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Business Statistics Office

# Business Monitor

Report on the  
Census of Production

Radio, radar and  
electronic capital goods



HMSO



A publication of the Government Statistical Service

PA367

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A publication of the Government Statistical Service

## Report on the Census of Production 1977

### Radio, radar and electronic capital goods

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

Department of Industry  
Business Statistics Office

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#### Special Note for Purchasers

Commencing with the 1971 Census, the Census of Production reports are being numbered in a uniform series embracing all industrial inquiries in the Business Monitor series. These Business Monitors have a code P (for production) followed first by A (indicating that it is an annual series) or Q (quarterly) or M (monthly); and then by a number indicating the minimum list heading, or sub-division of a minimum list heading, of the Standard Industrial Classification (revised 1968).

The Census of Production (PA) reports are available on standing order (details on application to Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH. Telephone 01-928 6977), although they are not included in the global subscription arrangements for the Business Monitor series.

#### Government Statistical Service

A service of statistical information and advice is provided to the Government by specialist staffs employed in the statistics division of individual Departments. Statistics are made generally available through their publications and further information and advice on them can be obtained from the Departments concerned.

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PA367 RADIO, RADAR AND ELECTRONIC CAPITAL GOODS

PA367

The information in this report relates to establishments classified to the Radio, radar and electronic capital goods industry, minimum list heading 367 in the Standard Industrial Classification (revised 1968). The activities of the industry include:—

Manufacturing electric or electronic sound or visual signalling systems or apparatus such as bells, sirens, indicator panels, burglar and fire alarms, road traffic signalling equipment (but not signalling equipment for vehicles), electronic railway signalling equipment (but not electric railway signalling equipment); radio and television transmitters, radio communication receivers, radar and electronic navigational aids, high frequency heating apparatus, magnetic compasses and gyroscopes, X-ray apparatus and electromedical equipment including infra-red, ultra-violet, radiant heat, etc. lamps for diagnosis and therapy: electrical and electronic equipment for stimulation and massage; heart, kidney and lung machines; sterilising equipment and reading aids. Industrial electronic control equipment, electronic measuring equipment, electronic computers and electronic desk calculators are excluded.

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

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TABLE 1

Output and costs, 1973-1977  
All United Kingdom establishments classified to the industry (a)

	Unit	1973	1974	1975	1976	1977
Enterprises	Number	455	573	637	757	779
Establishments	"	525	665	741	863	886
Sales of goods produced	£ thousand	435,545	542,545	724,987	812,929	1,027,850
Receipts for work done and industrial services rendered	"	(b)	(b)	(b)	60,491	89,029
Capital goods produced for establishments' own use	"	1,954	2,881	2,847	2,706	3,020
Non-industrial services rendered	"	11,631	18,266	25,971	25,865	28,030
Goods merchanted or factored	"	28,236	37,828	45,017	96,754	85,075
<b>Total sales and work done (c)</b>	"	<b>477,366</b>	<b>601,519</b>	<b>798,822</b>	<b>998,745</b>	<b>1,233,004</b>
Increase during the year, work in progress and goods on hand for sale	"	9,164	47,597	53,636	55,468	45,023
<b>Gross output</b>	"	<b>486,531</b>	<b>649,116</b>	<b>852,458</b>	<b>1,054,213</b>	<b>1,278,027</b>
Purchases of materials for use in production, and packaging and fuel	"	179,011	226,108	322,078	373,766	507,824
Purchases of goods for merchenting or factoring	"	26,474	40,368	35,461	68,904	56,280
Increase during the year, stocks of materials, stores and fuel	"	13,491	14,731	11,252	5,477	15,411
Cost of industrial services received	"	16,108	18,605	20,062	28,894	36,762
<b>Net output</b>	"	<b>278,429</b>	<b>378,765</b>	<b>486,109</b>	<b>588,126</b>	<b>692,572</b>
Total employment (d)	Thousands	89.1	92.4	96.5	96.3	102.4
<b>Net output per head</b>	£	<b>3,124</b>	<b>4,099</b>	<b>5,036</b>	<b>6,108</b>	<b>6,765</b>
Payments for non-industrial services						
Hire of vehicles, plant and machinery	£ thousand	4,480	5,851	7,867	3,529	5,850
Rents of industrial and commercial buildings	"	(e)	(e)	(e)	7,054	9,698
Commercial insurance premiums	"	3,123	3,792	4,596	5,267	6,165
Bank charges	"	282	608	830	615	1,175
Other non-industrial services	"	15,971	15,813	27,340	34,631	53,108
Licensing of motor vehicles	"	84	113	149	203	232
Rates, excluding water rates	"	2,916	3,939	5,788	6,584	7,489
<b>Gross value added at factor cost</b>	"	<b>251,573</b>	<b>348,649</b>	<b>439,538</b>	<b>530,243</b>	<b>608,855</b>
<b>Gross value added at factor cost per head</b>	£	<b>2,823</b>	<b>3,773</b>	<b>4,553</b>	<b>5,506</b>	<b>5,948</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons. Satisfactory returns accounted for 85 per cent of employment within the industry.
- (b) Included in sales of goods produced.
- (c) Details of manufacturers' quarterly sales of principal products are published regularly in Business Monitor PQ367.
- (d) Average number employed, including full and part-time employees (see table 7) and working proprietors.
- (e) For 1973-1975 rents of industrial and commercial buildings were not recorded separately, but included in hire of vehicles, plant and machinery.

