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Business Statistics Office

# Business Monitor

## Report on the Census of Production

### Shipbuilding and marine engineering

HMSO



A publication of the Government Statistical Service



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Enquiries:  
Business Statistics Office  
Newport, Gwent  
NPT 1XG  
Newport 56111 (STD code 0633) ext 2455  
Telex 497121  
Answer Back BSONPT G

# PA370

# Business Monitor

A publication of the Government Statistical Service

## Report on the Census of Production 1979

## Shipbuilding and marine engineering

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

London: Her Majesty's Stationery Office



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- PA1002 Summary tables

The information in this report relates to establishments classified to the Shipbuilding and marine engineering industry, minimum list heading 370 in the Standard Industrial Classification (revised 1968). The activities of the industry include:—

Building or repairing ships (naval and merchant), boats, barges, lighters etc., of all types and sizes, whether self-propelled or not; making oars, masts and spars, rigging and other tackle and ship's models, off-shore oil and gas drilling rigs (floating); manufacturing and repairing main and auxiliary steam (reciprocating and turbine) engines for ships and marine boilers. The manufacture or repair of internal combustion engines for ships and boats (including out-board motors) is included if carried out at marine engineering establishments. The manufacture of ships' capstans and winches is 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

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Output and costs, 1975-1979  
All United Kingdom establishments classified to the industry (a)

	Unit	1975	1976	1977	1978	1979
Enterprise	Number	1,350	1,403	1,406	1,384	1,372
Establishments	"	1,483	1,537	1,549	1,551	1,535
Value of vessels and floating equipment completed for sale	Thousands	399,538	580,973	578,189	700,775	908,938
Other sales of goods produced (including marine engineering)	"	608,496(b)	477,138	536,288	598,739	561,714
Receipts for work done and industrial services rendered	"	(b)	279,219	340,510	355,461	348,317
Capital goods produced for establishments' own use	"	6,471	7,782	9,278	7,582	11,552
Non-industrial services rendered	"	2,561	3,650	4,990	5,718	5,580
Goods merchanted or factored	"	11,663	23,045	28,204	31,448	29,471
<b>Total sales and work done (c)</b>	"	<b>1,028,729</b>	<b>1,371,808</b>	<b>1,497,459</b>	<b>1,699,724</b>	<b>1,865,572</b>
Increase during the year, goods on hand for sale (d)	"	1,584	1,137	432	2,268	1,128
Increase during the year, work in progress						
Vessels and floating equipment of all tonnages (e)	"	155,101	43,106	136,890	87,624	135,252
Other work in progress including marine engineering	"	27,568	61,933	84,429	8,934	13,755
<b>Gross output</b>	"	<b>1,212,982</b>	<b>1,477,984</b>	<b>1,719,210</b>	<b>1,798,550</b>	<b>2,015,707</b>
Purchases of materials for use in production, and packaging and fuel	"	514,295	616,220	725,639	793,154	770,637
Purchases of goods for merchanding or factoring	"	10,099	18,933	22,165	25,508	25,843
Increase during the year, stocks of materials, stores and fuel	"	12,754	9,175	11,209	4,359	16,944
Cost of industrial services received	"	71,319	97,702	109,022	130,256	163,562
<b>Net output</b>		<b>630,023</b>	<b>754,305</b>	<b>873,592</b>	<b>853,992</b>	<b>1,072,609</b>
Total employment (f)	Thousands	177.3	178.2	173.1	169.4	156.4
<b>Net output per head</b>	£	<b>3,554</b>	<b>4,233</b>	<b>5,045</b>	<b>5,043</b>	<b>6,860</b>
Payments for non-industrial services						
Hire of vehicles, plant and machinery	Thousands	3,921(g)	3,185	5,298	5,354	5,730
Rents of industrial and commercial buildings	"	(g)	2,440	2,196	2,762	3,017
Commercial insurance premiums	"	10,278	12,940	14,475	16,150	14,333
Bank charges	"	429	472	412	430	416
Other non-industrial services (h)	"	17,628	27,060	31,496	37,124	40,852
Licensing of motor vehicles	"	171	206	264	266	263
Rates, excluding water rates	"	9,246	10,657	11,734	12,892	13,909
<b>Gross value added at factor cost</b>	"	<b>588,349</b>	<b>697,344</b>	<b>807,717</b>	<b>779,014</b>	<b>994,088</b>
<b>Gross value added at factor cost per head</b>	£	<b>3,319</b>	<b>3,914</b>	<b>4,665</b>	<b>4,600</b>	<b>6,358</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census. Satisfactory returns accounted for 86 per cent of employment within the industry.
- (b) Receipts for work done and industrial services rendered included in other sales of goods produced (including marine engineering).
- (c) Details of manufacturers' quarterly sales of principal products are published regularly in Business Monitor PQ370.
- (d) Excluding vessels and floating equipment of all types.
- (e) Including all types of merchant vessels, pleasure craft, war vessels, floating docks, pontoons, off-shore drilling rigs etc.
- (f) Average number employed during the year, including full and part-time employees (see table 7) and working proprietors.
- (g) Rents of industrial and commercial buildings (not recorded separately) included in hire of vehicles, plant and machinery.
- (h) For 1975-1978 transport of goods by road (within the United Kingdom) was not recorded separately. For 1979 the amount payable was £3,346 thousand.

