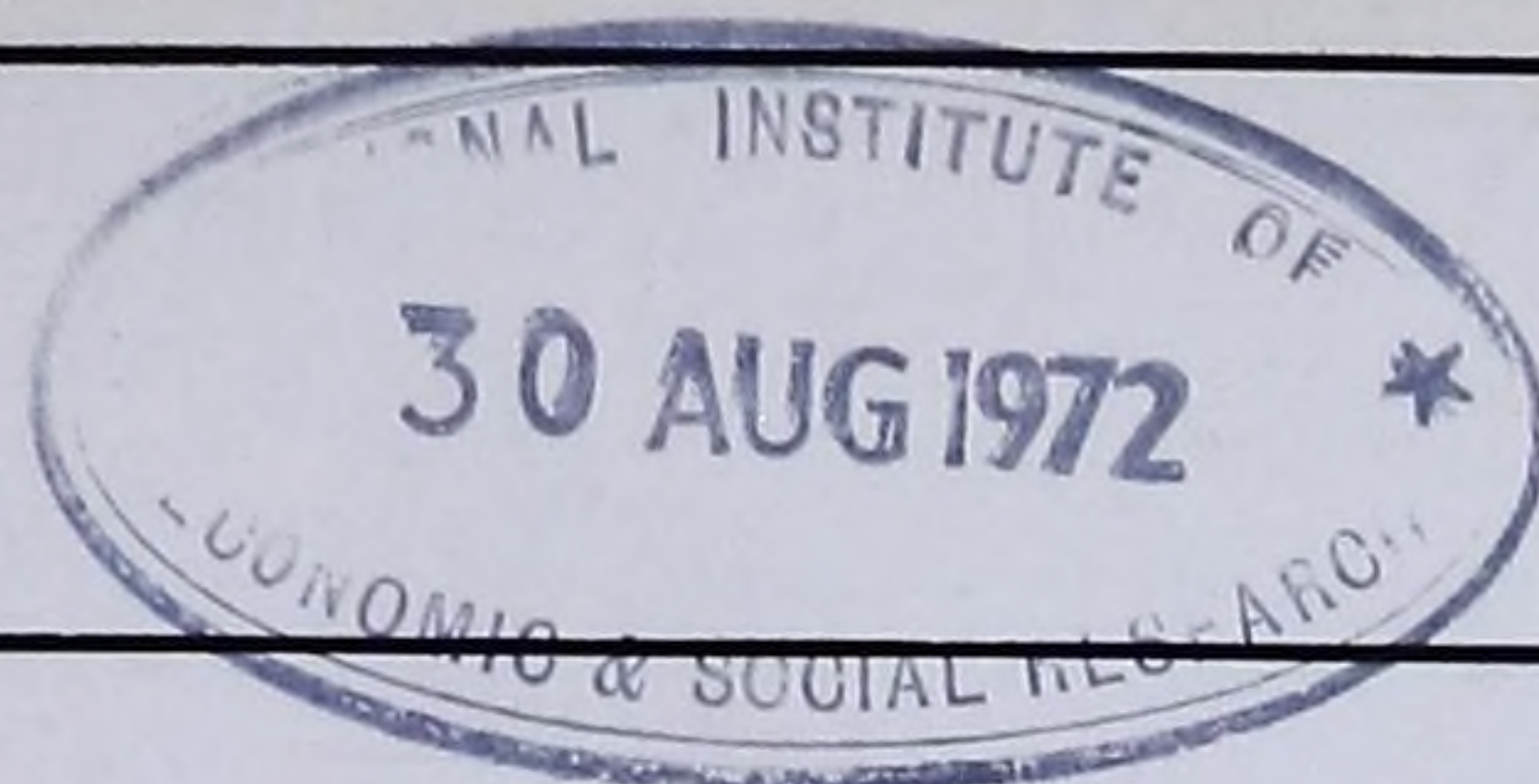


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STATISTICAL NEWS

Developments in British Official Statistics

A publication of the Government Statistical Service

Note by the Editor

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

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

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Developments in British official statistics

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Taking care of soft figures: reflections on improving the accuracy of the GNP

George Jaszi, *Director, Bureau of Economic Analysis, US Department of Commerce*

Adaptation of a paper presented to the Nineteenth Annual Conference on the Economic Outlook at the University of Michigan, Ann Arbor, 18–19 November 1971.

As a rule, special problems of communication arise in addressing a foreign audience. I am happy that the present occasion is exempt from this rule in at least one significant respect. The name of my organization was recently changed from Office of Business Economics to Bureau of Economic Analysis. Fortunately, a British audience is so familiar with the corresponding acronyms – OBE and BEA – that further explanation of the change is unnecessary. In the following remarks I shall adhere to the traditional OBE, which I consider more dignified.

I shall talk about improving the statistical accuracy of the national accounts. I shall do so because of my increasing concern lest our necessary effort to improve the accuracy of the GNP cause damage to our economic intelligence by creating expectations that are doomed to disappointment, by abetting less than optimal use of the available figures, and by leading to a misdirection of future research. I shall argue that progress towards better GNP estimates will be costly and slow and that in the interim we can get more out of the existing, imperfect figures if we are less demanding of them. Finally, paradoxical as it may sound, even though we should strive for accuracy in the GNP estimates, were we to achieve perfect accuracy in this world rather than in the world beyond, this would be conclusive proof that we had failed in our duties as national accountants.

Primary data and estimating techniques

To make my remarks intelligible, I must preface them with a brief description of the production process whose end product is the GNP. The main point to be remembered in this connection is that OBE, the producer of the accounts, is, with insignificant exceptions, not in the business of collecting the primary data on which the accounts are based. These are collected by a large number of other agencies, either as by-products of administrative operations or as part of general purpose data collection programs.

Although the collecting agencies are increasingly aware of and responsive to OBE's needs, neither the coverage, nor the definition, nor the timing of the basic data meets our needs fully, and a major portion of our staff is engaged in processing the data by complex and ingenious estimating methods to fill in the empty boxes of the classification scheme of the GNP accounts – personal consumption expenditures, government purchases, wages, profits, taxes, saving and investment, and what not – and to arrive at estimates of total GNP.

Total GNP is estimated in two largely independent ways: once in terms of product flows and once in terms of the incomes that are generated in the course of production. In principle, the two estimates should give identical answers, but, because of imperfections in the data sources and estimating methods, a statistical discrepancy between the two estimates appears.

The statistical discrepancy measures the net residual of error which remains after the best possible estimates of the various components of the income and product flow have been made. If initial estimates of the components lead to a sizeable statistical discrepancy or to erratic movements in it, they are re-examined and an effort is made to trace the source of the discrepancy and to eliminate it as far as possible. This re-examination of the initial estimates consists mainly of a critical comparison of the methodology of the component estimates for error and inconsistency. This is an essential step of the estimating procedure which cannot be taken by the individual estimators responsible for the preparation of the component series, but must be reserved until initial estimates of all the components have been prepared.

In summary, estimating the national accounts is like putting together a complex jigsaw puzzle, some of the parts of which may be warped or missing. Alternatively, the job can be likened to a manufacturing process in the course of which raw materials and semifinished products

that are often recalcitrant are converted into complex final products by the use of advanced technological processes. Viewed in this light, the accuracy of the GNP estimates is seen to depend ultimately on the quality of the basic data that are at our disposal. Ingenuity in estimating is not a perfect substitute for source data. We do, nevertheless, often come out with much better estimates than our basic data sources suggest. Let me give you the most recent illustration. In the course of 1969, a widening statistical discrepancy between the product flow and income flow estimates of GNP indicated that one or more of our statistical sources had gone astray. Additional cross-checks pointed strongly to the monthly retail trade data, which we use to estimate personal consumption, as the culprit. Accordingly, as noted in the July issue of the 1970 *Survey of Current Business*, we departed from our usual procedure for estimating consumption and substituted for it a junior version of the commodity flow method which in its full complexity is used to establish benchmark estimates for consumption for years covered by the economic censuses. Subsequently, the Census Bureau revised the retail trade estimates and confirmed our calculations within narrow limits.

Quality of GNP estimates

I believe that our GNP estimates are good, both because we have abundant and reliable source data to work with and because we use intelligence and judgment to process them.

I might also mention that our GNP estimates are better than those of other nations. They are superior to those of English speaking countries, and excel also those of the Scandinavians. We do much better than the French. I have no direct knowledge about Germany and Japan, the two miracle nations of the industrial world. But I am willing to bet that, unlike in many other lines of production, they present no serious competitive threat in the manufacture of GNP. OBE feels that it needs neither surtax, nor quotas, nor currency devaluation to cope with them.

Naturally, our performance has not been unblemished. We had a miserable experience last spring when we discovered that we had grossly overstated corporate profits because we had been misled by the Federal Trade and Securities and Exchange Commissions sample. We committed another painful error in 1965 (as noted by Arthur Okun in his *Political Economy of Prosperity*) when several of our data sources faltered and put a drag on our estimate of the pace of economic activity. Another unpleasant revision occurred a little earlier when the substitution of benchmark estimates

based on input-output calculations for cruder techniques previously used resulted in an increase in our assessment of the long-term growth of GNP, and also of its internal structure.

I also recall a shattering experience in the mid-fifties when we were taken for a ride and overestimated food expenditures because we were slow to notice that the retail food store sales on which we based them included nonfood items on an increasing scale: baby carriages, garden tractors, and what not. To complete the list of my professional traumas, I must delve back into the early postwar years when we missed the massive conversion of entrepreneurial income to corporate profits that followed the abolition of the wartime excess profits tax.

Data improvement

This is not a recitation of historical *curiosa*. We are likely to witness similar eruptions again because there has not been sufficient improvement in the primary data from which we construct the GNP accounts. This much is certain. How much of an improvement there has been is more difficult to assess. Substantial improvements in some of our data sources have occurred, for instance, in the manufacturing censuses and associated surveys. But there was retrogression also. For example, our wage and salary estimates are less firmly anchored than they used to be. And it is sad to contemplate that the last major error we committed, the error in corporate profits which I mentioned earlier, was in an area in which data progress had been most visible in the postwar period. The Internal Revenue Service tabulations, which serve as benchmarks for our corporate profit estimates, had been speeded up about one year and a strong sample survey of manufacturing profits, which we use to carry the benchmark estimates of these profits forward, had been established. It is this sample survey that was shown to have failed us last spring.

The task of assessing the degree of data improvement is vastly complicated by the fact that we have been dealing with a moving target. Over the postwar period, the GNP accounts have not stood still. With a few exceptions, they became more comprehensive, more detailed, and more timely, and therefore made more exacting demands on the data base. Perhaps the safest generalization is that the data pack lags the GNP rabbit by about as much as it did twenty-five years ago. It has a long way to go.

Costs and returns of improvements

The high quality of our GNP estimates is a summit from which further improvements in them should be viewed. It is also necessary to take into account the

cost of such improvements and to be realistic about the net return that is likely to accrue.

The costs are large. I cannot make an estimate, partly because I am not sufficiently familiar with the costs of primary data collection into which the bulk of the resources would have to go, and partly because the nature of the question precludes an unambiguous estimate. But there can be no doubt that the costs could run into tens of millions of dollars. Let us remember also that they would pay off only over a long period of time, because many of these programs have long gestation periods and also because some must wait upon the completion of another.

In the interim, there is actually a risk that data improvement will weaken the estimates of total GNP. This is not a weighty consideration, but what I have in mind is that Offsetting Error, the guardian angel of national accountants, would be put off and restricted in its benevolent sway by the gradual encroachment of better source data. Perfect data are an absolute blessing, but imperfect or incomplete data, even if they are improvements, sometimes interfere with the accuracy of the estimates.

More seriously, one must not be overly sanguine about the size of the prospective improvements in the estimates of GNP. There are two reasons for conservatism. The first is the problem of synchronization. Lack of synchronization is one of the most important sources of error in the short-term GNP estimates and the prospects of reducing it are not altogether bright. Let me explain.

All parties involved in a given economic transaction must in the national accounts report that transaction at the same time; or, if differences in timing are appropriate, these differences must be recorded systematically. If these conditions are not met, the accounts may be thrown out of gear. Take, for instance, a sale by one business to another. When the sale is made, the item is removed from the inventories of the seller, causing an unbalance in the national income and product account while it is in transit, unless, as seems most unlikely, it is offset by a mirror image transaction somewhere else in the system.

The timing problem would be present even if each economic unit maintained a set of accounts based on uniform principles and reported its transactions for identical spans of time. Needless to say, this is not the case, and numerous additional inconsistencies of a cruder kind are introduced into the accounts. For instance, our estimates of private wages are based upon reports that cover one week's operation each month, and even though every effort is made to infer from them

wages for the quarter as a whole there is really no assurance that these figures will be synchronized precisely with the corporate profits estimates which are based on quarterly reports. Again, government expenditures are reported on a cash basis, and in order to synchronize them with the business accounts of sales and inventories, they are put on a delivery basis with the aid of partial information. Obviously, this also may give rise to faulty synchronization.

Most of the statistical reporting systems upon which the GNP estimates rely have been set up for separate use instead of as part of an interrelated system, and accordingly the synchronization of these systems has not been a matter of concern. Nor was a systematic attack upon the problem possible in these circumstances. With the advent of the national accounts, especially in a quarterly form, proper timing has become a matter of utmost importance, and at the same time a framework for working out a solution has been provided. But the cost of improvement will be heavy and is not likely to yield prompt returns.

Another crucial limit on the improvement of the accuracy of GNP statistics is seasonal adjustment. It seems to impose an absolute barrier, like the speed of light. Assume, for the sake of argument, an optimal situation. The millennium has been reached and all the productive resources of the nation have been channeled into the compilation of GNP. Even so, our effort to achieve statistical accuracy might be foiled: One single computer participating in the national effort might, without malice aforethought, undo it as with professional pride he tackles the routine of updating seasonal factors. This is no joke. Even if all the basic data sources were perfect and the problem of synchronization were solved, revisions of seasonal factors which are routine and unavoidable could in a trillion dollar economy such as ours result in GNP revisions of three, four, or five billion dollars, revisions which are of the same order of magnitude as those that are made currently and cause consternation in the hearts of some of our clientele.

Side effects of emphasis on accuracy

Before I turn to constructive suggestions about how to live reasonably happily in a world that is not the best possible of all worlds, I want to draw attention to some possible side effects that a distorted emphasis on accuracy might have. The first relates to our preliminary GNP estimates which are published two weeks after the end of the quarter on the basis of primary data that are incomplete, most importantly with respect to inventories, foreign and domestic trade, and prices. A decision to publish these figures was reached many

years ago because experience showed that, in spite of their margin of error and occasional aberrations, they were a major aid to economic analysis. At the beginning, the Council of Economic Advisers pretended to be the source of the figures. Subsequently, we dropped this transparent veil and OBE took the responsibility for them.

Because of the recent upsurge in the concern for accuracy, a delay in the publication of the GNP figures has been mentioned as a way of doing away with the revisions that are now made one month after the publication of the initial estimates. I am sceptical of such a move, because, as I shall explain soon, I do not regard the initial figures as misleading, provided they are properly interpreted. As an *obiter dictum*, it should be noted that the postponement would affect only private users of the GNP data. Government economists and decisionmakers would, I am sure, insist on getting the tainted data on the previous schedule.

A second side effect which might be harmful is exclusive preoccupation with improving items that are explicit components of GNP, to the neglect of items that may be of equal analytical interest but happen not to be members of the GNP club. Saving statistics are an outstanding example. Given the puzzling behaviour of the saving rate and the importance of this phenomenon for economic analysis and decisionmaking, it is hardly necessary to stress the importance of improving saving statistics, which are one of the weakest elements of our information system.

There is a third side effect of the increased emphasis on accuracy which I fear, particularly because resources available for national accounts work are scarce: the channeling of excessive resources into marginal improvements of the existing estimates at the expense of the development of new estimates that survey unexplored territories of our economy; estimates which by the nature of things must be soft.

Such a development would be outright disaster. Creative progress in the work on national accounts, not only in OBE but also elsewhere in the United States and all over the world, has been due to forays into new territories that initially were not backed up by sufficient resources. OBE's entire work, beginning with the balance of payments accounts of the early twenties to the capital goods flow matrix we published a few months ago, is eloquent testimony.

Sometimes, it is true, these forays have ended in defeat and retreat. But more often than not the territories that had been gained were held, and supporting troops were moved up in time to secure the advance positions that had been taken. It would be a

shame if the fetish of perfection became a block to genuine progress in national accounting.

