



1988-89
Census of Mining Establishments
Details of Operations by
Industry Class
Australia

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**CENSUS OF MINING ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS
AUSTRALIA 1988-89**

IAN CASTLES
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AUSTRALIAN BUREAU OF STATISTICS

CATALOGUE NO. 8402.0

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NOTE: The 1988-89 Census of Mining was restricted to the metallic minerals, coal, oil and gas industries. Previous mining censuses also included construction materials and other non-metallic industries (see Explanatory Notes, paragraph 2). Statistics for previous years in this publication have been retabulated to be consistent with the scope of the 1988-89 census. A full census will be conducted for the 1989-90 financial year.

In addition, changes to the business units definitions (see Explanatory Notes, paragraphs 7 to 12) have caused some discontinuities, more particularly in relation to the brown coal industry (see also footnote (c) of Table 1). The count of establishments reflects some similar (though less significant) effects in other industries. The main change in number of establishments is the result of normal fluctuations in activity in the gold industry, particularly amongst small operators.

Details of minerals produced during 1988-89 obtained from the Census and a number of other sources are not included. They will be published separately in *Mineral Production, Australia, 1988-89* (8405.0) to be issued shortly. Copies can be obtained from ABS offices.

Please note that a list of related publications is shown in paragraph 14 of the Explanatory Notes.

SUMMARY OF RESULTS

The mining sector in general

Australia's Gross Domestic Product (GDP) was valued at \$336,485 million in 1988-89, 13 per cent more than in 1987-88. The mining sector contributed \$13,947 million or 4.1 per cent of the total GDP (\$14,506 million or 4.9 per cent in 1987-88). (Source: *Australian National Accounts: National Income and Expenditure, 1988-89* (5204.0)).

Exports by Australia's mining sector in 1988-89 were valued at \$9,750 million compared with \$9,581 million in 1987-88, an increase of 1.8 per cent. However, as a proportion of total merchandise exports, the mining sector declined slightly from 23.3 per cent in 1987-88 to 22.4 per cent in 1988-89. (Source: *Exports, Australia: Annual Summary Tables, 1988-89* (5424.0)).

The 1988-89 (truncated) Mining Census (refer to the note above)

Value added

Business unit definition changes referred to in the above note, make comparisons with 1987-88 difficult. In current price terms, value added for the truncated mining industry census in 1988-89 was \$12,567 million. After allowing for the contributions of those establishments now classified out of mining, in current prices, a small increase can be imputed.

An increase of 15 per cent or 774 million in the metallic minerals industries was offset by a decrease in coal, oil and gas industries.

Western Australia contributed 32.5 per cent of the 1988-89 value added total. Queensland followed with 23.7 per cent, New South Wales 16.9 per cent, Victoria 11.8 per cent, Northern Territory 6.8 per cent, South Australia 6.4 per cent and Tasmania 1.9 per cent.

Employment

There were 15,869 persons working underground at 30

June 1989, showing a decrease of 151 persons on the previous year.

The proportion of female workers in the mining industry remains at 7 per cent.

Capital expenditure

Capital expenditure outlayed on new and second-hand fixed tangible assets, less disposals, in the mining industry in 1988-89 was \$3,747 million. Almost 62 per cent was outlayed in Western Australia. Of the total, 38 per cent was outlayed by establishments in ASIC Class 1300, Oil and Gas and a further 24 per cent by ASIC Class 1123, Gold.

Operating ratios

Persons employed per establishment increased from 158 in 1987-88 to 174 in 1988-89 (+10.1%). Since 1984-85, employment per establishment has increased by 32 persons or 23 per cent.

Wages and salaries per person employed increased from \$39,100 in 1987-88 to \$41,600 in 1988-89 (+6.4%).

Turnover per person employed increased from \$281,500 in 1987-88 to \$297,800 in 1988-89 (+3.6%).

Value added per person employed increased from \$189,600 in 1987-88 to \$191,900 in 1988-89 (+1.2%).

Capital expenditure on new fixed tangible assets per person employed increased to \$56,300 in 1988-89. This represents a gain of 2.2 per cent on 1987-88 (\$55,100).

Royalties

Mineral royalties of \$723 million were paid in 1988-89, a decrease of 19.8 per cent on 1987-88 (\$901 million). The oil and gas industry was the main contributor to this decrease, with royalties in 1987-88 of \$414 million compared with \$255 million in 1988-89 (-38.3%).

