, either from its accounts or by estimation, annual figures of total sales, total purchases and stocks, but to accept, if commodities are not sold by the geographical unit, quarterly detailed sales figures from whatever larger unit can provide them. The advantage of this choice (to the extent that the annual information required can be supplied for all geographical units) is that net output for each geographical unit and regional analysis of the data would be possible, and so would analysis at a fine level of industrial detail – although the BSO would have to accept self-classification by the geographical unit.

There are, however, three objections to this course. First, it may well prove impossible in all cases to obtain even aggregate annual information for geographical units. Second, to accept annual census information from one reporting unit and quarterly commodity information from a different reporting unit would be a marked departure from a prominent aim of the new system, congruence of the quarterly and annual inquiries by getting both sets of figures from the same unit. Finally, the provision of the additional information would impose a substantial extra burden upon respondent firms.

The alternative, which the BSO proposes to adopt, is to accept that for some statistics, in respect of some undertakings, a wider basis than the geographical unit must be recognised as the statistical unit, so that quarterly and annual figures are consistent (aside from those cases when the annual figures relate to a financial and not to a calendar year), but at the cost of the loss of some regional figures, of finely-defined industries, and of a lowering of the index of specialisation [1] for some industries.

The problem arises in the new type of annual census of production which is being held in respect of 1970. At the beginning of 1971 the BSO sent out a questionnaire to each geographical unit on its register of manufacturing establishments. For single unit enterprises and the geographical units, which though belonging to multi-unit enterprises are themselves accounting units, the achievement of congruence between the annual census and the quarterly sales inquiry will present no difficulty. In other cases, recipients who are not themselves accounting units are following the practice they adopted in the quinquennial censuses and sending the form to the parent unit to make a return for them. In such cases the parent unit is being asked to provide full information for each geographical unit and, in particular, the BSO will try to ensure that activities in different countries (England, Scotland, Wales) and different industries are covered by separate returns. Where, however, an undertaking's accounting system does not permit the provision of full information about activities of each of its locations, the BSO will accept the following information:

a. For the group as a whole but excluding transfers within the group:
    1. Details of business
    2. Number of working proprietors
    3. Number employed
    4. Wages and salaries
    5. Stocks

(4) The index of specialisation for an industry is the ratio of the sales of the principal products of that industry by firms classified to the industry to the total value of their sales of goods produced and work done.

6. Capital expenditure
7. Work done by other firms, and transport costs
8. Total purchases
9. Total sales and work done
10. Goods merchanted or factored
11. Receipts for services rendered and certain other receipts and payments

b. For each geographical unit belonging to the group:
employment and capital expenditure.

The figures of employment by location will be used to pro-rate the net output of the reporting unit as a whole between its geographical units. (Sometimes it may be possible to obtain the view of reporting units about the validity of the figures derived in this way.) All the geographical units will be classified for production statistics purposes to the industry of their parent organisation making a return covering them. In such cases, the industrial classification, say for statistics of employment, of a geographical unit may differ from its classification in production statistics.

In the new system of inquiries the BSO proposes to publish statistics, broken down by industry and standard region, of employment, capital expenditure and net output. No regional breakdown, but only figures for the country as a whole, will be given for purchases, sales of individual commodities, total sales, gross output, and stocks. So far as regional figures of net output are concerned, the proportion of the total arrived at by estimation from employment figures will be indicated (except where this would involve the risk of disclosure of information relating to an individual undertaking); but where net output for a given industry estimated from employment figures is very large in relation to net output directly calculated for establishments located in the area, only the net output of the latter will be shown, with an indication of the percentage of employment in the area for which no net output figures are available (again, confidentiality requirements may limit the amount of information which can be given). For manufacturing industry as a whole, or for broad groups of industry, it is unlikely that the extent of estimation will be so great that aggregated regional figures cannot be produced.

The method of estimating net output outlined above is clearly a very approximate one which in some cases will not provide reliable figures – it is for this reason that the Business Statistics Office proposes to suppress from publication regional net output figures which involve a high proportion of estimation. The method was one which was commented on adversely by the Estimates Committee of the House of Commons in its report on the Government Statistical Service: 'The apportionment of data between areas on the basis of employment figures cannot be regarded as a satisfactory alternative for establishment returns. Your Committee recommend that returns to the Census of Production should be based on reporting units which allow of analysis by regions and sub-regions of production and the flow of goods and services.'[5] Extended investigations with industrial firms, however, make it clear that modern production and accounting systems sometimes make it impossible to value production except for an organisation as a whole, and discussions with industry have failed to suggest any viable alternative in those cases to apportioning net output on the basis of employment although the shortcomings of this method are widely recognised.

The Government Statistical Service has discussed the problem too, with the Statistics Working Party of the Confederation of British Industry (CBI). The CBI has also come to the conclusion that an attempt to collect comprehensive regional output statistics would be inadvisable.

In the quarterly inquiries, information about commodity sales will be collected from the same reporting units as supply the census figures and will exclude inter-unit transfers. Thus there should be congruence between quarterly and annual sales figures, an aim of the new system.

There will be a problem of classifying to an industry these multi-unit enterprises which make combined returns. In censuses of production in the past, an undertaking has been classified to an industry[6] on the basis of its major activity; normally, an undertaking was classified to an industry if its sales of the principal products of that industry accounted for a greater proportion of its sales than did its sales of principal products of any other industry. Generally, the index of specialisation within an industry as a result of this method of classification is high, because most undertakings are single establishments which generally produce a relatively narrow range of products. Reporting units covering several locations, on the other hand, will tend much more than do single establishments to have a wide range of products, and classification to a fine industry level will be more haphazard. To a significant extent however this tendency is mitiga-

(5) Paragraph 93, Fourth Report of the House of Commons Estimates Committee. Session 1966–67, Government Statistical Services (HMSO)

(6) For the 1968 Census of Production 154 industries were distinguished, corresponding to Minimum List Headings, or in some cases to subdivisions of MLH's, of the Standard Industrial Classification.

ted by the recognition as reporting units of separate divisions of large organisations.

There are three possible approaches to this problem. If it is accepted that it is not meaningful to classify an enterprise with wide-ranging activities to a narrowly-defined industry group, one solution would be to classify reporting units covering a number of locations whose activities fall in more than one Minimum List Heading of the Standard Industrial Classification to an Order of the Classification only. (There are only 17 Orders of the Classification within the manufacturing field, compared with 121 Minimum List Headings of which 54 are further sub-divided; generally it seems likely that the activities of a reporting unit will be more or less confined within an Order.) It would then be possible to provide statistics for each Minimum List Heading covering reporting units with homogeneous activities and, in addition, for each Order, statistics for reporting units with a wide range of activities within the Order.

A more radical solution would be to accept that the classification of most reporting units – whether they cover one geographical unit or activities at a number of locations – to a narrowly-defined industry involves a measure of arbitrariness. In 1963, for example, about 14 per cent of all production was of products which were not principal products of the industry to which reporting units were classified. It could be argued, therefore, that the industrial classification for production statistics should be broader than Minimum List Headings; it might consist of groups of headings, or even Orders.

The third possibility is the solution adopted in the past which the BSO intends to continue. It is to classify all reporting units to a census industry (roughly a Minimum List Heading of the Standard Industrial Classification) even though a particular reporting unit covers a number of geographical locations at which quite widely different activities are carried on. Although this is in line with practice in past censuses of production, the extension of integrated accounting systems in large organisations makes it inevitable that the BSO must accept figures for large and diversified reporting units to a gradually increasing extent, and the index of specialisation in production statistics is likely to show a downward tendency.

Summary and conclusions

Thus, to summarise the points made in this article: many large multi-unit establishments will not be able to supply full census of production information for each of the locations which make up such an establishment, and the BSO recognises that in such cases a return must be accepted from a reporting unit which covers the activities of the multi-unit establishment as a whole. Separate figures will, however, be obtained of the employment and capital expenditure of each location.

The BSO aims to publish production statistics broken down by industry and standard region in respect of employment, capital expenditure and net output. Figures of purchases, total sales and gross output, commodity sales and stocks, will generally be available only for the country as a whole.

Figures of net output by standard region for an industry or group of industries will only be given if the degree of estimation (based on employment by region) is not so large as to throw doubt on the validity of the figures. While information about the degree of estimation of regional net output will be given as far as possible, confidentiality considerations will sometimes limit the amount of information which can be given.

As in the past, each reporting unit will be allocated to a census industry (corresponding roughly to a Minimum List Heading of the SIC) but because reporting units will sometimes cover a number of locations with fairly diverse activities, the index of specialisation in production statistics may in future be rather lower than on average in the past.

Statistical surveys conducted by the National Board for Prices and Incomes

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The NBPI statistical surveys

The National Board for Prices and Incomes was dissolved on 31 March 1971 after six years' existence. Since the incomes policy on which it was required to base its reports has been abandoned it is not an appropriate time nor is *Statistical News* an appropriate place to assess the value of its 170 reports. It is however an appropriate time to examine the methods used in the Board's investigations since the general opinion expressed in official and press comment has been that the fact-finding methods of the Board and its staff set a new standard for an investigating body. Moreover, many of the Board's reports, particularly on the general study references (e.g. on productivity schemes, payment-by-results, job evaluation, salary structures and overtime and shiftwork) and other reports of general interest such as on London weighting in the non-industrial civil service, local authority rents, top salaries in private and nationalised industries, solicitors' remuneration, architects' fees and low pay have a long-term interest and application that is not greatly affected by changing attitudes to incomes policy. This applies not only to the reports themselves but also in many cases to the statistical and other investigations on which they are based.

In the four and a half years from October 1966 the Statistics Branch of NBPI conducted some 150 'statistical surveys' for about half the 145 reports issued in that time, an average of two per report for which such surveys were considered necessary. The term 'statistical survey' is used to signify a survey, nearly always on a sample basis, covering the entire target field and distinct therefore from selective case studies and analyses of accounting data only (the latter are excluded partly because they were not generally the responsibility of Statistics Branch). Although these surveys mostly provided information for the purpose of references to the Board on questions relating to earnings or prices, they were very far ranging in their scope and depth. Many had common features but every one was designed ad hoc for its purpose. The statistical enquiries of the Board are perhaps best known for earnings surveys, which largely created a new dimension in wage and salary statistics, particularly when the Department of Employment, at our suggestion, initiated their own New Earnings Surveys from September 1968. But the surveys in fact range from behavioural studies in depth to nationwide surveys of establishments, from measuring the responsibilities of top management and time-costing in professions to studies of the characteristics of low-paid workers and from studies of local authority rents and rebates to garage charges.

The purpose of this article is to see what lessons can be drawn from this substantial volume and variety of surveys. The main feature that distinguishes them from most government surveys apart from their *ad hoc* nature is the exceptional speed with which they were carried out. Many of the smaller surveys were completed for three-month references in about six weeks from the first drafting of the questionnaire to the production of tabulations, and most were completed in under four months though a few took much longer. A description is given later of the main methods by which this was achieved. Another feature is the adoption of untried methods, such as instructing employers by post on the drawing of samples of individual workers for the analysis of their hours of work and pay. A description of some of the lessons we have learned in conducting these surveys may be of interest particularly to those who have had relatively little experience in conducting surveys. These lessons concern the relationship between the theory of sampling and practice, methods of consultation and decision-making, the relative advantages of manual and computer analysis, and some of the methods used in drafting questionnaires, editing and analysis and the general strategy and tactics adopted in some of the more interesting surveys.

Organisation of the Board

A brief outline of the organisation of the Board and the nature of its enquiries will help to explain the nature of consultation and levels of decisions in the Board and the part played by statistical surveys in the Board's enquiries.

The Board itself consisted of a Chairman, Deputy Chairmen, some full-time and some part-time members, appointed mainly from industrial management, trade unions and universities. It dealt solely with references made to it on specific questions mainly on pay or prices, apart from a few 'standing references'. The operational staff, largely composed of civil servants, was divided into 2 'generalist' branches providing working party chairmen and secretaries and a series of specialist branches, management operations, industrial relations, financial, economic and statistical. Support staff included an enquiry team.

Organisation of Statistics Branch

The establishment of Statistics Branch was expanded from 15 at the end of 1966 to about 40 – Chief Statistician, 6 statisticians served by up to 8 reference sections headed by a higher executive officer, with a clerical pool and small general section with a senior executive officer and 2 assistant statisticians. It was organised throughout on a project basis i.e. each section under a statistician handled all statistics on a reference. It was considered that the gain in responsibility and identification with the subject of the reference outweighed the advantages of specialisation on subjects like sampling, computer handling, etc.