Living with present estimates

Let me, finally, suggest a *modus vivendi* with the existing GNP estimates while we pursue a sober and steady campaign to improve them. Such an accommodation must start with a proper view of GNP as a tool of economic analysis.

Most obviously, GNP is a measure of the market value of the output of the economy. But the secret of its success is that it is much more than this. The sales of national output to major markets – the consumer market, the market for investment goods, the foreign market, and the government market – are shown separately. The allocation of the value of the nation's output among the various expenses of production – wages and salaries, interest, taxes, depreciation, etc. – and profits is also shown. This analysis of the cost side of GNP is the first step in tracing the flows of income through the economy to show how the purchasing power of each of the major markets that absorbs the nation's output is generated. For consumers, for instance, it is shown how incomes derived from production are supplemented by transfers received from government and diminished by taxes paid to government, leaving an aggregate that is available for consumption and saving. Similar balanced statements showing receipts and the manner of their disposition are given for the other markets that represent the major outlets for GNP.

To avert unnecessary frustration stemming from emphasis on accuracy that is out of focus, we must stress the broader interpretation of the GNP accounts. GNP should not be interpreted primarily as a single-dimensional measure of the economic performance of the nation, a thermometer of aggregate economic activity whose exact reading we watch with the concern of an anxious mother standing vigil over her feverish child. Rather GNP should be regarded as the centre of a tableau that presents a comprehensive and detailed statistical picture of the economic process in terms of the production of total output and its distribution among, and use in, the major markets whose dynamics determine the functioning of the economy.

In this tableau, the magnitudes are presented within the framework of a disciplined accounting system in which the various economic flows are shown in relation to each other. The structure and classification of the system has been designed to provide a realistic description of the important features of the economy and hence tends to meet the requirement of practical economic analysis and of policy formulation and

execution. No rival framework for the study of the economic mechanism exists.

The entries in this system, even though they lack precision, are usually solid enough to give a correct indication of the direction in which aggregate economic activity is moving and of whether the change is large or small. Of equal importance, they show the major factors that are responsible for the change, and their relative importance. They provide the basis for an order-of-magnitude analysis of economic events. So viewed, the GNP has not been misleading, except in the few cases that I have mentioned earlier in this talk.

There is another consideration that should enter into assessing the use of GNP. The margin of error to which GNP accounts are subject is not the only limitation in their application to economic analysis and decision-making. The shoe also pinches on other feet. There are weaknesses in economic theory and in the statistical techniques of uncovering economic relationships. No degree of accuracy in the GNP estimates will save us from the perils of multicollinearity. Nor would a perfect GNP dispel the clouds that blur our vision of exogenous factors. A concern with statistical accuracy that is motivated by the notion that statistical accuracy will lead to perfection in economic analysis is unwarranted and dangerous.

In summary, some of the users of our estimates believe that a butter knife can be used for shaving, and are constantly frustrated in this attempt. We must teach them that a butter knife is very useful if used properly, and encourage them to use it to butter their bread, while at the same time we strive to devise sharper statistical cutlery.

The basic nature of the proper strategy is clear: We must couple our campaign for the improvement of the GNP figures with a campaign to teach the public to make the best use of imperfect figures. And, if I am right in my interpretation, we may teach them not only the best use, but also a use that is good – good on an absolute scale.

Information and methodology

Many individuals and groups can join OBE in this educational campaign. But there is a supplementary move which must remain OBE's exclusive responsibility. To enable the intelligent user to make the best use of our estimates, we must provide him with descriptions of our methodology that are focused on the reliability of these estimates. We had a unique record in this respect through the mid-fifties, but because of overwork and the lack of requisite talent we have seriously slipped

since that date, and I cannot be sanguine about retrieving the ground we have lost.

In the absence of a complete new explanation of methodology, there are two more limited ways in which we could be helpful to the users of our estimates. First, we could provide them with a better feel for the reliability of our estimates by compiling historical information on the size of the revisions these estimates undergo. This measure of reliability, is, of course, subject to severe limitations. Most important, it must take the last published estimate of an item as the standard of truth. But I despair of any other way of calculating a measure of error. Error calculations that are applicable to sample data cannot be used for GNP.

Another way we could be helpful to the users of our data is by keeping them more closely informed about emerging discrepancies in the basic data and about the ways we deal with such trouble. I am not referring primarily to the statistical discrepancy which is there for all to see, and to which we do draw attention in our writeups of GNP if it misbehaves. I refer to numerous other cross-checks that we make and use in monitoring the GNP. These cross-checks are never of a conclusive kind, but sometimes they bear circumstantial evidence that is so strong that it warrants incorporation in the GNP. I have given you the most important recent experience along these lines: the substitution of other sources for retail trade in the estimation of personal consumption expenditures.

I am thinking of comparisons we make among various measures or proxies of manufacturing production – the Federal Reserve Board index, Census and Federal Trade Commission shipments and inventories, the OBE measures of income and gross product originating in manufacturing, and the adjusted commodity component of GNP; comparisons among retail sales, comparable components of the Census shipment series and the FRB index, and retail sales tax collection, which we make in the course of estimating personal consumption expenditures; comparison among estimates of producers' durable equipment based on FRB, the Plant and Equipment Survey, and the Census shipments series and the Annual Survey of Manufactures, which we use to prepare our estimates of the producers' durable equipment component of GNP, comparisons among IRS, FTC, and Census series that we maintain to monitor our inventory estimates; the series on housing permits, starts, completions, and sales that might be used to discover aberrations in the residential investment estimates; among the retail sales, 10-day, and consumer auto data that do not always work in tandem; comparison between 'establishment' and 'household' employment series that might reveal a

misbehaviour of our wage and salary estimates; the cross-check on our profit estimates through tax collections that did not save us from our debacle last spring; and finally of comparisons of direct estimates of personal saving, undistributed corporate profits, and government surplus with our residual estimates of the same items.

This detective work is an integral part of our techniques of estimating the GNP accounts. The public would benefit if it were better informed of it. Difficulties arise, however, if we go too far in this direction. We could go all the way only in a peaceable kingdom in which the lion lies down next to the lamb.

The outlook

Although I do not expect the millennium, I am hopeful that balanced progress towards the improvement of the national accounts can be made. And just to be absolutely sure that I shall not be accused of fouling my own nest, let me repeat that I am wholeheartedly in favour of vigorous data improvement. But I would centre the effort on improving the GNP in its function as a statistical tableau – a factual, empirical, quantitative counterpart of modern economic theory – instead of in its function of a fever thermometer of economic activity. This would put the horse before the cart and help to ensure that better data are obtained for analytically interesting component flows of the accounts that are shaky at present, whether they are included in GNP or not. This approach would also tend to ensure that resources that should be used to open new vistas are not sacrificed on the altar of perfection. Last but not least, it would help us to count our blessings and to make good use of them.

Food marketing trends in the United Kingdom: some implications for agriculture

Dr A. P. Power, *Senior Principal Agricultural Economist,
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Shortened version of a paper presented at the CENECA (Paris) International Symposium

Introduction

Consumers' expenditure on food in the United Kingdom exceeded £7,350 million in 1970 and accounted for just over 23½ per cent of total consumers' expenditure that year. Just over half this food comes from home production, and about one-quarter of this large and growing sum currently accrues to the agricultural producers in the United Kingdom. Food constitutes the largest single category of total consumers' expenditure, and expenditure on food has continued to expand both in volume and value, although as a proportion of the total it has fallen from a peak of 31.4 per cent in 1956. It is the purpose of this paper to examine how domestic agriculture's share of the total value of food marketed in the United Kingdom moved during the period 1960 to 1970, and to consider whether the outcome was mainly due to developments within agriculture itself or to factors largely outside the purely agricultural sphere. Some of the implications of this analysis for the future development of agriculture in the United Kingdom will also be considered.

Recent trends and developments

During the period 1960/70 household expenditure on food in the United Kingdom increased from £4,228 million to £6,363 million and remained throughout the largest single category of total consumers' expenditure, as can be seen from the table below where the annual expenditure on food by householders is compared with some other major categories of household expenditure for the years 1960, 1965 and 1970.

£ thousand million			
	1960	1965	1970
Total consumers' expenditure	16.9	22.9	31.2
Expenditure on housing	1.7	2.6	3.9
clothing	1.7	2.1	2.6
household food	4.2	5.1	6.4
Consumers' total expenditure on food (including food cost of meals away from home)	4.9	5.9	7.4
Indexes of consumers' expenditure on food (1960=100)			
current value	100	121	152
volume	100	106	111

The total market for food in the United Kingdom is still larger however. The line 'consumers' total expenditure on food' in the table above is the sum of consumers' expenditure on household food, plus the food cost element of meals supplied by caterers and institutions. The total of such expenditure, estimated at £4,850 million in 1960, had increased to £7,351 million by 1970, when it accounted for just over 23½ per cent of total consumers' expenditure. The index (1960=100) of consumers' expenditure on food in 1970 was 152 at current prices, and 111 at constant prices. Clearly consumers' expenditure on food has been declining slowly but steadily as a proportion of total consumers' expenditure during the period 1960/70; from almost 29 per cent in 1960, the proportion had declined to 23½ per cent in 1970. Thus despite its considerable expansion in absolute terms during the decade the food industry has declined in relative importance. This is not surprising; it is merely another confirmation of the long established 'Engel's Law' which states that as real disposable income per head increases a smaller proportion of that income tends to be spent on food.

The food industry

The food market, as we have seen, is currently worth over £7,350 million, is expanding and still represents the largest single share of total consumer expenditure. The food industry is composed of a large number of widely differing sectors. It comprises the farmers and growers who produce the United Kingdom's indigenous food supplies, the importers of non-indigenous and imported supplies, the food manufacturers who prepare and process the raw food as well as a large number of distributors who undertake the transporting, storage, wholesaling and retailing functions which comprise the marketing process. Each sector of the food industry has indeed a common interest in the general prosperity, expansion and development of the market for food; but because the industry is highly competitive each section of the trade, whether it be the agricultural, manufacturing or distributive sector, is concerned to increase its share of the overall market. It is worth examining

what has been happening to agriculture's share of the overall food market in recent years.

In an article by L. J. Angel, 'Measuring self-sufficiency for food and drink in the United Kingdom'⁽¹⁾, estimates were presented of the proportion of domestic food supplies derived from home agriculture and fisheries. Home production of food, defined as the value of food moving into manufacture or distribution from all home sources including gardens and allotments and fish landings by British vessels, valued at market prices but excluding deficiency payments, increased from £1,357 million in 1962/63 to £1,789 million in 1969/70. Expressed as a percentage of total domestic food supplies, this showed a gradual tendency to increase, from 51.0 per cent in 1962/63 to 53.0 per cent in 1969/70. A similar picture emerges if we look at the domestic production of food for home consumption. To get this estimate the figure for home production of food quoted above was adjusted principally to allow for the food content of exports of manufactured food products, for food produced by farmers for their own consumption, and for taxes.

	1962/63	1969/70
Domestic production of food for home consumption (£m)	1,325	1,892
Value of food sold (£m)	5,314	7,081
Proportion of domestic food expenditure from domestic production	24.9%	26.7%

Here the value of food sold in the United Kingdom includes ships' stores and supplies for the Armed Services, excludes the value of food produced by farmers for their own consumption and is adjusted for stock changes. Again there was a slow but steady increase from 24.9 per cent in 1962/63 to 26.7 per cent in 1969/70, in the proportion of total domestic expenditure on food accounted for by home production, but part of the increase results from the treatment of tax. Taking 1962/63 as 100, the index of total domestic production was 142.8 in 1969/70 and that of total domestic expenditure on food 133.3 (both at market prices).

The cost of food marketing

In 'The cost of processing and distributing food in the United Kingdom'⁽²⁾, J. A. Beaumont shows that the annual cost of marketing food in the United Kingdom increased steadily from £2,722 million in 1962/63 to £3,678 million in 1969/70 – an increase of 35 per cent over the eight-year period. The total output of the food sector, however, (including the costs of processing and distribution as well as the original value of the food) had also increased by almost 35 per cent in 1969/70 as compared with 1962/63. Thus the cost of marketing the

food as a percentage of its total retail and export value remained remarkably constant at about 50 per cent. To obtain the annual cost of marketing food in the United Kingdom the estimates of the value of food inputs into marketing were subtracted from the total of consumers' expenditure on food plus the value of food exported, with further additions to cover the value of food purchased for ships' stores and by Government for the Armed Services, and any adjustments required for known changes in stocks. The estimated values of the food moving into the processing and distributive sector in the United Kingdom were for both home-produced and imported food. The estimated value of food produced within the United Kingdom on non-commercial gardens and allotments and of food produced on farms for farmers' own consumption was excluded, since it could be assumed that virtually none of this food entered the marketing sector.

The available evidence suggests therefore that the domestic agricultural producers and importers between them on the one hand and the food processors and distributors on the other have managed, on the whole, to retain their respective shares of the overall market for food in the United Kingdom in recent years. Domestic agriculture it seems also managed to increase marginally its share of the value of both domestic food supplies and of total consumer expenditure on food in the United Kingdom over the 1962/63 to 1969/70 period.

The marketing sector

A functional breakdown of the food industry is as follows:

- | | |
|-----------------------------------|--|
| 1. <i>Pre-marketing functions</i> | The production and importation of the food entering the domestic marketing sector. |
| 2. <i>Marketing functions</i> | |
| (a) Processing and preparation | e.g. drying, slaughtering, combining, blending, bottling, cooking, preserving, canning, freezing, quick-freezing, pre-packaging, research, product development, etc. |
| (b) Distribution | e.g. bulking, breaking, transporting, storing, grading, packing, selling product differentiation, provision of market information, market development, etc. |

It must be emphasised that we are here concerned with grouping the *functions* performed within the food sector irrespective of who performs them. Conceptually the

pre-marketing functions, such as planting, cultivation and harvesting of the food by farmers and growers and the activities undertaken by importers in bringing imported food to the port of entry into the United Kingdom may be considered distinct from the subsequent marketing functions which are undertaken in moving the food from the farm gate or ship's side to the final purchaser, whether this be an individual consumer, a caterer or an institutional purchaser. Again a clear distinction may be made between the functions involved in the processing and preparation of the food and those undertaken in distribution. The former involve an essential change in the nature or form of the product, i.e. a transformation of the product in some way or another; distributive activities, on the other hand, are directed towards making the product available to the market either geographically or temporally.

In practice more than one function is often undertaken by the various agencies. Although agricultural producers, for instance, are largely concerned with the pre-marketing functions of growing food, they may undertake some of the processing and distributive functions. Some are engaged in slaughtering and pre-packing, while many are engaged in transporting, storing, grading and selling their products. On the other hand some processors grow their own food supplies and many involve themselves in such distributive activities as product differentiation, market information, storage and transportation, while distributors may engage in both processing and pre-marketing functions. All three agencies – agricultural producers, processors and distributors – are vitally concerned with the major distributive activities of pricing and selling.

Major food types

About 46 per cent of the United Kingdom diet is supplied by carbohydrates, 42 per cent by fat and nearly 12 per cent by protein. During the period 1962/63 to 1969/70 there was a slight shift in demand from food with a relatively high carbohydrate content to food with a relatively high content of fat or protein. In general, carbohydrates come from those foods which are cheaper per ton to produce and fat and protein from those which are relatively more expensive to produce per ton; e.g. a ton of crops requiring only one stage of production is cheaper to produce than a ton of animal products which needs firstly the production of some crop (whether grass or cereal) and then its conversion into animal product, the efficiency of which process is invariably much less than one.

The estimated proportions of current gross value of supplies of food for human consumption in the United Kingdom in 1962/63 and 1969/70 and of total con-

sumers' expenditure on food in 1962 and 1969, accounted for by the relatively expensive or low carbohydrate food group (LCG) and the relatively inexpensive or high carbohydrate group (HCG) were as follows:

	1962/63	1969/70
	Percentage	Percentage
<i>Proportion of total value of United Kingdom food supplies accounted for by:</i>		
low carbohydrate group	75.1	77.8
high carbohydrate group	15.5	13.1
	1962	1969
<i>Proportion of total consumers' expenditure on food accounted for by:</i>		
low carbohydrate group	51.0	52.1
high carbohydrate group	23.3	22.4

It will be seen that over the seven year period there was a slight shift from the HCG to the LCG group, in the proportions of the total value of food supplies they accounted for. Within the LCG, meat and vegetables showed the largest proportional increases going up from 29.5 per cent and 6.7 per cent to 33.2 per cent and 7.9 per cent respectively. Milk and egg products were exceptional in that their shares had declined by 1969/70 (18.3 per cent and 5.3 per cent) as compared with 1962/63 (19.8 per cent and 6.3 per cent). Within the HCG, sugar recorded a substantial decline in value. A broadly similar result is given by the breakdown of the figures for 1962 and 1969 of consumers' expenditure on food in the United Kingdom at current prices. This shift from the relatively low valued to the more highly valued foods would only contribute towards maintaining agriculture's share of the value of the food consumed if processors and distributors tended, on the whole, to operate on an absolute rather than a percentage mark-up. But the shift was only of limited significance in the seven year period under review.