TABLE 2

Capital expenditure, 1975-1979  
All United Kingdom establishments classified to the industry (a)(b)

	£ thousand				
	1975	1976	1977	1978	1979
Land and buildings					
New building work	33,265	27,614	21,165	31,912	44,291
Land and existing buildings					
Acquisitions	512	806	4,702	3,076	19,460
Disposals	484	808	411	222	1,297
Vehicles					
Acquisitions	1,514	2,583	4,286	4,372	4,505
Disposals	502	717	926	1,163	1,764
Plant and machinery					
Acquisitions	43,088	38,410	37,796	39,173	46,868
Disposals	2,610	2,112	1,670	773	6,096
<b>Total net capital expenditure</b>	<b>74,782</b>	<b>65,776</b>	<b>64,942</b>	<b>76,375</b>	<b>105,968</b>

(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, 1975-1979  
All United Kingdom establishments classified to the industry (a)

	£ thousand					
	1975	1976	1977	1978	1979	Value at end of year
			Increase			
Materials, stores and fuel	12,754	9,175	11,209	4,359	16,944	135,664
Work in progress						
Vessels and floating equipment of all tonnage (b)	155,101	43,106	136,890	87,624	135,252	1,282,280
Other work in progress including marine engineering	27,568	61,933	84,429	8,934	13,755	364,004
Goods on hand for sale (c)	1,584	1,137	432	2,268	1,128	8,361
<b>Total</b>	<b>197,007</b>	<b>115,350</b>	<b>232,960</b>	<b>103,185</b>	<b>167,079</b>	<b>1,790,310</b>

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

(b) Including all types of merchant vessels, pleasure craft, war vessels, floating docks, pontoons, off-shore drilling rigs etc.

(c) Excluding vessels and floating equipment of all types.



TABLE 4

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Analysis of establishments by size, 1979  
All United Kingdom establishments classified to the industry (a)

Size group (b)	Estab-lish-ments (b)	Enter-prises (c)	Employment			Wages and salaries (f)				
			Number	Number	Number	Operatives		Others (e)		
						Total (d)	Opera-tives	Others (e)	Total	per head
1-10	972	945	4,428 )							
11-19	219	213	3,230 )	13,122	3,750	57,449	4,378	19,761	5,270	
20-49	122	118	3,825 )							
50-99	86	83	6,120 )							
100-199	56	52	7,441	5,957	1,472	25,222	4,234	7,765	5,275	
200-299	13	13	2,995	2,377	618	11,747	4,942	3,363	5,441	
300-399	14	10	4,968	3,690	1,278	19,040	5,160	7,018	5,491	
400-499	10	7	4,386	3,580	798	17,076	4,770	4,547	5,698	
500-749	8	5	4,543	3,360	1,183	15,934	4,742	5,904	4,990	
750-1,499	16	5	16,470	12,854	3,616	61,133	4,756	22,219	6,145	
1,500-2,999	5	3	11,430	9,011	2,419	40,550	4,500	14,491	5,990	
3,000 and over	14	3	86,518	64,587	21,931	289,206	4,478	128,897	5,877	
<b>Total</b>	<b>1,535</b>	<b>1,372</b>	<b>156,354</b>	<b>118,538</b>	<b>37,065</b>	<b>537,357</b>	<b>4,533</b>	<b>213,964</b>	<b>5,773</b>	

(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 (see table 7) and working proprietors.

(c) 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.

