

THE BRITISH LIBRARY
OF POLITICAL
AND SOCIAL SCIENCE

WY

BRITISH LIBRARY
25 SEP 1934
OF POLITICAL AND
ECONOMIC SCIENCE.



FINAL REPORT
on the
Fourth Census of Production (1930)

PART III

- 7 THE FOOD, DRINK AND TOBACCO
TRADES
8 THE CHEMICAL AND ALLIED
TRADES
9 THE PAPER, PRINTING AND STATIONERY
TRADES

*Presented to Parliament in pursuance of the Census of
Production Act, 1906 [6 Edw. 7, Ch. 49]*

Crown Copyright Reserved

LONDON
PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE
To be purchased directly from H.M. STATIONERY OFFICE at the following addresses
Adastral House, Kingsway, London, W.C.2; 120, George Street, Edinburgh 2
York Street, Manchester 1; 1, St. Andrew's Crescent, Cardiff
80, Chichester Street, Belfast
or through any Bookseller

1934

Price 8s. od. Net

51-200-3



R(0)
42
(4271/1980)

42
(HA 251)

STATISTICS
BACK-UP

PUBLICATIONS RELATING TO TRADE

FOURTH CENSUS OF PRODUCTION (1930).

Final Report, Part I. The Textile Trades; The Leather Trades; The Clothing Trades.

Part I of the Final Report on the Fourth Census of Production (1930) deals with the Textile Trades, the Leather Trades and the Clothing Trades. The various specialised branches in each of these trades are reported on in separate sections. The information contained in the Volume contrasts the results for 1930 with those of 1924 and contains statistics of:—

Production (net output, volume of production)—Number of establishments—Size of firms—Regional distribution—Employment (employment in 1930 and 1924; age and sex distribution; monthly fluctuations in employment; outworkers)—Wages—Mechanical power (power in use and not in use; power equipment of the various trades; power (applied mechanically and electrically) in each trade and per operative employed)—Consumption of fuel.

Roy. 8vo. pp. xviii + 472. Price 7s. net. Post free 7s. 6d.

Final Report, Part II. The Iron and Steel Trades; The Engineering, Shipbuilding and Vehicle Trades; the Non-Ferrous Metals Trades.

This volume like the first volume contains comparative statistics for 1924 and 1930 for the industries grouped under the three broad headings given above.

Roy. 8vo. pp. xviii + 506. Price 7s. 6d. Post free 8s.

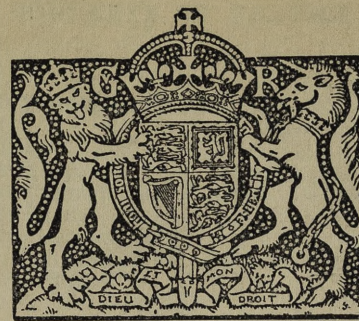
His Majesty's Stationery Office publishes from time to time the **REPORTS OF THE DEPARTMENT OF OVERSEAS TRADE** on the Economic, Financial, and Commercial Conditions of all parts of the world. A subscription of 60s. (post free) secures the complete series of some 30-40 reports—a most useful series of guide books to the world's markets, written by officials with exceptional facilities for obtaining first-hand information. Reports can also be obtained singly.

THE BOARD OF TRADE JOURNAL. A weekly periodical providing first-hand information from official sources on the state of trade at home and abroad. Regular features include:—Statistical tables of production, trade and commerce, the text of new commercial treaties, changes in tariff rates the whole world over, advice of forthcoming exhibitions and fairs and articles relating to special sections of industry and commerce. 6d. weekly. By post, 7d. Annual Subscription 30s. net. Specimen number post free.

Obtainable from

HIS MAJESTY'S STATIONERY OFFICE

at the addresses on the cover of this publication



FINAL REPORT on the Fourth Census of Production (1930)

PART III

THE FOOD, DRINK AND TOBACCO
TRADES

THE CHEMICAL AND ALLIED
TRADES

THE PAPER, PRINTING AND STATIONERY
TRADES

*Presented to Parliament in pursuance of the Census of
Production Act, 1906 [6 Edw. 7, Ch. 49]*

*Crown Copyright Reserved**

BRITISH LIBRARY
25 SEP 1934
OF POLITICAL AND
ECONOMIC SCIENCE.

