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BUSINESS MONITOR

Report on the Census of Production

Metal-working machine tools and engineers' tools



A publication of the Government Statistical Service

PA322

BUSINESS MONITOR

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BUSINESS MONITORS

SPECIAL NOTE FOR PURCHASERS

The Business Statistics Office, aided by industry and commerce, provides much of the statistical data required by Government for monitoring the economy.

You may, if you wish, purchase much of the data in the form of Business Monitors which are a series of publications containing statistical information compiled from inquiry forms sent out regularly by the BSO to selected firms asking detailed questions about production, sales, employment and investment. Business Monitors are the primary or in many cases the only source of the information they contain.

The Annual Census of Production Monitors deal with the manufacturing, energy, mining and construction industries. There are 118 Monitors in this series some of which cover more than one industry and they are all listed overleaf. They are prefixed by a code P (for Production) followed by A (annual series).

The 1980 Annual Census of Production was the first to be produced on the basis of the 1980 revision of the Standard Industrial Classification with individual reports covering three digit groups of the classification. 1980 reports contain comparable data for 1979, reworked from information originally published on the basis of the 1968 revision of the SIC. Also available is a special summary volume for the 1979 Census of Production based on 1980 SIC, and also containing the 1979 Purchases Inquiry Business Monitor — PA1002.1. 1979 Census of Production and Purchases Inquiry is available from HMSO Books price £21.00 reference ISBN 011 5141146.

If you would like details concerning Annual Census of Production data published for earlier years please telephone Newport 56111 (STD 0633) Ext 2455.

If you would like to know more about the complete series of Business Monitors please contact HMSO Books (Publicity Department), FREEPOST, Norwich NR3 1BR who will send you a copy of the detailed Business Monitor Brochure which lists the Monitors available and tells you how to order. For individual Monitor copies, back numbers or further information regarding the contents of Business Monitors please contact the Librarian, Business Statistics Office, Government Buildings, Cardiff Road, Newport, Gwent, NPT 1XG. Telephone Newport (0633) 56111, Extension 2973. Telex 497121; answer back BSONPT G.

Report on the Census of Production 1982

Metal-working machine tools and engineers' tools

Presented by the Secretary of State for Trade and Industry
to Parliament in pursuance of the Statistics of Trade Act 1947
(10 & 11 Geo.6 Cha.39 sec 7)

Department of Trade and Industry
Business Statistics Office

London: Her Majesty's Stationery Office

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- PA120 Coke ovens
- PA130 Extraction of mineral oil and natural gas
- PA140 Mineral oil processing
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- PA256 Specialised chemical products mainly for industrial and agricultural purposes
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- PA314 Metal doors, windows, etc.
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- PA321 Agricultural machinery and tractors
- PA322 Metal-working machine tools and engineers' tools
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- PA325 Mining machinery, construction and mechanical handling equipment
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PA322 METAL-WORKING MACHINE TOOLS AND ENGINEERS' TOOLS

PA322

The information in this report relates to establishments classified to the Metal-working machine tools and engineers' tools industry, Group 322 in the Standard Industrial Classification Revised 1980. The industry Group covers the following Activity Headings:—

- 3221 Metal-working machine tools**
 - 1. Metal cutting machine tools**
Manufacture of metal cutting machine tools (including numerically controlled) e.g. boring, drilling, grinding, and milling machines, turning machines, machining centres, gear making machines, sawing machines, unit construction and transfer machines and multi-function machine tools. Manufacture of physico-chemical process machining tools for cutting, forming and welding metal, including machine tools incorporating ultrasonics and laser technology. Manufacture of rolling mills, wire rope making machines, wire weaving machines, gas cutting and welding equipment is classified to Group 328 and electric welding equipment to Group 343.
 - 2. Metal forming machine tools**
Manufacture of metal forming machine tools (including numerically controlled) e.g. bending and forming machines, drawing machines, forging and swaging machines, presses and shearing machines.
- 3222 Engineers' small tools**
 - 1. Hard tipped and other metal cutting tools**
Manufacture of diamond and hard metal tipped tools, tips, dies and die pellets and mining tools tipped with sintered metal carbide. Manufacture of twist drills, machine saws (including saws for cutting wood), milling cutters, machine knives, lathe tools, planer tools, threading dies and taps, etc.
 - 2. Press tools**
Manufacture of moulds, dies and other press tools including moulds and dies for working rubber, plastics or glass but excluding foundry moulds which are classified to Group 328.
 - 3. Other engineers' small tools**
Manufacture of chucks, jigs, fixtures and other tool and work holders for use with metal-working machine tools.

