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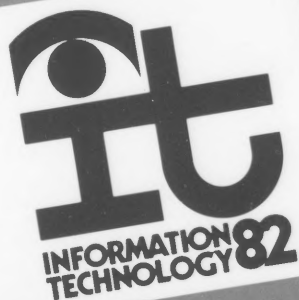
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STATISTICAL NEWS

Developments in British Official Statistics



**Information
Technology
Edition**



A publication of the Government Statistical Service



Government Statistical Service

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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Information technology policy in the United Kingdom

A. R. D. Norman and D. A. T. Rayfield, Information Technology Unit, Cabinet Office

Information technology

The economies of many advanced countries in the Western World have a growing information sector, and a relatively declining manufacturing and extractive sector. Fewer and fewer people are involved with the transformation of matter and energy from one form to another, while more and more of us are involved in transforming information from one pattern to another. Also growing is the third sector, in which people provide to others, through markets, public institutions or in their own homes, personal services (such as nursing) which unlike, say, banking, are not primarily information-based. All these sectors are inextricably intertwined, and finding useful measures of size and growth is difficult. Suffice it to say that the information sector of the economy is growing rapidly and the activities associated with it are contributing an ever larger proportion of gross national product.

The technologies for processing and communicating information are the foundations of this growth, and hence the concern not only of corporations but also of governments. Attention usually focusses on two technologies in particular: micro-electronics and telecommunications transmission. The ratio of performance to cost in both has been rising at an unprecedented rate. The impact on the economies of industrialised countries is more like that administered by war and revolution rather than by any previous technical change. Steam power, the internal combustion engine and telegraphy established themselves over a generation. Information technology is making similar progress in the lifetime of a parliament or a presidency.

The activities that use information technology go on both in businesses and in public administration. These activities use resources, both human and equipment, to produce information products and services, not all of which are bought and sold in the market place. Information itself is a commodity which can be bought and sold, and is a resource or factor of production substituting for machinery, materials, money, people or energy in a production process.

National policy for information technology

The European Community has an information technology strategy. The French have launched a programme for telematique, to bring about l'Informatisation

de la Societé. Successive Japanese national plans have given priority to information technology. In the United States, research and development have pulled-through information technology. The United States government spends many times more on defence and space computers alone than the total investment of the British government in computers for all purposes.

With each new generation of technology undercutting its predecessors and production costs declining along a learning curve, those who enter markets late and without the ability to build up large volumes quickly, have no way of catching up with the leaders. If our competitors are willing to capture markets by accelerating research and development and basing their prices on expectations of high sales volume, then British companies must develop competitive positions or lose their markets.

The British government has not been short of advice that the opportunities are manifold and that it should ensure the British industry is in a position to match the competition. Its own Advisory Council for Applied Research and Development—leaders of science and industry who channel their recommendations through the Cabinet Office—identified information technology as 'possibly the area of application with the greatest potential for creating employment' and suggested that 'the United Kingdom had advantages which should enable it to gain a significant share of the world market for information services and associated products'. It published its detailed report on information technology in September 1980. The National Economic Development Council, which brings together government, industry and trades unions, has also proposed an information technology strategy. A research group set up by the present government while in opposition before the last election put forward proposals, as did the present Minister for Information Technology before his appointment at the beginning of 1981. To sustain our standard of living, we will have to produce high value-added products and services, with low materials and energy inputs. A high proportion of these will have to be sold to other advanced economies, which like us will have by then as much as two-thirds of all their economic activity in the information sector.

With hardware becoming increasingly cheaper, and the cost of moving information into and out of our own

or any other country declining rapidly too, we will have to develop products commanding high margins. In addition to the production of the hardware itself, we shall increasingly need to export information, packaged as bibliographic material, indexes, market research findings, investment analyses, legal opinions and so on. The high value-added services in the information economy involve organising, collating, and analysing information; interpreting, translating and extracting knowledge from information; negotiating, arbitrating and evaluating; separating the relevant from the irrelevant; and innovating in design and technique.

The City of London has long been a world centre for such invisible trade and should continue to be an entrepot for the exchange of information and the making of bargains and deals. But information is highly mobile, and the City's advantages could be eroded unless it maintains not only its reputation for integrity, but also an underpinning of law and practice that makes it one of the best places in the world to conduct business. Hence, for example, the government has announced its intention to introduce legislation on data protection.

How information policy is developed in the United Kingdom

The government receives advice from many sources, including committees set up for the purpose. The Advisory Council for Applied Research and Development has already been mentioned. There are many others, like the United Kingdom Industrial Space Committee, Advisory Board for the Research Councils and so on. Civil servants are sometimes members and often provide the secretariat. The National Economic Development Council is chaired by a Cabinet Minister, and works through a network of dozens of sector working parties, several of which are involved with information technology. Representatives of industry, trades unions and the relevant government departments discuss ideas and develop recommendations for strategies and policies which feed back into the policy machinery not only of government, but also of business.

The government also has a number of quasi autonomous organisations, like the National Computing Centre and the British Standards Institution, which tackle broad or narrow issues, either by using their own resources or by drawing on the expertise of industry and the relevant professions. Government is also closely connected with key parts of the industry, not only through its public ownership of British Telecom, but also through its investment bank, the British Technology Group, which looks after the government's investments in firms like INMOS.

If it feels in need of still more advice, the government

can commission reports from committees like that of Sir Charles Carter, which examined the Post Office and Sir Norman Lindop which reported on Data Protection.

Information technology is of international interest, and British delegations will be found at the European Commission, OECD, UNESCO, ITU, ISO, GATT and so on. Foreign Office posts have scientific and commercial attachés keeping close watch on policy development in many countries.

This mass of information and ideas, proposals and evaluations, views on priorities and assessments of implications, is fed back to the Departments responsible for turning the government's broad strategic objectives into detailed policies.

The information technology industry is sponsored mainly by the Department of Industry. Policy for telecommunications, computing, micro-electronics, space and related information technology businesses is the prime concern of a Minister of State, Mr. Kenneth Baker, reporting to the Secretary of State for Industry, Mr. Patrick Jenkin. But other Departments have important responsibilities: the Central Computer Telecommunication Agency (CCTA), within the Treasury, is the representative of the government as user, and has important responsibilities including the supply of technical advice and acting as purchasing agent for major investments. The Department of Trade is responsible, *inter alia*, for the British Standards Institution, copyright, international trade policy, and some of the information using businesses; the Home Office looks after civil rights, including data protection, and broadcasting, and contains the Radio Regulatory Department which manages the radio spectrum; the Foreign and Commonwealth Office concerns itself with such political issues as the New World Communications and Information Order debated last year at UNESCO, and with aid to Third World countries; and other Departments and their agencies, such as the Department of Employment, Manpower Services Commission and the Department of Education and Science have important roles to play, for example, in training.

In order to ensure that government policies and action are securely based on a close appreciation of market needs and opportunities, the Prime Minister appointed a Panel of Information Technology Advisers to advise on all aspects of information technology. In addition, a small unit has been established within the Cabinet Office to be the principal link between the Advisers and Departments. The unit will also help to promote the use of information technology within government, and will seek to ensure the coherence of government policies towards information technology, particularly in so far as they span the responsibilities of more than one Department. One of the first results of these arrange-

ments is the Cable Report¹ prepared by the Advisers, and which is currently the subject of much public debate.

The framework of United Kingdom information technology policy

Experience in Britain and abroad has shown that the creation of a climate favourable to enterprise and risk-taking remains the principal contribution that government can make. Nevertheless, the government also takes certain key direct roles, albeit with the closest possible co-operation of the private sector. These roles include

- Provision of the telecommunications infrastructure;
- Development of the regulatory and legal environment;
- Selective industrial support for information technology sectors;
- Education, training and awareness;
- Applications in the public sector.

The government has a basic responsibility for the infrastructure of the information economy. The British Telecommunications Act, which gives the Secretary of State for Industry the power to liberalise the provision of telecommunications services, has now been in effect for about a year and has led to new opportunities emerging for many companies, a large number of them related to information technology. One such venture is Project Mercury, which will result in the construction of a second telecommunications network to compete with that of British Telecom. To further stimulate the development of telecommunications, the government is planning to introduce legislation to transform British Telecom from a publicly owned corporation into a public limited company with its shares owned by the wider population. This will allow BT to raise money on the public markets independently of the public sector borrowing requirement, and at the same time expose BT to the commercial pressures of the market.

The legal framework, which protects the value of intellectual property, determines the powers and inter-relationships of companies, defines the status of computer records, gives protection to the privacy of the citizen and assigns legal liability for defective products, is a matter for government legislation.

In foreign affairs, the government negotiates tariff agreements, handles the harmonisation of United Kingdom law with that of other countries, and operates any agreements involving embargoes, sanctions or trade restrictions to which the United Kingdom is a party. It also signs international conventions, such as that of the Council of Europe on Data Protection (although, of course, it is Parliament which ratifies such agreements). The Home Secretary has announced that he will introduce legislation which will enable the United Kingdom

to endorse the OECD guidelines as well as ratify the Council of Europe convention.

The government deploys its own funds directly to sponsor selective developments in industry, to procure information technology products and services to meet its own needs, and to invest through various channels in private or public sector industries. It can thus encourage research, development or use of the new technologies. Through its industrial aid programmes, it can attract inwards investment and foster import substitution; and it also has the means to promote exports.

The education and training of the labour force is provided substantially by the public sector, using central as well as local government funds. The government also has the capacity to publicise and demonstrate new technology to the world at large, to British industry and, not least, to its own staff. After all, government is in practice one of the biggest information technology using organisations in the country. It therefore needs, as part of its efficient operation, to make extensive use of information technology throughout its own administration. So it has the potential to exert influence on the way in which information technology develops through the exercise of its very considerable procurement power.

The visible elements of the policy

This year, 1982, has been designated Information Technology Year and a large programme of events has been organised to promote and increase awareness of information technology. These events have included conferences, seminars, and mobile and static exhibitions.

A major programme managed by the Department of Industry is sponsoring a dozen Office of the Future trials. These trials use equipment designed and manufactured by United Kingdom companies, and located in a range of public sector organisations to establish the effectiveness of various designs in real user environments.

As well as supporting the suppliers of information technology, the government has promoted its application. Through its micro-processor awareness programme and development schemes, the significance of micro-electronics is much better understood in industry, and the market for products based on micro-processors has grown substantially. These extensive support programmes have been reinforced by a sustained policy of public purchasing by both central government and public bodies in order both to foster indigenous technology and to help 'pull through' products by exploitation of innovative and large scale projects. Many of these are associated with military applications, where research and development in advanced techniques and technologies is primarily funded by government.

The Department of Education and Science has implemented a national development programme for schools and colleges which covers curriculum development, the development of material for both the initial and in-service training of teachers and the development of improved software for use in schools. Hands-on experience of computing will ultimately become a routine part of the educational system. A scheme to expand the multi-million pound micro-electronics programme for schools so that all secondary schools can eventually have micro-computer facilities, and the necessary educational packages, was announced in April 1981. Under the scheme, the Department of Industry will match funds provided locally towards the purchase of an approved micro-computer for each eligible school. At least two teachers must have received appropriate training for the school to be eligible. Schools can select either the Research Machines RML380Z or an Acorn BBC Micro-computer. Both are British machines, for which substantial software libraries are being built up. This scheme has recently been extended to include primary schools.

The government already supports the principle of national and international standards organisations, and it works with other governments on bilateral and multi-lateral development of particular standards. Each

element involves different organisations and fields of interest, but all are alike in the sense that there is an urgent need to establish an effective national effort. The European Commission has given a strong lead, and the United Kingdom is eager to support the initiative. For this purpose the Department of Industry has set up the FOCUS Committee, under the chairmanship of Industry Minister Mr. John Butcher. Its membership is made up of leading people in the IT community, and it will be working to identify areas where standards are needed, and to promote the better understanding and use of standards. At the same time government wants United Kingdom users to be involved so that the standards that are developed both nationally and internationally are acceptable to them. United Kingdom suppliers are to be involved so that proper standards can be developed before the de facto standards of individual multi-national corporations are adopted.

This review would be incomplete without reference to what is known as the Fifth Generation of computers. A committee under the chairmanship of Mr. John Alvey of British Telecom was set up to consider and make recommendations on the British response to this concept. This it did at the end of August 1982, and the report and its recommendations are being considered by government.

Reference

1. *Report on cable systems*, February, 1982 (HMSO) (Price £3.60 net).



Improving the dissemination of CSO computer-readable data

Graham Giles, Statistician, Central Statistical Office

The CSO Databank

The CSO has launched a major scheme to develop computer dissemination of macro-economic statistics. In principle the scheme is not new. Whilst the CSO's macro-economic statistics are best known from printed publications such as *Economic Trends* many have long been available in computer-readable form through the Macro-Economic Databank. However, the new scheme will be so very much larger in scope and offer so much easier and more timely access that it is virtually a new concept.

The existing Databank has two thousand time series, including the CSO's own statistics on the National Accounts, the Balance of Payments and the Index of Production, and a selection of figures compiled by other Government departments on prices, earnings, population and manpower. The figures are updated monthly by the CSO and sold on magnetic tape. Amongst regular purchasers are computer bureaux and other information providers, who provide on-line access to the data for their clients. Other users buy the data direct from CSO to mount on their own computers.

Most purchasers of computer-readable data want to analyse the figures by computer, for commercial planning and forecasting or for academic research. Increasingly, though, computers are being used purely for the storage and retrieval of information, without any subsequent computer analysis. This can offer several advantages over more traditional methods. In particular, the time spent searching for information can be reduced, as a wide range of data can be made available to the user in his own office, with powerful facilities for locating the required information. Another advantage of computer-readable data is that much more data can be provided than in a printed publication. As a result, more detailed data and data for longer time spans can be included without raising the cost to a level which might prove unacceptable to users not wanting the extra information.

The Databank, for example, includes quarterly figures for the past twenty years or more. It is also possible to make data available more quickly in computer-readable form, as the time-consuming business of preparing and distributing a publication is avoided.

The Databank does not offer many of these advantages at present. The two thousand series it contains are

only a small proportion of the number in CSO publications and whole areas such as financial statistics are barely covered. Furthermore, the tapes are not sold until the data appear in publications some weeks after the main figures have been released in press notices. The reasons for this are largely historical. When the Databank was introduced over ten years ago most of the time series included in it were compiled manually. This limited the number of series which could be maintained and delayed the sale of data.

There remain two major obstacles to the improvement of the Databank. Firstly many of the series in CSO publications are compiled by other Government departments and are not held on the CSO computer. Secondly, the existing CSO database system from which series are transferred to the Databank (described in *Statistical News* No. 40.7) was designed for 'compilers' rather than 'users' of statistics. Each compiler is given considerable freedom in the organisation and naming of data items which has proved a considerable handicap to users in finding the series they want and keeping track of changes which the compilers have made in data organisation. The effect has been to discourage the addition of new series to the Databank and to delay its production.

A new data service

Work now being done in the CSO will remove these obstacles, and make it possible to introduce a new data service to replace the Databank.

The service will be based on a new Central Database which is being established on the CSO computer for use within Government (this will be described more fully in a future issue of *Statistical News*). This database will bring together copies of the series most often used, with a unified format and naming convention.

Interrogation software will be provided to simplify the retrieval of data. A computerised control system will update the database from compilers' files on the existing database system on agreed release dates ensuring that the data available to users are consistent and as up-to-date as possible. Any changes which compilers make to the organisation of their data will be made and communicated to users in a controlled and uniform way.

At first, most of the series on the Central Database will be drawn from those already held on the CSO computer, but later it will be expanded to include all the data

in the main CSO economic publications, where possible transferring data from Government departments and other sources in computer-readable form. Apart from the benefits to users of the database and of the new data service, this will also allow camera-ready copy for the publications themselves to be produced using the computer, as described in the last issue of *Statistical News*.

The new data service will take its data from the Central Database, and will grow as the database grows. Initially the data sold will be similar in content to the Databank, but brought more into line with publication tables. Data relating to the cyclical indicators and the production accounts, currently available from the CSO on computer printout, will also be sold. Later the coverage will include all the series in *Financial Statistics* and the *Monthly Digest of Statistics* as they are computerised. Further development will depend on the progress made in computerising other publications and on the requirements of users.

Data will be available much earlier than in the Databank. The main figures will be released as soon as possible after they appear in press notices, while the corresponding detailed figures will be available either at the same time or shortly after, depending on the timetable for compiling them. Because of the increase in the volume of data, not all of which will be of interest to every subscriber, and the need to sell different series at different times to coincide with release dates, the series will be grouped into several data sets, each of which will be available individually.

Appointment of an agent

The improvements in content and timeliness over the Databank, and the increasing use made of computers for data retrieval, are expected to lead to a considerable growth in sales.

The CSO is not well equipped to provide a magnetic tape or on-line distribution service on a large scale, nor to cope with the work generated in answering queries and collecting fees. It is also felt that the data should be marketed more actively than in the past and that users' requirements should be monitored more closely. So the CSO is choosing an agent – by competitive tender – to market and distribute the data both to end-users and to computer bureaux wishing to offer data services. It is likely that the agent himself will offer bureau services, and the agreement with him will be designed to ensure that he does not gain any unfair advantage over his competitors in having the data earlier than them.

A tenet of the White Paper on the GSS is that services offered to the public should be self-financing. The charges made will be such as to recover the extra costs of dissemination and contribute an appropriate proportion to the Central Database costs. The sale of the data will be governed by a licence agreement between the agent and the purchaser, covering such things as fees, frequency and timing of delivery and copyright conditions.

Details of how to obtain data from the new service will be published in *Statistical News* and elsewhere when the service starts.

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Economic Trends (Price £9.75 net), *Financial Statistics* (Price £7.50 net), *Monthly Digest of Statistics* (Price £5.00 net) (all HMSO monthly)



The computer simulation model for forecasting and costing corporation tax in the United Kingdom

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Introduction

In 1977, the Inland Revenue began development of a computer model of corporation tax in the United Kingdom. The main feature of the model was the simulation of the corporation tax liabilities for individual companies to incorporate not only those companies which make taxable profits but also those which are tax-exhausted. Tax-exhaustion occurs when the income of the company is exceeded by its tax allowances and reliefs, so that it has a tax loss and some of the allowances and reliefs are not of immediate benefit in reducing tax liability. Previously, the Inland Revenue's forecasting and costing work used aggregate statistical information taken over all companies. This proved increasingly inadequate as the range of capital allowances was extended and stock relief was introduced, increasing the number of tax-exhausted companies and their impact upon tax forecasts. This paper describes the computer model and its use, and outlines some of its limitations and areas of future development.

The system of corporation tax in the United Kingdom is described in some detail in the Green Paper on Corporation Tax published in January 1982¹.

Structure of the computer model

The computer model has three essential parts:

- a tax calculator which calculates tax liability from given levels of income, allowances, and set-offs;
- a projection subroutine which projects for each individual company levels of income and allowances within specified national growth rates; this is done by using randomly generated values from predetermined statistical distributions;
- a disposal of losses facility which allows a company to use any tax loss to maximum advantage by surrendering it as group relief, carrying it back to set against profits of an earlier year, or carrying it forward.

The model can therefore calculate tax liability, dispose of tax losses and also project to future years to produce forecasts of tax accrual. The data used by the model are as follows:

- a database of historical information drawn from

tax assessments for a sample of individual companies;

- national accounts scaling factors which constrain the sample results to be consistent with the best available estimates of national levels of income, allowances, and tax;
- projection factors drawn from National Income Forecasts undertaken by the Treasury.

The process undertaken by the model is to recalculate the tax for all the individual companies on the database after applying the scaling factors so that the aggregate results are consistent with the national accounts estimates of incomes and allowances. The model, using statistical distributions, then projects the incomes and allowances in line with the forecasts undertaken by the Treasury before calculating the tax liabilities based on those projections. The model allows for the generation of tax losses and their disposal by way of group relief, carrying back, and carrying forward. The model is programmed to undertake all the processing for one company before starting the next. This case-by-case approach allows losses to be carried backwards and forwards easily, but it does not allow realistic simulation of group relief. The approach does however use relatively little storage space within the computer since only one company's details are stored at a time.

The projection subroutine is the most technical part of the model. In order to generate realistic tax forecasts for individual companies, it cannot be assumed that all companies adhere to the overall national growths in income and allowances, even within particular sectors of industry. It is therefore necessary to allow individual companies to have varying annual growth rates in, e.g. trading income, which nevertheless give aggregate results which agree with the national annual growth. This is achieved by using statistical distributions where the mean of the distribution is determined by the forecast national annual growth and the dispersion of the distribution allows individual companies to vary from the national growth. This type of projection method is very important for trading income where companies may have either a profit or loss. If national profits are forecast to rise by 10 per cent in the following year, the projection method needs to allow for the following

possibilities for individual companies:

<i>First Year</i>	<i>Second Year Possibilities</i>
Profit	Profit increase greater than or equal 10 per cent Profit increase less than 10 per cent Profit less than last year Loss
Loss	Profit Loss smaller than year before Loss larger than year before

When the model was established no information existed on how annual growths in income and allowances for individual companies did vary from national averages. In the absence of such information 'Normal' statistical distributions with quite small standard deviations (levels of dispersion) were used for four of the most important items in the tax assessment—trading profits, trading losses, capital allowances, and book values of stock. The model was programmed to allow for correlation between the growth of income and the main allowances, so that high income growth companies would also tend to have high growth in their allowances.

