

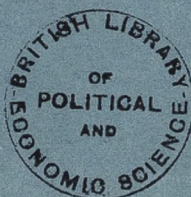
BOARD OF TRADE

S
42
[HA 251]

*The Report on the
Census of Production
for 1954*

Volume 5: Industry K

PRECIOUS METALS REFINING



Statistics of Trade Act, 1947 (10 & 11 Geo. 6 Ch. 39, Sec. 7)

LONDON: HER MAJESTY'S STATIONERY OFFICE

1957

PRICE 1s. 6d. NET

The Report on the Census of Production for 1954

VOLUME 5, INDUSTRY K

PRECIOUS METALS REFINING

THIS REPORT on the Precious Metals Refining Industry relates to establishments engaged wholly or mainly in the smelting, refining, etc. of gold, silver, platinum and other precious metals. Those whose chief business is the production of finished goods of precious metals are included in the reports on the Jewellery and Plate Industry (Volume 5, Industry J) and the Watch and Clock Industry (Volume 5, Industry I).

This industry together with the Jewellery and Plate Industry corresponds to minimum list heading 102 in the Standard Industrial Classification.

There were no larger establishments in Northern Ireland in the register for this industry.

LIST OF TABLES

Table No.	Title	Page	Table No.	Title	Page
1	Industry summary: estimates for the industry as a whole	5/K/3	6	Sales of principal products of the industry by establishments classified to other industries	5/K/5
2	Summary of returns received	5/K/3	7	Sales in the industry of other than principal products	5/K/5
3	Analysis by size, 1954	5/K/4	8	Total make of intermediate products	5/K/6
4	Analysis according to specialisation within the industry, 1954	Does not apply	9	Purchases of materials and fuel, 1954	5/K/6
5	Sales of principal products of the industry, including sales of these products by establishments classified to other industries	5/K/4	10	Average number of employees and wages, salaries and superannuation payments	5/K/7
			11	Employment in a specified week	5/K/7

IMPORTANT NOTES and definitions appear on the next page. In interpreting the data in the tables, it is essential to bear these in mind.

S
H2
[HA 25]

15.7.57

The following notes describe terms in general use in the tables of the report. More detailed explanations of the terms used and a description of the scope and method of taking the census are given in the separate booklet entitled 'The Report on the Census of Production for 1954 - Introductory Notes' (price 1s. 6d. net).

Industrial Classification: Establishments are classified to industries according to the nature of their output and, as far as possible, in conformity with the Standard Industrial Classification. Certain products are identified as the principal products of individual industries, the principal products for a given industry being of a similar nature or commonly associated in production. The principle of classification normally followed is that an establishment is classified to an industry if its output of the principal products of that industry accounted for a greater proportion of the value of its output than did its output of the principal products of any other industry.

Specialist producers normally comprise those establishments 50 per cent. or more of whose total output by value is accounted for by the characteristic products of the specialist group.

Intermediate products: For some industries figures are given showing the total quantities made during the year of intermediate products, i.e., products which may be further processed in the establishments in which they are produced.

Larger establishments: The information given in the report relates mainly to 'larger establishments', i.e., establishments of firms employing on the average more than 10 persons. In most cases an establishment comprises the whole of the premises under the same ownership or management at a particular address (e.g., a mine or factory). Offices, warehouses, laboratories and other ancillary places of business situated apart from the producing works are not regarded as separate establishments and are included in the return for the works.

Small firms are those employing on the average 10 or fewer persons.

The estimates for the industry as a whole given in Table 1 are normally obtained by increasing the other items shown in the same proportion as total employment.

Gross output (production) is the total value of goods made and other work done during the year: it is obtained by adjusting the value of sales and work done during the year for changes in the value of stocks of products on hand for sale and work in progress.

Net output is the amount left after deducting from the value of gross output the aggregate of the cost of materials and fuel used, the amount paid for work given out, and, for 1951 and 1954, any transport payments made. This represents the value added to materials by the process of production, and constitutes the fund from which wages, salaries, rents and taxes, advertising and other selling expenses and all other similar charges have to be met, as well as depreciation and profits.