Methods of investigation by the Board

One Board member was in charge of each reference through a Committee usually including one or two other Board members and a working party. Findings, papers and reports were drafted by the committee and submitted to the full Board for discussion and approval. The working party produced drafts of papers on issues, findings and reports for approval of the committee and initiated enquiries subject to the approval of the committee. The enquiries were of seven main types:

1. Assembly of background material leading to the reference.
2. Summary of existing statistics.
3. Fact finding and taking of oral and written evidence (in the Board oral evidence in particular was informal) from parties directly and indirectly concerned and experts.
4. Expert enquiries and consultations by the specialist branches or sometimes by hired consultants.
5. Case studies in depth by the Board's enquiry team or hired personnel.
6. Statistical sample surveys mostly by post but some by interview (usually using outside bodies) of a comprehensive nature.
7. Statistical or economic research.

Although not all these forms of enquiry were used on every reference, the majority were. Thus it can be seen that the statistical surveys formed only a part of a much wider pattern of enquiries.

Deciding on a statistical survey

The first stage in a reference was to analyse the background to the reference and consider the policy problems and possible solutions. From this it was possible to judge the adequacy of existing statistics and the need for a survey. It was usually clear at a very early stage, sometimes even before the reference arrived, whether or not a survey was needed. In any case an outline of the target field, broad strategy of the survey and rough cost would be submitted, perhaps 2 to 3 weeks after the reference was received, to the initial committee meeting for a decision to go ahead. In complex surveys this would take longer and occasionally, as for overtime and shiftwork, surveys were decided on much later after an exhaustive analysis of existing material.

Consultation

From then on consultation, both internal and external, drafting the questionnaire and settling details of the target field and sample would be a continuous process. For speed and efficiency, internal consultation was in as small a sub-group of the working party as possible, perhaps Statistics and one other specialist branch, such as Industrial Relations for a pay reference, until wider approval and suggestions were needed. External consultation was if possible informal, e.g. with officials of associations rather than boards, and comments were invited without commitment. Any published general support for a project was welcomed but detailed responsibility was always that of the Board, though we were usually allowed to say that a particular trade association, for example, had been consulted.

Piloting

One major method of speeding up surveys used by Statistics Branch was to eliminate the normal pilot stage of an enquiry in postal surveys. In such surveys the main theoretical purposes of a pilot are to test the questions by the way they are answered, to establish the patterns and extent of variance and thereby to improve the shape of the sampling frame to provide the desired level of accuracy for a minimum sample size, to ask open questions such as 'please state occupation' and use the answers to produce a series of codes, to use the replies to help plan the analysis and to invite suggestions for improvement. Piloting however can considerably extend the timetable for an enquiry. Time has to be allowed for questionnaires to be filled in and the results analysed. Moreover it cannot start until a reasonably polished draft is ready. This the Board rarely had time for since some reports were required within a statutory time limit of 3 months, but more importantly because it took the view that the value of most reports was greatly enhanced if they were made quickly, the average being only some four to five months.

The method adopted by Statistics Branch in postal surveys in place of formal piloting was informal testing by interview coupled with continuous improvement. Successive drafts were discussed with a series of trade associations, large and small firms, and each would be asked to comment question by question on the latest draft available without providing answers to them. The whole process was often completed in under 2 weeks but the time taken depended on the complexity of the questionnaire and the tightness of the timetable. Since drafting the questionnaire is the most critical stage of the enquiry and one of the most difficult to forecast, the timetable was kept as flexible as possible to ensure that the questionnaire was 'right' for its purpose. Those with experience in conducting surveys will know that a questionnaire has to be concise, to the point, unambiguous, technically sound, easily analysed and free of any imperfections. In addition, to gain acceptance and for the sake of ease of completion, it must conform as closely as possible with the nature of the records kept by those who have to complete it. Only in this way can an adequate response rate be assured. We regard it as the most critical aspect in designing a questionnaire to strike the right balance between the information that is required and the information that can most readily be supplied. To draft a questionnaire adequately it is important that a statistician is closely involved with the policy discussions in the references.

We believe that, apart from the advantage of speed, our methods of informal testing in postal surveys have advantages which can outweigh the disadvantages compared to formal piloting, though the two methods could be combined. First, unless there is more than one pilot survey, amendments made as a result of the pilot will never be tested. By our method the final questionnaire itself could be tested. Secondly, close questioning at an interview produces much better comments and suggestions than a written request for these. Thirdly, it can be an imposition to ask people to complete a questionnaire which will not be used in the final analysis. Fourthly, it is easier to adapt the questionnaire for ease of completion by informal testing. Fifthly, only a relatively few firms of various types needed to be consulted and these firms were in any case generally ready to complete the actual questionnaire so that the field was not restricted, whereas with a pilot survey it may be necessary to exclude these firms from the full survey. This may mean that large firms must be excluded from the pilot. Finally, only a substantial and reasonably representative pilot survey produces sufficient returns to provide useful analyses of variance, and, for reasons explained below, even a full knowledge of this would, in our view, be no more than a useful guide in determining the shape and size of sample in the type of surveys that we have carried out; a moderate and relatively inexpensive increase in the size of the sample can achieve the same result.

These comments on piloting relate to the kind of surveys with which we have been concerned, particularly those addressed to employers rather than individuals; for the latter a decision on piloting may depend on the timetable and the degree of confidence in the validity of the questionnaire. They would certainly not apply to surveys like batch testing of products or agricultural field samples. Nor are they applicable to interview surveys. Here piloting serves other important purposes including the testing of interview time, interviewee reaction, interviewer dependability and organisational problems, which are critical for the planning of such surveys. Moreover because of the high expense of interviewing the minimum size of sample is much more critical. For these reasons we piloted only the relatively small number of surveys conducted by interview and, with the exception of the armed forces attitude survey, not postal surveys nor those conducted by post with a follow-up interview (these were used in earnings surveys in industries where pay was regulated by wages councils and the follow-up was carried out for us by officials of the Department of Employment).

Drafting the questionnaire

For ease both of analysis and completion a technique, widely used for example in market research, is to ask coded or 'closed-ended' questions which can be answered simply by ticking the appropriate box as opposed to quantitative or 'open-ended' questions for reply in figures or words respectively. Examples of closed-ended questions are degrees of satisfaction with a job or ranges of distance from home to work. A questionnaire designed wholly in this way can be analysed very quickly by hand or by a standard computer programme. Although we used this method wherever possible, almost all our surveys, like most Government surveys, contained quantitative questions for which averages and other calculations were required and for which this method was therefore not appropriate. Consequently, although we occasionally used standard computer programmes, nearly all our surveys analysed by computer required the writing of special programmes of analysis. Open-ended questions were generally avoided but they were still found appropriate e.g. in questions like 'other, please specify' or 'please state reasons' for subsequent coding or summarisation. To save time and improve accuracy most questionnaires were planned as punching documents (this is convenient even for manual analysis) without hand-coding, except for open-ended questions (some surveys are planned to be hand-coded throughout). But convenience in punching often had to be subordinated to presentability. There are great advantages for example in confining a questionnaire to one single or double sheet of paper.

Sampling

Except in small enquiries, sampling frames in our work had one common feature and this is perhaps a general experience – they are nearly always imperfect. At best they are not up-to-date. More commonly, e.g. lists of members of trade associations, they contain many firms out of the scope of the enquiry, or lack reliable data on which to base stratification. On some large enquiries we had the co-operation of the Department of Employment, Business Statistics Office, the Ministry of Defence and, as it then was, the Ministry of Public Building and Works, who issued questionnaires on our behalf. But many of their sampling frames were subject to the Statistics of Trades Act, which allowed them to provide lists based on the trading 'activity' of firms but forbade them to give us classifications by size or based on the main activity. This meant that they had to apply the necessary stratifications by sector of industry, size, region, etc. and issue on our behalf the appropriate questionnaire (which could differ by sector or size) and any reminder. These difficulties proved an impediment to speed and complexity of the sampling frame but through the co-operation of departments were not insuperable.

Determination of the appropriate size and shape of a sample was in our experience a matter of judgment and not of calculation. It was also related to the form of analysis. Analysis by computer allows for a much more sophisticated and complex stratification, to adjust the replies for non-response and thereby restore the proper balance between different strata, than is practicable with manual analysis. It is essential for a statistician to have a sound knowledge of sampling theory so that he can judge the likely effect on sampling error of different sizes and patterns of samples in relation to the likely variance. Rough measures of variance could in most of our surveys be obtained from past experience or published statistics. What is never available in our experience is any reliable guidance on the acceptable level of sampling error. Moreover in a multi-dimensional analysis which we normally produced there is no single criterion. For example, in an earnings survey alternative analyses of hours and details of earnings may be produced by sector, agreement, grade, occupation, age, region, full and part-time, etc., with some degree of cross analysis.

It is very much a matter of subjective judgment in each particular survey how much sampling error is acceptable for each type of analysis. There is also a choice between (1) equal error of large and small groups, (2) error related to the numerical importance of each group and (3) a compromise between these. These questions must be judged against the purposes of the survey, which are normally complex. We have generally considered it appropriate in earnings surveys to aim first at error related to the numerical importance of each group, i.e. broadly speaking to give each worker an equal chance of selection and then to consider how far any relatively small section (e.g. those in a small sector of the industry or a separate agreement for Scotland) needs strengthening because of its importance or because of high variance. On the other hand in looking, for example, at conditions of service in firms or establishments we wished to include all or a substantial proportion of large ones and a relatively small proportion of small ones. Thus in a survey of pay and conditions we required small samples of employees in large firms and large samples in small firms to give workers a roughly equal chance of selection. This also met the important pre-condition that no firm should be required to supply information for large numbers of employees.

The normal method of sampling within firms was to provide a separate random start number for each firm and to ask for interval sampling from lists of employees but, to do this for the larger firms who were being asked to sample, we needed to have a rough estimate of the numbers of employees. Editing was necessary to check that proper cross-sections of employees were being provided and that the sampling fraction of the total number of employees was correct. Our experience is that relatively little reference back or re-editing was required on this account, especially if we were able on the computer to gross up the number of workers separately in each firm to the totals given.

As many stratifications were used as were practicable, generally sector of industry, size of firm, region and sometimes grade of employee or occupation in large organisations, not only to reduce sampling error by adjustment for non-response but also because a balanced picture of the industry or service was one of the aims of the survey.

Editing

Both manual and computer editing were required in surveys analysed by computer. Computer editing provides many essential checks but is mechanical in operation. Manual editing is a necessary adjunct for all aspects requiring judgment. Manual editing creates problems, however, because it combines a lot of routine work with high level judgment. This could only be achieved by a chain of reference of problem cases from clerical level through executives up to statistician level. This involvement of the statistician, though limited, helped him to interpret the results of the survey.

Reminders

We normally aimed to issue one reminder by post in each survey. In small surveys this could be done by telephone for the sake of speed and to assist response. Even in larger surveys telephone reminders were helpful in inviting critical returns. Reminders could not normally be issued until at least a week after the final date given for returns, since experience showed that the main flow started two or three days before that date and continued at a high rate for three or four working days later. We have even had a return one year after the relevant report was published! Timetables had therefore to be planned to allow for this. In a computer analysis the final close-down was delayed if the computer programming was behind schedule.

Response rates

Over all our surveys we achieved an average response rate of 72 per cent based on averaging the individual rates for each survey. Averaged on the basis of the total number of returns issued and valid replies received, i.e. an average weighted by the number of returns in each survey, the average was 61 per cent. Both these estimates understate the true response rate since substantial numbers of questionnaires issued were out of scope for various reasons. We do not have a full analysis allowing for this factor, but records kept for 36 of the more recent surveys showed about 10 per cent of those issued to be out of scope. If this applied throughout it would raise the average response rate per enquiry to over three-quarters and the average response rate for all forms issued to over two-thirds. The Board possessed compulsory powers to require returns, but although the added authority that this gave was important, it never in fact went so far as to prosecute anyone for failing to make a return.

Non-response

Theoretical problems arise in adjusting for non-response. If a proportion of the response is out of scope, does one assume that the same proportion or none of the non-respondents are equally out of scope or some other assumption? On consideration we tended to assume the former. A further problem arises from entrants and leavers from the field – new companies, cessations, etc. Since sampling frames are virtually never up-to-date, entrants are not included and cessations are automatically excluded. The question arises whether the field should be grossed to a total that includes new companies. The theoretically correct answer is not to do so, since new companies are not typical of all companies, but the disadvantages of excluding part of the turnover of the industry may sometimes outweigh this. Sometimes a better method of dealing with non-response is to do a follow-up survey of non-respondents. But such a follow-up is valueless unless the sample is substantial and returns almost complete. This is very difficult to achieve. Moreover our timetables did not generally allow this. On the other hand we did find it useful on some occasions, e.g. the enquiry into salary structures, to ask for minimal information which would help us to categorise the non-respondents. This proved a useful adjunct as the initial reponse was low on this occasion.

