

08/42 (71A25D)

② 42

P834



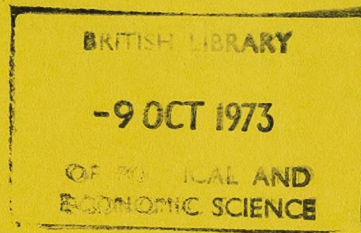
Publication of the Government Statistical Service

# Business Monitor

DEPARTMENT OF TRADE AND INDUSTRY  
BUSINESS STATISTICS OFFICE

## Report on the Census of Production 1970

C53 Industrial engines





**Special Note for Purchasers**

Commencing with the 1970 Census, the Census of Production reports will in future be published annually as part of the Business Monitor series. They will continue to be available on standing order from HMSO, but 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 divisions 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.

Enquiries:  
Business Statistics Office  
Cardiff Road  
Newport, Mon  
NPT 1XG  
Newport 56111 (STD code 0633) ext 2455

Publication of the Government Statistical Service

# Business Monitor

DEPARTMENT OF TRADE AND INDUSTRY  
BUSINESS STATISTICS OFFICE

## Report on the Census of Production 1970

### C53 Industrial engines

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



List of Industry Reports, etc.

- C1 Introductory Notes
- C2 Coal mining
- C3 Stone and slate quarrying and mining
- C4 Chalk, clay, sand and gravel extraction
- C5 Petroleum and natural gas  
Salt and miscellaneous non-metalliferous mining and quarrying
- C6 Metalliferous mining and quarrying
- C7 Grain milling
- C8 Bread and flour confectionery
- C9 Biscuits
- C10 Bacon curing, meat and fish products
- C11 Milk and milk products
- C12 Sugar
- C13 Cocoa, chocolate and sugar confectionery
- C14 Fruit and vegetable products
- C15 Animal and poultry foods
- C16 Vegetable and animal oils and fats
- C17 Margarine
- C18 Starch and miscellaneous foods
- C19 Brewing and malting
- C20 Soft drinks
- C21 Spirit distilling and compounding
- C22 British wines, cider and perry
- C23 Tobacco
- C24 Coke ovens and manufactured fuel
- C25 Mineral oil refining
- C26 Lubricating oils and greases
- C27 General chemicals (inorganic)
- C28 General chemicals (organic)
- C29 General chemicals (other than inorganic and organic)
- C30 Pharmaceutical chemicals and preparations
- C31 Toilet preparations
- C32 Paint
- C33 Soap and detergents
- C34 Synthetic resins and plastics materials and synthetic rubber
- C35 Dyestuffs and pigments
- C36 Fertilizers
- C37 Polishes
- C38 Formulated adhesives, gelatine, etc.
- C39 Explosives, fireworks and matches
- C40 Formulated pesticides and disinfectants
- C41 Printing ink
- C42 Surgical bandages, etc.
- C43 Photographic chemical materials
- C44 Iron and steel (general)
- C45 Steel tubes
- C46 Iron castings, etc.
- C47 Aluminium and aluminium alloys
- C48 Copper, brass and other copper alloys
- C49 Miscellaneous base metals
- C50 Agricultural machinery (except tractors)
- C51 Metal-working machine tools
- C52 Pumps, valves and compressors
- C53 Industrial engines
- C54 Textile machinery and accessories
- C55 Construction and earth moving equipment
- C56 Mechanical handling equipment
- C57 Office machinery
- C58 Mining machinery
- C59 Printing, bookbinding and paper goods making machinery
- C60 Refrigerating machinery (except domestic type refrigerators)
- C61 Space heating, ventilating and air-conditioning equipment
- C62 Food and drink processing machinery
- C63 Miscellaneous (non-electrical) machinery
- C64 Industrial (including process) plant and steelwork
- C65 Ordnance and small arms
- C66 General mechanical engineering
- C67 Photographic and document copying equipment
- C68 Watches and clocks
- C69 Surgical instruments and appliances
- C70 Scientific and industrial instruments and systems
- C71 Electrical machinery
- C72 Insulated wires and cables
- C73 Telegraph and telephone apparatus and equipment
- C74 Radio and electronic components
- C75 Broadcast receiving and sound reproducing equipment
- C76 Electronic computers
- C77 Radio, radar and electronic capital goods
- C78 Electric appliances primarily for domestic use
- C79 Miscellaneous electrical goods
- C80 Shipbuilding and marine engineering
- C81 Wheeled tractor manufacturing
- C82 Motor vehicle manufacturing
- C83 Motor cycle, tricycle and pedal cycle manufacturing
- C84 Aerospace equipment manufacturing and repairing
- C85 Locomotives and railway track equipment
- C86 Railway carriages, wagons and trams
- C87 Engineers' small tools and gauges
- C88 Hand tools and implements
- C89 Cutlery, spoons, forks and plated tableware, etc.
- C90 Bolts, nuts, screws, rivets, etc.
- C91 Wire and wire manufactures
- C92 Cans and metal boxes
- C93 Jewellery and precious metals
- C94 Metal furniture
- C95 Drop forgings, etc.
- C96 Metal hollow-ware
- C97 Miscellaneous metal goods
- C98 Production of man-made fibres
- C99 Spinning and doubling on the cotton and flax systems
- C100 Weaving of cotton, linen and man-made fibres
- C101 Woollen and worsted
- C102 Jute
- C103 Rope, twine and net
- C104 Hosiery and other knitted goods
- C105 Lace
- C106 Carpets
- C107 Narrow fabrics
- C108 Made-up household textiles and handkerchiefs
- C109 Canvas goods and sacks, etc.
- C110 Textile finishing
- C111 Asbestos
- C112 Miscellaneous textiles
- C113 Leather (tanning and dressing) and fellmongery
- C114 Leather goods
- C115 Fur
- C116 Waterproof outerwear
- C117 Men's, and boys' tailored outerwear
- C118 Women's and girls' tailored outerwear
- C119 Overalls and men's shirts, underwear, etc.
- C120 Dresses, lingerie, infants wear, etc.
- C121 Hats, caps and millinery
- C122 Corsets and miscellaneous dress industries
- C123 Gloves
- C124 Footwear
- C125 Bricks, fireclay and refractory goods
- C126 Pottery
- C127 Glass
- C128 Cement
- C129 Abrasives
- C130 Miscellaneous building materials and mineral products
- C131 Timber
- C132 Furniture and upholstery
- C133 Bedding and soft furnishing
- C134 Shop and office fittings
- C135 Wooden containers and baskets
- C136 Miscellaneous wood and cork manufacturers
- C137 Paper and board
- C138 Cardboard boxes, cartons and fibre-board packing cases
- C139 Packaging products of paper and associated materials (other than board)
- C140 Manufactured stationery
- C141 Wallcovering
- C142 Miscellaneous manufactures of paper and board
- C143 Printing, publishing of newspapers and periodicals
- C144 General printing, publishing, etc.
- C145 Rubber
- C146 Linoleum, plastics floor covering, leathercloth, etc.
- C147 Brushes and brooms
- C148 Toys, games and children's carriages
- C149 Sports equipment
- C148 Miscellaneous stationers' goods
- C149 Plastics products
- C150 Musical instruments
- C151 Miscellaneous manufacturing industries
- C151 Gas
- C152 Electricity
- C153 Water supply
- C154 Summary tables