TABLE 2

Capital expenditure, 1973-1977  
All United Kingdom establishments classified to the industry (a)(b)

	£ thousand				
	1973	1974	1975	1976	1977
Land and buildings					
New building work	2,632	2,877	1,782	3,596	3,865
Land and existing buildings					
Acquisitions	1,326	1,481	2,578	1,416	1,132
Disposals	806	163	121	58	50
Vehicles					
Acquisitions	1,342	1,664	1,786	2,564	4,310
Disposals	390	409	452	790	1,170
Plant and machinery					
Acquisitions	16,242	20,919	18,682	25,650	36,305
Disposals	666	424	627	2,079	1,478
<b>Total net capital expenditure</b>	<b>19,681</b>	<b>25,944</b>	<b>23,627</b>	<b>30,299</b>	<b>42,915</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.
- (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, 1973-1977  
All United Kingdom establishments classified to the industry (a)

	£ thousand				
	1973	1974	1975	1976	1977
			Increase		Value at end of year
Materials, stores and fuel	13,491	14,731	11,252	5,477	95,822
Work in progress	9,997	41,205	40,390	46,935	329,555
Goods on hand for sale	-833	6,392	13,246	8,533	73,435
<b>Total</b>	<b>22,655</b>	<b>62,328</b>	<b>64,888</b>	<b>60,945</b>	<b>498,812</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.

TABLE 4

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Analysis of establishments by size, 1977  
All United Kingdom establishments classified to the industry (a)

Size group (b)	Estab-lish-ments (c)	Enter-prises (c)	Employment			Wages and salaries (f)			
			Total (d)	Opera-tives	Others (e)	Operatives		Others (e)	
						Total	per head	Total	per head
Number	Number	Number	Number	Number	Number	£ thousand	£	£ thousand	£
1-10	543	521	2,393						
11-19	117	114	1,664						
20-49	72	71	2,292	5,448	3,555	14,526	2,666	12,945	3,641
50-99	44	43	3,119						
100-199	36	36	4,716	2,896	1,815	7,589	2,620	6,562	3,616
200-299	17	17	4,270	2,501	1,765	7,014	2,805	6,412	3,633
300-399	9	6	3,002	1,544	1,458	4,402	2,851	5,606	3,845
400-499	9	8	4,086	2,147	1,939	7,411	3,452	6,928	3,573
500-749	10	8	6,041	2,682	3,359	8,548	3,187	13,012	3,874
750-999	7	7	6,012	3,035	2,977	9,264	3,052	11,975	4,022
1,000-1,999	10	6	15,709	6,522	9,187	21,854	3,351	35,574	3,872
2,000-2,499	3	3	6,689	3,504	3,185	12,790	3,650	12,010	3,771
2,500-2,999	4	4	10,980	4,979	6,001	15,537	3,121	26,139	4,356
3,000 and over	5	3	31,397	13,418	17,979	41,725	3,110	72,295	4,021
<b>Total</b>	<b>886</b>	<b>779</b>	<b>102,370</b>	<b>48,676</b>	<b>53,220</b>	<b>150,660</b>	<b>3,095</b>	<b>209,458</b>	<b>3,936</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.  
 (b) Average number employed, including full and part-time employees (see table 7) and working proprietors.  
 (c) The sum of the figures for the size groups may exceed the total for the industry because some enterprises control establishments in more than one size group.  
 (d) Including working proprietors.  
 (e) Administrative, technical and clerical employees.