Analysis

The use of computers was essential in all our larger surveys and in others where there were complex grossing factors or substantial processing was required in editing or analysis. They were used in nearly 90 of our 150 surveys and nearly all were handled by various private bureaux which were required to sign an appropriate declaration of secrecy. To achieve maximum speed with the use of a computer we aimed to write detailed specifications for editing and analysis as soon as possible after the questionnaire was finalised. By this means programming could proceed while the enquiry was in progress and the analysis programme was usually ready by the time the final forms received had been edited and corrected. Massive tabulations could then be produced within a day. The specification had to show, for example, the numbers of occupations, their grouping and the number of ranges in a range analysis, but actual codings and range limits could be determined after most of the returns had been received. Thus although there were some disadvantages in flexibility compared to manual analysis, these were not serious and even for medium-sized surveys there was a gain in speed, editing and volume of data. The main advantages of manual analysis lay in greater flexibility and in the fact that provisional results based on partial returns could be produced, if required, at any stage. Manual and computer analysis were often combined in two-part surveys.

Since a computer produces a considerable volume of tabulations to standard patterns at no very great cost, it is easy to produce extensive cross-classifications but these are not appropriate to sample surveys because of excessive sub-division of sample numbers. But cross-analyses may be necessary to establish the relative influence of different factors on variables. Much of the effort in planning specifications was therefore based on finding appropriate sub-totals, e.g. of occupations, regions, etc., in an earnings survey which could stand cross-analysis and still produce viable results for at least part of the field.

Presentation of a planned specification for approval was found to pose problems. Few administrators or other specialists could absorb a complex set of tables, which in any case it would be uneconomic to set up and then adjust. Consequently a descriptive analysis that nevertheless brought out the precise composition of the tables was a necessary first stage in planning a specification. In a massive survey like our recent social survey on the behaviour and attitudes of low-paid workers which had 175 questions and therefore variables, it was found useful to divide these into 3 groups: (1) basic classifications (three industries, full- and part-time men and women and low-paid and other), (2) main explanatory variables (marital status, age, country of origin, education, health, length of journey to work etc.) and (3) normally dependent variables like pay ranges, job satisfaction, mobility, etc. By this means it was possible to concentrate discussion on the problems of which variables to relate to each other in analysis.

Computer costs

Programming has usually been the most expensive part of using a computer for a survey, followed by processing and punching. We have tried to use standard programmes but have never found one that was satisfactory for our purposes. But we believe that it would not be too difficult to develop one that could have analysed most of our surveys at a considerable saving in speed and cost. Some progress has however been made in developing standard programmes within the Central Statistical Office and Office of Population Censuses and Surveys.

Standard errors and bias

Bias is largely a function of the quality of the sample and the volume and quality of the replies. Grossing for non-response within adequate strata deals with much of this and editing also contributes. Detected bias can be embarrassing but could usually be handled in a way that prevented false conclusions being drawn; it is thus less dangerous than hidden bias. We have however never had any post facto evidence of hidden bias of any major significance. One advantage of using a computer is that standard errors can be produced at least for the main items in much greater volume with little trouble. These are helpful not only in assessing the value of the survey but also in providing a body of experience for future surveys.

Techniques used in planning and analysing particular surveys

A few examples may be of interest to illustrate some of the methods of planning and analysis used in some of our surveys.

Solicitors (*Report No. 54*)

For this reference we were faced with the problem of trying to measure the relative costs and charges and therefore profitability for different types of solicitors' work throughout the profession. Since the work to be analysed might take from a day or two to many months to complete, it appeared impracticable to ask solicitors to time-cost a full range of solicitors' work from start to completion and, even if done, a sample however selected could harldy show the relative importance of each class of work in their income. We therefore attempted to measure only the *relative* costs and charges by the most appropriate method for each. For this purpose we asked a 10 per cent sample of practices to analyse the time spent on every class of work, including unproductive time, over 2 weeks at a suitable period of the year (June) and to analyse all their bills for the past year. The bills provided a full percentage analysis of solicitors' gross revenue by type of work. This was compared with a similar analysis of costs based on the times spent coupled with accounting data of profits, salaries by grade of fee-earner, and other expenses. With a two-thirds response, this survey provided the basis for various recommendations about adjusting the level of fees for relatively remunerative and unremunerative types of work.

Solicitors (*Report No. 164*)

For this reference we required a detailed analysis of time-costs for each stage in conveyancing work by type and value of conveyance. The survey was designed to provide a basis for recommendations on adjustment to the various scales of solicitors' charges for conveyancing and mortgage work. We supplied time-sheets to a sample of about 100 co-operating practices to attach to the files for all conveyances started in one month for housing, other than the most expensive, and in two months for high-value housing and other types of property and land. From this and other information relating to the practices' profits, salaries and other expenditure we were able to calculate the time spent, costs and charges for conveyancing, mortgage transaction and ancillary work by ranges of property value. Although data for over 900 conveyances were analysed in this way it was found that for some comparisons – property on registered compared to unregistered land, commercial and industrial property compared to housing, acting for both parties (purchaser and vendor) compared to acting for one and comparisons of mortgage work – the number of conveyances for one of each pair of data, though generally adequate in total, was inadequate in various ranges, when sub-divided into ranges of property value. Since the cost was closely related to the property value and the average property values were different for each pair it was necessary, in order to compare the totals, to reweight these for the larger groups of each pair by the numbers in the smaller group in each range of property value. In this way valid comparisons, based on similar average property values, could be made of the relative costs of the total numbers in the smaller groups with the total of the larger groups. The technique is similar in some respects to age weighting, which has been used in comparing the pay of university teachers in different faculties and universities, but the purpose in this analysis of conveyances was to make maximum use of relatively small numbers in parts of the sample.

London Weighting in the Non-industrial Civil Service (Report No. 44)

This survey covered the housing and travel costs of some 7,000 non-industrial civil servants working in inner and outer London and other parts of the country. The date of purchase of houses and the price paid by owner occupiers plus current expenditure were included in the information asked for, since it was anticipated that the expenditure of those moving into London and having to buy at current prices and perhaps the 'opportunity costs' of those whose property had appreciated would be relevant to the enquiry as well as the actual costs. Using this data and published information on movements in house prices up to date from various past periods we were able to up-date the cost of housing to current levels to provide estimates of 'opportunity costs'. These were adjusted by differences in rates paid for recently-purchased houses compared with the average over all periods to give for each area rough estimates of comparable standards of housing. This survey was presented to the last Conference of of European Statisticians as an interesting example of an inter-regional statistical study.

Pay and Conditions in the Building, Civil Engineering and Ancillary Industries

Here we had the problem of instructing employers on drawing samples of workers in these industries, employing over a million workers and varying in size from those with very small numbers of employees to those employing them on sites throughout the country. Some of these kept central pay records but most kept these on site or regionally. Our normal two-stage sampling methods described above were not suitable on this occasion. We had in effect to enable large employers with numbers of sites to draw samples of sites rather than interval samples of workers throughout their sites since this would be an impractical burden. Some employers had over 300 sites scattered throughout the country. Employers were therefore asked if they had fewer than 80 employees or, if more, less than five sites or establishments with separate payrolls to draw various interval samples. If they operated 5 or more sites they were asked to select at specific intervals the sites themselves and to provide details for all the workers on each site selected except that for the largest sites details for only 1 in 2 or 1 in 4 workers were required. This compromise was acceptable to the trade associations and resulted in what was a reasonably good response rate, for such a diffuse industry, of about two-thirds.

Results of surveys

It is outside the scope of this article to describe the methods of writing up and using the results of the surveys, the use of correlations or regression analysis occasionally used in further analysis of the results and of the part played by the surveys in the reports issued. But many of the surveys provided an essential basis for many of the conclusions and recommendations in reports. Others provided useful background information for the discussions in the body of the report. A summary of the surveys carried out is shown in the annex. Nine of these were published separately as Statistical Supplements to the Reports and most of the remainder as appendices. Brief summaries describing most of the surveys issued since October 1968 have been published in 'Notes on current developments' in *Statistical News.*

Annex

Summary of statistical surveys carried out by Statistics Branch NBPI 1967–1971

Year	All surveys: Number of surveys	All surveys: Questionnaires: Issued	All surveys: Questionnaires: Usable returns	All surveys: Questionnaires: Response rate	Earnings surveys only: Number of surveys	Earnings surveys only: Questionnaires: Issued	Earnings surveys only: Questionnaires: Usable returns	Earnings surveys only: Questionnaires: Response rate	Earnings surveys only: Workers: Number in sample	Earnings surveys only: Workers: Total number covered	Earnings surveys only: Workers: Average sampling fraction
				%				%	000	000	%
1967	32	27,821	16,531	59·4	12	5,480	3,473	63·4	139·9	2,647·2	5·3
1968	61	48,244	28,812	59·7	14	12,532	8,530	68·1	47·4	1,367·8	3·5
1969	30	18,718	13,431	71·8	16	5,487	4,170	76·0	29·9	734·2	4·1
1970	15	8,204	5,614	68·4	9	2,306	1,513	65·6	36·6	650·5	5·6
1971	13	12,000	5,306	44·2	4	1,392	925	66·5	35·0	377·0	9·3
Total	151	114,987	69,694	60·6(1)	55	27,197	18,611	68·4	288·8	5,776·7	5·0

(1) Based on the ratio of total usable returns to questionnaires issued. The unweighted average of the response rates for each survey was 72 per cent. Either figure understates the true response rate for reasons explained in the tests.

The internal purchasing power of the pound

Note by the Central Statistical Office

The value of the 'pound in your pocket' is a matter which is of immediate personal concern to everyone and, to put it formally, the internal purchasing power of the currency – or what can be bought with a given sum of money – has been a matter of public discussion in this country more or less continuously since the end of the 1939–45 war. Since the middle of the 1950's, questions to officials on changes in the value of the pound have been referred to the Central Statistical Office which has also dealt with parliamentary questions on the topic addressed to Treasury Ministers.

Changes in the purchasing power of a currency are the inverse of changes in the levels of prices; when prices go up the amount which can be purchased with a given sum of money goes down. An index of the purchasing power of the pound is thus the inverse of the price index of goods and services that are purchased with money, expressed in pounds. Questions on the purchasing power of the pound are usually raised in the context of expenditure by individuals on the goods and services that they consume and, in the United Kingdom, two price indices are available for use in calculating this index of purchasing power. These are the annual Consumer Price Index (CPI) and the monthly General Index of Retail Prices (RPI) and they are used independently or in conjunction according to the precise purpose for which the estimate is required.

The General Index of Retail Prices

The monthly General Index of Retail Prices measures changes in the average level of retail prices of the goods and services bought by a sample of households representative of nearly nine-tenths of all households in the United Kingdom; it is compiled and published by the Department of Employment. In calculating the weights for this index the expenditures of households where the main income is a national insurance retirement pension, or where the income of the head of the household is above a certain limit (£55 a week at present), are excluded[1]. The index is used in answering parliamentary questions about changes in the 'cost of living', in collective bargaining, in agreements providing for sliding scales, and in comparing changes in retail prices with changes in incomes of particular groups of persons coming within the scope of the index.

The Consumer Price Index

The other price index arises as a by-product of the compilation of the national accounts, where consumers' expenditure has been estimated for each year since 1946 and also for 1938. These estimates are made both at current prices and also revalued at the constant prices of a base year which, in the first place, was 1948 and then, subsequently, was 1954, 1958 and, at the present time, is 1963. The ratio of total consumers' expenditure at current prices to total consumers' expenditure at constant prices, expressed as an index, is the Consumer Price Index. Consumers' expenditure accounts for about 65 per cent of total domestic expenditure at market prices. Although the prices of the remaining 35 per cent of domestic expenditure may not move in the same proportion, it is convenient to use the Consumer Price Index as the means of computing changes in the internal purchasing power of the pound for consumers as a whole. The Consumer Price Index tends to increase rather more slowly than the General Index of Retail Prices. The Consumer Price Index is not, necessarily, the most appropriate index to use in order to express current expenditure in constant price terms – that is to 'deflate' expenditure – on for example new buildings, roads and machinery or on government current services. Special price indices can be, and are, used for 'deflating' these types of capital and current expenditure and, for some purposes, the price index for the gross domestic product as a whole is used.

