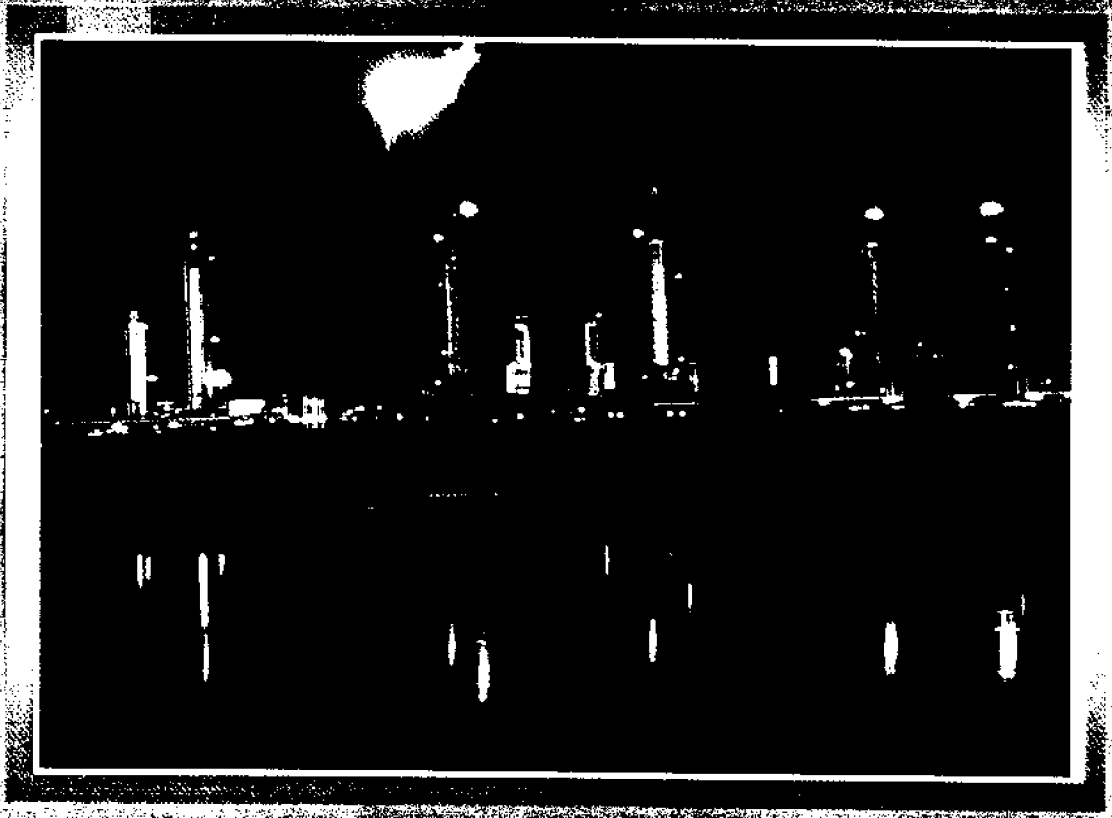
Australian Bureau of Statistics



1993 - 94

THE AUSTRALIAN MINING INDUSTRY

ABS Catalogue No. 8414.0

NEW ISSUE

AUSTRALIAN MINING INDUSTRY 1993–94

W. McLennan
Australian Statistician

AUSTRALIAN BUREAU OF STATISTICS

CATALOGUE NO. 8414.0

Produced by the Australian Government Publishing Service

CONTENTS

INQUIRIES

- *for further information about statistics in this publication and the availability of related unpublished statistics*, contact Helen Shannon on Adelaide (08) 237 7382 or any ABS State Office.
- *for information about other ABS statistics and services*, please refer to the last page of this publication.

PREFACE

The mining industry is an important part of the economy of Australia, contributing nearly 5% of gross domestic product and accounting for almost a quarter of its exports. Australia is a leading mineral resource nation and is the world's largest producer of bauxite, diamonds, lead and zircon. Identified mineral reserves indicate that the significance of the mining industry is likely to continue.

The mining industry has played an important part in the history of Australia. The development of our nation, socially and economically, can be closely aligned with new mineral discoveries. The birth of the mining industry began with the first European settlers who quarried stone and dug clay for bricks. Gold discoveries at Bathurst, Bendigo and Ballarat in 1851 attracted migrants and resulted in infrastructure development and establishment of towns. This need to service the mining industry saw Australia move from a largely agrarian economy to an economy with a significant industrial component.

This compendium brings together for the first time a range of ABS information relating to mining, including the annual mining census, mineral commodity production estimates, the mineral exploration collection, environmental expenditure related to mining, overseas trade, employment and industrial relations information. Information on Australia's mineral resources is included along with international comparisons. The annual mining census data was previously published in *Mining Industry, Australia* (8402.0) and the mineral production estimates in *Mining Production, Australia* (8405.0).

Further information, including some additional detail can be obtained if required from the Mining National Project Centre, Australian Bureau of Statistics, GPO Box 2272, Adelaide, SA 5001 or telephone (08) 237 7382.

Comments on the content of this publication can be provided to the Mining National Project Centre.

ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it the wide range of statistics published by the ABS would not be available for general use by governments and the community.

W. McLennan
Australian Statistician

Australian Bureau of Statistics
January 1996

OVERVIEW

FINANCIAL SUMMARY

	1992–93	*1993–94*	*Change*
	$m	$m	%
Exploration expenditure	1 244	1 299	4.4
Value of production	26 721	25 702	- 3.8
Value added	19 270	18 907	- 1.9
Establishment turnover	28 870	29 000	0.5
Value of exports	15 860	14 603	- 7.9
Net capital expenditure	4 004	4 020	0.4
Environmental expenditure	137	178	29.9

Internationally Australia continues to be a leading mineral resource nation. It is one of the world's top six countries for commodities such as bauxite, gold, iron ore, lead, zinc, mineral sands and uranium. Australia has approximately 11% of the world's bauxite and is the largest producer of natural rough diamonds and the mineral sand zircon. Australia ranks fourth in the world for gold resources and the vast Pilbara reserves positions the country second in terms of iron ore resources.

A total of $1,299 million was spent during 1993–94 exploring for minerals and petroleum. Over $360 million of this was searching for offshore crude oil. The Bureau of Resource Sciences anticipates that successes in the Timor Gap will lift Australia's petroleum self-sufficiency level to about 73% by the year 2000. However, without further discoveries, this will drop back to 47% by 2005. This will have a significant effect on Australia's imports, as petroleum is imported in large quantities.

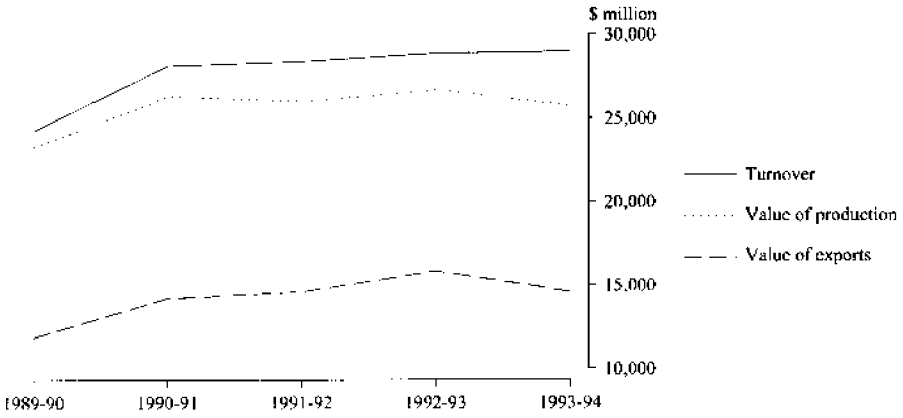
The ex-mine value of mineral commodities produced during 1993–94 was $25,702 million, a decrease of 4% from 1992–93. Lower prices for coal, oil and gas, along with decreased production of oil and gas, resulted in the lowest total value of commodities produced for the minerals sector since 1989–90.

The mining industry had sales of $33,076 million during 1993–94. Export data reveal that much of this output is sold overseas and underlines the growing importance of the Asia region as a market for Australian commodities. The Asia region bought $5,300 million of black coal during 1994–95 with Japan and the Republic of Korea being the major purchasers. Exports of refined gold and iron ore to Asia were significant in this period.

A total turnover of $29,000 million was reported for 1993–94 which was virtually unchanged from 1992–93. Although turnover has remained steady in 1993–94, the contributions of the major industry sectors has varied quite markedly. While turnover for coal increased by 7% to $9,897 million, much of this increase was attributable to the inclusion of brown coal in Victoria. Prior to 1993–94, Victorian brown coal production was classified as part of the electricity industry, and separate data were not available. Industry restructuring has meant that these data

are now available. Decreased production due to maintenance programs saw turnover for oil and gas decline by $722 million (9%) to $7,758 million in 1993–94. Increases in the value for gold and copper resulted in turnover for metal ore mining increasing by just over 1% to $11,344 million during this period.

FINANCIAL SUMMARY, 1989–90 TO 1993–94



Protection of the environment is an important aspect of the mining industry. Expenditure for the primary purpose of pollution abatement and control was $178 million in 1993–94. This was 30% more than the $137 million reported in 1992–93 for the same industries. The majority of this expenditure, and increase, occurred in metal ore mining. The inclusion of brown coal mining accounted for almost $8 million of the total increase in 1993–94.

Total employment at June reported in the mining census decreased by 3% to 56,440 persons in 1993–94. This continues the decline in employment which has been evident over the last decade. Wages and salaries paid in 1993–94 were $3,615 million, 4% up on 1992–93. After wages and salaries, payments for contract, subcontract and commission work were the next largest single expense incurred by mining operators.

EMPLOYMENT SUMMARY

	Units	*1992–93*	*1993–94*	*Percentage change*
Employment	no.	57 987	56 440	– 2.7
Wages and salaries	$m	3 487	3 615	3.7
Union participation	%	n.a.	45	n.a.
Industrial disputes — working days lost per thousand employees	no.	1 045	1 962	87.8

Mining employment continued to be predominantly male, with over 90% of all employees being male (compared with around 60% in all industries). Among the mining sectors, over 97% of coal mining employees were male.

Some 45% of all employees in mining were members of trade unions. This compares with 35% trade union membership across all industries. Time lost per employee through industrial disputes was more than twenty times the all industries figure. The 1,962 working days lost per thousand employees was directly attributable to workers in the coal mining industry where 6,803 working days per thousand employees were lost in 1993–94.

HISTORY OF THE MINING INDUSTRY

The history of the Australian mineral industry began with the first European settlement when settlers quarried stone and dug clay for bricks for their buildings. The industry since then has had its booms and depressions, but from the discovery of gold, it has been an important contributor to the Australian economy. It provides the nation's basic industrial requirements — construction materials, fuel and industrial raw materials; it has facilitated decentralisation of both population and industry, as towns, railways and ports were established to serve the mines and smelters; it has encouraged technological advancement, both in its own and other related fields; and it has been a major earner of export income. The industry has created wealth for the nation and its people through the discovery and mining of mineral deposits and processing the ore. It now produces some 65 different mineral commodities with annual values of production ranging to more than $7,000 million in the case of coal. Australia mines, or has unworked deposits of, almost all mineral commodities — of the major mineral raw materials it now lacks only sulphur. Some commodities, such as petroleum and aluminium, have had a relatively short production history in Australia; others, such as the base metals, iron ore and especially, coal, go back to the early days of the industry.

COAL

It is not surprising that coal was the first mineral, other than those used for construction, to be found, because seams outcrop along the coast to the north and south of Sydney. Coal was first discovered in the Newcastle area by escaped convicts in 1791. Mining began near Newcastle in 1799 and in 1800 coal became the first mineral exported from Australia.

Production increased steadily from the 1830s onwards, and in the mid-1920s Australian production was almost 14 megatonnes, but the depression of the 1930s saw it fall by over a third of this amount. Renewed growth faltered in the late 1940s. Exports, which normally exceeded 1 megatonnes/year until the mid-1920s, had fallen to about 50,000 tonnes by the late 1940s because of increasing competition. At that time petroleum products began to replace coal in industry and railways, and these trends were exacerbated by prolonged industrial unrest.

It was widely agreed that coal would be of diminishing importance as a major mineral commodity. However, measures taken to improve the efficiency of mining, realisation of the economic importance of near-surface seams in the Bowen Basin in Queensland, and the emergence of large markets for coking coal, particularly in Japan, brought about a resurgence in the industry. Exports began to increase rapidly in the mid-1950s, and, with impetus added by the oil shocks of the 1970s, Australia became the world's largest coal exporter, with exports reaching 88 megatonnes in 1985. By 1993–94 exports of coal had risen to 129 megatonnes.

The pattern of black coal production has changed. In 1953, New South Wales provided 77% of the total production and Queensland, 14%, while in 1993–94, the two States provided 47% and 48%, respectively. Queensland became the predominant exporting State contributing 55% of coal exports compared with 45% from New South Wales. In total, 73% of Australian production was exported. Despite its changing fortunes the coal industry has been a major part of the mineral industry for 150 years and the rapid increase in exports in the 1960s consolidated its pre-eminence. In 1993–94 coal contributed 27% of the total value of ex-mine production in Australia.

MINERALS

In the circumstances at the time, the early settlers were little interested in minerals. Traces of gold were reported from 1823 onwards, and occurrences of other metals were reported from time to time. The first metalliferous mining was of silver-lead, at Glen Osmond near Adelaide in 1841. Copper mining began at Kapunda, in South Australia, in 1842, and at Burra, to the north, in 1844. At the end of the same decade, the first pig iron was produced from a small deposit of iron ore near Mittagong, New South Wales.

It was the discovery of payable alluvial gold in 1851 near Bathurst in New South Wales and, soon after, at the rich Victorian fields, that gave impetus to the metalliferous sector of the mineral industry. As search and discovery quickly spread to other parts of eastern Australia, the migrants which the gold attracted, the infrastructure which resulted, and realisation of the mineral potential, all profoundly influenced the development of Australia from the 1850s onwards.

The wealth created by the newly-mined gold and the influx of migrants began the transition away from an agricultural and pastoral economy. As industries were established to supply the machinery and transport facilities needed by the mines, service industries expanded to cater for increasing population and growing commercial activities.