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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			
							£ thousand
£ thousand	£ thousand	£ thousand	£	£ thousand	£ thousand		
113,748	116,782	63,304	6,686	(j)	(j)	3,625	29,922
55,380	57,429	31,775	6,738	83,210(j)	5,866(j)	1,864	16,831
53,022	54,958	30,429	7,126	26,992	6,321	1,768	16,600
35,337	37,020	19,954	6,647	17,880	5,956	1,259	13,532
52,653	52,923	32,994	8,075	27,331	6,689	1,593	18,613
92,855	100,368	51,280	8,489	46,401	7,681	2,272	37,093
87,873	90,939	51,771	8,611	43,975	7,314	2,214	36,168
202,870	208,385	123,813	7,882	109,644	6,980	9,867	91,828
74,568	78,885	49,621	7,418	42,939	6,419	2,035	32,413
122,939	136,818	76,005	6,922	68,295	6,220	4,365	73,734
341,758	343,520	161,627	5,148	142,188	4,529	12,052	132,079
<b>1,233,004</b>	<b>1,278,027</b>	<b>692,572</b>	<b>6,765</b>	<b>608,855</b>	<b>5,948</b>	<b>42,915</b>	<b>498,812</b>

- (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 £51,345 thousand. The remuneration of outworkers on returns received was £170 thousand.  
 (g) Sales of goods produced, capital goods manufactured, buildings constructed by establishments for their own use, work done, industrial and non-industrial services rendered and merchanted 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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Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1977  
All United Kingdom establishments classified to the industry (a)

Area	Total employment (b)		Net capital expenditure (c)		Net output (d)		Gross value added at factor cost (d)	Gross value added at factor cost returned by establishments with 80 per cent or more of their employment in the region as a proportion of total gross value added at factor cost in the region
	Thousands	per cent of United Kingdom	£ thousand	per cent of United Kingdom	£ thousand	£ thousand		
Standard regions of England								
North	1.3	1.3	373	0.9	6,654	5,569	7.3	
Yorkshire and Humberside	0.7	0.7	360	0.8	*	*	*	
East Midlands	3.6	3.6	1,044	2.4	18,523	15,562	25.7	
East Anglia	3.3	3.2	1,755	4.1	*	*	*	
South East	71.6	70.0	31,340	73.0	487,975	429,328	70.9	
South West	8.7	8.5	2,735	6.4	62,007	53,597	71.1	
West Midlands	1.2	1.2	387	0.9	7,776	6,873	35.8	
North West	3.0	3.0	1,179	2.8	19,973	17,374	29.4	
England	93.5	91.4	39,172	91.3	641,885	561,961	/	
Wales	1.1	1.1	328	0.8	5,803	5,062	24.2	
Scotland	7.7	7.6	3,409	7.9	44,634	41,618	82.6	
Great Britain	102.3	100.0	42,909	100.0	692,322	608,641	/	
Northern Ireland	—	—	6	—	250	214	—	
United Kingdom	102.4	100.0	42,915	100.0	692,572	608,855	/	

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.