Long-term comparisons

For comparisons with periods prior to 1938, a different price index has to be used because no official data are available to provide a consumers' price index similar to that for 1938 and for 1946 onwards. For the years 1914 to 1938, the only available official price index suitable for estimating the changes in the value of the pound was the Cost of Living Index, compiled monthly by the Ministry of Labour. This was a working class cost of living index based on expenditure patterns for the 1904 to 1914 period and had become very much out of date by 1947, when it was replaced by the Interim Index of Retail Prices, although in fact it

(1) For full details see *Method of construction and calculation of the Index of Retail Prices* Studies in Official Statistics No. 6 (HMSO) 1967.

reflected patterns of the cost of living quite well up to 1939. Because of the distortions to expenditure patterns due to war rationing, price control and subsidies, no purchasing power comparisons have been compiled for the war years 1939 to 1945.

The Cost of Living Index and the Consumer Price Index have been linked in a continuous series from 1914 to the latest year (excluding the war years 1939 to 1945) to produce one index, based on 1963 = 100, the reciprocal of which represents the index of the internal purchasing power of the pound, as shown in Table 1 below.

TABLE 1

Index of the internal purchasing power of the pound (1963 = 100)

1914	485	1931	329	1954	126·6
1915	394	1932	337	1955	122·4
1916	332	1933	346	1956	117·2
1917	275	1934	344	1957	113·6
1918	239	1935	339	1958	110·6
1919	225	1936	330	1959	109·9
1920	195	1937	314	1960	108·8
1921	215	1938	310·6	1961	105·7
1922	265			1962	101·8
1923	279	1946	183·5	1963	100·0
1924	277	1947	171·8	1964	96·8
1925	275	1948	159·5	1965	92·6
1926	282	1949	155·8	1966	89·2
1927	289	1950	151·5	1967	87·0
1928	292	1951	138·9	1968	83·3
1929	296	1952	131·1	1969	79·1
1930	307	1953	128·9	1970	75·0

Due to revisions and improvements in the component series of consumers' expenditure the annual estimates of the Consumer Price Index, given in each edition of the National Income Blue Book, show slight revisions in respect of past years from time to time, whereas the General Index of Retail Prices is not altered subsequent to initial publication. These revisions cannot be avoided but rarely affect the indices of comparative purchasing power by more than a decimal point except in respect of the latest two or three years.

Although no suitable official price index exists which can be used for comparisons with years prior to 1914, G. H. Wood produced a reasonably reliable index for the period 1850–1914 [(2)] and, for years prior to 1850, price indices calculated by Colin Clark [(3)] and by Phelps Brown and Hopkins [(4)] have been used to compile a continuous index of the purchasing power of the pound. The Central Statistical Office uses this index when it is required to give an approximate value to the pound compared with years before 1914. However, because this index is the result of linking together several indices, on different bases and measuring price changes of different groups of commodities, the index can only be taken as showing very approximate price movements over the whole period and any serious student of the history of the value of the pound should go back to the same sources and make his own judgment as to the value of such a long-period comparison.

Some qualifications

The CPI reflects changes in prices paid in the market, including the effect of all the taxes that are levied on consumer goods and services and of all the subsidies financed by government, but the index is not directly affected by changes in the level of direct taxation levied on the incomes of persons. Thus, although the index of purchasing power based on the CPI is used to calculate the gross personal income that would command the same purchasing power in year Y as, say, an income of £3,000 in year X, this calculation will not give the gross income that would produce a 'take home pay' in year Y that had the same purchasing power as the 'take home pay' for a gross income of £3,000 in year X. For this type of calculation the index of purchasing power should be applied to the net income after tax in year X and then grossed up, if necessary, by the appropriate rates of taxes on income in year Y. When using the purchasing power index it is also necessary to remember that, because the CPI for any year is based on the pattern of expenditure for that year, it is only appropriate strictly speaking for comparisons with purchasing power in the base year. Comparisons with other years may be affected by differences in the 'weights' of the components of personal consumption; these differences are generally more important over longer than over shorter periods.

When the base year for the Consumer Price Index is changed, however, the path of the price index between the two base years is liable to be revised. For use in calculating the purchasing power of the pound in respect of periods between the base years, the Consumer Price Indices based on the two different years are spliced together and then expressed in terms of the new base year = 100. Thus up to 1948, the path of the Index is equivalent to that based on 1948 = 100; from 1948 to 1954, the 1948 and 1954 based indices are spliced; from 1954 to 1958 and from 1958 to 1963 the indices are similarly spliced; and from 1963 onwards the 1963 based index is used. For this reason, the index numbers for some years before 1963 differ from the price indices of consumer goods and services given in Table 16 of the 1970 edition of the National Income Blue Book.

(2) See Layton and Crowther, *The Study of Prices*, Table 1 Appendix E, p.272.
(3) See Colin Clark, *The Conditions of Economic Progress*, p.73.
(4) See 'Seven centuries of the prices of consumables' – *Economica*, November 1956, p.311.

Finding the change in purchasing power between any two years

The index numbers in Table 1 can be used to calculate the change in purchasing power, in money terms, between any two years in the period. *Thus*, if the purchasing power of the pound is taken to be 100p in year X then its comparable purchasing power in the year Y would be:

$$100\text{p} \times \frac{\text{index number in year Y}}{\text{index number in year X}}$$

For example, if the purchasing power of the pound is taken to be 100p in 1962, then its comparable purchasing power in 1969 would be:

$$100\text{p} \times \frac{79{\cdot}1}{101{\cdot}8} = 77\tfrac{1}{2}\text{p}$$

In Table 2, the estimated purchasing power of the pound has been calculated for each of the years 1960 to 1970, taking the value as 100p in each year in turn.

The values given in Table 2 imply, in the case of 1962 and 1969 for example, either that a pound in 1969 could purchase what it required only 77½p (15s 6d) to purchase in 1962, or that it required 129p (25s 9d) in 1969 to purchase what a pound could purchase in 1962.

Changes over short periods

Although a quarterly Consumer Price Index could be derived from the quarterly estimates of consumers' expenditure, at current and at constant prices, which are given in the *Monthly Digest of Statistics*, such an index would show erratic movements not only because of seasonal changes in prices but also because of seasonal and other short-term changes in the pattern of consumers' expenditure. For this reason, the Consumer Price Index is not usually derived quarterly. The General Retail Price Index is not seasonally adjusted and has some seasonal variability so that short-period changes will on occasion be opposite to the trend in the Index. For example, because of the seasonal pattern of food prices, the Retail Price Index for food is generally lower in the third quarter of the year than in the second quarter. This may mean that the General Retail Price Index shows little change between the second and third quarters, due to the large weight of the food component, when the overall trend is rising. The General Retail Price Index is used to adjust the purchasing power index number for any year (Table 1) in order to get a value for a particular month within the year.

The formula is:

$$\text{pp index number for month} = \text{pp index for year} \times \frac{\text{average General Index of Retail Prices for year}}{\text{General Index of Retail Prices for month}}$$

For example the value of the RPI was 132·1 in July 1969 and 131·8 on average for the year 1969 and so

$$\text{the pp index for July 1969} = 79{\cdot}1 \times \frac{131{\cdot}8}{132{\cdot}1} = 78{\cdot}9$$

However, because of its seasonal movement, the General Retail Price Index is of most value in this context if the change in the purchasing power of the pound between a particular month in year X and the same month in year Y has to be calculated and there has been a large change in the level of consumer prices, for example due to changes in taxes on expenditure, during the course of either or both years X and Y.

The General Retail Price Index is also used in this way to project the latest annual purchasing power index number so that a comparison with more recent months can be calculated:

For example, the RPI for February 1971 = 147·8 and average for 1970 = 140·2 so that

$$\text{the pp index for February 1970} = 75{\cdot}0 \times \frac{140{\cdot}2}{147{\cdot}8} = 71{\cdot}2$$

A pamphlet explaining how the changes in the purchasing power of the pound between years from 1914 can be calculated is prepared by the Central Statistical Office in the Spring and Autumn of each year, following the publication of the pre-Budget National Income White Paper and of the National Income and Expenditure Blue Book respectively. This pamphlet contains Tables 1 and 2 above, the table of the monthly purchasing power index for the latest months of the current year, and tables giving the Cost of Living Index linked to the Consumer Price Index (1963 = 100) from 1914 to 1938 and from 1946 to the latest year and the monthly General Retail Price Index for each month from January 1962. This pamphlet can be obtained from the Information Officer at the Central Statistical Office.

Note: See page 13.17 for Table 2

TABLE 2

Internal purchasing power of the pound

new pence

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
100p in 1960	100	97	93½	92	89	85	82	80	76½	72½	69
100p in 1961	103	100	96½	94½	91½	87½	84½	82½	79	75	71
100p in 1962	107	104	100	98	95	91	87½	85½	82	77½	73½
100p in 1963	109	105½	102	100	97	92½	89	87	83½	79	75
100p in 1964	112½	109	105	103½	100	95½	92	90	86	81½	77½
100p in 1965	117½	114	110	108	104½	100	96½	94	90	85½	81
100p in 1966	122	118½	114	112	108½	104	100	97½	93½	88½	84
100p in 1967	125	121½	117	115	111	106½	102½	100	95½	91	86
100p in 1968	130½	127	122½	120	116½	111	107	104½	100	95	90
100p in 1969	137½	133½	129	126½	122½	117	113	110	105½	100	95
100p in 1970	145	141	135½	133½	129	123½	119	116	111	105½	100

Notes on current developments

POPULATION AND VITAL STATISTICS

Population and vital statistics – England and Wales

The Registrar General's Statistical Review for 1967 is completed by the addition of the commentary volume to the two volumes of medical and population statistics already published.

The Eighth Revision of the International Classification of Diseases (brought into use in 1968) caused some disturbance of continuity in the classification of causes of death, and an attempt to maintain a degree of continuity has been made by coding and tabulating 1967 death records according to both the old seventh and the new eighth revision classification. Ratios which can be used for the conversion of mortality statistics from the old to the new methods of classification are also given. The certification of causes of death is discussed in the General Mortality chapter, and coding of causes of death also receives some attention in further discussion and analysis of the results of the multiple cause coding study commenced in 1966. Other mortality subjects discussed in this volume are mortality associated with alcohol and the probability of death from lightning.

The chapter on population continues the description, initiated in the 1966 Commentary volume, of the revisions made to the preceding mid-year population estimates in the light of the results of the 1966 Sample Census. The migration section compares estimates yielded by the International Passenger Survey with other sources of information, such as statistics from receiving countries for emigration from the United Kingdom and Home Office statistics of immigrants to the UK. Estimates derived from the Sample Census of the immigrant population in England and Wales in 1966 are summarised. Another chapter discusses the seasonal pattern of births, examines the manner of solemnization of marriages and surveys 1966 divorces.

Reference

The Registrar General's Statistical Review of England and Wales for the Year 1967, Part III Commentary (HMSO) 1971

1966 Sample Census of Population

The Scientific and Technological Qualification Tables contain details of persons recorded in the Census as possessing qualifications in scientific and technological subjects.

A question on qualifications in science and technology was first asked in the 1961 Census, and was confined to qualifications of first degree level or equivalent. In 1966 the question was extended to cover all subjects of study and all qualifications obtained after reaching the age of 18 (apart from qualifications normally obtained at school). This volume gives information comparable with that of the 1961 Census; a further volume will provide information on all subjects of qualification and all levels of qualification.

It should be noted that in both 1961 and 1966 information on qualifications was collected from a 10 per cent sample of the population. Both sets of tabulations are therefore liable to sampling errors, and care should be taken in making comparisons between the two Censuses.

In 1966, it is estimated that of those economically active aged 18 and over, 285 thousand males (1·9 per cent) and 22 thousand females (0·3 per cent) had degree level qualifications in science and technology. The corresponding figures for 1961 were 231 thousand males (1·5 per cent) and 18 thousand females (0·3 per cent). For men and women together the proportions were 1·3 per cent in 1966 and 1·1 per cent in 1961. In addition, in 1966, it is estimated that 49 thousand qualified persons were economically inactive (38 thousand in 1961). Of these 43 per cent were retired and 30 per cent were full-time students.

Reference

Sample Census 1966, Great Britain, Scientific and Technological Qualifications (HMSO) May 1971 (Price £1·15).