Sales means sales during the year of goods made in the establishment covered by the return or made on commission for it, whether produced in the year or not. The value of sales is the net selling value, i.e., the amount charged to customers, whether on an ex-works or delivered basis, and net of any trade discounts, agents' commissions, allowances for returnable cases, purchase tax, etc. For goods charged on a delivered basis to customers overseas, firms were required to give the f.o.b. value.

Materials and fuel: The total cost of materials and fuel purchased includes all purchases during the year of materials for use in production, and of fuel (includ-

ing oil, gas and electricity) for all purposes: packing materials, including the full cost of returnable cases when first purchased; workshop and office materials; water charges; materials for repairs to buildings, plant and vehicles when carried out by firms' own work-people included in their returns; consumable tools; and parts for machinery purchased as replacements. Purchases of goods for merchanting are excluded. The cost of materials and fuel used, given in Table 2, is obtained by adjusting purchases for changes during the year in the value of stocks.

Stocks: Firms were required to give stocks of materials and fuel, products on hand for sale, and work in progress, at income tax values.

Customs and Excise Duty paid on materials purchased is normally included in the cost of materials. Finished goods are similarly valued as they were sold, duty-paid or duty-free. The net amount of any duty paid is deducted in arriving at net output.

Employment: Total employment includes working proprietors, administrative, technical and clerical employees, and operatives, but excludes outworkers, canteen employees and persons engaged in merchanting or any other activity not covered by a firm's return, who are shown separately as excluded employees. Employees are persons on the pay-roll (i.e., persons whose National Insurance cards were held by employers), whether employed full-time or part-time.

Working proprietors are proprietors of businesses other than limited companies, together with members of their families who worked in the business without receiving fixed wages or salaries. Any persons working less than half the normal hours are excluded. For Northern Ireland directors of limited companies (other than those paid by fee only) are also included.

Administrative, technical and clerical employees include directors, other than those paid by fee only (except in Northern Ireland); managers, superintendents and works foremen; research, experimental, development, technical and design employees (other than operatives); draughtsmen and tracers; travellers; and office (including works office) employees.

Operatives include all other classes of employees, i.e., broadly speaking, all manual workers.

Outworkers are persons employed by the firm who work on materials supplied by the firm in their own homes.

Wages and salaries include all overtime payments, bonuses and commissions without any deductions for income tax, insurances, contributory pensions etc. They exclude payments to working proprietors.

Capital expenditure includes expenditure on new building work, and on plant, machinery and vehicles, charged to capital account during the year, including any transport and installation costs involved. It includes expenditure in respect of establishments in Great Britain which had not begun production before the end of the year (which has not previously been included in the Census of Production reports for individual industries).

Symbols used:

.. for not available

- for nil or negligible (less than half the final digit shown).

Where figures are rounded, e.g., given to the nearest £ thousand, there may be apparent slight discrepancies between the sums of constituent items and the totals shown. In some cases, figures have been combined with others of a similar nature where publication of separate details might disclose information relating to an individual undertaking.

Industry summary: Estimates for the industry as a whole

TABLE 1

	United Kingdom			Scotland 1954 (a)	Wales 1954
	1948	1951	1954		
	£ million	£ million	£ million	£ million	£ million
Gross output (production)	35.2	63.3	73.8	..	-
Net output	3.7	8.0	7.8	..	-
Total stocks and work in progress					
At beginning of year	7.2	9.3	10.3	..	-
Change during year	+ 0.5	+ 0.7	- 0.2	..	-
Capital expenditure less disposals (b)	0.3	0.4	0.7	..	-
Wages and salaries	1.8	2.6	3.1	..	-
	Thousands	Thousands	Thousands	Thousands	Thousands
Total employment	4.7	5.8	5.3	..	-

(a) Owing to the risk of disclosure of information relating to individual firms separate particulars cannot be given. There were no larger establishments in Scotland in the register for this industry.

(b) Capital expenditure on new building work, plant, machinery and vehicles (including (except in 1948) that incurred in Great Britain for establishments not yet in production), less amounts received for plant, machinery and vehicles disposed of.