For a full description of the 1980 classification see Standard Industrial Classification Revised 1980 obtainable from Her Majesty's Stationery Office, price £3.40.

In interpreting the data in the tables it is essential to bear in mind the notes and definitions which commence on page 9.

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TABLE 1

Output and costs, 1979-1982
All United Kingdom establishments classified to the industry (a)

	Unit	1979	1980	1981	1982
Enterprises	Number	2,709	2,696	2,739	2,716
Establishments	"	2,888	2,884	2,916	2,872
Sales of goods produced	£ million	1,207.3	1,388.3	1,139.8	1,164.7
Receipts for work done and industrial services rendered	"	26.9	43.6	72.5	40.9
Capital goods produced for establishments' own use	"	1.5	2.1	2.2	2.7
Non-industrial services rendered	"	3.1	6.0	2.5	2.7
Goods merchanted or factored	"	102.6	93.6	106.4	127.4
Total sales and work done	"	1,341.4	1,533.6	1,323.4	1,338.4
Increase during the year, work in progress and goods on hand for sale	"	40.0	12.5	-4.7	-11.8
Gross output	"	1,381.4	1,546.1	1,318.7	1,326.6
Purchases of materials for use in production, and packaging and fuel	"	462.6	516.0	408.4	418.6
Purchases of goods for merchenting or factoring	"	79.9	67.6	86.6	93.1
Increase during the year, stocks of materials, stores and fuel	"	10.6	-2.5	-9.8	-9.7
Cost of industrial services received	"	52.7	40.5	33.1	46.7
Net output	"	796.8	919.5	780.8	758.5
Total employment (b)	Thousand	99.4	96.9	82.6	71.8
Net output per head	£	8,013	9,490	9,456	10,567
Payments for non-industrial services					
Hire of vehicles, plant and machinery	£ million	4.7	6.3	8.7	8.4
Rents of industrial and commercial buildings	"	3.8	6.6	6.2	6.1
Commercial insurance premiums	"	7.9	9.8	9.7	8.0
Bank charges	"	1.2	1.2	1.4	1.3
Other non-industrial services	"	66.9	70.3	78.1	80.5
Licensing of motor vehicles	"	0.4	0.5	0.6	0.6
Rates, excluding water rates	"	10.8	13.3	15.8	17.0
Gross value added at factor cost	"	701.0	811.5	660.3	636.6
Gross value added at factor cost per head	£	7,050	8,375	7,997	8,868

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census. Satisfactory returns accounted for 52 per cent of employment within the industry.

(b) Average number employed, during the year, including full and part-time employees and working proprietors.

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TABLE 2

Capital expenditure, 1979-1982
All United Kingdom establishments classified to the industry (a)(b)

	1979	1980	1981	1982
Land and buildings				
New building work	15.6	7.7	3.1	2.9
Land and existing buildings				
Acquisitions	1.5	3.1	1.8	1.7
Disposals	1.8	1.4	2.8	2.6
Plant and machinery				
Acquisitions	60.7	53.5	45.2	33.6
Disposals	3.6	4.8	6.1	7.5
Vehicles				
Acquisitions	12.2	9.5	7.9	8.0
Disposals	3.8	3.5	3.2	3.7
Total net capital expenditure	80.7	64.2	45.9	32.4

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

(b) Capital expenditure in respect of manufacturing establishments where production had not commenced before the end of the year, is included.