C53 Industrial engines

C53.1

This report on the Industrial Engines Industry relates to establishments engaged wholly or mainly in manufacturing industrial internal combustion engines (other than in marine engineering establishments as explained under "Method of Classification" below) and in the manufacture of all other types of prime movers except turbines for electricity generation, marine engines and steam locomotives. The manufacture of gas turbines and internal combustion engines for rail vehicles are included but internal combustion engines for the propulsion of wheeled tractors, motor vehicles and aircraft are not. Parts of industrial engines are also included.

The industry corresponds to minimum list heading 334 in the Standard Industrial Classification (revised 1968) which was used for the first time as a basis of classification in the 1968 census, when it was reported as part 53. The definition of the industry is the same for the 1968 and 1970 censuses. The figures given for 1963 have been reclassified as far as possible according to the Standard Industrial Classification (revised 1968).

METHOD OF CLASSIFICATION

The standard procedure for classifying an establishment to an industry is described in the notes on page (iii). Certain modifications of the standard procedure were necessary, however, for this industry. References in following paragraphs to returns are to those in the 1968 Census of Production where detailed product sales were available.

Returns showing sales of marine internal combustion and gas turbine engines and parts thereof as the largest item of output were classified to this industry provided they accounted for less than 95 per cent. of total output and no other principal products of the Shipbuilding and Marine Engineering Industry were sold.