Convenience foods

A second factor of much greater significance and one that would operate to increase the processors' and distributors' share of the total value of food consumed was the growth in the demand for convenience foods. Convenience food is defined in the Annual Report of the National Food Survey Committee ⁽³⁾ as:

'Those processed foods for which the degree of preparation has been carried to an advanced stage by the manufacturer and which may be used as labour saving alternatives to less highly processed products'.

The growing importance of these foods as a proportion of United Kingdom household expenditure on food is shown by the following indices (1963 = 100) (see also ⁽⁴⁾).

	1964	1969	% Change
Convenience foods	104.5	139.8	+33.8
Other foods	102.6	118.2	+15.2
Total food	102.0	123.5	+21.1

Household expenditure on convenience foods during the 1964/1969 period had increased at an annual compound rate of almost 6 per cent compared with a growth rate of just under 3 per cent per annum for other foods. In terms of the average weekly household expenditure on convenience foods, the increase was from £0.32 per person in 1964 to £0.48 in 1969. Indeed when account is taken of price changes this group had accounted for practically all the gain in the real value of food purchases during the period⁽³⁾.

This swing to convenience foods represents a growing tendency on the part of the housewife to buy her own time by transferring to the processor much of the work that she used to do in the kitchen in preparing and cooking food. At the same time there is an ever increasing demand for improved presentation of the food in terms of improved packaging, more attractive display and for extra built-in services. All these additional activities involve both processors and distributors in additional costs so that the overall marketing bill might be expected to increase as a proportion of the total value of the food sold, thereby reducing the share of the agricultural producer and food importer. That this, on the whole, has not happened suggests that processors and distributors have been able to offset these expanding and rising costs by increases in efficiency and by passing on, in their turn, an increasing proportion of certain distributive functions (e.g. service in shops, delivery to homes) to the householders.

Concentration and rationalisation

The economies of scale to be realised in processing and distribution have led to considerable rationalisation in both food manufacturing and food retailing. The three largest firms in the bread industry accounted for about 60 per cent of output in 1969 as compared with only 17 per cent in 1951. Rationalisation and concentration have been taking place in many of the food manufacturing industries in the United Kingdom and this trend is expected to continue. A similar trend towards concentration in food retailing is taking place. The Census of Distribution shows that between 1957 and 1966 the number of retail food establishments fell by 17 per cent and the market share of the multiples rose from just over 20 per cent to nearly 33 per cent.

The increased concentration of food sales in the multiples sector is shown by their index of sales, which in 1970 was 145 (1966 = 100) compared with that for the specialist food shops such as butchers, (with a 1970 index of 117) and greengrocers (107). The index for co-operatives on the other hand was only 111. With the continued growth in the number of supermarkets and cash and carry establishments offering a complete range of food and a wide range of non-food products further significant reductions in the number of specialist food shops and increases in the concentration of food sales can be expected in the next few years.

Implications for the future

In the period under review shifts in demand from less expensive foods may have helped agriculture to maintain its share of the final value of food purchased; but more importantly despite rising costs and the increased services they are called upon to provide, food processors and distributors have improved their economic performance through increased efficiency and improved rationalisation, so offsetting to some extent the inflationary pressures arising from input cost increases. The net result has been a tendency for the marketing bill to account for a fairly constant share during the period 1962/63 to 1969/70 of the final value of food marketed.

These trends such as the shift in demand towards the relatively expensive protein type food products are likely to continue in future years. Although the growth of the convenience food sector appears to have been checked in 1971, it is also likely that the increasing demand for inbuilt services, more preparation, more expensive packaging and presentation of food products will continue perhaps at a more rapid rate than in the past, with both processors and distributors increasing their costs, and probably their share of the value of the food purchased in the United Kingdom.

There are a number of ways in which agricultural producers might become more involved in marketing functions, and, in so far as they perform them at least as efficiently as those who are currently responsible, thereby help to maintain or increase their share of the final value of the food marketed:

- (i) through individual action;
- (ii) through producer co-operation and marketing boards;
- (iii) by vertical integration.

The scope for individual action is somewhat restricted. Nevertheless certain of the distributive functions such as grading, a limited amount of storing and transport

and some direct selling can be and have been undertaken by individual producers. Structural changes are helping to enlarge the individual's sphere of action. The trend towards large and more specialised farms⁽⁵⁾ enables the individual producer to perform these marketing functions more economically.

Producer co-operation is a means whereby the advantages of size and specialisation are attained by means of improved organisation. Structural change is normally slow and frequently painful whereas co-operative activity offers the possibility of obtaining similar advantages more readily but at the sacrifice of a certain amount of individual freedom of action. Co-operative marketing has been particularly important in the sale of horticultural products, livestock and eggs and poultry. In 1969/70 these three categories accounted for about 11 per cent, 31 per cent and 22 per cent respectively of co-operative sales (£176.5 million) in that year.

The formation of producer groups has been particularly significant in pig and cattle enterprises. In the case of pigs many groups have been formed, some for the production and sale of weaner pigs to fatteners, in other cases both the fatteners and the store pig producers formed part of the same group. Similar developments have occurred in the cattle enterprises with the formation of groups for the production of calves. Successful group co-ordination has allowed producers to raise the volume of their throughput and to enforce quality standards.

In the United Kingdom marketing boards are a particular form of producer co-operative, set up at the producers' initiative and controlled by producers, but having certain statutory powers to regulate marketing by all producers of the products concerned. The Milk Marketing Board is perhaps the best known of the marketing boards in the United Kingdom but others of importance are the Potato Marketing Board and the Hops Marketing Board.

Vertical integration, the undertaking by one sector of one or more of the functions normally carried out by other sectors, would mean that agricultural producers would undertake processing or distributive functions as well as their normal pre-marketing functions, or distributors or processors could become involved in the pre-marketing or in each others functions. Thus an agricultural co-operative society sets up a factory for the processing of its members' produce.

A common means of gaining control (i.e. of achieving vertical integration) is through the use of contractual arrangements. All contracts involve some degree of integration. There is considerable use made of contract-

ing in agriculture in the United Kingdom at present. The importance of contracting and its impact on agriculture in the United Kingdom is the subject of a full-scale study currently being made by an independent Committee of Inquiry, as mentioned in *Statistical News* 16.26.

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The relative price effect in public expenditure: its nature and method of calculation

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The Green Paper *Public Expenditure: a new presentation* (Cmnd 4017) published in April 1969 recommended that future presentations of public expenditure should include an allowance for the relative price effect. An overall adjustment for this was introduced in the first of the annual series of White Papers, *Public Expenditure, 1968-69 to 1973-74*⁽¹⁾, published in accordance with another recommendation of the Green Paper, and in the subsequent White Papers *Public Expenditure, 1969-70 to 1974-75*⁽²⁾ and *Public Expenditure to 1975-76*⁽³⁾ this adjustment was attributed to individual expenditure programmes. This article seeks to explain the nature of this adjustment and how it is calculated.

The nature of relative price effect

A description of the relative price effect first appeared in the 1969 Green Paper and was repeated, with some slight change of emphasis, in the Appendix on methodology to each of the first two public expenditure White Papers in the annual series. The concept is not an easy one and the first part of this article represents an attempt, not to improve on the official description, but to explain it from a different standpoint which may be of particular interest to those concerned with the economic appraisal of projects and programmes in both the public and private sectors. It starts from the premise that the nature of the relative price effect is perhaps most easily understood by distinguishing between two types of statistical/economic operation.

The first type of operation is that of estimating *output/expenditure at constant prices*. The essence of this operation is the attempt to measure changes in the volume of real resources – goods and services – through time. For *marketed* goods and services this involves in principle measuring current year quantities at base year prices. In practice, small homogeneous groups of output/expenditure at current prices are deflated by a suitable price index.

For *non-marketed* goods and services, which comprise the greater part of the output of public authorities, such as health, education and police, there is no measure of the value of output. In current price estimates, the

value of the goods or services provided is equated with the total costs. In constant price estimates a change in the value of the output of public authorities is by convention assumed proportional to numbers employed. No allowance is made for the increase in productivity – either quantitative or qualitative – which undoubtedly occurs, stemming from the use of better equipment, organisation and training, except where this can be deduced from changes in the relative numbers in different grades, or the numbers in different age groups. The joint implication of the (reasonable) current price assumption that the value of the services equals the cost of provision and the (unreasonable) constant price assumption of constant productivity is an underestimate of the growth in the real output of public services and an excessive increase in their implied ‘price’.

The constant price series in the national income statistics are calculated in this way, as are the constant price estimates of public expenditure before the application of the relative price effect. These latter include transfer payments as well as direct expenditure on goods and services and represent in principle a measure of the change in the volume of total output over which the public sector can be said to have command, either directly through its own expenditure on goods and services or indirectly by the expenditure of private individuals and institutions financed by transfers. This series, which is referred to as ‘in volume terms’ in the 1971 White Paper on Public Expenditure (Cmnd 4829), has two important features:

- (a) The abstraction of all changes, whether absolute or relative, in prices or assumed values of goods and services; and
- (b) The use of the term ‘resources’ to mean the *outputs* of the productive system and not its *inputs*.

The second type of operation is that of estimating *the cost of a project or programme at constant prices*. An example of this is a major railway electrification project, where the costs over the period of the investment in diesel traction are compared with those of electric traction. Although the analysis is conducted at constant

prices, this does not mean that all costs are assumed to remain at the same base year relativities. If, as is to be expected, the future trend in the price of diesel oil is likely to differ from that of electricity, then this is precisely what the analysis ought to reveal. Similarly, electrification implies a heavier initial capital expenditure on the fixed assets but lower expenditure later on locomotives, and also on repair and maintenance. Diesel traction would, therefore, have a larger proportion of labour costs, but less fixed capital. In brief, future estimates of the *relative* price movements of all major items of cost (including labour) are required for the two alternative schemes, together with estimates of labour productivity in the maintenance of locomotives and track.

The term 'at constant prices' in this sense has, therefore, a very different meaning from that described earlier. It signifies removing the effects only of general inflation, while taking full account of changes in the relative prices and productivities of different inputs. A series of expenditure figures in this form differs in two important respects from the volume series described above:

- (a) Allowance is made for future changes in relative prices, only the effect of general inflation being removed; and
- (b) Costs relate in concept to the *inputs* to the various programmes, such as labour, other goods and services purchased on current account and the acquisition of fixed assets; they do not relate to the outputs of either the private or public sectors in the sense in which those outputs enter into final consumption or investment.

This form of expression is just as applicable to claims on goods and services, such as current transfers and debt interest, as it is to expenditure on goods and services themselves.

Whatever the form of the call on public funds, the question arises of how the 'price' of the given type of expenditure may reasonably be assumed to move in the future, relative to the general level of prices. Labour-intensive expenditures are likely, *ceteris paribus*, to experience above-average price increases (positive relative price effect). By contrast, the prices of investment goods tend to rise less steeply than the general price level; expenditure on fixed investment, therefore, tends to qualify for a negative relative price effect.

The implication of the foregoing is that public expenditure programmes measured before the application of the relative price effect provide the best indication of the volume of goods and services represented by these programmes. This must, however, be qualified by

the proviso already noted that the increase in this volume from year to year is understated to the extent that the productivity of public servants is increasing – probably in all parts of the public sector and in many different ways. The adjustment for the relative price effect does, therefore, embody two elements. The first of these may be regarded as an allowance for the differential price movements in the cost of the various inputs to the public sector, including the cost of goods and services purchased by the recipients of public sector transfers. The second represents a correction for the understatement of the effects of productivity increases inherent in the conventions used for measuring public authorities' output. The extent of this understatement is a matter of speculation. In so far as it becomes possible to correct for it by measuring directly productivity in the public sector, then the output of the public authorities, in the sense discussed earlier, will increase more rapidly from year to year and the relative price effect adjustment will be correspondingly reduced.

Expenditure programmes adjusted for the relative price effect reveal the real cost of the inputs required to produce the services to the public represented by the programmes. Hence estimates on this basis are described as 'in cost terms' in Cmnd 4829.

The calculation of the relative price effect

The effect of applying the relative price adjustment to a constant price volume series of public expenditure estimates is to produce a series which, when expressed as a percentage of gross domestic product at constant prices, will provide the best possible measure of what that percentage will be at the actual prices of each future year. Since the prices of goods and services purchased by the public sector, and particularly the price of manpower, move differentially from prices generally, the necessary adjustment can be made by applying to the expenditure projections as measured at conventional constant prices a correction for the expected differential movements between the prices of the various components of public expenditure on the one hand and the GDP price index on the other.

The forward estimates of expenditure provided by departments to the Treasury in the annual survey of public expenditure are expressed at Survey prices of the year in which each survey is carried out. Survey prices reflect to a large extent the procedures followed by individual departments in constructing the estimates of expenditure for which they are responsible and do not relate to a unique point in time either between programmes or between different parts of the same programme. In order to adjust for this and to put the estimates for the whole range of expenditure on to a

common price basis, to which the relative price effect can be applied, the estimates are first converted from Survey prices to the estimated outturn or current prices of the financial year about to start, for example, in the 1972 Survey they were converted from 1972 Survey prices to 1972-73 estimated outturn prices.

The relative price effect is calculated by reference to the movement in five basic indices compared with that of the GDP factor cost price index over the latest ten year period. These indices are the movement in earnings per head of public authorities' employees, the consumer price index, the retail price index, an index of the prices of investment goods and the index of export prices. Broadly speaking, the earnings index is applied to wages and salaries, the consumer price index to current expenditure on goods and non-labour services and the investment price index to all expenditure on fixed assets. These general rules are, however, varied for certain kinds of expenditure. For example, in accordance with the practice followed in the national income statistics fees paid to general practitioners under the National Health Service are classified as current expenditure on goods and non-labour services. The level of these fees is determined by much the same criteria as govern the fixing of wages and salaries within the public service generally and are subject to a similar relative price effect. Current expenditure on goods and non-labour services within the health programme is, therefore, adjusted by a weighted index of average earnings and consumer prices, reflecting the ratio of fees to other expenditure. Expenditure on land and existing buildings is adjusted by a special factor related to the past movement in the price of land compared with prices generally.

The same method is followed for calculating the relative price effect attributable to transfer payments; the relativity used in adjusting the volume estimates is selected on the basis of the nature of the final expenditure to which each class of transfer payment is thought to give rise. For example, current grants to persons in general are adjusted by the consumer price index and capital grants to the private sector by the investment index. But this general rule is varied to take account of the particular characteristics of the various forms of transfer payment within each expenditure programme and where appropriate the basic indices are combined using weightings related to the pattern of the underlying final expenditure. Current grants to private bodies, for example, tend to be spent partly on wages and salaries and partly on other current goods and services; the average earnings index and the consumer price index are accordingly combined with appropriate weightings so as to reflect this. Similarly, capital grants to schools and universities are adjusted with reference to a weighted average of the investment index and the special land

index. The relativity applied to social security benefits is that of the retail price index. For some kinds of expenditure, mainly subsidies, where none of the basic indices seems particularly appropriate to the type of transaction involved, a nil relativity is assumed.

The calculation of the relative price effect-adjusted constant price series is a computer-based operation. The analysis of the survey returns provides for a summary of the departmental estimates by functional heading (i.e. a more detailed breakdown by function of the 21 programmes distinguished in Cmnd 4829), economic category, and spending authority (central government, local authorities, public corporations). The conversion of these estimates first from Survey prices to estimated outturn prices and then to produce a relative price effect-adjusted series is done by the computer, separately for each cell distinguished in the basic analysis. So far as the calculation of the relative price effect is concerned, the computer input is limited to the five basic relativities listed above. The programme provides for the combination of these indices with the appropriate weightings to form the special indices applied to certain categories of expenditure.