PERCENTAGE DISTRIBUTION OF TURNOVER AND EMPLOYMENT,
BY INDUSTRY, AUSTRALIA 1988-89

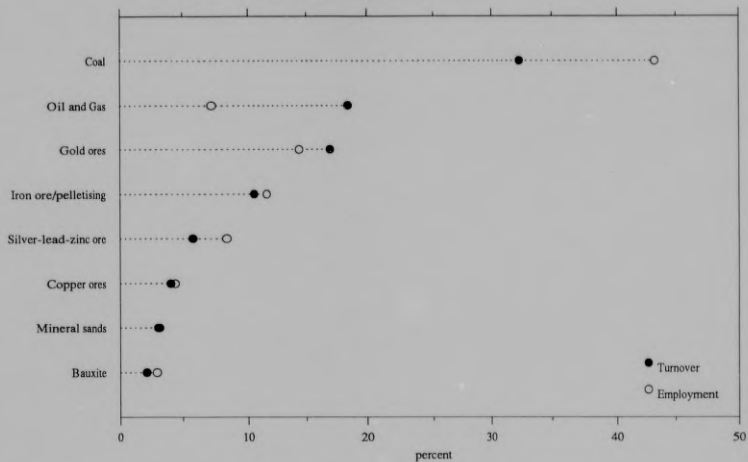


TABLE 1. MINING ESTABLISHMENTS: SUMMARY OF OPERATIONS, BY INDUSTRY CLASS, AUSTRALIA, 1988-89

ASIC code	Description	Number of establishments at 30 June		Employment at end of June(a)	Wages and salaries(b)	Turnover	Stocks		Total purchases transfers in and selected expenses	Value added	Fixed capital expenditure less disposals
		1987-88	1988-89				Opening	Closing			
				no.	\$m	\$m	\$m	\$m	\$m	\$m	\$m
	Metallic minerals —										
	Ferrous metal ores —										
1111	Iron ores	15	13	} 7,619	285.6	2,053.8	291.2	153.9	898.3	1,018.1	331.0
1112	Iron ore pelletising	2	1								
	Non-ferrous metal ores —										
1121	Bauxite	9	6	1,936	71.5	423.2	19.0	29.6	96.7	337.2	16.0
1122	Copper ores	6	6	2,878	115.4	791.5	79.5	102.8	209.0	605.7	136.9
1123	Gold ores	195	160	9,410	347.1	3,315.5	343.9	399.1	1,534.1	1,836.6	903.5
1124	Mineral sands	17	12	2,009	56.4	623.2	75.1	85.1	187.6	445.6	93.9
1125	Nickel ores	3	5	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	13	16	5,434	223.2	1,123.8	92.7	148.9	437.7	742.3	152.3
1127	Tin ores	10	8	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1128	Uranium ores	2	2	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	9	5	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
11	Total metallic minerals	281	234	32,553	1,225.5	9,566.7	1,202.3	1,203.0	3,619.0	5,948.5	1,913.0
	Coal, oil and gas —										
1201	Black coal	103	99	} 28,208	1,269.2	6,328.8	614.2	576.4	2,888.7	3,402.4	407.4
1202	Brown coal	6	2								
1300	Oil and gas	37	41	4,724	224.6	3,605.9	237.7	241.2	393.4	3,216.0	1,426.9
12-13	Total coal, oil and gas	146	142	32,932	1,493.8	9,934.7	851.9	817.6	3,282.0	6,618.4	1,834.3
Total metallic minerals, coal, oil and gas —											
1988-89(c)		376		65,485	2,719.3	19,501.4	2,054.1	2,020.6	6,901.0	12,566.8	3,747.3
1987-89(c)		427		67,531	2,642.6	19,417.1	2,037.2	1,917.0	6,491.3	12,805.6	3,632.8
1986-87		419		69,556	2,561.2	17,769.7	1,686.8	2,080.5	6,145.7	12,017.7	n.a.
1985-86		437		70,027	2,376.8	18,297.9	1,534.8	1,672.8	6,198.0	12,237.9	n.a.
1984-85		489		69,224	2,119.1	15,052.3	1,674.0	1,595.6	5,033.2	9,940.8	1,705.2

(a) Includes working proprietors. (b) Excludes amounts drawn by working proprietors. (c) The establishments that were included in Brown Coal in 1987-88 but excluded in 1988-89 (see Explanatory Notes, paragraphs 7 to 12) contributed 4 establishments and estimates of 2,670 employment, \$369m turnover and \$310m value added in 1987-88.

TABLE 2. MINING ESTABLISHMENTS : TYPE OF EMPLOYMENT (AT END OF JUNE) BY INDUSTRY CLASS, AUSTRALIA, 1988-89
(number)

ASIC code	Description	Working proprietors	Administrative, technical and mining services employees	Production and all other employees	Total employment			Below ground
					Males	Females	Persons	
	Metallic minerals —							
1111	Ferrous metal ores —							
1112	Iron ores	}	1,355	6,264	6,946	673	7,619	8
	Iron ore pelletising							
	Non-ferrous metal ores —							
1121	Bauxite	—	943	993	1,685	251	1,936	—
1122	Copper ores	—	950	1,928	2,714	164	2,878	1,501
1123	Gold ores	40	2,598	6,772	8,233	1,177	9,410	1,273
1124	Mineral sands	—	568	1,441	1,797	212	2,009	—
1125	Nickel ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	—	1,948	3,486	5,177	257	5,434	2,744
1127	Tin ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
11	Total metallic minerals	48	9,258	23,247	29,409	3,144	32,553	5,721
	Coal, oil and gas —							
1201	Black coal	}	4,176	24,032	27,597	611	28,208	10,148
1202	Brown coal							
1300	Oil and gas	—	2,570	2,154	4,044	680	4,724	—
12-13	Total coal, oil and gas	—	6,746	26,186	31,641	1,291	32,932	10,148
	Total metallic minerals, coal, oil and gas —							
1988-89		48	16,004	49,433	61,050	4,435	65,485	15,862
1987-88		70	19,912	47,549	63,020	4,511	67,531	16,020
1986-87		101	20,376	49,079	64,744	4,812	69,556	18,109
1985-86		143	19,752	50,132	65,878	4,149	70,027	18,167
1984-85		223	19,808	49,193	64,957	4,267	69,224	17,370

