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# Business Monitor

DEPARTMENT OF TRADE AND INDUSTRY  
BUSINESS STATISTICS OFFICE

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## Report on the Census of Production 1970

C4 Chalk, clay, sand and gravel extraction

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## Report on the Census of Production 1970

### C4 Chalk, clay, sand and gravel extraction

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)

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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
- C150 Miscellaneous stationers' goods
- C151 Plastics products
- C152 Musical instruments
- C153 Miscellaneous manufacturing industries
- C154 Gas
- C155 Electricity
- C156 Water supply
- C157 Summary tables

C4 Chalk, clay, sand and gravel extraction

EXTRACT 96 TO C4.1.

This report on Chalk, Clay, Sand and Gravel Extraction Industry relates to establishments engaged wholly or mainly in extracting chalk, clay, sand and gravel from pits or quarries and in such ancillary activities as cleaning, washing, grading, etc. normally carried out at pits and quarries.

The industry corresponds to minimum list heading 103 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 4. The definition of this industry is the same for 1963, 1968 and 1970 censuses.

Pits and quarries operated by firms in industries corresponding to other minimum list headings are not included unless they kept separate accounts. These industries include pottery; bricks, fireclay and refractory goods; cement.

In this industry establishments employing less than 25 persons account for a relatively large proportion of employment and output and therefore for 1970, the full range of information was requested from all establishments employing 11 or more persons.

Mining and Quarrying industries were excluded from the censuses for 1963, 1968 and 1970 taken in Northern Ireland, and this report relates, therefore, only to Great Britain.

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 Great Britain establishments in the industry		
1	Net output, 1963, 1968 and 1970 - Establishments classified to the industry	C4.3
2	Capital expenditure and stocks, 1963, 1968 and 1970 - Establishments classified to the industry	C4.4
3	Analysis of establishments by size, 1970 - Establishments classified to the industry	C4.5
4	Percentage analysis of employees by age and sex, 1970 - Establishments classified to the industry	C4.6
5	Regional distribution of employment, net capital expenditure and net output, 1970 - Establishments classified to the industry	C4.7
Section II - Analysis of returns received		
6	Analysis of net output of returns received from establishments employing 11 or more persons, 1963, 1968 and 1970	C4.8
7	Percentage analysis of twelve-month periods covered by returns from establishments employing 11 or more persons, 1970	C4.9

TABLE 1

Net output, 1963, 1968 and 1970

All Great Britain establishments classified to the industry (a)

	Unit	1963	1968	1970
Enterprises	Number	699	570	689
Establishments (b)	"	1,128	1,128	1,188
Sales of goods produced and work done (c)	£'000	59,431	99,211	140,431
Services rendered to other organisations (d)	"			
Goods merchanted or factored	"	2,776	3,833	2,252
Canteen takings	"			
<b>Total sales and work done</b>	"	62,207	103,044	143,481
Value of outward transport carried out by establishments' own staff on goods sold (e)	"	4,979	5,156	6,091
Change during year, goods on hand for sale	"	+ 81	+ 631	+ 290
<b>Gross output (f)</b>	"	76,947	129,660	178,130
Cost of purchases	"	16,714	25,681	31,020
Change during the year in stocks of materials, stores and fuel	"	+ 93	+ 499	+ 876
Payments to other organisations				
for work done on materials given out	"	210	374	3,550
for transport	"			
inwards on materials and fuel purchased				
by road	"	366	295	200
by rail and other means	"			
outwards on goods sold				
by road	"	9,680	18,645	25,617
by rail and other means (g)	"			
<b>Total costs</b>	"	26,877	46,678	62,195
<b>Net output</b>	"	50,070	82,979	115,934
Total employment (including working proprietors) (h)	Thousands	21.5	21.3	23.0
<b>Net output per head</b>	£	2,331	3,888	5,043

(a) Including estimates for establishments not making satisfactory returns and for establishments employing less than 11 persons.

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

(c) Sales of products are valued at ex-quarry or ex-works prices, the cost of transport being shown separately.

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

(e) See *transport payments* in notes commencing on page (iii).

(f) Includes costs of outward transport; see note on page (iv).

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

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

TABLE 2

C4.4

Capital expenditure and stocks, 1963, 1968 and 1970

All Great Britain establishments classified to the industry (a)

	1963	1968	1970 (b)
Capital expenditure	£'000	£'000	£'000
New building work	988	1,656	3,215
Land and existing buildings			
Acquisitions	4,095	3,375	2,464
Disposals	509	1,033	337
Plant and machinery			
Acquisitions	5,722	11,464	12,732
Disposals	384	683	734
Vehicles			
Acquisitions	1,585	2,082	1,888
Disposals	326	340	452
<b>Total net capital expenditure (c)</b>	11,171	16,521	18,776
Stocks and work in progress at end of year			
Materials, stores and fuel	2,052	3,566	5,103
Goods on hand for sale	1,917	4,180	5,524
<b>Total stocks</b>	3,969	7,746	10,627

- (a) Including estimates for establishments not making satisfactory returns and for establishments employing less than 11 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 Great Britain 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	572	822	4,450	6,599	1,618	9,123	2,322	1,382	1,435	61,341	81,355	52,308	6,267	5,361	4,830
11-24	137	239	3,897												
25-49	76	86	2,888	2,266	555	2,909	777	1,284	1,400	17,592	22,545	12,991	4,498	1,876	1,218
50-99	25	28	1,908	1,559	343	2,164	556	1,388	1,620	13,174	16,408	9,824	5,149	1,810	391
100-199	3	6	959	776	183	1,009	246	1,300	1,344	4,334	6,999	3,835	3,999	878	438
200 and over	6	7	8,889	6,792	2,097	8,517	3,121	1,254	1,448	47,040	50,822	36,976	4,160	8,851	3,751
<b>Total</b>	689	1,188	22,991	17,992	4,796	23,722	7,022	1,318	1,464	143,481	178,130	115,934	5,043	18,776	10,627