Gold was the prospectors prime target for many years after 1851, and the Victorian discoveries were followed by many others around the continent, though few were so rich. Many of the new goldfields were abandoned as the shallow surface alluvials were exhausted, but on some, especially in Victoria, mining progressed to the deep leads-alluvial deposits covered by tens of metres of later sediments or by lava flows.

Prospecting on some fields discovered primary gold lodes rich enough to be worked. Working such lodes necessitated deep shafts, machinery and treatment plants, and these required capital. The individual miner or syndicate was replaced by companies, employing dozens or even hundreds of men. Towns were established and, as confidence in the long life of the mines increased, tents and shanties gave way to more permanent private and commercial buildings. When, decades later, the mines began to peter out, many such towns survived because they had become centres for the surrounding agricultural and pastoral industries, or were at convenient points on well established transport routes.

The interest and expertise in prospecting aroused by gold soon led to discoveries of other metals. Tin mining began almost simultaneously in 1872 at Inverell, New South Wales; Mount Bischoff, Tasmania; and Stanthorpe, Queensland. With the discovery soon after of other fields, especially Herberton in North Queensland, Australia became the major world source of tin in the late 1870s and early 1880s. Base metals were discovered at many places, including Moonta-Wallaroo, South Australia; Zeehan-Dundas and Mount Lyell, Tasmania; Cobar, New South Wales; and Mount Morgan, Queensland. The fabulous Broken Hill lode, whose profits spawned a variety of industries, including steel at Newcastle in 1915, was discovered in 1883.

By the beginning of the twentieth century, the metalliferous mining industry, with associated smelters and refineries, was well established. Gold was still pre-eminent, accounting for three-quarters of the total value of metalliferous mine production, with copper, lead and silver accounting for most of the remaining quarter.

Like the goldfields, each mine needed a town for its workers, engineering and machinery suppliers and transport facilities — including ports to ship its products to other parts of the world. Many towns in existence today owe their foundation to a mineral deposit found in the last four decades of the nineteenth century.

The industry continued to prosper in the early years of the twentieth century, however, it was severely affected by the collapse of metal prices after the ending of World War I. Many mines closed, and the value of mineral exports fell from $15.3 million in 1919–20 to $7.6 million in 1921–22.

In the late 1930s the mineral industry, although well established, played a minor role in the Australian economy. The need for new ore reserves of many minerals was the major concern of the industry in the late 1930s and early 1940s. Indeed, the forty-year drought of new discoveries, after the flood of the previous century, led some to the belief that there were few new resources to be found, and that the industry would gradually run down. An embargo was placed on the export of iron ore in 1938 by the Commonwealth Government, when reserves of high-grade ore were believed to be no more than 260 megatonnes. Few new mineral deposits were found from the beginning of the century until after World War II.

In the late 1940s there began a series of discoveries that was to completely change the structure of the industry and elevate Australia to a major mineral exporting country. In the 1950s the mainstays of the industry were lead, zinc, copper, gold and coal, and only the first four were exported in any quantity. By the late 1960s Australia was a world force in aluminium, coal, iron ore, nickel, manganese, titanium, uranium and zirconium as well as the traditional lead and zinc.

Some of the 'new' deposits had been known previously, but had not been economically workable. The economics of working such deposits changed remarkably because of technological advances which lowered the cost of mining and transporting huge quantities of material, but these advances would not have been decisive without the emergence of Japan as a major buyer of coal, iron ore and bauxite.

The discovery of new ore bodies close to former mines and the striking of the many new deposits was aided by the development of geochemical and geophysical exploration methods suited to Australian conditions. Many techniques developed in the northern hemisphere were not successful in the arid, deeply weathered terrain characteristic of most of Australia. However, these techniques were modified and new ones developed, and Australia is now a world leader in expertise for mineral exploration in arid regions.

Apart from Japan's economic growth, the expansion of the world economy in the 1950s and 1960s meant an ever increasing demand for minerals. Australia, with its well established industry, had the experience needed to find and develop the new deposits needed to meet this demand.

The greatly increased knowledge of the geology of Australia resulting from systematic geological and geophysical studies led to a better understanding of the geological composition of the continent. Mineral explorers were able to search more efficiently by using geological theories on the origin of mineral deposits to target specific areas for concentrated exploration. The better understanding showed that Australia had a high potential for the discovery of mineral deposits. This realisation, together with Australia's political stability, led to an influx in the early 1960s of major overseas mining companies which brought in new expertise and ideas, as well as funds for exploration.

The search for a variety of minerals in diverse geological conditions has developed a highly experienced mineral exploration industry which has begun exporting its skills to other parts of the world.

PETROLEUM

The 1960s saw also the discovery of economic accumulations of what had been Australia's most serious mineral deficiency — petroleum.

Although it had been sought for many years, petroleum (which includes crude oil and natural gas) was a latecomer to the mineral production scene in Australia. However, it now has become one of Australia's major mineral products in terms of value of production and in 1985, following a change in government policy on petroleum exports, it was Australia's second most valuable mineral export.

Hydrocarbons, in the form of crude bitumen, were first recorded in 1839, at the mouth of the Victoria River, near the Western Australia — Northern Territory border. The first well drilled specifically for petroleum was in 1882 at Alfred Flat, in the Coorong area of South

Australia. However this well, and several others in the same general area, did not encounter any oil.

In 1900, at Roma in Queensland, natural gas was encountered in an artesian water bore which was being deepened. Gas continued to flow freely from the well and in 1906 it was reticulated for town lighting; however, the flow failed after 10 days. This discovery marks the real beginning of petroleum exploration in Australia. Many wells were drilled subsequently in the Roma region; some encountered small quantities of oil or gas.

The first substantial flow of oil was in 1953 from the Rough Range No. 1 well in the north-west of Western Australia. However, a commercial field did not eventuate, and the interest in petroleum exploration aroused by the discovery began to wane. Because of the economic and strategic advantages of an indigenous supply of petroleum, the Commonwealth Government had encouraged the search for it since soon after World War I. With the increasing importance of petroleum and petroleum products to the Australian economy, in 1957 the Government adopted several measures, including a subsidy for specific approved operations, to encourage petroleum exploration. These measures did much to encourage exploration.

Australia's first commercial oil field was discovered at Moonie, 200 kilometres south-east of Roma in 1961. A pipeline was built to Brisbane, and commercial production began in 1964. Other important events in 1964 were the discovery of oil and gas at Barrow Island, Western Australia; of gas in what has become a cluster of oil and gas fields in north-west South Australia and the adjoining part of Queensland; and the most important of all, the discovery of gas some 25 kilometres off the Gippsland coast in Australia's first offshore well. By 1993–94 the Gippsland Shelf fields supplied almost 60% of the crude oil and about 20% of the natural gas produced in Australia.

The Gippsland Shelf discovery, as well as becoming Australia's main source of oil and gas, also turned attention to Australia's extensive continental shelf, and 1971 saw the discovery of the huge gas fields of the North West Shelf. In addition to supplying Western Australia, they began to feed one of the world's few liquefied natural gas export projects at the end of the 1980s.

In the early 1970s, petroleum exploration again began to languish — indications from exploration were that onshore oilfields probably would be small and hence unlikely to be economic. However, the oil shocks of 1973 and 1979, when oil prices increased several-fold, completely changed the economics of the industry. Expenditure on exploration increased rapidly, from $49 million in 1976 to $948 million in 1982. Some known fields, such as Palm Valley and some Bass Strait fields, were developed, and many new fields were discovered, especially in south-west Queensland and the adjoining part of South Australia.

While exploration has been primarily for oil, it has discovered large resources of natural gas. Indeed, indications are that geological conditions in Australia in the past have favoured the formation of gas rather than oil. Natural gas contributed 18% of total Australian energy consumption in 1993–94.

Most Australian crude oils are 'light', and oil still has to be imported to supply heavy fractions needed for lubricating oils, bitumen, etc.. In 1985, 96% of Australian crude oil requirement was met by domestic production. However, unless major new discoveries are made, Australia's crude oil self-sufficiency will begin to decrease as production from some existing fields declines. Natural gas supplies, however, are adequate for many years, although resources are unevenly distributed around the continent.

The construction of a $400 million pipeline between the Pilbara and the Western Australian goldfields will supply industries with North West Shelf natural gas. The privately built, owned and operated gas pipeline will be 1,400 kilometres long. The project should increase the profitability of existing mining operations as well as increasing the viability of a number of projects that are currently considered as sub-economic.

The conclusion of GATT negotiations in Uruguay in December 1993 saw an important development in international trade occur. The Agreement should result in lower tariffs on manufactured goods and an increased openness of major markets. The benefits to mineral exporting nations such as Australia are likely to be substantial. The GATT arrangements will mean that Asian economies will require additional raw materials to assist in their expansion into newly opened international markets.

ENVIRONMENTAL ISSUES

In the 1950s the industry began to be affected by increasing public concern for the quality of the environment. With the rising awareness that preservation of natural features such as scenery and plant and animal habitats had a value to society, governments increased the controls on discharge of potentially polluting emissions such as water containing sediments or chemicals, and noxious gases. Whereas the industry once had general priority in land use, it now had to justify its activities in competition with other potential uses of the land. Governments also took account of the likely effect of a proposed mining or treatment process on the surroundings before deciding whether it should go ahead, and required that, where feasible, mined-out areas be rehabilitated by reshaping and revegetating the surface so that the site could be used for other purposes.

The mineral sand mining industry illustrated the increased concern over environmental protection during the 1970s. Environmental lobbying resulted in the Federal Government ending mining on Fraser Island, Queensland. Mining ceased on the island in 1976.

NATIVE TITLE

The mineral industry's former priority for land use was eroded further in the 1970s when title to extensive tracts of land in the Northern Territory and some States was granted to the land's traditional Aboriginal owners. One result of this was that companies had to obtain the consent of the Aboriginal owners before they could explore or mine on such land. Because of the significance of land to Aboriginal society, and because of the owners' wish to minimise the effect of a different culture on their traditional way of life, this requirement commonly required prolonged negotiations and this in turn added to the costs and uncertainty of the mineral exploration process.

On 3 June 1992 the High Court of Australia brought down its decision in *Mabo and Others v the State of Queensland*. This decision and the subsequent *Native Title Act 1993* which came into force on 1 January 1994 rewrote Australian law on the impact of colonisation. Together they will have a profound significance on the Indigenous people and the various industry groups with vested interests in land such as agricultural and mining industries. The Act has resulted in a degree of uncertainty within the mining industry. Any land that has been subject to tenure such as freehold, will be free from the Act, as the tenure will be deemed to have extinguished native title. Procedures for carrying out the Act have been designed to be fair, just, economical and prompt, and to safeguard against vexatious and frivolous claims. Future activities, such as exploration, which will have minimal effect on native title have been excluded from the Act. In terms of mining, there is no provision in the Act for the activity to be vetoed by native title holders, however the Act does give native title holders the right to negotiate under certain circumstances.

STRUCTURE OF THE MINING INDUSTRY

The annual mining census collects data from management units and establishments classified to the coal mining, oil and gas extraction and metal ore mining industries. Units classified to construction material mining and mining n.e.c. are surveyed every three years. Non-employing units are excluded except where they are participants in operational unincorporated joint ventures.

The following analysis relates to establishment rather than management unit data (see Explanatory Notes, Statistical unit). Management unit level data includes information from establishments that are not predominantly engaged in mining activities and contrasts with establishment data which provides more homogeneous data for each industry. Concentration ratios relate mining establishments to contributing management units. The following analysis and table summarises the ratios. Detailed information, including data for individual industries, are available in the table at the end of this chapter. An explanation of the derivation of concentration ratios is provided in the Explanatory Notes, Concentration statistics.

The census shows that there were 515 mining establishments belonging to 381 management units operating at the end of June 1994.

ESTABLISHMENT LEVEL — SELECTED STATISTICS AND CONCENTRATION RATIOS,[1,2] AUSTRALIA, 1993–94

	Establishments at 30 June		*Employment at end of June*		*Wages and salaries*		*Turnover*		*Value added*		*Fixed capital expenditure less less disposals*	
Management units	no.	ratio	no.	ratio	$m	ratio	$m	ratio	$m	ratio	$m	ratio
Largest												
12	53	0.10	18 030	0.32	1 223	0.34	12 275	0.42	8 705	0.46	1 757	0.44
25	87	0.17	28 619	0.51	1 964	0.54	16 951	0.58	11 947	0.63	2 234	0.56
50	146	0.28	37 188	0.66	2 452	0.68	21 812	0.75	15 142	0.80	2 922	0.73
100	227	0.44	45 274	0.80	2 939	0.81	25 832	0.89	17 709	0.94	3 455	0.86
200	341	0.66	49 330	0.87	3 146	0.87	28 507	0.98	19 691	1.04	3 712	0.92
All	**515**	**1.00**	**56 440**	**1.00**	**3 615**	**1.00**	**29 000**	**1.00**	**18 907**	**1.00**	**4 020**	**1.00**

[1] Note that the number of management units is greater in this table than the total number of in-scope management units. This is due to the inclusion of establishments in this table which belong to management units which are classified to industries other than mining.

[2] Excludes ANZSIC subdivision 14, Construction material mining.

CONCENTRATION RATIOS

Ranking all management units by turnover confirms the highly concentrated structure of the industry. In 1993–94 the 12 largest management units accounted for 42% of turnover and 46% of value added. In addition, these units employed 32% of the mining labour force.

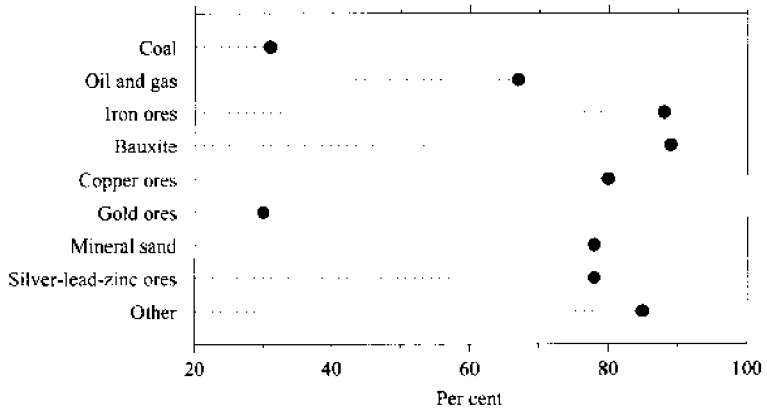
The top 100 management units (MUs) accounted for 227 (44%) of all establishments. This group accounted for 89% of turnover, 94% of value added, 86% of fixed capital expenditure less disposals and 80% of the labour force.