LONDON

PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE

To be purchased directly from H.M. STATIONERY OFFICE at the following addresses
Astrakal House, Kingsway, London, W.C.2; 120, George Street, Edinburgh 2
York Street, Manchester 1; 1, St. Andrew's Crescent, Cardiff
80, Chichester Street, Belfast
or through any Bookseller

1934

Price 8s. od. Net

CONTENTS OF VOLUME

	Page
INTRODUCTORY NOTES	v
FOOD, DRINK AND TOBACCO TRADES:	
GENERAL REPORT	1
GRAIN MILLING TRADE	29
BREAD AND BISCUIT TRADES	47
COCOA AND SUGAR CONFECTIONERY TRADES	65
PRESERVED FOODS TRADE	79
BACON CURING AND SAUSAGE TRADE	95
BUTTER, CHEESE, CONDENSED MILK, AND MARGARINE TRADES	109
SUGAR AND GLUCOSE TRADE	125
FISH CURING TRADE	139
CATTLE, DOG AND POULTRY FOODS TRADE	149
ICE TRADE	159
BREWING AND MALTING TRADES	169
SPIRIT DISTILLING TRADE	183
SPIRIT RECTIFYING, COMPOUNDING AND METHYLATING TRADE	195
AERATED WATERS, CIDER, VINEGAR AND BRITISH WINE TRADES	203
WHOLESALE BOTTLING TRADE	215
TOBACCO TRADE	227
CHEMICAL AND ALLIED TRADES:	
GENERAL REPORT	237
CHEMICALS, DYESTUFFS AND DRUGS TRADES	261
FERTILISER, DISINFECTANT, GLUE AND ALLIED TRADES	301
SOAP, CANDLE AND PERFUMERY TRADES	317
PAINT, COLOUR AND VARNISH TRADE	334
SEED CRUSHING TRADE	348
OIL AND TALLOW TRADE	363
PETROLEUM REFINING TRADE	377
EXPLOSIVES AND FIREWORKS TRADE	387
STARCH AND POLISHES TRADE	395
MATCH TRADE	405
INK, GUM AND SEALING WAX TRADES	413
PAPER, PRINTING AND STATIONERY TRADES:	
GENERAL REPORT	423
PAPER TRADE	444
WALLPAPER TRADE	461
PRINTING, BOOKBINDING, STEREOTYPING, ENGRAVING AND KINDRED TRADES	467
PRINTING AND PUBLICATION OF NEWSPAPERS AND PERIODICALS	481
MANUFACTURED STATIONERY TRADE	491
CARDBOARD BOX TRADE	505
PENS, PENCILS AND ARTISTS' MATERIALS TRADE	516
INDEX	524

Subjects dealt with in General Reports:

- Principal results for 1930 and 1924.
- Periods covered by returns.
- Production :
 - Net output.
 - Volume of production.
- Number of establishments.
- Size of firms.
- Regional distribution.

HA251 (42)

Subjects dealt with in General Reports—contd.

Employment:

- Employment in 1930 and 1924.
- Age and sex distribution.
- Monthly fluctuations in employment.
- Outworkers.

Wages.

Power:

- Power in use and not in use.
- Power equipment of the various trades.
- Power applied mechanically and electrically in each trade and per operative employed.

Consumption of fuel.

Subjects dealt with in reports on individual trades:

- Principal results for 1930 and 1924.
- Deficiencies in 1930 aggregates.
- Size of firms.
- Regional distribution.
- Sub-divisions of the industry (in appropriate cases).
- Production.
- Prices.
- Volume of production.
- Production, exports and imports.
- Employment.
- Power.
- Consumption of fuel.
- Tabular results for England and Wales and for Scotland.

Note.—A detailed table of contents is prefixed to the report on the Chemicals, Dyestuffs and Drugs Trades (page 261).

INTRODUCTORY NOTES

The Census of Production

The original authority for the taking of a Census of Production was provided by the Census of Production Act, 1906. The *first Census* was taken in respect of the year 1907, and following the completion and publication of the report an Order was made providing that further Censuses should be taken at intervals of five years. The *second Census* related to the year 1912, but the outbreak of war interrupted its progress and a separate report on that Census was not published. The *third Census* fell due in 1917, but owing to the war could not be taken for that year. An amending Act (the Census of Production Act, 1917) was, therefore, passed providing that Censuses should be held, not every five years as previously determined by Order, but in any year fixed for the purpose by an Order made by the Board of Trade and laid before Parliament. It was not until after an interval of twelve years that the series of Censuses was resumed, the third Census being taken in respect of the year 1924. The final reports on the third Census were published in five volumes in the years 1930, 1931 and 1932 and incorporated such of the results of the second Census (1912) as were sufficiently complete to permit of effective comparisons with those for the other two censal years.