Births in England and Wales

The *Registrar General's Quarterly Return No. 488* contains, for the first time, tables giving quarterly numbers of legitimate live births analysed by number of previous children and by marriage duration. It is intended that these two tables will appear regularly in the Quarterly Return. Hitherto comparable data have only been available on an annual basis in the *Registrar General's Statistical Review of England and Wales* (Part II).

An accompanying commentary discusses some recent trends in births. The quarterly statistics show that the actual number of first and second births occurring to married women increased slightly in the September quarter of 1970 compared with the corresponding quarter of 1969, a break from the downward trend of the previous few years. The numbers of births of third and higher birth orders continued to fall. Over the last few years there has been a relative postponement in childbearing in the earlier years of marriage; the question that follows is whether this was beginning to give way around mid-1970 to a period when delayed births were beginning to occur in significant numbers. While it will be necessary to await further information before it will be clear whether short-term factors were contributing to the sharp increase in births which occurred at the end of 1970, the commentary concludes that the analysis of birth data for recent quarters makes changes in birth spacing seem an element of possible importance and worth continued study.

Reference

The Registrar General's Quarterly Return for England and Wales No. 488. Quarter ended 31st December 1970 (HMSO) May 1971 (Price 22½p).

1971 Census in Scotland

The Preliminary Report on the 1971 Census in Scotland, to be published at the end of June, will be the first of the 1971 series issued. It will comprise provisional figures for the enumerated and resident population of each local authority area in Scotland, together with supplementary tables of the Scottish population at each census from 1801, the population of the countries of the British Isles at selected censuses, and an age distribution of persons enumerated in 1971 away from their usual residence. A short account of the census-taking operation and of the forthcoming census publications will be included. All 1971 figures in this report will be derived from summaries compiled by the field enumeration force, and they may differ slightly from those finally reported.

Scottish statistics

The 1969 annual report of the Registrar General for Scotland was published earlier this month. New tables give the estimated population by sex and age for the counties and large burghs, and for planning and hospital regions; single years of age are extended to 24 for the sex and age table for Scotland. Two new life tables (which may not be produced every year) give regional variations in the expectation of life on current mortality and the national expectation of life derived from the 'improving mortality' assumptions used for population projections. Further new tables show the estimated net migration by sex and age for Scotland to the remainder of the UK, and overseas, and the regional net migration within Scotland.

The Registrar General's fourth quarterly return for 1970, to be published in mid-1971, will contain the preliminary return for the year 1970, estimated migration for the first half of 1970, and births during 1970 analysed by the parents' countries of birth, in addition to the usual quarterly tables.

Reference

Annual Report of the Registrar General for Scotland 1969, No. 115 (HMSO) May 1971 (Price: Part I, £3·85; Part II, £1·35).

SOCIAL SECURITY

Regional statistics of incapacity

The statistics of incapacity produced by the Department of Health and Social Security for the year 1968/69 (a statistical year beginning with the first Monday in June) contain information about regions more comprehensive than produced hitherto from this source. For example, spells of incapacity ending in the year and days of incapacity in the year have both been analysed in tables which specify the cause of incapacity, the area, the age of the claimant and the duration of the spell. Regional statistics of the populations at risk for sickness benefit are also available, permitting the calculation of several rates and inter-regional comparisons. The leading figures available for earlier years were given in Tables 10 and 11 of the *Abstract of Regional Statistics 1970*.

Further information can be obtained from the Department of Health and Social Security, Statistics Division, 10 John Adam St., London W.C.2.

HOUSING

Surveys for the Francis Committee on the Rent Acts

Three surveys were undertaken by the Department of the Environment last year on behalf of the Committee on the Rent Acts (the Francis Committee) and reports on them are published as appendices to the Committee's report. The fieldwork in all the surveys was completed between March and August 1970.

The first two surveys were directed and supervised by the statistical staff of the Department who were also responsible for the reports. The fieldwork and basic tabulation was carried out by the British Market Research Bureau Limited.

The tenants' survey (Appendix I) covered representative samples of tenants in each of four areas, the Greater London, West Midlands and Central Clydeside conurbations and the South Wales Coastal Belt (including Cardiff) and separate samples in a few small areas of housing stress within the three conurbations. In each case separate samples were taken of tenancies registered in the system set up under the 1965 Act and of other uncontrolled unfurnished tenancies and furnished tenancies; tenancies still under 1957 Act control were excluded throughout. The survey was designed to reveal the particular characteristics of tenancies in stress areas and to indicate why a very large proportion of regulated tenants had not taken advantage of the Rent Officer and Rent Tribunal systems. It provided a great deal of information about the tenants and their households (by age, income, social grade, family type, etc.) and their attitudes to their landlords, the tenancies and the Rent Act procedures, as well as about their rents and the nature and condition of their accommodation. It reveals *inter alia* that, while tenants in Glasgow pay out on average about 6 per cent of their take home pay in rent, this proportion exceeds 20 per cent in London. Accommodation in Glasgow was in general smaller and provided with fewer of the basic amenities than in London, but was in a better state of repair. This report includes a summary of conclusions.

The landlords' survey (Appendix II) had a more limited coverage and for various reasons it is difficult to draw quantitative conclusions from it. It covered the landlords (or agents) owning (or managing) the dwellings visited in the tenants survey in Greater London and the West Midlands conurbation. The report analyses the sample of landlords interviewed, by age, origin, social grade, and number and type of tenancies, their familiarity with Rent Act procedures and their views about their relations with their tenants and the rent regulation machinery.

Appendix III is the report of a study of Rent Tribunal cases in Greater London, carried out by the Sociological Research Section of the Department in collaboration with the Centre for Environmental Studies. This study looked at the outcome of 100 applications to Rent Tribunals in London made between 1 February and 30 April 1969. Information was collected on the furnished accommodation forming the subject of the application and on changes in the lettings about a year after the Tribunal case. The characteristics of tenants and landlords were recorded and tenants who had since moved were traced and interviewed about their new housing conditions. A separate sample of tenants, who made applications but withdrew them before the Tribunal hearing, was interviewed to find out why they had not continued with the case.

Reference

Report of the Committee on the Rent Acts, Cmnd. 4609 (HMSO) March 1971 (Price £2·85).

Household projections

New household projections for England and Wales and for Scotland, calculated by the Department of the Environment and the Scottish Development Department, have recently been published in the twentieth issue of *Housing Statistics, Great Britain*. They are derived from the 1969-based population projections, made by the Government Actuary's Department in consultation with the Office of Population Censuses and Surveys and the Registrar General for Scotland, which are published in the *Registrar General's Quarterly Return for England and Wales No 485* and the *Registrar General for Scotlands' Quarterly Return No 461*.

The household projections are not greatly different from those previously published (*Statistical News* 11.24). They have again been tentatively extended to 1991 and show estimates of the numbers of married couple households. These too are based on projected headship rates and are given for comparison with the numbers of married couple families (all of which are treated as potential households).

Reference

Housing Statistics, Great Britain No. 20 (HMSO) March 1971 (Price 90p).

EDUCATION

Northern Ireland education statistics

Northern Ireland Education Statistics No. 10 published in September 1970 contains updated (1968/69) figures relating to the subjects covered in the corresponding volume issued in October 1969, that is, finance, school-leavers, examinations and further education.

It reveals that expenditure on education by the public sector during the year 1968/69 rose to £56·5 million, an increase of nearly 8 per cent over the previous year. Of this total £11·96 million was spent by the local authorities, representing approximately 21 per cent and this compares with 20 per cent in 1967/68.

The number of school-leavers during the year was 23,902, an increase of 1,169 over the previous year. The percentage of these going into other institutions of education rose slightly to 39·1 per cent, while the percentage going directly into employment fell slightly to 60·9 per cent. Of the total school-leavers entering Universities, Colleges of Education and other Institutions of Education, approximately 6 per cent, 11 per cent and 75 per cent respectively were from secondary (intermediate) schools. Each of these percentages showed a slight increase over the previous year.

The level of qualifications among the school-leavers showed a substantial increase. Four thousand and sixty had qualifications at 'A' level, an increase of nearly 21 per cent; 1,890 had 5 or more 'O' levels, an increase of 15 per cent, and 2,709 had between 1 and 4 'O' levels, an increase of approximately 28 per cent. Of the total number of school-leavers, 36 per cent had qualifications at either 'O' or 'A' level, and this compares with 31 per cent the previous year.

In keeping with the increase in the number of leavers with 'A' level passes, the number of leavers who stayed at school until they were 18 or more rose substantially. Of the 8,659 who left with GCE qualifications, 5,296 or 61 per cent were 18 or over. This compares with 19 per cent for the year 1967/68.

In the further education sector the number of students enrolled for the year 1969/70 was 34,724. This compares with 34,496 for 1968/69. However in the non-vocational courses the numbers fell by 2,000 to approximately 17,390.

Reference

Northern Ireland Education Statistics No. 10 (HMSO) September 1970 (Price 87½p).

MANPOWER AND EARNINGS

Employment census

It has been decided that the annual censuses of employment are to continue on the lines already announced (*Statistical News* 9.22). The next census will be held in June 1971 and will provide links with the present method of obtaining employment statistics, based mainly on counts of national insurance cards, and with the censuses of population and distribution which are being held this year. From 1972 the present annual industrial analyses of employment based on national insurance cards will be discontinued and will be replaced by annual industrial analyses from the new census of employment.

For the 1971 census of employment, a simplified form is being introduced for those firms which have only one address. It has also been decided that employers with only 1 or 2 employees will be asked to complete census forms only once every 3 years. In consequence, employment census forms will not be sent in 1971 to employers who had only 1 or 2 employees in the 1970 census.

The above arrangements relate to the annual industrial analyses. The present quarterly series of the total number of employees (not analysed by industry), based on the total number of national insurance cards, will continue until national insurance cards are abolished.

Regional employee activity rates

The usefulness of the male employee activity rates by Standard Region in Great Britain as indicators of potential labour reserves and for inter-regional comparisons was reviewed in an article in the January 1971 issue of the *Department of Employment Gazette*, which also presented extensive new data derived from the 1966 Census of Population. These were used to compare regional differences in the Department's annual series of employee activity rates with more general activity rates, taking account of other groups, such as the self-employed, members of the armed forces, students and the retired. For males, wide inter-regional differences in employee activity rates reflected differences in the proportions of the self-employed. When these and other groups were included, the residual inter-regional differences were much reduced. For females, the differences in the employee activity rates were not substantially reduced when other groups were included. The conclusions were that regional comparisons between employee activity rates for males were not very meaningful and that the annual series for males should no longer be compiled or published, but that the rates for females provided useful guidance and should continue to be published.

Civil Service staff records

The February and August 1970 issues of *Statistical News* referred to a computer-based personnel record system being set up in the Civil Service Department to cover senior staff in all Departments. The system, known as the Central Management Staff Record (CMSR), became operational in June 1970 after the records of about 6,500 senior staff had been set up on an ICL System 4/70 computer. By the time this note appears a further 2,000 records will have been added, consisting of all former CEO's and SCEO's who became Principals and Senior Principals in the Administration Group on 1 January 1971. A full description of the system is to be found in the May 1971 edition of the *O & M Bulletin* (*The Journal of Government Management Services*).

Qualified manpower in Great Britain

A new study entitled *Qualified Manpower in Great Britain – The 1966 Census of Population*, No. 18 in the series Studies in Official Statistics, is being published by the Central Statistical Office.

The inclusion in the 1966 Census of Population of a question on all educational qualifications obtained over the age of 18 gave the first comprehensive data on the numbers of qualified people in the country. This study, written by Dr. Rosenbaum, analyses the data, presenting it in tabular form together with a detailed commentary. Breakdowns of the qualified population by industry, occupation, sex and age are given, together with information on their subject and level of qualification. In particular the broad subject groups of education, health, science and engineering and technology are discussed in some detail. A further chapter relates the qualified population to the population of Great Britain as a whole. At the time of the 1966 Census the total number of qualified people was 2·1 million out of a population of 37·8 million over the age of 18 (a qualified person was defined as one who had attained a qualification after the age of 18, excluding those normally obtained at school, e.g. GCE 'A' levels). Some 2½ per cent of the population over the age of 18 had degrees or equivalent qualifications and just over 3 per cent had other higher educational qualifications such as teaching certificates.

Reference

Studies in Official Statistics No. 18. *Qualified Manpower in Great Britain – The 1966 Census of Population* (HMSO) June 1971 (Price 65p).