TABLE 3. MINING ESTABLISHMENTS : WAGES AND SALARIES PAID(a) BY INDUSTRY CLASS, AUSTRALIA, 1988-89
(\$m)

ASIC code	Description	To administrative technical and mining services employees	To production and all other employees	To all employees
	Metallic minerals —			
	Ferrous metal ores —			
1111	Iron ores	} 91.5	194.1	285.6
1112	Iron ore pelletising			
	Non-ferrous metal ores —			
1121	Bauxite	28.2	43.3	71.5
1122	Copper ores	41.9	73.5	115.4
1123	Gold ores	107.4	239.7	347.1
1124	Mineral sands	20.4	35.9	56.4
1125	Nickel ores	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	69.1	154.2	223.2
1127	Tin ores	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.
11	Total metallic minerals	399.2	826.3	1,225.5
	Coal, oil and gas —			
1201	Black coal	} 201.5	1,067.7	1,269.2
1202	Brown coal			
1300	Oil and gas	128.7	95.8	224.6
12-13	Total coal, oil and gas	330.3	1,163.5	1,493.8
Total metallic minerals, coal, oil and gas —				
1988-89		229.5	1,989.8	2,719.3
1987-88		818.4	1,824.2	2,642.6
1986-87		736.8	1,824.4	2,561.2
1985-86		668.5	1,708.3	2,376.8
1984-85		619.8	1,499.3	2,119.1

(a) Excludes amounts drawn by working proprietors.

TABLE 4. MINING ESTABLISHMENTS : COMPONENTS OF TURNOVER BY INDUSTRY CLASS, AUSTRALIA, 1988-89

ASIC code	Description	Sales and transfers out(a) of minerals and other goods			All other operating revenue(b)	Capital work done for own use or for rental or lease	Total turnover
		Produced by the establishment	Not produced by the establishment	Total			
	Metallic minerals —						
	Ferrous metal ores —						
1111	Iron ores	}	—	2,001.8	26.7	25.3	2,053.8
1112	Iron ore pelletising						
	Non-ferrous metal ores —						
1121	Bauxite	423.2	—	423.2	—	—	423.2
1122	Copper ores	787.0	—	787.0	1.2	3.2	791.5
1123	Gold ores	3,094.9	22.3	3,117.3	155.3	43.0	3,315.5
1124	Mineral sands	618.5	1.8	620.3	2.7	0.3	623.2
1125	Nickel ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	1,116.4	—	1,116.4	1.1	6.3	1,123.8
1127	Tin ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
11	Total metallic minerals	9,043.4	24.3	9,067.7	196.8	302.3	9,566.7
	Coal, oil and gas —						
1201	Black coal	}	39.7	6,234.7	82.2	11.9	6,328.8
1202	Brown coal						
1300	Oil and gas	3,557.4	—	3,557.5	19.3	29.1	3,605.9
12-13	Total coal, oil and gas	9,752.4	39.8	9,792.1	101.5	41.1	9,934.7
Total metallic minerals, coal, oil and gas —							
1988-89		18,795.8	64.0	18,859.8	298.2	343.3	19,501.4
1987-88		18,877.0	107.0	18,984.0	206.2	226.9	19,417.1
1986-87		17,338.8	121.2	17,460.0	159.0	150.7	17,769.7
1985-86		17,771.5	85.3	17,856.8	157.5	283.6	18,297.9
1984-85		14,796.3	36.8	14,833.0	148.3	71.0	15,052.3

(a) Transfer out to other establishments of the same enterprise. (b) Includes bounties and subsidies on production, imputed commission for work done or for sales carried out on behalf of other establishments of the same enterprise. Excludes interest, royalties, dividends and receipts from sales of fixed assets.

TABLE 5. MINING ESTABLISHMENTS : PURCHASES, TRANSFERS IN AND SELECTED EXPENSES BY INDUSTRY CLASS, AUSTRALIA, 1988-89
(\$m)