The Fourth Census—Preliminary and Final Reports

The fourth Census related to the year 1930 and schedules were issued to firms in January, 1931. A preliminary report covering five iron and steel industries was published in the form of a supplement to the Board of Trade Journal on 10th December, 1931, and further supplements were issued throughout 1932, usually at fortnightly intervals. The series of preliminary reports on the 120 industries and national and local government services to which the Census applied was completed at the end of January, 1933, and the whole of the data was summarised in a supplement issued on 16th February, 1933; a further supplement issued on 2nd March, 1933, furnished preliminary data as to the consumption of fuel and electricity and the distribution of industry in the principal industrial areas.

The results given in the preliminary reports were provisional and those contained in the final reports embody a number of amendments and adjustments, due mainly to the receipt of returns that were outstanding and to the revision of returns that were the subject of correspondence when the preliminary figures were published. In addition to the matters covered by the preliminary reports the final reports show for each trade the quantities of coal and coke consumed, the distribution of the trade in the chief industrial areas, a grouping of the results according to the size of the firms engaged, particulars of wages paid, and an estimate of the volume of production compared with the year 1924. Each report includes

particulars of the products of the trade that were recorded by firms mainly concerned in other trades. Separate particulars are shown for England and Wales and for Scotland wherever such particulars can be given without the risk of disclosing information relating to individual firms, and, wherever possible, information is given as to similar production in Northern Ireland.

The final report on the fourth Census is being published in a series of five separate volumes, of which the present volume is the third. Four volumes will contain reports on individual trades and groups of trades and the fifth will deal with the results of the Census as a whole. The present volume relates to the Food, Drink and Tobacco Trades, the Chemical and Allied Trades and the Paper, Printing and Stationery Trades.

Scope of the Fourth Census

Except as noted in the following paragraph, the Census covered all manufacturing industries, mining and quarrying, building and contracting and the productive services of public utility companies, Local Government Authorities and Central Government Departments. Processes of conversion or finishing carried out by firms on goods supplied to them by other firms, and repair work, were also included in its scope. For a complete list of the industries and services included in the Census reference should be made to Schedule I (p. xv).

The industries and services excluded from the fourth Census were the following:—

- Laundry work, and the dyeing and cleaning of used garments; the dressing and dyeing of ornamental feathers;
- Taxidermy work;
- The making of wigs;
- Flax scutching;
- Portrait or trade photography (other than the making of or printing from blocks or metal plates prepared by photographic processes, and the printing of cinematograph films);
- Parish Councils and Parish Meetings.

An important departure from the practice of the previous Census was made by the exclusion of businesses in which not more than ten persons were employed on the average. This limitation has assisted materially in expediting the publication of the results of the Census without substantially affecting the representative character of the general aggregates. It is to be observed, however, that large numbers of small scale businesses are to be found in industries the products or services of which are disposed of direct to the consuming public (e.g., bespoke tailoring and dressmaking, bread baking, house decoration and maintenance, and repair work of many descriptions) and for these industries and certain others the limitation of the Census to the larger organisations has led to considerable deficiencies in the results obtained. In order to afford a measurement of the defect attributable to this cause, the report on each trade contains a short section giving particulars of the

numbers of persons recorded as employed by small firms at the Censuses of 1924 and 1930; for the earlier year, the recorded value and principal details of their output are also shown.

Method of Canvass

An advance copy of the Census schedule was issued at the beginning of the year 1930, with a two-fold object in view—

(1) to identify the smaller firms; all firms that employed not more than ten persons on the average during the year 1929 were invited to claim exemption by making a declaration stating the average number of their employees during the year and the nature of the business in which they were engaged;

(2) to acquaint the larger firms with the nature of the information that they would be required to furnish at the end of the year.

About 142,000 firms claimed exemption from the Census, leaving about 163,000 as the number to which it was necessary to issue the formal schedule. As the result of statements made on the formal schedule and subsequent correspondence, it was found that this number included a further 65,000 firms that employed not more than ten persons on the average during the year.

The formal schedule was issued in January, 1931, and by Section 3 (2) of the Census of Production Act, 1906, firms were allowed a period of three months to furnish their returns. The number of second applications sent, after this period had expired, was approximately 56 per cent. of the total number of schedules issued and third applications were found necessary in respect of about 10 per cent. of that number. About 16,000 returns were found to be defective or incorrectly made and had to be returned for completion and revision.

Speaking generally, the Census was conducted by correspondence, no local staff of canvassers being employed by the Census Office.