Prices and earnings in 1951-69 – an econometric assessment

The Department of Employment is publishing a report of a working party set up in 1969 to examine existing econometric models on the determination of prices and earnings and to see whether these models threw light on the effect of prices and incomes policies. The working party included academics as well as officials. The report, made last year, considers many different econometric models and fits them to data up to the end of 1969. It is being published as a contribution to discussion in the field. The appendices include a summary of published articles on the subject, a survey of the theories and reasoning underlying previous work, and an extensive set of relevant statistical data.

PRODUCTION

Reorganisation of industrial statistics

New quarterly sales enquiries will be launched in the second quarter of 1971 in the following six industries:

Motor Cycle, Tricycle and Pedal Cycle Manufacturing – MLH 382*
Jute – MLH 415*
Fur – MLH 433
Hats, Caps and Millinery – MLH 446
Non-Refractory Goods – MLH 461/2*
Cement – MLH 464

*These enquiries replace existing monthly enquiries into: bicycles and tricycles, motor-cycles, road vehicle components (MLH 382); the jute industry (MLH 415); clay tiles, clay roofing tiles, stoneware pipes and conduits and hollow clay building blocks (MLH 461/2).

In each of the above industries the enquiry will cover all establishments with 25 or more employees and the results will be published regularly in the Business Monitor series.

The following short-period enquiries will continue:

Motor Cycle, Tricycle and Pedal Cycle Manufacturing – MLH 382.
Monthly enquiry sponsored by the Cycle and Motor Cycle Association into deliveries.

Jute – MLH 415
Enquiry into stocks, consumption and sales of raw jute.
(This enquiry will in future be taken quarterly instead of monthly.)

Hats, Caps and Millinery – MLH 446
Monthly sales enquiry sponsored by the British Felt Hat Manufacturers' Federation.

Non-Refractory Goods – MLH 461/2
Monthly enquiry into the production, deliveries and stocks of bricks.

Cement – MLH 464
Weekly return sponsored by the Cement Makers' Federation (CMF) of manufacturers' deliveries and stocks of cement.
Monthly return collected by the CMF of cement deliveries in the Economic Planning Regions.

Further information on these enquiries can be obtained from:

Department of Trade and Industry

a. Economics and Statistics Division 2, Dean Bradley House, Horseferry Road, London SW1 (Tel. 01-799 5688 Ext. 5) for the enquiry into Motor Cycle, Tricycle and Pedal Cycle Manufacturing.
b. Economics and Statistics Division 3, 1 Victoria Street, London SW1 (Tel. 01-222 7877) for the enquiries into Jute (Ext. 3160) and for Fur, and Hats, Caps and Millinery (Ext. 3152).

Department of the Environment, Statistics Division, Lambeth Bridge House, London SE1 (Tel. 01-735 7611 Ext. 2013) for the enquiries into Non-Refractory Goods and Cement.

The following industries can now be added to those reported earlier where discussions between Government statisticians and industry interests, on the reorganisation of industrial statistics, have already commenced:

Brewing and Malting – MLH 231
Soft Drinks – MLH 232
Other Drink Industries – MLH 239
Mineral Oil Refining – MLH 262
Formulated Pesticides, etc. – MLH 279/4
Narrow Fabrics – MLH 421
Asbestos – MLH 429/1

Discussions are due to start in the following metal goods industries:

Engineers' Small Tools and Gauges – MLH 390
Hand Tools and Implements – MLH 391
Cutlery, Spoons, etc. – MLH 392
Bolts, Nuts, Screws, Rivets, etc. – MLH 393
Wire and Wire Manufactures – MLH 394
Cans and Metal Boxes – MLH 395
Drop Forgings – MLH 399/5
Domestic and Other Holloware – MLH 399/6 & 7

Industrial statistics – alleviation of form-filling

The principal aim of the current reorganisation of industrial statistics is to establish an integrated system of short-period and annual enquiries on a comprehensive basis. The establishment of this general system will mean an increase in the demands made on industry for statistical information, e.g. the number of respondents in industry covered by the new arrangements for quarterly statistics will amount to perhaps two-fifths of all manufacturing firms against about one-quarter under the previous reporting arrangements; this result is an inevitable consequence of the widely accepted need to improve the existing statistics. However, as it is also most important to keep the reporting burden on respondents to the minimum possible, the opportunity has been taken in the course of the reorganisation programme to review existing requirements for information with a view to the reduction of these wherever possible.

As a result of the reviews of the existing statistics of industries which have taken place so far, various easements of form-filling burdens have been achieved and other reductions, subject to agreement with representatives of the industry concerned, are proposed. Examples of these changes include the discontinuation of certain enquiries, and the reduction in frequency of others; in many enquiries the collection of ex-factory export deliveries or of export and home market orders in product detail will be discontinued; in some enquiries the collection of commodity inputs and stocks will be dropped. In a few enquiries there will be some reduction in the number of respondents relative to those in the enquiry they replace because of a raising of the exemption level. It is estimated that about *8,000* respondents to existing industry enquiries will be affected, in some degree, by these alleviations. Additionally, in a few instances, trade associations have decided to discontinue their own statistical enquiries, in whole or in part, in view of the statistics which will become available from the new official enquiries.

Notes of the progress of enquiries in individual industries are included in each issue of *Statistical News*.

FOOD AND AGRICULTURE

Food consumption levels

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 1970 and revised estimates for 1969 has been prepared and published in *Trade and Industry* (Vol. 2, No. 8, page 412) on 24 February 1971.

Revised figures with more detailed nutritional analyses will be published in June.

Harmonised accounts for farming net income and agricultural net output

When the index of agricultural net output was revised in 1969, the opportunity was taken to regroup some components so as to bring their accounting treatment more into line with that used in the current-priced net income calculation (see *Statistical News* 6.24 and *Economic Trends* No. 194). The extended coverage of the agricultural census from June 1970 (described in *Statistical News* 6.9) has made complete harmonisation possible with the result that there is now a single framework for both current-priced and constant-priced accounts (the latter at present uses prices averaged over the three years June 1964–May 1967).

The new framework indicates the relationship between gross product, net product (formerly called net output) and farming net income; and figures on this basis were presented in the White Paper *Annual Review and Determination of Guarantees 1971* (Cmnd. 4623) to show the build-up of farming net income at current prices for each of the years 1968–9, 1969–70 and 1970-1 (forecast). A longer time-series at current prices and a corresponding series at constant prices (at least down to the level of net product) will be published in the *Annual Abstract of Statistics 1971*.

Other new agricultural statistics

This year's Annual Review White Paper also incorporates a number of other improvements compared with previous years. The tables on crop acreages, livestock numbers and the labour force, on incomes by farm-type and on market values, unit subsidies and total returns to producers, give greater detail than before. Statistics on labour productivity, average farm-size in terms of standard man days, and on exports have been introduced into existing but rearranged tables. Two new tables have been introduced on gross fixed capital formation in agriculture, and on the numbers of holdings producing each main type of crop and livestock together with the average size of each such enterprise on the holdings concerned. Other tables have been rearranged in the interests of clarity, and percentage relationships have been added to some tables of absolute figures.

TRANSPORT

London area air traffic forecasts

The report of the Commission on the third London airport, published in January 1971, refers to forecasts of air traffic demand in the London area made by the Working Party on Traffic and Capacity at Heathrow, set up by the Department of Trade and Industry, whose own investigations ran concurrently. The Working Party included representatives of United Kingdom airlines and the British Airports Authority. Its report was published in April 1971.

The Working Party investigated the relationships between air traffic demand and some of the principal demographic and economic variables. While these indicated the relative importance of some of the principal determinants of demand for air travel the relationships were fairly loose and not precisely calculable. In the event, air transport forecasts were made by extrapolation of long-run trends in each of the main markets modified by consideration of economic factors likely to be operating and probable developments in air transport. Passenger demand in 1980 is expected to be about three times what it was in 1969 with international traffic increasing more than domestic. The introduction of larger aircraft and the rapid growth in high load factor charter services is expected to moderate the corresponding increase in aircraft movements to about two-thirds.

The traffic demand forecasts and representative distributions of aircraft types and the airways used to enter and leave the London terminal area were used as in-put to a computer simulation of air traffic control for Heathrow airport. Estimates were made of the average size and distribution of air traffic control delays which may arise at Heathrow in busy summer periods in the coming decade.

The report of the Commission on the Third London Airport (SBN 11 510171 3) is published by HMSO, price £5. The report of the Working Party of Traffic and Capacity at Heathrow (SBN 11 510 446 1) is published by HMSO, price £2·60.

BALANCE OF PAYMENTS

Seasonal adjustment of United Kingdom overseas trade figures

An article concerning recent work on the seasonal adjustment of United Kingdom trade statistics was published in *Trade and Industry* on 17 February 1971. Its purpose was to provide a recent account of the sources of variation in the monthly trade figures and to describe problems and methods of adjusting the trade data, and the effects of changes in the adjustments. Revised seasonally adjusted quarterly figures for total exports and imports, together with their major components, are presented in the article and the new adjustments have been brought into use with the monthly trade statistics from the beginning of 1971.

The reasons for the changes, as explained more fully in the article, were to incorporate various alterations in the coverage and arrangement of the trade statistics, including the latest developments in the recording of the data, and to bring the seasonal analysis up to date. A statistical note at the end of the article gives in some detail the seasonal and other adjustments made to exports and imports. The various steps in the main computer analysis are described and an account is also given of a shorter subsidiary computer programme with which, as new monthly figures become available, the seasonal factors are brought up-to-date and applied to adjust the monthly values of trade.

UK official long-term borrowing and lending

In the March issue of *Economic Trends* two new tables were introduced showing the quarterly levels of UK official long-term borrowing outstanding (Table 12) and UK official long-term lending outstanding (Table 13). Regional and country detail is given in summary form in both tables. More detailed annual figures of UK official long-term borrowing and lending outstanding are published in the UK Balance of Payments Pink Book (Tables 35 and 36 of the 1970 issue). The level of UK official short and medium-term borrowing outstanding is already published each quarter in *Economic Trends.*

NATIONAL BOARD FOR PRICES AND INCOMES

Hours of work, overtime and shiftworking

The NBPI report and statistical supplement on this subject, which covers all aspects of hours of work, was published in December 1970. The report contains many national and some international statistics on hours of work and shiftwork, including the results of a number of surveys carried out by the Board. These are given in detail in the supplement. The two main surveys carried out were first an analysis relating to May 1970 of some 2,300 establishments by size, industry and level of overtime working, of questions on overtime, shiftwork and part-time working. The second was a study of the behaviour and attitudes towards shiftwork and overtime of a sample of about 1,000 adult male manual workers in 22 establishments in a variety of industries in three selected areas. The analyses identify the personal and working characteristics of shiftworkers and those who work unusually long hours, their attitudes and those of their wives to their work patterns and the effects of these on the domestic and social lives of the workers concerned. A third major study was a special analysis of the New Earnings Survey carried out for NBPI by the Department of Employment. This showed the relationship of total and overtime hours and shiftwork to age, pay level and sickness and other absence. The supplement also contains a summary of hours of work in other countries and the results of surveys of the views of employers' associations, major employers and unions on aspects of working hours together with a classified bibliography.

References

Hours of Work, Overtime and Shiftworking, National Board for Prices and Incomes, Report No. 161, Cmnd. 4554 (HMSO) December 1970 (Price 80p).

Hours of Work, Overtime and Shiftworking (Supplement), National Board for Prices and Incomes, Report No. 161 (Supplement), Cmnd. 4554 – I (HMSO) December 1970 (Price £1·45).

Garages

In February 1971 the NBPI reported on the costs, profits and charges of a sample of about 700 from the 10,500 garages carrying out repairs and servicing of motor cars. The report includes index numbers of charging rates since October 1966 when the Board last carried out a survey and distributions of garages by type and size in ranges of charging rates and charges for specified jobs in addition to analyses of earnings and other data.

Reference

Costs and charges in the motor repairing and servicing industry, National Board for Prices and Incomes, Report No. 163, Cmnd. 4590 (HMSO) February 1971 (Price 35p).

Remuneration of solicitors

In April 1971 the NBPI made its third report (but the second and last under its standing reference) on the remuneration of solicitors; the earlier reports were published in February 1968 and November 1969. The latest report gives the results of a detailed time-cost survey of conveyances starting in a four-week period beginning in April (eight-week period for the less common types of conveyances). Each practice provided, in addition to accounting information and particulars of individual profits and salaries, details of total charges and time spent on each stage of a conveyance by each fee-earner. These records were then converted into costs relating to each fee-earner. Total time and costs as well as charges in respect of conveyancing and work on mortgages for over 900 conveyances were then analysed by various types (on registered compared with unregistered land, for vendor with purchaser, commercial with housing property, etc.) to provide comparisons on which the Board could make recommendations about scales of charges. Estimates were also made of the total value of conveyances and of the relationship between changes in the value of property, of conveyancing charges and the general price level. There is also an estimate of the financial costs and savings to the public from land registration.