ASIC code	Description	Electricity and fuels purchased	Purchases and transfers in(a)		Commission work ex- penses and payments to mining contractors (c)	Repair and main- tenance expenses	Outward freight and cartage (d)	Motor vehicle running expenses	Sales com- mission payments	Rent, leasing and hiring expenses			Total purchases transfers in and selected expenses
			Stores materials etc.(b)	Minerals and other goods for resale						Land building and other structures	Motor vehicles	Plant machinery and other equipment	
	Metallic minerals —												
	Ferrous metal ores —												
1111	Iron ores	} 79.2	218.8	—	166.8	260.0	67.8	8.9	11.7	71.1	3.2	10.8	898.3
1112	Iron ore pelletising												
	Non-ferrous metal ores —												
1121	Bauxite	17.9	35.6	—	11.2	16.9	12.5	0.3	1.5	—	0.1	0.8	96.7
1122	Copper ores	10.3	135.3	—	21.0	25.5	13.6	1.3	0.6	0.1	0.4	0.9	209.0
1123	Gold ores	219.0	349.3	19.1	663.2	175.6	17.8	32.8	0.6	4.3	3.7	48.8	1,534.1
1124	Mineral sands	35.6	45.4	1.8	30.6	41.2	14.7	5.4	1.3	6.1	—	5.3	187.6
1125	Nickel ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	35.7	191.9	—	56.4	70.6	76.5	2.7	0.9	0.5	0.8	1.7	437.7
1127	Tin ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
11	Total metallic minerals	443.5	1,034.1	21.1	979.5	625.3	256.2	54.6	21.1	83.5	8.4	71.7	3,619.0
	Coal, oil and gas —												
1201	Black coal	} 249.3	444.1	34.4	181.0	509.3	1,384.9	32.9	3.5	5.6	1.6	42.1	2,888.7
1202	Brown coal												
1300	Oil and gas	33.2	56.2	—	113.0	58.8	92.3	7.2	0.8	12.4	1.2	18.2	393.4
12-13	Total coal, oil and gas	282.5	500.3	34.4	294.0	568.1	1,477.3	40.1	4.2	18.0	2.8	60.4	3,282.0
	Total metallic minerals, coal, oil and gas —	726.0	1,534.4	55.5	1,273.5	1,193.4	1,733.5	94.7	25.3	101.5	11.2	132.1	6,901.0
1988-89		726.0	1,534.4	55.5	1,273.5	1,193.4	1,733.5	94.7	25.3	101.5	11.2	132.1	6,901.0
1987-88		571.0	1,683.4	88.0	1,113.4	809.1	1,961.5	80.3	47.4	30.8	7.9	98.4	6,491.3
1986-87		521.7	1,744.3	70.0	872.8	769.6	1,911.1	58.7	26.9	35.1	7.4	127.9	6,145.7
1985-86		529.2	2,092.0	84.5	752.3	650.3	1,825.7	58.7	27.4	35.0	8.0	134.9	6,198.0
1984-85		448.3	1,635.7	37.0	645.3	536.6	1,533.9	31.8	26.6	29.8	5.7	102.7	5,033.2

(a) Transfers in from other establishments of the same enterprise. (b) Includes minerals for further processing. (c) Includes imputed commission charges for work done by other establishments of the same enterprise. (d) Includes imputed charges for freight carried out by other establishments of the same enterprise.

TABLE 6. MINING ESTABLISHMENTS : FIXED CAPITAL EXPENDITURE BY TYPE OF ASSET, BY INDUSTRY CLASS, AUSTRALIA, 1988-89
(\$m)

ASIC code	Description	Capital expenditure on—					Fixed capital expenditure less disposals			
		New fixed tangible assets				Land and second- hand assets	Disposals of fixed tangible assets	Land, buildings and other structures (incl. mine development)	Vehicles, plant, machinery and equipment	Total
		Buildings and other structures	Mine development	Vehicles, plant, machinery and equipment	Total					
	Metallic minerals —									
	Ferrous metal ores —									
1111	Iron ores									
1112	Iron ore pelletising	134.5	30.3	181.3	346.1	—	15.1	161.0	170.0	331.0
	Non-ferrous metal ores —									
1121	Bauxite	2.2	7.1	12.1	21.3	—	5.4	8.9	7.0	16.0
1122	Copper ores	1.4	81.2	57.1	139.7	0.8	3.6	82.6	54.3	136.9
1123	Gold ores	136.6	225.4	559.5	921.6	42.2	60.3	347.8	555.7	903.5
1124	Mineral sands	5.2	5.3	83.4	93.9	5.0	4.9	13.1	80.8	93.9
1125	Nickel ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	33.5	34.2	122.4	190.0	1.0	38.7	55.5	96.8	152.3
1127	Tin ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
11	Total metallic minerals	322.7	399.2	1,095.0	1,816.9	237.5	141.5	772.0	1,141.0	1,913.0
	Coal, oil and gas —									
1201	Black coal									
1202	Brown coal	41.7	85.4	298.3	425.4	59.4	77.5	129.8	277.6	407.4
1300	Oil and gas	223.2	485.9	737.6	1,446.7	—	19.8	708.9	718.0	1,426.9
12-13	Total coal, oil and gas	264.9	571.3	1,035.9	1,872.1	59.4	97.3	838.7	995.6	1,834.3
	Total metallic minerals, coal, oil and gas —									
1988-89		587.6	970.5	2,130.9	3,689.1	296.9	238.8	1,610.7	2,136.6	3,747.3
1987-88		916.6	482.5	2,324.7	3,723.8	34.7	125.7	1,400.0	2,232.8	3,632.8
1986-87(a)						n.a.				
1985-86(a)						n.a.				
1984-85		342.8	621.4	811.7	1,776.0	31.4	102.1	959.6	745.6	1,705.2

(a) Data not collected for these years. See paragraph 13 of the Explanatory Notes.