TABLE 3

Stocks and work in progress, 1979-1982
All United Kingdom establishments classified to the industry (a)

	1979	1980	1981	1982	Value at end of 1982
Increase during year					
Materials, stores and fuel	10.6	-2.5	-9.8	-9.7	105.5
Work in progress	34.5	-5.7	-5.4	-11.7	230.0
Goods on hand for sale	5.6	18.2	0.6	-0.1	122.1
Total	50.6	10.0	-14.5	-21.5	457.6

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

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TABLE 4

Analysis of establishments by size, 1982
All United Kingdom establishments classified to the industry (a)

Size group (b)	Establishments (c)	Enterprises (d)	Employment			Wages and salaries (f)			
			Total (e)	Operatives	Administrative, technical and clerical	Operatives		Administrative, technical and clerical	
						Total	per head	Total	per head
Number	Number	Thousand	Thousand	Thousand	£ million	£	£ million	£	
1-10	1,508	1,500	7.1						
11-19	698	685	10.3						
20-49	427	412	12.7	26.2	10.7	158.7	6,063	81.2	7,595
50-99	120	109	8.0						
100-199	59	57	8.1	5.3	2.8	30.6	5,776	21.0	7,563
200-299	20	16	4.8	3.1	1.7	19.5	6,213	13.9	8,207
300-399	17	17	5.9	3.8	2.1	23.2	6,194	15.0	7,094
400-499	9	9	3.8	2.7	1.2	16.3	6,129	8.3	7,085
500-749	8	8	5.1	3.3	1.8	19.7	6,044	14.5	7,958
750 and over	6	6	6.0	3.9	2.2	20.2	5,226	16.6	7,707
Total	2,872	2,716	71.8	48.1	22.4	288.2	5,987	170.6	7,604

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.
- (b) Average number employed during the year, including full and part-time employees and working proprietors.
- (c) Establishments employing fewer than 20 persons are generally exempt from Business Statistics Office inquiries and data for these establishments are therefore of doubtful reliability. Figures for establishments employing 1-10 persons are particularly at risk. They should be regarded merely as the best estimates available and used with caution.
- (d) The count of enterprises shown in each row represents the number of enterprises, irrespective of size, owning the establishments shown in the previous column, i.e. the number of enterprises owning the establishments within the size group indicated by the row heading. It should be noted that because an enterprise may own establishments in more than one size group, the sum of the individual enterprise counts may exceed the total for the industry.
- (e) Including working proprietors.

Total sales and work done (g)	Gross output	Net output	Gross value added at factor cost		Net capital expenditure (h)	Total stocks and work in progress at end of year	
			Total	per head			
							£ million
658.2	653.3	407.0	10,698	(j)	(j)	19.3	170.8
149.1	145.9	80.7	9,970	416.8(j)	9,033(j)	4.1	53.1
103.1	103.5	58.6	12,123	47.3	9,775	2.9	47.2
134.0	134.2	72.7	12,386	62.0	10,572	2.8	50.4
60.1	60.3	35.2	9,184	29.0	7,556	1.6	31.1
102.5	104.2	45.8	9,030	33.4	6,581	1.4	57.2
131.4	125.4	58.4	9,691	48.1	7,977	0.3	47.9
1,338.4	1,326.6	758.5	10,567	636.6	8,868	32.4	457.6

- (f) The cost of employers' contributions to national insurance, pensions and welfare schemes and the running costs of canteens, is estimated for the industry at £75.3 million. The remuneration of outworkers on returns received was £14 thousand.
- (g) Sales of goods produced, capital goods manufactured and buildings constructed by establishments for their own use, work done, industrial and non-industrial services rendered and merchant goods.
- (h) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.
- (j) Gross value added data relate to establishments employing 1-199.