Summary of returns received

TABLE 2

	Unit	Great Britain 1948	United Kingdom	
			1951	1954
FIRMS EMPLOYING ON AVERAGE MORE THAN 10 PERSONS				
Number of establishments	No.	31	29	33
Total value of sales and work done	£'000	33,669	62,069	71,832
Products on hand for sale	"	4,591	7,081	7,834
and work in progress	"	+ 755	+ 177	+ 576
Gross output (production) (a)	"	34,422	62,246	72,407
Purchases of materials and fuel	"	30,585	54,796	63,887
Stocks of materials and fuel	"	2,432	2,011	2,254
Cost of materials and fuel used	"	- 218	+ 465	- 751
Payment for work done on materials given out	"	30,803	54,330	64,638
Payment for transport (b)	"	8	27	28
	"	2	35	57
Net output	"	3,612	7,854	7,685
Average number of employees	{ operatives No. { others	3,465	4,268	3,908
Total employment (d)	"	1,164(c)	1,428	1,327
Net output per person employed (d)	"	4,631	5,696	5,235
	£	780	1,379	1,468
Wages and salaries	{ of operatives £'000 { of others	1,059	1,545	1,950
	"	699	977	1,054
Capital expenditure				
New building work (e)	"	130	195	55
Plant and machinery	{ acquisitions (e) " { disposals	196	218	190
	"	4	5	1
Vehicles	{ acquisitions (e) " { disposals	11	32	25
	"	5	8	6
FIRMS EMPLOYING ON AVERAGE 10 OR FEWER PERSONS				
Number of returns	No.	18	15	15
Total employment, including working proprietors	"	107	99	101

(a) For the year 1948 gross output excludes payments for transport services outwards on finished goods sold. For subsequent years gross output includes payments to other firms and undertakings and to firms' own separate transport organisations for transport services.

(b) Payments to other firms and undertakings and to firms' own separate transport organisations. For the year 1948 payments cover only transport outwards of finished goods sold. For subsequent years they cover payments for transport of both finished goods sold and materials and fuel purchased.

(c) Number in week ended September 25, 1948.

(d) Excluding outworkers.

(e) Excluding expenditure for establishments not yet in production.

Analysis by size, 1954

Larger establishments in the United Kingdom

TABLE 3

Average number employed (a)	Estab-lish-ments	Gross output	Net output	Employees		Wages and salaries		Capital expenditure (b)	Net output per person employed (a)
				Operatives	Others	Operatives	Others		
	Number	£'000	£'000	Number	Number	£'000	£'000	£'000	£
11 - 24	5	669	94	59	21	21	14	-	1,171
25 - 49	8	2,081	386	203	86	64	63	9	1,336
50 - 99	7	3,903	612	367	115	147	93	6	1,269
100 - 999	13	65,754	6,593	3,279	1,105	1,718	885	254	1,504
Total	33	72,407	7,685	3,908	1,327	1,950	1,054	270	1,468

(a) Excluding outworkers.

(b) Capital expenditure on new building work and on acquisition of plant, machinery and vehicles. Excluding expenditure for establishments not yet in production.

TABLE 4 - Analysis according to specialisation within the industry, 1954

Larger establishments in the United Kingdom

No specialisation within this industry was distinguished.

Sales of the principal products of the industry, including sales of these products by establishments classified to other industries

Larger establishments in the United Kingdom

TABLE 5

	1951		1954		Entries
	Quantity	Value	Quantity	Value	
	Th.oz.troy	£'000	Th.oz.troy	£'000	Number
Gold					
Refined in bars, etc.	1,167.6	14,730	2,106.7	26,393	5
Partly refined in bars, etc.	74.0	923	71.0	889	..
Manufactures of gold not specified above					
Rolled gold	1,586.1	1,061	1,365.6	587	..
Gold fuse wire (a)	..	203	-	-	-
Other gold wire (a)	40.8	570	13.4	116	..
Gold sheet	613.7	299	77.1	584	..
Other (b)	..	648	564.4	5,530	9
Platinum					
Refined in grain, ingot, bar or powder	219.6	6,876	396.4	11,274	6
Other sorts, including alloys and manufactures, not elsewhere specified (b)	112.7	3,379	68.2	2,153	..
Silver					
Refined	22,967.4	7,286	15,445.2	4,917	9
Partly refined	10,237.2	2,558	9,122.1	2,277	..
Manufactures of silver					
Fine silver sheet	2,155.9	604	1,909.0	507	5
Fine silver wire	395.0	150	397.3	136	..
Alloyed silver including solders	8,611.8	1,880	12,096.6	2,836	7
Other manufactures of silver (b)	881.9	237	100.7	47	5
	..	608	..	1,472	..