TABLE 7. MINERAL ROYALTIES BY INDUSTRY CLASS, AUSTRALIA, 1988-89
(\$m)

ASIC code	Description	Mineral royalties paid by mining establishments		
		To governments	To others	Total
	Metallic minerals—			
	Ferrous metal ores—			
1111	Iron ores	}	18.0	110.9
1112	Iron ore pelletising			
	Non-ferrous metal ores—			
1121	Bauxite	33.7	—	33.7
1122	Copper ores	26.2	—	26.2
1123	Gold ores	18.1	14.1	32.3
1124	Mineral sands	24.3	1.3	25.6
1125	Nickel ores	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	30.2	—	30.2
1127	Tin ores	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.
11	Total metallic minerals	236.3	42.9	279.2
	Coal, oil and gas—			
1201	Black coal	}	8.1	188.2
1202	Brown coal			
1300	Oil and gas	223.9	31.6	255.4
12-13	Total coal, oil and gas	404.0	39.6	443.6
Total metallic minerals, coal, oil and gas —				
1988-89		640.2	82.5	722.8
1987-88		788.2	113.1	901.3
1986-87		769.6	117.9	887.5
1985-86		926.4	116.8	1,043.2
1984-85		721.7	100.2	821.9

TABLE 8. MINING ESTABLISHMENTS : SUMMARY OF OPERATIONS BY INDUSTRY SUBDIVISION, STATES(a), 1988-89

TABLE 6. MINING ESTABLISHMENTS: SUMMARY OF OPERATIONS BY INDUSTRY SUBDIVISION, STATE(S), 1988-89										
ASIC code	Description	Establish- ments at 30 June No.	Employment at end of June (b) No.	Wages and salaries(c) \$m	Turnover \$m	Stocks		Total purchases transfers in and selected expenses \$m	Value added \$m	Fixed capital expenditure less disposals \$m
						Opening \$m	Closing \$m			
NEW SOUTH WALES										
11	Metallic minerals	21	3,438	127.2	710.3	69.9	109.5	292.5	457.4	100.2
12	Coal	64	16,445	736.1	2,896.2	215.8	223.9	1,240.5	1,663.9	161.3
13	Oil and gas	—	—	—	—	—	—	—	—	—
Total metallic minerals, coal, oil and gas —										
1988-89		85	19,883	863.2	3,606.5	285.7	333.5	1,533.0	2,121.3	261.5
VICTORIA										
11	Metallic minerals	9	1,507	73.3	1,616.1	46.1	49.5	140.1	1,479.3	267.9
12	Coal	2								
13	Oil and gas	1								
Total metallic minerals, coal, oil and gas —										
1988-89		12	1,507	73.3	1,616.1	46.1	49.5	140.1	1,479.3	267.9
QUEENSLAND										
11	Metallic minerals	59	6,437	241.7	1,774.9	118.8	162.2	578.2	1,240.2	268.4
12	Coal	30	9,588	460.1	3,155.3	347.8	310.0	1,548.2	1,569.2	231.1
13	Oil and gas	24	314	13.3	258.1	19.3	26.2	91.7	173.2	35.4
Total metallic minerals, coal, oil and gas —										
1988-89		113	16,339	715.1	5,188.3	485.9	498.4	2,218.1	2,982.6	534.9
SOUTH AUSTRALIA										
11	Metallic minerals	3	2,437	87.8	952.1	172.1	188.6	167.4	801.2	109.8
12	Coal	1								
13	Oil and gas	1								
Total metallic minerals, coal, oil and gas —										
1988-89		5	2,437	87.8	952.1	172.1	188.6	167.4	801.2	109.8

For footnotes see end of table.