This system is a flexible one and enables a relative price effect-adjusted series to be produced, in total and for each individual programme, on each occasion and at the same time as the basic analysis of the Survey estimates, or of those estimates updated, is produced. Similar analyses by economic category, spending authority and the resource classification shown in Table 3.2 of Cmnd 4829, or combining any of these classifications with each other or with the functional classification, can be obtained with equal facility. The relative price effect and the adjustment from Survey prices to current prices of the first year of the Survey can also be tabulated in terms of any of these classifications. The system provides for the basic price indices and the weighting pattern used in combining them to be altered whenever required.

Revaluation of outturn

The calculation of a relative price effect-adjusted series for the actual expenditure in past years is much simpler. Since the purpose of the relative price effect adjustment is to produce a series of public expenditure estimates from which only the effects of general inflation have been removed, all that is necessary is to inflate or deflate the outturn by the movement in the GDP price index between the year to which the outturn relates and that forming the price basis of the revalued series.

Since the management of public expenditure is concerned with the use of resources, the comparison between such expenditure and the gross domestic product

should be in terms of factor cost. The implication of this is that in revaluing from one price basis to another the GDP *factor cost* price index should be used and that taxes forming part of public sector outlays should be excluded from the revaluation process. This involves deducting the actual amounts of taxation included in the outturn price figures and, after the factor cost figures have been converted to the new price basis, adding back the tax element at the rates in force in the year to which this price basis relates. The changes in taxation have occasionally been such that without this adjustment the movement in demands on resources made by the public sector would be distorted. Using mainly the information which was published in an article by the Central Statistical Office on the allocation of taxes on expenditure by type of expenditure published in *Economic Trends*⁽⁴⁾, it is possible to make an approximate adjustment for the impact of taxation in revaluing the outturn figures for the past. But more work remains to be done in establishing a sound basis for these adjustments, particularly with regard to their effect on individual programmes.

The use and limitations of the relative price effect

Because the index numbers used in calculating the relative price effect for the future are based on the trends derived from past movements, the relative price effect-adjusted forward series provide only a trend view of the effects on the public expenditure projections of expected price relativities. The series cannot, therefore, be regarded in any sense as a forecast of the movements in public expenditure at the current prices of each year. The pattern of this movement will depend upon how the prices of goods and services purchased by the public sector, directly or indirectly, move year by year in relation to the general price movement. In particular the year by year movement in public sector prices will be affected by the year by year incidence of pay awards to the various categories of public sector employees and this is smoothed out in calculations made on a trend basis. It follows that the estimate of the relative price effect will be less accurate in relation to individual programmes than to the total of public expenditure, and that forward figures adjusted for the relative price effect are not suitable for control purposes.

In spite of these qualifications the inclusion of an allowance for the relative price effect in the public expenditure projections represents an important advance in overcoming the limitations of a conventional constant price series as an indication of the cost of public expenditure programmes. Although it forms only an intermediate step in the calculation of an aggregate which, by taking account of tax flow-backs and savings out of transfer payments, offers the best single measure of the

real cost to the economy of changes in total public expenditure⁽⁵⁾, a relative price effect-adjusted series provides an important additional tool for use as background to policy decisions affecting the development and distribution of individual programmes within that total. The flexibility of the processing arrangements assists this process by enabling such a series to be produced readily, in whatever degree of detail is required, on the basis of alternative assumptions about expenditure policies and price movements.

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Form-filling: The Report of the Committee of Inquiry on Small Firms

Note by the Government Statistical Service

Introduction

The Committee of Inquiry on Small Firms (the Bolton Committee) in its report presented in November 1971, devoted the whole of chapter 15 to the problem of reducing the burden of form-filling on firms and made a number of recommendations on statistical forms and procedures. In March 1972 statements by the Prime Minister and the Parliamentary Under Secretary of State for Trade and Industry on proposed government action on these recommendations were made in answers to Parliamentary Questions (*Statistical News* 17.32). This note discusses more fully these recommendations (paragraph 15.34 of the Report, recommendations 1 to 9 and 13).

The Committee recognised that small businesses do not distinguish between administrative and statistical forms and that their disquiet over form-filling in general causes their complaints against statistical enquiries to be all the sharper. This of course makes it the more necessary to look at the need for each enquiry directed to small businesses but it is also relevant to note that the amount of statistical paper received by small firms is not substantial (*Statistical News* 11.16).

As regards statistical enquiries, paragraphs 15.7–15.9 of the Report note that by the use of sampling methods, or by exemptions, the burden of providing statistics on small firms has been very much alleviated. For example, firms in manufacturing industry employing fewer than 25 persons (which account for something like three-quarters of all manufacturing enterprises in the country) are in most trades exempt from completing quarterly and annual statutory returns on production. The Committee acknowledged in paragraph 15.6 that ‘small firms make a significant contribution to the total so that without them... global statistics would be seriously inadequate’. For example, it is estimated from the results of the last full Census of Distribution that small businesses as defined by the Committee accounted for about one-third of all sales and about one-half of people engaged in retailing. There are many services trades and some manufacturing industries where small businesses are also important. The problem is to get information which the government needs, and many in

industry can put to good use, without imposing unfairly, uneconomically or unacceptably on small business firms.

The Committee noted the action being taken by the Government Statistical Service (GSS) to improve the presentation of statistics to promote their use by business, commenting favourably on the booklet *Profit from Facts*, which has been in substantial demand from business firms (*Statistical News* 17.5).

The recommendations of the Committee are very much in line with the policy of the GSS and the developments under way. The objectives underlying them are wholly acceptable and while it is not possible to accept all the recommendations exactly as they were framed, the Government believes that the objectives of most of them should and can be met.

All save one of the Committee's recommendations were expressed in terms rather wider than their application to small firms only and are therefore considered in similarly broad terms in this note.

Recommendation 1

The effect on small firms of all statistical surveys should be carefully considered and every effort made to extend the present practices of sampling and of exemption of smaller firms wherever possible.

There is already widespread use in statistical enquiries of various practices aimed at alleviating the burden of form-filling on smaller firms; these practices include complete exemption from many enquiries, simplified forms in others, and also sampling arrangements. The Committee recognised this and recommended that departments should continue to devote careful attention to this matter, extending present practices wherever possible.

The recommendation harmonises with the Government's own interest in producing statistics in as economic a fashion as possible. There are, however, certain limitations on the use of sampling or the exempting of small firms. Exemption is sometimes only practicable where there is prior information about the full extent of the field to be surveyed, and more important, detailed

information about products or the location of activities can sometimes only be obtained by collecting returns from substantially all businesses.

Recommendations 2 and 3

The Survey Control Unit of the CSO should be given power to amend or veto all statistical surveys not meeting with its approval on grounds of expense, necessity, coverage or design.

This power should extend to all departments of Government and to those quasi-Government bodies which commonly issue statistical enquiries.

It is not considered that a system giving the CSO veto powers, perhaps based on statute as suggested in the Report, would be consistent with the traditional system of departmental responsibility in this country. However, the need for strengthening existing arrangements has been accepted, and this matter was dealt with in a statement by the Prime Minister on 14 March 1972, (*Statistical News* 17.32).

Recommendation 4

The use of statutory powers for the collection of statistics should be strictly controlled and in all cases explicitly justified.

It has been traditional practice to seek the voluntary co-operation of industry wherever possible in the supply of information for statistical purposes on the grounds that it is more desirable to operate under such arrangements rather than use statutory powers. The consequence of this policy is that perhaps one-half or more of current statistical enquiries directed to businesses rely on a voluntary response, which is rarely complete but is sufficiently high to yield results adequate for the purpose required. In situations where it is necessary to secure a virtually complete response if the results are to be of value, e.g. censuses and true random samples, statutory backing is essential and this is the principal reason for the use of such powers.

The work of the GSS is conducted in a way which is in line with this recommendation. However, the criteria used for judging the need to invoke statutory powers could with advantage be more explicitly formulated and justified, and it is proposed to review all existing statutory statistical forms directed to businesses to ensure that these criteria are met.

Recommendation 5

It should be clearly stated on every statistical enquiry whether or not its completion is obligatory.

There is at present a clear distinction between statutory based and voluntary statistical enquiries in that the form or covering document in the former case always makes it clear that completion is obligatory under the

appropriate legislation (almost always the Statistics of Trade Act) whereas, of course, there are no such references if completion is not obligatory. Moreover, all enquiries conducted on a voluntary basis will have been launched by the request for co-operation couched in terms which will have made clear the voluntary nature of the operation.

In order, however, to ensure that in all cases the wording used on forms is appropriate to the status of the enquiry, and does not mislead recipients, it is proposed to review all Government statistical forms and make any necessary changes so that statutory and non-statutory forms are clearly distinguished.

Recommendation 6

The development of the Central Register of Businesses is strongly commended, and it is hoped that resources adequate to ensure rapid progress will be devoted to it.

It is recognised that such a register could be of great value for various reasons and the Business Statistics Office is actively exploring this possibility.

Recommendation 7

In this context the CSO should reconsider the question of the preparation and publication of an enterprise census which would provide comprehensive coverage of all firms as soon as possible as part of its plans for the development of business statistics.

This recommendation is closely related to recommendation 6. The creation of a Central Register would go a long way towards the provision of comprehensive information about enterprises: equally it would be difficult to obtain comprehensive information or conduct an enterprise census without a satisfactory register.

Recommendation 8

The true cost of any statistical exercise and not merely the often comparatively small proportion of cost falling on Government estimates, should be fully taken into account before starting an enquiry, and methods chosen which involve the least total cost rather than least Government expenditure.

Before launching new or revised statistical enquiries, departments make an assessment of the burden on respondents of the enquiry. The coverage and content of the enquiry is discussed with representative bodies or advisory groups and sometimes with typical individual respondents. Pilot surveys may also be taken.

These negotiations together with previous experience in conducting various types of enquiry provide a good qualitative assessment of the relative burdens of requests for information in various fields. This knowledge is fully

taken into account before enquiries are launched. It is the case therefore that the GSS endeavours to conduct surveys in the spirit of the first part of this recommendation. (The matter of quantitative assessments of costs is discussed under recommendation 9).

The latter part of the recommendation underlines the desirability of sampling, simplified forms and other devices which is discussed above (recommendation 1). It also requires, as far as possible, matters such as the avoidance of duplication in questions asked in surveys, the standardisation of requirements, the easy transfer of data between departments, and various other features, to be observed in the conduct of operations. These are all aims to which the GSS will continue to pay regard.

Recommendation 9

Any proposal for a new or revised statistical exercise should include an estimate in man-hours of the time required by respondents to complete the form.

The GSS accepts the general principle underlying this recommendation which is that some assessment must be made of the burden on respondents of statistical enquiries.

At present, departments endeavour to follow this principle in the conduct of their business. The translation of qualitative assessments into quantitative estimates, however, does raise problems. First, it is open to question whether good quantitative estimates can be made in some instances; some work has been done in this direction with varying degrees of success. Second, progress in this field would require further help from respondents and might add to the overall burden of form-filling placed on them by government.

It is hoped to go some considerable way towards meeting this recommendation. The 'inventory' of statistical surveys of the Survey Control Unit, the records of which were used in producing evidence on form-filling burdens for the Committee, can be expanded and refined to produce very detailed analyses of the impact of statistical surveys on respondents. Further it is proposed that the practice of making man-hour estimates which has been pioneered in some recent statistical surveys be extended to other enquiries wherever good results without undue cost seem possible.

Recommendation 13

All statutory barriers to the passage of statistics between different departments should be stringently examined and demolished wherever possible. We regard this as of particular importance in the case of statistics collected by the Inland Revenue.

So far as information collected under the Statistics of Trade Act is concerned, Ministers can and do give permission for the passage for statistical purposes of unprocessed data to other departments. In the case of voluntary enquiries, departments sometimes find it necessary to assure businesses that the basic information will not be seen by more than the small group of people processing it for the primary purpose for which it is wanted. However, the desirability is accepted, in the interests of economy and the fullest use of data, of seeking to persuade industry to allow information to be used fully and confidentially by the GSS.

The position is different for information useful for statistical purposes collected in the course of administration. In general, information which businesses are required to give is only used for the specified purposes, although of course, aggregated statistics are often compiled from the raw data and published. This is a safeguard for businesses against the use of information for purposes other than originally intended. However, statisticians in the collecting departments are able to prepare analyses from the data and these can usually be put to general statistical use.

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

Reference

Small Firms: Report of the Committee of Inquiry on Small Firms (the Bolton Committee) (HMSO) November 1971 (Price £2.55 by post £2.68).

Developments at Business Statistics Office

R. F. L. Sims, *Senior Principal, Business Statistics Office*

The Business Statistics Office is the principal Government agency for collecting statistics from business firms. It was created at the beginning of 1969 out of the former Board of Trade Census Office as part of the programme to re-organise Government statistics along more centralised and integrated lines. The office is responsible for the introduction of a new system of industrial statistics (see *Statistical News* 1.7), for statistics of distribution and services, and for the development of a Central Register of Businesses (see *Statistical News* 4.5). The Office is administered by the Department of Trade and Industry but its policy is decided by an inter-departmental committee chaired by the Director of the CSO.

The decision to move the former Board of Trade Census Office from Eastcote in the north-western suburbs of London to Newport in Monmouthshire was taken in April 1966 and confirmed by Ministers in April 1968.

Preliminary work on the site of the new offices for Business Statistics Office on the western outskirts of Newport began in the Autumn of 1969 and the main contract for the construction of the present phase of the development, designed to house 1,200–1,300 staff, was let in January, 1970, and work started immediately. The target completion date of the initial building was December 1972. Progress on the construction of the new building has been so good that it has been possible to bring practically all Business Statistics Office activities under one roof several months ahead of schedule. The fact that the present complex has been completed well within the target is due to the excellent relationship which has existed throughout the planning and development stages between Business Statistics Office, Department of Trade and Industry, Department of Environment and the consulting Architects, Sir Percy Thomas & Son, and to the efforts of the main contractor, E. Turner & Sons Limited of Cardiff and the numerous sub-contractors.

The new offices have been handed over in stages as parts of them were completed, the computer block in the spring of 1971 when a 1906A ICL computer was installed and commissioned, the data block at the end of 1971, the block containing the staff restaurant, conference and recreation accommodation in April last,

and now the main office block. In the meantime the Business Statistics Office had to conduct its affairs with its staff dispersed in two temporary offices in the centre of Newport, some 3 miles from the new building, and with a sizeable but diminishing contingent continuing to operate from Eastcote. This dispersal of resources over four sites, including the new permanent one, created many difficulties additional to those normally associated with the movement of a big office and a large turnover of staff. Moreover the move took place when the office was making a fundamental change to the existing system of industrial statistics. Of the 800 or so staff at present in Business Statistics Office about 80 with previous experience of business statistical work have transferred from Eastcote, 200 have come from other Department of Trade and Industry offices and other departments and no fewer than 520, mostly clerical staff, have been recruited locally. However despite difficulties arising from absorbing new staff and from introducing a new computer the office is now more than two-thirds the way through introducing the new system of industrial statistics. It is also in the midst of a major census of distribution.

The concentration of the Business Statistics Office under one roof will go a long way towards improving lines of communication, both internally and with our contacts outside the Business Statistics Office, in other departments and in industry. Poor communication has been our major difficulty over the past few years.

The new office is in an attractive setting with a woodland screen at the back and playing fields in front. Some old trees have been retained and supplemented by fresh planting and by lawns. Car-parking space is available for all staff and special provision is made for visitors. The new building is about 3 miles from the centre of Newport and the railway station but visitors can be met at the station. There is a good rail service to and from London, fast trains at hourly intervals covering the journey in about two hours. The opening of the M4 motorway has put Newport within little more than 2 hours travelling time of London by road. Being 3 miles from the Newport shopping centre has its disadvantages for staff, but there is in hand the provision of some on-site facilities.

Apart from working space for 1,200 to 1,300 staff, the

new building provides accommodation for meetings and conferences and for staff recreation, including provision for meals and refreshment. All these facilities are available in the recreation block which is separate from working areas so that the confidentiality of information stored in Business Statistics Office is properly safeguarded.

The development of the Business Statistics Office and its work is continuing. Within the next two or three years, apart from completing the introduction of the new system of industrial statistics, the office will assume responsibility for the collection of statistics for the construction industry and for retail sales and related short-period distributive and service trade inquiries as part of the continuing process of centralising the collection of business statistics. Britain's entry into the Common Market will bring further developments in which the Business Statistics Office will play a major role. There is room on the present site for more office space if these and other new tasks which the office will have to undertake necessitate adding to the present accommodation.