The disadvantage of allowing statistical variation between companies in the projections of annual growths is that the forecast national average growths may not be achieved over the sample of companies. For example, a very large profit growth applied to a company with very high profits in the first year could produce such high profits in the second year that, within the small sample of companies used, the aggregate profit change would be too high. Bias in the results may also be caused by the method of generating the statistical distributions. This is done using random observations from the desired distribution, but if the number of observations is relatively small a close approximation to the desired distribution may not be obtained. To overcome the bias caused by these two aspects of the simulation method the sample of companies used is effectively increased by repeating the projections and tax calculations for each company several times using a different set of random observations from the statistical distributions for each replication within a run of the model. Although theoretical considerations suggest that the number of replications should be very large, practical considerations have limited the number used to ten. However, it is possible to use bias correction factors also. These are measured by observing the bias obtained on one run of the model and, on the next run, using it to modify the mean growth input so that the desired mean growth is then obtained. For example, if 10.0 per cent is the desired growth, but the model produces only 9.5 per cent, a further computer run with 10.5 per cent input is likely to produce a growth of near 10.0 per cent. This is

effective because of the method used to generate the random observations, as described in the next paragraph.

Computer processing

With approximately 5,000 companies on the model's database and the complexity of the simulation methods, the processing of the model is a substantial undertaking. On the Inland Revenue's ICL1904S computer, the typical running time for the model programmes is about four—five hours if other work is being processed simultaneously and about two hours if not. The programmes have therefore been developed to minimise the running time and to utilise as little storage space as possible. The structure of the programmes and database is broadly as follows.

- The companies on the database are sorted into industrial groups so that storage space is not required for all groups simultaneously.
- The random numbers used in the model are not generated within the programme on each separate run. They are generated separately when the database is set up and then stored with the details for each company on the database (approximately 250 random numbers are used for each case, i.e. sufficient for ten replications of four distributions for six years). As each database is processed by the model many times (perhaps up to 100) for different costings and forecasts, storing the random numbers of the database produces a significant saving in computer running time. The random numbers used are from the standard 'Normal' distribution (with mean of zero and standard deviation of unity). They are transformed in the model programmes into random observations from the desired statistical distributions using the national projection factors. The random numbers are not changed from one run to the next so that the overall levels of profits, allowances, and tax only change as a result of a change in the tax calculation (for costings) or in the projection factors (for forecasts or setting the bias correction factors, as mentioned above).
- The model programmes read and process the cases one at a time. After the historical information has been processed, the case details are projected to the next year and the tax calculation undertaken. Successive projections are then undertaken until the final year is reached. The results for all years are stored while the results are recalculated to allow for any tax losses which can be carried backwards. Both sets of results are then added into the accumulation stores from which the aggregate results are finally derived. Having completed the

first replication, the model then returns to the last historical year for the same case and undertakes the second replication using a new set of random numbers from the database. At the end of the last replication, the model moves on to the next case and starts processing and accumulating its results.

- d. At the end of the cases, the programme divides the projected results by the number of replications and prints the results. Three main tables are produced – a summary of results before losses are carried back; a detailed table showing the effect of losses carried back and giving estimates of numbers of companies with each type of income, allowance, and tax variable; and a very brief summary of results for about twelve separate industry groups.

When it was first established the model programmes were developed to calculate the tax liabilities for *both* the normal situation where all the allowances were in operation *and* simultaneously for the situation where one of the major allowances was withdrawn. This double calculation was used extensively for estimating the costs of capital allowances and stock relief. It did however cause the running time of the model to be much longer than necessary for a straightforward forecast using the normal situation. The model has now been simplified to operate on just one situation per run with a consequent reduction in running time. The capability has not however been reduced since successive runs can be undertaken when necessary to test the effects of removing the major allowances from the tax calculations.

Past use of the computer model

The use of the model for forecasting occurs at regular intervals during the year when the Treasury undertakes reviews and forecasts of the economy using its own computer model. The Treasury provides the Inland Revenue with its National Income Forecast (NIF) which is translated into projection factors for use on the corporation tax computer model. The Treasury give forecasts of appropriation accounts for the industrial and commercial sector and the financial sector, but no sub-division within those sectors; for example, forecasts for the manufacturing subsector are not produced. For these two sectors, the Inland Revenue's computer model then produces forecasts of mainstream tax. As a separate procedure the Treasury's dividend forecast is used to produce forecasts of advance corporation tax. Tax forecasts are also prepared for public corporations and the North Sea oil and gas sector. The separate forecasts are then aggregated to give forecasts of total corporation tax.

The costing work undertaken by the computer model

has varied over time as political interest has concentrated on different subjects. In 1977, the work consisted principally of measuring both the total tax forgone by the existence of capital allowances and the introduction of stock relief and the costs of changing the provisions of the temporary stock relief scheme. The model costed the former by using the second situation results and the latter by programming the precise changes proposed for the scheme. The latter was only possible as the basic data included not only stock relief itself, but the levels of book values of stocks and other information used to calculate the relief. Over a period of about three years, several major changes to the stock relief were costed and subsequently introduced. These included the introduction of the write-off of unrecovered stock relief and the deferral of recoveries (the Dips scheme), both of which required the longitudinal approach of the model. In 1980, the latest system of stock relief, which gives relief for price rises only and is based on an 'all-stocks index', was introduced. The transition from the old system to the new was costed on the computer model and it produced valuable results. It showed that although the new scheme gave less relief in total than the temporary scheme, it was found to be more costly to the Exchequer in the first few years because stock relief recoveries, which occurred when a company's book values decreased, were discontinued. Under the new scheme all companies with stocks would receive some relief and thus, being spread more evenly over companies, more of the relief was actually available to reduce tax liabilities.

Apart from costing stock relief, the main costing applications of the model have been the investigations of the tax effects of possible new structures of corporation tax for the Green Paper. These included a structure without both stock relief and capital allowances so that the tax base was gross historical profits. The most difficult structure to cost statistically was the derivation of a current cost accounting (CCA) tax base where the main reliefs became the inflation adjustments, viz depreciation, cost of sales adjustment, monetary working capital adjustment, and gearing. Values for these adjustments were not available for the companies on the database, nor would they have been in local tax offices. However, various sources of external data were available which made it possible to estimate them. Depreciation was estimated using external data to estimate relationships between depreciation and capital allowances. Gearing ratios were calculated from summaries of company accounts. The cost of sales adjustments were calculated using each company's level of stocks (available on the database) and the appropriate stock price index. The monetary working capital adjustment was more difficult but was estimated very

approximately by measuring the relationship in summaries of company's accounts between stocks and monetary working capital. For each adjustment, the external data were available within detailed industry groups so that the estimates took account of differences between industries. It did therefore prove possible to estimate the inflation adjustments for each company on the database and hence the tax calculation was simulated. Details of the methods adopted for this and other costings are available.²

Limitations of the computer model and further development

The computer model has been used so intensively since its introduction that little time and resources have been available to improve its simulation methods. Some changes have been inevitable: updating the forecasting horizons, converting to a new computer, rearranging the data for more efficient processing. However, some weaknesses in the simulation methods are now evident. Currently, desk adjustments are made to the model results to correct for these, but such adjustments involve some subjectivity and cause unfortunate delays in producing forecasts and costings. The important weaknesses of the simulation methods are described below.

Group relief

One area of difficulty concerns group relief. In a local tax office, the amount of group relief is claimed by the recipient company after comparing its profits with the tax losses generated in companies in the same group. The computer model cannot simulate group relief in this way because it does not know which companies are members of which groups, nor with a small sample can it expect to cover all the members of a group in its sample. Moreover the computer power required to undertake simulations on this basis, even if the data were available, would be above the power currently available. Thus when a change to the tax regime is costed, the computer model cannot ascertain, when looking at a profitable company in a group, how many tax losses would be generated under the new regime in loss making members of the same group, which could be surrendered to it and other profit making members of that group. All that the model can do is project group relief from the levels in the historical data.

When undertaking costings of major changes to the tax regime the computer model's estimate of group relief received may be amended by the Statistician after the model run to take account of the new level of losses available for surrender as group relief. The amendment can be substantial and subject to a wide margin of error. There are various options currently being studied to overcome the weakness of the group relief simulation.

One option is to change the structure and perhaps the size of the Enquiry which provides the basic data into a two-stage sample where the first stage selects company groups and the second stage selects companies within groups. This would allow a more realistic simulation of group relief to be programmed, but the resources required to maintain a register of companies on a group basis and operate a two-stage Enquiry large enough to give tolerably small sampling errors would be considerable. This development also relies on the acquisition of considerably greater computer storage and power for processing the model. Other simpler alternatives involving linking loss-making companies to profit-making companies on the computer model are also being studied. One of these methods involves forming companies, which may not be related, into 'pseudo-groups' just for the purposes of simulating group relief on the model. This requires measuring the incidence and structure of company groups and then allocating sample companies to pseudo-groups in a statistically representative manner. The model calculations would then need to be re-structured to allow group relief received by a company to be determined after losses had been calculated for companies in the same group. This option also requires greater computer power, but would not involve more manpower for a register of company groups.

'Realistic statistical distributions'

The second major weakness in the simulation method is the nature of the statistical distributions used by the model which, as described above, were not based on measurement of annual changes of incomes and allowances for individual companies. It was assumed that the changes were distributed according to 'Normal' statistical distributions. However, model runs with these distributions showed that companies were unable to use sufficient losses brought forward. Also, few were able to carry losses back to the previous year. The distributions did not allow sufficient companies to move from trading profit in one year to trading loss in the next and vice versa. Considerable research has now been undertaken to determine the type and spread of the statistical distributions which most closely reflect the observed range of annual changes. For example, for companies making trading profits, the standard statistical distribution which most accurately fits the observed changes is a 'Cauchy' distribution (the ratio of two 'Normal' distributions) and the dispersion about the mean is much greater than that being used at present for the 'Normal' distribution on the computer model. A 'Cauchy' distribution is also most accurate for companies making losses, but the dispersion is very large (almost 50 per cent of loss making companies might be expected to make profits in the following year). For capital allow-

ances, it has been found that a 'Lognormal' distribution is the best distribution for forecasting annual changes and their variations from the overall change. For book values of stocks, a 'Normal' distribution is adequate but with a slightly larger standard deviation than that used previously.

It is clear from the above that realistic simulations of the annual changes in companies' incomes and allowances particularly where there is some correlation present will be quite complicated. The need to achieve the specific growth rates for net trading income (trading profits less losses) and allowances implied by the Treasury forecast whilst simultaneously allowing for the wide variation between companies is likely to make further research and development of the model necessary during the immediate future. The industrial recession of 1980 has introduced national profit changes which are unlike those for earlier years and hence the statistical distributions of individual company changes may also be different from those that have been identified as most accurately fitting the observed changes in earlier years. The research must therefore be updated so that any variation in the distributions with economic performance can be assessed and if necessary incorporated into the simulation methods.

Tax reconciliation

The third area of difficulty in using the computer model is that the tax calculated for past years by grossing the results for the small sample of companies to population levels is normally above that estimated from known levels of national receipts. This may be caused by sampling errors and bias. It is however necessary, when forecasting and costing, to make post-model adjustments to constrain the model's forecasting base to the correct starting point. This can be done in a number of ways but it is unsatisfactory in that it introduces subjectivity and delays. Costings and forecasts are almost always required urgently and thus a fully computerised

system should be developed. In due course therefore it is intended to introduce into the model further refinements which will automatically constrain the calculations of tax to known historical amounts.

Future computer requirements

The model developments discussed will require substantial changes in the computing arrangements. A new more powerful computer is being installed for Inland Revenue statistics work in late 1982, which is expected to be fully operational by the end of 1983. The development of the model to simulate group relief within company groups will require the restructuring of the model programmes to handle several companies simultaneously rather than successively. This will add considerably to the storage space required and also to the amount of processing. The means of doing this on the new computer have yet to be investigated. The implementation of new statistical distributions will also involve more computing. Methods of reconciling the historical tax estimates have yet to be investigated, but they will inevitably introduce further processing requirements. It is therefore unlikely that the new methods will be fully operational on the new computer until 1984 at the earliest.

Conclusion

Despite the limitations of the present version of the computer model, since its advent in 1977 it has led to a substantial improvement in the forecasts of mainstream corporation tax. Also the Inland Revenue's capability to cost both minor and major changes to corporation tax has been extended by the introduction of an 'individual company' or 'disaggregated' approach. The model's detailed analyses have also been valuable in the general monitoring of companies' use of allowances. It has therefore become a valuable additional policy tool available to the Inland Revenue and the proposed improvements should increase its value.

References

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2. *Green paper on Corporation Tax—statistical work*, obtainable from Statistics Division, Room S.13, West Wing, Somerset House, London WC2R 1LB



New developments in statistics at CIPFA

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Introduction

The Statistical Information Service (SIS) of the Chartered Institute of Public Finance and Accountancy (CIPFA) was established in 1976 to provide financial and other statistics and related advice to CIPFA members and managers in local and other public authorities. Since that time a unique and detailed annual series of publications has been developed, covering for the most part individual local government services but also including volumes on general statistics, statistical techniques, and particular aspects of local and other authorities' activities such as charging.

Through a network of statistical working parties, the information collected and published by SIS has been continually expanded and refined, and CIPFA has played an important part in the development and use of statistics for policy and management both at national and local level.

Although the annual publications are the predominant feature of the SIS, the working parties – on which relevant government departments are represented by members of the Government Statistical Service (GSS) – also provide a forum for the discussion of developments and difficulties in local authority statistics. Through the SIS working parties and otherwise, CIPFA maintains a continuing effort to expand the coverage of the statistics that are available, and to improve the quality of the data and how they are defined. As a consequence, CIPFA devotes considerable effort to responding to specific inquiries from local authorities and others, and to issuing advice ancillary to the publications. And the SIS has long been aware of the need to develop information services which do not necessarily rely on annually published tables or listings as the dissemination medium.

New steps

During the last two years, CIPFA has taken three initiatives which will result in significant improvements in the information services available to public authorities and other interested parties. Broadly speaking, the developments which are currently in hand fall into three areas:

- local publication activities
- management information
- computing and advanced technology.

To assist in the development of these and other activities in the use of information in the public sector, a statistician has been seconded from DoE to CIPFA, on a shared cost basis, for a period of two years from September 1981. The aim of this article is to describe some of the detailed services which are being prepared as a result of this new arrangement. It is divided loosely into three parts, accordingly.

Part 1 – Local publication activities

One of the first acts of the new Government was to make a commitment to the development and use of statistical performance indicators in the public sector, and in particular in local government, as an aid to the assessment of local authorities' activities by councillors, ratepayers and other local interests. A consultation paper¹ issued in October 1979 stressed the importance of allowing authorities to compare their costs and levels of service against those in other authorities.

While all concerned at national and local level emphasised the importance of not drawing conclusions about performance on the basis of statistical comparisons alone, the moves – which were eventually enshrined in Part II of the Local Government, Planning and Land Act 1980 – were generally welcomed as a means to strengthen local accountability.

CIPFA played an important part in the development of the initiative by, first, preparing (in association with the Society of Local Authority Chief Executives) a draft code of practice governing the information to be published by local authorities in support of rate demands and in annual reports. A central feature of the latter proposal was the publication of sets of comparative statistical indicators of performance.

CIPFA was subsequently involved in the discussions between central and local government representatives to finalise the code of practice² on local authority annual reports (eventually published in February 1981), and in compiling the details of the statistics that were to be incorporated in those reports. This task was undertaken by a specially convened sub group of the National and Local Government Statistical Liaison Committee, resulting in the specification of some fifty five indicators for local publication and comparison covering all the major local government services.

Local government comparative statistics

In order to assist local authorities in fulfilling the terms of the code of practice CIPFA subsequently compiled and published a full set of the specified data for each local authority in England and Wales. The first, experimental, version of *Local Government Comparative Statistics*³ appeared in July 1981 and was welcomed by authorities as an invaluable aid to their activities under the code of practice. The booklet also contained extensive advice on the definitions and sources of the data, which were for the most part drawn from the various SIS publications covering the relevant local authority services. It was also designed to provide a summary source of information on comparative local government statistics for use by national bodies as a supplement to the published reports of individual authorities.

Following the success of the first publication, a 1982 edition of the booklet⁴ was published in July this year, containing for the most part the statistics specified in the code of practice for each local authority, and averages for classes of authority. The booklet contains the relevant financial and other statistics for the two financial years 1980/81 (actuals) and 1981/82 (estimates).

Comparisons service

Following experiments conducted on the basis of the data in the 1981 booklet, CIPFA (with the co-operation and assistance of the Director of Finance and Administration of Cambridgeshire County Council) has now established a regular computer-based comparisons service covering the data in the comparative statistics publication and in CIPFA's 'Finance and General Statistics' booklet. This provides, for every relevant statistic published in either booklet, a comparison between the figure for an individual authority and the average for a selected group of authorities.

Thus for each of the figures published in *Local Government Comparative Statistics*, and authority can obtain a computer print which shows: -

- the figure for the authority;
- the average figure for a group of authorities selected by CIPFA or specified by the authority;
- the percentage difference between the two figures.

Ancillary services

A further service introduced this year and based initially on the statistics in the 1982 edition of *Local Government Comparative Statistics* provides computer-printed density maps of the data for any selection of local authorities. It is hoped that the resulting easier use of graphical representation in local publications and reports may help to make the statistics more meaningful to a lay audience.

Another activity in this field covers the provision of advice to local authorities in the publication of statistics for local consumption. In 1981 a survey of authorities' intentions concerning the selection of comparator authorities was undertaken and the results published⁵ in August 1981. Subsequently, through a variety of media - seminars, lectures, journals and the annual Public Sector Accounts Award - CIPFA has provided information about good practice in the local publication of annual reports containing comparative statistics.

Clustering

CIPFA has recognised that there is a continuing demand from local authorities for information and guidance concerning the publication and use of comparative statistics. One aspect which has concerned local authorities is the selection of appropriate comparator authorities, and the possible use of clustering techniques to identify groups of homogeneous authorities.

Although numerous sets of clusters have been prepared in recent years, many of them are not entirely suitable for use in the context of comparative statistics published by local authorities themselves. CIPFA, in association with the Institute of Local Government Studies, have therefore developed a clustering of English local authorities designed specifically for this purpose, while not being in any sense a recommended or preferred set of clusters within which comparisons may be drawn.

Particular features of the clustering, which is intended above all to be of practical use to local authorities, are that

- each authority is grouped only with authorities of the same 'class';
- the presentation of the clustering allows authorities to choose larger (and less homogeneous) or smaller (more homogeneous) clusters which are compatible with the overall structure, according to their purpose;
- the clusters and 'sub-clusters' which have been chosen are intended to be of sufficient size to be of practical use;
- the work also provides 'nearest neighbour' authorities for each authority.

The new clusters and ancillary information will be published shortly.

Clustering service

In recognising that no one set of clusters can ever be considered optimal, and that considerable demand exists for alternative or complementary sets of clusters which reflect more closely local authorities' activities in a particular service, CIPFA is preparing a clustering service to supplement the general clusters produced in published form.

The immediate service will provide sets of clusters in similar format to the general set, based on any subset of the 55 variables used for that set, and in particular on subsets chosen to reflect more closely the activities of an authority in carrying out any particular function or group of functions. Thus it will be possible to generate hierarchies of clusters based on those variables which appear to affect, say, the provision of primary and secondary education, similar to those produced recently by the statistics branch of the Department of Education and Science.⁶

Longer term developments of the clustering service are envisaged to take into account changes in the basic data arising particularly out of the 1981 census, and to offer alternative general clusters based on different data sets. Clusters for other types of authority, and clusters based on operational or similar units smaller than an entire authority, are also to be developed.

Part 2 – Management information

To supplement the existing Statistical and Financial Information Services which provide, respectively, data and procedural advice for managers in local and public authorities, CIPFA has taken steps to establish a Management Information Service. This will encompass both data and methods, and broadly speaking will operate at a more detailed level attuned to the activities of the individual user than do either SIS or FIS. The concept of the MIS has been left deliberately vague, however, in order to be able to develop new ideas and activities in a situation of rapid change.

New database

The core of the MIS will be a new integrated database to be held on CIPFA's new computer and purpose-built software (see part 3). Initially, this will hold all the data that are collected as the basis for the SIS publications, beginning with the 1982/83 financial, etc. estimates and 1981/82 outturn for local authorities. Earlier years' data will be added as the demand arises.

To this initial series, other data relating to public authorities' activities will be added or accessed by the database on a progressive basis. This will, it is hoped, include unpublished information resulting from regular or ad hoc surveys, data collected by government departments, the local authority associations and other central institutions, and economic and social statistics which affect public sector activities. In addition, individual institutions will be encouraged to contribute their own management information (on a confidential basis where necessary) to enable others to access the database to conduct research, forecasting, comparisons, modelling and other analysis for policy and management purposes.

By definition the information of this kind that is collected will not necessarily form part of an account or aggregate statement, nor result from a regular survey or a full census.