Marine internal combustion and gas turbine engines and parts thereof are treated in the census as principal products of the Shipbuilding and Marine Engineering Industry (Part C80).

In classifying other returns within the mechanical engineering group of industries the value of unspecified work done (other than structural and installation work), including repair work, was not taken into account unless it amounted to 80 per cent. or more of the total output of the return in which case the return was classified to the General Mechanical Engineering Industry (part C66). The amount charged for erecting and installing machinery and plant (other than air-conditioning, heating and ventilating plant) was treated as part of the selling value of these items in determining the industrial classification of the returns. The standard classification procedure as outlined in the notes on page (iii) was further modified where a return would have been classified to one of the mechanical engineering industries relating to a specific class of machinery (viz. parts C50 to C66), but where the sales of the principal products of the industry concerned (including parts) accounted for less than 20 per cent. of the total output: in such cases the return was classified to the General Mechanical Engineering Industry (part C66).

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



Table No	Title	Page
Section I - Estimates for all United Kingdom establishments in the industry		
1	Net output, 1963, 1968 and 1970 - Establishments classified to the industry	C53.3
2	Capital expenditure and stocks, 1963, 1968 and 1970 - Establishments classified to the industry	C53.4
3	Analysis of establishments by size, 1970 - Establishments classified to the industry	C53.5
4	Percentage analysis of employees by age and sex, 1970 - Establishments classified to the industry	C53.6
5	Regional distribution of employment, net capital expenditure and net output, 1970 - Establishments classified to the industry	C53.7
Section II - Analysis of returns received		
6	Analysis of net output of returns received from establishments employing 25 or more persons, 1963, 1968 and 1970	C53.8
7	Percentage analysis of twelve-month periods covered by returns from establishments employing 25 or more persons, 1970	C53.9

TABLE 1

Net output, 1963, 1968 and 1970

All United Kingdom establishments classified to the industry (a)

	Unit	1963	1968	1970
Enterprises	Number	79	43	53
Establishments (b)	"	102	66	64
Sales of goods produced and work done	£'000	85,153	121,981	138,858
Services rendered to other organisations (c)	"			
Goods merchanted or factored	"	10,645	13,729	11,876
Canteen takings	"			
<b>Total sales and work done</b>	"	95,798	135,710	151,172
Change during the year, goods on hand for sale	"	- 406	+ 1,051	+ 3,334
Change during the year, work in progress	"	+ 4,315	- 438	+ 9,291
<b>Gross output</b>	"	99,707	136,324	163,797
Cost of purchases	"	51,157	68,634	87,105
Change during the year, stocks of materials, stores and fuel	"	- 356	- 123	+ 4,642
Payments to other organisations	"	3,362	2,422	7,748
for work done on materials given out	"			
for transport by road	"			
for transport by rail, water, air and Post Office parcel services (d)	"			
<b>Total costs</b>	"	55,662	72,664	91,769
<b>Net output</b>	"	44,045	63,659	72,028
Total employment (including working proprietors) (e)	Thousands	37.5	33.5	32.6
<b>Net output per head</b>	£	1,173	1,902	2,207

(a) Including estimates for establishments not making satisfactory returns and for establishments employing less than 25 persons.

(b) See definition of establishments in notes on page (iii).

(c) Amounts charged for hiring out plant, machinery or other goods, for providing transport, or for any technical or other services rendered.

(d) For 1963 and 1968, payments for postal services are excluded.

(e) Average number of persons employed during the year.



TABLE 2

C53.4

Capital expenditure and stocks, 1963, 1968 and 1970

All United Kingdom establishments classified to the industry (a)

	1963	1968	1970 (b)
Capital expenditure	£'000	£'000	£'000
New building work	261	543	950
Land and existing buildings			
Acquisitions	10	43	16
Disposals	113	343	42
Plant and machinery			
Acquisitions	1,925	3,020	4,657
Disposals	749	633	109
Vehicles			
Acquisitions	175	262	279
Disposals	73	81	38
<b>Total net capital expenditure (c)</b>	1,436	2,812	5,713
Stocks and work in progress at end of year			
Materials, stores and fuel	9,109	19,631	21,749
Work in progress	48,577	18,941	31,527
Goods on hand for sale	6,422	9,187	14,567
<b>Total stocks</b>	64,108	47,758	67,843

(a) Including estimates for establishments not making satisfactory returns and for establishments employing less than 25 persons.