(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				
							Total	per head
£ thousand	£ thousand	£ thousand	£	£ thousand	£	£ thousand	£ thousand	
265,112	276,423	141,559	8,042	(j)	(j)	7,405	66,399	
99,428	100,773	54,247	7,290	172,579(j)	6,891(j)	3,226	27,431	
49,394	50,095	23,459	7,833	20,395	6,810	1,608	10,677	
62,130	61,862	33,839	6,811	29,816	6,002	2,234	32,625	
61,032	61,101	30,125	6,868	27,291	6,222	1,782	31,103	
50,747	49,902	25,399	5,591	23,347	5,139	1,562	34,514	
160,057	179,391	67,889	4,122	57,985	3,521	4,851	217,410	
195,446	143,816	50,166	4,389	43,904	3,841	3,159	141,772	
922,225	1,092,344	645,926	7,466	618,771	7,152	80,140	1,228,378	
<b>1,865,572</b>	<b>2,015,707</b>	<b>1,072,609</b>	<b>6,860</b>	<b>994,088</b>	<b>6,358</b>	<b>105,968</b>	<b>1,790,310</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 £128,025 thousand. The remuneration of outworkers on returns received was £ 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

PA370

Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1979  
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	percentage
Standard regions of England							
North	*	*	*	*	*	*	*
Yorkshire and Humberside	4.1	2.6	525	0.6	24,097	21,835	69.5
East Midlands	0.8	0.5	377	0.4	5,400	4,815	20.0
East Anglia	3.7	2.4	1,645	1.6	28,002	25,236	38.9
South East	32.7	20.9	47,885	45.2	338,549	322,329	83.2
South West	17.5	11.2	27,355	25.8	121,102	114,182	86.7
West Midlands	1.1	0.7	445	0.4	9,248	8,198	22.6
North West	8.0	5.1	1,641	1.6	46,763	42,541	62.1
England	*	*	*	*	*	*	
Wales	1.3	0.8	421	0.4	10,908	9,484	39.4
Scotland	35.6	22.7	16,119	15.2	237,684	220,379	89.0
Great Britain	*	*	*	*	*	*	
Northern Ireland	*	*	*	*	*	*	*
United Kingdom	156.4	100.0	105,968	100.0	1,072,609	994,088	

- (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 (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

PA370

Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments, 1979

Accounting year ended	Percentage of total returns received	Percentage of total number employed
	per cent	per cent
1979 April (a)	3.3	3.8
May	0.6	—
June	1.1	0.3
July	3.3	0.4
August	1.7	0.4
September	12.2	1.9
October	1.7	0.2
November	—	—
December	46.1	28.3
1980 January	1.1	0.3
February	0.6	0.1
March (b)	28.3	64.3

(a) From 6th April.

(b) Including returns made for twelve-month period ended 1st to 5th April 1980.

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	93	—	93
Female	5	2	7

Source: Department of Employment

- (a) The percentages relate to the numbers employed (excluding working proprietors) in the United Kingdom at mid-June, 1977, the latest date for which information is available.



TABLE 8

PA370

Operating ratios, 1978-1979  
All United Kingdom establishments classified to the industry (a)

	Unit	1978	1979
Gross output per head	£	10,620	12,892
Net output per head	£	5,043	6,860
Gross value added per head	£	4,600	6,358
Gross value added as a percentage of gross output	%	43	49
Ratio of gross output to stocks (b)		1.1	1.1
Wages and salaries as a percentage of gross value added	%	95	76
Ratio of operatives to administrative, technical and clerical employees		3.4	3.2
Wages and salaries per administrative, technical and clerical employee	£	5,051	5,773
Wages and salaries per operative	£	4,179	4,533
Net capital expenditure per head	£	451	678
Net capital expenditure as a percentage of gross value added	%	10	11

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

(b) Stocks include materials, stores and fuel, work in progress and goods on hand for sale at the end of the business year.

## 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, 1979.

## GENERAL INFORMATION

Changes made for 1979  
The Census for 1979 is in line with similar inquiries being conducted in other member countries of the European Community.

The census differed from the 1978 census in three respects. A question on the leasing of capital assets was removed from the form and a question on road transport costs was added. The sample of units in the 10 to 19 employment size band included for the 1978 census was not repeated.

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, 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 the United Kingdom SIC has reflected the organisation and structure of industry and trade as it existed in the United Kingdom. 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 is not a commodity classification. An index, based on the 1968 SIC for all commodity headings for which sales data are provided in the Quarterly Business Monitors is published in Business Monitor PO 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 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 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 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. An enterprise group is 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 the Department of Employment and HM Customs and Excise. The 1973 Finance Act allows the latter to pass lists of businesses registered for VAT to the BSO. Where necessary details are sought directly from new businesses. Units which cease to trade are removed from the live register.

## Coverage

In recent censuses returns have been required from all establishments employing 20 or more. For the 1979 Census in 68 selected manufacturing industries coverage of establishments in the 20 to 49



employment size band has been reduced to a 1 in 2 sample. This change has relieved some 5,800 firms of the need to complete a census return.

#### 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 average number of persons on the payroll during the year of return. 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. Full-time and part-time employees are included but 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 merchandising 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 est-

ablishment'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 merchandising 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 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.

##### 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 establishment's 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

Merchanted 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 merchandising 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 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 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.

##### 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 each industry, including not selected 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 practice with regard to stock valuation, may affect comparability in some respects.

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