(55227)

TABLE 5 (contd.)

	1951		1954		Entries
	Quantity	Value	Quantity	Value	
	Th.oz.troy	£'000	Th.oz.troy	£'000	Number
Palladium, iridium, rhodium, osmium, ruthenium and alloys thereof, other than platinum alloys (a)	304.3	3,867	253.9	3,303	6
Other precious metals	116.2	332	..	857	..
Concentrates, metallic residues, wastes, etc., not elsewhere specified	1.1	228	0.6	33	5
Work done for the trade or on commission (c)	..	58	..	23	..
		481		210	9
Total		53,110		64,144	..
Sales in other industries (see Table 6)		810		1,120	..
Principal products of this industry sold by establishments in the industry		52,300		63,023	13

(a) So far as recorded separately.

(b) Excluding plate, jewellery, watches, etc., for which see the Jewellery and Plate Industry (Volume 5, Industry J) and the Watch and Clock Industry (Volume 5, Industry I).

(c) Amount charged.

TABLE 6 - Sales of principal products of the industry by establishments classified to other industries

Larger establishments in the United Kingdom

The total value of the sales of principal products of the industry by establishments classified to other industries was £1,120,000 for 1954, the principal industry being Non-Ferrous Metals (Smelting, Rolling, etc.) (Volume, 3G).

Sales in the industry of other than principal products

Larger establishments in the United Kingdom

TABLE 7

	1954	
	Quantity	Value
	Th.tons	£'000
Copper and manufactures thereof	6.8	1,715
Other non-ferrous metals and manufactures thereof	..	118
Chemical manufactures	..	1,854
Other goods	..	3,965
Work done (a)	..	962
	..	193
Total		8,808

(a) Amount charged.

(55227)

Total make of intermediate products
Larger establishments in the United Kingdom

TABLE 8

	Returned in all industries (a)		
	1951	1954	
	Quantity	Quantity	Entries
	Th.oz.troy	Th.oz.troy	Number
Gold			
Refined in bars, etc.	3,982.3	3,384.0	6
Partly refined in bars, etc.	73.9	69.0	..
Platinum, refined in grain, ingot, bar or powder	338.6	429.7	6
Silver			
Refined	46,045.2	31,600.7	10
Partly refined	10,339.5	8,774.5	..

(a) Except in the case of refined silver the quantities shown were produced by the precious metals refining industry. In 1951 the total make of refined silver in the industry amounted to 43,797,900 troy ounces, but owing to the risk of disclosure of information relating to individual firms, similar information cannot be given for 1954.

Purchases of materials and fuel, 1954

Larger establishments in the United Kingdom

TABLE 9

	Quantity	Cost
	Th.oz.troy	£'000
Materials		
Gold, unrefined in dust and amalgam, partly refined and refined in bars, etc.	2,769.8	34,631
Silver, unrefined and refined	33,780.4	9,588
Non-ferrous metals, other than precious metals, in all forms except finished parts	Th.cwt. 188.5	2,005 509
All other purchased materials	..	16,819
Fuel and electricity	Th.tons	
Coal	7.0	30
Coke	2.6	20
Liquid fuels (including creosote/pitch mixtures)		
For use in internal combustion engines	Th.gal.	
Motor spirit (petrol) for use in road vehicles and derv. fuel	37	8
Other	-	-
For burning in furnaces, boilers, kilns, etc.	1,059	51
Gas purchased	Th.therms	
From Gas Boards	919	54
From other sources, including other departments of the same firms	-	-
Electricity purchased (a)	Th.kWh.	
From Electricity Boards	30,601	166
From other sources, including other departments of the firms	-	-
All other purchased fuel	..	5
Total cost		63,887

(a) Owing to the risk of disclosure of information relating to individual firms the total quantity of electricity generated in firms' own establishments cannot be given.