(b) Capital expenditure in respect of manufacturing establishments where production had not commenced before the end of the year, is included for 1970.

(c) Acquisitions less disposals.



TABLE 3

Analysis of establishment by size, 1970

All United Kingdom establishments classified to the industry (a)

Size group (b)	Enterprises (c)	Estab-lishments (d)	Total employment (b)	Employees		Wages and salaries		Wages and salaries per head		Total sales and work done (f)	Gross output	Net output	Net output per head	Capital expenditure (net) (g)	Total stocks and work in progress at end of year
				Operatives	Others (e)	Operatives	Others (e)	Operatives	Others (e)						
	Number	Number	Number	Number	Number	£'000	£'000	£	£	£'000	£'000	£'000	£	£'000	£'000
1-10	18	18	148	1,313	556	1,487	876	1,134	1,576	8,371	9,310	4,392	2,333	327	2,912
11-24	7	7	147												
25-49	7	7	266												
50-299	13	13	1,321												
300-749	3	3	1,836	1,323	513	1,662	787	1,256	1,535	6,922	7,488	3,836	2,089	399	2,719
750-1,999	6	11	15,657	9,836	5,821	13,289	8,795	1,351	1,511	74,648	83,584	36,089	2,305	1,666	38,934
2,000 and over	4	5	13,268	8,508	4,758	9,879	7,330	1,161	1,540	61,230	63,415	27,711	2,089	3,320	23,278
<b>Total</b>	53	64	32,643	20,980	11,648	26,318	17,789	1,254	1,527	151,172	163,797	72,028	2,207	5,713	67,843

(a) Including estimates for establishments not making satisfactory returns and for establishments employing less than 25 persons.

(b) Average number employed during the year (including working proprietors) by the establishment.

(c) The sum of the figures for the size groups exceeds the total for the industry to the extent that enterprises made returns for establishments in more than one size group.

(d) See definition of establishments in notes on page (iii).

(e) Administrative, technical and clerical employees.

(f) Including sales of goods merchanted or factored and canteen takings. Also includes services rendered to other organisations (amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered).

(g) Acquisitions less disposals.



TABLE 4

C53.6

Percentage analysis of employees, by age and sex, 1970 (a)

All United Kingdom establishments classified to the industry

Ages	Males	Females	All employees
	per cent	per cent	per cent
Under 18	2	1	3
18 and over	83	14	97
All ages	85	15	100.0

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) at mid-June, 1970.

TABLE 5

C53.7

Regional distribution of employment, net capital expenditure and net output, 1970  
All United Kingdom establishments classified to the industry

Area	Average number employed (a)		Net capital expenditure (b)		Net output and employment in the region of establishments with more than 80 per cent of their employment in the region (c)		
	Thousands	per cent of United Kingdom	£'000	per cent of United Kingdom	Estimated net output £'000	Average number employed as a percentage of total average number employed in the industry in the region	Net output as percentage of total of the industry in the United Kingdom
Standard Regions of England							
North	*	*	*	*	*	*	*
Yorkshire and Humberside	*	*	*	*	*	*	*
East Midlands	*	*	*	*	*	*	*
East Anglia	*	*	*	*	*	*	*
South East	5.7	17.3	594	10.4	11,033	80.0	15.3
South West	*	*	*	*	*	*	*
West Midlands	*	*	*	*	*	*	*
North West	6.0	18.5	1,633	28.6	9,449	64.3	13.1
England	30.3	92.9	5,249	91.9	49,915	76.3	69.3
Wales	-	-	-	-	-	-	-
Scotland	*	*	*	*	*	*	*
Great Britain	*	*	*	*	*	*	*
Northern Ireland	*	*	*	*	*	*	*
Unallocated (d)	-	-	-	-	15,438	-	21.5
United Kingdom	32.6	100.0	5,713	100.0	72,028	-	100.0

(a) Including working proprietors.

(b) New building work plus acquisitions less disposals of land and existing buildings, plant and machinery and vehicles: including capital expenditure at establishments not yet in production.

(c) Where a census return covered addresses in two or more regions an estimate was made of the net output attributable to the region only where more than 80 per cent of the establishment's employees were located in the region. The estimate was made by assuming that net output at each address covered by a return was proportionate to employment at the address. The establishment's residual net output was included in unallocated net output.