While the analytical service which will draw on the database will be aimed principally at individual local, health or water authorities, and at public corporations, it is envisaged that the national institutions of central and local government, and research and academic bodies will also access the database. One important objective is therefore to provide a facility to link datasets which have hitherto been compiled and used by a particular sector or sub sector, or by the separate functional units in e.g. local authorities.

Locational data

One important subset of the new database concerns the acquisition and use of what can conveniently be termed locational data to allow new types of analysis to be carried out. This involves the compilation of demographic, economic, operational, land use etc. data relating to public sector activities in such a way that it can be disaggregated to small geographical units to provide very powerful analyses of needs and resources. It will also allow the aforementioned linking of datasets that are not traditionally used in the same context e.g. land use information from planning activities, rating information, and data on service delivery to individual areas or units, together with, of course, selected census data.

It is hoped that a major feature of the statistical data of this kind will provide much improved access to the information on commercial and industrial floorspace now held by Inland Revenue Valuation Offices. CIPFA, in association with specialists in the analysis and use of land use and property information, is currently undertaking a feasibility study to assess the potential for releasing and developing this data following the decision of the Department of the Environment to offer the operation of the present system to institutions outside central government.

Both the floorspace statistics and other locational data will be analysed where necessary using specialist software which allows for the re-classification of data to alternative areas and administrative units, the operation of an on-line inquiry service and the provision of computer prepared maps and graphical displays as a means of analysis and presentation. As noted already it is hoped to develop the clustering activities, through the use of locational data, to identify individual areas, administrative or operational units that face similar demands or problems in the delivery of particular services.

Audit statistics

In an article describing current statistical developments in the District Audit Service in *Statistical News* 58.10, reference is made to the increasing use by auditors of financial and other statistics of local authorities, and to the links that are being developed between the District Audit Service and CIPFA in this field. The provision of statistics and analytical facilities for use by both external and internal auditors is an important element of the new Management Information Service, and it is expected that significant developments will take place, initially covering local government in England and Wales, during the period of establishment of the new Audit Commission for Local Government.

Firm links involving members of the GSS in the relevant institutions have therefore been established between the Department of the Environment, the District Audit Service and CIPFA. CIPFA's role will be to assemble and provide a fundamental collection of data (centred on the SIS information covering local authorities) together with, where relevant, a facility for audit staff to access and analyse the data on a regular or ad hoc basis. It is expected that this will involve, inter alia, the use of remote terminals to the new CIPFA computer and the transmission of data in a form which can be accessed by the new microcomputers acquired recently by the three parties.

CIPFA has also taken the initiative in providing information for managers in local government about the analytical work that is being carried out in District Audit. This covers not only audit and evaluation methodology (which is outside the scope of this article), but also details of the statistical analyses that are being prepared for use by district auditors to support their activities. One such experimental analysis has already been distributed to local authority subscribers to the SIS and it is hoped to extend the dissemination of information about Audit statistics as an aid to the fostering of good management practice.

Modelling and research

In order to make full use of the data that are collected, CIPFA will also be acquiring and developing a variety of computer based models for use by institutions and authorities in the public sector. Where possible, existing models will be developed to allow them to meet general requirements, and the programs involved will be adapted to run on the various computers which are available to the Institute. Examples of the models which it is hoped to provide include budgeting, financial forecasting, repricing, pricing and charging, local authority grants, expenditure determinants, housing maintenance costs and specific applications in the non-local authority sector.

Where suitable theoretical or actual models are not in existence already, CIPFA is embarking – in association with appropriate institutions – on a major research programme to develop the necessary theory and to specify, write and test the models. An initial list of potential areas for research is currently under consideration.

In short therefore, the management information database will comprise both datafiles and programs. The data will be available, where appropriate, with dedicated analytical methodology; and free-standing models will also be developed which can accept the user's own data. Both data and programs will be accessible through a variety of media.

Part 3 – Computing

CIPFA has for some time been closely involved in the development and use of computers for use in local and public authorities, through the Institute's Financial Data Processing Panel. Also, the SIS publications are compiled in many cases by CIPFA members in local authorities using a variety of machines, or by the CIPFA Secretariat using specialist computer bureaux.

The Institute has now entered a new phase in the use of computers for internal and external purposes through the purchase of a 'CMC Reality' mini computer and associated software. This will be used for a variety of activities but will form the core of the computing resources needed for the Management Information Service. CIPFA will also however be testing a number of different microcomputer systems, together with specialist bureaux; and some links will be retained with mainframe machines in other institutions and authorities. The MIS will therefore be constructed on a three-cornered, integrated, computing base, using the CIPFA mini, micros and other mainframes through direct links which are now being established.

New software

In order to cope with the variety of data-sources, surveys and information which will be held on the new database, CIPFA has commissioned a new suite of specialist programs to run on the CMC Reality installed recently. This system, which encompasses survey processing, file storage and manipulation and ad hoc or structured access and presentation, is designed to be run from remote terminals based either in CIPFA or with the database users.

The survey processing part of the system allows data to be input in various ways:

- direct data entry from the terminal keyboard, either for batch surveys or ad hoc amendments
- from a variety of magnetic tapes
- from floppy disks on linked microcomputers
- by direct data transference over telephone lines

Following input, the data can be validated and distributed to the database following principles available only in the most up to date validation programs currently available.

Data storage and file manipulation is based on a unique system whereby datafiles and record types (usually authority types) are maintained independently and in parallel. This allows for complete flexibility in accessing, merging and presentation of data and eliminates much of the work needed to maintain data files and specify records at the time the data are output. Aggregates of records can be specified within the type files for repeated generation on a variety of data files.

Much emphasis is laid on the ability to manipulate data for analytical purposes through performing row and column functions, and the creation of new variables as functions of the existing variables. Finally, data can be presented through listings, tabulations, frequency counts or through a powerful ad hoc inquiry language incorporating selecting, sorting etc. Simple regression is also available on the data together with counts, rankings, averages and other summary statistics. Word processing facilities will allow the preparation of text for output alongside the tabulations and other data output; and simple graphical presentation of the data should also be available.

Specialist bureaux

Where special facilities are required which cannot be provided by the CMC hardware or software, CIPFA is using linked bureaux specialising in the particular service. Examples of the facilities that will be available include high quality camera-ready copy output, advanced statistical analysis, computer mapping, handling of location-tagged data and associated reclassification, and advanced computer graphics.

The Management Information Service data and programs will be accessible through a variety of media. Remote terminals can access the CIPFA machine or associated mainframes direct, or CIPFA will provide a phone in/write in inquiry service for those without access to a compatible terminal. In some case, programs and/or data will be available on magnetic tape for use on clients' own machines. And where appropriate CIPFA will make use of the various teletext systems that are available, or using the word processor will produce hard copy output tailored to the needs of the individual or collective user.

Microcomputers

CIPFA is also keenly aware of the opportunities that are presented for information services through the rapid developments in the fields of microcomputing and

advanced technology. A CP/M-operating microcomputer has already been purchased to operate in tandem with the in-house minicomputer and with other mainframes. This will be used for testing the potential for links between micros and the CIPFA database, for the development of micro-based models, and for establishing links with similar machines in District Audit, in DoE and in other local authorities.

Microcomputers are thought to have a high potential for use in disseminating SIS and other CIPFA data, to be accessed and analysed by the standard software available with the micro, or through dedicated software developed by CIPFA or associated bodies. Trials are already in hand to make available one set of published SIS data on floppy disk using the microcomputer already installed.

In parallel, CIPFA is also participating in the IT82 Management Awareness Project by preparing the specification for analytical software which will access and display a range of SIS data. This software, if well received, will be available from CIPFA together with SIS publications in floppy disk form, for users of the BBC microcomputer introduced recently. A similar activity involves the development by Cambridgeshire County Council on CIPFA's behalf of the current statistical comparisons service on the new IBM microcomputer for use by SIS clients with the suitable equipment.

Besides these specific activities to develop the use of microcomputers in connection with the database, CIPFA is considering generally how best to exploit the software that is now available on other popular types of micro in use in central and local government, health authorities etc. (e.g. Apple), in order to facilitate access to the management information service. And the Institute's Financial Modelling Working Party has embarked on a survey of micro-based financial modelling applications—this will result in a register of applications that will itself be maintained on CIPFA's micro.

Conclusion

In parallel with the continuing development of its existing Financial and Statistical Information Services, CIPFA is establishing a new management information service. This will be based on a new database encompassing a variety of types of data relevant to the management of public sector authorities, coupled with the acquisition and development of computer-based methodology designed for use with the data or independently. A central feature of the new service is its reliance on a variety of computer and allied resources which incorporate the latest developments in advanced technology for management.

CIPFA is uniquely placed to provide services for public sector policy makers, managers and auditors of the kind envisaged. The Institute enjoys unrivalled support and communications from over 9,000 members who are employed throughout the public sector and abroad. A network of specialist committees ensures that the services are relevant to the needs of those who use them, and are based soundly on the best advice that is available. In the statistics field, CIPFA has long enjoyed close relations with the GSS, and the current arrangement whereby professional and operational links are maintained between government statisticians in CIPFA, in the District Audit Service, and in DoE have allowed a number of initiatives to be taken which it is hoped will bring widespread benefits to authorities, institutions and individuals throughout the public sector.

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5. *Local Authority Annual Reports 1980/81: A Survey of the Comparability of Local Authorities* (CIPFA, August 1981.)
6. *A Classification of Local Education Authorities by Additional Educational Needs (Cluster Analysis)* Department of Education and Science Statistical Bulletin No. 8/82, available from Statistics Branch, DES, Elizabeth House, York Road, London, SE1 7PM.

Jack Stafford

Jack Stafford died on 24 September at the age of 73. He had retired in 1978 and there will be many people in the GSS and outside it who worked with him and who will remember with respect and affection his powerful combination of intellect and sound practical judgement.

After gaining a first class degree in economics, he became in 1930 an Assistant Lecturer in economics at the University of Manchester at the early age of 21 and was promoted to Lecturer in 1934. He presented a paper on road transport to the Manchester Statistical Society in 1932 and published a collection of Essays in Monetary Management. He went to the United States in 1938 as a Rockefeller Foundation Fellow in economics. No doubt, if the war had not come, he would have continued his academic career.

He returned to England and joined the staff of the Central Statistical Office in early 1941. Towards the end of the war he took an active part in the discussions which led up to the White Paper on Employment Policy in 1944. He got involved in working out the detailed proposals of what kinds of statistics would be needed for this policy and then in the drafting of the Statistics of Trade Act, 1947 and the organisation of a new Statistician Class to be responsible for collecting and analysing the statistics.

He decided to resign from his University post and to stay in the Statistician Class to help to carry through the new programme for the development of British economic statistics. From 1948 to 1972 he was Director of Statistics at the Board of Trade, later the Department of Trade and Industry. While at the Board of Trade, in the 1950s and early 1960s, he also acted as economic adviser to Ministers and senior officials. After leaving the DIT at an age when most people are settling into retirement Jack took on the challenge of setting up the Statistics Division of the Price Commission and running it until 1978.

He was an innovating Statistician. We owe to him virtually the whole framework of economic statistics in use today which he developed in association with Sir Harry Campion. He was responsible for the development of the wholesale price indices and for introducing the inquiries on which are based the present day National Accounts, Balance of Payments and Index of Production. He also played a leading role in setting up the Business Statistics Office.

Jack Stafford was made a CB in 1953. Outside the Office he led by choice a very private life with his wife Miriam and their family. 1982 was the year of their golden wedding. We send his widow our condolences.



New developments in statistical computing in the Departments of Environment and Transport – the DISC Project

P. Dowdeswell, Statistician, Departments of Environment and Transport

Introduction

The Departments of Environment and Transport are pursuing a new approach to their statistical computing. This approach arose out of the Study into the Computing Requirements of Statistics Divisions (SICROS) carried out in the Departments by an independent consultant and an in-house team in 1980 (reported in *Statistical News* 51.41). This article describes progress on the procurement of a pilot computer facility for statisticians in the Departments.

Background

During the 1970s the Departments' statistical computing was carried out on several in-house machines and a growing number of commercial bureaux. In-house system development was mostly done by Computing Division, generally using purpose-written COBOL programs, whilst at bureaux statisticians used a variety of data management software packages. The SICROS project highlighted the disadvantages of these arrangements including inflexible in-house systems with long development schedules, lack of adequate facilities for user access in-house, expensive use of bureaux and the associated cost of learning a wide variety of systems. A strategy, expressed in terms of data management, data acquisition, hardware and software, and people and organisation, was put forward in the SICROS report. This involved the establishment of an in-house mini-computer bureau and the introduction of new methods in computing and statistics divisions.

In 1981 the DISC (Developments in Statistical Computing) team was formed and charged with developing an approach following SICROS guidelines to provide cost effective computing to meet the needs of statisticians. The DISC team is part of Computing Division and has a statistician posted on it. The team is directed by a Steering Group chaired by the Principal Director of Statistics and including the head of the Directorate of Management Services. The main thrust of the team's approach so far has been the purchase of a minicomputer and appropriate software for a pilot study in the statistics area.

Procurement

The team's first task was to draw up the Operational

Requirement (OR) defining in detail the software and hardware requirement. It was based on a study of a range of typical statistics projects in the Departments and on a market survey of minicomputer manufacturers and their software. Wide consultations on the content of the OR took place within the statistics directorates. The key features of the OR were the concentration on *software* facilities with particular emphasis on ease-of-use and integration of proven packages, and the need for easy enhancement of the machine. The main software facilities sought were

- an operating system suited to a time-sharing environment
- a parameter driven package, or packages, to provide facilities for data management, including queries and report generation, tabulation and statistical analysis.

A workload for the pilot machine was specified in terms of profiles of typical systems and a performance demonstration that the suppliers had to achieve on the proposed equipment.

After advertisement in the EC Gazette the OR was issued to 64 enquirers in November 1981. Seven proposals were received in December and a short list of three produced in January 1982. Evaluation of the three short-listed proposals and other contractual procedures took place over the following six months, during which time one firm withdrew. The contract was awarded on 9 August 1982.

The machine to be purchased is a DEC VAX 11/780 with 2 Megabytes of main memory and associated equipment as follows:

- 1 system disc
- 2 256 Megabyte discs
- 1 magnetic tape system
- 1 line printer
- 6 VT-100 VDU terminals

Interface to allow remote access by batch terminal (for the Departments' Bristol data collection unit).

The major items of software being purchased are SIR (statistical data management package), P-STAT (statistical analysis package) and DATATRIEVE (a more conventional data management package), as well as lower-level programming languages such as FORTRAN and BASIC.

Pilot

The pilot study is planned to last nine months following the delivery of the equipment in October 1982 and has two main purposes:

- to demonstrate the availability and utility of suitable software
- to demonstrate that online use of the computer and software by statisticians and their staff is possible and cost effective.

Some major longer term aims of the DISC project to which the new equipment is expected to make a substantial contribution are:

- to improve access to data
- to maximise usability of data by developing an information strategy
- to reduce in-house development costs and time scales and to reduce external running costs.

Before embarking upon the procurement of the software and hardware the team considered whether to link the procurement to an existing large statistics project or to acquire more generalised facilities and choose appropriate projects for the introduction of new techniques. The latter, pilot study, approach was chosen because it allowed for a wide spread of expertise and new knowledge across people in both Departments, it avoided the risks of being associated with time critical projects, it demonstrated a more generally applicable facility by being based on a wide range of projects, it avoided incurring the costs of a full system and it provided the basis for relatively speedy follow-up procurements.

Several existing and new projects (and parts of projects) have been selected for piloting from throughout the statistics directorates to reflect the range of tasks performed and to involve a wide variety of users. Apart from testing the hardware and software in support of a wide variety of statistics projects and monitoring user (both computing and statistical staff) reaction, there are a number of general tasks that can best be accomplished within a pilot framework. These include:

- developing an accounting tariff
- estimating costs for typical tasks
- determining the capacity of the machine
- estimating future training and staffing levels.

All these will help to judge whether the savings forecast by SICROS are realistic.

The in-house bureau facility being piloted is not expected to emulate all the best features of all the best bureaux. It is intended to provide a cost-effective, adequate service to meet statisticians' needs. It is expected to be cheaper than the existing services - not only on processing and development costs but because rationalisation of computing facilities should produce a more educated and easily controlled organisation.

If the pilot is successful it is intended to enhance the

pilot machine and replicate the facilities, to provide sufficient capacity for the computing needs of the statistics directorates. It is envisaged that some computing (such as one-off tasks requiring specialist software and peak loads) may still be done at commercial bureaux, but it is intended that other work will gradually move to the new facilities. Other software packages (including those sponsored by the GSS) may be acquired as and when available on the VAX range.

The Departments' approach is compatible with several of the themes in the 1981 White Paper on the GSS, including:

- need for more cost-effective methods of gathering and processing information
- need for statisticians to work closely with computer experts to obtain more efficient use of computers
- emphasis on generalised systems in place of tailor made programs for each application
- need for costing computing consistently both between statistical computing projects and with other resources.

Another development in the Departments relevant to these aims and arising out of the Rayner scrutiny programme is the introduction of Management Accounting Systems in each Department. These are to be set up initially on a commercial bureau and later transferred to an in-house minicomputer.

Closely linked to the DISC team's work is that of the data manager, a statistician who is developing an information strategy for the Statistics Directorates. Initially his job is to identify the data held with its definitions, users and sources. From this information he will recommend the data to be associated together, based on the needs of statisticians and other users to access the information and taking into account any confidentiality restrictions. As a result, data which were formerly limited to one application (and perhaps to one computer) will now be more generally available to other statisticians. The data manager will be able to provide advice and assistance to the DISC team on the priorities attached to the transfer of existing activities and new computerised work to the DISC machine and the structure of the new data-sets to be created.

After the inception of the DISC project a further Department-wide strategic review of administrative computing was mounted. The study report endorsed the DISC minicomputer approach and proposed extensions of this approach leading to the establishment of minicomputer bureaux for DTp and DOE (excluding the Property Services Agency) with computing resources managed by separate high level policy groups. These groups have recently been set up and they are looking to the DISC pilot study to give direction to the wider implementation of the strategic plans across both Departments.



A manpower data base for the Manpower Services Commission

Michael J. Janes, Statistician, Manpower Services Commission

Summary

This article describes how the Manpower Services Commission (MSC) has (through a research project) set up a database on the computer system shared by the Universities of Newcastle and Durham known as NUMAC (Northumbrian Universities Multiple Access Computer). Staff in MSC's Regional Manpower Intelligence Units (RMIU's) access the database through dial-up telephone lines. They are able to call up small area employment, unemployment and vacancy data for different moments in time, and for different geographical aggregations of the data.

The database

MSC now has a computerised database of unemployment, vacancy and employment statistics for the 923 Employment Office Areas that cover Great Britain. These data will shortly be joined by 1981 Census of Population Small Area Statistics aggregated to the same areal base. A detailed list of the data sets is given in Table 1.

The Department of Employment (DEm) has responsibility for collecting and reporting employment, unemployment and vacancy data and in the main uses MSC's local employment offices (Jobcentres) as agents. The Department of Employment's computer installation at Runcorn has been used for many years to process the statistical manpower returns to form national and regional totals. DEm have always been willing to provide users with computer tapes of the published data but a comprehensive, interrogatable database has not been attempted before.

What is the database used for?

MSC has nine Regional Manpower Intelligence Units (RMIUs) whose locations are given in Table 2. An RMIU acts as the Secretariat of the Regional Manpower Services Director who is in turn the representative in the regions of both the Secretary of State for Employment and the Manpower Services Commission itself. In Wales and Scotland the MIUs service the MSC's Committees for Wales and Scotland and report on employment matters to the respective Secretaries of State for Wales and Scotland. As a consequence RMIUs handle official cases and provide ministerial and commission briefing.

They answer questions from MPs and various official bodies (Local Authorities, Employers organisations, District Manpower Committees, Trade Unions, Research Bodies, etc.) and write *ad hoc* and regular reports, the most widely circulated being their Regional Labour Market Quarterly Reports. Additionally they provide information to MSC's operating and service divisions with the aim of enabling MSC to plan its programmes in full knowledge of the labour market situation in given localities.

In carrying out these functions quick access to data is vital and the NUMAC database provides a means of efficient retrieval and analysis. Briefing for ministers and the Commission is usually given in terms of the local labour market definition, the Travel to Work Area (TTWA) (380 TTWAs cover Great Britain) but the geography of requests for data varies enormously. MPs request data for constituencies, Local authorities want data on a borough or education authority basis, MSC's Training Division might wish to approximate a Skill-centre catchment area, while regional level data are most often requested as benchmarks for comparisons. In all of these cases the ability to swiftly aggregate from the local employment office area building block is a major benefit of the NUMAC database.

A close rival in terms of benefit is the ability to produce a time-series of one particular cell of a cross tabulation e.g. 'under 18's unemployed for over 12 months in an area' or 'the numbers employed full-time and part-time in a particular industry or in an area. A feature rapidly gaining in popularity is the ability to rank output by order of magnitude e.g. to find the ten worst labour markets (TTWAs) in terms of long-term unemployment in the country, region or area'?

Outside MSC, the Department of Industry have used the database in their assessment of assisted area statuses, while the Department of Employment have called upon the database to provide a regional or local dimension to ministerial briefing and policy making. In addition, there is considerable pent-up demand—many local authorities and academics wish to make use of the database. At present, while funded from MSC's research budget, a tight control is being kept on who uses the system. Indeed, the system monitors all its customers, the functions they use, the resources they use, and the mistakes they make!