Readers may wish to note that the full address of the office is:

Business Statistics Office
Cardiff Road
Newport, (Mon)
NPT 1XG

Telephone: Newport (STD 0633) 56111

Arrangements are being made to provide Telex facilities in the new office; the service number will be notified as soon as it is known.

Survey of collections of economic statistics in the United Kingdom

Note by the Committee of Librarians and Statisticians

This is a shortened version of a report to the Office for Scientific and Technical Information (OSTI) which has appeared as No. 5114 in the OSTI Report Series.

This report is a brief description of a survey of collections of economic statistics in United Kingdom libraries and other institutions, an investigation supported by a research grant from the Office for Scientific and Technical Information and undertaken on behalf of the Library Association and the Royal Statistical Society by the Committee of Librarians and Statisticians (formerly the Joint Working Party of Librarians and Economic Statisticians), see *Statistical News* 4.38. The Committee was established jointly by the Library Association and the Royal Statistical Society as a result of the 1965 Conference on Librarian-Statistician Relations in the Field of Economic Statistics at which it became clear that research workers were frequently unaware of the existing collections of materials and of the services available to exploit them; while librarians in their turn were not always aware of the needs of statisticians, and many of the traditional library services of the country did not provide what the statisticians needed⁽¹⁾. The Committee was accordingly set up to design a programme of work which would encourage the improvement of services available to research workers using statistical materials, and one of its first tasks was to organise a systematic survey of the resources in economic statistics of librarians and other organisations in the United Kingdom. Little real information was available on the extent of collections outside London and the degree to which they could relieve research workers from frequent visits to London.

The investigation was started in 1967 and completed in 1971. Initially Mrs Ramonda Jo Roth was appointed as Research Assistant to carry out the preparatory work and to conduct a pilot survey. Towards the end of 1968 work on the main Survey was taken over, as Consultant to the Committee, by Mr Peter R. Lewis then Lecturer in Library Studies at the Queen's University of Belfast, with the assistance there of Miss Rosemary Young.

The pilot survey

The pilot survey covered 18 organisations, primarily in the Greater London area, although three provincial

libraries were included to check the validity of the London results. The sample included universities, central government, professional associations, and public libraries, trade associations, trade unions and business firms. Follow-up interviews were made for the 15 London libraries and the three Southampton libraries.

The questionnaires for the pilot survey were designed on the assumption that libraries particularly, and probably the other types of organisation also, would have a recognisable policy for the acquisition, holding and disposal of statistical material in which they were interested and on which they would be able to answer detailed questions. But this assumption was not borne out, and it appeared that a library could only state its policy by extracting a list of serial statistical publications received, classifying the items, and then deducing its policy from the results. Libraries of business firms, trade associations and trade unions found it virtually impossible to complete the questionnaire at all. It seemed that their parent organisations would only be interested, as a general rule, in one class of statistical material, and that the very complexity of the questionnaires designed for the whole field limited responses from such organisations. Only personal visits from the Research Assistant to all organisations could have produced the results aimed at by the Committee, and this could clearly not be accomplished within the funds and time available.

Modification of the project

The findings of the pilot study thus led to a considerable modification of the project. Organisations which might hold useful statistical material were divided as follows, depending on the ease of interrogating them about their collections:

- Group A. Public libraries; university libraries; professional associations' libraries, and government libraries.
- Group B. Business firms; trade and other associations, and trade unions.

Group A contained, in the main, all libraries with formally organised collections of material able to reply with moderate ease to a detailed questionnaire on the current statistical titles received as well as to give details of back holdings. Organisations comprising Group B on the other hand were felt to be likely to respond only in general terms to enquiries about their holdings of material, and they were invited to answer a separate, relatively simple and short questionnaire about their holdings and their availability to research workers.

Group A Survey

The mailing list for the questionnaire was compiled from standard directories and consisted of all municipal public libraries serving a population of 100,000 or more, and some other public libraries regarded for other reasons (e.g. regional importance) as having a potentially substantial interest in the field: all national libraries and main university libraries in the United Kingdom, and the libraries of relevant departments and institutions in the academic sphere of economics; the libraries of relevant professional associations and learned societies, and of government departments having a general or specialised interest in economic affairs.

The basis for the questionnaire sent to all these organisations was a check-list of current titles of all known statistical serials relating to the United Kingdom and its constituent parts. The bulk of the titles in the check-list of course related to Government publications, mostly departmental (non-Parliamentary) but included some titles published as Command Papers and House of Commons Papers. Response to the questionnaire was excellent and as a result it was possible to compile a basic *Union list of statistical serials in British Libraries*, which became the third publication in the LA-RSS Resources in Economic Statistics Series⁽²⁾.

British Parliamentary Papers are important both because they are a primary source of official statistics throughout the nineteenth and early twentieth centuries, and because a number of current serials published as Parliamentary Papers, not primarily statistical in form and so not included as individual titles on an already large check list, nevertheless contain statistical information in text or appendices which are of value to the economist. A general question, therefore, was included in the questionnaire seeking broadly to establish the size and limits of respondents' collections of Parliamentary Papers as a whole. A summary of the answers to this question is included in the Union List. Information was also obtained in broad terms on the extent of respondents' collections of the statistics of overseas countries and other parts of the world.

Group B Survey: Selection of addresses

The principal criteria for the selection of organisations to which the questionnaire was sent were as follows:

- (i) Size of the organisation. In the business and commercial sector, only the larger organisations are likely to be able to justify in extent and intensity of use the expense of maintaining significant collections of statistical material. (However, some kinds of commercial organisations, such as market research agencies, depend significantly on the use of statistics however relatively small they may be: and these were not excluded on grounds of size).
- (ii) Relevance to the field of economic research. Many smaller organisations were canvassed if their aims and activities suggested that they would make significant use of economic statistics: e.g. trade associations, chambers of commerce, professional associations.

The sources from which the mailing list was compiled on these criteria were principally as follows:

The Times 300: leading companies in Britain and overseas. Enlarged edition, 1967.

Financial Times: guide to the actuaries' share-index. Stock Exchange Year Book 1968. (Used principally to verify addresses of public companies etc. listed in the above two sources; and as a control register for this category).

Directory of British associations: edition 2, 1967/8. Ministry of Labour: directory of employers' associations, trade unions, etc., 1960 (as amended to May 1969).

Trades Union Congress: report of the 100th annual congress 1968. (pp. 18-60, names and addresses of secretaries and delegates).

Aslib Economics Group: list of members (as amended to July 1968).

Royal Statistical Society: list of Fellows 1968.

From these sources, and from following up further suggestions made by respondents during the course of the Survey, a total of 2,689 addresses was compiled. From the initial mailing, 31 questionnaires were returned by the Post Office as undeliverable: and the effective size of the mailing-list was thus finally 2,658.

Group B Survey: Results

The overall response rate was 40 per cent. It was noticeable that the category of associations (in which were included trade associations, research associations, chambers of commerce, professional associations, etc.) responded, at 52 per cent, at twice the rate of business firms, trade unions and market research organisations, from each of which there was a response rate of

approximately 25 per cent. But with the total number of respondents a substantial proportion were not willing to give access to other research workers in any circumstances. Overall, the proportion of organisations which were willing to give access was about 65 per cent of respondents, the behaviour of Associations at 70 per cent was better than the overall rate and, as might be expected, that of business firms substantially worse with only 44 per cent of those responding positively being able to allow publication of their addresses.

The publishable part of the information obtained, relating to those organisations in principle willing to admit outside individuals to the use of their collections (although with the right of refusal in particular instances and never without prior arrangement) was published as *Economic statistics collections: a directory of research resources in the United Kingdom for business, industry and public affairs*⁽³⁾.

The table below gives the distribution of collections of statistical materials by regions of the United Kingdom, and distinguishes those which may be available to research workers. It shows clearly that more than half the statistical collections counted are within the London postal districts – a proportion which remains the same in respect of collections inaccessible to, as well as open to, other research workers.

Respondents were also asked to indicate which of

ten broad groups of subject matter their collections contained. Most respondents indicated an interest in more than one of these subjects groups in their collections so that the total of all particular interests mentioned is much greater than the number of all respondents. But the overall pattern is of some interest: the general and miscellaneous groups of statistics forms the basis of about 50 per cent of all listed collections. After this the most popular subject areas in these collections are production statistics, occupying some part of about 45 per cent of them, and labour and wages statistics, at 34 per cent. Financial and company statistics ranked fairly high (26 per cent) and among those ranking at a relatively low level of interest were prices (20 per cent) and external trade and payments (18 per cent). The least represented subject area was land use and planning (11 per cent). All these proportions were reflected in the regional situations, as well as the national picture.

References

- (1) *Conference on Librarian-Statistician relations in the field of economic statistics*, London 1965. (London, Library Association 1966).
- (2) *Union list of statistical serials in British libraries*, LA-RSS Resources in Economic Statistics 3, SBN 85365 076 4 (London, Library Association 1972, Price £2.50).
- (3) *Economic statistics collections: a directory of research resources in the United Kingdom for business, industry and public affairs*, LA-RSS Resources in Economic Statistics 1, SBN 85365 132 9 (London, Library Association 1970, Price £2.00).

Type of Organisation				London	England and Wales (exc. London)	Scotland	N. Ireland
Associations							
In directory	...	...		101	43	14	5
Not published	...	...		42	21	3	1
Total	...	...	...	143	64	17	6
Business firms							
In directory	...	...		31	34	4	—
Not published	...	...		32	48	2	—
Total	...	...	...	63	82	6	—
Trade unions							
In directory	...	...		12	3	—	—
Not published	...	...		2	2	—	—
Total	...	...	...	14	5	—	—
Other respondents							
In directory	...	...		20	24	3	2
Not published	...	...		—	2	—	—
Total	...	...	...	20	26	3	2
All respondents							
In directory	...	...		164	104	21	7
Not published	...	...		76	73	5	1
Total	...	...	...	240	177	26	8

Notes on current developments

POPULATION AND VITAL STATISTICS

Mid-1971 based population projections for England and Wales

The most recent *Registrar General's Quarterly Return for England and Wales* contains a summary of the latest population projections. The base population takes into account the preliminary results of the 1971 Census on the size, age and sex structure and marital condition of the population. The Census showed that the previous mid-year estimate as carried forward from the 1961 Census was too high (see *Statistical News* 16.17), so there is a discontinuity in the starting point of the 1971-based projections as compared with the 1970-based set published a year ago.

The latest data on fertility, and the trend over recent years, have led to the assumption in the 1971-based, projections of an average completed family size for future marriages of some 2.33 live births. In the previous projections it had been assumed that the figure would remain at an overall average of about 2.4, the likely final figure for the marriage cohorts of the late 1950s and early 1960s. More recent marriage cohorts, particularly those women marrying under 20 years of age, have shown lower fertility in the early years of marriage. The latest assumptions on mean completed family size involve some reduction in future for women marrying before age 20 and thus some narrowing in the differential between them and women marrying at older ages.

The results of the 1971 Population Census have led to an upward revision in the estimate of net external emigration over the past decade and this, too, has been reflected in assumptions about future net migration. The 1971-based projections give a projected rate of increase in population which averages around 0.45 per cent per annum over the 40 year period as compared with 0.6 per cent per annum in the previous projections.

Last year, for the first time, a detailed analysis of the projections, the methods and the assumptions for the United Kingdom, Great Britain, Northern Ireland, and Scotland as well as England and Wales were published in the booklet *Population Projections 1970-2010*. A new edition of this booklet will be published shortly and will contain a discussion of the latest projections.

References

The Registrar General's Quarterly Return for England and Wales No 493 Quarter ended 31st March 1972 (HMSO) August 1972 (Price 23p)
Population Projections 1970-2010 Prepared by the Government Actuary, Office of Population Censuses and Surveys (HMSO) November 1971 (Price £1.20)

1971 Census of Population – voluntary follow-up survey of incomes of Great Britain

In the February 1971 issue of *Statistical News* (12.14) it was explained that a one per cent sample survey of incomes would be carried out as a follow-up to the census. However, because of the reaction in some quarters to the census it was decided to postpone the survey from June 1971 to this year. An announcement that it was to go ahead was made by the Secretary of State for Social Services in a written reply to a question in the House of Commons on March 22nd 1972.

A small pilot enquiry was carried out in March and April to test public reaction and levels of response and as these were favourable the bulk of the questionnaires were posted out on June 21st.

One effect of the postponement of the enquiry was that the census field organisation could not, as previously intended, send out the questionnaires and this had to be done centrally at the Titchfield office of OPCS and in GRO Edinburgh. In all other respects the survey is unchanged. It is a voluntary postal enquiry covering all persons aged 15 and over in a one per cent sample of households and of certain categories of people living in boarding houses, hospitals and similar institutions.

About 400,000 people in Great Britain have received questionnaires asking for income information under six headings: income from employment, income from self-employment, student grants, private pensions, state pensions and benefits and other income. A small sub-sample of households will later be interviewed to provide checks on the quality of the data and also to obtain some information not asked for in the postal questionnaire.

The information collected in this enquiry will be linked to the census data previously obtained and the combined records will be used to produce analyses of income cross-classified with demographic, economic and social characteristics of the population.

The survey including the follow-up interviews will be completed by the end of October and it is expected that the first results will be available by the summer of next year.

Sampling from the electoral register

Members of the Social Survey Division of the Office of Population Censuses and Surveys have made available, over the years, their detailed knowledge of the electoral registers in a series of published notes and articles. The latest of these is now available and contains information intended to be of use when drawing samples for interview and postal surveys. Whilst in principle the electoral registers are a simple sampling frame, in practice complications arise that make their use by no means straightforward.

A description of the contents and general layout of electoral registers is given pointing out, for example, variations between different types of area. The selection of a sample of individuals or a sample of addresses is discussed; the latter includes a description of a method to ensure that all addresses have an equal probability of selection should this be desired. The booklet goes on to discuss some practical difficulties – relating the polling district to the local authority, the best form of address to use in a postal survey when the full postal address is not available (including a description of a postal index maintained by the Social Survey Division) and so on. The paper concludes with a review of the strengths and weaknesses of the register as a sampling frame.

Anyone contemplating using the electoral registers for the first time will find the guide rewarding; those familiar with them may be interested to compare their procedures with those described.

Reference

The Electoral Register by Sheila Gray. New Sampling Series No. 3 (Not on general sale. Available to *bona-fide* enquirers from OPCS, Social Survey Division, Atlantic House, London EC1).

1971 Census of Population – voluntary follow-up survey of qualified manpower

At the request of the Department of Employment the Office of Population Censuses and Surveys is shortly to carry out a pilot survey of people who, in the 1971 Census, were recorded either as having a professional or higher educational qualification themselves, or as working in an occupation with a sizeable proportion of such people.

Information is required to help formulate future Government policy in the field of qualified manpower, on employment, education and absorption into the labour market and the pilot is designed to show whether such information can be obtained successfully by a voluntary postal follow-up to the census. Ques-

tions will cover career history, relationship of qualifications obtained to the jobs held at the time of the Census, training provided by employers, income from employment, as well as further information on qualifications. Not all the questions will apply to all potential respondents, so that different questionnaires will be sent to five groups defined on the bases of age, sex and marital status, and qualification.

For the pilot survey, questionnaires will be sent to some 500 people in each group and later a small number will be interviewed. If the pilot survey is successful a full scale survey covering about 50,000 people will be carried out in the spring of 1973.

1971 Census in Scotland

Several county reports of the 1971 census have now been published, and it is hoped to complete the series this year. Further information can be obtained from The General Register Office (Scotland), New Register House, Edinburgh EH1 3YT (Tel: 031-556 3952).

Scottish statistics

The Registrar General's return for the first quarter of 1972, recently published, contains projections of the population of Scotland to 2011 and overseas migration tables for the second half of 1971, in addition to the usual quarterly tables.

HEALTH AND SOCIAL SECURITY

Sickness absence

The Proceedings of the Royal Society of Medicine, Volume 65 Number 6 June 1972 contain an account of a meeting in March 1971 on the subject of sickness absence. Three papers were presented to the meeting which was a joint meeting of the Epidemiology and Preventive Medicine and Occupational Medicine sections.