Reference

Standing Reference on the Remuneration of Solicitors: Second Report, National Board for Prices and Incomes, Report No. 164, Cmnd. 4624 (HMSO) April 1971 (Price 50p).

National Health Service ancillary workers

A report by the NBPI on *Pay and Conditions of Service of NHS Ancillary Workers* was published in April 1971. This was one of a set of three reports by the Board on low-paid manuals in three service trades, the others covering laundries and dry-cleaning and service industries. The report gives the results of a survey of pay and conditions of employment for a week in September 1970 from a sample of 470 hospitals (a response of 89 per cent) and 6,000 workers engaged in various occupations such as domestic, catering and laundry workers and porters. Engineering and building workers were excluded in the reference. Analyses cover the composition of the labour force, age and length of service, and composition of hours and earnings.

Reference

Pay and Conditions of Service of NHS Ancillary Workers, National Board for Prices and Incomes, Report No. 166, Cmnd. 4644 (HMSO) April 1971 (Price £1·05).

Laundry and dry cleaning workers

For the report by the NBPI on pay and conditions in this trade, a survey of pay, hours of work and conditions of employment was carried out for a week in September 1970 covering a sample of 309 firms and 3,400 workers.

Reference

Pay and Conditions of Service of Laundry and Dry Cleaning Workers, National Board for Prices and Incomes, Report No. 167, Cmnd. 4647 (HMSO) April 1971 (Price 80p).

Contract cleaning workers

For the report by the NBPI on pay and conditions in contract cleaning, a survey was carried out for a week in September 1970 covering a sample of 721 firms.

Reference

Pay and Conditions of Service of Contract Cleaning Workers, National Board for Prices and Incomes, Report No. 168, Cmnd. 4637 (HMSO) April 1971 (Price 45p).

Circumstances of low-paid workers

In November 1970 the National Board for Prices and Incomes carried out a survey into the characteristics and circumstances of nearly 1800 workers in three low-paying service industries. The survey covered full-time men, full-time women and part-time women manual workers in the laundry and dry cleaning industry and the National Health Service and part-time women in the contract cleaning trade. The survey had two main aims, first to assess the relationship between the pay of these workers and their standard of living and second to explore some of the factors affecting their ability to earn and the choice of jobs open to them. The survey was conducted by interview and the questionnaire's 175 questions cover many aspects of these problems. A calculation based on the benefits awarded to Supplement Benefit Commission claimants was used to measure the relative standards of living of workers covered by the survey. The main results of the survey are presented in an appendix to the report. The analyses explore the relationships between pay and living standards, and the relative influences of the different characteristics of the workers and their circumstances on their pay, attitudes to work, mobility and many other factors.

Reference

General Problems of Low Pay, National Board for Prices and Incomes, Report No. 169, Cmnd. 4648 (HMSO) April 1971 (Price £1·50).

INTERNATIONAL

Council of Europe

a. Second Population Conference

This is to be held at Strasbourg from 31 August to 7 September 1971. The First Conference, held in 1966, had a programme which embraced a very wide range of topics. The Second Conference aims to deal in depth with a few clearly-defined subjects, relating principally to applied demography. The United Kingdom representative on the Organising Committee for the Conference has been Miss Jean Thompson, Office of Population Censuses and Surveys. Six topics have been chosen on which reports will be presented to the Conference by research directors appointed by the Organising Committee:

1. The demographic aspects of the ageing of the population in Europe and its social and economic implications.
2. The demographic aspects of differential mortality and morbidity according to age and sex in Europe; their social and economic consequences, especially in the field of excess male mortality.
3. Inter-relationship between fertility and the social and economic status of families in Europe; its effects on social policies.
4. The demographic and social pattern of migrants in Europe, especially with regard to international migrations.
5. Population data needs and the use of such data in demographic and social analysis.
6. Developments in demographic teaching and research in Europe.

Preparatory research undertaken on these subjects has covered as far as possible the whole of Europe and has been largely original in character. From the results obtained, a number of practical conclusions will be drawn, aimed at guiding the public authorities in sectors directly affected by population trends and their repercussions.

Although membership of the Conference is limited, and is by invitation only, the debates will be public. Further information is available from the Secretary General, Council of Europe, Strasbourg.

b. Meeting on demographic projections

A working party was held in Geneva from 15–19 March 1971. Twenty-two member countries were represented and a number of international organisations. The United Kingdom was represented by Miss J. Thompson of the Office of Population Censuses and Surveys (who was in the Chair) and by Mr. C. Stewart of the Government Actuary's Department.

The principal business of the meeting was to consider the need for additional efforts to increase the comparability of national projections of population in order to meet the growing demand for internationally comparable demographic projections at the regional and world-wide level.

On the co-ordination of total population projections by sex and age, there was an exchange of experience regarding methods, techniques and data used in national projections with the aim of clarifying the problems involved; the meeting considered the main characteristics of the projections to be adopted for the 1973 revision of the United Nations population projections, to be presented at the Third World Population Conference (in 1974) as well as to meet many current requirements. There was an exchange of experience on other demographic projections e.g. regional, household and families, labour force, and the school population.

PUBLICATIONS

Annual Digest of Health Statistics

The Department of Health and Social Security recently published the *Digest of Health Statistics for 1970*, the second in their series of Annual Digests. Most of the statistics relate to England and Wales but summary tables for Great Britain are included in this issue for the first time.

The Digest aims to give the salient statistics for the health and closely related welfare services. The figures are presented generally in the form of ten year trends together with the earliest year after the inception of the National Health Service for which figures are available. Additionally, in some cases more detailed analyses with regional or other breakdowns are given. The Digest includes sections on population, on finance and manpower of the health and welfare services, hospital administration, dental, opthalmic and pharmaceutical services, local authority health and welfare services, psychiatric services, morbidity and preventive medicine.

A number of new tables for England and Wales have been introduced in this issue, including an analysis of hospital current revenue expenditure by type of hospital, and tables relating to hospital building schemes completed, mental illness hospitals, and abortions. Abortions are analysed in two tables, in the first by place, marital status and age, in the second by Regional Hospital Board area.

Reference

Digest of Health Statistics for England and Wales (with summary tables for Great Britain) 1970 (HMSO) March 1971 (Price £1·60).

Historical Abstract of Labour Statistics

The volume *British Labour Statistics: Historical Abstract 1886-1968*, which was described in an article in *Statistical News* (10.7), has now been published. It is intended as a standard work of reference and includes all the main series of statistics on wage rates, earnings, hours of work, retail prices, employment, unemployment, vacancies, family expenditure, industrial disputes, membership of trade unions, industrial accidents, labour costs and output per head. The extensive introductory notes give a complete description of the methods used to compile the statistics. In addition to the official series published between 1886 and 1968, the volume contains some earlier material.

The book is bound in hard covers and contains 380 pages of tables and 50 pages of text.

Reference

British Labour Statistics: Historical Abstract 1886–1968 (HMSO) 1971(Price £7·00).

Civil Service Statistics 1970

Civil Service Statistics 1970 is the first of a new series of annual reports produced by the Civil Service Department Statistics Division. It contains a number of tables analysing the Civil Service manpower situation on 1 January 1970, showing for example the types of jobs civil servants do, the numbers in each department, and the numbers in the different regions. Other tables give details of the numbers entering and leaving the Civil Service during 1969, with analyses by staff group, age, and length of service.

The report includes a brief commentary which, with the aid of diagrams, focuses attention on some of the main aspects of the tables. There is a section describing the structure of the Civil Service as it was in 1970, together with a description of the changes now taking place. The commentary also includes historical information showing the changing size of the Civil Service since the beginning of the century. Most of the report is concerned with the non-industrial Civil Service, and the quoted current figures have mainly been obtained from the Central Staff Record.

It is planned to issue a similar report each year. Future issues are expected to follow a similar pattern, repeating the basic statistical tables and including an introductory text, which will comment on changes during the year and look in some detail at one particular aspect.

Reference

Civil Service Statistics 1970 (HMSO) February 1971 (Price 70p).

CSD Management Studies

The first two reports in a new series of studies in Civil Service management subjects by the Civil Service Department have now been published. This series of *CSD Management Studies* will comprise reports of studies and surveys undertaken by the Department as part of its responsibility for the central management of the Civil Service; it is expected that such reports will interest management both from the rest of the public sector and from private industry.

The first report in the series was *Sickness Absence in the Civil Service, 1967*, which was prepared by the Statistics Division of CSD with the help of the Medical Advisory Service. An article about this survey giving the main results appeared in the November 1970 issue of *Statistical News* (11.10). It covered 21,000 non-industrial civil servants, a 5 per cent sample of staff in 1967. The report lists the causes of sickness absence and carries tables of the categories of people affected, together with a summary of the main points revealed by the survey. It was found that, on the whole, civil servants have about the same sickness absence rate as other comparable workers.

The second study in the series was *Computers in Central Government Ten Years Ahead* a review by a three-man team (two civil servants and a senior consultant) who reported to the CSD in 1969. The report concentrates mainly on administrative and general purpose data processing, and begins with a review of past trends. It then attempts to identify the needs for the next decade in terms of machines, systems and personnel, taking account of likely developments in computer technology. A foreword to their report explains that publication of the team's findings 'implies neither endorsement of its forecasts and conclusions nor acceptance of its recommendations'.

References

CSD Management Studies 1. *Sickness Absence in the Civil Service 1967* London (HMSO) 1971 (Price 45p).

CSD Management Studies 2. *Computers in Central Government Ten Years Ahead* (HMSO 1971 (Price £1·25).

Firearms in crime

The results of an investigation into those indictable offences in England and Wales which involved firearms in 1967 and 1968 were published in November 1970 in a report in the series of Home Office Research Studies.

The reason for making the investigation was that there has been concern about the continuing increase in the number of these offences. The statistics collected before 1967 did not distinguish between offences of actual use or carriage for possible use and offences in which firearms were involved only as stolen property. In 1967 a new and more informative series was started from which the report was compiled. It was found that over 60 per cent of the offences in 1967 and 1968 were offences in which firearms were involved only by being mis-appropriated. The report demonstrates that the main reason for the increase from 1,511 in 1966 to 2,339 in 1967 in offences involving firearms reported to the Home Office was an improvement in the recording of these offences.

The report is mainly concerned with the 1670 offences in the two years in which firearms were actually used. These offences were divided into those recorded in London and in the rest of the country. They were analysed by type of weapon, classification and motivation of offence, and by scene of crime. Offences involving personal injury were analysed by age of victim and offender, and offences of robbery were analysed by the success or failure of the robbery and by the type and amount of property stolen and recovered.

Some of the more interesting findings are that three-fifths of the offences in which firearms were used had violence as their motive and nearly all the remainder were for gain. For offences motivated by violence the number per head of population was almost the same in London as in the rest of the country, but the rate for offences for gain was twelve times higher in London. A robbery in London was 4 times as likely to involve a firearm as one outside. 89 people were killed by firearms in the two years, over half by shot guns. In addition 130 people were seriously injured and 634 slightly injured. Many of the latter group were found to be children and adolescents injured by airguns by other children and adolescents.

For the years from 1969 information in the same detail as in the report is being collected on a regular basis using forms devised from the experience gained during this investigation.

Reference
Home Office Research Studies: No. 4. *Firearms in Crime*. A Home Office Statistical Division Report by A. D. Weatherhead and B. M. Robinson (HMSO) November 1970 (Price 30p).

Family Expenditure Survey 1970 – preliminary results

The annual report on the Family Expenditure Survey for 1970 is expected to be published in September. Meanwhile some preliminary results of the survey are being published in the *Department of Employment Gazette*. As usual, these are analyses of weekly expenditure, averaged over all households in the United Kingdom which co-operated in the survey, with corresponding figures for 1968 and 1969.

Motor industry statistics, 1960-69

The third edition is now available of the *Data Book of Motor Industry Statistics*, first published in 1969. It contains a wide range of statistical information for the UK, covering production, imports and exports, registrations, finance and employment. In addition, there are statistics relating to the production of cars and commercial vehicles in the leading motor manufacturing countries. These data have been collected from a number of sources, notably the Society of Motor Manufacturers and Traders, and the Department of Trade and Industry. The presentation is designed to assist all those seeking information on the state of the UK motor industry.