How the database began?

Four years ago the MSC embarked upon a programme of improving the way trends in the labour markets within the regions were monitored 'Regional Manpower Intelligence Development', as this programme has become known, has many facets but one of the most important is to get more out of the wealth of statistical information on employment, unemployment and vacancies, that is regularly collected and recorded at a highly disaggregated geographical level. In 1978 at the same time as this MSC Development Programme was beginning to address the problem of not having a comprehensive and interrogatable database for local data, researchers outside Government were also beginning to realise that not having such a database was a hindrance to research into labour market matters. The Geography Department of the University of Durham and the Centre for Urban and Regional Development Studies (CURDS) at Newcastle University came to MSC in the summer of 1978 with a research proposal to set up a pilot information system for the 70 local employment office areas that comprise the Northern Region of England. MSC agreed to fund a joint project at the universities of Newcastle and Durham under Professor Goddard and Dr. Rhind. The Department of Employment agreed to provide the universities with data tapes of the relevant manpower series as far back into history as they were able.

The pilot project

During this pilot project a large number of data problems were encountered and solved. Many of the historical unemployment data tapes had deteriorated and could not be read, while transferring ICL format data tapes onto an IBM mainframe computer is never straightforward. Nonetheless the research team were able to show that a database could be set up. They were also able to demonstrate the benefits of having such a computerised database—in particular the greater depths of statistical analysis that could be performed. Of special mention is the 200 map atlas of the employment characteristics of Northern Region prepared using the specialist mapping facilities at Durham.

The current project

Towards the end of the pilot project in the summer of 1980 the research team made a case for extending the pilot database into a nationwide system. At the same time work within MSC on the RMI Development Programme had pointed out the fact that a considerable amount of effort was expended in the RMIUs extracting data for briefing, report writing and question answering. Data were usually extracted from folders of statistical returns or computer print-out, or else from

clerically updated ledgers. Staffing resource constraints were such that data extraction took up almost all the available time, allowing only a minimal amount for analysis, interpretation, and proper presentation. The development of a computerised database of manpower statistics was therefore seen from within MSC as a valuable means of releasing resources to more productive work.

A programmer/analyst and a database administrator were recruited to run the two years further research. Involvement in the project was widened. First, by the elevation of Dr Rhind to the Chair of Geography there. Birkbeck College (University of London) was brought in to take over the development of a facility for displaying statistics in map form. This was work which Dr. Rhind had specialised in at Durham University. Secondly, the Departments of Employment, Industry, Environment and the Office of Population Censuses and Surveys were invited to link with MSC in steering the research and evaluating the database itself.

An attempt was made to build in from the start the various types of presentation and analysis that users of the system would require. However to most users on the ground in the regions, the idea of a computerised database was so novel that they were unable to give a complete specification of their requirements. The alternative approach adopted was for the Research Team to provide outputs and then invite feedback from the users as to how these outputs met their needs. By having a resident programmer on the team suggestions could be acted upon almost immediately and this quick response has led to the system being held in very high regard by the users.

The data series were introduced in stages. First of all the employment series became available followed later by unemployment and vacancy data. With the mounting of each new series, users have indicated which of the previously written analysis routines are appropriate and also suggested new analysis routines suitable for that particular series.

To cope with all the suggestions received, the database system has undergone two major revisions already. In the near future further revisions are likely first of all to cope with changes in the unemployment series under the JUVOS system, and secondly, to incorporate Census of Population Small Area Statistics. The longer term aim is to aggregate both Census of Population Small Area Statistics and Workplace Statistics to local employment office area level to give the first fully integrated manpower database. Indeed integration is a major plant of the whole project since a major drawback to the clerical system has always been the extreme difficulty of linking employment, unemployment and demographic data.

Most users have had to be taught how to use a computer terminal from first principles: thus part of the job has been an educational one. In carrying this out the research team have been assisted by MSC's own Head Office group responsible for the RMI Development Programme but the achievements to date were only made possible by the tolerance and help of management and staff in all of the regional offices of MSC. Although help facilities are built into the system the users have also been provided with a detailed written Guide.

Technicalities

The universities of Newcastle and Durham's shared computer (NUMAC) is an IBM 370/168 running under the Michigan Terminal System (MTS). The current size of the database, after compaction, is of the order of 45 megabytes and growing at about 12 megabytes a year. On receipt of a data tape from DEm, data are validated, compacted, and transferred to a 200 megabyte disk, usually within 24 hours. Data are recalled and manipulated through one large computer program named ACCESS. This conversational program is written in IBM Fortran IV, level H and makes use of some of the MTS facilities such as line files. Graphical output is obtained through an interface to the GIMMS package, but while it is hoped that the general user will soon be able to carry out simple graphing, the more sophisticated mapping facility will always require an expert operator. The RMIUs are equipped with hard copy teletype terminals (originally installed to service MSC's internal Special Programmes Division system, SPECTRUM). Additionally one of the two Commodore PET 8032 Microcomputer Systems installed in each RMIU includes a modem and recent work has included adapting a program written by a former member of the Newcastle University staff which converts the microcomputer into an intelligent terminal.

The future

While it is financially attractive to leave the database at NUMAC, availability and control problems have led the Central Computer and Telecommunication Agency to recommend that the best long-term home for the Manpower database is on the Department of Employment computer at Runcorn. A penalty of the success of the system is that the load on the university computer from outside users (already in excess of 50 accesses a week) may grow to unacceptable levels. Plans are now being prepared to transfer the database in the summer of 1984. In the intervening two years development of the system will continue to take place.

Mention has already been made of the take-on of Census of Population data. The mapping facility will be further developed once the boundaries of all 923 local employment office areas have been digitized and recorded on the computer. Preliminary work in the RMIUs has demonstrated the feasibility of down loading data from the main database to the RMIUs' Commodore PET 8032 microcomputers for more detailed local investigation and this has raised the possibility of transferring further locally held data from floppy disk to the mainframe computer. Here MSC is only on the threshold and much work remains to be done.

All of the data series to be found on the database are available at the lowest geographical level (the employment office area). However, there is much data of interest to the labour market analyst that is only available at the regional or county level. Plans are afoot to include such data on the system.

The Manpower Services Commission is to hold an IT 82 exhibition at its Sheffield Headquarters, Moorfoot, from 23 to 25 November 1982 when this database will feature alongside other MSC developments in the IT field.

Acknowledgments

It should be clear from the sections above that the manpower database at NUMAC has come about as the result of an unusual combination of academic and government team effort. Within that team special mention should be made of Professor John Goddard (Newcastle University), Professor David Rhind (Birkbeck College), Mr Alan Townsend, Mr Robert Nelson and Mr Peter Dodds (Durham University), Mr Andrew Gillespie and Dr David Owen (Newcastle University) and all members of the Steering Group for the project who have nurtured the project from a proposal into a practical tool in only four years and at minimal cost.

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Regional Labour Market Quarterly Reports and references 2, 3 and 4 are available from the Manpower Services Commission, MIPD/CDG, Moorfoot, Sheffield S1 4PQ.

TABLE 1
DATA AVAILABLE FROM MSC'S MANPOWER DATABASE AT NUMAC

Return <i>(Published Data)</i>	Data Categories	Data Source	Availability
	Monthly Unemployment Totals – the <i>published</i> Statistics: Males/Females Temporarily stopped	EO, CO and PEO	MONTHLY July 1978 onwards (except – at present – Mar and Apr 1981) ANNUALLY June 1972 to June 1978
<i>EDS2A</i>	Monthly Unemployment Totals by: Males/Females Adults (excluding TS) Adult students Temporarily Stopped School/Student leavers under 18 yrs School/Student leavers aged 18 School/Student leavers 19 & over	EO, CO and PEO	MONTHLY July 1978 onwards
<i>EDS2B</i>	Monthly Unemployment Totals of Non-claimants registered at COs & EOs by: – Males/Females Full time non-claimants Part time non-claimants Temporarily stopped Married females – November 1981 onwards only at present Non Thursday TS Self service submissions	EO, CO and PEO	MONTHLY July 1978 onwards
<i>EDS82A</i>	Quarterly Unemployment by Age and duration bands: Males/Females 11 age bands 14 duration bands	EO, CO and PEO	QUARTERLY Jan, Apr, July, Oct July 1978 onwards
<i>EDS68</i>	Quarterly Occupational analysis of Unemployment and Vacancies by: Males/Females 18 Key Occupaton Groups (CODOT) 394 Key Occupations also Vacancy/Unemployment ratio and Unemployment/ Vacancy ratio	EO and PEO only	QUARTERLY, Mar, June, Sept, Dec Sept 1978 onwards
<i>EDS89</i>	Quarterly Occupational analysis of Placings & Cancelled Vacancies 18 Key Occupation Groups 394 Key Occupations (Notified Vacancies can be calculated)	EO and PEO only	QUARTERLY Mar, June, Sept, Dec Sept 1978 onwards

Return	Data Categories	Data Source	Availability
<i>EDS10</i>	Quarterly Unemployment by Industry Male/Females Temporarily stopped Sectors (5) Orders (28) Minimum List Headings (183) of SIC also Vacancy/Unemployment ratio and Unemployment/Vacancy ratio	EO, CO and PEO	QUARTERLY Feb, May, Aug Aug 1978 to May 1982 (discontinued (May 1982)
<i>EDS81</i>	Quarterly Industrial analysis of Placings & Unfilled Vacancies Sectors (4) Orders (27) Minimum List Headings (183) of SIC	EO, CO, and PEO	QUARTERLY Feb, May, Aug, Nov, Aug 1978 onwards
<i>EDS83</i>	Quarterly Unemployment by Ethnic origin 7 Categories of Origin Male/Female Self/parental origin	EO, CO, and PEO	QUARTERLY May, Aug, Nov from Aug 1978 onwards (<i>not</i> February)
<i>EDS83B</i>	Annual Unemployment by Ethnic origin by age As EDS 83 but in addition 4 age categories	EO, CO, and PEO	ANNUALLY February from Feb 1979 onwards
<i>ERII</i>	Annual Census of Employment by Industry by:- Males/Females Sectors (5) Orders (28) Minimum List Headings (183) of SIC Full time/Part time	Employers	ANNUALLY June 1971 to June 1978

Note: EO = Employment Office or Jobcentre
CO = Careers Office
PEO = Professional and Executive Recruitment Office

TABLE 2

MSC's Regional Manpower Intelligence Units

<i>Locations</i>	<i>Regions</i>
Edinburgh	Scotland
Cardiff	Wales
Newcastle	Northern Region except Cumbria
Manchester	North West Region and Cumbria
Leeds	Yorkshire and Humberside
Birmingham	East and West Midlands
Bristol	South West
London	Greater London
Basingstoke	South East excluding Greater London

Recently available statistical series and publications

The following publications containing social statistics have recently, or will soon become available during the October–December quarter of 1982. Unless otherwise specified, copies may be purchased from Her Majesty's Stationery Office. A list of release dates of economic series is published monthly in *Economic Trends*.

Department of Employment

Employment Gazette, published towards the end of each month, contains indicators on earnings, unemployment and prices. Issues published in the third quarter of 1982 include Family Expenditure Survey results on household spending in 1981.

Departments of the Environment and Transport

Housing and Construction Statistics, second quarter 1982 Part 1, No 10.

Housing and Construction Statistics, second quarter 1982 part 2, No 10.

Local Housing Statistics. Issue 62 figures for the first quarter 1982.

Transport Statistics Great Britain 1971-1981

Road Accidents Great Britain 1981.

Statistical Bulletins

Road Accidents and Casualties in Great Britain 1981, fourth quarter 1981 (STCG 4(82)2)

Road Accidents and Casualties in Great Britain, first quarter 1982 (STCG4(82)3)

Road Accidents and Casualties in Great Britain second quarter 1982 (STCG4(82)4)

Traffic in Great Britain, first quarter 1982 (STCG2(82)1)

Road Accidents and Casualties in Great Britain 1981 (STCG4(82)1)

Departmental Statistical Bulletins are available from:

STCG3

DOE/DTP

Room A140

Romney House

43 Marsham Street

London SW1 3PY

Department of Health and Social Security

The Department of Health and Social Security publish regular monthly and quarterly statistical series on such topics as Unemployment benefit, Child benefit and Sickness invalidity and injury benefits. Extracts and summaries from these series are eventually published in *Social Security Statistics*.

Further information can be obtained from:

Mr R. V. Easey,

Department of Health and Social Security,

Room A2111,

Newcastle Central Office

Newcastle-upon-Tyne NE98 1YX

Telephone: Newcastle (0632) 797373

Home Office

Criminal Statistics, England and Wales 1981

Fire Statistics United Kingdom, 1981

Probation and after-care statistics, England and Wales, 1981

Statistical Bulletin: Statistics on the Prevention of Terrorism (Temporary provisions) Acts 1974 and 1976, third quarter 1982.

Statistical Bulletin: The outcome of arrests during the serious incidents of public disorder in July and August 1981.

Statistical Bulletin: Offences relating to motor vehicles, England and Wales, 1981.

Statistical Bulletin: Notifiable offences recorded by the police in England and Wales, third quarter, 1982.

Statistical Bulletin: Betting licensing statistics, Gt. Britain, 1981/82.

Statistical Bulletin: Control of immigration statistics, United Kingdom, 3rd quarter 1982.

Statistical Bulletin: Coroners statistics, England and Wales, 1981.

Statistical Bulletin: statistics of mentally disordered offenders made subject to restrictions, England and Wales, 1981.

Copies of Home Office Statistical Bulletin are available from the Home Office Statistical Department, Room 1813, Tolworth Tower, Surbiton, Surrey KT6 7DS

Scottish Education Department

Basic Educational Statistics (Scotland) Fact Card.

Statistical Bulletins on the following subjects:

Autumn Enrolments of students in Vocational Further Education (1981)

Provision for pre-school children.

Excess and Deficit of Teachers by Subject

School Leaver Projections

Student Awards and Bursaries

Welsh Office

Welsh Housing Statistics 1981

Welsh Agricultural Statistics 1981

Digest of Welsh Statistics 1981

Mental Health Statistics 1981

The above publications are now available only from:

Publications Unit

Economic and Statistical Services Division

Welsh Office

Cathays Park

Cardiff CF1 3NQ

New Surveys assessed by the Survey Control Unit June to August 1982

For further information on the surveys listed, the appropriate departmental contact may be obtained from Miss Claire Gallagher (01-233 8583), Survey Control Unit, Central Statistical Office, Great George Street, London SW1P 3AQ.

An introductory note was given in Statistical News 36.41

New Surveys assessed June to August 1982

Title	Sponsor	Those approached	Approximate number approached	Location	Frequency
Business surveys					
Survey among ABTA Travel Agents	BTA	Travel Agents	600	UK	AH
Fit for Work Award Scheme	COI	Employers	40	GB	AH
Test of Department of Employment Maternity Pay Rebate Form	COI	Employers	252	YH	AH
Reductions in Working Time through National Agreements	DEM	Employers	300	GB	AH
Job Release Scheme Replacement Condition - 1982	DEM	Employers	750	GB	AH
Branch Plant Research Project	DIT	Manufacturing Firms	300	UK	AH
Accident/Dangerous Occurrence Report Form (merchant ships)	DIT	Shipping Companies	1600	UK	C
Employment Generated by HIDB Assistance approved in 1974	HIDB	Employers	425	S	AH
Postgraduate Research Studentships: Cereal Spraying	MAFF	Cereal Growers	60	SE	HY
Mobile Homes Act: Site Operators Survey	SDD	Mobile Home Site Operators	85	S	AH
Survey of Financial Sector	SEPD	Banking sector	12	S	AH
Goods Vehicle Survey - Motorway Traffic	TRRL	Drivers	3000	E	AH
Local authority surveys					
Induction & In-Service Training of Teachers - Volume & Cost	DES	Education departments	105	EW	AH
Quality of Teaching - Criteria of Teacher Selection Project	SED		0	S	AH
Other Surveys					
First Destinations of Graduates and Diplomats	DES	Polytechnics and Colleges	80	EW	A
Patients Personal Detail Sheets	DHSS	Patients	50	SE	AH
Support Given to Laryngectomy Patients After Discharge	DHSS	Patients	55	SE	AH
Integrated Rural Development in the Peak District National Park	DOE	Farmers, Rural Residents	NK	EM	AH
A6 Trunk Road: Market Harborough Bypass Roadside Interviews	DTP	Drivers	6000	EM	AH
A20 Folkestone - Dover Traffic Survey	DTP	Drivers	3000	SE	AH
A677/A6119 Improvement: Roadside Interviews/Traffic Survey	DTP	Drivers	15000	NW	AH
M1 - A1 Link Road: Corby Cordon Survey	DTP	Drivers	1000	EM	AH
Roadside Surveys for A41 Berkhamstead Bypass	DTP	Drivers	1800	SE	AH
Okehampton to Launceston A30 October O & D Survey	DTP	Drivers	350	SW	AH
A13 Wennington to Mardyke Footpath Survey (Aveley, Essex)	DTP	Pedestrians	NK	SE	AH
Telford/Shrewsbury Bypass Origin and Destination Survey	DTP	Drivers	4000	WM	AH
Survey of Tourists to Brighton	ETB	Visitors	3500	SE	AH
Study of Career Progression of Qualified Craftsmen	MAFF	Craftsmen	650	GB	AH
Survey of Newly Qualified PER Registrants	MSC	Unemployed	1500	UK	AH
Statistics of Unemployed Disabled People	MSC	Unemployed	30000	GB	AH
Talbot Redundancy Study	MSCS	Employees	2750	S	AH
Taylor Nelson Family Food Panel	EA	Households	2000	GB	HY
Household Egg Purchases Survey - Northern Ireland Television Consumer Audit	EA	Households	400	NI	F
British Survey of Eating Out - Eggs	EA	Households	NK	GB	Q
Household Egg Purchase - GB	EA	Households	4000	GB	W
Consumer Usage and Attitude Survey: Eggs	EA	Households	2350	GB	Y3
Survey of Dental Health of School Children 1983	OPCS/DHSS	Children	22000	UK	AH
Survey of Secondary School Pupils' Smoking	OPCS/DHSS	Children	5000	GB	AH
Mobile Homes Act - Residents Survey	SDD	Mobile Home Site Residents	NK	S	AH
Trials of the Prototype CR6 Taxis	TRRL	Passengers	NK	E	AH
Gateshead District Council Shopping Survey	TRRL	Shoppers	1800	N	AH
Effects of Withdrawal of Suburban Bus Services	TRRL	Passengers	600	EW	AH
Study of the Attitudes, Opinions & Knowledge of Motorcyclists	TRRL	Motorcyclists	NK	GB	AH
The Disabled in the Welsh Housing Environment	WO	Disabled	1150	W	AH
Mid-Wales Tourism Flow Study	WTB	Tourists	1000	W	AH

LIST OF ABBREVIATIONS

General

ABTA	Association of British Travel Agents
O&D	Origin and Destination
PER	Profession Executive Register

Sponsors

BTA	British Tourist Authority
COI	Central Office of Information
DEM	Department of Employment
DES	Department of Education and Science
DHSS	Department of Health and Social Security
DIT	Departments of Industry and Trade
DOE	Department of the Environment
DTP	Department of Transport
EA	Eggs Authority
ETB	English Tourist Board
HIBD	Highland and Island Development Board
MAFF	Ministry of Agriculture, Fisheries and Food
MSC	Manpower Services Commission
MSCS	Manpower Services Commission Scotland
OPCS	Office of Population Censuses and Surveys
SDD	Scottish Development Department
SED	Scottish Education Department
SEPD	Scottish Economic Planning Department
TRRL	Transport and Road Research Laboratory
WO	Welsh Office
WTB	Wales Tourist Board

Location

E	England
EM	East Midlands
EW	England and Wales
GB	Great Britain
N	Northern England
NI	Northern Ireland
NW	North West England
S	Scotland
SE	South East England
SW	South West England
UK	United Kingdom
W	Wales
WM	West Midlands
YH	Yorks and Humber-side

Frequencies

A	Annual
AH	Ad hoc (or single time)
C	Continuous
F	Fortnightly
HY	Half yearly
Q	Quarterly
W	Weekly

Notes on current developments

POPULATION AND VITAL STATISTICS

Population Trends

The latest edition of *Population Trends*, the quarterly journal of the Office of Population Censuses and Surveys (OPCS), was published in October and contains the following articles:

Estimating fertility from household composition data in the census: the 'own-child' approach

The 1981 Census did not include a direct question on fertility comparable to questions asked in the censuses of 1971, 1961, 1951 and 1911, and in the Family Census of 1946. Nevertheless it is planned to make use of information from the 1981 Census about families containing children to give approximate measures of fertility during the preceding 10-15 years. This article by Audrey Brown of OPCS Population Statistics Division, describes the methodology to be used and also presents an analysis of 1971 Census results to show how these approximate measures of fertility compare with those given by the direct questions and to those obtained from birth registration.

The evolution of population estimates in England and Wales

The Registrar General's annual local authority population estimates are one of the oldest and most basic statistical series. This article by John Craig and Patricia Broad of OPCS Population Statistics Division, adds to our understanding and appreciation of current methods by setting these in their historical context and showing how the methods fit in with, and adapt to, the social environment prevailing at particular points in time.