A concentration table at industry level can be found on pages 17–18. A number of industries display activity that is highly concentrated. The largest four management units in the iron ore mining industry

accounted for 88% of turnover and 94% of employment in that industry. A similar pattern exists in the bauxite mining and copper ore mining industries where the largest four management units accounted for 89% and 80% of turnover, respectively, in 1993–94.

The least concentrated industries are those of coal mining and gold ore mining. The largest four management units in the coal mining industry accounted for 31% of turnover in 1993–94 while in the gold ore mining industry the same ranked group accounted for 30% of turnover.

PERCENTAGE CONTRIBUTION OF LARGEST FOUR MANAGEMENT UNITS BASED ON TURNOVER, BY INDUSTRY, 1993–94



UNINCORPORATED JOINT VENTURES

Industries that have a large number of unincorporated joint ventures display concentration ratios for employment and wages and salaries that are more evenly spread. This is because participants report details of turnover but often have few or no employees. Labour for such operations is usually employed by the joint venture operator. This is illustrated in the oil and gas extraction industry where the largest four management units account for 67% of turnover and 46% of employment.

Ranking establishments by employment size provides a different picture. The table below shows that many mining operations have employment in excess of 100 persons. There are a small number of extremely large operations (i.e. more than 1,000 employees), and their contribution to employment and turnover is significant. Most mining is conducted on a large scale although some industries such as gold mining and tin mining have a substantial number of small establishments.

Establishments that were only participants in unincorporated joint ventures (UJV) accounted for $9,193 million in turnover during 1993–94. There were 207 establishments that only had participant status. This highlights a common operational style in mining that allows development of mineral deposits and the spread of risk through the involvement of and investment by both local and overseas organisations not otherwise involved in the mining industry.

MINING ESTABLISHMENTS BY EMPLOYMENT SIZE, AUSTRALIA, 1993–94

Employment size	*Establishments at 30 June 1994* no.	*Employment at end of June* no.	*Wages and salaries* $m	*Turnover* $m	*Value added* $m	*Fixed capital expenditure less disposals* $m
Less than 10	64	219	37	592	263	278
10–19	35	548	28	219	36	31
20–49	46	1 630	108	1 026	564	65
50–99	43	3 138	156	1 555	729	226
100–499	93	22 817	1 424	6 621	3 056	815
500–999	19	12 867	815	5 044	2 707	587
1 000 or more	8	15 078	1 035	4 560	2 358	503
UJV participants	207	143	12	9 382	9 193	1 514
Total	**515**	**56 440**	**3 615**	**29 000**	**18 907**	**4 020**

ESTABLISHMENTS BY STATE

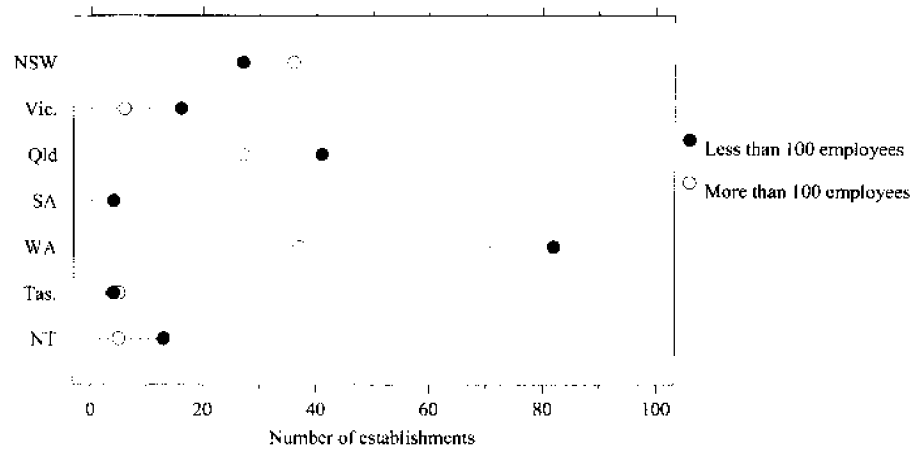
An analysis of establishments by State illustrates the relative levels of mining activity in each State and the composition of that activity. In terms of number of establishments, the major mining States are Western Australia, Queensland and New South Wales.

MINING ESTABLISHMENTS BY EMPLOYMENT SIZE BY STATE, 1993–94

Employment size at end of June	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*Australia*
Less than 10	6	9	16	3	25	1	3	63
10–19	4	4	9	1	16	1	—	35
20–49	9	2	13	—	16	1	5	46
50–99	8	1	3	—	25	1	5	43
100–499	28	5	18	3	29	5	5	93
500 or more	8	1	9	1	8	—	—	27
UJV participants	42	6	58	8	82	—	12	207
Total	**105**	**28**	**126**	**16**	**201**	**9**	**30**	**515**

Unincorporated joint venture participants aside, the majority of establishments in New South Wales have an employment size between 100 and 499 employees. This reflects the coal mining activity that dominates the State. Contrast that with the profile for Western Australia where the majority of establishments employ fewer than 100 persons. This is a reflection of the gold mining industry in that State. Western Australia also has 37 establishments with more than 100 employees. This covers the activities of iron ore mining and the larger gold mines.

MINING ESTABLISHMENTS[1] BY EMPLOYMENT SIZE, 1993–94



[1] Excludes establishments that are only participants in unincorporated joint ventures.

ECONOMY-WIDE COMPARISONS

The previous analysis used establishment level information, but it is also possible to present comparisons across industries at the management unit level. The ABS integrated economic statistics system provides for the collection of data from each industry sector (at management unit level), allowing comparisons between and across different industry sectors. The following analysis presents the mining sector in the context of the Australian economy.

Operating profit before tax (OPBT) for the entire mining sector (including services to mining) was $5,527 million in 1993–94 (which represented 7% of the total OPBT for all employing trading businesses). This was up on the $5,363 million contribution in 1992–93.

SUMMARY OF INDUSTRY PERFORMANCE

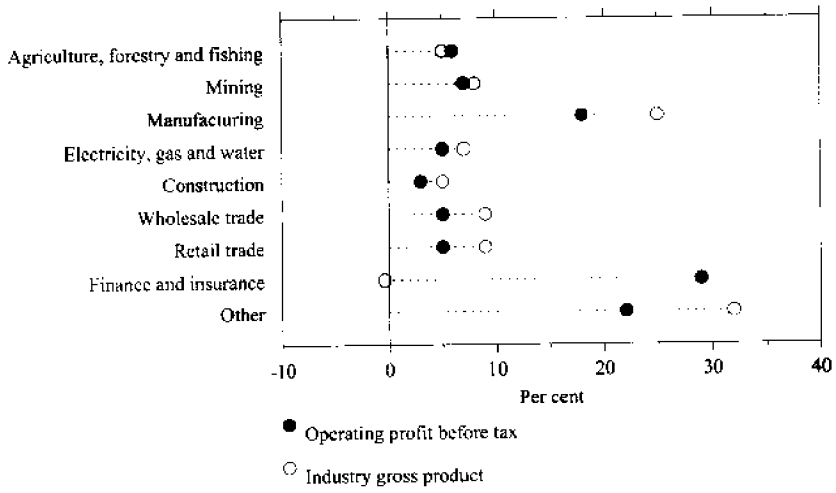
	Operating profit before tax		*Industry gross product*	
	1992–93	*1993–94*	*1992–93*	*1993–94*
Industry sector	$m	$m	$m	$m
Agriculture, forestry and fishing	3 617	4 660	8 685	10 117
Mining	5 363	5 527	16 699	16 914
Manufacturing	12 946	14 014	51 869	55 078
Electricity, gas and water supply	2 585	3 606	14 348	14 472
Construction	2 089	2 303	10 247	11 325
Wholesale trade	4 084	4 200	18 782	20 599
Retail trade	3 619	3 594	19 185	19 602
Finance and insurance	20 616	22 089	– 1 975	– 926
Other	12 437	16 422	69 693	73 639
Total	**67 356**	**76 415**	**207 533**	**220 820**

Source: Business Operations and Industry Performance, Australia, 1993–94 (8140.0).

In terms of operating profit before tax, manufacturing accounted for $14,014 million (18%) in 1993–94 while the finance and insurance sector accounted for $22,089 million (29%).

Mining industry gross product in 1993–94 was $16,914 million (8%) of the total industry gross product of $220,820 million. The industries with the greatest contribution to industry gross product were manufacturing with $55,078 million (25%) and wholesale trade with $20,599 million (9%).

SUMMARY OF INDUSTRY PERFORMANCE, 1993–94



Source: Business Operations and Industry Performance, Australia (8140.0).

ESTABLISHMENT LEVEL[a] — SELECTED STATISTICS AND CONCENTRATION RATIOS BY INDUSTRY CLASS,[b],[c] AUSTRALIA, 1993–94

ANZSIC code	Industry description	Management units at 30 June		Establishments at 30 June		Employment at end of June		Wages and salaries		Turnover		Value added		Fixed capital expenditure less disposals	
		No.	Ratio	No.	Ratio	No.	Ratio	$m	Ratio	$m	Ratio	$m	Ratio	$m	Ratio
	Coal mining														
1101	Coal mining														
	First	4	0.04	17	0.11	6,508	0.25	512.0	0.27	3,071.1	0.31	1,538.5	0.28	199.0	0.23
	Second	4	0.04	12	0.08	4,414	0.17	335.5	0.17	1,596.7	0.16	945.8	0.17	140.0	0.16
	Third	4	0.04	11	0.07	4,351	0.17	304.0	0.16	1,165.1	0.12	842.6	0.15	67.6	0.08
	Fourth	4	0.04	9	0.06	1,759	0.07	116.7	0.06	894.9	0.09	531.7	0.10	89.4	0.10
	Fifth	4	0.04	6	0.04	1,670	0.06	101.8	0.05	666.9	0.07	424.8	0.08	127.5	0.15
	Sixth	4	0.04	5	0.03	1,871	0.07	147.0	0.08	481.5	0.05	235.3	0.04	16.6	0.02
	Remainder	84	0.78	93	0.61	5,783	0.22	407.0	0.21	2,021.4	0.20	972.7	0.18	222.4	0.26
	Industry total	*108*	*1.00*	*153*	*1.00*	*26,356*	*1.00*	*1,924.1*	*1.00*	*9,897.5*	*1.00*	*5,491.3*	*1.00*	*862.6*	*1.00*
	Oil and gas extraction														
1200	Oil and gas extraction														
	First	4	0.07	18	0.18	2,059	0.46	126.4	0.39	5,181.1	0.67	4,807.9	0.68	628.5	0.46
	Second	4	0.07	8	0.08	73	0.02	8.6	0.03	1,376.8	0.18	1,381.3	0.19	385.6	0.28
	Third	4	0.07	11	0.11	10	—	0.6	—	604.6	0.08	589.6	0.08	190.0	0.14
	Fourth	4	0.07	10	0.10	128	0.03	7.2	0.02	209.7	0.03	165.9	0.02	19.2	0.01
	Fifth	4	0.07	5	0.05	28	0.01	2.0	0.01	128.9	0.02	134.5	0.02	1.1	—
	Sixth	4	0.07	5	0.05	—	—	—	—	87.1	0.01	87.6	0.01	11.7	0.01
	Remainder	34	0.59	44	0.44	2,146	0.48	179.8	0.55	170.3	0.02	-53.9	-0.01	144.7	0.10
	Industry total	*58*	*1.00*	*101*	*1.00*	*4,444*	*1.00*	*324.6*	*1.00*	*7,758.5*	*1.00*	*7,112.8*	*1.00*	*1,380.9*	*1.00*
	Metal ore mining														
1311	Iron ore mining														
	First	4	0.29	8	0.44	5,950	0.94	378.2	0.95	2,809.7	0.88	1,852.7	0.85	446.8	0.91
	Second	4	0.29	4	0.22	353	0.06	21.0	0.05	273.0	0.09	220.7	0.10	34.2	0.07
	Remainder	6	0.43	6	0.33	33	0.01	0.6	—	125.6	0.04	103.9	0.05	11.1	0.02
	Industry total	*14*	*1.00*	*18*	*1.00*	*6,336*	*1.00*	*399.8*	*1.00*	*3,208.3*	*1.00*	*2,177.3*	*1.00*	*492.1*	*1.00*
1312	Bauxite mining														
	First	4	0.44	4	0.44	1,536	0.88	75.5	0.88	707.4	0.89	455.0	0.87	56.3	1.00
	Remainder	5	0.56	5	0.56	213	0.12	10.2	0.12	87.7	0.11	68.6	0.13	0.1	—
	Industry total	*9*	*1.00*	*9*	*1.00*	*1,749*	*1.00*	*85.8*	*1.00*	*795.2*	*1.00*	*523.6*	*1.00*	*56.4*	*1.00*
1313	Copper ore mining														
	First	4	0.27	4	0.27	2,166	0.81	122.3	0.79	775.8	0.80	526.3	0.88	58.2	0.49
	Second	4	0.27	4	0.27	389	0.15	24.1	0.16	158.0	0.16	80.6	0.14	25.7	0.22
	Remainder	7	0.47	7	0.47	119	0.04	8.0	0.05	32.7	0.03	-10.6	-0.02	35.6	0.30
	Industry total	*15*	*1.00*	*15*	*1.00*	*2,674*	*1.00*	*154.4*	*1.00*	*966.5*	*1.00*	*596.3*	*1.00*	*119.5*	*1.00*

For footnotes see end of table.