TABLE 5

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Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments, 1982

Accounting year ended		Percentage of total returns received	Percentage of total number employed	
		per cent	per cent	
1982	April (a)	8.0	4.6	
	May	2.7	2.3	
	June	7.6	5.7	
	July	2.7	1.7	
	August	2.3	1.1	
	September	6.5	5.0	
	October	7.2	5.4	
	November	2.7	4.9	
	December	39.9	41.8	
	1983	January	3.8	8.1
		February	0.4	0.1
		March (b)	16.4	19.3

(a) From 6th April.

(b) Including returns made for twelve-month period ended 1st to 5th April 1983.

TABLE 6

Operating ratios, 1979-1982

All United Kingdom establishments classified to the industry (a)

	Unit	1979	1980	1981	1982
Gross output per head	£	13,892	15,957	15,971	18,481
Net output per head	£	8,013	9,490	9,456	10,567
Gross value added per head	£	7,050	8,375	7,997	8,868
Gross value added as a percentage of gross output	%	51	52	50	48
Ratio of gross output to stocks		3.1	3.0	2.8	2.9
Wages and salaries as a percentage of gross value added	%	63	64	71	72
Ratio of operatives to administrative, technical and clerical employees		2.4	2.3	2.2	2.1
Wages and salaries per administrative, technical and clerical employee	£	5,073	6,158	6,847	7,604
Wages and salaries per operative	£	4,339	5,155	5,318	5,987
Net capital expenditure per head	£	812	662	555	451
Net capital expenditure as a percentage of gross value added	%	12	8	7	5

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

NOTES

These notes give the main information needed for interpreting the figures in the industry Business Monitors: more detailed information about the census is given in a separate Business Monitor - PA1001 (Introductory Notes) of the Report on the Census of Production, 1982.

GENERAL INFORMATION

CHANGES MADE FOR 1982

There were no major changes between the 1982 census and the 1981 census.

INDUSTRIAL CLASSIFICATION

The 1982 census is being conducted on the SIC (Revised 1980). The United Kingdom SIC was first issued in 1948 and revised in 1958, 1968 and 1980. It exists to promote uniformity and comparability in the official statistics of the United Kingdom. Prior to the 1980 revision the general principles followed were those of the International Standard Industrial Classification of all Economic Activities of the United Nations Statistical Office but for the 1980 revision an attempt was made to align the United Kingdom classification as closely as practicable with NACE, the classification in use by the Statistical Office of the European Community. The SIC is a classification by activity and not a commodity classification.

STATISTICAL UNIT

The statistical unit for the purpose of the census is the establishment, which is defined in the SIC as the smallest unit which can provide the information normally required for an economic census, for example, employment, expenses, turnover, and capital formation. Usually the principal activities carried on in an establishment fall within a single heading of the classification (e.g. steel making or sugar refining). Typically the establishment embraces all the activities carried on at a single address e.g. a mine or factory, including those which are ancillary to the principal activities. Frequently distinct activities characteristic of different industries are carried on at one address, but normally these are not classified separately and the whole establishment is classified according to the main activity. If, however, the required range of data can be provided for each activity, each is taken to constitute a separate establishment. Sometimes activities which are conducted as a single business are carried on at a number of addresses. Where this is so, businesses are asked to provide the full range of information in respect of each address, whether or not the activities are different. Their activities may, however, be integrated to such an extent that they constitute a single establishment. In the latter case the establishment is defined to cover the combined activities at these addresses (termed local units). Separate figures of employment and net capital expenditure are obtained for each local unit in order to compile regional tables. Efforts are made by the BSO to ensure, by negotiating with respondents, that the return from an establishment does not cover local units in more than one of the countries of the United Kingdom.