County changes in population, 1971-81

Previous articles in recent issues of *Population Trends* about changes in population revealed by results from the 1981 Census have concentrated on the 403 local authority districts of England and Wales. Although the 54 counties are a coarser areal unit, changes at this level are important because of the administrative role of the counties. Moreover the counties are useful as statistical units in highlighting some changes which are less obvious at the district level. For example, many counties have one or more districts in which a large town predominates together with other districts of a more mixed character; in these circumstances changes at the district level are greatly affected by short distance moves between large towns and their hinterlands whereas

changes at the county level reflect a more overall, aggregative, change. In this article from OPCS Population Statistics Division the population present at the Censuses of 1981 and 1971 are compared, subdividing the changes for whole counties into the change in the towns and the change in the remaining rural part of each county.

The new district health authorities

The recent re-structuring of the National Health Service has led to changes in the Health Service areas and this article from OPCS Population Statistics Division describes the relationship of the new areas to both the old health areas and the present local government areas.

Reference

Population Trends 29 Autumn 1982 (HMSO 1982) (Price £4.10 net)

Population change and regional labour markets

Published in September by OPCS were six of the papers presented at the British Society for Population Studies Conference on 'Population change and regional labour markets' held at Trevelyan College, University of Durham, 22-24 September 1982. The six papers are:

Demographic trends and labour supply

This paper by Norman Davis of the Manpower Services Commission traces some of the historical developments which have helped fashion the present trends in labour supply and the outlook for the next few years. The paper concentrates on some key demographic developments within the European Community and in the regions of Britain.

Migrants, visitors and commuters in the British Census

In this paper by Harry Lawson, formerly of the General Register Office for Scotland, measures of total, internal and external movement and of area interaction are defined and the effect of area type and population is analysed. Comparisons of migration, travel-to-work and temporary visits in the 1961-71 Censuses are used to examine the generality of the measures proposed.

Population and the labour market with special reference to growth areas in the UK

An examination of employment trends by A. G. Champion, A. E. Gillespie and D. W. Owen of the University of Newcastle upon Tyne, based on the Censuses of Employment and Population shows that the highest rates of employment growth took place on the edges of the major metropolitan regions and in many of the more

rural areas beyond. They show that simple correlation between employment and population change rates produces positive but only relatively weak relationships at county level, so labour market accounts are used to explore the background to employment trends in more detail.

Migration between British local labour markets and some speculation on policy options for influencing population distributions

By drawing from detailed studies of empirical trends, Stephen Kennett of the London School of Economics argues that the importance and complexity of the migration process has been underestimated in analytical assessments of the local economy. Four common misconceptions of labour mobility are introduced and their implications for policy formation and local labour market dynamics are considered. Discussion then turns to some of the fundamental characteristics of migration. Finally, the paper speculates on some integrated policy strategies for population distribution in the urban system and, more tentatively, it suggests some instruments by which the population mix and balance between conurbations and smaller cities might be adjusted.

Regional labour supply: an economic/demographic model

This paper by Peter Elias and Ian Molho of the University of Warwick describes some aspects of a major programme of research on spatial labour market modelling. Included is a discussion of a recent projection of employment and unemployment at the regional level, together with details of the more important labour supply sub-models used in the production of the projection. The paper concludes with an analysis of possible directions for future research.

Women's activity rates and regional employment markets

Women's economic activity rates show large variations between and within the regions of Britain. Paul Allin of the Equal Opportunities Commission attempts to draw attention to factors which, using a more thorough analysis, may explain this variation, at least in part. The problem of defining women's economic activity is also considered in this regional context.

Reference

British Society for Population Studies. *Population change and regional labour markets*. BSPS Conference Papers, Trevelyan College, University of Durham, 22-24 September 1982. OPCS Occasional Paper 28. (OPCS 1982) (Price £4.00 net)

Postcode based vital statistics

Records of births and deaths registered in Scotland during the years 1974 to 1980 are now held on data files

in postcode of usual residence order. The information of these basic files includes all items in the C (cause of death) and S (Fertility) series of tables published in the Registrar General's Annual Report. Inclusion of the postcode of usual residence will permit aggregation of data to *ad-hoc* areas specified by users in terms of postcodes.

The General Register Office (Scotland) (GRO) are also making available counts of the numbers of births and deaths at postcode unit level in order to permit users to re-aggregate the data to areas which are of most interest to them. This is expected to be of assistance with small area population estimation (especially for pre school children). Some local authorities have in the past purchased similar information on an *ad-hoc* basis but it is now intended that a standard data set should be available for all users.

Postcode sector line prints

There are approximately 1,000 postcode sectors in Scotland and a set of tabulations for the years 1974 to 1980 has been prepared from the postcode based files. Each table shows on a single line per sector basis:

- a. deaths by age and sex
- b. deaths by 12 selected causes (ICD 'B' list)
- c. births by age of mother, sex and parity, and social class (i.e. by each separately, not cross classified).

This set of statistics is available at the cost of 25p per page plus VAT.

Alternatively the complete set of tables may be obtained in the form of microfiche at a cost per year of £5.00 per table plus VAT. Future costs of such tabulations will depend on user demand.

Maps showing sector detail with code letter area and outward code district boundaries are available. Coverage is based on the Bartholomew's half-inch to the mile series with the exception of Edinburgh and Glasgow which are based on three inch to the mile maps. Copies priced £2.50 each can be obtained from:

The Post Office
Postal Marketing (PMk2.3)
Postal Headquarters
St Martins-le-Grand London
EC1A 1HQ
Telephone: 01-432 1620

Postcode unit vital event counts

Data are available for the period 1974 to 1980 and will be released in the form of hard copy, microfiche or magnetic tape subject to the conditions of supply outlined below. One printed page contains approximately 128 postcodes and the whole of Scotland is covered by 226 pages. Two microfiche cover the complete set of

data for any year and data for the whole period 1974-80 are available on a single magnetic tape, from which users will be able to extract and re-aggregate as necessary.

Magnetic tape will be in standard ICL 64 character code and a full specification and record layout can be supplied on request. Tapes can also be provided in EBCDIC format at an additional cost.

Hard copy from microfiche will cost 14p per page plus VAT.

The set of 2 microfiche will cost £5.75 per year. Subsets of the data will not be available on microfiche.

For the period 1974 to 1980 the magnetic tape record will cost £175.00. When available data for 1981 will cost £40.00. Customers will not be expected to provide GRO with blank tapes.

Questions and enquiries about postcode based vital statistics should be addressed to:

General Register Office for Scotland
Statistics Branch
Ladywell House
Ladywell Road
Edinburgh
EH12 7TF
Telephone: 031-334 0380 ext. 243

1981 Census

County Reports

The Part 1 reports (100 per cent statistics) for each county in England and Wales have now been published by HMSO. They contain data for each county and district on the population present on census night; demographic characteristics such as population in private and non-private households, sex, age and marital status and country of birth; economic characteristics; housing characteristics such as private households by number of rooms, size of household, density, tenure, amenities and use of a car; and (for Welsh counties only) the use of the Welsh language.

The Part 2 reports (10 per cent statistics) for only a few counties have been published so far. The tables contained in these reports include data on employment, economic activity, socio-economic groups and travel to work.

Monitors

In October a set of twelve *Parliamentary Constituency Monitors* was published by OPCS. Similar tables to those published in the national and regional summary monitor have been produced for each parliamentary constituency in England, Scotland and Wales. Each monitor plus an index to the complete set is available individually from Information Branch (Dept SN), OPCS, St Catherine's House, 10 Kingsway, London WC2B 6JP, or the complete set may be obtained as a bound volume.

Also published in October was a summary and review of 1981 Census data for local authorities, completing the set of OPCS County Monitors. This final issue compares and contrasts the data published in the series for all local authority areas in Great Britain and so examines the diversity that exists between the areas enabling local values to be set in a national context. As there are over 500 such areas, variation is expressed in statistical summaries and by reference to extreme values. Geographical patterns are shown by maps of selected variables.

The now complete set of OPCS County Monitors, including a loose leaf binder is available from OPCS Information Branch (address above) at a cost of £20 including postage and packing.

Statistics from the 1981 Census for England and Wales appear on *Prestel* from page 500,412 onwards.

References

Parliamentary Constituency Monitors. Great Britain. (OPCS 1982) (Price £6 net) or available individually as:

OPCS Census Monitor	PCM 1 East Anglia
	PCM 2 East Midlands
	PCM 3 North
	PCM 4 North West
	PCM 5 South East: Greater London
	PCM 6 South East: Remainder - North of Thames
	PCM 7 South East: Remainder - South of Thames
	PCM 8 South West
	PCM 9 West Midlands
	PCM 10 Yorkshire and Humberside
	PCM 11 Scotland
	PCM 12 Wales

Each Monitor is priced at £0.50 and a handling charge of £0.95 plus VAT will be added for orders of five or more Monitors. An additional Monitor:

PCM 13 Index

will be sent free of charge with every order

Summary and review of local authorities. OPCS County Monitor CEN 81 CM 58 (OPCS 1982)

1981 Census - Scotland

Regional Bulletins have been produced for all the Regions and Islands Areas in Scotland. Each Bulletin contains a summary of the final figures of the population and housing in each Region and its Districts (price 30p net). A national summary was published in July showing the Region and District figures contained in the individual Bulletins together with totals for Scotland. Regional Reports (replacing the County Reports of previous Censuses) started to become available in September and will continue to be published during the coming months. The 100 per cent Small Area Statistics are now available for Enumeration Districts and their aggregation to Postcode Sectors, Local Government Districts, Islands Areas and Regions. A number of Scottish Topic Volumes will be published next year, including Migration and Workplace Tables, Gaelic Tables and the Housing Report.

Comparison of 1971 and 1981 Small Area Statistics

To allow direct comparison of Census data between 1971 and 1981 GRO(S) has retabulated the 1971 Census information using the 1981 layout of Small Area Statistics Tables and definitions, as far as the available data will allow. The addition of unit postcodes to individual 1971 household records has allowed the reformatted figures to become available for most areas held on the postcode directory.

The reformatted 1971 postcode based 100 per cent Small Area Statistics are available at Enumeration district, postcode sector, district and region level, 10 per cent tables and other areal levels (including *ad hoc* areas) will be produced during 1983.

Further details of all these publications may be obtained from:

Census Customer Services
GRO SCOTLAND
Ladywell House
Ladywell Road
Edinburgh
EH12 7TF

Vital Statistics (Scotland)

The Registrar General's Annual Report for 1981 was published during November (HMSO, price £13.50 net). Vital statistics tables relating to the second quarter of 1982 appeared in the Registrar General's Weekly Return from WR 34/82.

Population estimates

Provisional population estimates for mid-1981 for England and Wales by age and sex and for local authority areas and health area by sex were published in two OPCS Monitors in September. The figures for district health authority areas are the first to be published since the areas were constituted on 1 April 1982. All estimates are based on the results of the 1981 Census but are termed provisional because not all the detailed census data required were available and therefore some approximations were necessary. It is hoped to publish a revised set of estimates next year.

Also published recently was a report giving the best factual comparison that can be made at present between the results of the 1981 Census for England and Wales and the Registrar General's annual series of population estimates which have been carried forward from the 1971 Census. This has been done to provide an agreed set of facts about the accuracy of the annual estimates which central and local government can use. The report explains that population estimates may become harder or easier to make because, for example, of changes in the quantity and quality of the sources of information being used or because the pattern of population move-

ment changes so as to become harder or easier to measure. Possible changes in the method currently being used are mentioned.

Reference

A comparison of the Registrar General's annual population estimates for England and Wales with the results of the 1981 Census OPCS Occasional Paper 29 (OPCS 1982) (Price £3 net)

Area mortality on microfiche

The detailed picture of deaths by cause for the regions, counties, districts and health areas of England and Wales for 1980 was published in a new format in September. The volume, produced by OPCS, gives causes of death by sex and age and area on a set of fourteen microfiche and includes a twenty-three page report and index. It is the first of the Registrar General's annual reports on mortality statistics to be published in this format and if this proves to be acceptable to readers it is intended to extend this style of presentation to other volumes in future.

Reference

Mortality statistics: area (microfiche) Series DH5 no. 7 (HMSO 1982) (Price £6.50 exclusive of VAT) (taxable element £4.50—Postage 20p extra)

SOCIAL STATISTICS

Social Trends 13: 1983 edition

December sees the publication of the 13th edition of *Social Trends*. As with previous issues, *Social Trends 13* provides a descriptive brief for government about broad changes in society, as well as a comprehensive source of information for public discussion of such changes and of social policies.

Social Trends 13 contains 211 tables and 71 charts, about one third of which are new, backed up by extensive commentary explaining trends and providing background information. The latest data are included whenever possible, in particular from the General Household Survey and from such new important sources as the 1981 Census of Population and the 1981 Labour Force Survey.

The material in *Social Trends* is arranged in thirteen chapters which generally reflect the administrative functions of government. The topics covered are: population; households and families; education; employment; income and wealth; resources and expenditure; health and personal social services; housing; transport; communications and the environment; leisure; participation; law enforcement; and two particular social groups, viz ethnic minorities and 16 to 19 year olds.

Further details can be obtained from:

Martin Daly
Branch 10
Central Statistical Office
Great George Street
London
SW1P 3AQ
Telephone: 01-233 8201

Reference

Social Trends 13, 1983 (HMSO) (Price £19.95 net)

General Household Survey

Published in September was the *General Household Survey 1980*, an interdepartmental survey sponsored by the Central Statistical Office and carried out by the Office of Population Censuses and Surveys. The General Household Survey (GHS) is a continuous survey based on a sample of the general population resident in private (non-institutional) households in Great Britain, and has been running since 1971.

The 1980 report is divided into eleven chapters: an introduction describing the scope and development of the survey, sample design and response; population; housing and household mobility; burglaries and thefts from private households; employment; education; health; smoking; drinking; elderly people in private households and a study of household formation based on the General Household Survey.

An OPCS Monitor, issued on 1 June 1982, gave preliminary results from the 1981 GHS.

References

OPCS. *General Household Survey 1980*. Series GHS no. 10. (HMSO 1982) (Price £12.70 net)

OPCS. *General Household Survey. Preliminary results for 1981*. OPCS Monitor GHS 82/1. (available from OPCS Information Branch (Dept SN), St Catherine's House, 10 Kingsway, London WC2B 6JP.

Family Expenditure Survey 1981

Summary results for the Family Expenditure Survey for 1981 were published in the September 1982 issue of *Employment Gazette*. Average household expenditure on goods and services among the 7,525 United Kingdom households which co-operated in the survey (an effective response of 72 per cent) was over £125 per week, just under 13½ per cent higher than in 1980. A rise in retail prices of around 13 per cent between 1980 and 1981, however, meant that average household expenditure in 1981 was only fractionally higher (about ½ per cent) in real terms than a year earlier. The full report of the 1981 Family Expenditure Survey is in preparation and will be published shortly.

Quarterly results for 1981 have been published in the *Gazette* as they became available, and the issue for September 1982 also included data for the fourth quarter of 1981.

References

Family Expenditure Survey Report for 1981 (HMSO) (Price forthcoming)
Employment Gazette September 1982 (HMSO) (Price £2.25 net)

Criminal Statistics, England and Wales, 1981

This annual publication is the main source for national statistics relating to crime and criminal proceedings in England and Wales and, as for 1980, consists of a Command Paper comprising nine chapters of commentary, graphs and historical tables and four supplementary volumes giving the detailed figures for 1981.

The Command Paper follows the form of the 1980 edition, Chapters 2 to 4 covering offences recorded by the police and offences involving firearms and homicide, and Chapters 5 to 9 cover criminal proceedings. The information on proceedings includes details of the number of persons proceeded against, convicted and given the various types of sentence, including immediate imprisonment; the use of police and court remand and applications for legal aid are also covered.

The supplementary volumes, or individual tables from them, can be purchased from Home Office Statistical Department (01-399 5191, Ext. 272) and are as follows:

Criminal Statistics, England and Wales, Supplementary tables 1981

Vol. 1 – proceedings in magistrates' courts

Vol. 2 – proceedings in the Crown Court

Vol. 3 – tables by police force area and some court areas

Vol. 4 – convictions, cautions, DPP prosecutions, mentally-disordered offenders, appeals, prerogative of mercy, legal aid, etc.

Reference

Criminal Statistics, England and Wales, 1981 (HMSO) (Price £10.65 net)

Offences relating to motor vehicles

This annual Home Office Statistical Bulletin was published in October. It gives statistics on written warnings, fixed penalty notice issued, prosecutions, findings of guilt, sentences and licence disqualifications and endorsements, and ages of offenders. Also included are the results of roadside breath tests and subsequent tests of blood or urine. Supplementary tables for 1981 were made available at the end of October 1982 and give further detailed statistics of how offences relating to motor vehicles were dealt with by the police and the courts.

References

Offences relating to motor vehicles England and Wales, 1981, Home Office Statistical Bulletin. (Price £2.00 net)

Offences relating to motor vehicles, England and Wales, 1981, supplementary tables, October 1982, Home Office (Price £4.00 net).

Fire statistics

Summary Fire Statistics, a Home Office Statistical Bulletin published in September 1982, presents the main statistics of fires attended by local authority fire brigades in the United Kingdom up to and including 1981. In addition to information on fires and casualties in various locations and a breakdown of fires in dwellings in terms of the source of ignition, the bulletin gives for the first time an analysis of the causes of fires, distinguishing accidental ones from those thought to have been ignited deliberately and showing fires that arise from faulty equipment, through carelessness and through the unintentional misuse of appliances.

Statistical Bulletins can be obtained from:

Home Office Statistical Department
Room 1813
Tolworth Tower
Surbiton
Surrey

Reference

Summary Fire Statistics (Home Office) (Price £1 net)

Outcomes of arrests during the serious incidents of public disorder in July and August 1981

Outcomes of arrests during the serious incidents of public disorder in July and August 1981 was published by the Home Office in October 1982 as a Home Office Statistical Bulletin. Tables are given showing numbers of persons arrested in each of the twenty-five police force areas affected, by sex, age group, ethnic appearance, employment status, address in relation to the location of the incident and previous criminal record. Outcomes of these arrests – i.e. whether charged and, if so, types of offences, numbers found guilty by the courts and sentences given – are shown by police force area, age, sex and ethnic appearance.

Separate reports are also available for each of the twenty-five police force areas involved giving analyses in greater detail.

References

Outcomes of arrests during the serious incidents of public disorder in July and August 1981 Home Office Statistical Bulletin (Price £2.00 net)

Persons arrested in serious incidents of public disorder for each police force area Price £1.00 net, obtainable from Room 844, S1 Division, Home Office, 50 Queen Anne's Gate, London SW1H 9AT.

Offences of drunkenness

This annual Home Office Statistical Bulletin gives statistics on cautions, findings of guilt and sentences for offences of drunkenness.

Reference

Offences of drunkenness, England and Wales, 1981, Home Office Statistical Bulletin, Issue 16/82, 7 September 1982 (Price £2.00 net)

Misuse of drugs

The annual Home Office Statistical Bulletin, *Statistics of the misuse of drugs in the United Kingdom 1981*, was published on 29 June 1982. This Bulletin gives statistics of seizures of controlled drugs and of drugs offenders, covering the years 1973 to 1981, and of drug addicts known to the Home Office in the years 1971 to 1981. Provisional statistics of addicts known to the Home Office were published in an earlier Bulletin on 23 February 1982. Supplementary tables for 1981 were made available at the beginning of August 1982 and give further detailed statistics of drug offenders.

References

Statistics of the misuse of drugs in the United Kingdom 1981, Home Office Statistical Bulletin, Issue 13/82, 29 June 1982 (Price £2.00 net).

Drug addicts known to the Home Office, 1981, Home Office Statistical Bulletin, Issue 2/82, 23 February 1982 (Price £1.00 net).

Statistics of the misuse of drugs, United Kingdom, Supplementary tables 1981, Home Office (Price £4.00 net).

Scottish Housing Statistics

Issue No. 17 of *Scottish Housing Statistics* which was published in August 1982, continues the regular series of tables on house building, improvement work, housing finance and sales.

Supplementary tables in this issue give District information on the energy conservation programme in the public sector, on the homes insulation scheme, on capital payments and allocations and on housing for the elderly and disabled.

Reference

Scottish Housing Statistics No. 17 (HMSO, August 1982) (Price £7.00 net)

The privately rented sector

A report published in September presents the results of a survey of private rented housing in England, carried out in 1978 by the Social Survey Division of the Office of Population Censuses and Surveys on behalf of the Department of the Environment. The survey collected information about both the occupants and the accommodation at a sample of addresses identified as being privately rented in the 1977 National Dwelling and Housing Survey.

The report is divided into six chapters: an overview of the privately rented sector; general characteristics of the privately rented sector and its sub-sectors in 1978; privately rented lettings and their tenants; some complexities of the privately rented sector; financial aspects of the privately rented sector and special topics. The volume also contains a technical appendix.