Production in Northern Ireland

In consequence of the decision of the Board of Trade to take a Census of Production in Great Britain in respect of the year 1930, the Ministry of Commerce of Northern Ireland deemed it advisable to take a simultaneous Census in Northern Ireland. The scope of the Census and the general methods of procedure were the same as those adopted for the Census of Great Britain, except that, for the purpose of the exclusion of small businesses, a limit of five employees was taken instead of ten. The Report on the Census was published in 1932.*

In cases where it has been necessary to take the United Kingdom as a unit for comparative purposes (e.g., for purposes of comparison with the particulars of external trade) the figures of production in Northern Ireland have, wherever possible, been added to those relating to Great Britain. Each of the trade reports contains,

* Census of Production of Northern Ireland, 1930 (price 2s. 6d. net).

therefore, a summary of the chief results ascertained at the Census of Northern Ireland, so far as separate figures are available, together with details of the output of the products of the trade.

Regional distribution of production

For the purposes of the Census, Great Britain was divided into the following ten industrial areas:—

- (1) Greater London;
- (2) Lancashire, with North Cheshire and the Glossop and New Mills district of Derbyshire;
- (3) The West Riding of Yorkshire with the city of York;
- (4) Northumberland, Durham and the Cleveland district of Yorkshire;
- (5) Warwickshire, Worcestershire and Staffordshire;
- (6) The rest of England (except Monmouthshire);
- (7) Glamorganshire, Monmouthshire and Carmarthenshire;
- (8) The rest of Wales;
- (9) Lanarkshire, Renfrewshire and Dumbartonshire;
- (10) The rest of Scotland.

A list of the districts included within the first four areas, which are not confined within definite county boundaries, is given in Schedule II on page xviii.

In the reports, the gross and net output value and the average number of persons employed in each trade, as ascertained at the 1930 Census, are shown separately for each of the principal areas concerned, so far as this can be done without disclosing information as to the business of individual firms. So far as possible, corresponding particulars are also given for the year 1924.

While the majority of firms that maintained productive establishments in more than one of these areas were able to supply separate particulars in respect of their production in each area, there remained a number that treated their businesses as one unit for accounting purposes and were unable to make separate returns for each establishment. In such cases, the return was assigned to the area in which the main establishment was situated. The amount of error involved by cases of this kind is not, however, believed to be substantial.

Classification of Industries

For the purposes of the Census, production was grouped in 120 industries* and a separate report is being issued for each industry. It should be borne in mind, however, that the number of industries selected for separate survey must be governed to some extent by considerations of convenience of enumeration. There are many hundreds of distinct sections of manufacture which might be regarded as forming separate industries, but in view of their relatively small aggregate production or the predominating importance of a single firm or group of associated firms, it has not been possible to deal with them as separate units. In many cases,

* See Schedule I (page xv).

however, a separate tabulation has been made of the leading particulars for these smaller groups and these particulars are shown in a section of the report relating to "Sub-divisions of the industry".

It should also be observed that many firms do not confine their operations to any one "industry" but produce several classes of products, generally allied in nature, and the industrial grouping had to be designed to cover as far as possible all the manufacturing activities of firms of this kind. As, however, very many firms that are primarily concerned in one branch of manufacture also make, as secondary products, goods that are manufactured mainly by other industries, any such grouping can only be partially complete. In each of the reports, the products which are characteristic of the industry under discussion are termed "Principal products" and particulars of the output of these products that were recorded by firms in other industries are shown separately; the secondary products of the industry, which are termed "Other products", are shown in a separate section and have been included in the statement of "Principal products" of the various industries concerned.

Comparability with previous Censuses

The results for the year 1930 are compared throughout with those for 1924, and the latter have been adjusted for the more limited scope of the 1930 Census; that is to say, they relate to production in Great Britain and include only the returns in which the average number of persons employed was more than ten. It has not been possible to reduce the results of the first and second Censuses to the same basis and comparison cannot, therefore, be extended to pre-war years.

The comparability of the figures relating to values and costs is considerably affected by the changes in prices that took place between 1924 and 1930. For most classes of goods quantitative records are available for both years and price equivalents (i.e., the average value at factory per unit of quantity) can be shown for the purpose of comparison. No allowance can be made for changes in type or quality of goods recorded under the same description in the two years, while in the inter-censal period certain new products have emerged for which no earlier price equivalent exists. Moreover, individual headings frequently comprise a range of goods that may be allied by nature but show considerable divergence in average values, while in the numerous varieties of goods that can be composed of alternative materials a price change may be the result merely of the substitution of one class of material for another.

The above considerations affect industries in varying degrees, but they should not be overlooked in comparing the particulars of prices given in the reports and also those of "Volume of production", the latter being based on the relationship between the calculated average values for goods recorded under corresponding descriptions in the two years.