(b) Average number employed, including full and part-time employees (see table 7) and working proprietors.

(c) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.

(d) Where a census return covered addresses in two or more regions, an estimate of the net output attributable to each address was made by assuming that net output was proportionate to employment. An estimate for each region was obtained by aggregating estimates of net output for addresses located in that region. Gross value added at factor cost is treated similarly.

TABLE 6

PA367

Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments employing 20 or more persons, 1977

Accounting year ended	Percentage of total returns received		Percentage of total number employed	
	per cent		per cent	
1977 April (a)	3.9		0.6	
May	1.3		0.1	
June	5.2		10.6	
July	5.2		7.1	
August	3.2		0.5	
September	2.6		0.4	
October	1.9		0.2	
November	3.2		2.2	
December	38.7		15.9	
1978 January	2.6		0.5	
February	1.9		0.6	
March (b)	30.3		61.4	

(a) From 6th April.

(b) Including returns made for twelve-month period ended 1st to 5th April 1978.

TABLE 7

Percentage analysis of employees, by full and part-time employment and sex, 1977(a)

Sex	Full-time		Part-time		All employees	
	per cent		per cent		per cent	
Male	72		1		73	
Female	22		5		27	

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) in the United Kingdom at mid-June, 1976, because 1977 information is not yet available.

TABLE 8

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Operating ratios, 1977  
All United Kingdom establishments classified to the industry (a)

	Unit	1977
Gross output per head	£	12,484
Net output per head	£	6,765
Gross value added per head	£	5,948
Gross value added as a percentage of gross output	%	48
Ratio of gross output to stocks		2.6
Wages and salaries as a percentage of gross value added	%	59
Ratio of operatives to administrative, technical and clerical employees		0.9
Wages and salaries per operative	£	3,095
Wages and salaries per administrative, technical and clerical employee	£	3,936
Net capital expenditure per head	£	419
Net capital expenditure as a percentage of gross value added	%	7

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments employing fewer than 20 persons.

## 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 - PA 1001 (Introductory Notes) of the Report on the Census of Production, 1977.

## GENERAL INFORMATION

## Changes made for 1977

The Census for 1977 is in line with similar inquiries being conducted in other member countries of the European Economic Communities. There was a small number of changes in the scope of the industry reports compared with 1976.

For the first time in the industry monitors a table has been included on operating ratios, calculated from census measures of output, investment, manpower and labour costs.

Specific changes are explained in the introductions to the industry reports or by footnotes to the tables.

Suppression of information relating to individual undertakings Section 9(5)(b) of the Statistics of Trade Act 1947 states - "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".

If a figure involved disclosure the contributor concerned was sometimes asked to give permission for its publication. In the majority of cases permission was given. When it was refused and where contributors were not approached the figure has been suppressed, either by combining it with other figures, or as in the regional tables, by omitting the figure altogether.

## 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.

## Industrial classification

The United Kingdom Standard Industrial Classification (SIC) was first issued in 1948 and was subsequently revised in 1958 and 1968. It exists to promote uniformity and comparability in the official statistics of the United Kingdom. The general principles followed are those of the International Standard Industrial Classification of all Economic Activities of the United Nations Statistical Office but the United Kingdom SIC reflects the organisation and structure of industry and trade as it exists in the United Kingdom. The SIC is a classification by activity and is not a commodity classification. However, an index of all commodity headings for which sales data are provided in the Quarterly Business Monitors, is published in Business Monitor PQ 1000.

## Statistical units

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, capital formation. Usually the principal activities carried on in an establishment fall within a single heading of the classification (eg steel making or sugar refining). Typically the establishment embraces all the activities carried on at a single address eg a mine or a 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 separate 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 are obtained of employment and net capital expenditure at each unit in order to compile regional tables. Efforts are made by the Business Statistics Office (BSO) to ensure, by negotiating with respondents, that the return from an establishment does not cover local units or addresses in more than one of the countries of the United Kingdom.