TABLE 8. MINING ESTABLISHMENTS: SUMMARY OF OPERATIONS BY INDUSTRY SUBDIVISION, STATES(a), 1988-89 — continued

ASIC code	Description	Establish- ments at 30 June No.	Employment at end of June(b) No.	Wages and salaries(c) \$m	Turnover \$m	Stocks		Total purchases transfers in and selected expenses \$m	Value added \$m	Fixed capital expenditure less disposals \$m	
						Opening \$m	Closing \$m				
WESTERN AUSTRALIA											
11	Metallic minerals	113	17,690	665.4	5,605.4	630.5	550.6	2,181.8	3,343.7	1,318.4	
12	Coal	3	}	2,923	126.9	886.3	75.3	63.1	133.9	740.2	990.5
13	Oil and gas	12									
Total metallic minerals, coal, oil and gas — 1988-89		128	20,613	792.4	6,491.7	705.8	613.7	2,315.7	4,083.8	2,308.9	
TASMANIA											
11	Metallic minerals	10	}	2,500	101.0	502.6	64.8	57.9	254.0	241.7	20.2
12	Coal	1									
13	Oil and gas	—	—	—	—	—	—	—	—	—	
Total metallic minerals, coal, oil and gas — 1988-89		11	2,500	101.0	502.6	64.8	57.9	254.0	241.7	20.2	
NORTHERN TERRITORY											
11	Metallic minerals	19	}	2,206	86.6	1,144.1	293.8	279.2	272.6	856.9	244.1
12	Coal	—									
13	Oil and gas	3									
Total metallic minerals, coal, oil and gas — 1988-89		22	2,206	86.6	1,144.1	293.8	279.2	272.6	856.9	244.1	
AUSTRALIA											
11	Metallic minerals	234	32,553	1,225.5	9,566.7	1,202.3	1,203.0	3,619.0	5,948.5	1,913.0	
12	Coal	101	28,208	1,269.2	6,328.8	614.2	576.4	2,888.7	3,402.4	407.4	
13	Oil and gas	41	4,724	224.6	3,605.9	237.7	241.2	393.4	3,216.0	1,426.9	
Total metallic minerals, coal, oil and gas — 1988-89		376	65,485	2,719.3	19,501.4	2,054.1	2,020.6	6,901.0	12,566.8	3,747.3	
1987-88		427	67,531	2,642.6	19,417.1	2,037.2	1,917.0	6,491.3	12,805.6	3,632.8	
1986-87		419	69,556	2,561.2	17,769.7	1,686.8	2,080.5	6,145.7	12,017.7	n.a.	
1985-86		437	70,027	2,376.8	18,297.9	1,534.8	1,672.8	6,198.0	12,237.9	n.a.	
1984-85		489	69,224	2,119.1	15,052.3	1,674.0	1,595.6	5,033.2	9,940.8	1,705.2	

(a) Details for earlier years' by states are available in previous issues of *Census of Mining Establishments, Details of Operations by Industry Class, Australia* (8402.0). In making comparisons with statistics for earlier years, however, allowance should be made for the changes in scope and units referred to in the Note on page 1 and the Explanatory Notes of this issue. (b) Includes working proprietors. (c) Excludes amounts drawn by working proprietors.

TABLE 9. MINING ESTABLISHMENTS : SELECTED OPERATING RATIOS BY INDUSTRY CLASS, AUSTRALIA, 1988-89

ASIC Code	Description	Persons employed per establishment(a)	Value per person employed(a)				Ratio of—	
			Wages and salaries(b)	Turnover	Value added	New capital expenditure	Value added to turnover	Wages and salaries to value added(b)
		No.	\$'000	\$'000	\$'000	\$'000		
	Metallic minerals—							
	Ferrous metal ores—							
1111	Iron ores	} 544.2	37.5	269.6	133.6	45.4	0.50	0.28
1112	Iron ore pelletising							
	Non-ferrous metal ores—							
1121	Bauxite	322.7	36.9	218.6	174.2	11.0	0.80	0.21
1122	Copper ores	479.7	40.1	275.0	210.5	48.5	0.77	0.19
1123	Gold ores	58.8	37.0	352.3	195.2	97.9	0.55	0.19
1124	Mineral sands	167.4	28.1	310.2	221.8	46.7	0.71	0.13
1125	Nickel ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1126	Silver-lead-zinc ores	339.6	41.1	206.8	136.6	35.0	0.66	0.30
1127	Tin ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1128	Uranium ores	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
1129	Non-ferrous metal ores n.e.c.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
11	Total metallic minerals	139.1	37.7	293.9	182.7	55.8	0.62	0.21
	Coal, oil and gas—							
1201	Black coal	} 279.3	45.0	224.4	120.6	15.1	0.54	0.37
1202	Brown coal							
1300	Oil and gas	115.2	47.5	763.3	680.8	306.2	0.89	0.07
12-13	Total coal, oil and gas	231.9	45.4	301.7	201.0	56.8	0.67	0.23
	Total metallic minerals, coal, oil and gas —							
1988-89		174.2	41.6	297.8	191.9	56.3	0.64	0.22
1987-88		158.2	39.1	287.5	189.6	55.1	0.66	0.21
1986-87		166.0	36.8	255.5	172.8	n.a.	0.68	0.21
1985-86		160.2	33.9	261.3	174.8	n.a.	0.67	0.19
1984-85		141.6	30.6	217.4	143.6	25.7	0.66	0.21

(a) Includes working proprietors. (b) Excludes amounts drawn by working proprietors.

TABLE 10. MINING ESTABLISHMENTS(a) : CONTRIBUTION TO VALUE ADDED BY PERIOD OF ACCOUNTING

Reference year	Contribution to mining value added for accounting period ended—						Total value added
		Prior to December	December	January to May	June	After June	
1985-86	\$m	21.3	4,386.4	2,520.7	5,281.3	28.1	12,237.9
	%	0.2	35.8	20.6	43.2	0.2	100.0
1986-87	\$m	30.6	3,255.1	2,483.6	6,192.3	56.1	12,017.7
	%	0.3	27.1	20.7	51.5	0.5	100.0
1987-88	\$m	—	3,329.9	1,963.1	7,480.9	31.7	12,805.6
	%	—	26.0	15.3	58.4	0.2	100.0
1988-89	\$m	—	2,747.7	1,657.8	7,994.8	166.5	12,566.8
	%	—	21.9	13.2	63.6	1.3	100.0

(a) Comprising of establishments classified to metallic minerals, coal, oil and gas industries.