Duplication in value of Gross Output and Cost of Materials

The gross output value recorded by the Census of Production represents the value of the goods in the form in which they were sold (or transferred to another department of the same firm), but as the finished products of one section of industry constitute in many cases the materials of another, the value of the same goods may be included several times in that of the products as finally delivered for export or for home consumption; and the purchase of the same goods in different forms involves a corresponding over-statement of the aggregate amount recorded as "Cost of materials". This multiplication of record occurs not only between different industries and groups of industries but between different firms in the same industry.

In order to determine the extent of this duplication in respect of any group of firms or industries, it would be necessary to ascertain the value of each class of materials at the stage of manufacture at which they were purchased and also the origin of these materials, since duplication is only involved in so far as sales and purchases of materials took place within the group of firms or industries under consideration. As the returns furnished under the Census of Production Act contained no information regarding materials used except their aggregate value, it is not possible to measure the amount of duplication with any precision; and though estimates on this subject are made in respect of selected industries, it should be understood that these estimates are based on assumptions that may be somewhat arbitrary and that the limits of error in many cases must be rather wide.

Net Output

The net output of a trade is the figure which results from deducting the aggregate "Cost of materials used" and the amount paid for "Work given out" from the value of the gross output, and eliminates the duplication referred to in the previous paragraph. This figure represents the value added to materials by the industrial processes carried out by the trade in question and, after allowance for a sum sufficient to cover the depreciation of plant and machinery, constitutes the fund from which wages, salaries, rent, royalties, rates and taxes, advertisement and selling expenses, and all other similar charges have to be provided, as well as profits. In the present volume a number of trades are engaged in the production of goods (e.g., refined sugar, beer, table waters, matches, patent medicines, playing cards, etc.), which are liable to duties of Excise. These duties, being included in the selling values recorded in the returns, were also included in the corresponding net output value. In order that the basis of the net output of each trade, calculated as stated above, should be similar, the amount of the Excise duty paid has been estimated in each case and deducted from the net output of the appropriate trades. Full particulars of the deductions made on this account are given in the reports on the individual trades concerned.

The net output per employee is obtained by dividing the aggregate net output of an industry by the average number of persons (including administrative, etc., staff) employed in that industry. It will be clear that the magnitude of the net output per employee is affected by the relative importance of the various elements included in the figure; for example, the net output per employee (other things being equal) will tend to be lower in those industries in which large numbers of females are engaged than in those staffed predominantly by males, and also in those where production was affected by irregularities in the number of working hours; heavy advertising and other selling expenses will, on the other hand, be reflected in a high net output per employee. In comparing the results shown for the various industries, therefore, the net output per employee should be regarded with some reserve as a measure of relative prosperity or efficiency.

In calculating the net output in the manner described above, the figure arrived at may be affected to some extent by differences in the recorded valuation of goods as sold and as purchased. Payments to transport firms, railway companies, etc., for carriage outwards were not included in the value of the goods as returned by the producing firm, and this value is also exclusive of the charges of merchants through whose hands the goods may have passed before receipt by the purchasing firm. The cost of the goods, as recorded in the returns of the latter, represented the cost as received and would thus only coincide with the valuation assigned to the goods by the producing firm in cases where the sale was made direct and no payment for transport of the goods was incurred.

Wages

By Section 3 (1) of the Census of Production Act, 1906, the Board of Trade are precluded from requiring compulsory statements of the amount of wages paid. The tables on this subject in the general reports on groups of industries are based upon the results of parallel inquiries conducted on a voluntary basis by the Ministry of Labour and relate only to *operatives*, this term being defined in the same manner as in the Census of Production schedules. For the purpose of these tables information was obtained as to the total wage-bill of a group of firms in each trade that made returns to the Ministry of Labour and to the Census of Production Office.

Instructions for making Returns

The following notes explain the meanings of the terms used in the reports and outline the general instructions given to firms as to the manner in which their returns were to be completed.

1. *Period covered.*—Firms were given the option of making returns for the calendar year 1930 or, if the calendar year was not their year of account, for a business year ending not later than 31st March, 1931, and not earlier than 1st April, 1930.

2. *Number of establishments and number of returns.*—For the purpose of the Census the term "establishment" included all premises at which operatives were employed and at which goods were subjected to some process before delivery to purchasers. It therefore excluded offices and branches where the personnel consisted solely of directive, clerical or selling staffs. Forms were issued in respect of each establishment, but where a firm owning more than one establishment in the same trade preferred to make a combined return covering all establishments in one area, this course was usually allowed, subject to the number of operatives employed at each establishment being shown separately. On the other hand, where a firm carried on more than one trade in the same establishment, separate returns were obtained for each trade wherever firms were in a position to furnish them. Neither the number of establishments nor the number of returns received therefore necessarily express for any trade the number of firms engaged in that trade. This circumstance should be borne in mind in considering the tables dealing with "Size of firms" which are based on the average numbers of persons employed as shown in the individual returns.