- (i) 'Recent trends in certificated sickness absence' by F. E. Whitehead, Department of Health and Social Security.
- (ii) 'Sickness absence in the civil service' by Dr D. Thomson, Civil Service Department.
- (iii) 'International comparisons of sickness absence' by Dr P. J. Taylor, TUC Centenary Institute of Occupational Health, London School of Hygiene and Tropical Medicine.

Politics and the statistics of poverty

In July 1971 the Department of Health and Social Security published a report on *Two Parent Families – A study of their resources and needs in 1968, 1969 and 1970*. The report was based on a re-analysis of the Family Expenditure Survey.

This report is critically reviewed by Professor Townsend in *The Political Quarterly* (Volume 43 No. 1) for January-March 1972. A reply to his criticisms by J. R. Howe and F. E. Whitehead of the Statistics and Research Division of the Department of Health and Social Security is printed in the following edition of *The Political Quarterly* (Volume 43 No. 2) for April-June 1972.

HOUSING AND CONSTRUCTION

House condition survey of England and Wales 1971

Preliminary results were announced in May of the house condition survey in England and Wales, which was carried out by the Department of the Environment. This was on similar lines to the first survey by the Ministry of Housing and Local Government in 1967 (*Statistical News* 1.17 and 2.18).

There were an estimated 1.2 million unfit dwellings compared with 1.8 million in 1967; the inspectors judged that 0.7 million and 1.1 million respectively, would be best dealt with through clearance area action. The number of dwellings which lack one or more of the basic amenities (bath, washbasin, sink, hot water to these three points, and internal WC) had fallen by 1.0 million to 2.9 million.

The original sample of some 6,000 dwellings was revisited to reduce, so far as possible, the sampling errors of estimates of changes in the interim period. The assessments were again made by public health inspectors seconded to the Department for the survey.

A report on the survey is to be published in the autumn in the Housing Survey Reports series and a selection of tables will appear in the first issue of *Housing and Construction Statistics*.

First floorspace census

In June the Department of the Environment published for the first time comprehensive statistics of industrial, commercial and office floorspace in England and Wales and its distribution by regions and local authority areas. The figures refer to the 1 April 1967 and information is also provided on changes in the following 12 months.

The census was taken mainly to meet the needs of town planners in central and local government but it is already clear that it will be used for market research purposes and in studies of the economics of industrial, shop and office location.

The basic information was supplied by Inland Revenue Valuation Offices. Valuation officers measure up premises when they are valuing them for rating purposes and since 1964 they have been making returns to their headquarters of the floorspace in new hereditaments, hereditaments undergoing structural alteration or subject to

change of use. Aggregated figures for England and Wales and regions have been published in the *Reports of the Commissioners of HM Inland Revenue* and a detailed analysis of changes from 1964 to 1967 was published by Ministry of Housing and Local Government in 1968 in the first booklet in the current series. In 1967 the Valuation Offices undertook for the Ministry of Housing and Local Government a comprehensive census of floorspace in these uses. Figures were assembled of the total area of floorspace in each local authority area in each use, analysed by size of hereditament. This information, after a thorough and time-consuming editing process, forms the basis of the present publication. Information on changes in the year 1967/8 was collected at the same time as the census was being taken and the collection of data on changes is now a regular annual exercise. Together the census and the information on changes provide a basis for estimates of the stock of floorspace in later years. Further censuses will be taken at intervals, the next probably in 1974.

Use classes employed in these publications are as defined for valuation purposes and are not 'pure' categories; hereditaments are allocated to classes according to their dominant use, so that an office, for example, which is part of an industrial hereditament is included in the figures for industrial floorspace. There are also some exclusions, mainly large industrial plants, where the methods of valuation employed do not involve measuring up floorspace. Any comparison with floorspace figures from other sources needs also to take account of the method of measurement. Valuation officers normally, but not universally, measure the effective floor area which is the net internal area of buildings excluding piers, staircases, lifts, passages, WCs, etc.

Annual changes for the three years before the 1967 census may be described as experimental in that they were a first attempt by the Valuation Offices to collect such data. Certainly the annual change data received after 1967 show substantially larger gross reductions in and additions to floorspace and although a sample analysis of back data failed to reveal any evidence of under-recording in the 1964 to 1967 period, the series proper should be regarded as having started in 1967.

Census results indicate that the floorspace of factories and other industrial properties in England and Wales in 1967 amounted to 2,400 million square feet – some 50 square feet per head of population, compared with about 600 million square feet in shopping use and 400 square feet in office use. The South East region, with about one third of the population of England and Wales, had half the total office space but only a quarter of the industrial floorspace. The region also has the

largest offices and the smallest factories – on average only half the size of those in the Northern region. Shopping floor space was more evenly distributed in line with population, and there were no marked differences between the regions in the size of shops. The predominance of the South East, and especially London, in the allocation of office space is due to both commercial and government offices. More than one third of all central government office space is in London alone. Outside the South East, the North West region has more central government offices than any other region. The census figures also show that 89 local authorities had more than 1½ million square feet of shopping floor space. Among them are included all the London boroughs except Barking. Westminster headed the list, followed by Birmingham, Manchester and Liverpool; all these had more than 10 million square feet of shopping space. Westminster also headed the list for commercial office space followed by the City of London, Manchester and Camden. With 2½ million square feet of central government office space Westminster also heads the list for this use category.

The floorspace census was the first exercise of its type and returns required very careful editing. Queries on the credibility of returns were put to the Chief Valuer's Office who sorted them out with individual valuation officers, inevitably a time-consuming process. Publication has also been delayed by processing difficulties. The Department of the Environment plans to produce a third booklet showing detailed annual changes from 1967 to 1969 towards the end of this year and a fourth showing changes from 1969 to 1972 by the middle of 1973.

Reference

Statistics for Town and Country Planning, Series II *Floorspace No. 2, Floorspace in industrial, warehouses etc, shopping and office use* (HMSO) June 1972 (Price £1.45, by post £1.53)

MANPOWER AND EARNINGS

Labour turnover

Estimates of labour turnover derived from Department of Employment earnings and employment surveys in recent years were brought together and discussed in a recent article in the Department's *Gazette*. They include New Earnings Survey estimates of the proportions of employees in the various industries, occupations, age-groups and regions who had been employed by their employers for under one year at the time of the survey and, for manufacturing industries, annual rates of engagements and discharges derived from employment (L return) surveys.

Reference

Department of Employment Gazette April 1972 pages 347 to 351 (HMSO Price 52½p)

Occupational classification

The Department of Employment has produced a new classification entitled *Classification of Occupations and Directory of Occupational Titles* (CODOT) to be published in September 1972 and available from HMSO (Price £7.00). Some 3,500 occupations are separately identified, defined and coded in the classification and these, together with the residual occupations in the occupational groups, cover all occupations in Great Britain. Like the International Standard Classification of Occupations (ISCO) the basic principle of CODOT is classification according to work performed. Occupations are defined according to what the worker does and grouped according to similarity of work performed.

The classification has a four-tier structure of major, minor and unit groups and occupations and can be operated at any of the four different levels according to the user's requirements. A decimal system of coding is used.

Although primarily intended for use in the Department's employment and careers guidance services CODOT will be available to anyone wishing to identify and classify occupations and will also serve as a reference document for a new system of occupational statistics. A list of key occupations for statistical purposes (KOS) has been prepared in consultation with interested organisations and will be published both in CODOT and the *Department of Employment Gazette*. All key occupations are defined in CODOT and grouped in the same broad structure. KOS will be used by government departments and industrial training boards as a base for occupational statistics including those collected in the next Census of Population.

INDUSTRIAL STATISTICS

Historical series of index of industrial production

The May issue of *Economic Trends* contains an article introducing a new historical series for the Index of Industrial Production, extending over the period 1948 to 1971. These long-run series are based on a careful analysis of the historical data, and are provided in much greater industry detail than the earlier published index numbers extending over the period. The original data was first of all corrected for changes in the Standard Industrial Classification (SIC) which have been made during this extended period, in order to bring the series for the whole period 1948–1971 onto the 1968 SIC. These series, calculated in some considerable degree of industry detail on the different base years, were then linked together by a statistical method developed by the CSO to form a continuing run over the whole period for each industry. The final step was to aggregate the data to form the totals, using a method of chain linking.

The resulting series enable growth rates to be compared between industries over the period, and it can be seen that there has been a marked divergence between the leaders and the laggards. For example the chemicals industry has grown at an annual compound rate of over 5 per cent, having increased in size by about 5 times between 1948 and 1971, whereas the coal mining industry has declined by about 50 per cent since the peak output reached in 1954. The gas industry, after declining in the late 1950's, has since then grown rapidly, and between 1966 and 1971 reached the top of the growth league at 12 per cent per annum.

Apart from affording comparisons such as these, the new historical series will provide long runs of comparable index numbers which will be of value to economists and to model builders.

1968 Census of Production

Tables providing lists of the separate parts of the Report on the Census of Production for 1968 which had been published and were available from Her Majesty's Stationery Office were given in *Statistical News*, November 1971 (15.17), February 1972 (16.22) and May 1972 (17.25). The following table provides a list of the further parts which have now been published.

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

Report Part No.	Description	Standard Industrial Classification Minimum List Heading
4	Chalk, clay, sand, etc	103
5	Metalliferous mining and quarrying	109 (1/2)
11	Milk and milk products	215
18	Starch and miscellaneous foods	229 (2)
19	Brewing and malting	231
26	Lubricating oils and greases	263
30	Pharmaceutical chemicals and preparations	272
31	Toilet preparations	273
35	Dyestuffs and pigments	277
42	Surgical bandages, etc.	279 (6)
44	Iron and steel (general)	311
48	Copper, brass and other copper alloys	322
49	Miscellaneous base metals	323
53	Industrial engines	334
54	Textile machinery and accessories	335
56	Mechanical handling equipment	337
57	Office machinery	338
63	Miscellaneous (non-electrical) machinery	339 (5) (6) (8) (9)
65	Ordnance and small arms	342
102	Jute	415
107	Narrow fabrics	421
109	Canvas goods and sacks	422 (2)
114	Leather goods	432
120	Dresses, lingerie, infants' wear, etc.	445
121	Hats, caps and millinery	446
124	Footwear	450
133	Bedding and soft furnishings	473
134	Shop and office fittings	474

Reorganisation of industrial statistics

A further 14 industries will be covered by the new system of quarterly sales enquiries from the third quarter 1972 bringing the total number of enquiries operative to 119. Details of previous developments in the new system have been fully reported in earlier issues of *Statistical News*.

The 14 industries are:

Sugar – MLH 216

Fertilizers – MLH 278

† Electrical Machinery – MLH 361

Insulated Wires and Cables – MLH 362

† Telegraph and Telephone Apparatus and Equipment – MLH 363

† Radio and Electronic Components – MLH 364

* Gramophone Records and Tape Recordings – MLH 365/1

*† Other Broadcast Receiving and Sound Reproducing Equipment – MLH 365/2

† Electronic Computers – MLH 366

† Radio, Radar and Electronic Capital Goods – MLH 367

Electric Appliances Primarily for Domestic Use – MLH 368

Electrical Equipment for Motor Vehicles, Cycles and Aircraft – MLH 369/1

† Primary and Secondary Batteries – MLHs 369/2 and 369/3

† Electric Lamps and Light Fittings, Wiring Accessories, etc. – MLHs 369/4 and 369/5

† These enquiries will replace existing quarterly enquiries into production of rotating electrical machinery; deliveries of motor control gear; sales, new orders received and orders on hand of rectifier plant (MLH 361); deliveries and orders on hand of telecommunication equipment (MLH 363); sales of passive components (MLH 364); deliveries of dictating machines (MLH 365/2); deliveries and orders on hand of electronic computers and related equipment (MLH 366); deliveries and orders on hand of electronic capital equipment; sales of hearing aids (MLH 367); stocks and sales of accumulators (MLH 369/3); production and deliveries of electric lamps (MLH 369/4); deliveries of electric light fittings (MLH 369/5).

* These enquiries will replace existing monthly enquiries into production and sales of gramophone records (MLH 365/1); production and sales of electronic consumer goods; production, deliveries and stocks of tape recorders (MLH 365/2).

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

The following short period enquiries will continue:

Sugar – MLH 216

Monthly enquiry into production, deliveries and stocks of syrup and treacle.

Monthly enquiry into stocks, imports and melt of raw sugar.

Monthly enquiry into production, deliveries and stocks of refined sugar.

Fertilizers – MLH 278

Monthly enquiry into production, deliveries and stocks of nitrogenous fertilizers.

Returns by members to the Fertilizer Manufacturers' Association.

Electrical Machinery – MLH 361

Returns by members to the British Electrical and Allied Manufacturers' Association.

Telegraph and Telephone Apparatus and Equipment – MLH 363

Returns by members to the Telecommunication Engineering and Manufacturing Association.

Radio and Electronic Components – MLH 364

Returns by members to the Radio and Electronic Component Manufacturers' Federation.

Other Broadcasting Receiving and Sound Reproducing Equipment – MLH 365/2

Returns by members to the British Radio Equipment Manufacturers' Association.

Electric Appliances Primarily for Domestic Use – MLH 368

Returns by members to the Association of Manufacturers of Domestic Electrical Appliances

Returns by members to the Domestic Refrigeration Development Committee.

Electric Lamps, Light Fittings, Wiring Accessories, etc. – MLHs 369/4 and 369/5

Returns by members to the Lighting Industry Federation Ltd.

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

a. Ministry of Agriculture, Fisheries and Food, Statistics Division 1, Great Westminster House, Horseferry Road, London SW1P 2AE

(Tel: 01-834 8511 Ext. 6418 for the enquiry into MLH 216).

b. Department of Trade and Industry, Economics and Statistics Division 3, Dean Bradley House, Horseferry Road, London SW1P 2AG

(Tel: 01-799 5688 Ext. 107 for enquiries into MLH 278 and Ext. 104 for MLHs 361 to 369).

TRANSPORT

New-style motor vehicle registration form

A new-style application form for licensing new motor vehicles was introduced during June and July.

The new form, V55, is a single sheet which will be used for the licensing and registration of new vehicles. Attached to it is a two-sheet section with carbon-paper inserts, so that official details of the vehicle and the dealer's name and town copy through onto those sheets. These are sent to an agency acting for the motor industry and which is also acting for the Department of the Environment in the assembly of official vehicle registration statistics until the Department's centralised licensing system at Swansea becomes operative at the beginning of 1974.

A new feature of the additional sheets is a Voluntary Statistical Section, in which applicants are invited to supply information which will be of value for motor industry market research and for government statistics. It includes questions about the purchaser's occupation, his previous vehicle, the method of payment for the new vehicle and the main uses to which the vehicle will be put. If the purchaser chooses to give his name and address in the voluntary section the manufacturer will be able to get in touch with him more readily over any safety matters which may arise. The name and address will not be linked in processing with other information given in the section.

The change in the method of assembling official vehicle registration statistics will result in a change in definitions. In the past the monthly statistics of new registrations published in Business Monitor and elsewhere have reflected the statistical work done by Local Taxation Offices in the course of a month. In future, starting in October, the statistics for each month will represent registrations which became effective in that month. Figures on this new basis will therefore more accurately represent the numbers of new vehicles coming into use each month and will not be subject to any variation due to changes in the timing of work done at local offices. The change in definition is not likely to have any material effect on the interpretation of the statistics; but a special analysis of the figures is to be made over the next 12 months to enable any changes in the seasonal pattern to be identified.

NATIONAL ACCOUNTS

Preliminary estimates of GDP: a new series

For some time the Central Statistical Office has, for internal purposes, made preliminary estimates of GDP for the most recent quarter, based on output data, about seven weeks after the end of the quarter.

These estimates are now being published and an estimate for the second quarter of 1972 will be given in a Press Notice issued on 21 August 1972. They are based on provisional estimates of the index of industrial production for the quarter and such data as are available at the time of the output of the rest of the economy. Experience has shown that they have given reasonably good indications of changes in GDP between the most recent quarters and they are available some 5 weeks before the provisional estimates of national income are published. They are subject to revision when the latter estimates are issued, and they represent only one of the three methods of measuring GDP. A note on the new series was included in the July issue of *Economic Trends*.