(d) Includes estimates of net output for establishments not making satisfactory returns and establishments employing less than 25 employees, and unallocated net output of establishments covering addresses in two or more regions.



TABLE 6

C53.8

Analysis of net output of returns received from United Kingdom establishments employing 25 or more persons, 1963, 1968 and 1970

	Unit	1963	1968	1970
Enterprises	Number	27	21	23
Establishments (a)	"	50	44	32
Sales of goods produced and work done	£'000	83,894	121,281	121,963
Services rendered to other organisations (b)	"			
Goods merchanted or factored	"	10,488	13,651	10,482
Canteen takings	"			
<b>Total sales and work done</b>	"	94,382	134,932	132,827
Change during the year, goods on hand for sale	"	- 400	+ 1,045	+ 2,962
Change during the year, work in progress	"	+ 4,251	- 435	+ 7,618
<b>Gross output</b>	"	98,233	135,542	143,407
Cost of purchases	"	50,401	68,240	76,276
Change during the year, stocks of materials, stores and fuel	"	- 351	- 123	+ 3,994
Payments to other organisations				
for work done on materials given out	"	3,312	2,408	6,876
for transport by road	"	775	726	939
for transport by rail, water, air and Post Office parcel services (c)	"		750	427
<b>Total costs</b>	"	54,839	72,247	80,524
<b>Net output</b>	"	43,394	63,294	62,883
Total employment (including working proprietors) (d)	Thousands	37.0	33.3	28.8
<b>Net output per head</b>	£	1,173	1,902	2,185

(a) See definition of establishments in notes on page (iii).

(b) Amounts charged for hiring out plant, machinery or other goods, for providing transport, or for any technical or other services rendered.

(c) For 1963 and 1968, payments for postal services are excluded.

(d) Average number of persons employed during the year.

TABLE 7

C53.9

Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments employing 25 or more persons

Accounting year ended	Percentage of total returns received	Percentage of total numbers employed
	per cent	per cent
1970 April (a)	3.1	0.2
May	0.0	0.0
June	0.0	0.0
July	6.3	2.7
August	0.0	0.0
September	3.1	0.1
October	3.1	0.2
November	0.0	0.0
December	46.9	55.5
1971 January	3.1	0.3
February	0.0	0.0
March (b)	34.4	41.0
	100.0	100.0

(a) From 6th April.

(b) Including returns made for twelve-month period ending 1st to 5th April 1971.



## Notes

These notes give the main information needed for interpreting the figures in the industry reports, (more detailed information about the census is given in a separate booklet—"Introductory Notes", Part C1 of the Report on the Census of Production for 1970).

### GENERAL INFORMATION

#### *Changes compared with 1968*

The questions asked in the 1970 census were similar to those in the 1968 census with certain exceptions. In particular the 1970 census returns did not ask for details of:—

- (i) purchases or sales by commodities
- (ii) payments of rates
- (iii) payments for repairs and maintenance
- (iv) costs of operating road goods vehicles.

The amounts payable to other organisations for transport of goods however, did include the cost of the Post Office parcel services.

Other changes concern the treatment of firms employing less than 25 persons and the rules used for classifying establishments to industry. Any such changes are explained in the following paragraphs, or in the introductions to the industry reports, or by footnotes to the tables.

#### *Industrial classification*

Establishments were classified to industries on the basis of major activity in conformity with the third edition of the Standard Industrial Classification (Revised 1968). Normally an establishment was classified to an industry if its sales of the principal products of that industry accounted for a greater proportion of its total sales than in its sales of the principal products of any other industry. Classification of an establishment in this census was based on the establishment's return to the Census of Production, 1968.

Establishments added to the register subsequent to the 1968 census were classified on the basis of the description of the business given by the respondent.

#### *Coverage*

Detailed census returns were generally sought only from establishments employing on average 25 or more persons, but in industries where firms employing less than 25 persons account for a relatively high proportion of total employment and output the exemption limit was lowered to 11. Census returns were also sent to establishments whose employment was not known to the Business Statistics Office at the time of despatch; if their employment was below the exemption limit for their industry establishments were asked to supply figures only of total employment and total sales.