EXPLANATORY NOTES

Introduction

This publication presents detailed statistics from the (truncated) census of mining establishments for 1988-89, with comparative statistics for four previous years. Publications in this series are confined to statistics such as turnover, purchases and selected expenses, wages and salaries, employment and capital expenditure. They exclude details of minerals produced which are contained in the series *Mineral Production, Australia* (8405.0).

2. The 1988-89 (truncated) census differs from previous mining censuses in that the construction materials and other non-metallic minerals industries have been excluded. Complete mining censuses, including these industries, are being conducted on a triennial basis and the next one is scheduled for the 1989-90 financial year.

3. The period covered by the annual census is in general the twelve months ended 30 June. Where businesses find it impossible to supply information on this basis a substitute accounting period is used for data other than that relating to employment. An indication of the effect on the statistics of businesses using varying accounting periods is given in Table 10 which shows the contribution to value added by period of accounting.

4. The mining census is conducted as a component of the ABS's integrated economic statistics system. Data from each industry sector conform to the same basic conceptual standards, allowing comparative analysis between and across different industry sectors.

Scope and coverage

5. Mining, as specified in Division B of the *Australian Standard Industrial Classification (ASIC) 1983* (1201.0), broadly relates to the extraction of minerals occurring naturally as solids such as coal and ores, liquids such as crude petroleum, or gases such as natural gas, by such processes as underground mining, open-cut extraction methods, quarrying, operations of wells or evaporation pans, dredging or recovering from ore dumps or tailings. Activities such as dressing or beneficiating ores or other minerals by crushing, milling, screening, washing, flotation or other processes (including chemical beneficiation) or briquetting, are included because they are generally carried out at or near mine sites as an integral part of mining operations. Natural gas absorption and purifying plants are also included.

6. Excluded are establishments mainly engaged in refining or smelting of minerals or ores (other than preliminary smelting of gold), or in the manufacture of such products of mineral origin as coke, cement and fertilisers. Also excluded from the collection are itinerant and part-time miners, particularly in the gemstone industry and to a lesser extent in the copper and tin industries. This deficiency in coverage exists because production is usually on such a small scale that it would be difficult to establish lists of producers and obtain statistical returns.

7. The basic unit for which statistics are reported in

ABS integrated industry collections is the establishment. Prior to the 1988-89 census, this unit covered, in general, all the operations carried on under the ownership of one enterprise (business) at a single physical location. A combination of factors (including better communication and transport facilities, improvements in extractions and refining technologies, and greater automation allowing management to be spread over a number of locations) has changed the way businesses are managed and made it increasingly difficult to obtain the requisite information under the locational definition. This has required increasing degrees of estimation to maintain the statistical series.

8. To overcome these quite significant reporting problems, the ABS has modified the establishment definition to align it more closely with industry practices. The establishment is now defined as the smallest accounting unit of an enterprise within a State or Territory which controls its productive activities and for which a specified range of detailed data is available.

9. Separately located administrative offices and ancillary units such as storage premises, laboratories and producers' sales branches continue to have their activities included with mining activities unless these ancillaries are sufficiently large for them to constitute a separate accounting unit.

10. The new unit definitions are being progressively implemented on the ABS central business register as reporting arrangements with individual businesses are finalised.

11. Despite the circumstances referred to above, the majority of establishments continue to cover the operations at a single physical location.

Effects

12. The effect of these changes on the financial and employment series is most marked in brown coal mining where mines and electricity generation facilities are operated jointly. However, the main changes in the number of establishments, particularly in gold ores, are the result of normal fluctuations in activity amongst the small operators; for example, in Western Australia about 30 establishments either went out of business or were no longer in scope of the gold ores industry.

Definitions of data items

13. The information shown for the various items defined below relates mainly to establishments which operated at any time during the year. Unless otherwise stated, details for establishments which are being set up but are not yet in productive operation are also included.

Establishments at 30 June. The number of establishments in operation at 30 June relates to mining establishments as such. It includes mines on a *care and maintenance* basis if there is permanent employment but does not include establishments yet to begin productive operation.

Employment at end of June. Working proprietors, and employees on the payroll at end of June.

Wages and salaries. The wages and salaries of all employees of the establishment. Drawings of working proprietors are excluded.

Turnover. (See also Note (a) on this page). Sales of minerals (net of coal export levy and petroleum production excise duty payments) and other goods whether produced by the establishment or not, plus transfers out of minerals and other goods to other establishments of the same enterprise, plus bounties and subsidies on production, plus all other operating revenue from outside the enterprise (such as commission, repair and service revenue and rent, leasing and hiring revenue) plus capital work done for own use, or for rental or lease. Receipts from interest, royalties, dividends and the sale of fixed tangible assets are excluded.

Stocks-opening and closing. Stocks of materials, fuels, mine products and work-in-progress, of the establishment whether located at the establishment or elsewhere.