ESTABLISHMENT LEVEL[a] — SELECTED STATISTICS AND CONCENTRATION RATIOS BY INDUSTRY CLASS,[b],[c] AUSTRALIA, 1993–94 — *continued*

ANZSIC code	Industry description	Management units at 30 June		Establishments at 30 June		Employment at end of June		Wages and salaries		Turnover		Value added		Fixed capital expenditure less disposals	
		No.	Ratio	No.	Ratio	No.	Ratio	$m	Ratio	$m	Ratio	$m	Ratio	$m	Ratio
1314	Gold ore mining														
	First	4	0.03	16	0.10	1,989	0.25	108.6	0.30	1,272.8	0.30	615.1	0.29	134.1	0.21
	Second	4	0.03	9	0.05	728	0.09	37.8	0.10	682.2	0.16	449.8	0.21	62.7	0.10
	Third	4	0.03	7	0.04	420	0.05	17.5	0.05	418.2	0.10	288.2	0.14	13.4	0.02
	Fourth	4	0.03	6	0.04	494	0.06	28.6	0.08	330.4	0.08	200.9	0.10	80.9	0.13
	Fifth	4	0.03	5	0.03	492	0.06	24.8	0.07	261.2	0.06	180.7	0.09	31.6	0.05
	Sixth	4	0.03	7	0.04	477	0.06	20.8	0.06	212.5	0.05	83.1	0.04	44.9	0.07
	Remainder	115	0.83	118	0.70	3,403	0.43	124.7	0.34	1,060.0	0.25	291.2	0.14	278.7	0.43
	Industry total	*139*	*1.00*	*168*	*1.00*	*8,003*	*1.00*	*362.8*	*1.00*	*4,237.3*	*1.00*	*2,109.1*	*1.00*	*646.3*	*1.00*
1315	Mineral sand mining														
	First	4	0.40	8	0.50	930	0.53	36.8	0.48	405.4	0.78	198.8	0.81	18.9	0.54
	Remainder	6	0.60	8	0.50	840	0.47	39.1	0.52	116.2	0.22	47.0	0.19	16.0	0.46
	Industry total	*10*	*1.00*	*16*	*1.00*	*1,770*	*1.00*	*75.9*	*1.00*	*521.7*	*1.00*	*245.7*	*1.00*	*34.9*	*1.00*
1317	Silver-lead-zinc ore mining														
	First	4	0.33	8	0.47	2,473	0.83	146.9	0.85	730.0	0.78	232.7	0.68	43.7	0.64
	Second	4	0.33	5	0.29	484	0.16	25.1	0.15	146.6	0.16	59.7	0.17	21.7	0.32
	Remainder	4	0.33	4	0.24	18	0.01	0.5	—	58.3	0.06	51.4	0.15	2.6	0.04
	Industry total	*12*	*1.00*	*17*	*1.00*	*2,975*	*1.00*	*172.5*	*1.00*	*934.9*	*1.00*	*343.8*	*1.00*	*68.0*	*1.00*
1316, 1319	Metal ore mining n.e.c.														
	First	4	0.25	6	0.33	1,860	0.87	106.2	0.92	575.6	0.85	288.6	0.94	315.7	0.88
	Second	4	0.25	4	0.22	122	0.06	5.1	0.04	63.0	0.09	6.2	0.02	0.1	—
	Remainder	8	0.50	8	0.44	151	0.07	3.6	0.03	41.7	0.06	11.8	0.04	43.1	0.12
	Industry total	*16*	*1.00*	*18*	*1.00*	*2,133*	*1.00*	*114.9*	*1.00*	*680.3*	*1.00*	*306.6*	*1.00*	*358.9*	*1.00*

[a] See Explanatory Notes, Statistical unit.

[b] Management units ranked by contribution to industry turnover largest twenty in categories of four, see Explanatory Notes, Concentration Statistics.

[c] Note that the number of management units in this table is greater than the total number of management units in the table on page 85. This is due to the allocation of all establishments to their predominant industry classification prior to aggregating to management unit level.

MINERAL AND PETROLEUM EXPLORATION

Exploration is the search for new deposits of ore, oil or gas. It includes searches intended to greatly extend the limits of known deposits by geological, geophysical, geochemical, drilling or other methods. It excludes activity of a developmental or production nature.

During 1994–95 a total of $1,577 million was spent exploring for minerals and petroleum in Australia and in offshore waters, $278 million (21%) more than in 1993–94. There was expenditure of $893 million searching for minerals, $164 million searching for oil onshore and $520 million searching for oil offshore. During 1993–94 Australian resident companies spent $256 million on overseas exploration for minerals and petroleum.

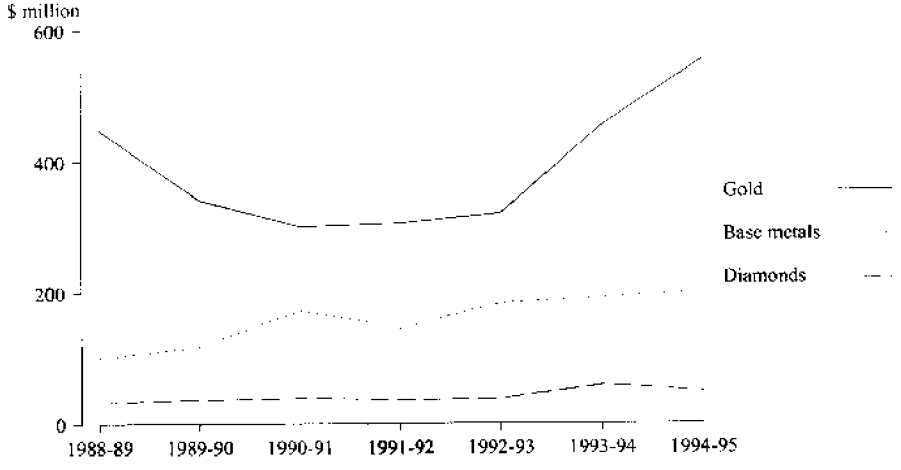
Detailed data is available on a quarterly basis in the ABS publication, *Actual and Expected Private Mineral Exploration, Australia* (8412.0).

MINERAL EXPLORATION

The $893 million expended in Australia in 1994–95 was an increase of 13% on the previous year. Gold continues to be the main mineral sought with $555 million spent. This represented 62% of total mineral exploration in Australia for 1994–95.

Base metals were the next most sought minerals with $201 million spent (23%), followed by diamonds, $48 million (5%) and coal, $38 million (4%). The search for gold, base metals and diamonds accounted for nearly 90% of Australian mineral exploration in 1994–95.

EXPLORATION EXPENDITURE BY MAIN MINERAL SOUGHT, AUSTRALIA



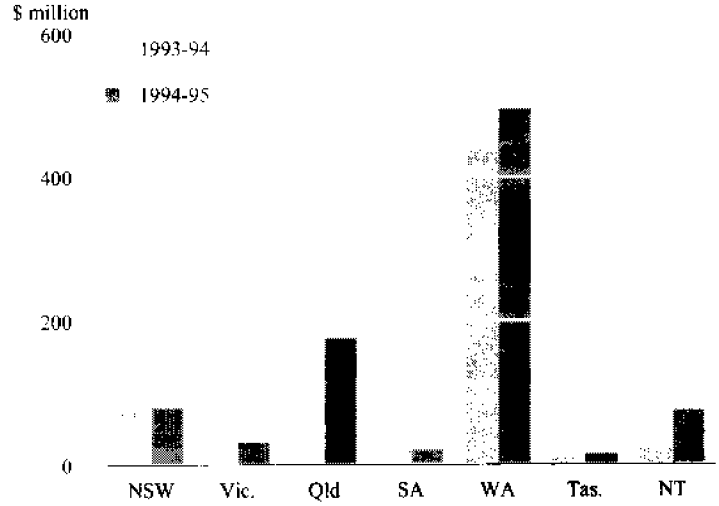
Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

Exploration expenditure for base metals has doubled between the period from 1988–89 to 1994–95. In 1988–89 it was $100 million, and by 1994–95 it had increased to $201 million. Expenditure on exploration for diamonds has also increased from $33 million in 1988–89 to $48 million in 1994–95, an increase of 45%.

In contrast exploration expenditure for uranium has continued to decrease, falling 73% from $28 million in 1988–89 to $8 million in 1994–95.

Expenditure on exploration for minerals rose in all States except South Australia in 1994–95 compared with 1993–94. Increases ranged from 51% in Victoria to 8% in New South Wales. Expenditure decreased in South Australia by $4 million (15%) in 1994–95. Expenditure in Western Australia increased to $496 million (up 9%) in 1994–95. Gold explorers made up the majority of this increase, spending over $379 million, up from $310 million in 1993–94. Other expenditures and increases were: Queensland $176 million (26%), Northern Territory $76 million (9%), Victoria $31 million (51%) and Tasmania $15 million (46%).

EXPLORATION EXPENDITURE BY STATE (excludes petroleum exploration)



Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

Data on exploration expenditure is collected by type of lease. Leases are classified into two categories — production leases and all other areas. Production leases are areas on which mine development is actually taking place. In 1988–89 expenditure on production leases was $112 million, or 16% of the total expenditure of $698 million. By 1994–95 this had increased to $203 million. A total of $691 million was spent on all other areas in 1994–95.

Metres drilled on production leases has risen significantly in the last 2 years. In 1993–94, exploration companies reported 2,770,000 metres drilled on production leases representing 29% of the total of 9,580,000 metres. This increased to 3,329,000 metres drilled in 1994–95 which represented 32% of the total 10,330,000 metres drilled.

MINERAL EXPLORATION EXPENDITURE AND METRES DRILLED (other than for petroleum)

	Expenditure			*Metres drilled*		
	On production leases	*On all other areas*	*Total*	*On production leases*	*On all other areas*	*Total*
	$m	$m	$m	'000 metres	'000 metres	'000 metres
1988–89	112	586	698	1 812	4 765	6 577
1989–90	90	517	608	1 598	4 735	6 332
1990–91	115	486	602	1 760	4 452	6 212
1991–92	131	473	604	1 626	4 253	5 877
1992–93	148	483	632	1 944	5 049	6 993
1993–94	184	608	793	2 770	6 810	9 580
1994–95	202	691	893	3 329	7 001	10 330

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

Drilling expenditure in 1993–94 totalled $284 million, 36% of total mineral exploration expenditure of $793 million.

More than two-thirds of all drilling expenditure was in Western Australia ($192 million). This represented 42% of all mineral exploration expenditure in Western Australia.

DRILLING METHODS: TOTAL EXPENDITURE BY STATE, 1993–94 (other than for petroleum)

	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*Total*
Drilling method	$m	$m	$m	$m	$m	$m	$m	$m
Diamond	15	n.p.	22	n.p.	79	5	8	132
Reverse circulation	n.p.	1	9	n.p.	70	n.p.	n.p.	91
Percussion	1	n.p.	n.p.	—	n.p.	—	n.p.	11
Rotary air blast	n.p.	n.p.	4	1	33	—	2	40
Other	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	1	9
Total	**21**	**4**	**41**	**4**	**192**	**5**	**17**	**284**

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

The average drilling costs per metre for all States and Territories were $101 using diamond drilling, $27 using reverse circulation, $33 using percussion drilling and $9 using rotary air blast drilling.

DRILLING METHODS: TOTAL METRES DRILLED, BY STATE,[1] 1993–94 (other than for petroleum)

	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*Total*
Drilling method	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres
Diamond	138	n.p.	197	n.p.	809	42	n.p.	1 311
Reverse circulation	131	53	300	n.p.	2 715	n.p.	196	3 436
Percussion	46	n.p.	169	n.p.	n.p.	—	n.p.	345
Rotary air blast	n.p.	n.p.	336	n.p.	3 755	—	n.p.	4 422
Other	n.p.	n.p.	14	n.p.	n.p.	n.p.	n.p.	568
Total	**407**	**102**	**1 015**	**124**	**7 765**	**56**	**614**	**10 082**

[1] The information on metres drilled by drilling methods has been obtained from a special annual supplementary collection. The results differ from the data shown in the table at the top of this page which are collected quarterly.

Source: Actual and Expected Private Mineral Exploration, Australia, December Quarter 1994 (8412.0).

PETROLEUM EXPLORATION

Total petroleum exploration expenditure in 1994–95 was $684 million, an increase of 35% compared with 1993–94. Expenditure on production leases rose by 48% to $104 million, while expenditure on all other areas increased by 33% to $580 million in 1994–95.

Onshore exploration expenditure increased by $19 million (13%) to $164 million in 1994–95. Expenditure on offshore exploration increased by $158 million (44%) to $520 million in 1994–95. An increase of $177 million in drilling expenditure offset the decrease of $19 million in other offshore expenditure during 1994–95.

PETROLEUM EXPLORATION EXPENDITURE

	Onshore			*Offshore*			*Total expenditure*		
	Drilling	*Other*	*Total*	*Drilling*	*Other*	*Total*	*On production leases*	*On all other areas*	*Total*
	$m	$m	$m	$m	$m	$m	$m	$m	$m
1988–89	136	98	234	299	106	406	130	509	639
1989–90	74	70	143	350	90	439	66	517	583
1990–91	129	88	217	257	108	365	131	451	583
1991–92	61	75	135	142	196	339	70	404	474
1992–93	63	52	115	284	213	497	69	543	612
1993–94	84	60	145	208	154	362	70	437	507
1994–95	83	81	164	385	135	520	104	580	684

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

OVERSEAS EXPLORATION

During 1993–94, $256 million was spent on mineral and petroleum exploration outside Australia by Australian resident companies. Petroleum exploration was the largest component (65%) of total overseas exploration expenditure in 1993–94. A total of 93 Australian resident companies explored overseas for minerals or petroleum in 1993–94. Of these 93 companies, 71 intended to explore overseas in 1994–95; 6 did not intend to explore overseas in 1994–95; and 16 were unsure of their intentions for 1994–95.

Of the Australian resident companies that were not exploring overseas in 1993–94, 10 intended to explore overseas in 1994–95 and 31 were unsure of their intentions.