Reference

J. E. Todd, M. R. Bone and I. Noble. *The privately rented sector in 1978*. (HMSO 1982) (Price £12.60 net)

Christmas bonus

The report of a survey which asked recipients of the Christmas bonus in 1979 and the general public their views of the scheme was published in November. The survey was carried out in January and February 1980 by the Social Survey Division of OPCS on behalf of DHSS. Its aim was to test public awareness of attitudes to the bonus and the way in which the bonus was used.

Reference

D. A. Lievesley. *The 1979 Christmas bonus*. (OPCS 1982) (Price £3.00 net)

Experiments on living animals

Statistics of Experiments on Living Animals Great Britain 1981 was published on 14 September. The decline in the number of experiments, which started in 1977, continued. Total experiments started in 1981, at 4.3 million, were 5 per cent down on 1980, and 23 per cent down on the maximum annual number of 5.6 million started in 1971; the 1981 figure was the lowest since 1963.

Just under 12,000 licencees reported experiments during 1981, slightly fewer than in 1980. At the end of 1981, 527 places were registered with the Home Office as being suitable for experimental work.

Reference

Statistics of Experiments on Living Animals Great Britain 1981, (HMSO) Cmnd. 8657 (Price £4.90 net)

EDUCATION

Higher Education

Department of Education and Science Statistical Bulletin 9/82 provides information normally over a five year period ending in 1981/82, about the numbers of full and part-time students at higher education institutions in Great Britain, including the Open University. The figures for 1981/82 are provisional. It analyses data by the qualifications aimed for, the type of institution and sex, and it gives the number of part-time students and degrees awarded. It also includes charts of age and qualified participation rates, i.e. the numbers of young entrants to higher education expressed as percentages of the eighteen year old population, and of the number of young people qualified to enter higher education respectively.

A classification of Local Education Authorities by additional educational needs (Cluster Analysis)

The Local Government Planning and Land Act 1980 calls for the publication by local authorities, of a variety of information about the services they provide and the cost of doing this. The stated aim is to enable the public to judge an authority's performance by identifying the costs of services and comparing them with those of other

authorities. Traditionally, comparisons have been made between authorities of the same geo-political group, i.e. Shire County with Shire County.

Department of Education and Science Statistical Bulletin 8/82 describes an alternative method of grouping local education authorities in England and Wales using socio-economic data readily obtained from the National Dwelling and Housing Survey, HMSO, 1978 and the statistical technique known as Cluster Analysis. Six variables measuring socio-economic disadvantage that have at some time been linked with educational need were used in the analysis. The percentage of children aged 0-17 years in each authority in each of six socio-economic categories was used to form a 'percentage profile' for each authority. The profiles were then compared using a computer package capable of performing Cluster Analysis to derive six groups of authorities. The members of each group had similar percentage profiles but the groups were significantly distinguishable from each other to merit their retention as separate groups.

Copies of Statistical Bulletins can be obtained from:

Department of Education and Science
Statistics Branch
Room 1/29
Elizabeth House
York Road
LONDON SE1 7PH
Telephone 01-928-9222 Ext 2776

School leaver projections: Scotland

This statistical bulletin, one in a series relating to young people, particularly those in the 16 to 18 age group, gives the latest projections of the number of young people expected to leave School in Scotland over the next decade. The projections are analysed by age, sex, qualifications achieved at School, term of leaving and availability for employment.

Student awards and bursaries: Scotland

A bulletin dealing with the number of Scottish students in receipt of awards made by the Scottish Education Department under the Students' Allowances Scheme in sessions 1976/77 to 1980/81 inclusive and the cost of these awards. Information is also given about bursaries awarded by education authorities.

Copies of statistical bulletins can be obtained from:

Scottish Education Department
Division VII
Room 206
43 Jeffrey Street
Edinburgh EH1 1DN
Telephone: 031-556-9233 Ext 286

MANPOWER AND EARNINGS

Unemployment statistics

An article in the September 1982 issue of *Employment Gazette* described the changes to the unemployment statistics resulting from registration at Jobcentres being made voluntary from October 1982.

Because unemployed people no longer have to register for employment in order to be eligible for benefit, figures based on registrations records will be incomplete, and so from November, the statistics will be limited to unemployed *claimants* (who typically account for all but three or four per cent of unemployed registrants, except during the summer months when school leavers have joined the register but are not yet eligible for benefit). The exclusion of non-claimants will be partially offset by the inclusion of certain severely disabled people, and the size of the count will also be affected by administrative differences between the two systems: on balance the new count will be somewhat lower.

There will also be various changes in the detailed analyses available: the industrial classification will cease, and the occupational analysis will be confined to voluntary registrants; analysis of ethnic minority groups and the disabled will be treated differently; and certain new analyses will become available, particularly with respect to flows on and off the register and local area statistics.

Reference

Employment Gazette September 1982 (HMSO) (Price £2.25 net)

New Earnings Survey

The first results of the 1982 New Earnings Survey were published on 21 October, a week earlier than last year. Also, the contents of the first two booklets have been rearranged to ensure that the most widely used results are available as soon as possible.

The main contents of the six parts of the report and their publication dates are:

- Part A Streamlined analysis of key results by collective agreement, industry, occupation, age and region; principal analyses by major collective agreement (21 October 1982)
- Part B Summary analyses; additional analyses by major collective agreement; description of the survey method, classifications, terminology, etc. (11 November 1982)
- Part C Earnings and hours in particular industries (December 1982)
- Part D Earnings and hours in particular occupations (January 1983)
- Part E Earnings and hours in regions and counties, and in age groups (February 1983)

- Part F Detailed analyses of hours of work; earnings and hours of part-time women workers (March 1983)

As in previous years the survey collects information from employers about the earnings, hours, etc, of a 1 per cent sample of individual employees in April. The 1982 survey questionnaire was similar to that used in 1981, except that the question on holiday entitlements was not repeated.

An article commenting on some of the results of the survey appeared in the October 1982 edition of *Employment Gazette*.

Another survey will be conducted in April 1983.

References

New Earnings Survey 1982 (HMSO, in six parts, £7.00 each)
Employment Gazette, October 1982 (HMSO, £2.25 net)

Wages and employment in agriculture: England and Wales, 1960-80

A paper of this title has recently been published as number fifty two in the Government Economic Service Working Paper series. The paper was originally prepared by economists in the Ministry of Agriculture, Fisheries and Food to meet a request from the Agricultural Wages Board for England and Wales (AWB). It analyses the changes in employment particularly of hired regular whole-time males in the Industry, in relation to various factors including the wages prescribed by the AWB and the premium between these and actual earnings.

The paper is divided into eight sections which, in addition to a summary, include a detailed review of the available data on the Industry's total labour force and on hours worked, wages/earnings and other labour costs and remuneration. A brief examination of some theoretical aspects then precedes a review of previous empirical studies which have primarily been of interview/questionnaire or econometric types. The final section describes two alternative econometric models, and presents and discusses the results obtained.

Copies of the Working Paper may be obtained from:
Economics Division III,
Ministry of Agriculture, Fisheries and Food,
Room 4/8, 49-53 Parliament Street,
London
SW1A 2NH.

Seasonally adjusted series of employees in employment in service industries

Seasonally adjusted series of employees in employment in service industries are now published regularly by the Department of Employment in its *Employment Gazette*. Some consequential changes have been made to the other already published seasonally adjusted series for

manufacturing industries, for Index of Production industries and for all industries and services. A note describing the new series for service industries and the changes to the other series was published in the September issue of the Gazette.

Reference

Employment Gazette, September 1982 (HMSO) (Price £2.25 net)

Homework in Wages Council industries: a study of pay and earnings

It is widely believed that homeworkers are particularly vulnerable to low pay, even within the protected enclave of Wages Council industries. Data extracted from Wages Inspectorate records for some 500 homeworkers and 500 inworkers were analysed to consider this issue in some detail. The study compares the pay and earnings of homeworkers and inworkers in the Wages Council clothing industry, and sets these two groups in a national context by comparisons with the results of the New Earnings Survey. Many homeworkers were found to be low-paid, in terms of weekly earnings, but hours worked and skill level appear to account almost entirely for relatively low earnings. Some homeworkers were found to be among the highest-paid women manual workers. The study also provides information on the characteristics of homeworkers and inworkers in the Wages Council clothing industry. The full report has been published as a DE Research Paper, and a summary was presented in the September 1982 issue of the *Employment Gazette*.

References

Homeworking in Wages Council Industries: A study of pay and earnings based on Wages Inspectorate records, by C. Hakim and R. Dennis, Research Paper No. 37, London, Department of Employment, October 1982. (Price £6.00 net)
'Homework in the London clothing industry' by C. Hakim, *Employment Gazette*, September 1982 (HMSO) (Price £2.25 net).

Manpower and training in the electronics industry

The Engineering Industry Training Board (EITB) recently produced a reference paper - *Manpower and training in the electronics industry*. This report sets out statistics available from a variety of sources on the electronics industry in Great Britain. The report deals in particular with data relevant to employment and training, and also examines the overall economic outlook for the industry.

A similar reference paper on the closely related telecommunications industry (RP/1/80) is also available, and similar material has been compiled on the related sector of instrument engineering.

For further information and copies of the reports write to:

Engineering Industry Training Board
54 Clarendon Road
Watford
WD1 1LB

Reference

Manpower and training in the electronics industry, EITB Reference Paper RP/5/82.

AGRICULTURE AND FOOD

National Food Survey

The National Food Survey Committee's recently published Annual Report for 1980 presents analyses of data obtained from the National Food Survey about household food consumption, expenditure and nutritional levels in Great Britain in 1980. It also provides a review of the Survey results over the six years 1975 to 1980. The data included in the Report are considerably more detailed than those presented in the Ministry's 'Food Facts' series.

In addition to providing detailed analyses of the changes in national average household food consumption and nutrition up to 1980, the Report also presents averages for each of the standard statistical regions and other areas, and for groups of households classified according to the age of the housewife, to housing tenure, and for freezer-owning and other households.

An appendix to the Report gives a general account of the structure and methodology of the Survey. Another appendix gives estimates of income and price elasticities of demand for food and of other demand parameters derived using Survey data; these results are prefaced by a full account of the statistical techniques employed.

Summarised Survey results are also published in the *Monthly Digest of Statistics* as they become available, and are supplemented by brief quarterly commentaries in *British Business*. Additional and more detailed information can also be supplied on payment of fees. For further details contact:

National Food Survey Branch
Ministry of Agriculture, Fisheries and Food
Room 419
Whitehall Place (West Block)
London SW1A 2HH
Telephone: 01 233 5088

References

Household Food Consumption and Expenditure: 1980 (HMSO) (Price £15.60 net)
Monthly Digest of Statistics (HMSO, monthly) (Price £5.00 net)

Agricultural censuses and surveys

Annual estimates of crop production 1981 harvest

The Production Crops/England and Wales statement giving County and Regional estimates of yield and production for England and Wales was issued in June 1982.

The April 1982 sample pig enquiry

The results of this enquiry, conducted under Community Legislation, were published in Statistical Information Notice STATS NO 177/82 on 17 June 1982.

The June 1982 agricultural census

For the first time a combined United Kingdom and England Press Notice has been compiled for the June 1982 Provisional results. This Press Notice No 309 was published on 24 August 1982.

Statistical Information Notices may be obtained from:

Ministry of Agriculture, Fisheries and Food
Room A615
Government Buildings
Epsom Road
Guildford GU1 2LD

Provisional results of the June 1982 Scottish Agricultural Census

The provisional results of the June 1982 Scottish Agricultural census held on 1 June 1982 were published as a Scottish Office Press Notice on 18 August 1982 (Press Notice number 840/82).

Output and utilisation of farm produce in the United Kingdom 1975-1981

This is the latest in the annual series of statistics on UK agricultural output published by the Ministry of Agriculture, Fisheries and Food. The tables show, for all holdings in the United Kingdom, the production, output and utilisation of farm and horticultural crops and livestock production for the years 1975-1981, together with the estimated value of output.

Copies are available from the Ministry of Agriculture, Fisheries and Food (Publications), Lion House, Willowburn Estate, Alnwick, Northumberland, NE66 2PF, price £6.00 (by post £7.00).

Sea fisheries

The Sea Fisheries Statistics for 1981 largely follow the layout of the 1980 publication. Where appropriate, figures for earlier years have been converted to metric units. Classification of vessel lengths and gross registered tonnage of vessels remain in imperial units. The tables refer, as far as possible, to the United Kingdom with separate figures for England and Wales, Scotland and Northern Ireland. Additional statistics relating to Scotland are published annually in the Scottish Sea Fisheries Statistical Tables.

These tables are intended to provide a broad picture of the United Kingdom fishing industry and its operations. Requests for more detailed information

should be addressed to:

The Secretary,
Ministry of Agriculture, Fisheries and Food,
Fisheries Statistics Unit,
Great Westminster House,
Horseferry Road,
London SW1P 2AE

Reference

Sea Fisheries Statistical Tables 1981 (HMSO) August 1982 (Price £8.00 net)

INDUSTRIAL STATISTICS

Business Monitors - Annual Census of Production 1980

Readers of *Statistical News* are made aware of the results of the 1980 Census of Production as the Business Monitors become available. The following table lists the monitors published since notification in the last issue.

<i>Business Monitor Number</i>	<i>Description</i>	<i>Standard Industrial Classification 1980 Group Heading</i>
PA 140	Mineral oil processing	140
PA 224	Non-ferrous metals Industry	224
PA 311	Foundries	311
PA 313	Bolts, nuts, washers, rivets, springs and non-precision chains	313
PA 314	Metal doors, windows, etc	314
PA 320	Industrial plant and steel work	320
PA 326	Mechanical power transmission equipment	326
PA 328	Miscellaneous machinery and mechanical equipment	328
PA 330	Manufacture of Office machinery and data processing equipment	330
PA 341	Insulated wires and cables	341
PA 343	Electrical equipment for industrial use, and batteries and accumulators	343
PA 345	Miscellaneous electronic equipment	345
PA 352	Motor vehicle bodies, trailers and caravans	352

<i>Business Monitor Number</i>	<i>Description</i>	<i>Standard Industrial Classification 1980 Group Heading</i>	<i>Business Monitor Number</i>	<i>Description</i>	<i>Standard Industrial Classification 1980 Group Heading</i>
PA 361	Shipbuilding and repairing	361	PA 491	Jewellery and coins	491
PA 365	Miscellaneous vehicles	365	PA 492	Musical instruments	492
PA 371	Measuring, checking and precision instruments and apparatus	371	PA 494	Toys and sports goods	494
PA 372	Medical and surgical equipment and orthopaedic appliances	372	All 111 Business Monitors in the series have now been published.		
PA 411	Organic oils and fats	411	Copies of these Business Monitors are available on standing order from Her Majesty's Stationery Office, PO Box 569, London SE1 9NH (telephone 01-928-1321) or through any Government Bookshop. They are not, however, included in the global subscription arrangements of the Business Monitor Series.		
PA 412	Processing of bacon, meat and poultry	412	Further information on the PA series of Business Monitors and Censuses generally can be obtained from:—		
PA 414	Processing of fruit and vegetables	414	Mr R. J. Egerton Business Statistics Office Cardiff Road NEWPORT Gwent NPT 1XG Telephone Newport (0633) 56111 Ext 2455		
PA 419	Bread, biscuits and flour confectionery	419	Commercial and industrial floorspace statistics: Wales		
PA 421	Ice cream, cocoa, chocolate and sugar confectionery	421	The second edition of <i>Commercial and industrial floorspace statistics for Wales</i> was published in September.		
PA 422	Animal feeding stuffs	422	The format of this, second edition follows that of the first, both in the information presented and the numbering of the tables. Detailed information is presented by counties, statistical sub-divisions and districts for seven non-domestic use classes for the periods 1974-81 and 1980-81.		
PA 423	Starch and miscellaneous foods	423	Floorspace statistics are widely used in many fields including investment decisions, property development, marketing management consultancy, as well as in central and local government.		
PA 428	Soft drinks	428	Commercial and industrial floorspace statistics at local authority level are provided in aggregate form annually by the Welsh Office from Inland Revenue Valuation Offices as part of the rating system of non-domestic properties. Floorspace statistics for England are processed by the Department of the Environment.		
PA 434	Spinning and weaving of flax, hemp and ramie	434	References		
PA 436	Hosiery and other knitted goods	436	<i>Commercial and Industrial Floorspace statistics: Wales</i> No. 1 Welsh Office (Price £3.80 net), No. 2 (Price £3.00 net). Both publications are available from:		
PA 442	Leather goods	442	Publications Unit		
PA 453	Clothing, hats and gloves	453	ESS1		
PA 455	Household textiles and other made-up textiles	455	Welsh Office		
PA 462	Manufacture of semi-finished wood products and further processing and treatment of wood	462	Cathays Park		
PA 463	Builder's carpentry and joinery	463	Cardiff CF1 3NQ		
PA 464	Wooden containers	464			
PA 465	Miscellaneous wooden articles	465			
PA 467	Wooden and upholstered furniture and shop and office fittings	467			
PA 475	Printing and publishing	475			

Housing and Construction Statistics 1971-1981

The third edition of this annual publication is designed to provide a broad perspective on developments in construction and housing over the past decade. It complements the two-part quarterly publication also called *Housing and Construction Statistics* which provides the latest monthly and quarterly statistics for the main series published in this volume as they become available.

The publication is prepared by the Statistics Directorate of the Department of the Environment in collaboration with the Scottish Development Department, the Welsh Office and other government departments.

There are four new tables in this edition. Tables 65 and 66 show investment in new buildings and works (excluding housing) and the transfer costs of land and existing buildings by public and private sectors. Tables 87 and 88 give information on construction tender costs of local authority housing for the regions in England. Eight of the tables have been significantly amended; tables 2 and 80 have been expanded to contain more information, table 69 is based on the latest white paper (Cmnd. 8494) showing public expenditure in cash terms and not survey prices as in previous years, tables 82, 90, 111 and 128 reduce the number of categories shown, and table 84 now only covers Scotland.

A notes and definitions section appropriate to the tables in both the annual and quarterly publications followed by an alphabetical index is provided at the back of the publication.

A listing of table numbers in the 1980 edition is shown for comparison alongside the corresponding table numbers in this edition.

A further source of information is *Local Housing Statistics* prepared by the Department of the Environment and Welsh Office and published quarterly by HMSO. This provides up to date information on house building progress, house renovations and council house sales by regions, counties and local authority areas.

The tables relate to Great Britain and cover the period 1971-1981 unless otherwise stated. Some tables provide cross-sectional data for the latest year.

References

Housing and Construction Statistics 1971-1981 (HMSO 1982) (Price £21.00 net)
The government's expenditure plans 1982-83 to 1984-85 (Cmnd. 8494) (HMSO) March 1982 (Vol 1 Price £4.15 net; Vol 2 Price £7.45 net)

DISTRIBUTION AND OTHER SERVICES

Wholesaling, catering and motor trades

The results of the Business Statistics Office's 1980 annual inquiries into wholesaling and dealing, catering and allied trades, and the motor trades, together with comparable figures for the years 1977 to 1979 were published in *British business* 6 August. Summary figures for retailing were published in *British business* 11 June.

The inquiries are taken primarily for national accounts purposes, including estimates of real output, consumers' expenditure, stock building and capital expenditure. For wholesaling and catering they provide the only official statistics on structure and trends over the whole of this period.

Further details of wholesale distribution for 1978 were given in *British business* 24 September (page 125).

Reference

British business (HMSO weekly) (Price £1.10 net)

British film and television: overseas transactions

An article in *British business* 17 September 1982 gives the results of the 1981 inquiry. Overseas transactions for film and television material are given together with separate area analyses. Film companies are also analysed by area and type of transaction, and by type of transaction and category of company. The estimates are obtained from the Department of Trade's annual inquiry into overseas transactions by film and television companies relating to the production and exhibition of cinematograph film and television material.

Reference

British business (HMSO weekly) (Price £1.10 net)

Computer services industry 1981

British business of 27 August contained an article on 'Computer services industry's slow growth continued during 1981'. The article included statistical tables illustrating the progress of the industry in the United Kingdom since the early 1970s. The figures shown were in annual terms and the variable chosen as an overall indicator of the industry's fortunes over this long period was its billings—that is the amount for which the industry invoiced its clients in total each year for work done for them. The tables show the figures analysed by kind of work done, in terms of the type of clientele involved and the number and composition of personnel employed in the industry over the period, classified by occupation.

Reference

British business (HMSO weekly) (Price £1.10 net)

ENERGY

Digest of United Kingdom Energy Statistics 1982

The 1982 Digest, published in June, brings up-to-date some of the figures given in the 1981 Digest. It contains revisions to some of the previously published figures and it may be necessary to make further revisions in the next issue, particularly to the figures for 1981 and the financial year 1981/82.

The first section covers general energy statistics and includes tables showing each fuel in original units of measurement, in coal equivalent, in oil equivalent and in terms of the thermal content of fuels. Other tables show the estimated value of purchases of fuels, energy consumption by final users and an analysis of energy consumption by main industrial groups. The section also contains charts showing the trend of primary fuel consumption and demand by final consumers of energy. Many of the statistics have the same coverage as those in other sections and where this is so the explanatory notes in these sections are applicable. The other sections deal separately with individual fuels, prices and values of fuels and foreign trade in fuels. Fuel production and consumption statistics are derived mainly from the records of fuel producers and suppliers. Foreign trade statistics are derived from returns made to HM Customs and Excise and published in the *Overseas Trade Statistics of the United Kingdom*. Due to industrial action, complete figures for 1981 are not available.