Establishments are asked to exclude from their returns particulars relating to any department not engaged in production e.g. merchandising, transport or warehousing, for which they keep a separate set of accounts. Transfers of goods produced to such departments are treated as sales and respondents are asked to value them as far as possible as if sold to an independent purchaser. Where separate accounts are not kept, responders are asked to include details of all these activities in their return. Particulars relating to head offices mainly engaged in the administration of the production units within the scope of the census are included. Where more than one return is made the information in respect of the head office is apportioned among them. For certain purposes in the censuses of production (e.g. for disclosure testing and the preparation of the enterprise analyses shown in Business Monitor PA1002) related establishments are combined to enterprise level. An enterprise group is defined as a business consisting of either a single establishment or two or more establishments under common ownership or control. Information about relationships between establishments, the changing structure of groups of companies and about common ownership links is obtained from many sources, including the Stock Exchange Year Book, company reports, press reports, and information supplied by individual establishments.

THE REGISTER

A computerised register of about 124,000 production units throughout the United Kingdom is held in the BSO. This register provides the basis for a wide range of BSO inquiries mailed to the production sector. For each production unit the register contains identification particulars and information about a unit's eligibility for inclusion in an inquiry; its relationship with other units in common ownership; industrial classification; nationality of parent company if foreign owned and location indicators permitting regional analyses. Regional and size analyses of manufacturing local units are published each year in Business Monitor PA1003 (Analyses of United Kingdom Manufacturing (local) units by employment size).

The inquiries provide a major source of information for keeping the register continuously up-to-date and act as a check on its structure. For the establishments on the register making returns to the quarterly inquiries into manufacturers' sales, industrial classification is derived from an analysis of their commodity sales and is reviewed annually. For any other establishments for which no up-to-date information was available classification to SIC Revised 1980 was made on a pro-rata basis in line with the reclassification pattern by industry of establishments for which actual product sales data was held. Employment data are entered on the register from the quarterly inquiries and the censuses of production. Where establishments do not make a return to these inquiries the employment data are based on information provided by the Department of Employment from censuses of employment. New additions to the register are obtained from various sources including Value Added Tax records, the Census of Employment and register proving forms.

COVERAGE

The census covers United Kingdom establishments engaged in production and construction industries (Divisions 1 to 5 of the SIC (Revised 1980)). The Channel Islands and the Isle of Man are excluded.

Under the sampling arrangements agreed for the 1982 census, forms were despatched to samples of 1 in 4 and 1 in 2 for the 20 to 49 and 50 to 99 employment size bands respectively for most production industries. For a limited number of production industries, where there were very few units in the sample size bands, all establishments with employment of 20 or more were included. Units employing fewer than 20 continued to be exempt from selection. All units employing 100 or more were subject to a full coverage. The total number of forms mailed was 18,260. In the construction industry forms were despatched to a 1 in 2 sample of undertakings employing 20 to 49 and all undertakings employing 50 or more. The total number of forms mailed was 5,800.

SUPPRESSION OF INFORMATION RELATING TO INDIVIDUAL UNDERTAKINGS

Subsection 9(5)(b) of the Statistics of Trade Act, 1947 states that: "The following provisions shall have effect with respect to any report, summary or other communication to the public of information obtained under the foregoing provisions of this act -

in compiling any such report, summary or communication the competent authority shall so arrange it as to prevent any particulars published therein from being identified as being particulars relating to any individual person or undertaking except with the previous consent in writing of that person or the person carrying on that undertaking, as the case may be; but this provision shall not prevent the disclosure of the total quantity or value of any articles produced, sold or delivered; so, however, that before disclosing any such total the competent authority shall have regard to any representations made to them by any person who alleges that the disclosure thereof would enable particulars relating to him or to an undertaking carried on by him to be deduced from the total disclosed".

Where the publication of any figure is likely to disclose particulars relating to an individual undertaking, either the contributor is approached to seek consent for publication or the figure is suppressed. Where convenient, suppression takes the form of combining the disclosive figure with adjacent cells. Steps are also taken to avoid the release of figures which may lead to disclosure by deduction when compared with other census results.