Further information about the statistical unit appeared in an article "The statistical unit in business inquiries" in Statistical News No 13 May 1971.

Establishments are asked to exclude from their returns particulars relating to any department not engaged in production eg merchandising, transport, 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 they 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 were included. Where more than one return was made the information in respect of the head office was apportioned among them.

For certain purposes in the annual censuses of production (especially the enterprise analyses of Business Monitor PA 1002) related establishments are combined. For these purposes an enterprise group may be defined as a business consisting of either a single establishment or two or more establishments under common ownership or control. Bringing together establishments into enterprise groups is also necessary for the purpose of ensuring that there will be no disclosure of the activities of any one enterprise group. Information about the relationship of 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

The register permits a questionnaire to be sent direct to the reporting establishment on which the latter can include information relating to all the manufacturing (or local) units which it comprises. The inquiries provide a major source of information for keeping the register continuously up-to-date and act as a check on its detail and structure. For the establishments on the register making returns to the quarterly inquiries, the industrial classification is derived from an analysis of their sales of commodities and is reviewed annually. Employment data are entered on the register from returns to the annual census of production. In cases where an establishment does not make a return to these inquiries the employment data are based on information provided by the Department of Employment from the annual censuses of employment. New additions to the register are obtained from various sources including Companies Registration Office and the Department of Employment. The 1973 Finance Act allows HM Customs and Excise to pass to the BSO lists of businesses registered for VAT. Information from all these sources is used to improve the register, and where necessary, details are sought directly from new businesses. Units which cease to trade are removed from the live register.

Increasing use of the information obtained from the Department of Employment, HM Customs and Excise and BSO inquiries has led to improvements on the register, which in turn enabled the BSO to produce better estimates, particularly of numbers of smaller establishments and enterprises.

## Coverage

A return was required in the 1977 Census from each establishment with 20 or more employees. Each establishment is classified to an industry, as defined in the SIC, whose principal products form the major part of the establishment's sales.

## Regions

The regions defined in Table 5 take account of the boundary changes arising out of the Local Government Act 1972 and the Local Government Act (Scotland) 1973. These changes came into effect in April 1974 in England and Wales and May 1975 in Scotland.

## TERMS USED IN THE CENSUS REPORT

### Average number employed

Establishments were required to state the number of persons on the payroll on average during the year of return, whether full-time or part-time employees. Separate figures were required for:

- (a) administrative, technical and clerical employees
- (b) 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. Outworkers (ie 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 worked in the business without receiving a wage or salary; but such persons who worked 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, transport (including roundsmen), warehouses, stores, shops and canteens, inspectors, maintenance workers and cleaners. Operatives engaged in outside work of erecting, fitting etc are also included, but outworkers are excluded.

### Capital expenditure

Capital expenditure during the year in respect of manufacturing 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 each 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 establishment's 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 is 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.

### 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.

### 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.

### 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) and 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.

### 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 eg 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.

### 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 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). Leasing, renting and hire purchase charges 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. New building work and machinery or other capital items produced by establishments for hiring out or leasing are regarded as sales, the value included in the return being that adopted in the establishments' capital asset accounts. 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 in 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.

### 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.

### Capital goods produced for establishments' own use

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

### 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.

### Goods merchanted or factored

Merchant goods are those (excluding canteen sales) sold without

having been subjected to any manufacturing process by the seller.

### 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, together with a margin of overhead costs and profits. 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, commissions and holiday pay, 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 value of any payments in kind, travelling expenses etc is excluded.

### Remuneration paid to outworkers

The remuneration paid to outworkers (ie 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.

### Employers' insurance and welfare contributions

This item includes employers' contributions to national insurance (and/or earnings related basic contributions under the Social Security Pensions Act, 1975) and 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.

### Operating ratios

The operating ratios shown were 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 the industry, including exempted establishments 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 - for example, differences in definitions, treatment of depreciation (which is not identified in the census data) and varying practise with regard to stock valuation, may affect comparability in some respects.

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