OVERSEAS EXPLORATION EXPENDITURE OF AUSTRALIAN RESIDENT COMPANIES BY REGION AND TYPE OF MINERAL SOUGHT, 1993–94

	North America	*Latin America*	*PNG*	*Indonesia*	*Other Asia*	*Africa*	*Other*	*Total*
	$m	$m	$m	$m	$m	$m	$m	$m
Petroleum	n.p.	n.p.	24	n.p.	26	n.p.	n.p.	166
Copper, lead, zinc etc.	n.p.	n.p.	n.p.	4	4	—	2	14
Gold	4	8	6	18	10	2	5	54
Mineral sands	4	n.p.	—	n.p.	n.p.	n.p.	n.p.	6
Coal	—	—	n.p.	—	n.p.	—	—	n.p.
Construction materials	—	—	—	—	n.p.	—	—	n.p.
Diamonds	n.p.	n.p.	—	2	2	—	3	12
Other	n.p.	—	—	—	n.p.	—	—	1
Unknown	—	—	—	—	n.p.	—	n.p.	n.p.
Total	**48**	**42**	**32**	**30**	**45**	**7**	**52**	**256**

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

TIMOR GAP ZONE OF COOPERATION[1]

Although petroleum exploration in the Timor Sea commenced in the early 1960s and reached a peak about 1990, (during which time about two-thirds of Australia's total offshore exploration was occurring in the Timor Sea), the anticipated success was not realised.

In 1992 the Timor Gap Zone of Cooperation Treaty was signed by Australia and Indonesia, and production sharing contract areas were awarded. A third wave of exploration activity started. Exploration is still at an early stage but by 1994 a total of 166 wildcat wells had been drilled over an area of approximately 240,000 square kilometres, or an average of 1,445 square kilometres per well. So far there are 18 potentially commercial discoveries from the 166 exploration wells, a success rate of 11%.

The Bureau of Resource Sciences assessment is that production estimates from already discovered fields indicate that our petroleum self-sufficiency could improve from the earlier projection of 55% to 73% by the year 2000. This is particularly significant because Australia's petroleum production has been falling. Although it is anticipated that the success of exploration in the Timor Gap Zone will bring our self-sufficiency up to 73% by 2000, it is also anticipated that it will have dropped to 47% by the year 2005.

[1] *Source: 'Down to Earth'*, published by the NT Chamber of Mines and Petroleum, Inc.

IDENTIFIED MINERAL RESOURCES

Internationally Australia continues to be a leading mineral resource nation. It is one of the top six producing countries of the world for such commodities as bauxite, gold, iron ore, lead, zinc, mineral sands and uranium.

CLASSIFYING RESOURCES

Mineral resources are classified according to the geological certainty of their existence and their economic viability. Those resources that are well known geologically are referred to as demonstrated resources and those that are poorly known, as inferred resources. The tonnage and grade of demonstrated resources are determined from dimensions revealed in outcrops, trenches, workings, drill holes and associated sampling. Inferred resources are determined from a broad knowledge of the geological character of the deposit and few, if any, samples or measurements. Economically viable resources are those for which at the time of determination, profitable extraction or production under defined investment assumptions has been established, analytically demonstrated or assumed with reasonable certainty. Para-marginal resources border on being economically viable and require only a small increase in price or improvement in technology to become viable. In contrast economic extraction of submarginal resources would require a substantially higher commodity price or a major cost-reducing advance in technology to become viable.

Classifying a mineral resource as an economic demonstrated resource (EDR) reflects a high degree of certainty as to the size and quality of the resource and its economic viability. A more complete discussion on subsoil assets can be found in Section 3, Subsoil Assets, of *Occasional Paper: National Balance Sheets for Australia — Issues and Experimental Estimates, 1989 to 1992* (5241.0).

Australia's gold and base metals EDR increased significantly in 1993. In contrast both gem and industrial diamond EDR decreased substantially and sub-economic resources of both rose sharply. The EDR of other major commodities including bauxite, black and brown coal, iron ore, manganese ore, mineral sands and nickel showed little or no change in 1993.

SELECTED COMMODITIES

Bauxite

Australia has approximately 11% of the world's bauxite EDR. Bauxite is mined from open-cut operations at Weipa (Queensland), Gove (Northern Territory) and in the Darling Ranges (Western Australia). Major bauxite resources in the Admiralty Gulf region of northern Western Australia are potentially mineable but are remote from energy supplies and infrastructure. Australia's bauxite EDR and the ratio of EDR to identified resources (demonstrated plus inferred resources) remained virtually unchanged in 1993.

Black coal

Approximately 8% of the world's EDR of black coal occurs in Australia, principally in the Sydney and Bowen Basins in New South Wales and Queensland, respectively. Lesser proportions occur in the Gunnedah Basin (New South Wales) and the Galilee, Surat, and Morton Basins (Queensland). Locally important but small EDR also occur in Tasmania, South Australia and Western Australia.

Cobalt

Although Australia has only 1% of world EDR of cobalt, it ranks sixth after Zaire, Cuba, Zambia, New Caledonia and the former USSR. Output of cobalt from Australia is principally a by-product of nickel mining and processing and accounts for 8% of world output.

Copper

Australia has about 6% of world EDR and ranks fourth with Poland after Chile (27%), USA (14%) and the former USSR (11%). In Australia, copper occurs mainly in the Olympic Dam (South Australia) and Mount Isa (Queensland) deposits. Other important deposits are North Parkes (New South Wales), Osborne and Ernest Henry (Queensland) and Nifty (Western Australia).

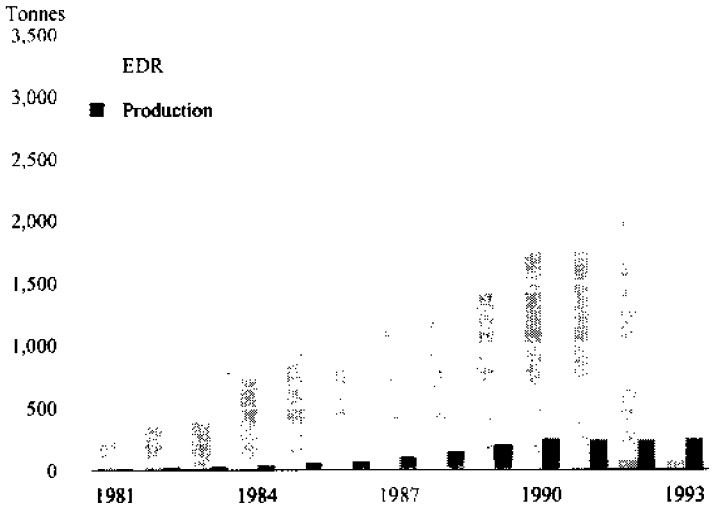
Diamonds

Australia is the largest producer in the world of natural rough diamonds but only a relatively small proportion of its output is of gem quality. Most of Australia's diamond resources are in the Argyle deposit in the Kimberley region of Western Australia. Small resources occur in alluvial deposits in the Kimberleys and in the 'deep lead' deposits at Copeton (New South Wales). Other prospects, including some in New South Wales and the Northern Territory, are being examined.

Gold

Australia has about 8% of world EDR and ranks fourth after South Africa, the former USSR and USA. The strong growth in EDR in 1993 was due to the rise in the price of gold and the combined effects of successful exploration and reassessment of known deposits. Deposits in Western Australia account for 66% of EDR. Resources occur and are mined in all States and the Northern Territory.

GOLD EDR AND PRODUCTION, 1981 TO 1993



Source: Bureau of Resource Sciences, *Australia's Identified Mineral Resources, 1993*.

Iron ore Australia has the world's second largest EDR of iron ore after the former USSR. About 90% of Australia's very large identified resources of iron ore occur in the Pilbara region of Western Australia, mainly in the Hamersley Basin, one of the world's major iron ore provinces.

Manganese Australia has just over 12% of world EDR and ranks third after South Africa (46%) and the former USSR (38%). The principal mines and resources are located at the Groote Eylandt deposit (Northern Territory) and Woodie Woodie in the Pilbara (Western Australia).

Mineral sands Australia has just over 31% of world EDR of ilmenite, 17% of rutile and 29% of zircon. With the exception of large inland undeveloped deposits in western Victoria and south-west New South Wales, most of the resources in Australia occur along the eastern and western coastal regions. Some resource are not available for mining because they occur in national parks and other reserved areas.

Nickel Almost all of Australia's EDR (98%) occurs in sulphide deposits in Western Australia. Australia's EDR ranks sixth in the world after Cuba, Russia, Canada, New Caledonia and Indonesia.

Platinum group metals There is minor production of platinum group metals (platinum, palladium, osmium, iridium, rhodium and ruthenium) as a by-product of nickel mining at Kambalda and nearby Carnilya Hill near Kalgoorlie in Western Australia. Exploration resulted in the discovery of substantial inferred resources, mostly in Western Australia, in recent years, but these are not commercially viable.

Uranium For 1993 Australia's reasonably assured resources (RAR) of uranium, recoverable at less than US$80/kg uranium, amounted to 631,000 tonnes.

Australia's estimated additional resources category I (EAR–I) recoverable at less than US$80/kg uranium were estimated to be 149,000 tonnes uranium.

In addition, Australia has the following resources in the high cost category: RAR in the US$80–130/kg uranium cost category — 76,000 tonnes uranium; EAR–I in the US$80–130/kg uranium cost category — 40,000 tonnes uranium. Also it is estimated that there is a 75% probability that Australia has undiscovered resources amounting to more than 2,600,000 tonnes and a 50% probability that the undiscovered resources may exceed 3,900,000 tonnes.

Zinc and lead Australia has the largest EDR in the world of both zinc and lead. EDR rose substantially for both in 1993, reflecting a reclassification of the previously para-marginal resources in the McArthur River deposit (Northern Territory) and the Hilton Mine (Queensland).

MAJOR COMMODITIES

The following table summarises details of Australia's major commodity resources for 1993 and provides a world comparison figure for 1992.

IDENTIFIED RESOURCES OF MAJOR MINERALS AND FUELS

		Australia 1993					*World 1992*
		Demonstrated			*Inferred*		*Demonstrated*
			Sub-economic				
Mineral	*Unit*	*Economic*	*Para-marginal*	*Sub-marginal*	*Economic and sub-economic*	*Undifferentiated*	*Economic*
Antimony	kilotonnes	116.5	87.6	—	—	13.7	4 200
Asbestos	megatonnes	—	46.4	—	—	77.1	110
Bauxite	megatonnes	2 582	—	5 303	—	2 134	23 000
Coal[1]							
In situ	gigatonnes	115	2	8	—	very large	—
Recoverable	gigatonnes	93	2	6	—	165	920
Cadmium	kilotonnes	84.7	40.1	1.7	—	8.2	540
Chromite	megatonnes	—	2.37	0.52	20	—	1 400
Cobalt	kilotonnes	52	47	242	98	—	4, 00
Copper[2]	megatonnes	20.2	17.2	0.8	8.1	—	323
Diamonds[3]	megacarats	336	336	0.6	—	33.9	1 280
Fluorine	megatonnes	—	24.1	5.8	—	0.7	108
Gold	tonnes	3 003	1 206	65	—	990	44 000
Iron ore	gigatonnes	17.9	12.9	0.4	17.8	—	150
Lead	megatonnes	19.4	8.9	5.9	—	16.8	63
Lithium	kilotonnes	160	—	3	—	7	2 200
Magnesite	megatonnes	2 18.7	188	285.2	—	8.8	2 500
Manganese ore	megatonnes	107	26	167	163	—	800
Mineral sands[4]	megatonnes	151	124.8	0.5	—	141.4	538
Molybdenum	kilotonnes	—	—	3	222	...	5 500
Nickel	megatonnes	2.9	1.6	3.8	3	—	47
Niobium	kilotonnes	3.4	68	—	—	1 994	3 500
Petroleum							
Crude oil	gigalitres	258	—	40	—	—	158 517
Natural gas	teralitres	950	—	1 088	—	—	138 338
Condensate	gigalitres	124	—	56	—	—	—
LPG (natural)	gigalitres	131	—	83	—	—	—
Phosphate rock	megatonnes	—	2 095	—	—	1 947	12 000
Platinum group	tonnes	17.7	20.7	16.7	113	—	56 000
Rare earths[5]	megatonnes	1	3.5	10.6	—	4	100
Shale oil	gigalitres	—	—	4 564	40 468	—	n.a.
Silver	kilotonnes	33.6	17	3.9	—	31.9	280
Tantalum	kilotonnes	6.3	6	0.09	—	65	22
Tin	kilotonnes	123.3	139.6	77.2	414	5.3	8 000
Tungsten	kilotonnes	1.1	95.1	106.2	81.8	—	2 300
Uranium	tonnes			see selected commodities above			
Vanadium	kilotonnes	19	1 739	8 425	2 282	—	10 000
Zinc	megatonnes	37.6	30.6	3.9	—	13.5	140

[1] Includes black and brown coal.
[2] Western world only.
[3] Gem, cheap gem and industrial.
[4] Includes rutile, ilmenite and zircon.
[5] Includes rare earth oxides and Yttrium Oxide (Y_2O_3).

Source: Bureau of Resource Sciences, *Australia's Identified Mineral Resources, 1993*

RESEARCH AND DEVELOPMENT EXPENDITURE

The value of research and development (R&D) expenditure in the mining industry in 1993–94 was $309 million, an increase of 80% in current prices over 1992–93. Mining R&D expenditure accounted for 10% of total expenditure while manufacturing accounted for the majority of R&D expenditure with 56% of total expenditure devoted to R&D.