SYMBOLS USED

The following symbols are used throughout the PA series of Business Monitors;

- .. not available
- nil or less than half the final digit shown
- * figures cannot be shown owing to the risk of disclosing information about individual enterprises.
- R revised

ROUNDING OF FIGURES

Figures in the tables have, where necessary, been rounded to the nearest final digit. Where figures have been so rounded, the sum of the constituent items may not always agree exactly with the total shown.

EXPLANATION OF TERMS USED IN THE CENSUS REPORT

The notes and definitions given in this section are mainly based on the general instructions given to respondents as to the way in which returns were to be completed.

CAPITAL EXPENDITURE

Capital expenditure during the year in respect of production units where production had not started before the end of the year is included. Establishments were asked not to deduct from the value of capital expenditure amounts received or expected to be received in grants or allowances from the Government or any statutory body or local authority. Establishments with 100 or more employees were asked to include a total net capital expenditure figure for the calendar year.

a. New building work

This represents the cost incurred during the year of new building and other constructional work to be used in connection with the business covered by the return. The value is that charged to capital account during the year of return; it includes expenditure on new buildings and on the extension or reconstruction of old buildings, the value of works of a capital nature carried out by the establishments own staff and the cost of any newly constructed buildings purchased. Figures shown include legal charges, stamp duties, agents commissions, etc.

b. Land and existing buildings

The items shown are the capital cost of freeholds purchased and the capital cost or premium payable for leaseholds acquired (excluding the value of assets acquired in taking over an existing business), and the amounts receivable for freeholds or leaseholds disposed of. The value is that charged to capital account during the year of return.

c. Plant, machinery and vehicles

The items shown are the value of plant and machinery and of vehicles acquired both new and second-hand, and the amount received for items disposed of during the year. The value of plant and machinery acquired includes plant, etc. which firms produced for their own use in connection with the business covered by the return. The value of plant, etc. acquired is the expenditure charged to capital account during the year of return less any discounts received, but including the cost of transport and installation. Deductible value added tax is excluded but non-deductible value added tax on motor cars acquired and Customs and Excise car tax are included. No deduction is made for depreciation, amortization or obsolescence. The proceeds of items disposed of during the year exclude amounts written-off for items scrapped.

CAPITAL GOODS PRODUCED FOR AN ESTABLISHMENT'S OWN USE

This includes all work of a capital nature carried out during the year by the establishment's own staff for their own use.

COST OF INDUSTRIAL SERVICES

This includes amounts payable to other firms for work done on materials supplied by the establishment, payments for repairs and maintenance (including those in respect of rented buildings) and amounts paid to other firms for contracts which have been sublet. Payments to outworkers are excluded.

COST OF NON-INDUSTRIAL SERVICES

This includes rents of industrial and commercial buildings, hire of plant, machinery and vehicles (excluding vehicles hired with drivers), commercial insurance premiums, bank charges and amounts paid for professional services, post office services, transport (within the United Kingdom), advertising, etc. Amounts payable on royalties for the right to use patents, trademarks, copyrights, etc., manufacturing and quarrying rights and technical "know-how" are also included.

EMPLOYMENT:

AVERAGE NUMBER EMPLOYED

Establishments were required to state the average number of persons on the pay roll during the year of return. Separate figures were required for:

- administrative, technical and clerical employees
- all other employees (operatives)

Averages could be calculated from the figures relating to the last week of each calendar month. Establishments were also required to state the number of working proprietors where appropriate and these are included in total employment figures. Full-time and part-time employees are included but outworkers (i.e. persons employed by establishments who worked in their own homes, etc. on materials supplied by the establishment) are excluded. The figures include persons engaged on merchanting or factoring and canteen workers where particulars in respect of these activities could not be excluded from the return.

WORKING PROPRIETORS

These include all persons regarded as "self-employed" for national insurance purposes and members of their families who work in the business without receiving a wage or salary; but such persons who work less than half the normal number of working hours are excluded. Directors working in the business but not in receipt of a definite wage, salary, or commission are included under this heading; directors paid by fee only are not included.