Reference

Digest of United Kingdom Energy Statistics 1982 (HMSO) June 1982 (Price £11.50 net)

TRANSPORT

First official survey of waterway traffic

A recent publication *Inland Waterway Freight Statistics* reports a survey conducted by the Marine Transport Centre, University of Liverpool, on behalf of the Departments of Transport and Environment. The survey covered the length of waterway track available (not necessarily in use) for freight traffic; the wharves and vessels in use; and estimates of tonnes lifted and tonne-kilometres performed analysed by type of movement (internal, coastwise, special or foreign), type of vessel (self-propelled barge, push-tow barge, pull-tow barge or open-sea vessel), type of waterway (ECMT and alternative classifications), commodity (24 groups based on the NST classification), and other variables of interest. All information relates to the calendar year 1980.

The coverage of the study is considerably wider than the previously available statistics of traffic on the commercial waterways managed by British Waterways Board. As well as all barge canals of at least 51 tonnes barge capacity, the record covers the Manchester Ship Canal and many navigable rivers and estuaries. The published report also contains proposals for updating annually the principal results of the research.

Copies of *Inland Waterway Freight Statistics* (at £10 per copy) and of *A Guide to the British Inland Waterway Vessel Fleet* (at £3 per copy) may be obtained from:

Marine Transport Centre
University of Liverpool
4 Cambridge Street
PO Box 147
Liverpool
L69 3BX

Transport Statistics Great Britain 1971-1981, (see item below) contains tables based on the Marine Transport Centre study, showing tonnes lifted and tonne kilometres performed on inland waterways and estuaries in 1980, and the length of available water-way track.

International road haulage in 1981

The Department of Transport recently published its third report on the International Road Haulage Survey. This report, giving results for 1981, is broadly similar to the 1980 report published earlier this year but the background material and analytical commentary have been enlarged.

Statistics presented in the report concern the performance of United Kingdom international road hauliers. They show that although international road haulage as a whole recovered in the latter half of 1981 from a severe decline in the previous twelve months, United Kingdom hauliers do not seem to have benefitted as much as their foreign competitors, possibly because there has been very little growth in outward traffic from the United Kingdom.

The International Road Haulage Survey, begun in 1979 to meet the requirements of EC Directive 78/546, is complementary to the DTp Continuing Survey of Road Goods Transport which covers domestic road haulage under the same Directive. The report contains ten basic tables giving details of the countries in which goods were loaded and unloaded, the types of commodity carried, the type of service – whether for hire and reward or for own account, and the region in which the goods were loaded or unloaded in the United Kingdom. The survey methodology is also described in detail.

Copies of the report are available from the Department of Transport, Room S12/02A, 2 Marsham Street,

London SW1P 3EB, price £8.50 plus 40p postage and packing. Cheques/postal orders should be made payable to the Department of Transport and crossed.

Port statistics 1981

The latest edition of the annual publication *Port Statistics 1981* has just been published by the Department of Transport (DTp) and the British Ports Association. This is the second annual publication produced since the closure of the National Ports Council and the last in strictly comparable format. *Statistics News* No 56 gave details of the new 'mode of appearance' classification due to replace the current port statistics format next year.

Port Statistics 1981 will be of particular significance to those interested in port traffic because of the possible unavailability of HM Customs and Excise statistics of foreign trade for 1981, and because it also gives details of domestic traffic which is not available from Customs sources. The book is in three parts, - one, a detailed commodity analysis (including analyses by major ports); the second, an analysis of unclassified traffic by major port, and by country; and the third part, a more general section dealing with statistics on such things as passenger traffic, manpower and finance.

The figures are based upon confidential returns made annually to the Department by all port authorities but the publication has been produced jointly by DTp and industry's trade association, the British Ports Association. This is only one of several such examples of fruitful co-operation in statistics between the Department and Industry.

Port Statistics 1981 is available from the British Ports Association at Commonwealth House, 1-19 New Oxford Street, London WC1A 1DZ, price £20.00 plus postage and packing.

Transport statistics

Transport Statistics Great Britain 1971-1981 brings together a comprehensive range of statistical information on inland surface transport in order to encourage informed debate on transport development and policies. As in previous editions, most of the tables cover eleven years, though some span longer or shorter periods and a few contain forecasts for years ahead. To provide a wider context for the inland surface transport series, some summary tables on air and sea transport are included.

Reference

Transport Statistics Great Britain 1971-1981 (HMSO) October 1982 (Price £19.00 net)

Scottish Transport Statistics No. 3

Scottish Transport Statistics number 3 is a compilation of transport statistics relating to Scotland. The volume contains over 60 tables, some of which have not been published elsewhere, dealing with all modes of transport in Scotland. There are major sections on vehicle licensing and registration, public service vehicles, road freight, rail and air transport and public expenditure on transport.

Copies, price £1.00 including postage, can be obtained from:

Scottish Office Library
Orders Section
Room 2/64
New St Andrew's House
St James Centre
Edinburgh, EH1 3SX

UK shipping: an international industry

An article describing the international operations of the United Kingdom shipping industry, which earned over £3.5bn in 1981, was published in *British business* on 10 September 1982. The article is based on the annual sample inquiry conducted by the General Council of British Shipping on behalf of the Government Statistical Service. Tables show the principal world fleets, size of UK fleet (both at 1 July 1981); revenue from international activities, and expenditure abroad. Other sources of government shipping statistics are also listed.

Reference

British business (HMSO weekly) (Price £1.10 net)

International passenger survey

Estimates and tables in an article in *British business*, 27 August 'Fewer visits to the UK last year' were based on the International Passenger Survey, which is a survey of passengers entering and leaving the United Kingdom. A description of the survey together with notes and definitions relating to tables is given at the end of the article. Results are published quarterly and annually in *Business Monitors* (MQ6 and MA6) *Overseas travel and tourism*.

Reference

British business (HMSO weekly) (Price £1.10 net)

Statistics of road accidents

Road Accidents Great Britain 1981 was published in November by the Department of Transport, Scottish Development Department and the Welsh Office. The review of road accidents again includes an account of major road safety publicity campaigns and follows up last year's account of the seasonal pattern of road acci-

dents and casualties by describing how seasonal variations may be removed to reveal the underlying trends. There is a description of casualty rates by birth cohort for selected cohorts of car drivers and riders of two-wheeled motor vehicles. Other topics covered in detail include accidents at road works, driver and rider (pedal and motor) involvement rates by age and sex, the nature of injury causing death to various road users and a comparison of the 1981 casualty pattern with that in 1958 (which experienced the same total number of fatalities). The review is completed by short articles on pedal cycles, heavy goods vehicles and an expanded analysis of the cost of road accidents.

The main part of the book consists of seven time series tables (one of which goes back to 1909) and 34 detailed tables relating to 1981. One table extends coverage of casualties by class of road user to the United Kingdom and another includes 26 other countries (1980 data). The other new tables (plus expansions) give more new information on accidents by daylight/darkness, by road surface (dry or wet), by street lighting, by extended severity description (accidents by number of deaths/serious injuries by road class and area), on casualties by severity in accidents involving particular vehicles (by road class/area and by particular vehicle combinations), on pedestrian casualties in relation to crossings and on driver involvements by age/sex (whether injured or not).

More up to date information is now included in the new series of statistical bulletins on road accidents published quarterly – to date giving figures up to June 1982. A new digest of road accident statistics by region and county should be published during December. Enquiries on these to:

Department of Transport,
B2.42,
Romney House,
43 Marsham Street,
London,
SW1 3PY
Telephone: 01-212 6763

Reference

Road Accidents Great Britain 1981 (HMSO) November 1982 (Price £0.00 net)

HOME FINANCE

National Income and Expenditure 1982 Edition

The 1982 edition of *National Income and Expenditure* (the Blue Book) was published on 16 September 1982.

A number of changes have been introduced this year. Royalties and licence fees on oil and gas production are no longer being treated as a tax on expenditure but as a form of property income paid by companies and public

corporations to the central government. The tables showing estimates of retirements from capital stock and the associated tables showing gross domestic fixed capital formation after deducting retirements, previously shown in Section 11 of the Blue Book, have been discontinued.

A new section has been introduced into the Blue Book entitled the Blue Book System of Accounts, which includes two new tables and explanatory text. The first presents a summary matrix of the current, capital and financial transactions of the institutional sectors in 1981 and the second brings together the unidentified transactions of each sector for the years 1971 to 1981.

Quarterly figures for the last ten years consistent with those in the Blue Book were published as usual in the October issue of *Economic Trends*, which also contained tables of percentages derived from the Blue Book relating to the composition of total final expenditure, total domestic income and total personal income. Also given here are growth triangles (which show the annual rates of change between any given pair of years) for gross domestic product at constant factor cost and real personal income in the years 1948 to 1981.

Reference

National Income and Expenditure 1982 Edition (HMSO) (Price £13.50 net)

Output measures: introduction of revised treatment of royalties and licence fees paid on North Sea oil and gas operations

Following a change in the treatment of royalties and licence fees on North Sea operations in UK factor incomes, introduced in the 1982 National Income and Expenditure Blue Book, the weights given to oil and gas extraction activities in the output-based measure of gross domestic product at factor cost (GDP(O)) and in the index of industrial production (IOIP) have been reviewed. These modifications have resulted in an increase of about ½ per cent in the level of the 1975-based IOIP since 1979, with smaller upward revisions for earlier years, and corresponding but smaller changes in GDP(O). A description of the review and a technical note on the sensitivity of the IOIP to the choice of weights are given in an Occasional Paper (No. 17), available on request from:

Branch 4
Central Statistical Office
Great George Street
London
SW1P 3AQ

Inland Revenue Statistics 1982

Inland Revenue Statistics 1982 continues the series of separate statistical reports produced by the Board of Inland Revenue since 1970. The data presented have been compiled by Inland Revenue Statistics Division. They are an edited selection of a very wide variety of data derived mainly from departmental offices involved with the administration of the various taxes. Only a small part of the corpus of data held by the department can be included and readers are encouraged to contact Statistics Division if the particular analysis in which they are interested does not appear: many other tabulations are available at cost.

The structure of the volume follows broadly the pattern of its predecessors. It is divided into five main sections, each preceded by comprehensive notes:

Section 1: General. (Tables 1.1 to 1.6).

These tables give very broad aggregates of total receipts of taxes, numbers of taxpayers and costs of allowances and reliefs.

Section 2: Personal Incomes (Tables 2.1 to 2.10).

Within this section are tables which give the amount of wages, salaries, occupational pensions and tax deducted within the PAYE system, and tables relating to the self-employed (Schedule D). Other data about personal incomes will appear in the companion volume *The Survey of Personal Incomes 1979-80* (HMSO) to be published in the near future.

Section 3: Company Incomes (Tables 3.1 to 3.12).

This section contains various tables concerned with bodies liable to corporation tax, and a table giving profits from oil and gas production.

Section 4: Capital and Wealth (Tables 4.1 to 4.21).

The Inland Revenue administers a variety of taxes on capital or on capital transactions, and tables on each of these are included. They cover capital transfer tax (and its predecessor estate duty), capital gains tax and development land tax. In addition, this section includes tables on the distribution of personal wealth.

Section 5: Valuation and Stamp Duties (Tables 5.1 to 5.9).

This final section contains a variety of tables derived wholly or partly from the work of the Valuation Office. It includes tables relating to rateable values, floorspace, agricultural land prices and conveyancing. It also contains tables relating to stamp duties.

The volume concludes with several appendices containing tables of tax rates and reliefs, details of the trade classification used and tables relating to personal marketable wealth as identified by the estate multiplier

method. There is also an appendix which updates the data on tax thresholds given in Section 2A of *Inland Revenue Statistics 1980* and Appendix C of *Inland Revenue Statistics 1981*.

Reference

Inland Revenue Statistics 1982 (HMSO) (Price £8.95 net)

House prices

The October issue of *Economic Trends* included an article, 'A new index of average house prices' by the Department of the Environment. This article discusses how movements in this adjusted index have differed from the average prices of houses mortgaged to building societies and describes the derivation of the index.

Most house price statistics regularly published by the Department of Environment are based on the average price of dwellings bought with a building society mortgage. While building societies dominated the mortgage market, these series provided a reasonable guide to house price trends generally. In 1981 banks started lending for house purchase on a large scale and are likely to maintain a major interest in the market. As a result, house prices on which building society mortgages are granted can no longer be taken to reflect the general trend in house prices.

Not only has house price information not been collected from banks so far, but the rapid growth of bank lending probably drew in mortgagors who were not a typical cross-section of house buyers with consequential effects on the nature of the building societies business.

The mix of housing being mortgaged changes, partly through long term trends – for example, post-war housing becoming a larger part of the stock – partly through short term variations in the housing market. A house price series making some allowance for mix changes and so providing a better measure of true price movements, has been used in calculating the owner-occupiers' mortgage and interest component introduced into the Retail Price Index in 1975. This mix adjusted, or weighted, house price series is to be published regularly in *Housing and Construction Statistics*.

References

Economic Trends (HMSO) October 1982, (Price £9.75 net)

Financial Statistics

Tables 6.1 and 6.2 showing liabilities and assets of the monetary sector were revised in the June 1982 issue of *Financial Statistics*. The new table 6.1 brings together corresponding levels and transactions data for the various sectors. A combined transactions table for assets and liabilities by banking month is now given with some additional seasonally adjusted detail. Table 6.2

gives the sectoral breakdown of domestic deposits and lending. The tables on acceptances and advances, 6.7, 6.8 and 6.9, have been combined into a new table 6.7 more in line with the Bank of England quarterly bulletin. The detailed analyses in respect of individual groups of banks have been omitted.

A new table on National Savings Bank: rate of interest on investment accounts was also introduced in the June issue to replace table 13.10 on the Minimum lending rate. Details of external liabilities and claims in tables 11.6 and 11.7 are no longer available in respect of banking months and quarters.

The September 1982 issue of *Financial Statistics* saw the introduction of the new monetary aggregate, M2, into table 7.1. M2 is a measure of deposits which focuses on the transactions balances of the private sector. This new series has been constructed as one of the steps, announced by the Chancellor in his Budget Statement of 1981, to improve the information available about the narrower measures of money.

Reference

Financial Statistics (HMSO, monthly) (Price £7.50 net)

Births and deaths of firms in the United Kingdom – regional distribution 1981

An article in *British business* 24 September looks at the regional distribution of the provisional estimates of births and deaths of firms for 1981, and the revised estimates for 1980. Previous articles are covered in *Statistical News* 56.29, 57.26 and 58.32.

Inquiries comments and views, but not requests for copies of the article, should be addressed to:

Mr A. Ganguly
Statistician
Small Firms Division
Room 226
Ashdown House
123 Victoria Street
London
SW1E 6RB

Reference

British business (HMSO weekly) (Price £1.10 net)

British businesses by turnover size

British business, 1 October, contained an article on 'Analyses of British businesses by turnover size: 1981'. The article shows for Great Britain the number of records held on the register which the Business Statistics Office maintains largely from information obtained by HM Customs and Excise in the administration of VAT. In addition to overall distribution by size of turnover and by industrial grouping, there are separate turnover size analyses for sole proprietorships, partnerships and corporate business, general government and non-

profit-making bodies. There is also a comparison for all businesses between the 1980 and 1981 counts. The basic information in the tables relates to mid-1981 when the turnover figures held on the register for most records related to a period close to the financial year 1979-80.

Reference

British business (HMSO weekly) (Price £1.10 net)

Measures of competitiveness

An article in the Bank of England's September 1982 *Quarterly Bulletin* discusses three different measures of competitiveness. It describes recent developments in UK competitiveness, and explains how the concept is incorporated in some large econometric models. Some simulations using the Bank's model are presented.

The Bank's *Quarterly Bulletin* (at £5.00 per copy) may be obtained from:

Bulletin Group
Economics Division
Bank of England
Threadneedle Street
London EC2R 8AH

Current cost accounting

An article in the Bank of England's September 1982 *Quarterly Bulletin* analyses the accounts of some 250 major companies, prepared according to current cost and historic cost conventions, for the last three years.

Historic cost accounting generally overstates profitability – the average current cost pre-tax return on capital is around half the historic cost figures. Industries most affected are textiles, motors, paper and packaging and chemicals, while construction, engineering contracting and retailing are least affected. Post-tax returns on equity are reduced even more using current cost accounting. Around half the companies studied have paid dividends that were not fully covered by current cost profits.

Recent developments in equipment leasing

An article in the Bank of England's September 1982 *Quarterly Bulletin* describes the subsequent developments since an article published in the September 1980 *Quarterly Bulletin* on the growth of leasing during the 1970's. It draws on discussions with the leasing industry, as well as published statistics. The five main points are that the rate of growth of leasing, in real terms, has slowed sharply over the last two years. That the clearing banks dominate the leasing industry and their capacity to do new business has been reduced recently by slower growth of profits. Nevertheless, leasing continues to finance an increasing share of fixed investment. The industry has become more flexible in the range of assets

leased and terms of contracts and, finally, that rental rates have fluctuated less than interest rates.

At the end of 1981, the Bank took over, from the Department of Industry, the responsibility for collecting and compiling official statistics on capital expenditure by companies which lease out capital goods. A supplementary note to this article updates earlier Department of Industry statistics.

Mortgage lending and the housing market

An article in the Bank of England's September 1982 *Quarterly Bulletin* argues that now the banks have entered the housing market in a major way, the market for mortgages is more likely to be cleared mainly by interest rate movements rather than by rationing. The recent sharp rise in mortgage lending reflects the removal of restrictions allowing persons to increase their capital gearing, and probably does not reflect a significant rise in the demand for housing. A substantial part of mortgage lending does not ultimately finance new or improved housing, but is available for the acquisition of other assets or other spending. House prices are somewhat low in real terms, and may recover in the course of the next few years.

British industry in a competitive world

The Bank of England's September 1982 *Quarterly Bulletin* reprints a speech the Governor gave at the annual dinner of the Development Corporation of Wales. The topics covered were: the key role of profitability – for jobs now and for investment in the future. Wage settlements need to be significantly lower than in the present round and that the greater concentration of procurement decisions in this country has tended to help the strong supplier.

Changes to the Statistical Annex

A few changes were introduced to the Statistical Annex of the Bank of England's September 1982 *Quarterly Bulletin* –

- i. Table 11.1: Money stocks: amounts outstanding
This table has been expanded and now includes figures for transactions balances described in an article in the June 1982 *Quarterly Bulletin*.
- ii. Table 12: Components of private sector liquidity
This table now incorporates monthly and quarterly percentage changes for PSL₁ and PSL₂, and seasonally adjusted figures for shares and deposits with building societies.

Scottish LG financial statistics

Scottish Local Government Financial Statistics 1978-79 (the second publication in the series) was published in October 1982 by HMSO on behalf of the Scottish Office, price £5.00 net.

United Kingdom Balance of Payments 1982 Edition (the Pink Book)

Detailed figures for each of the last eleven years were published on 1 September in the latest Pink Book. There have been no significant changes in the balance of payments series presented in this publication. Within the 'Assets and Liabilities' section, however, the analyses of UK banks' external liabilities and claims in foreign currencies have been expanded; additional geographical detail of external sterling liabilities has also been added; and a geographical analysis of UK banks' external sterling claims has been included for the first time. The IMF section has been discontinued as most of these figures are published on a monthly basis in Financial Statistics.

When the Pink Book was prepared, figures were available for imports for all of 1981 but figures for exports were not available for July and August. The figures for exports in 1981 in this volume are provisional estimates prepared by the Department of Trade, based on the 10 months data available.

Revisions are mainly the result of later and more complete information but some result from improvements in the methods of estimating certain series. The most substantial revisions have been to figures for the last three years, with smaller changes for earlier years. Figures prior to 1975 remain as previously published.

Reference

The United Kingdom Balance of Payments 1982 Edition: (HMSO) (Price £9.75 net)

Official development assistance in 1981

Net official development assistance (oda) to developing countries passed the £1 billion mark for the first time in 1981. It amounted to £1,082 million equivalent to 0.43 per cent of GNP. The figure is net of capital repayments of past aid loans.

As recently agreed by the Development Assistance Committee of the Organisation for Economic Co-operation and Development the administrative costs of the aid programme, estimated at £33 million, are included in the figure. The comparable figure for 1980 was £796 million equivalent to 0.35 per cent of GNP. The increase was due mainly to a resumption in the issue of promissory notes in favour of the International Development Association.

The main components of net oda in 1981 were bilateral capital grants and loans. (£442 million, 41% of the total), bilateral technical cooperation (£213 million, 20%) and multilateral aid (£427 million, 39%).

The main bilateral recipients were India (£138 million), Bangladesh (£33 million), Sudan (£32 million) and Kenya (£31 million). Of the multilateral agencies the IDA received £185 million and the EC £158 million.

In addition to oda there are other official flows to developing countries on terms or conditions which do not count as development assistance. In 1981 total other

official flows net of repayments amounted to £174 million, mostly in the form of interest subsidies in support of export credits extended at fixed interest rates. Such subsidies amounted to £369 million in 1981, but were offset by £247 million repayments of officially financed export credits.