Total purchases, transfers in and selected expenses. (See also Note (a) on this page). Purchase of electricity, fuels, stores and materials, containers, etc. and minerals and other goods for resale, plus transfers in of goods from other establishments of the same enterprise, plus charges for processing and other commission work and payments to mining contractors, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses and sales commission payments and rent, leasing and hiring expenses.

Value added. (See also Note (b) on this page). Turnover plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

Rent and leasing expenditure. Outlay on rent and leasing of buildings, vehicles, machinery, plant and equipment.

Fixed capital expenditure less disposals. (See also Note (c) on this page). Outlay on new and second-hand fixed tangible assets less disposals. Includes the value of assets acquired under finance leases (as defined in ASRB 1008).

Note (a) Transfers to and from other establishments of the enterprise referred to in the definition of *Turnover* and *Total purchases, transfers in and selected expenses* are valued, for statistical purposes, at prices commensurate with the prices which would have been received or paid if the establishments concerned had been under separate ownership, i.e. at commercial selling price.

Note (b) While *value added* is the basic measure of an industry's contribution to total production it cannot be inferred that when wages and salaries are deducted from value added, the whole of the surplus is available for profit. There are many miscellaneous expenses (such as depreciation,

workers' compensation insurance, other insurance, payroll tax, income tax, rates, advertising, interest on borrowed funds, bad debts and other sundry charges) which are not taken into account in arriving at value added. Value added as calculated in this publication differs from the concept used in the National Accounts where the concept of value added also excludes some administrative expenses and sundry charges, and the change in stocks component is measured by valuing the physical change in stocks at current prices. It is not practicable in these censuses to collect data fully in accord with the National Accounts concept of value added.

Note (c) Details of fixed capital expenditure were not collected in the 1985-86 and 1986-87 censuses because of the progressive adoption during that period of the Accounting Standards Review Board's ASRB 1008, which deals with the treatment of capital assets acquired under *finance leases*. 1987-88 is the first year for which all capital expenditure has been reported in accordance with ASRB 1008. ASRB 1008 requires that lessees should capitalise finance leases in their accounts, in effect accounting for assets acquired under finance lease arrangements in substantially the same way as they account for assets purchased. This enables the lessee to record the acquisition of an asset as capital expenditure, an allowance for its replacement as depreciation and financing of the acquisition as interest payments. Previously these entitlements belonged to the lessor. The treatment of capital assets acquired under *operating leases* has not been affected by this change.

Related publications

14. The following is a list of publications containing other mining and related statistics for Australia, published by the ABS, the Bureau of Mineral Resources, Geology and Geophysics (BMR) or the Australian Bureau of Agricultural and Resource Economics (ABARE). Users are also referred to the annual reports of the State Mines Departments, which contain mineral statistics.

Exploration statistics

Quarterly

Actual and Expected Private Mineral and Petroleum Exploration, Australia (8412.0)

Australian Petroleum Exploration and Development Statistics (BMR)

Biannual

The Petroleum Newsletter (BMR)

Commodity statistics

Monthly

Exports, Australia (5432.0)

Imports, Australia (5433.0)

Quarterly

- Exports, Australia (5434.0)
Imports, Australia (5435.0)
Agriculture and Resources (ABARE)
Quarterly Mineral Statistics (ABARE)

Biannual

- Australia's Identified Petroleum Resources (BMR)

Annual

- Mineral Production, Australia, 1987-88 (8405.0)
Manufacturing Commodities: Principal Articles Produced, Australia, 1986-87 (8303.0)
Foreign Trade, Australia, Exports (5436.0)
Foreign Trade, Australia, Imports (5437.0)
Commodity Statistical Bulletin (ABARE)

Industry and related statistics

Annual

- Census of Mining Establishments: Summary of Operations (Preliminary) by Industry Class, Australia, 1988-89 (8401.0)
Manufacturing Industry: Details of Operations Australia, 1987-88 (8203.0)
Australian Oil and Gas Exploration and Development, 1990 (BMR)

Irregular

- Census of Mining Establishments: Selected Items of Data Classified by Employment Size and Industry Class, Australia, 1987-88 (8410.0)
Census of Mining Establishments: Industry Concentration Statistics, Australia, 1987-88 (8411.0)

15. In addition to the publications above, more detailed information at State level is available from each State office of the ABS.

16. Current publications produced by the ABS are listed in the *Catalogue of Publications and Products, Australia* (1101.0). The ABS also issues, on Tuesdays and Fridays, a *Publications Advice* (1105.0) which lists publications to be released in the next few days. The *Catalogue and Publications Advice* are available from any ABS office.

Symbols and other usages

- nil or rounded to zero
n.a. not available
n.e.c. not elsewhere classified
n.p. not available for separate publication (but included in totals where applicable)
— break in continuity of series
— (where a line is drawn between two consecutive figures in the same column, or alongside two or more figures in consecutive columns)
ASIC Australian Standard Industrial Classification.
m million

17. Where figures have been rounded, discrepancies may occur between sums of the component items and totals.

18. The figures shown for previous years have been revised where necessary and, as a consequence, may not agree with similar data shown in previous publications. Details of industry classes for which revisions have been made can be obtained by contacting the ABS.

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