EMPLOYEES

Administrative, technical and clerical employees include directors in receipt of a definite wage, salary, or commission, managers and works foremen; research and design employees (other than operatives); draughtsmen, editorial staff, advertising staff, travellers and all office employees. Operatives include all other classes of employees, that is, broadly speaking all manual wage earners. They include operatives employed in power stations, inspectors, maintenance workers and cleaners. Staff engaged in transport (including roundsmen), or employed in warehouses, stores, shops and canteens, should be included only where separate accounts are not kept. Operatives engaged in outside work of erecting, fitting, etc. are also included, but outworkers are excluded.

EMPLOYERS' INSURANCE AND WELFARE CONTRIBUTIONS

This item includes employers' contributions to national insurance under the Social Security Pensions Act, 1975, as well as commercial insurance premiums to provide pensions, superannuation or other retirement benefits, sickness benefits, personal accident benefits, disability or death benefits for employees or former employees or their dependants. Contributions to the running costs of canteens, social centres, children's and holiday homes, etc. for employees, former employees and their dependants are also included.

GROSS OUTPUT

In the calculation of gross output the value of total sales and work done is increased by the rise (or reduced by the fall) during the year in the value of work in progress and goods on hand for sale.

GROSS VALUE ADDED AT FACTOR COST

Gross value added at factor cost is calculated by deducting from net output the cost of non-industrial services e.g. rent of buildings, hire of plant, machinery and vehicles (excluding vehicles hired with drivers), commercial insurance premiums, bank charges and amounts paid for professional services, post office services, transport (within the United Kingdom) and advertising, rates (excluding water rates) and the cost of licensing motor vehicles. This estimate of gross value added approaches more closely than census net output to the definition of net output or value added in national accounts statistics.

GROSS VALUE ADDED AT FACTOR COST PER HEAD

The figures of gross value added at factor cost per head are derived by dividing the gross value added by the average number of persons employed (full and part-time) on all activities covered by the returns, including operatives, administrative, technical and clerical employees and working proprietors, but excluding outworkers.

NET OUTPUT

Net output, a customary census measure, is calculated by deducting from gross output the cost of purchases (reduced by the rise, or increased by the fall, during the year of stocks of materials, etc.), the cost of industrial services received and where applicable, duties, etc.

NET OUTPUT PER HEAD

The figures of net output per head are derived by dividing the net output by the average number of persons employed (full and part-time) on all activities covered by the returns, including operatives, administrative, technical and clerical employees and working proprietors, but excluding outworkers.

NON-INDUSTRIAL SERVICES RENDERED

This includes rents received for commercial and industrial buildings, amounts charged for hiring out plant, machinery and vehicles and other goods and amounts charged to other organisations for the provision of transport. It also includes amounts received for the right to use patents, trademarks, copyrights etc., manufacturing and quarrying rights and technical "know-how" and revenue from such staff facilities as canteens.

OPERATING RATIOS

The operating ratios shown are obtained by dividing the estimate of the industry total for the quantity shown in the numerator by the corresponding estimate for the quantity shown in the denominator. These estimates cover all establishments classified to each industry, including establishments not selected and non-respondents. Within an industry, it is possible to compare ratios for an individual firm with the ratios shown for the relevant industry. However, it is important to bear in mind that various factors may affect the results e.g. differences in definitions, treatment of depreciation (which is not identified in the census data) and varying practice with regard to stock valuation, may affect comparability in some respects.