For the year 1930 a column with the heading "Entries" will be found in each table of "Principal products" throughout these reports. The figures in this column represent, for each kind of commodity or group of commodities, the number of separate schedules received bearing entries against the heading or headings concerned. For the reasons explained above, this number should not be taken as expressing precisely the number of firms engaged in making the commodity or commodities in question. Corresponding information for 1924 is not available.

3. *Exclusion of merchanting.*—Where firms, in addition to their manufacturing business, also bought goods and re-sold them in the same condition as that in which they were purchased, they were instructed to omit such goods from their statements of output and of materials, and to exclude from their statements of persons employed those members of their staff who were wholly or mainly required in connection with their merchanting business.

4. *Distinction between "Goods made for sale" and "Total make."*—In general, the output which is stated in the reports for any particular class of goods represents goods in the form in which they were sold during the censal year or held in stock at the end of the year. It thus falls short of the total make of such goods by the quantities that were used for further manufacturing purposes in the establishments in which they were made. For certain classes of products a return of total make was required in addition to that of the output for sale; this additional information is, in most cases, summarised and dealt with separately in the reports on the trades concerned.

5. *Valuation of output.*—The values of goods shown in the returns to the Census of Production were required to represent the net selling value of all deliveries of the goods (as packed for sale)

within the year of return, plus the value of stocks at the end and less that of stocks at the beginning of the year. In determining the net selling value, firms were instructed to deduct from the amounts charged to customers such items as discounts, payments to transport firms, railway companies, etc., for carriage outwards, and allowances for returnable cases, etc. Where separate returns were made for different departments of the same firm, and goods produced in one department were used in another department in the production of more finished goods, such goods were required to be included in the output of the first (producing) department, and in the materials of the second (using) department, at the value at which they were transferred in the firm's books.

6. *Valuation of work done by firms working "On commission," etc.*—Firms working "on commission" or "for the trade" on materials given out to them by other firms were required to state, as the value of their output, only the amounts received by them for the work, less discounts and payments to transport firms, railway companies, etc., for carriage outwards, and to exclude the value of the materials supplied to them by the firms for which the work was done. Where the work was done on goods supplied by manufacturing firms, its value is included in the final selling value of the goods as recorded by those firms. In the case of goods made on commission for merchants or other persons who made no returns to the Census, the selling value of the goods has escaped record.

7. *Materials.*—The materials of which the cost was required to be stated included all raw and other materials purchased and used in the production of the output recorded in the firm's return; all fuel, oil, gas and electricity purchased; packing and workshop materials; and materials for repairs to the firm's own buildings or plant carried out by their own workpeople. The figure of cost to be stated under this heading was the total amount spent in the purchase of such materials, etc., in the year, plus the value of stocks at the beginning and less that of stocks at the end of the year. The figure was not to include wages, salaries, rent, rates, insurance, depreciation, and similar charges, or the cost of new machinery and plant. Where separate returns were made for different departments of the same firm, goods produced in one department and used in another department in the production of more finished goods were required to be treated as purchased by the second (using) department, and included in that department's total cost of materials at the amount credited to the producing department in respect of those goods.

Firms working on commission or for the trade were instructed to return, as materials, only goods which they themselves purchased and used, and not the goods given out to them by the firms for which they worked.

Under the provisions of the Census of Production Act, 1906, the cost of materials was required to be stated in one sum only, without any details. At the fourth Census no voluntary questions relating to such materials were included in the schedules issued to manufacturers.

8. *Work given out.*—Firms giving out work to other firms were required to state the aggregate amount paid to such firms for work done. The amount thus returned was not to include the cost of any items accounted for under the heading of "Materials."

9. *Persons employed.*—Firms were required to classify persons employed by them under the two headings of (1) Operatives (wage-earners), and (2) Administrative, technical and clerical staff. The term "Operatives" was defined as including all wage-earners (including foremen, van and lorry drivers and warehousemen) employed by the firm in or about the factory or works, or in outside work of construction or repair; and the term "Administrative, technical and clerical staff" was defined as including the office and management staff (i.e., working proprietors, managing directors, managers, designers, salesmen, travellers, etc.), all clerks, typists and other persons engaged primarily in office work being recorded under this heading and not as operatives. Where outworkers were employed, the numbers of these were recorded separately and were not included in the numbers of operatives. Persons required wholly or mainly in connection with any merchanting business carried on were to be excluded.