(a) Including estimates for establishments not making satisfactory returns and for establishments employing less than 11 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

C4.6

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

All Great Britain establishments classified to the industry

Ages	Males	Females	All employees
	per cent	per cent	per cent
Under 18	2	1	3
18 and over	89	8	97
All ages	91	9	100.0

Source: Department of Employment

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

TABLE 5

C4.7

Regional distribution of employment, net capital expenditure and net output, 1970

All Great Britain 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 Great Britain	£'000	per cent of Great Britain	£'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 Great Britain
Standard Regions of England							
North	0.8	3.4	653	3.5	2,401	54.7	2.1
Yorkshire and Humberside	0.9	4.1	406	2.1	1,651	47.7	1.4
East Midlands	1.0	4.5	357	1.9	3,663	70.4	3.2
East Anglia	1.2	5.4	764	4.1	3,108	47.7	2.7
South East	5.0	21.6	3,199	17.0	17,047	46.1	14.7
South West	8.6	37.5	9,511	50.7	29,922	92.7	25.8
West Midlands	1.9	8.4	1,457	7.8	5,757	60.2	5.0
North West	1.4	5.7	597	3.1	3,730	71.9	3.2
England	20.8	90.6	16,944	90.2	67,279	73.3	58.1
Wales	0.5	2.1	96	0.5	1,143	42.6	1.0
Scotland	1.7	7.3	1,736	9.3	2,766	44.5	2.4
Unallocated (d)	-	-	-	-	44,746	-	38.5
Great Britain	23.0	100.0	18,776	100.0	115,934	-	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 11 employees, and unallocated net output of establishments covering addresses in two or more regions.

TABLE 6

C4.8

Analysis of net output of returns received from Great Britain establishments employing 11 or more persons, 1963, 1968 and 1970

	Unit	1963(a)	1968(a)	1970
Enterprises	Number	106	78	166
Establishments (b)	"	380	368	293
Sales of goods produced and work done (c)	£'000	41,085	63,248	96,977
Services rendered to other organisations (d)	"			
Goods merchanted or factored	"	2,362	2,953	1,889
Canteen takings	"			
<b>Total sales and work done</b>	"	43,447	66,201	99,334
Value of outward transport carried out by establishments' own staff on goods sold (e)	"	3,807	3,456	4,550
Change during year, goods on hand for sale	"	+ 73	+ 318	+ 231
<b>Gross output (f)</b>	"	53,932	81,571	119,871
Cost of purchases	"	12,554	19,209	22,751
Change during the year in stocks of materials, stores and fuel	"	+ 116	+ 435	+ 794
Payments to other organisations for work done on materials given out for transport	"	52	119	3,150
inwards on materials and fuel purchased				
by road	"	336	88	148
by rail and other means	"			
outwards on goods sold				
by road	"	6,603	1,976	2,111
by rail and other means (g)	"			
<b>Total costs</b>	"	19,435	30,577	41,042
<b>Net output</b>	"	34,504	50,995	78,830
Total employment (including working proprietors) (h)	Thousands	14.7	14.0	16.9
<b>Net output per head</b>	£	2,344	3,630	4,668

(a) For 1963 and 1968, the analysis relates to returns received from establishments employing 25 or more persons.

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

(c) Sales of products are valued at ex-quarry or ex-works prices, the cost of transport being shown separately.

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

(e) See *transport payments* in notes commencing on page (iii).

(f) Includes cost of outward transport; see note on page (iv).

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

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

TABLE 7

C4.9

Percentage analysis of twelve-month periods covered by returns received from Great Britain establishments employing 11 or more persons, 1970.

Accounting year ended	Percentage of total returns received	Percentage of total numbers employed
	per cent	per cent
1970 April (a)	2.4	1.0
May	1.4	1.0
June	5.8	3.2
July	1.4	0.5
August	1.7	0.8
September	5.8	42.3
October	2.4	1.0
November	1.7	0.9
December	49.1	28.6
1971 January	0.7	0.2
February	1.0	0.4
March (b)	26.6	20.1
	100.0	100.0

(a) From 6th April.

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

#### 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

This represents the cost incurred during the year of new building and other non-durable work (including office buildings, canteens and the like) and in connection with the business covered by the return but not including repairs to buildings. The value is that charged to capital account during the year of return; it includes expenditure on new buildings or on the extension or renovation of all buildings, the value of works of capital nature carried out by the establishment's own staff and the cost of any newly constructed buildings purchased. Figures shown include any lease charges, architect's commissions, etc.

##### (b) Land and existing buildings

The items shown are the original cost of freehold purchased and the capital cost of leases payable for freehold acquired (excluding the value of any assets acquired in taking over an existing business), and



# 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 receiveable 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 worth-while 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	Cost of outward transport
=	Gross output

#### Net output

Net output represents the value added to materials by the process of production (including the margin on selling any merchantable 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.
=	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 merchanting 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 their 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 minerals raised or goods produced by the business covered by the return, 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. merchantable or factored) and canteen takings are included.

The value shown for sales is the net selling value, defined, in the case of mine or quarry products, as the amount charged to customers whether at ex-mine or ex-quarry prices or, in the case of other goods, at ex-works prices, 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 minerals raised and 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

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 merchanting 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 goods sold including waste products 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 and the cost of outward trans-

port services performed by the business covered by the return. The cost of transport services used in connection with mining and quarrying operations as such and for the transport of employees is excluded. 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. The estimated cost of freight over private railway lines etc. to a public railway line or to a point of shipment or sale is also included. 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.

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