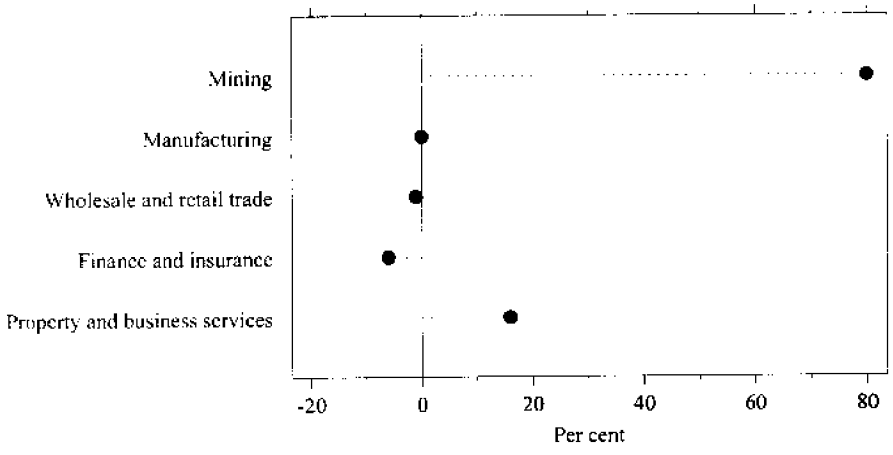
RESEARCH AND DEVELOPMENT EXPENDITURE BY INDUSTRY[1]

	Management units		*Expenditure on R&D*		*Person years of effort on R&D*	
	1992–93	*1993–94*	*1992–93*	*1993–94*	*1992–93*	*1993–94*
Industry of enterprise	no.	no.	$m	$m	years	years
Mining	90	81	172	309	840	798
Manufacturing	1 741	1 753	1 688	1 687	12 887	13 447
Wholesale and retail trade	258	260	223	221	1 704	1 737
Finance and insurance	27	27	120	112	1 463	1 155
Property and business services	590	633	447	519	4 456	4 732
Total other industries[2]	120	111	194	180	1 494	1 342
Total all industries	**2 826**	**2 865**	**2 844**	**3 028**	**22 844**	**23 210**

[1] Excludes enterprises in ANZSIC Division A.
[2] ANZSIC Divisions D, E, H J, M–Q.

Source: Research and Experimental Development Business Enterprises, Australia, 1993–94 (8114.0).

PERCENTAGE CHANGE IN R&D EXPENDITURE BY INDUSTRY FROM 1992–93 TO 1993–94



Source: Research and Experimental Development Business Enterprises, Australia, 1993–94 (8114.0).

Human resources, measured in person years of effort, devoted to R&D in the mining industry decreased by 5% (42 person years) in 1993–94. This has also been reflected in a drop of 7% ($4 million) in expenditure incurred in labour costs. Mining represents 3% of human resources devoted to R&D.

TYPE AND SOURCE OF EXPENDITURE

R&D capital expenditure increased 284% from $33 million in 1992–93 to $128 million in 1993–94. Other current expenditure which includes expenditure on materials, fuels, rent and leasing, repairs and maintenance, data processing etc. and the proportion of expenditure on general services and overheads, attributable to R&D activity, increased 53% from $87 million to $134 million in 1993–94.

TYPE OF RESEARCH AND DEVELOPMENT EXPENDITURE, SOURCE OF FUNDS, MINING INDUSTRY

	1992–93	*1993–94*
	$'000	$'000
Type of expenditure		
Capital expenditure	33 390	128 237
Labour costs	50 646	47 159
Other current expenditure	87 491	134 004
Source of funds		
Own funds	169 230	306 151
Other	2 297	3 248
Total funds	**171 527**	**309 399**

Source: Research and Experimental Development Business Enterprises, Australia, 1993–94 (8114.0).

The majority of funding for R&D expenditure in the mining industry is from the mining companies themselves, accounting for 99% of total funds.

EXPENDITURE BY LOCATION

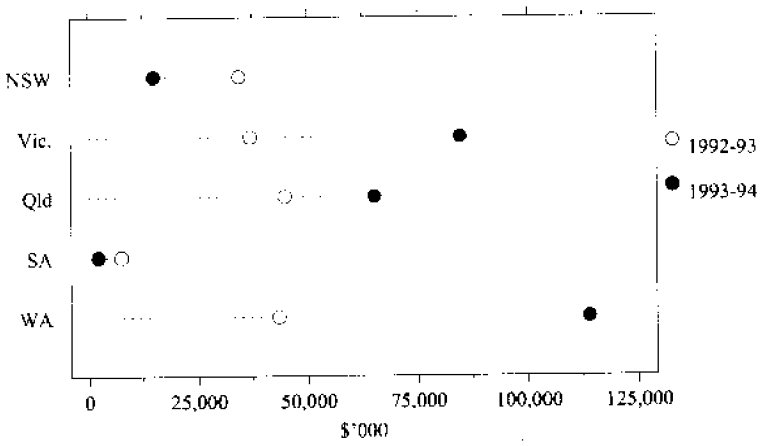
The leading States in terms of R&D expenditure in the mining industry are Western Australia ($114 million) and Victoria ($85 million), accounting for 37% and 27% of R&D total expenditure, respectively. Western Australia and Victoria also recorded the largest percentage increases in R&D expenditure of 163% ($71 million) and 129% ($48 million), respectively, in 1993–94.

MINING INDUSTRY, RESEARCH AND DEVELOPMENT EXPENDITURE BY LOCATION

	1992–93	*1993–94*
Location	$'000	$'000
New South Wales	34 364	14 962
Victoria	36 981	84 666
Queensland	44 802	65 218
South Australia	7 486	2 284
Western Australia	43 382	113 944
Tasmania, Australian Capital Territory, Northern Territory	3 654	n.p.
Overseas	858	n.p.
Total	**171 527**	**309 399**

Source: Research and Experimental Development Business Enterprises, Australia, 1993–94 (8114.0).

RESEARCH AND DEVELOPMENT EXPENDITURE BY STATE



Source: Research and Experimental Development Business Enterprises, Australia, 1993–94 (8114.0).

MINERAL PRODUCTION

The statistics in this section have been derived from information supplied to the various State Mines departments or directly to the Australian Bureau of Statistics (ABS) and are supplemented, in some cases, by data from other sources.

The information derived from the State Mines departments is not directly comparable with the sales data presented in the next section, Financial Operations. The scope of both series are explained in the Explanatory Notes.

The commodity data presented are the value of commodities extracted on an ex-mine basis (i.e. excludes freight charges). The following analysis discusses the data in the summary tables and also the tables at the end of this chapter.

MINING INDUSTRY

The total value of minerals produced in the metallic minerals, coal, oil and gas industries fell in 1993–94 by 4%, from $26,721 million in 1992–93 to $25,745 million in 1993–94. This reversed the increase of the previous year and represents the lowest figure since 1989–90.

The oil and gas industry contributed most to the decline, with a fall of 10%, from $8,216 million in 1992–93 to $7,423 million in 1993–94, resulting from lower production in some commodities and lower prices for all commodities. Coal industry production value decreased by 2% due to lower prices, from $7,585 million in 1992–93 to $7,418 million in 1993–94. Metallic minerals was little changed from $10,920 million in 1992–93 to $10,904 million in 1993–94.

VALUE OF MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94

		NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*Australia*
Type		$m	$m	$m	$m	$m	$m	$m	$m
Coal		3 407	401	3 317	57	236	[1]—	—	[2]7 418
Oil and gas		—	n.p.	234	n.p.	2 593	—	342	7 423
Metallic minerals		455	106	1 583	301	7 402	[1]327	686	[1]10 861
Total	1993–94	3 863	n.p.	5 134	n.p.	10 231	327	1 028	25 702
	1992–93	3 817	n.p.	5 519	n.p.	10 286	310	1 350	26 721
	1991–92	3 721	n.p.	1 726	n.p.	9 994	361	1 493	25 985
	1990–91	3 751	n.p.	4 961	n.p.	9 761	355	1 866	26 293
	1989–90	3 891	n.p.	4 974	n.p.	7 962	407	1 655	23 294

[1] Coal is included with metallic minerals for Tasmania.
[2] Excludes coal for Tasmania.

METALLIC MINERALS

The total value of metallic minerals produced during the last five years has remained constant, but the contribution of each State has changed during that period. Western Australia has strengthened its position as the leading producer but the value of metallic minerals produced in New South Wales, Queensland, Tasmania and Northern Territory has declined. Steady growth has occurred in Victoria and South Australia.

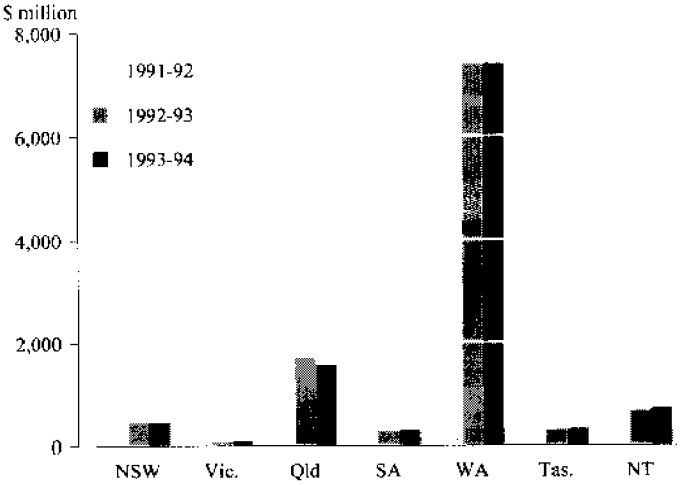
VALUE OF METALLIC MINERALS, STATES AND AUSTRALIA, 1989–90 TO 1993–94

	1989–90	*1990–91*	*1991–92*	*1992–93*	*1993–94*
	$m	$m	$m	$m	$m
New South Wales	548	618	447	465	455
Victoria	49	71	46	90	106
Queensland	1 957	1 724	1 482	1 702	1 583
South Australia	229	278	283	287	301
Western Australia	6 248	6 887	7 518	7 391	7 402
Tasmania[1]	407	355	361	310	327
Northern Territory	1 100	976	819	675	686
Australia[2]	**10 838**	**10 910**	**10 957**	**10 920**	**10 861**

[1] Includes coal.
[2] Includes coal for Tasmania.

Western Australia, as the major contributor in the metallic minerals sector, showed a slight increase, less than 1%, from $7,391 million in 1992–93 to $7,402 million in 1993–94. The second largest contributor, Queensland reported a 7% decrease over the same period, falling from $1,702 million to $1,583 million, and reversing the increase of the previous year.

VALUE OF METALLIC MINERALS BY STATE[1] 1991–92 TO 1993–94



[1] Includes coal for Tasmania.

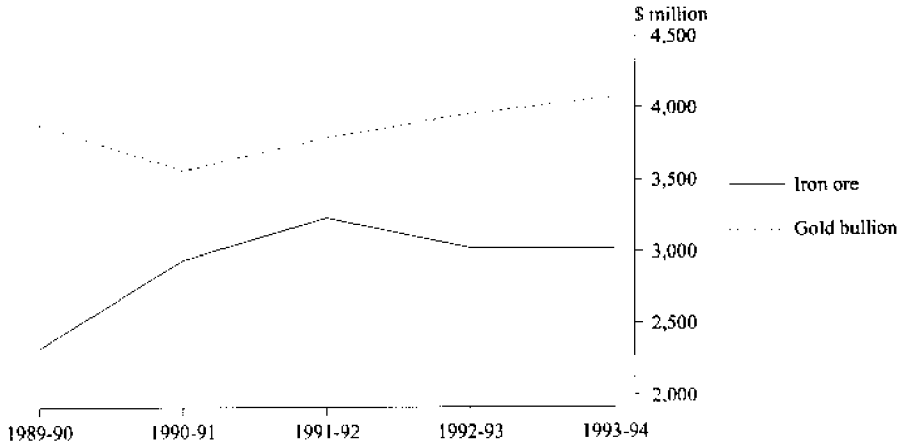
METALLIC MINERAL PRODUCTION, SELECTED MINERALS, AUSTRALIA, 1989–90 TO 1993–94

		QUANTITY				
Mineral	*Unit*	*1989–90*	*1990–91*	*1991–92*	*1992–93*	*1993–94*
Bauxite	kilotonnes	39 983	41 831	34 788	40 946	43 306
Copper concentrate[1]	kilotonnes	939	1 004	915	1 254	1 322
Copper precipitate[2]	tonnes	—	4 384	6 203	8 174	16 192
Gold bullion (dore)[3]	kilograms	256 725	264 993	259 656	275 331	274 687
Iron ore[4]	kilotonnes	110 119	111 475	114 781	115 703	123 631
Lead concentrate	kilotonnes	762	870	858	856	873
Manganese ore[5]	kilotonnes	1 261	724	375	597	815
Mineral sands[6]	kilotonnes	2 285	1 878	1 954	2 118	2 252
Uranium concentrate (U_3O_8)[1]	tonnes	3 077	2 913	2 901	1 342	1 457
Zinc concentrate[7]	kilotonnes	1 603	1 810	1 927	2 011	1 890
		VALUE				
		1989–90	*1990–91*	*1991–92*	*1992–93*	*1993–94*
		$m	$m	$m	$m	$m
Bauxite		n.p.	n.p.	n.p.	n.p.	[8]773
Copper concentrate[1]		n.p.	n.p.	n.p.	867	792
Copper precipitate[2]		—	14	19	26	50
Gold bullion (dore)[3]		3 889	[9]3 568	3 797	[9]3 962	[9]4 080
Iron Ore[4]		[9]2 330	[9]2 945	[9]3 239	[9]3 026	3 018
Lead concentrate		n.p.	n.p.	221	227	252
Manganese ore[5]		178	152	72	82	80
Mineral sands[6]		n.p.	n.p.	504	451	471
Uranium concentrate (U_3O_8)[1]		266	291	242	114	156
Zinc concentrate[7]		n.p.	n.p.	344	516	429
Other metallic minerals[10]		n.p.	n.p.	1 321	902	760
Total metallic minerals[10]		*10 838*	*10 910*	*10 957*	*10 920*	*10 861*

[1] Excludes South Australia.
[2] Includes copper concentrate in other forms.
[3] Includes alluvial gold.
[4] Includes iron ore pellets.
[5] Metallurgical grade.
[6] Includes ilmenite, beneficiated ilmenite, leucoxene, monazite, rutile and zircon zircon.
[7] Includes zinc-lead concentrate.
[8] Imputed by the ABS based on metallic content.
[9] Excludes Tasmania.
[10] Includes Tasmanian coal production.

The value of gold bullion production increased by 3% from $3,962 million in 1992–93 to $4,080 million in 1993–94, although production quantity remained constant at 275 tonnes. Iron ore, as Australia's second most valuable metallic mineral, decreased slightly in value, despite a production increase of 8 million tonnes or 7%.