(55227)

Average number of employees, and wages, salaries and superannuation payments (a)

TABLE 10 Larger establishments in the United Kingdom

	1951	1954
	Number	Number
Average number of employees		
Operatives	4,268	3,908
Administrative, technical and clerical employees	1,428	1,327
Total	5,696	5,235
Wages and salaries paid to	£'000	£'000
Operatives	1,545	1,950
Administrative, technical and clerical employees	977	1,054
Total	2,522	3,004
Wages and salaries per head	£	£
Operatives	362	499
Administrative, technical and clerical employees	684	794
Superannuation and other pension funds for employees and dependents		£'000
Employers' contributions	..	105
Employees covered	..	Number 3,967
Pension, etc. payments to former employees and dependents	..	£'000 21

(a) The following persons, not included above, were also employed by larger establishments in this industry ('other workers' includes for example employees engaged in merchanting):-

	United Kingdom	
	1951	1954
	Number	Number
Canteen workers		
Male	..	12
Female	..	123
Total	..	135
Other workers		
Male	..	26
Female	..	13
Total	..	39
Total excluded employees	150	174

Outworkers. The firms in this industry employed 47 female outworkers in 1951 and 34 female outworkers in 1954 the amounts paid to them being £4,000 and £3,000 respectively.

Employment in a specified week (a)

Larger establishments in the United Kingdom

TABLE 11

	1951			1954		
	Males	Females	Total	Males	Females	Total
Working proprietors	-	-	-	-	-	-
Operatives	3,125	1,033	4,158	2,838	1,031	3,869
Administrative, technical and clerical employees	988	457	1,445	889	433	1,322
Total employees	4,113	1,490	5,603	3,727	1,464	5,191

(a) Week ended September 22, 1951, or October 30, 1954.

DS 55227/1/Wt.3351 K.4 4/57 CL

LIST OF INDUSTRY REPORTS

VOLUME 1

- A. Coal Mines
- B. Non-Metalliferous Mines and Quarries (other than Coal, Salt and Slate)
- C. Salt Mines, Brine Pits and Salt Works
- D. Slate Quarries and Mines
- E. Metalliferous Mines and Quarries
- F. Brick and Fireclay
- G. China and Earthenware
- H. Glass Containers
- I. Glass (other than Containers)
- J. Cement
- K. Abrasives
- L. Building Materials
- M. Manufactured Fuel

VOLUME 2

- A. Coke Ovens and By-products
- B. Dyes and Dyestuffs
- C. Fertiliser, Disinfectant, Insecticide and Allied Industries
- D. Coal Tar Products
- E. Chemicals (General)
- F. Drugs and Pharmaceutical Preparations
- G. Toilet Preparations and Perfumery
- H. Explosives and Fireworks
- I. Paint and Varnish
- J. Soap, Candles and Glycerine
- K. Polishes
- L. Ink
- M. Match
- N. Mineral Oil Refining
- O. Oils and Greases
- P. Seed Crushing and Oil Refining
- Q. Glue, Gum, Paste and Allied Industries
- R. Plastics Materials

VOLUME 3

- A. Blast Furnaces
- B. Iron and Steel (Melting and Rolling)
- C. Iron Foundries
- D. Steel Sheets
- E. Tinplate
- F. Wrought Iron and Steel Tubes
- G. Non-Ferrous Metals (Smelting, Rolling, etc.)
- H. Scrap Metal Processing
- I. Motor Vehicles and Cycles (Manufacturing)
- J. Motor Vehicles and Cycles (Repairing)
- K. Aircraft Manufacture and Repair
- L. Railway Locomotive Shops and Locomotive Manufacturing
- M. Railway Carriages and Wagons and Trams
- N. Carts, Perambulators, etc.

VOLUME 4

- A. Shipbuilding and Ship Repairing
- B. Marine Engineering
- C. Machine Tools
- D. Textile Machinery and Accessories
- E. Small Arms
- F. Constructional Engineering
- G. Mechanical Handling Equipment

VOLUME 4 (contd.)