METHODOLOGY

Measuring variability in economic series

The August issue of *Economic Trends* contains a discussion of the problems of analysing variability in economic time series and introduces the regular publication for some 40 major series of one set of measures of variability. Most economic time series, even in seasonally adjusted form, contain irregular fluctuations and it is usually difficult to assess from the most recent observations what the trend in activity has been. The extent of these fluctuations varies considerably from series to series, and the user would find valuable some guidance as to how much reliability he can attach to the most recent observations as indicators of the trend, how much smoothing of them is needed to give a better assessment of it, and the likely reliability, for this purpose, of the smoothed series. The method described in the article was pioneered in the United States and, briefly, is based on analysing changes in the irregular and trend components of a series. The average of changes in the former in relation to the average changes in the latter is called the \bar{I}/\bar{C} ratio (I being the irregular component of a series and C the cyclical, or trend, component) and is one measure of variability. The uses and limitations of this ratio, and other measures resulting from this type of analysis are discussed in the article. The article also discusses an alternative approach, developed by the Department of Trade and Industry, based on the calculation of standard deviations. Work in this field is continuing.

PUBLICATIONS

United Kingdom in Figures

For the last two years, the Central Statistical Office has produced a pocket guide to the economy called *Britain's Economy in Figures*. Printed on durable plastic-coated card, it has included a run of three years' figures for each of some sixty major economic series. The demand for this card from business firms, educational establishments, trades unions, etc. has increased since the first one was printed and last year stocks were exhausted within two months. There have also been many requests to extend the coverage of the card to take in more social and environmental series, as well as a further year for longer-term comparisons. To accommodate this, a larger, folding card has been prepared this year, containing over twice as many series and covering the years 1951, 1966, 1970 and 1971. Copies of this new card, *United Kingdom in Figures*, will be sent automatically to those who last year asked to receive all future editions. New requests should be sent to the Central Statistical Office, Great George Street, London SW1P 3AQ, stating the number required (and the purpose if a large quantity is asked for) and whether future editions are wanted.

New Business Monitors

Twenty three new Business Monitors have been published in the Production Series since the last issue. They all present the results of new quarterly inquiries into manufacturers' sales and form part of the new system of industrial statistics being developed by the Government Statistical Service.

The new titles are as follows:

- P20 Soap and detergents
- P22 Polishes
- P29 Scientific and industrial instruments and systems
- P33 Jewellery
- P47 Construction and earth-moving equipment
- P52 Locomotives, railway track equipment, railway carriages, wagons and trams
- P58 Formulated pesticides, etc.
- P103 Paper and board
- P111 Clay building bricks and other non-refractory goods
- P112 Cement
- P115 Photographic chemical materials
- P116 Surgical instruments and appliances
- P119 Weaving of cotton, linen and man-made fibres
- P120 Woollen and worsted
- P121 Household textiles and handkerchiefs
- P122 Textile finishing
- P123 Refractory goods
- P125 Tobacco

- P126 Printing ink
- P127 Surgical bandages, etc.
- P128 Textile machinery and accessories
- P129 Mining machinery
- P130 Printing, bookbinding and paper goods machinery

In addition to sales information, the new publications also contain other related data in many cases e.g. statistics of imports and exports, employment and prices.

Each title can be obtained, by subscription only, from Her Majesty's Stationery Office, PO Box 569, London SE1 9NH at 37½p per annum. The first five and the seventh Business Monitors listed above replace existing Business Monitors, subscribers to which will automatically receive copies of the new Business Monitors for the duration of their current subscription.

Scottish Educational Statistics 1971

Scottish Educational Statistics 1971, is the sixth edition of a single volume publication which was first issued for the year 1966 and which provides, for standard reference, comprehensive statistics on education in Scotland.

The 1971 edition contains, as well as up-dated versions of previously published tables, a revised and in some respects expanded set of tables on the first destinations of graduates. There are new tables on occupational centres for handicapped children and on higher degrees etc. obtained at Scottish universities; but the most extensive – and among the most interesting – of the new tables are the two giving, for eight Scottish regions, some figures on (a) the numbers and ages of children and the types of education authority schools that they attend, and (b) the types and numbers of teachers, and the ratios between pupils and teachers in, respectively, non-denominational and Roman Catholic schools; total teacher figures and ratios are given for each education authority in each region. There is also for the first time a table about destination of qualified school leavers – that is, those leaving with at least one 'O' grade or one 'H' grade.

Reference

Scottish Education Statistics 1971 (HMSO) August 1972 (Price £2.85 net).

General Practice in Northern Ireland in 1970

To enable the general practitioner to play his full role in the future integrated health service, it was essential to have up-to-date factual information on the organisation and structure of general practice and on the extent to which general practitioners participated or wished to

participate in other branches of the existing tripartite Health Service. To this end, a comprehensive survey was carried out in October/November 1970, in which all 751 general practitioners in Northern Ireland took part. The results of the survey are presented in this report.

Factual information includes the sizes of doctors' lists, experience of doctors, types of surgery premises, the use of ancillary staff, hospital appointments held, access to hospital beds and to diagnostic and treatment facilities in hospitals. The report also contains useful analyses of the attitude of doctors to holding hospital appointments, to having access to hospital beds and to working in hospital as members of consultant teams.

Reference

A Survey of General Practice in Northern Ireland 1970 (HMSO, Belfast) June 1972 (Price 80p).

Salaries of top management

The second Report of the Review Body on Top Salaries (Chairman the Rt. Hon. Lord Boyle of Handsworth) contains an appendix showing the results of a survey of the remuneration of top management in industry, commerce and finance carried out by the Office of Manpower Economics on behalf of the Review Body. The survey covered approximately the same upper levels of management as those covered by the NBPI Report No. 107 on *Top Salaries in the Private Sector and Nationalised Industries* published in March 1969, but the sample was wider and included smaller companies. Movements are shown from September 1968 to 1971 in salaries and bonuses of chairmen, deputy chairmen, main board members and senior executives of 215 large industrial, commercial and finance companies and 38 organisations in nationalised industry. Nearly 3,000 posts were covered. They were only those for which the nature or responsibility had not changed materially for at least one year. An analysis is provided of the relative movements over the period in salaries and bonuses at different levels. Comparisons are made by size of company. An analysis is also provided of the period since the last increase as at September 1971.

Reference

Review Body on Top Salaries, Report No. 2 *Interim Report on Top Salaries*. Cmnd. 5001 (HMSO) June 1972 (Price 21p).

Professional earnings

The Review Body on Doctors' and Dentists' Remuneration (Chairman the Rt. Hon. the Earl of Halsbury, F.R.S.), to which the Office of Manpower Economics provides the secretariat, issued a Report in June 1972. This contains an appendix giving a comprehensive review of movements since 1955–56 in earnings of the

medical and dental professions compared with those of a wide range of other professions and the movements of salaries generally. The year 1955–56 was chosen as the first year of the series, since that was the year to which most figures related in the very comprehensive enquiry into the earnings and salaries of many professions carried out for the Royal Commission on Doctors' and Dentists' Remuneration under Lord Pilkington in 1960 (Cmnd. 939).

The time series cover both practice and salaried earnings of all the main professions for which statistics are available as well as a selection of salary scales. These are compared with movements in price indices and in the Department of Employment's Salary Index. In addition calculations have been made of the movements since 1959–60 in 'principal source' annual salaries of males at various percentile points from linked analyses by ranged produced by the Inland Revenue. The series are expressed in £ and as indices based on 1960–61 for reasons explained in the Report. For certain professions a spread of earnings by age groups is also shown. Technical notes are provided on sources, definitions and methods of estimation.

Reference

Report of the Review Body on Doctors' and Dentists' Remuneration 1972 Cmnd. 5010 (HMSO) June 1972 (Price 47p).

Productivity in services

A study of output in the services sector of the economy, *The Measurement and Interpretation of Service Output Changes* by Anthony D. Smith, was published in June by the National Economic Development Office. The study examines sectoral changes and trends in labour, output and productivity for the United Kingdom between 1951 and 1966, and considers the conceptual and practical difficulties in measuring these changes. Comparisons with other OECD countries are made.

The services sector is defined as that part of the economy not classified as either manufacturing, agriculture or extractive industry. The implication of this definition and the reliability of the measures are considered in the study which claims little attention has been paid to the difficulties involved.

The study agrees that it is useful to consider structural differences between the services and goods sectors, for example in labour intensity and net gross output ratios. However the existence of inter-sectoral productivity relationships is illustrated and a general quantitative study of these is called for.

Compared with the traditional measures of output at constant prices a different concept of economic output

taking account of relative price changes between trades and reflecting changes in demand is advocated.

Reference

The Measurement and Interpretation of Service Output Changes by A. D. Smith obtainable free from National Economic Development Office, Millbank Tower, Millbank, London SW1P 4QX.

National Institute Economic Review

In the May issue of the *National Institute Economic Review* there were articles on forecasting exports to the Six by N. C. Garganas, and on inflation, growth and economic policy in the medium-term by T. S. Barker and V. H. Woodward of the Department of Applied Economics, University of Cambridge. (Copies of this issue can be obtained from the National Institute Economic Review, 2 Dean Trench Street, Smith Square, London, SW1P 3HE).

Mr. Garganas' article, 'Forecasting exports to the Six: an analytical approach' presents equations designed to explain and predict by commodity group and in total, British exports to EEC. Estimated 'income' and price elasticities of demand vary considerably among commodity classes. Application of Almon interpolating polynomials suggests the existence of short distributed lags on the demand terms, but the resulting equations are not superior to ordinary regressions when adjusted for autocorrelated errors. Using these results, the article assesses the equations for 1970 and 1971 and gives forecasts for 1972. Although the aggregate equation is almost as efficient as the individual equations, disaggregation yields better estimates of effects of structural variables.

Mr. Barker and Mr. Woodward's article, 'Inflation, Growth and Economic Policy in the Medium-Term' describes projections of the British economy in 1975 made by the members of the Cambridge Growth Project.

The input-output model used for these projections incorporates two improvements over previous work by the project, production functions for 35 sectors and a consumption function. In addition, the fiscal system has been comprehensively incorporated into the model. Model projections are now conditional upon the level of average money earnings, the growth of world trade, import prices, the exchange rates and direct and indirect tax rates.

The article discusses the relationship between economic policy in the short-term and medium-term at an aggregate level. Projections of the economy to 1975 are given both before and after the 1972 budget measures on a single assumption about future wage inflation. The article goes on to discuss implications of different rates of inflation for economic policy.

An introduction to flow of funds accounting

The Bank of England have compiled an explanatory handbook (published early in August) on flow of funds accounting, both to introduce the subject to those not familiar with it and as a source of reference for newcomers and specialists alike. Flow of funds accounting is a logical extension of the more familiar system of national accounts; it covers the transactions in financial assets and liabilities which accompany income and expenditure. From an analytical standpoint, its purpose is also similar in that it attempts to illustrate statistically the financial activities relating the various sectors of the economy. The handbook includes for the first time a complete set of flow of funds accounts for the United Kingdom, including seasonally adjusted figures, over a long run of years.

The handbook is in five sections. Part 1 is an introduction to what compilers of flow funds accounts are trying to do and why; and discusses the problems, shortcomings and uses of this approach. Part 2 is a broad review of the figures themselves to show how financial trends are reflected in the accounts and the problems of interpretation. Part 3 is a technical note describing in detail the methods devised in the Bank for resolving the problems of seasonal adjustment of the flow of funds matrix. Part 4 presents tables with annual figures covering the years 1952-70 and quarterly figures – seasonally adjusted and unadjusted – for 1963-70. Part 5 sets out comprehensive notes on definitions, sources and adjustments.

Reference

An introduction to flow of funds accounting: 1952-70 obtainable from the Bulletin and Publications Group, Economic Intelligence Department, Bank of England, London EC2R 8AH (Price 50p).

GLC Bulletin

The collection of information about land use in London is described by L. F. Gebbett in his article 'The 1971 Greater London Land Use Survey' published in the March *Quarterly Bulletin of the Intelligence Unit Greater London Council*. The writer is head of Land Use and Decisions Analysis section of the Intelligence Unit.

The article gives a brief summary of previous surveys made of land use in the old London County Council Area and the present Greater London Council area. Repeated surveys are necessary because the uses to which land is put are constantly changing. The London boroughs are in favour of more detailed and more frequent surveys though they are not all agreed as to the ideal method of conducting them. The article reveals the difficulties that have been overcome to ensure

consistency over the whole area and at the same time enable the London boroughs to use the methods they find most suited to their needs.

Survey results are to be in the form of computer tabulations and include:

A complete list of parcels of land, for each borough in 1/1250 map national grid order.

Selective lists of all parcels within major use categories.

Analysis of all site areas and floorspace for the following:

- (i) 1/1250 (500m grid squares) maps,
- (ii) various special areas (e.g. shopping centres or green belt), and
- (iii) the boroughs

These analyses should be completed by the end of 1972. The national census of population took place on 25 April 1971 and the Greater London Transportation Survey also took place in 1971 so that, as the writer states, 'an exceptional amount of data about London will become available for 1971'.

Another article in the same GLC bulletin on 'A computerised system for road accident statistics in London: development and use', is written by E. D. Turner, of the Traffic and Development Branch, GLC Department of Planning and Transportation. The article gives statistics which illustrate the size of the road accident problem in London. The move to computerised records has meant that 'observed facts and dispassionate judgement are given more weight in the decision-making process'.

The new system is based on the GLC accident report form 524 which is an extension of a nationally standardised form 'Stats. 19'. It is part of a system devised by a working party set up in 1968 to design a system which would provide the following at minimal cost:

- (i) the main data channel to the GLC and the boroughs of accident details recorded by the police;
- (ii) an automatic sorting and tabulation procedure to give, on a regular basis, collected information on the number of accidents which occurred on different particular lengths of roads and at different junctions or in specified conditions;
- (iii) a statistical monitor program which would find the accident 'black spots' and means to indicate what improvements are most likely to give economic reductions in accidents; and
- (iv) a general purpose interrogation/retrieval facility to enable detailed investigations to be made on the nature of any specified accident problem in London.

The writer describes some of the problems that this working party had to consider and some of the solutions it investigated. He also describes the output which is the normal routine result of the system. The computer tabulations are despatched to the users, mostly borough road safety officers or borough engineers. Information can, however, be taken from the system in the form of maps, tables or lists on a one off basis. The article includes an example of a computer produced map of the Greater London Council Area with the names and boundaries of the London boroughs shown and showing the location of all reported accidents involving goods vehicles (over 1.5 tons) on C or unclassified roads. The marking distinguishes between accidents involving different numbers of vehicles.

The writer concludes that though road accident investigation is a study in the early stage of development, the techniques are now available to begin to quantify the losses due to road accidents and to determine the allocation of available resources which will make the most contribution to reducing casualties.

Reference

GLC Intelligence Unit *Quarterly Bulletin* No. 18 March 1972. Obtainable from the Information Centre, The County Hall, London, SE1 7PB (Price 50p, postage extra).

Resources in Economic Statistics

A *Union list of statistical serials in British libraries* has recently been issued as the third publication in the Library Association/Royal Statistical Society Resources in Economic Statistics series. It is published for the Committee of Librarians and Statisticians of the Library Association and the Royal Statistical Society by the Library Association. It forms the second part of a survey of economic statistics collections in the United Kingdom (see article on page 18.21). The first part of the survey results consists of a directory of organisations which hold collections of economic statistics, *Economic statistics collections: a directory of research resources in the United Kingdom for business, industry and public affairs*. These are for the most part bodies which do not have formally organised libraries or information services, or libraries whose economic statistics collections are not an important part of their holdings.

References

Union list of statistical serials in British libraries, LA-RSS Resources in Economic Statistics 3, SBN 85365 076 4 (London Library Association 1972, Price £2.50, £2.00 to members of LA and RSS).

Economic statistics collections: a directory of research resources in the United Kingdom for business, industry and public affairs, LA-RSS Resources in Economic Statistics 1, SBN 85365 132 9 (London, Library Association 1970, Price £2.00, £1.60 to members of LA and RSS).

OUTSIDE ORGANISATIONS

Statisticians in employment

A joint Conference of the Royal Statistical Society and the Manpower Society on the theme 'Statisticians in Employment' was held at Imperial College London on 7 June 1972. The President of the Royal Statistical Society, Professor G. A. Barnard, was in the chair.

In the first session short papers were given by Professor D. J. Bartholomew (University of Kent) and Mr. M. J. R. Healy (Medical Research Council) on professional training and re-training of statisticians, and their career development within statistics. The second session was devoted to a paper by Professor C. A. Moser (Head of the Government Statistical Service) on recent developments in the organisation and staffing of statistical work in Government, with particular attention to the problems associated with the large numbers of staff in the GSS (compared with the small number of professional statisticians) who need specialised knowledge and experience but who are not themselves statisticians or computer specialists.