This publication is obtainable from the National Economic Development Office, Millbank Tower, London SW1 (Price 55p).

New Business Monitors

Overseas travel

Statistics of travel to and from the United Kingdom obtained from the International Passenger Survey, are being prepared more promptly than hitherto, and will in future be published quarterly in the Business Monitor series. The Survey is carried out by interviewing passengers entering and leaving the United Kingdom on the main air and sea routes. The interviews are conducted by the Social Survey Division of the Office of Population Censuses and Surveys for the Department of Trade and Industry.

The new Business Monitor (reference M6) will also give details of the latest monthly figures of arrivals of foreign visitors, derived from Home Office records.

An annual supplement, to be published in the summer, will contain the full final annual results of the International Passenger Survey, which have hitherto been published in the former *Board of Trade Journal*.

Finance houses

Statistics of selected assets and liabilities of finance houses, formerly published in the *Board of Trade Journal* and *Trade and Industry*, have been incorporated into the Business Monitor series. The new Monitor (reference SD7), to be published quarterly, includes figures of selected assets, e.g. instalment debt outstanding, leased assets, etc., and a detailed analysis of deposit liabilities.

Manufactures of paper

Monitors have been published presenting the first results of new quarterly inquiries into manufacturers' sales of cardboard boxes, cartons and fibreboard packing cases (Minimum List Heading 482/1 of the Standard Industrial Classification), miscellaneous packaging products of paper and film (MLH 482/2), manufactured stationery (MLH 483) and miscellaneous manufactures of paper and board (MLH 484/2). These inquiries are designed to fit into the new system of industrial statistics which was described in an article by Mr. J. Stafford in issue No. 1 of *Statistical News*. The new Monitors (references P67, P68, P71 and P87, respectively) supersede earlier Monitors for boxes, cartons and fibreboard packing cases, paper and film bags and manufactured stationery. They maintain a very substantial degree of continuity with the preceding publications in product coverage of boxes, cartons, packing cases, paper and film bags and manufactured stationery, and give additionally, for the first time, official short-period statistics for a wide range of other paper products, such as paper sacks, wrapping and packing paper, moulded pulp articles, toilet paper, serviettes, handkerchiefs, etc.

All the above Monitors are obtainable from Her Majesty's Stationery Office, PO Box 569, London SE1, for an annual subscription of 37½p each.

Report on Overseas Trade – end of publication

It was decided that publication of the *Report on Overseas Trade*, produced by the Department of Trade and Industry, should cease with the February 1971 issue. The information which was published in the report can to some extent be obtained from other publications, the principal alternative sources of United Kingdom overseas trade statistics being:

Overseas Trade Statistics of the United Kingdom, which gives a considerable amount of detailed statistical information on imports and exports;

Trade and Industry, which contains articles on overseas trade published each month giving seasonally-adjusted statistics for broad commodity groups and the main areas of the world in recent periods, with similar but more detailed information appearing in quarterly articles on foreign trade;

Monthly Digest of Statistics, which contains a wide range of summary statistics of overseas trade by commodity and country, together with the unit value and volume index numbers;

Annual Abstract of Statistics, which gives summary tables showing more detail than those in the *Monthly Digest*, but on an annual basis only, with a run of statistics for about nine years.

All these sources are published by Her Majesty's Stationery Office.

Public expenditure

Two recent White Papers have set out the government's plans for public expenditure up to 1974/75. Cmnd. 4515 *New Policies for Public Spending* was essentially a statement of the effects of the new policies announced by the Chancellor on 27 October reflecting the approach of the new Government to public expenditure. The position before and after the changes, together with details of the changes, is displayed in two tables showing an analysis by individual programmes for 1971/72 and by groups of programmes for 1974/75. Cmnd. 4578 *Public Expenditure 1969/70 to 1974/75* followed Cmnd. 4234 *Public Expenditure 1968/69 to 1973/74* as the second of the annual series of public expenditure White Papers. It presents a fully detailed picture of public expenditure plans for each of the five years up to 1974/75.

The first section of Cmnd. 4578 comprises a general review of expenditure, with particular attention to the overall pattern of development and the public sector's use of resources. The second section describes the individual programmes in considerable detail, while the third provides additional statistical material analysed in various ways – by programme, economic category and spending authority – up to 1972/73.

An appendix gives tables analysing the changes from Cmnd. 4234 to Cmnd. 4578 by programme for each year from 1969/70 to 1974/75. The tables for the years 1970/71 to 1974/75 include also the programme estimates as they stood when the government assumed office in June of last year and in addition those for 1971/72 and 1974/75 repeat the Cmnd. 4515 estimates of the programmes after the changes announced in October. This set of tables thus provides on a comparable price basis a detailed history of developments in the public expenditure estimates from the last published plans of the previous administration to January this year when Cmnd. 4578 was published.

An important new feature of Cmnd. 4578 is the inclusion of a table (1.2) showing the totals of the individual programmes after adjustment for the relative price effect; the object of this adjustment is to ensure so far as possible that the programmes represent that proportion of gross domestic product at constant prices which in the event they will represent at current prices. This enables more meaningful comparisons to be made between the rates of growth of new programmes in terms of the demands on resources implied by the programme estimates. This is particularly important for those programmes which are large users of manpower.

References

New Policies for Public Spending, Cmnd. 4515 (HMSO) October 1970 (Price 10p).

Public Expenditure 1969/70 to 1974/75, Cmnd. 4578 (HMSO) January 1971 (Price 45p).

GLC Research reports

Research Report No. 9: Classifications of the London boroughs

Research Report No. 9, published by the GLC Intelligence Unit, presents some classifications of the London Boroughs, which have been produced as part of a programme of work aimed at the classification of districts within London. It is hoped that the classifications given here will be of use to those people requiring a division of Greater London into smaller units based on administrative areas.

These classifications are based on data, taken from the 1966 sample Census, relating to the resident population of the boroughs. They are derived by using cluster analysis techniques, which are described in Part I of this paper. Each borough is described by a score on each of a set of input variables. Boroughs with similar scores on these variables are clustered together and consequently the characteristics of each cluster can then be described.

It is seen that the London Boroughs tend to be grouped in different ways when input variables relating to different fields of interest are used to describe them. Six classifications, each relating to specific aspects of the population – for example, housing conditions and birthplace characteristics – are undertaken in this paper. A further classification is also included, based on a general set of input variables, and there is a discussion of the way in which this relates to the more specific classifications.

The report is obtainable from the Information Centre, The County Hall, London SE1 (Publication No. 7168 0331 3) (Price 40p).

Research Report No. 10: Car ownership in London

This report, published by the GLC Intelligence Unit, indicates that London may have to adapt to far greater numbers of cars over the next twenty years than are present now. The authors suggest that most policy decisions apart from direct control, such as the banning of street parking, will probably be found to have a marginal effect on the level of car ownership. Income distribution, of all the variables examined, has been found to be the only factor that affects car ownership substantially; and since a majority of the population are approaching the threshold point, at which only a small increase in real incomes will take them into the car-owning categories, it seems that in the forecasting period little can be done to prevent the growth of car ownership. The authors emphasise that their prediction is essentially a demand forecast and, in describing the methods they used, subject the whole concept of demand forecasting to a critical appraisal.

The paper contains forecasts of car ownership for households and the total number of cars in 1981 for the London Traffic Survey area, the GLC area, traffic districts and boroughs; in addition, there are estimates for the LTS area and traffic districts for 1991.

The report may be obtained from the Information Centre, The County Hall, London, SE1 (Publication No. 7168 0334 8) (Price £1·00).

United Nations: Growth of world industry

The second edition of *The Growth of World Industry* has now been published by the United Nations Statistical Office in two volumes. Volume I – *General industrial statistics 1958–1968* is divided into two parts: the first contains the basic national data for each country in the form of separate country chapters and the second part is a selection of main indicators showing global and regional trends in industrial activity, as well as detailed estimates and projections of the pattern of world industrial production and employment. Volume II – *Commodity production data 1958–1967* contains detailed information on world production of 315 industrial commodities. It also supplements, at the commodity level, the information presented on an industrial basis in volume I, and provides a more specific indication of the nature and importance of industrial activities in each of the 67 countries represented. Commodities are listed according to the International Standard Industrial Classification for all Economic Activities (ISIC), with their corresponding SITC codes, and there is an aplphabetical index to commodities,

Reference

The Growth of World Industry (1968 edition), United Nations Statistical Office (2 volumes). Volume I (SBN 11 901463 7), price £3·50; Volume II (SBN II 901150 6), price £2·19. Available from HMSO.

GOVERNMENT STATISTICAL SERVICE

Statistical Liaison Committee

A National and Local Government Statistical Liaison Committee has been formed with the following terms of reference:

a. To bring to the notice of local government the statistics which are already available, particularly from the Government Statistical Service, including both published material and material available on application.

b. To bring to the notice of central government, local government needs for statistical information and problems they experience in obtaining and using statistics collected by central government.

c. To co-ordinate the statistical activities, including the statistical aspects of administrative procedures, of local and central government, in order to facilitate a flow of information in both directions.

d. To discuss common problems in such fields as definitions and classifications, working towards common standards where these are appropriate.

The Committee met for the first time in September 1970, with Mr. I. C. R. Byatt, the then Director of Economics and Statistics at the Ministry of Housing and Local Government, in the chair. Members present included representatives of the Greater London Council, the London Boroughs Association, the County Councils Association, the Association of Municipal Corporations, the Rural District Councils Association, and a number of government departments; apologies for absence were received from the Urban District Councils Association. The secretariat is provided jointly by the Department of the Environment and the Central Statistical Office. A second meeting will be held very shortly.

Business Statistics Office

Mr. M. Richardson has visited the United States Bureau of the Census, Washington, to study United States computer techniques for protecting the commercial confidentiality of business statistics. As a result of this visit the BSO hopes to apply methods, some still under test, devised in the United States Bureau of the Census for preserving the confidentiality of figures of individual firms in two and three-dimensional statistical tables.

This study tour was a follow-up of the visit by members of the CSO and BSO to the United States in September 1970.

Seminar on input-output statistics

Mr. L. S. Berman and Mr. M. J. Green of the CSO and Mr. D. J. Liston of the DTI were the speakers at a seminar 'Input-output statistics for industry' organised by the British Institute of Management in collaboration with the Central Statistical Office and held in London during April.

Appointments

Central Statistical Office and Department of Trade and Industry

Mr. T. S. Pilling, Assistant Director, Central Statistical Office will transfer to the Department of Trade and Industry on 1 June 1971, and Mr. A. J. Boreham, Head of ECS 2 Division of DTI, will move to the CSO.

Business Statistics Office

Mr. H. E. Browning, Chief Statistician and Deputy Director of the BSO, has moved to the Newport Office and has taken over responsibility for distribution statistics including the Census of Retailing and Other Services for 1971.

Dr. B. Mitchell, Chief Statistician, has assumed responsibility for production statistics; he is at the Eastcote office.

LATE ITEM

1968 Census of Production

Part 1 of the Report on the Census of Production for 1968 will be published shortly. It contains information describing the coverage of the census and the methods used in conducting it and processing the returns received.

The Report on the Census of Production for 1968 is divided into 171 separate parts as follows:

a. Part 1 — Description of the Census
b. Parts 2–154 — Industry Reports
c. Part 155 — Index of Products
d. Parts 156–158 — Summary Tables, containing industry, area and enterprise analyses
e. Parts 159–171 — Directory of Businesses

The publication of the separate industry reports is expected to begin in the immediate future and to continue over a period of approximately twelve months. These will then be followed by the Index of Products and the Summary Tables. It is planned to publish the Directory of Businesses – which will contain the name, address and industrial classification of each contributor to the census who agreed to be included in such a list – early next year.

Alphabetical Index

The index to *Statistical News* covers the last nine issues. Page numbers are prefixed by the issue number e.g. 5.31 signifies issue number 5, 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.

The following conventions have been observed in printing this index: references to items appearing in articles are shown by (A); italics are used for the titles of published books or papers.

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CENTRAL STATISTICAL OFFICE

Input-output tables for 1968

Provisional input-output tables for 1968, distinguishing 70 separate industry groups, are now available from the Central Statistical Office, price £1·00 per set. (The main tables are also available in computer readable form.)

Summary tables, distinguishing 35 industry groups, together with an article explaining how they had been derived, were published in the January issue of *Economic Trends*.

The full tables are similar in coverage to the firmly based tables published for 1963 (Studies in Official Statistics No. 16). Orders should be addressed to the Information Office, Central Statistical Office, Great George Street, London, SW1.

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