PURCHASES

Purchases include the cost of raw materials, components, semi-manufactured goods and workshop materials; of replacement parts and consumable tools not charged to capital account; of packaging materials of all types; of stationery and printed matter; of fuel, electricity and water; of materials to be used by the establishment or given out to other establishments for the production of machinery or other capital items for the establishment's own use; of materials for use by the establishment when working on goods supplied by customers; and of food, etc. for any canteen covered by the establishment's return. Transfers of goods to the establishment from another department of the same firm not covered by the establishment's return are included at a cost corresponding to the estimated selling value recorded by the other department. Amounts payable to transport firms or credited to the firm's own transport department for delivery of materials are excluded, as are all purchases of machinery and plant charged to capital account. Purchases of goods for merchanting or factoring have been collected separately since 1973. The values shown exclude VAT. They include, in addition to the actual purchase price, the value of packaging material charged to the establishment. The value of returned goods or packaging material returned to the suppliers and any trade discounts are excluded. Materials purchased duty-paid are included at their duty-paid value, less any drawback, rebate, etc. The cost of transport is included only if it is included with the purchase price in the firm's accounts. Imported goods are included at their full delivered cost. If in the firm's accounts the transport from docks or airport is not included in the cost of goods purchased, the cost is entered at cif plus duty (if applicable).

RECEIPTS FOR WORK DONE AND INDUSTRIAL SERVICES RENDERED

Figures for work done represent the amount charged for work carried out on materials supplied by a customer and include repair work. Within certain industries this heading covers a wide variety of activities, for example, within the food sector - butter packed on commission; within the textile industries - making up of garments, fur dressing and textile finishing; within printing and publishing - preparatory work on type-setting, block making and binding. Work done is also significant in the electrical machinery and heavy engineering industries, covering erection, installation and repair and jobbing work. Other activities within this heading include exploration work, research and development, glass-cutting and dressing and planing of timber. Industrial services rendered include repairs and maintenance, installation work, and technical research and studies for other organisations.

REMUNERATION PAID TO OUTWORKERS

The remuneration paid to outworkers (i.e. persons employed by the establishment who do their work in their own homes) is generally on a piece-work basis. Only amounts paid to outworkers whose names appear on the establishment's payroll are included. Amounts paid to outworkers by sub-contractors are excluded.

SALES OF GOODS PRODUCED

Sales for the purposes of the annual censuses means deliveries on sale of goods made by establishments in the United Kingdom covered by the inquiry. Sales of goods made for these establishments by outworkers or by other establishments from materials given out to them and sales of waste products are included. Forward sales and canteen takings are excluded. All sales in the period of the inquiry are included irrespective of when the goods were manufactured.

Goods produced in one establishment and transferred either to ancillary departments not engaged in production for which there are separate accounts, or to another establishment of the same firm not covered by the return are treated as sales by the producing establishment and valued as far as possible as if they had been sold to an independent purchaser. Goods transferred to wholesale or retail selling organisations, for which separate accounts are kept, are valued on the same basis.

The value shown for sales is the "net selling value" defined as the amount (excluding VAT) charged to customers, whether on an ex-works or delivered basis, after any trade discounts and agents' commissions have been deducted. The cost of packing materials less allowance for returnable cases is included. In industries where products attract Excise Duty the value stated is usually inclusive of duty if sold duty-paid and exclusive of duty if sold in bond or exported.

STOCKS AND WORK IN PROGRESS

Values are given of stocks of goods on hand for sale and of materials, stores and fuel at the end of the year of return and of the change during the year, including any stocks of goods held for merchanting or factoring.

Work in progress is defined as materials which have been partially processed by the establishment but which are not usually sold or transferred to another establishment without further processing. The values include the cost of materials consumed and labour used. Progress payments made to sub-contractors are excluded and progress payments received from other organisations are not deducted.

WAGES AND SALARIES

These are amounts paid during the year to operatives and to administrative, technical and clerical employees. Payments to working proprietors, whether called salaries or not, are excluded. The values shown include all overtime payments, bonuses and commissions, whether paid regularly or not, and no deduction is made for income tax, insurances, contributory pensions, etc. The value of redundancy payments less any amounts reimbursed from Government sources is included. The values of any payments in kind, travelling expenses, etc. is excluded.

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