- H. Printing and Bookbinding Machinery
- I. Mechanical Engineering (General)
- J. Mechanical Engineering (Repairing)
- K. Electrical Engineering (General)
- L. Electric Wires and Cables
- M. Radio and Telecommunications
- N. Batteries and Accumulators
- O. Electric Lighting Accessories and Fittings

VOLUME 5

- A. Tool and Implement
- B. Cutlery
- C. Chain, Nail, Screw and Miscellaneous Forgings
- D. Wire and Wire Manufactures
- E. Hardware, Hollow-ware, Metal Furniture and Sheet Metal
- F. Brass Manufactures
- G. Needles, Pins, Fish Hooks and Metal Smallwares
- H. Scientific, Surgical and Photographic Instruments, etc.
- I. Watch and Clock
- J. Jewellery and Plate
- K. Precious Metals Refining
- L. Musical Instruments

VOLUME 6

- A. Cotton Spinning and Doubling
- B. Cotton Weaving
- C. Woollen and Worsted
- D. Rayon, Nylon, etc. Production
- E. Rayon, Nylon, etc. Weaving, and Silk
- F. Flax Processing
- G. Linen and Soft Hemp
- H. Jute
- I. Rope, Twine and Net
- J. Hosiery and Other Knitted Goods
- K. Lace
- L. Carpets
- M. Narrow Fabrics
- N. Canvas Goods and Sacks
- O. Textile Converting
- P. Made-up Household Textiles
- Q. Textile Finishing
- R. Textile Packing

VOLUME 7

- A. Asbestos
- B. Flock and Rag
- C. Hair, Fibre and Kindred Industries
- D. Leather (Tanning and Dressing)
- E. Feltmongery
- F. Leather Goods
- G. Fur
- H. Tailoring, Dressmaking, etc.
- I. Hats, Caps and Millinery
- J. Glove
- K. Umbrella and Walking Stick
- L. Boot and Shoe

VOLUME 8

- A. Grain Milling
- B. Bread and Flour Confectionery
- C. Biscuit
- D. Bacon Curing and Sausage

VOLUME 8 (contd.)

- E. Preserved Meat
- F. Milk Products
- G. Ice Cream
- H. Sugar and Glucose
- I. Cocoa, Chocolate and Sugar Confectionery
- J. Preserved Fruit and Vegetables

VOLUME 9

- A. Margarine
- B. Fish Curing
- C. Cattle, Dog and Poultry Foods
- D. Vinegar and Other Condiments
- E. Starch
- F. Ice
- G. Miscellaneous Preserved Foods
- H. Brewing and Malting
- I. Wholesale Bottling
- J. Spirit Distilling
- K. Spirit Rectifying and Compounding
- L. Soft Drinks, British Wines and Cider
- M. Tobacco

VOLUME 10

- A. Timber
- B. Furniture and Upholstery
- C. Soft Furnishings
- D. Shop and Office Fitting
- E. Wooden Containers and Baskets
- F. Paper and Board
- G. Wallpaper
- H. Cardboard Box, Carton and Fibre-board Packing Case
- I. Manufactured Stationery, Paper Bag and Kindred Industries
- J. Newspaper and Periodical Printing and Publishing
- K. Printing and Publishing, Bookbinding, Engraving, etc.

VOLUME 11

- A. Rubber
- B. Linoleum, Leathercloth and Allied Industries
- C. Brushes and Brooms
- D. Toys and Games
- E. Sports Requisites
- F. Miscellaneous Stationers' Goods
- G. Cinematograph Film Production
- H. Cinematograph Film Printing
- I. Plastic Goods and Fancy Articles
- J. Incandescent Mantles

VOLUME 12

- A. Building and Contracting
- B. Local Authorities (Building and Civil Engineering)
- C. Railways (Civil Engineering)
- D. Tramway, Trolley Bus and Omnibus Undertakings (Civil Engineering)
- E. Canal, Dock and Harbour Undertakings (Civil Engineering)
- F. Gas Supply Industry
- G. Electricity Supply Industry
- H. Water Undertakings

Crown copyright reserved

Printed and published by
HER MAJESTY'S STATIONERY OFFICE

To be purchased from
York House, Kingsway, London W.C.2
423 Oxford Street, London W.1
13A Castle Street, Edinburgh 2
109 St Mary Street, Cardiff
39 King Street, Manchester 2
Tower Lane, Bristol 1
2 Edmund Street, Birmingham 3
80 Chichester Street, Belfast
or through any bookseller

Printed in Great Britain