VALUE OF IRON ORE AND GOLD BULLION, AUSTRALIA, 1989–90 TO 1993–94



The coal industry contributed $7,418 million to the total value of minerals produced for 1993–94. This represented a decrease of 2% or $167 million from the 1992–93 value of $7,585 million. The quantity of coal produced was 228 million tonnes in 1993–94 compared with 226 million tonnes in 1992–93.

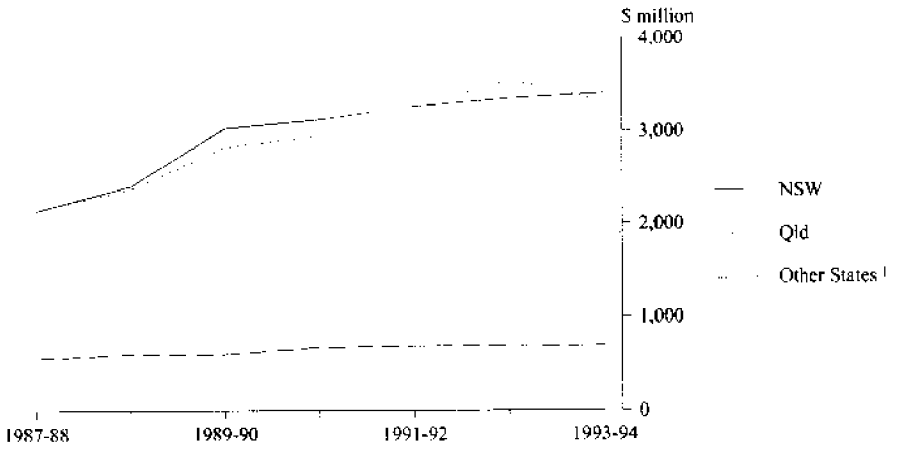
COAL PRODUCTION, SALEABLE, AUSTRALIA, 1989–90 TO 1993–94

	QUANTITY				
	1989–90	*1990–91*	*1991–92*	*1992–93*	*1993–94*
	kilotonnes	kilotonnes	kilotonnes	kilotonnes	kilotonnes
Coal (other than lignite)					
Semi-anthracite	251	220	43	231	305
Bituminous	144 880	149 886	163 672	165 242	164 808
Sub-bituminous	15 328	16 399	12 466	12 497	12 761
Total	*160 459*	*166 505*	*176 570*	*177 970*	*177 874*
Lignite					
For briquettes	1 789	1 802	2 010	1 264	1 470
Other	44 170	46 367	48 721	46 648	48 214
Briquettes	706	715	721	516	n.a.
	VALUE				
	1989–90	*1990–91*	*1991–92*	*1992–93*	*1993–94*
	$m	$m	$m	$m	$m
Coal (other than lignite)					
Semi-anthracite	5	5	12	8	5
Bituminous[1]	5 632	5 837	6 409	6 786	6 595
Sub-bituminous	487	544	415	411	417
Total[1]	6 125	6 387	6 836	7 205	7 017
Lignite					
For briquettes	13	13	15	6	5
Other	314	331	348	373	396
Briquettes	20	23	18	n.a.	n.a.
Total coal[1]	**6 472**	**6 754**	**7 216**	[2]**7 585**	[2]**27 418**

[1] Excludes Tasmania.
[2] Excludes briquettes.

New South Wales and Queensland continue to dominate the industry with 46% and 45%, respectively, of the total value of coal production in 1993–94.

VALUE OF COAL PRODUCED BY STATE, 1987–88 TO 1993–94



[1] Excludes Tasmanian coal.

There was a decrease in the quantity of bituminous coal produced, (although marginal at less than 1%), which contributed to the overall decline in the total value of coal. This was balanced by a 4% increase in brown coal (lignite) production. The main contributor to the declining value of coal was the drop in the average black coal unit value by 3% from $40.49 per tonne to $39.45 per tonne.

OIL AND GAS

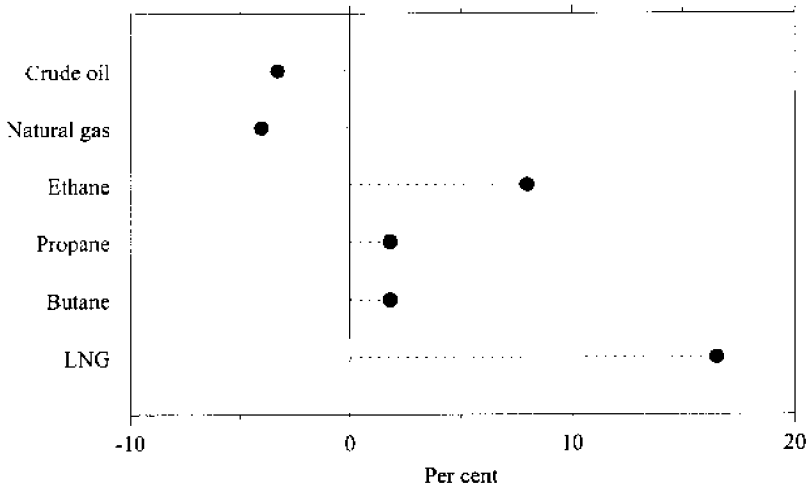
The total value of oil and gas production decreased during 1993–94 from $8,216 million in 1992–93 to $7,423 million, a fall of 10%. This resulted from falls in the unit value for all commodities except natural gas, and a further decrease in crude oil production quantity.

OIL AND GAS PRODUCTION, AUSTRALIA, 1989–90 TO 1993–94

		QUANTITY				
	Unit	*1989–90*	*1990–91*	*1991–92*	*1992–93*	*1993–94*
Crude oil[1]	megalitre	31 700	29 189	31 984	30 592	29 583
Natural gas[2]	gigalitre	15 354	15 589	16 289	16 631	15 959
Ethane	gigalitre	186	175	182	187	202
Propane[3]	megalitre	2 067	2 013	2 064	2 078	2 115
Butane[3]	megalitre	1 570	1 504	1 574	1 651	1 622
Liquefied natural gas	kilotonnes	2 015	3 577	4 250	4 922	5 732
		VALUE				
		1989–90	*1990–91*	*1991–92*	*1992–93*	*1993–94*
		$m	$m	$m	$m	$m
Crude oil[1]		4 416	6 328	5 445	5 508	4 747
Natural gas[2]		901	1 013	1 080	1 171	1 182
Ethane		29	28	34	35	33
Propane[3]		174	244	230	265	251
Butane[3]		128	180	177	213	194
Liquefied natural gas		336	838	846	1 025	1 016
Total		**5 983**	**8 629**	**7 812**	**8 216**	**7 423**

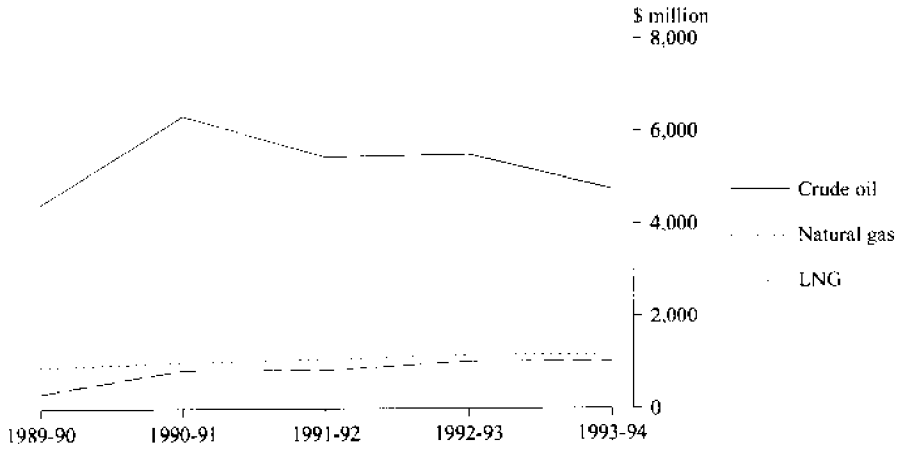
[1] Stabilised. Includes condensate.
[2] Includes field and plant usage.
[3] Excludes refinery production.

PERCENTAGE CHANGE IN QUANTITY OF OIL AND GAS PRODUCTION, AUSTRALIA, 1992–93 TO 1993–94



The only commodity in this sector which showed an increase in value was natural gas with a rise of just under 1%, despite a decrease in production quantity of 4%. This resulted from a rise in unit value from $70.41 per teralitre to $74.03 per teralitre. The value of liquefied natural gas decreased by 1% despite an increase in production quantity of 16%. The decrease in production quantity of 3% for crude oil was compounded by a decrease in unit values to produce a decrease in total value of 14%.

OIL AND GAS, AUSTRALIA, VALUE OF SELECTED COMMODITIES, 1989–90 TO 1993–94



METALLIC MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94

Commodity code	Mineral	Unit	1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic.	Qld	SA	WA	Tas.	NT	Australia
					QUANTITY							
556	Antimony concentrate	tonnes	1,839	2,114	812	—	—	—	—	—	—	812
500	Bauxite	kilotonnes	34,788	40,946	—	2	8,616	—	28,954	—	5,734	43,306
559	Bismuth concentrate	tonnes	n.p.	—	—	—	—	—	—	—	—	—
502	Copper concentrate	kilotonnes	(a)915	(a)1,254	161	84	838	n.a.	111	128	—	(a)1,322
503	Copper ore	tonnes	11,327	5,027	—	—	468	—	—	—	—	468
506	Copper precipitate(b)	tonnes	6,203	8,174	9,971	—	6,221	—	—	—	—	16,192
509	Gold bullion (dore)(c)	kilograms	259,656	275,331	10,049	3,984	44,011	—	196,226	216	18,201	274,687
511	Gold concentrate	tonnes	56,182	3,499	573	—	—	—	n.p.	—	—	n.p.
510	Gold ore	tonnes	(a)1,306	(a)9	—	—	—	n.a.	—	—	7	(a)7
512	Other gold	tonnes	2	—	—	—	—	—	—	—	—	—
(d)	Iron ore	kilotonnes	114,781	115,703	—	—	—	2,278	119,690	1,663	—	123,631
	Iron oxide for-											
516	Cement manufacture	tonnes	104,569	108,902	14,226	—	—	—	—	—	—	14,226
517	Coal washing	tonnes	204,285	221,810	43,808	—	26,436	—	—	104,972	—	175,216
535	Lead concentrate	kilotonnes	858	856	320	—	413	—	26	93	21	873
536	Lead-copper concentrate	tonnes	5,474	1,153	—	—	—	—	—	—	—	—
537	Lead ore	tonnes	2,572	7,379	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	tonnes	85,079	72,153	—	—	—	—	—	57,517	—	57,517
	Manganese ore-											
563	Metallurgical grade	kilotonnes	375	597	—	—	—	—	—	—	815	815
565	Other grades	kilotonnes	863	828	—	—	—	—	300	—	663	963
	Mineral sands-											
522	Ilmenite concentrate(e)	kilotonnes	1,424	1,516	6	—	218	—	1,403	—	—	1,627
523	Leucoxene concentrate	kilotonnes	12	11	—	—	—	—	17	—	—	17
524	Monazite concentrate	kilotonnes	7	6	—	—	—	—	6	—	—	6
525	Rutile concentrate	kilotonnes	169	185	40	—	58	—	69	—	—	167
529	Zircon concentrate	kilotonnes	342	400	35	—	51	—	349	—	—	435
532	Nickel concentrate	kilotonnes	476	522	—	—	—	—	563	—	—	563
533	Nickel ore	kilotonnes	831	259	—	—	200	—	—	—	—	200
569	Pyrite concentrate	kilotonnes	80	94	—	—	—	—	—	88	—	88
571	Scheelite concentrate	tonnes	545	1,099	—	—	—	—	—	27	—	27
570	Tantalite-columbite concentrate	tonnes	873	537	—	—	—	—	246	—	—	246
549	Tin concentrate	tonnes	10,995	12,387	—	—	79	—	n.a.	13,442	—	(f)13,521
575	Uranium concentrate (U_3O_8)	tonnes	(a)2,901	(a)1,342	—	—	—	n.a.	—	—	1,457	(a)1,457
543	Zinc concentrate	kilotonnes	1,767	1,897	613	3	525	—	270	324	60	1,795
544	Zinc ore	tonnes	7,018	1,179	—	—	—	—	—	—	—	—
547	Zinc-lead concentrate	kilotonnes	160	114	—	—	95	—	—	—	—	95
579	Other metallic minerals	tonnes	4,039	428	161	—	—	—	—	—	—	161

For footnotes see end of table.