The particulars required related to the persons employed (i.e., on the pay sheets) in certain specified weeks, with the proviso that, in the event of a strike or lock-out, holiday or special cessation of work in any of these weeks, the nearest ordinary week (of which the ending date should be stated) was to be taken. In the case of the Building and Contracting Trade, on account of the day-by-day variations in the numbers on the pay sheets, the *average* number employed in each of the weeks was required to be stated.

Firms were required to state:—

(a) The numbers employed in the week ended 18th October, 1930 (or 19th October, 1929, if the return covered a period ended before 18th October, 1930), divided under the two main headings defined above, and also according to their sex and to their age (as over or under 18 years of age).

(b) The number of operatives actually at work in a specified week (one of the middle weeks) in each month of the period covered by the return.

10. *Outworkers.*—In those trades employing outworkers (i.e., workpeople doing work off the firm's premises on materials supplied by the firm) particulars were required of the number of outworkers employed at two dates in the year covered by the return, viz., at about 1st February and 1st August.

11. *Engine power.*—Firms were instructed to give particulars of the prime movers, electric generators, and electric motors (exclusive of motor generators, converters and transformers) in their works, classifying the prime movers by kinds, the electric generators according to the kind of prime mover by which they were driven,

and the electric motors according as they were driven by purchased electricity or by electricity generated in the firms' own works. The classification may not in all cases be absolutely precise, since the organisation of some factories enables the electric motors installed to be driven either by purchased electricity or by electricity generated in the same works. This consideration applies particularly to those motors which are normally held in reserve against a breakdown or other emergency. For prime movers firms were required to state the total *effective* horse-power; for generators the total kilowatt capacity; and for electric motors, the total *rated* horse-power. Obsolete engines, engines of motor vehicles and locomotives were not to be included.

In recording the particulars of engines in their works, firms were required to show separately those ordinarily in use in 1930 and those in reserve or idle. These terms were intended to cover respectively engines in use for the greater part of the year, even though not working to their full capacity, and engines not in use, or only in use occasionally or during periods of breakdown of machinery ordinarily in use during the year.

12. *Electricity consumption.*—At the 1930 Census, for the first time, the compulsory powers of the Act were applied to the statement of the total quantity of electricity used in the year, distinguishing electricity generated in the firms' own works from electricity purchased. The particulars given under this head are shown in the report on each trade.

13. *Coal and coke consumption.*—Compulsory statements of the quantities of coal and coke used for power purposes, i.e., for driving engines, were required at the 1930 Census, and firms were also requested to state voluntarily the total quantities used for purposes other than for driving engines, the compulsory powers of the Act not being extended to fuel so used. The particulars furnished for the year 1930 are shown for each trade separately.

SCHEDULE I

LIST OF INDUSTRIES AND SERVICES COVERED BY THE CENSUS OF PRODUCTION

Non-Metalliferous Mining Products:

Coke and By-Products and Manufactured Fuel.
Cement.
Building Materials.
Manufactured Abrasives.

Bricks, Pottery and Glass:

Brick and Fireclay.
China and Earthenware.
Glass.

Chemicals:

Chemicals, Dyestuffs and Drugs.
Fertiliser, Disinfectant, Glue, etc.
Soap, Candle and Perfumery.

Chemicals—cont.

Paint, Colour and Varnish.
Seed Crushing.
Explosives and Fireworks.
Starch and Polishes.
Oil and Tallow.
Petroleum Refining.
Match.
Ink, Gum and Sealing Wax.

Iron and Steel:

Iron and Steel (Blast Furnaces).
Iron and Steel (Smelting and Rolling).
Wrought Iron and Steel Tube.
Iron and Steel Foundries.
Chain, Nail, Screw and Miscellaneous Forgings.
Tinplate.
Wire.
Tool and Implement.
Cutlery.
Needle, Pin, Fish-hook and Metal Smallwares.
Hardware, Hollow-ware, Metallic Furniture and Sheet Metal.
Small Arms.

Engineering and Shipbuilding:

Mechanical Engineering.
Electrical Engineering.
Shipbuilding.

Vehicles:

Motor and Cycle.
Aircraft.
Railway Carriage and Wagon.
Carriage, Cart and Wagon.

Non-Ferrous Metals:

Copper and Brass (Smelting, Rolling, etc.).
Lead, Tin, Aluminium and other Non-Ferrous Metals (Smelting, Rolling, etc.).
Gold and Silver Refining.
Finished Brass.
Plate and Jewellery.
Watch and Clock.