For further information on UK aid flows see *British Aid Statistics* published annually. The next edition is due out shortly. A summary of the main figures is given in *British Aid in Figures*.

References

British Aid in Figures is available free of charge from:

Information Department
Overseas Development Administration
Eland House
Stag Place
LONDON
SW1E 5DH

British Aid Statistics (forthcoming).

RESEARCH AND DEVELOPMENT

Research and development statistics

The August 1982 issue of *Economic Trends* contains a report on the survey of expenditure and employment by central government, in the field of research and development (R & D). The article is part of an annual series which has appeared since 1979. This time, since there are no new statistics of expenditure by industry, spending by government has been discussed at length. Some reference is also made to the analysis of overseas technological royalty transactions.

All departments were asked to supply details of their final outturn for the financial year 1979/80, together with forward estimates to 1982/83. Total net expenditure in 1979/80 was £2,457 in current values. Using a price index specially calculated for R & D, this implied an increase of over 10 per cent in volume, compared with the previous year. Of the total, nearly two thirds of the expenditure was in non-government establishments, such as industry and the universities.

Further details of R & D statistics may be obtained from Statistics 1A, Department of Industry, Millbank Tower, London SW1P 4QU (Tel 01-211 7152 or 5156).

Reference

Economic Trends No. 346 (August 1982), HMSO, (Price £9.75)

INTERNATIONAL

United Nations Statistical Computing Project

The RAPID Joint Group of the United Nations Development Programme Statistical Computing Project met in Bratislava on 14-15 May 1982.

Bill Bailey of the Office of Population Censuses and Surveys (OPCS) Computer Division attended, together with representatives from Sweden, Canada, German Democratic Republic (GDR), Hungary, Italy and Norway.

Reports were received from the Hungarian and GDR statistical offices on the installation of RAPID database system on their computers and the various technical problems encountered. The problems were mostly caused by the fact that their hardware and operating systems were not as modern as those in use at Statistics Canada where RAPID was developed. Hungary has an IBM370 and GDR has EC range computers (IBM 360/370 look alikes). Statistics Canada agreed to identify the minimum software facilities which could form a 'basic' RAPID system. This 'basic' system could then be preserved, if possible, to work in a variety of IBM environments.

Sweden, GDR and Hungary agreed to co-operate within the framework of the project on some joint software developments for RAPID. These were of a small nature, and the purpose of the exercise is to see how successful such developments are with a view to perhaps doing some larger scale work if the project continues.

Statistics Canada reported that current developments on RAPID were more in the area of consolidation of existing facilities rather than any major extensions.

The major task of the group is currently in drafting a RAPID Guidelines document. This will explain relational databases in general and RAPID in particular to interested users. It draws together information from various manuals, etc. into a single guide. A draft was gone through at the meeting and several changes suggested. Currently rather a bulky document, it is hoped to convert it to machine readable form to facilitate drafting and editing.

The next meeting of the Group will be in October in Canada and will be held in conjunction with a RAPID Users Conference. OPCS will be attending and will produce a paper evaluation of RAPID towards the end of the year.

Anyone interested in the work of the RAPID Joint Group should get in touch with John Dixie or Bill Bailey at OPCS, Titchfield, Fareham, Hants, PO15 5RS. (Telephone: 0329-42511)

Table Generation Working Group

At the June meeting of the Table Generation Working Group the specification for the proposed new tabulation package called Intertab was further refined, and plans were made to continue this work. The question of co-operation with the TAU project was discussed again and it was decided (with the United Kingdom representative abstaining) that the Group should seek to implement Intertab from scratch rather than take TAU as a basis and develop it further. A discussion on how the available resources should be organised to achieve the implementation of Intertab is planned for a later meeting.

Poland and Romania reported that they wished to make use of TAU and if possible contribute to the programme of development and testing, within the framework of the project. The Group reaffirmed its decision, made at the previous meeting, to support a member country who wishes to implement TAU. We will therefore be discussing possible arrangements with these two countries.

Previous reports on Statistical Computing Project meetings appeared in *Statistical News* 57.26, 57.33 and 58.28.

Job vacancies

The *Employment Gazette* for August 1982 contained an article by Kenneth Walsh, Research Fellow, Institute of Manpower Studies (IMS) on 'Measuring Europe's job vacancies'. The article, based on an IMS study looks at the measurement of vacancies in Belgium, France, West Germany, the Netherlands and the United Kingdom. The study involved detailed discussions with the appropriate agencies and other experts in each of the countries.

Reference

Employment Gazette, August 1982, pages 341-345 (HMSO) (Price £2.25 net)

PUBLICATIONS

Scottish Economic Bulletin

The Summer 1982 issue contained two articles. The first 'Regional accounts: Scottish trends 1971-1980' by C. C. Moncur discusses Scottish trends in some of the main economic indicators published in regional accounts - gross domestic product (GDP), personal disposable incomes and consumers' expenditure. The principal changes in the basis and coverage of the GDP estimates since the publication in 1978 of *Regional Accounts* are described in an annex to the article by P. Duncan.

The second article 'Offshore employment in the northern North Sea in 1980 and 1981' by R. Whyte

explains in detail what adjustments have to be made to employment survey results in order to obtain an estimate of total employment and describes the underlying trends which have been evident in recent levels of employment offshore and those which are likely to influence it in future.

In addition to the articles the charts and statistics section includes results from the 1979 Annual Census of Production covering investment and output in manufacturing industries, by individual industry Orders and by type of assisted area. Investment and output by overseas enterprises is also provided. Latest results of average weekly earnings in April and October 1981, indicating a rise in Scotland's relative position, are included. New charts are included on household weekly expenditure giving trends over ten years and a comparison of Scotland with the United Kingdom. Final figures are given on employees in employment by region in 1978.

References

Scottish Economic Bulletin Number 25/Summer 1982 (HMSO Edinburgh) (Price £6.00 net)

Regional Accounts Studies in Official Statistics No. 31 (HMSO 1978) (Price £1.75 net)

A handbook for the TI59 Programmable Calculator

The Manpower Services Commission (MSC) wishes to make known that it has available a handbook of wide applicability to users of programmable calculators, especially in the statistical field.

The Manpower Services Commission's Regional Manpower Intelligence Units and their Central Development Group have been users of the Texas Instruments TI59 Card-Programmable Calculator for some 4 years. More recently other statistical and finance sections of MSC have also become users. In the regions this calculator was seen as an inexpensive means of introducing administrative staff dealing with statistics to modern computational technology, extending the readily understood calculator concept to embrace 'programs' and 'multiple memories'. From this point MSC have moved on to successfully introduce microcomputers whilst retaining the TI59s to provide a powerful computational facility at the desk.

This versatile calculator has displayed notable staying power in the field of electronic calculators where technological frontiers are crossed with remarkable rapidity.

MSC staff found the manual provided by the manufacturers to be too obscure to be used as a self-teaching tool. The Central Development Group therefore developed material of their own and ran several training courses. It was from these sources that a comprehensive handbook was drawn up. This handbook has been in use in draft form for some while by MSC users, but it has now been updated and issued to a wider audience

in spiral bound form.

The handbook is in 4 sections:

- Section A — a general introduction to programmable calculators and more specifically the TI59 details of MSC's program library self study programmes
- Section B — How to enter and use already written programs
- Section C — An explanation of all the TI59's keys and how to use them
- Section D — Writing programs for the TI59—an introduction to programming techniques.

The handbook is not designed for cover to cover reading. Rather it can be used by the experienced operator as a reference document or else as a self-instructional guide for which the handbook's own appendices A2 and A3 chart the appropriate route.

Copies are available free from:

Mr. J. Kirkwood
MIPD/CDGI
Manpower Services
Commission
Moorfoot
Sheffield S1 4PQ
0742 704228

National Institute Economic Review

Five articles appeared in the latest issue of the *National Institute Economic Review*. The first article by A. D. Smith, D. M. W. N. Hitchens and S. W. Davies, entitled 'International Industrial Productivity: A comparison of Britain, America and Germany' explores the strength and weaknesses of Britain's industrial economy by comparing, sector by sector, our productivity record with that of the American and German economies. Results show that overall labour productivity was 2.7 times better in American industry and 1.4 times better in German industry in 1977.

British performance in the extractive industries and public utilities was especially poor compared with both the American and German industries. Better performers were United Kingdom agriculture and transport.

The broad similarities in the structure of the three economies suggests that Britain's poor performance is not explained by difference in the composition of output between the countries but by differences in productivity levels pure and simple. The prime culprit responsible for almost three-fifths of the overall industrial productivity differential is manufacturing in which, in comparison with the United States there has been no measured improvement since the 1930s.

The full details of the research are to be published by Cambridge University Press this autumn in a book entitled 'International Industrial Productivity: A Comparison of Britain, America and Germany', priced £12.50 net.

The second article: Labour Productivity in 1980: An International Comparison by A. D. Roy deals with international comparisons of standards of living which customarily use purchasing power parity (PPP) exchange rates. This is a follow-up of less usual, earlier NIESR work using PPPs to provide a similar comparison of output per employed worker. At 1973 world prices the United Kingdom's 1980 average output of all goods and services per worker may have been around sixty per cent of the corresponding level in the United States, perhaps two-thirds of that of Belgium, France, Germany and Holland and some ten per cent below output per worker in Italy and Japan.

The third article is 'Labour skills, R and D and capital requirements in the international trade and investment of the United Kingdom 1968-78'. This paper by H. Katrak examines the implications of the United Kingdom's relatively 'poor technological performance' for the factor requirements of its international trade and investments. Drawing upon the Human Skills, Technological Gap and Life Cycle of Product theories of international trade, the author postulates that over a period of years the United Kingdom's competing imports will become increasingly skill intensive and R and D intensive relative to its exports while the capital intensities of the exports will increase relative to that of the outflows. They hypothesis is tested by calculating the factor intensities of the foreign trade and investment flows in three years 1968, 1972 and 1978, and examining the changes in the factor-intensities between those years. The results for each of the pair-wise comparisons 1968-72 and 1972-78 turn out to be quite consistent with the hypothesis. The findings of the paper are then compared with those of earlier studies for the United States and Japan and certain similarities and contrasts are noted.

An article titled 'The contribution of education to economic growth in Britain: a note on the evidence' by A. Daly examines some of the British evidence relating to the effects of investment in education on national income and productivity growth. In 1977-9, six per cent of British GNP was spent on education, representing a considerable public investment to be monitored. Following the work of other economists, the article compares Britain's educational input with that of the United States and West Germany and concludes that there is no shortfall in aggregate educational input in Britain, when measured by the years of schooling completed by the population. However this conclusion takes no account

of differences in the quality of education undertaken and its vocational relevance, factors which should receive greater emphasis in policy decisions.

The fifth article, 'Factors influencing recent productivity growth - report on a survey of companies', by G. C. Wenban-Smith reports the findings of a small survey of United Kingdom manufacturers on the recent influences on productivity growth. Respondents reported that whereas the greatest stimulus to productivity growth in the 1960s was the expansion of demand, in the 1970s companies had had to invest increasingly to become more efficient and competitive. It was not expected that the high rate of growth of productivity through 1981 would be continued, but neither was there any evidence to suggest that manufacturing industry had undergone any major structural or behavioural changes which would reduce long-term productivity growth to a new and permanently lower level.

Reference

National Institute Economic Review No. 101 available from the offices of the National Institute

World Fertility Survey

Recent publications by this world-wide survey of possible interest to readers of *Statistical News* include:

Scientific report series

- No. 30 *The dynamics of birth spacing and marital fertility in Kenya* by W. Henry Mosley, Linda H. Werner and Stan Becker
- No. 32 *Infant mortality in Kenya: Evidence from the Kenya fertility survey* by Frank L. Mott
- No. 34 *Evaluation of the Jamaica fertility survey 1975-76* by Susheela Singh

Comparative studies

- No. 17 *Birth histories* by Noreen Goldman and John Hobcraft
- No. 18 *Basic characteristics, sample designs and questionnaires* by Jerzy Berent, Elise F. Jones and M. Khalid Siddiqui
- No. 19 *Differentials in age at first marriage* by James McCarthy

Other publications

The Sudan fertility Survey 1979: A summary of findings
The Norwegian fertility survey 1977: A summary of findings

The impact of some intermediate variables on fertility: evidence from the Venezuela National Fertility survey 1977: An occasional paper

World mineral statistics

The Institute of Geological Science's *World Mineral Statistics 1976-80* covering production, exports and imports was recently published by HMSO, price £18.00 net.

International publications

The following have recently been published and are available from HMSO:

United Nations, Department of International Economic and Social Affairs

Yearbook of Construction Statistics 1972-1979, price £18.75 net.

Yearbook of International Trade Statistics 1980 (in two volumes) Vol. 1 *Trade by Country*, Vol. 11 *Trade by Commodity, Commodity Matrix Tables*, price £56.25 net. for the two volumes.

Yearbook of World Energy Statistics 1980, price £45.00 net.

World Health Organisation

World Health Statistics Annual 1980-81 Infectious Diseases Cases, price £9.45 net.

OECD

Labour Force Statistics 1969-1980, price £11.00 net.

Revenue Statistics of OECD member countries 1965-1981, price £8.60 net.

Statistical Office of the European Communities
Employment and Unemployment 1974-1980, price £8.25 net.

Energy Statistics Yearbook 1980, price £13.00 net.

Eurostat Review 1971-1980, Price £6.80 net.

Forestry Statistics 1975-1979, price £6.30 net.

National Accounts ESA Aggregates 1960-1980, price £5.10 net.

Operation of Nuclear Power Stations 1981, price £5.00 net.

Statistical Yearbook. Transport, Communications, Tourism 1980, price £13.00 net.

Yearbook of Agricultural Statistics 1977-1980, price £6.80 net.

GOVERNMENT STATISTICAL SERVICE

Appointments and Changes

Mr. J. R. Merchant, Chief Statistician, Civil Service College, transferred to the Management and Personnel Office on 16 August 1981.

Mr. R. J. Eason, Statistician, Inland Revenue, transferred on loan and promotion to Chief Statistician at the Civil Service College.

Mr. P. Redfern, Deputy Director of Office of Population, Censuses and Surveys retires on 13 December 1982.

Mr. F. E. Whitehead will succeed *Mr. Redfern*, on promotion to Under Secretary.

Mr. D. C. L. Wroe, Chief Statistician, Central Statistical Office, promoted to Under-Secretary and transferred to the Departments of Environment and Transport on 1 October 1982.

Mr. G. A. Dean, Chief Statistician, Central Statistical Office, retired on 31 October 1982.

R. Davy, Chief Information Officer (B), Central Statistical Office, retired on 30 September 1982. *H. P. Lumsden*, Principal Information Officer becomes Head of Publications and Information for the Central Statistical Office.

Mrs. C. Palmer, Chief Statistician, Department of Health and Social Security, transferred on loan to an Assistant Secretary post.

LATE ITEMS

Census of Production - Northern Ireland

The *Report on the Census of Production of Northern Ireland 1979* was published in October 1982 by HMSO Belfast on behalf of the Department of Commerce (NI): Price £6.40 net.

Retail concentration ratios

An article in *British business*, 15 October 1982, gives concentration ratios from the retailing inquiry, 1980. Summary final results from this inquiry were published in *British business*, 11 June 1982, and the full results are now printed as Business Monitor *SDA 25.1980*.

Reference

British business (HMSO weekly) (Price £1.10 net)

International comparisons of profitability

British business, 15 October 1982, contained an article updating the comparisons published in that journal on 4 September 1981. The article which covers the years 1955 to 1980 is largely based on calculations by the Organisation for Economic Cooperation and Development.

Reference

British business (HMSO weekly) (Price £1.10 net)

London weighting

The Secretary of State for Employment (Mr. Norman Tebbit) replying to a parliamentary question announced that the Department of Employment is to discontinue publication of its London weighting indices. The indices were based on expenditure patterns which were now out of date.

Alphabetical Index

The index to *Statistical News* covers the last nine issues. Page numbers are prefixed by the issue number, e.g. 57.30 signifies number 57, page 30.

Generally speaking articles relating to the 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.

- abortion statistics, 54.33, 58.18
- agricultural
- crop production, annual estimates harvest 1979, 52.25, 1980, 56.18, 1981, 58.21, 59.37
 - December census, 51.34, 53.21, 1981, 57.21
 - December, glasshouse census, 1979 51.34, 1980, 53.21, 54.38, 55.18, 1981, 58.21
 - December, Scottish, 51.35, 53.22, 57.21
 - egg yields survey, 1979/80, 52.25
1980/81, 56.18
 - June 1980 agricultural census, 51.35, 52.25, 53.21
 - June 1981 agricultural census, 56.18, 57.21
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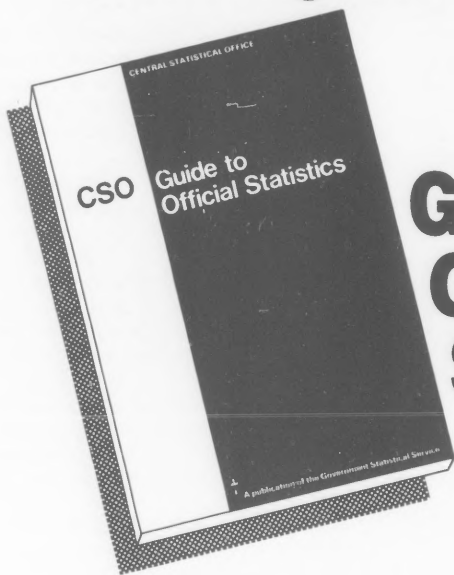
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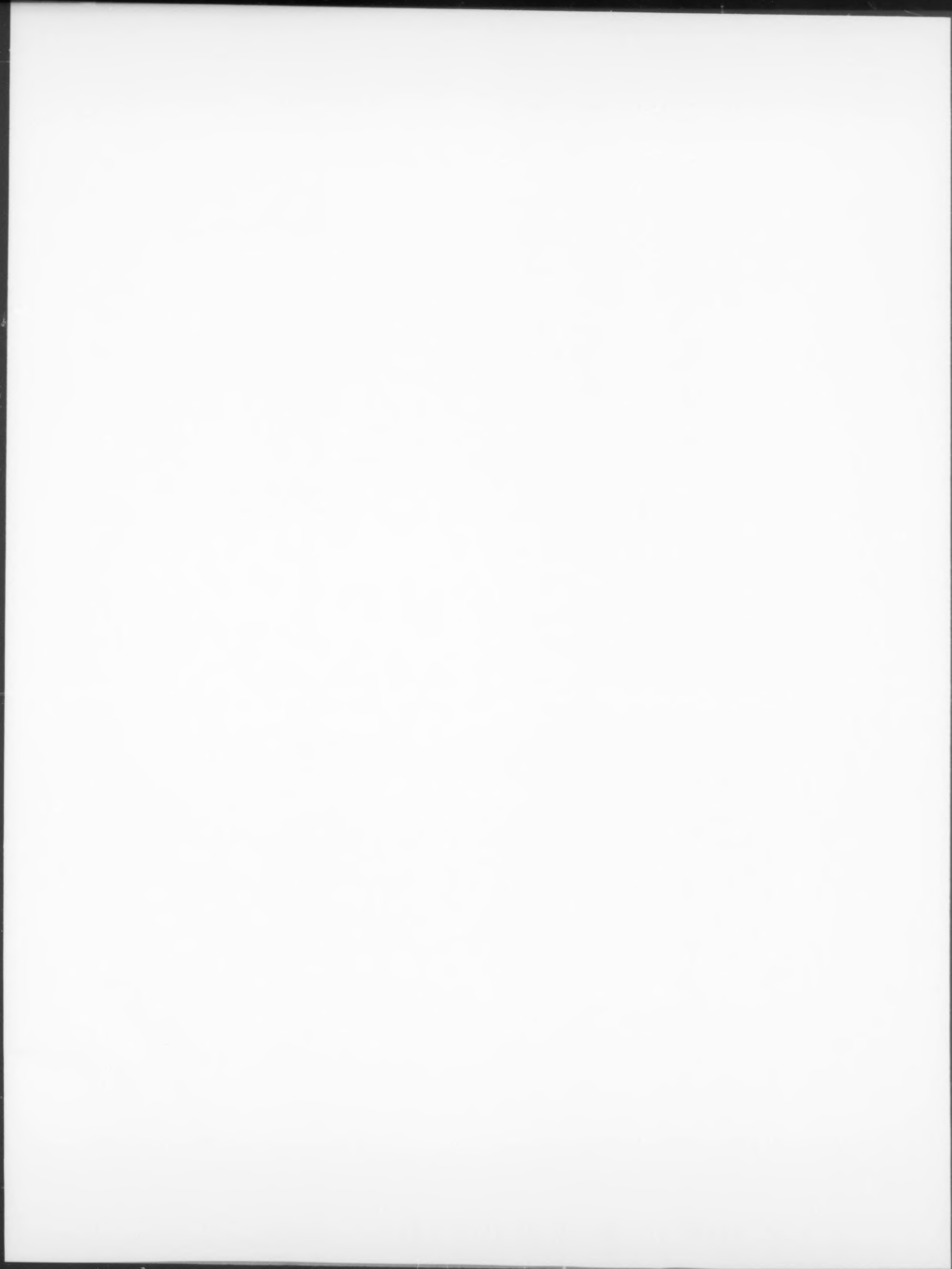
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