### TERMS USED IN THE CENSUS REPORT

#### *Average number employed*

Establishments were required to state the number of persons on the payroll (i.e. whose national insurance cards were held by them) on the average during the year of return, whether full time or part time employees. Separate figures were required for (a) administrative, technical and clerical employees and (b) all other employees (operatives). Averages could be calculated from 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 (i.e. persons employed by establishments who worked in their own homes etc. on materials supplied by the establishments) 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 fixed 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 managing and other directors in receipt of a definite wage, salary or commission, managers, superintendents and works foremen; research, experimental development, technical and design employees (other than operatives); draughtsmen and

tracers; editorial staff, staff reporters, canvassers, competition and advertising staff; travellers; and office (including works office) employees.

Operatives include all other classes of employees, that is, broadly speaking, all manual wage earners. They include those employed in and about the factory or works; operatives employed in power houses, transport work (including roundsmen), stores, warehouses, shops and canteens; inspectors, viewers and similar workers; maintenance workers, and cleaners. Operators engaged in outside work of erecting, fitting etc. are also included, but outworkers are excluded.

#### *Capital expenditure*

##### (a) New building work

This represents the cost incurred during the year of new building and other constructional work (including office buildings, canteens and the like used in connection with the business covered by the return, but not dwelling houses for employees). The value is that charged to capital account during the year of return; it includes expenditure on new buildings or 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 any 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 of premium payable for leaseholds acquired (excluding the value of any assets acquired in taking over an existing business), and the amounts receivable for any 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 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. 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 expenditure during the year in respect of manufacturing establishments where production had not started before the end of the year is excluded from the figures for both 1963 and 1968 but is included in the figures for 1970.

#### *Enterprise*

The term enterprise is used in this report to mean one or more establishments under common ownership or control. An enterprise normally consists of a single establishment, more than one establishment owned by the same firm, or a number of establishments owned by a parent company and its subsidiary companies. Information about the relationship between constituent companies of enterprises was obtained mainly from published sources such as the Stock Exchange Year Book supplemented by information from company reports and information supplied by establishments. The information available is not complete but covers the largest and most important groups of industrial establishments and is believed sufficient to provide a worthwhile basis for analysis.

#### *Establishment*

The definition of the establishment differed between the Censuses for 1963, 1968 and 1970. The definitions used were as follows:—

1963: the establishment was normally the premises under the same ownership or management at a particular address.

1968: the establishment was defined, in accordance with Standard Industrial Classification (Revised 1968), as being the smallest unit which could provide the information normally required for an economic census, for example, employment, expenses, turnover and capital formation. Sometimes activities which are conducted as a single business are carried on at a number of addresses. In 1968 where the activities of such a business were closely integrated and the addresses, termed local units, were in close proximity the establishment was defined to cover the combined activities and a single return was accepted. When the activities were closely integrated but the addresses were not in close proximity a combined return was accepted but the individual addresses were treated—in the count of establishments in an industry, for instance—as separate establishments.



1970: the practice of treating as multi-unit establishments those businesses with closely integrated activities at a number of addresses in close proximity was extended to all those businesses where the local units were at more than one geographical location and detailed census information was not available for each unit. Separate figures were obtained, however, of employment and capital expenditure at each unit. The effect of this change is to reduce somewhat the number of establishments as compared with 1968.

#### *Gross output*

Gross output measures the total value of production (including work done) by establishments during the year. It is calculated as follows:—

Value of sales and work done  
Plus/Less: Increase/decrease in value of stocks of goods on hand for sale  
Plus/Less: Increase/decrease in value of work in progress  
= Gross output.

#### *Net output*

Net output represents the value added to materials by the process of production (including the margin on selling any merchanted or factored goods). It is calculated as follows:—

Gross output  
Less: Purchases adjusted for change in value of stocks of fuel and raw materials  
Less: Payments for work given to other establishments  
Less: Payments for transport  
Less: Net amount of any duties, subsidies, allowances and levies payable  
= Net output.

#### *Net output per person employed*

The figures of net output per person employed are derived by dividing the net output by the average number of persons employed (full time 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 materials and components bought for use in production; of fuel and electricity for all purposes; of packaging materials including the cost of returnable cases and containers when first purchased; of workshop materials, office materials and materials for repairs to establishment's own buildings, plants and vehicles when carried out by their own work people included in the returns; of consumable tools; and of parts for machinery purchased during the year as replacements. Water charges are also included. In general, purchases of goods for merchanding or factoring and canteen supplies are included. Materials supplied by customers for processing are excluded, as are all purchases charged to capital account.