Textiles:

Cotton Spinning.
Cotton Weaving.
Woollen and Worsted.
Silk and Artificial Silk.
Linen and Hemp.
Jute.
Hosiery.
Textile Finishing.
Lace.
Rope, Twine and Net.
Canvas Goods and Sack.
Asbestos Goods and Engine and Boiler Packing.
Flock and Rag.
Elastic Webbing.
Coir Fibre, Horse-hair and Feather.
Roofing Felts.
Packing.

Leather:

Fellmongery.
Leather (Tanning and Dressing).
Saddlery, Harness and Leather Goods.

Clothing:

Tailoring, Dressmaking, Millinery, etc.
Boot and Shoe.
Hat and Cap.
Glove.
Fur.
Umbrella and Walking Stick.

Food, Drink and Tobacco:

Grain Milling.
Bread and Biscuit.
Cocoa and Sugar Confectionery.
Preserved Foods.
Bacon Curing and Sausage.
Butter, Cheese, Condensed Milk and Margarine.
Sugar and Glucose.
Fish Curing.
Cattle, Dog and Poultry Foods.
Ice.
Brewing and Malting.
Spirit Distilling.
Spirit Rectifying, Compounding and Methylating.
Aerated Waters, Cider, Vinegar, British Wine, etc.
Wholesale Bottling.
Tobacco.

Timber:

Timber (Sawmilling, etc.).
Furniture and Upholstery.
Cane and Wicker Furniture and Basketware.
Wooden Crates, Cases, Boxes and Trunks.
Coopering.

Paper, Printing and Stationery:

Paper.
Wallpaper.
Printing, Bookbinding, Stereotyping, Engraving, etc.
Printing and Publication of Newspapers and Periodicals.
Cardboard Box.
Manufactured Stationery.
Pens, Pencils and Artists' Materials.

Miscellaneous:

Rubber.
Scientific Instruments, Apparatus and Appliances (including Cinematograph Film Printing).
Musical Instruments.
Linoleum and Oilcloth.
Ivory, Horn, Picture Frame and Fancy Articles.
Brush.
Sports Requisites.
Games and Toys.
Incandescent Mantles.

Building and Contracting.

Mines and Quarries:

- Coal Mines.
- Slate Quarries.
- Non-Metalliferous (other than Slate) Quarries, including Oil Shale Mines.
- Metalliferous Mines and Quarries.
- Salt Mines, Brine Pits and Salt Works.

Public Utility Services:

- Railway Companies.
- Gas Works Undertakings.
- Electricity Undertakings.
- Waterworks Undertakings.
- Local Authorities (other than Gas, Electricity and Waterworks Undertakings).
- Tramway and Light Railway Companies.
- Canal, Dock and Harbour Companies.

Government Departments.

SCHEDULE II

INDUSTRIAL AREAS

The ten industrial areas distinguished are constituted as follows:

- (1) GREATER LONDON, comprising—
 - London Administrative County (including the City of London).
 - Maldon, Chelmsford, Ongar, Epping and other parts of South Essex.
 - Middlesex Administrative County.
 - Surrey Administrative County.
 - Gravesend, Sevenoaks and other parts of West Kent.
 - Barnet and other parts of South Hertfordshire.
- (2) LANCASHIRE, WITH NORTH CHESHIRE AND THE GLOSSOP AND NEW MILLS DISTRICT OF DERBYSHIRE, comprising—
 - Lancashire Administrative County.
 - Birkenhead, Chester, Northwich, Macclesfield and other parts of North Cheshire.
 - Glossop, New Mills and other parts of North Derbyshire.
- (3) WEST RIDING OF YORKSHIRE, WITH THE CITY OF YORK, comprising—
 - The West Riding (except Goole and Saddleworth):
 - Whitby, Kirkby Moorside, Thirsk and other southern parts of the North Riding.
- (4) NORTHUMBERLAND, DURHAM, AND THE CLEVELAND DISTRICT OF YORKSHIRE, comprising—
 - Northumberland Administrative County.
 - Durham Administrative County.
 - Guisborough, Stokesley, Northallerton, Richmond, Reeth and other northern parts of the North Riding of Yorkshire.
- (5) WARWICKSHIRE, WORCESTERSHIRE AND STAFFORDSHIRE.
- (6) THE REST OF ENGLAND (EXCEPT MONMOUTHSHIRE).
- (7) GLAMORGANSHIRE, MONMOUTHSHIRE AND CARMARTHENSHIRE.
- (8) THE REST OF WALES.
- (9) LANARKSHIRE, RENFREWSHIRE AND DUMBARTONSHIRE.
- (10) THE REST OF SCOTLAND.