In the first afternoon session there was a short paper from Professor P. G. Moore (London Graduate Business School) discussing the roles of statisticians in comparison with those of accountants, actuaries, operational researchers and other 'numerate professions', followed by a talk by Mr. I. H. Davidson (Arthur Andersen & Co.) on the distinctive characteristics of the training and specialist skills of the professional accountants.

The final session was devoted to a talk by Sir William Armstrong (Head of the Home Civil Service, and President of the Manpower Society) who stressed the need for statisticians, at least in Government Service, to acquire managerial and administrative skills by training and experience not only in order to be able to manage their own statistics organisations effectively, but also so that they might aspire to move freely into the non-specialist posts at the top of the Service in due course.

Perhaps the most provocative contribution to discussion was made by Lord Kearton who, with Sir Roy Allen, opened the final discussion session of the day. Lord Kearton left the Conference in no doubt that statisticians cannot afford to be complacent about acceptance of the value of their contribution by society. They need not only to do their work well, but also to put considerable effort into public relations so that everyone concerned is made aware not only that the work is being done well, but also that it is work which is useful and necessary.

About 150 people attended the Conference, which was organised by the CSD Statistics Division and administered by the RSS office. Consideration is being given to publication of the Conference papers, possibly in the Journal of the Royal Statistical Society.

Warwick University statistics library

On 3 July, Professor Moser, Head of the Government Statistical Service, was guest speaker at the formal opening of the University of Warwick's statistics library. Built up over the past three years, the collection comprises some 8,000 titles and is worldwide in its coverage. The main emphasis is on production, national income and trade. But social and demographic statistical sources are also included.

The service of the library and its staff is available on subscription to local businessmen. The library offers a pleasant working area – private rooms if necessary – photocopying facilities and calculating machines. It aims to provide the same kind of facility for businessmen in the Midlands as is provided by the Department of Trade and Industry's Statistics and Market Intelligence Library in London. The collection is less comprehensive than that of SMIL but runs of data can be supplemented by use of the telex link between the two organisations.

GOVERNMENT STATISTICAL SERVICE

Business Statistics Users Conference

The third United Kingdom conference to bring together representatives from business, central and local government and the academic world to discuss the problems of those who provide and use statistics was held on 21 April 1972 in the rooms of the Royal Society. The first conference had discussed business, economic and financial statistics, the second social statistics, and the third reverted to the topics of the first conference.

The conference was this time organised by the Confederation of British Industry at the request of, and in consultation with, the Standing Committee of Statistics Users which was formed following the first conference (see *Statistical News* 14.18).

The introductory address was given by Mr. Campbell Adamson, Director General of the CBI, who pointed out that the suppliers are not always the users of statistics. Users tended to disregard problems of supplier and vice versa. This was a problem which should be rectified by such a conference.

There were sessions on how far statistical needs could be met from the existing records, particularly of

smaller firms (Chairman Mr. Scouller), the central data bank system of government statistics and other statistical aspects of the Bolton Committee report (Chairman Professor J. H. B. Tew); accuracy versus timeliness of government statistics (Chairman Professor R. Matthews); and an open forum and report by the CSO on matters arising from the previous conference (Chairman Professor C. A. Moser).

European Communities

Close working relationships are being developed with colleagues in the Commission of the European Communities and United Kingdom statisticians are already attending statistical working groups. From 8–10 May, Professor Moser attended the Conference of Directors General of national statistical offices in the Communities, held in Marseilles.

Professor C. A. Moser

Professor C. A. Moser, Director of the Central Statistical Office, has been appointed a Visiting Fellow at Nuffield College, Oxford.

Retirements

Mr R. E. Beales, CBE

At the end of July 1972 Mr R. E. Beales retired from the post of Deputy Director of the CSO which he has held since 1957. After a break of about eight months, during which he is planning to make a trip round the world, he will return to work for the CSO on a consultancy basis.

Mr Beales originally trained as an actuary, working first for the Norwich Union Life Assurance Society and then for the Northern Assurance Company. He became a Fellow of the Institute of Actuaries in 1934. In 1943 he joined the CSO; from then until 1949 he was involved with the development of the Standard Industrial Classification and with CSO reports and publications, including the first post-war Statistical Abstract, a report for the Prosperity Campaign Committee, and the launching of the *Monthly Digest of Statistics*, now in its 27th year. As the UK representative advising on the exchange of statistical information with the USA, he visited that country in 1947 and again in 1948 on a UN Statistical Commission group of experts to advise on a new international standard industrial classification.

In February 1949 he was promoted to Statistician. In October of the same year he transferred to the Board of Inland Revenue on appointment to Chief Statistician, and in 1952 became Director of the Statistics and Intelligence Division there. His eight years at Inland Revenue saw the organisation of the

first post-war Income Census, for 1949-50, and the establishment of such exercises on a regular quinquennial basis. They saw also the Royal Commission on the Taxation of Profits and Income which from its inception in 1951 to its final report in 1955 produced many additional demands for statistics on all aspects of income and capital gains. Towards the end of his period at Inland Revenue, Mr Beales' responsibility for that department's contribution to national income statistics involved devising the new sets of quarterly enquiries for the evolving system of quarterly national accounts.

The development of national accounts then became an area of special responsibility for him when he returned to the CSO as Deputy Director in 1957, in addition to general oversight of all aspects of economic statistics.

Over the last 15 years he has attended a very great number of international meetings of statisticians, and played a major role in meetings leading up to the publication in 1968 of the United Nations' revised and greatly expanded System of National Accounts. He has been a member of the Expert Group which has worked on the extension of this system to the fields of income distribution and balance sheets.

Mr Beales was made a CBE in June 1961. He became a Fellow of the Royal Statistical Society in 1947; since then he served on the Council of the RSS and was a vice-president in the year 1967-68.

Mr C. W. Payne, ISO

Mr Payne, Statistician, Department of Trade and Industry, who was the longest-serving member of the Government Statistical Service, retired from the public service at the end of June. He joined the Civil Service as a boy clerk in 1917, and had held the rank of Statistician since 1951, working on transport and shipping statistics.

Appointments and changes

CENTRAL STATISTICAL OFFICE

Mr A. J. Boreham, Assistant Director, has been appointed Deputy Director in succession to Mr R. E. Beales, CBE who has retired from this post.

Mr W. B. Wakefield, Chief Statistician, Ministry of Defence, has transferred to a post at the same level in the Central Statistical Office.

DEPARTMENT OF EMPLOYMENT

Mr A. R. Thatcher, Director of Statistics, has been appointed as an additional Deputy Secretary. He will continue as Director of Statistics and will in addition take on responsibility for research and manpower forecasting.

Mr A. G. Carruthers, Under Secretary, Department of Trade and Industry, was appointed Deputy Director of Statistics at the Department of Employment on 1 August 1972.

DEPARTMENT OF TRADE AND INDUSTRY

Mr L. S. Berman, Assistant Director, Central Statistical Office, will be appointed Director of Statistics at the Department of Trade and Industry from 2 October 1972 in succession to Mr J. Stafford, CB on the latter's retirement from that post.

Miss R. J. Maurice, Chief Statistician, Central Statistical Office, will be appointed Under Secretary at the Department of Trade and Industry from 1 September 1972.

Mr P. W. Dworkin, has been promoted to Chief Statistician and is now head of Branch A (EcS5).

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

Mr E. L. Snowdon, Senior Principal Agricultural Economist, Head of Statistics Division 1, has been regraded Chief Statistician from 15 May 1972.

Amendments to the

List of principal statistical series and publications

Introductory note

It was stated in the CSO's new guide, the *List of principal statistical series and publications* (HMSO) May 1972 (price 47p), that amendments and additions to the List would be summarised regularly in *Statistical News* so that users could keep their copies up to date. The first list of amendments, covering the period from the beginning of February to June, is given below. Similar lists in forthcoming issues of *Statistical News* will cover subsequent quarterly periods.

Amendments to Part I. List of principal series

Page

Social Statistics

3. Health and Welfare

(g) In-patient statistics

4

First line of notes: after 'DHSS Statistical Report Series' add 'now retitled the DHSS Statistical and Research Report Series'.

Labour

4. Wages and earnings

Above (d) Earnings by occupation, add new entry:

8

(ca) Earnings of non-manual workers

Annual

Department of Employment Gazette

Indices of average earnings covering non-manual workers in all industries and services, with separate figures for manufacturing industries. The indices are now based on earnings in April obtained from the new earnings survey.

(e) New earnings survey

8

Second line of notes: insert 'collective agreement' so that sentence reads: 'Average earnings of manual and non-manual workers are analysed in detail by industry, occupation, region, collective agreement, etc.'

Final line of notes: Substitute for 'Preliminary results are published', 'Main results are first published'.

Transport and communication

2. Road transport

(c) Road goods transport

Add to heading:

Quarterly

Monthly Digest of Statistics

11

At the beginning of the notes insert *Monthly Digest*: Index of ton miles. *Highway Statistics*: Tons and ton-miles.

Distribution and other services

1 (b) Other large-scale enquiries

14

Last line of first paragraph of notes should now read '1969 provisional results were published in *Trade and Industry* 13 April 1972'.

National income and expenditure

6. Income and profits

(e) Earned income of employees; distribution of personal incomes

19

Add to heading:

Quinquennial

Survey of Personal Incomes

After second sentence of notes add: 'Starting with the 1969-1970 Survey, full results of the Inland Revenue detailed surveys are given in a separate publication'.

Financial and business statistics

1. Money supply and domestic credit expansion

(a) Money supply

20

Amend 'Quarterly' to read 'Monthly and Quarterly'. Second line of notes: amend 'three series' to read 'two series'. Delete third and fourth sentences and substitute: 'A former definition of money supply, M_2 , has now been discontinued. The series M_1 and M_3 are given both unadjusted and seasonally adjusted.'

(c) Velocity of circulation

20

Add to heading '*Financial Statistics*'

Add to notes: From April 1972 this series is being published twice yearly in supplementary tables in *Financial Statistics*. Also shown, for quarterly periods, are the rates of change of gross national product at current prices and rates of change of money stock (both at annual rates, seasonally adjusted).

7. Interest rates and security prices

(a) Short-term money rates

25

Add to note: 'From April 1972 the Finance House base rate, with dates of change, is also shown in *Financial Statistics*'.

Amendments to Part II. List of publications

Page 28

Analyses of Hospital running costs, related income and statistics (N. Ireland)

Delete 31/3/70. Substitute 31/3/71.

Annual Estimates of the Population of Scotland

Delete 1970. Substitute 1971.

Annual Review and Determination of Guarantees

Delete 22½p (1971). Substitute 24p (1972).

Page 29

Business Monitors. Production series:

The following new series should be added to the appropriate groups (with consequential changes to some headings):

Add to heading of first group

'drink and tobacco'

Food, drink and tobacco

P 125 Tobacco

Chemicals and allied industries

P 102 General chemicals

P 97 Pharmaceutical chemicals and preparations

P 115 Photographic chemical materials

P 126 Printing ink

P 127 Surgical bandages etc.

Below 'P 11 Toilet preparations' add new subject heading 'Engineering (general)'

Under new heading add:

P 113 Engineering (volume indices of sales and orders)

Mechanical engineering

P 124 Ball and roller bearings

P 129 Mining machinery

P 130 Printing, book-binding and paper goods machinery

P 128 Textile machinery and accessories

Instrument engineering

P 116 Surgical instruments and appliance

Quarterly

Quarterly

Quarterly

Quarterly

Quarterly

Quarterly

Monthly

Quarterly

Quarterly

Quarterly

Quarterly

Quarterly

Page 30

Vehicles

P 52 Locomotives, railway track equipment, railway carriages, wagons and trams

Quarterly

Textiles

P 121 Household textiles and handkerchiefs

P 118 Spinning and doubling on the cotton and flax systems

P 122 Textile finishing

P 119 Weaving of cotton, linen and man-made fibres

P 120 Woollen and worsted

Quarterly

Quarterly

Quarterly

Quarterly

Quarterly

Delete P 14 Linen. (This monitor is replaced by P 119)

Add to heading: 'Leather and leather goods' 'fur'

Leather, leather goods and fur

P 109 Fur

Quarterly

In heading Pottery and glass. Delete 'and' and add 'etc.'

Pottery, glass etc.

P 112 Cement

P 111 Clay building bricks and other non-refractory goods

P 123 Refractory goods

Quarterly

Quarterly

Quarterly

Page 31

Paper, printing and publishing

P 103 Paper and board

Quarterly

Commonwealth Immigrants Acts: Statistics

Delete 15p (1970). Substitute 16p (1971).

Defence Accounts

Delete £1.10 (1969-70). Substitute 73p (1970-71).

Page 32

Estimates for services under the Government of Northern Ireland

Delete £1.87½ (1971-72). Substitute £2.10 (1972-73).

Estimates, Memorandum by the Chief Secretary to the Treasury

Delete 85p (1971-72). Substitute 73p (1972-73).

Farm incomes in England and Wales

Delete £1.25 (1969-70). Substitute £1.50 (1970-71).

Financial Statement and Budget Report

Delete 45p (1971-72). Substitute 52p (1972-73).

Financial Statement (Northern Ireland)

Delete 17½p (1971-72). Substitute 18½p (1972-73).

Housing Return for Northern Ireland

Delete 18p. Substitute 18½p.

Inland Revenue statistics

Delete £2.25 (1971). Substitute £1.75 (1972).

Interest and dividends upon securities quoted on the Stock Exchange

Delete 15p (1970). Substitute 25p (1971).

Judicial statistics, England and Wales, Civil Judicial statistics

Delete (1970). Substitute (1971).

Loans from the National Loans Fund

Delete 20p (1971-72). Substitute 21p (1972-73).

Page 33**Local financial returns, Scotland**

Delete (1968-69). Substitute (1969-70).

Local housing statistics, England and Wales

Delete 80p. Substitute 85p.

National Insurance Fund - Accounts (Northern Ireland)

Delete 17½p (1969-70). Substitute 18½p (1970-71).

Northern Ireland Economic Report

Delete 37½p (1970). Substitute 42p (1971).

Passenger transport in Great Britain

Delete 50p (1969). Substitute 55p (1970).

Preliminary estimates of National Income and Balance of Payments

Delete 30p (1965 to 1970). Substitute 32p (1966 to 1971).

Page 34**Report of HM Chief Inspector of Constabulary**

Delete 70p (1970). Substitute 73p (1971).

Report on Hospital in-patient enquiry

After 'Part I Tables £2.10 (1968)'. Add Preliminary tables 42p (1969). Historical tables £2.35 (1949, 1957-67).

Report on the Agricultural Statistics of Northern Ireland

Delete 'Infrequent'. Substitute 'Quinquennial'.

Report on the Census of Production of Northern Ireland

Add 1968 Vol. 2 (Food, drink, tobacco, engineering.) 70p.

Road Accidents

Delete 75p (1969). Substitute 70p (1970).

Scottish sea fisheries Statistical Tables

Delete 65p (1970). Substitute 61p (1971).

Sea fisheries Statistical Tables

Delete 59p (1970). Substitute 61p (1971).

Statistical Review of England and Wales, The Registrar General's

Delete 1969. Substitute 1970. Part I Tables, Medical:

Delete £3.90. Substitute £4.10.

Part II Tables, population:

Delete £2.10. Substitute £2.15.

Page 35**Summary of Health Services Accounts**

Delete 1969-70. Substitute 1970-71.

Part I. Northern Ireland General Health Services Board

Delete 17½p. Substitute 13p.

Part II. Northern Ireland Hospitals Authority and Hospital Management Committees.

Delete 17½p. Substitute 18½p.

Supply Estimates

Delete £6.25 (1971-72). Substitute £6.50 (1972-73).

Insert Survey of Personal Incomes £1.50 (1969-70)

Quinquennial

Board of Inland Revenue (Page) 19

Amendments to Part III. Subject Index

Page 36

building materials: stocks

Delete (page) 8. Substitute (page) 18.

cereal production

Delete (page) 19. Substitute (page) 9.

Page 38

Finance houses, amend entry to read:

finance houses	14, 23, 24
base rate	25

NOTE

As stated in *Statistical News* 17.30 a new publication *Housing and Construction Statistics* replacing *Housing Statistics, Great Britain* and *Monthly Bulletin of Construction Statistics* is coming out this month. Consequent amendments to the *List of Principal Series and Publications* will be given in the November issue of *Statistical News*.

Alphabetical Index

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

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

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

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