The values shown include any duty paid (less rebate, etc.) but exclude trade discounts allowed. The cost of transport is included only if included in the cost of materials as invoiced; amounts paid to transport organisations, including an establishment's own separate transport organisations for delivery of materials and fuel are, therefore, excluded. Materials purchased overseas are included at the c.i.f. cost plus any duty payable if the cost of transport from the docks was not included in the invoiced price, but at their full delivery cost if invoiced "carriage paid home". Materials and fuel transferred from another department of the establishment not covered by the same return are included at the estimated selling value recorded by the other department.

#### *Sales*

Sales are in respect of goods made by the business covered by the return, goods made for it by outworkers or by other establishments from materials given out to them (sometimes described as goods made on commission) and waste products. Any machinery or other capital items produced for use in the business covered by the return are included, the value being that adopted in the establishment's asset accounts. Goods sold without being subjected to any manufacturing process (i.e. merchanted or factored) and canteen takings are included.

The value shown for sales is the net selling value, defined as the amount charged to customers whether on an ex-works or delivered basis excluding any trade discounts, agents' commissions, allowances for returnable cases, purchase tax, etc.; the net amount charged for packaging materials is included. Goods charged on a delivered basis to customers overseas are included at the f.o.b. value.

Goods produced in one establishment and transferred to another establishment of the same firm not covered by the return were 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 were kept were valued on the same basis.

To the extent that sales of finished products of one establishment constitute the materials purchased by another, total figures of the value of sales (and of materials and fuel purchased) include an element of duplication. In some industries, e.g. motor vehicle manufacturing, and woollen and worsted, this duplication is substantial; and aggregates of the figures for a number of industries contain significantly greater amounts of duplication. For work done on commission, sub-contract work, etc., the value shown is the total amount charged for the work, including the value of any materials bought and used in such work.

#### *Services rendered*

This represents the amounts charged for hiring out plant, machinery and other goods, providing transport, or for any technical or other services rendered to other organisations. It includes amounts credited for similar services rendered to other establishments of the same enterprise not covered by the return.

#### *Standard Industrial Classification*

Industry classification is based on the Standard Industrial Classification (Revised 1968). It is published by H M Stationery Office together with a separate index in the form of an alphabetical list of industries.

#### *Stocks and work in progress*

Values are given of stocks of goods on hand for sale, and of materials and fuel, at the end of the year of return, including any stocks of goods held for merchanding or factoring. Values of the change during the year are also shown. The values include duty in the case of dutiable goods held out of bond.

The value of work in progress at the end of, and the change during, the year are also usually shown. This excludes any progress payments made to sub-contractors, and no deduction is made on account of progress payments received.

#### *Transport payments*

These represent the total amount paid or credited during the year for both outwards transport of finished goods sold and inwards transport of materials and fuel purchased. They include payment to other establishments, and to any separate transport organisation of the same establishment not covered by the return, but exclude the value of transport services provided by the business covered by the return. The items included are payments for hired cartage and for inwards and outwards carriage by all forms of inland transport, i.e. railways, road haulage, canals, coastwise shipping, air, etc. Payments made for sea and air freight on goods sold to customers overseas and on materials and fuel purchased from overseas suppliers are excluded.

#### *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 any payments in kind, travelling expenses, lodging allowances, etc. and employers' contributions to national insurances and pension schemes is excluded.

#### *Work given out*

The figures shown represent the total amount paid for work done by other establishments (whether part of the same enterprise or not) on materials supplied to them. They do not include payments to individual outworkers or payments for business and other services.

#### **SYMBOLS USED**

The following symbols are used throughout the report:

- ... not available,
- nil or negligible (less than half the last significant figure)
- \* figures cannot be shown owing to risk of disclosing information about individual enterprises.

#### **ROUNDING OF FIGURES**

Figures in the tables have, where necessary, been rounded to the nearest final digit; there may, therefore, be apparent slight discrepancies between the sums of the constituent items and the totals shown.



© Crown copyright 1973

HER MAJESTY'S STATIONERY OFFICE  
*Government Bookshops*

To be purchased from  
49 High Holborn, London WC1V 6HB  
13a Castle Street, Edinburgh EH2 3AR  
109 St Mary Street, Cardiff CF1 1JW  
Brazennose Street, Manchester M60 8AS  
50 Fairfax Street, Bristol BS1 3DE  
258 Broad Street, Birmingham B1 2HE  
80 Chichester Street, Belfast BT1 4JY

*Government publications are also available  
through booksellers*