METALLIC MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94 — *continued*

Commodity code	Mineral	1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic.	Qld	SA	WA	Tas.	NT	Australia
		VALUE ($'000)									
556	Antimony concentrate	2,318	2,666	1,130	—	—	—	—	—	—	1,130
500	Bauxite	n.p.	n.p.	—	2	208,173	—	(g)435,179	—	129,935	773,289
559	Bismuth concentrate	n.p.	—	—	—	—	—	—	—	—	—
502	Copper concentrate	n.p.	866,650	77,321	35,511	558,956	n.c.	n.p.	n.p.	—	(a)791,766
503	Copper ore	1,455	1,077	—	—	17	—	—	—	—	17
506	Copper precipitate(b)	18,739	25,648	30,034	—	19,522	—	—	—	—	49,556
509	Gold bullion (dore)(c)	3,796,636	(h)3,961,843	107,754	70,234	478,454	—	3,088,470	n.p.	330,989	(h)4,079,963
511	Gold concentrate	85,764	12,534	703	—	—	—	n.p.	—	—	n.p.
510	Gold ore	(a)25	(a)685	—	—	—	n.c.	—	—	1,924	(a)1,924
512	Other gold	21	—	—	—	—	—	—	—	—	—
(d)	Iron ore	(h)3,239,040	(h)3,025,624	—	—	—	24,552	2,929,972	63,760	—	3,018,284
	Iron oxide for-										
516	Cement manufacture	n.p.	n.p.	85	—	—	—	—	—	—	85
517	Coal washing	n.p.	n.p.	5,941	—	3,146	—	—	n.p.	—	n.p.
535	Lead concentrate	221,146	226,944	73,314	—	151,587	—	n.p.	n.p.	2,434	252,416
536	Lead-copper concentrate	n.p.	n.p.	—	—	—	—	—	—	—	—
537	Lead ore	77	227	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	n.p.	n.p.	—	—	—	—	—	9,014	—	9,014
	Manganese ore-										
563	Metallurgical grade	72,436	82,314	—	—	—	—	—	—	80,083	80,083
565	Other grades	n.p.	n.p.	—	—	—	—	n.p.	—	52,805	n.p.
	Mineral sands-										
522	Ilmenite concentrate(e)			137	—		—	279,581	—	—	
523	Leucoxene concentrate			—	—		—	5,735	—	—	
524	Monazite concentrate	503,677	450,711	—	—	47,729	—	n.p.	—	—	470,930
525	Rutile concentrate			21,071	—		—	n.p.	—	—	
529	Zircon concentrate			9,442	—		—	59,921	—	—	
532	Nickel concentrate	—	n.p.	—	—	—	—	n.p.	—	—	n.p.
533	Nickel ore	n.p.	4,979	—	—	6,386	—	—	—	—	6,386
569	Pyrite concentrate	n.p.	n.p.	—	—	—	—	—	n.p.	—	n.p.
571	Scheelite concentrate	n.p.	n.p.	—	—	—	—	—	n.p.	—	n.p.
570	Tantalite-columbite concentrate	n.p.	n.p.	—	—	—	—	n.p.	—	—	n.p.
549	Tin concentrate	n.p.	n.p.	—	—	277	—	n.a.	n.p.	—	n.p.
575	Uranium concentrate (U3O8)	241,546	113,550	—	—	—	86,387	—	—	69,801	156,188
543	Zinc concentrate	325,675	501,694	128,220	640	102,025	—	n.p.	n.p.	18,060	422,423
544	Zinc ore	1,708	114	—	—	—	—	—	—	—	—
547	Zinc-lead concentrate	18,099	14,408	—	—	6,543	—	—	—	—	6,543
579	Other metallic minerals	284	30	23	—	—	—	—	—	—	23
	Total metallic minerals	**(i)10,957,237**	**(i)10,920,259**	**466,176**	**106,387**	**1,582,816**	**300,840**	**7,402,031**	**(i)327,403**	**686,031**	**(i)10,860,682**

(a) Excludes South Australia. (b) Includes copper in other forms. (c) Includes alluvial gold. (d) Commodity codes 507, 513, 515. Includes iron ore pellets. (e) Includes ilmenite from which titanium dioxide is not commercially extractable. Beneficiated ilmenite is also included. (f) Excludes Western Australia. (g) Imputed by the ABS based on metallic content and unit values obtained from other States. (h) Includes Tasmanian coal production.

COAL PRODUCED, STATES AND AUSTRALIA, 1993–94

Commodity code	Mineral		1991-92 Australia	1992-93 Australia	1993-94 NSW(a)	Vic	Qld	SA	WA	Tas	NT	Australia
					QUANTITY							
	Coal (other than lignite)-											
	Saleable coal(b)-											
581	Semi-anthracite	kilotonnes	432	231	—	—	305	—	—	—	—	305
580	Bituminous	kilotonnes	163,672	165,242	84,014	—	80,478	—	—	316	—	164,808
582	Sub-bituminous	kilotonnes	12,466	12,497	—	—	4,956	2,652	5,153	—	—	12,761
	Total	kilotonnes	176,570	177,970	84,014	—	85,739	2,652	5,153	316	—	177,874
	Washery rejects(b)	kilotonnes	(c)(d)41,817	(c)(d)44,831	17,944	—	24,271	n.a.	n.a.	248	—	(c)(d)42,463
	Underground	kilotonnes	(d)(e)59,450	(d)(e)61,116	46,791	—	12,835	—	n.a.	n.a.	—	(d)(e)59,626
	Open cut	kilotonnes	(d)(e)152,959	(d)(e)155,762	55,167	—	97,175	2,652	n.a.	n.a.	—	(d)(e)152,342
	Lignite-											
	Saleable coal-											
588	For briquettes	kilotonnes	2,010	1,264	—	1,470	—	—	—	—	—	1,470
589	Other	kilotonnes	48,721	46,648	—	48,214	—	—	—	—	—	48,214
586	Briquettes	kilotonnes	721	516	—	n.a.	—	—	—	—	—	n.a.
					VALUE ('$000)							
	Coal (other than lignite)-											
	Saleable coal-											
581	Semi-anthracite		11,604	7,977	—	—	4,999	—	—	—	—	4,999
580	Bituminous		(e)6,408,878	(e)6,786,230	3,407,363	—	3,187,562	—	—	n.p.	—	(e)6,594,925
582	Sub-bituminous		415,019	411,137	—	—	124,105	56,752	236,288	—	—	417,145
	Total		(e)6,835,501	(e)7,205,344	3,407,363	—	3,316,666	56,752	236,288	n.p.	—	(e)7,017,069
	Lignite-											
588	For briquettes		14,824	6,320	—	5,310	—	—	—	—	—	5,310
589	Other		347,647	373,099	—	395,678	—	—	—	—	—	395,678
586	Briquettes		18,420	n.a.	—	n.a.	—	—	—	—	—	n.a.
	Total coal		**(e)7,216,392**	**(e)(f)7,584,763**	**3,407,363**	**(f)400,988**	**3,316,666**	**56,752**	**236,288**	**n.p.**	**—**	**(e)(f)7,418,057**

(a) Source: Joint Coal Board for details of quantity produced.
(b) Raw coal is saleable coal plus washery rejects.
(c) Excludes South Australia.
(d) Excludes Western Australia.
(e) Excludes Tasmania.
(f) Excludes briquettes.

OIL AND GAS PRODUCED, STATES AND AUSTRALIA, 1993–94

Commodity code	Mineral		1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic.	Qld	SA	WA	Tas.	NT	Australia
					QUANTITY							
590&592	Crude oil-stabilised (incl. condensate)	megalitres	31,984	30,592	—	17,221	1,108	1,459	7,678	—	2,117	29,583
591	Natural gas(a)	gigalitres	16,289	16,631	—	4,999	1,616	4,550	4,457	—	337	15,959
593	Ethane	gigalitres	182	187	—	181	—	21	—	—	—	202
	Liquefied petroleum gases(b)-											
594	Propane	megalitres	2,064	2,078	—	1,400	150	565	—	—	—	2,115
595	Butane	megalitres	1,574	1,651	—	1,267	86	269	—	—	—	1,622
596	Liquefied natural gases	kilotonnes	4,250	4,922	—	—	—	—	5,732	—	—	5,732
					VALUE ($'000)							
590&592	Crude oil-stabilised (incl. condensate)		5,444,986	5,507,785	—	n.p.	90,022	n.p.	1,164,045	—	319,402	4,747,186
591	Natural gas(a)		1,079,634	1,171,055	—	n.p.	122,002	n.p.	413,371	—	22,979	1,181,529
593	Ethane		34,183	34,543	—	n.p.	—	n.p.	—	—	—	33,300
	Liquefied petroleum gases(b)-											
594	Propane		230,087	264,852	—	n.p.	13,563	n.p.	—	—	—	250,853
595	Butane		176,535	212,946	—	n.p.	8,825	n.p.	—	—	—	194,345
596	Liquefied natural gases		846,339	1,025,056	—	—	—	—	1,015,679	—	—	1,015,679
	Total oil and gas		**7,811,764**	**8,216,237**	**—**	**n.p.**	**234,412**	**n.p.**	**2,593,095**	**—**	**342,381**	**7,422,892**

(a) Includes field and plant usage.
(b) Excludes refinery production.

CONTENTS OF METALLIC MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94

In this table the contents of the various minerals (estimated by assay - see the Explanatory Notes) have been tabulated to show the aggregate quantity of each metal, metallic oxide or element contained in the various metallic minerals produced. The totals compiled in this way are on a mine production basis and, with no allowance made for losses in smelting they are in general, greater than the quantities actually recovered.

Commodity code	Mineral in which contained	1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic.	Qld	SA	WA	Tas.	NT	Australia
				Alumina (Al_2O_3) (kilotonnes)							
500	Bauxite	(a)10,018	n.p.	—	n.a.	n.a.	—	7,830	—	2,878	10,708
				Antimony (tonnes)							
556	Antimony concentrate	1,219	1,394	532	—	—	—	—	—	—	532
511	Gold concentrate	40	32	31	—	—	—	—	—	—	31
535	Lead concentrate	434	773	553	—	379	—	—	—	—	932
543	Zinc concentrate	7	5	19	—	—	—	—	—	—	19
547	Zinc-lead concentrate	1	—	—	—	—	—	—	—	—	—
	Total	**1,701**	**2,204**	**1,135**	—	**379**	—	—	—	—	**1,514**
				Bismuth (tonnes)							
559	Bismuth concentrate	n.p.	—	—	—	—	—	—	—	—	—
				Cadmium (tonnes)							
535	Lead concentrate	194	217	89	—	106	—	—	—	—	195
536	Lead-copper concentrate	—	3	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	—	2	—	—	—	—	—	—	—	—
543	Zinc concentrate	1,632	1,893	1,003	—	685	—	—	—	—	1,688
547	Zinc-lead concentrate	167	119	—	—	95	—	—	—	—	95
	Total	**1,993**	**2,234**	**1,092**	—	**886**	—	—	—	—	**1,978**
				Cobalt (tonnes)							
532	Nickel concentrate	634	287	—	—	—	—	370	—	—	370
533	Nickel ore	687	229	—	—	275	—	—	—	—	275
543	Zinc concentrate	31	34	28	—	—	—	—	—	—	28
	Total	**1,352**	**550**	**28**	—	**275**	—	**370**	—	—	**673**
				Copper (tonnes)							
502	Copper concentrate	n.p.	n.p.	53,910	20,398	215,050	67,327	21,535	32,408	—	410,628
503	Copper ore	677	383	—	—	16	—	—	—	—	16
506	Copper precipitate	6,169	—	—	—	6,178	—	—	—	—	6,178
511	Gold concentrate	(b)17,110	(b)507	—	—	—	—	n.a.	—	—	n.a.
535	Lead concentrate	6,607	6,276	3,204	—	2,520	—	—	38	—	5,762
536	Lead-copper concentrate	1,533	n.a.	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	1	126	—	—	—	—	—	—	—	—
532	Nickel concentrate	5,745	5,321	—	—	—	—	4,035	—	—	4,035
579	Pyrite ore	190	21	8	—	—	—	—	—	—	—
543	Zinc concentrate	3,843	2,507	1,674	—	462	—	—	202	—	2,338
547	Zinc-lead concentrate	8	—	—	—	—	—	—	—	—	—
	Total	**n.p.**	**n.p.**	**58,796**	**20,398**	**224,226**	**67,327**	**25,570**	**32,648**	—	**428,965**

For footnotes see end of table.

CONTENTS OF METALLIC MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94 — *continued*

Commodity code	Mineral in which contained	1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic.	Qld	SA	WA	Tas.	NT	Australia
				Gold (kilograms)							
556	Antimony concentrate	46	51	27	—	—	—	—	—	—	27
559	Bismuth concentrate	n.p.	—	—	—	—	—	—	—	—	—
502	Copper concentrate	n.p.	n.p.	869	—	4,476	808	n.c.	898	—	(b) 7,053
503	Copper ore	(b)1	(b)1	—	—	—	—	n.c.	—	—	n.c.
509	Gold bullion (dore)(c)	(b)48,374	(b)(d)53,857	6,010	3,621	26,852	—	n.c.	n.a.	17,734	(b)54,217
511	Gold concentrate	(b)3,828	(b)605	73	—	—	—	n.c.	—	—	(b)73
510	Gold ore	12	1	—	—	—	—	—	—	106	106
512	Other gold	1	n.p.	—	—	—	—	—	—	—	—
535	Lead concentrate	448	578	319	—	106	—	—	42	—	467
536	Lead-copper concentrate	475	—	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	—	48	—	—	—	—	—	—	—	—
532	Nickel concentrate	n.c.	n.c.	—	—	—	—	n.c.	—	—	n.c.
543	Zinc concentrate	286	154	136	—	—	—	—	—	—	136
	Total	**n.p.**	**n.p.**	**7,433**	**3,621**	**31,436**	**808**	**193,599**	**1,020**	**17,840**	**255,757**
				Iron (kilotonnes)							
(e)	Iron ore	71,497	72,075	—	—	—	1,738	74,121	1,101	—	76,960
				Lead (tonnes)							
502	Copper concentrate	2,221	2,979	1,919	—	584	—	—	226	—	2,729
503	Copper ore	—	2	—	—	—	—	—	—	—	—
535	Lead concentrate	n.p.	n.p.	204,049	—	209,747	6	21,113	39,284	9,260	483,459
536	Lead-copper concentrate	305	n.a.	—	—	—	—	—	—	—	—
537	Lead ore	214	581	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	14,191	10,342	—	—	—	—	—	6,246	—	6,246
579	Pyrite ore	6	—	—	—	—	—	—	—	—	—
543	Zinc concentrate	31,291	32,236	10,407	—	13,843	—	—	1,717	—	25,967
547	Zinc-lead concentrate	18,502	15,718	—	—	11,120	—	—	—	—	11,120
	Total	**n.p.**	**n.p.**	**216,375**	**—**	**230,294**	**6**	**21,113**	**47,473**	**9,260**	**524,521**
				Manganese (tonnes)							
563	Metallurgical grade	—	n.p.	—	—	—	—	—	—	396,984	396,984
565	Other grades	n.p.	n.p.	—	—	—	—	148,412	—	332,247	480,659
	Total	**n.p.**	**n.p.**	**—**	**—**	**—**	**—**	**148,412**	**—**	**729,231**	**877,643**
				Mercury (tonnes)							
543	Zinc concentrate	5	5	10	—	—	—	—	—	—	10
				Monazite (tonnes)							
524	Monazite concentrate	7,035	5,613	—	—	—	—	5,470	—	—	5,470

For footnotes see end of table.

CONTENTS OF METALLIC MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94 — *continued*

Commodity code	Mineral in which contained	1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic	Qld	SA	WA	Tas	NT	Australia
				Nickel (tonnes)							
502	Copper concentrate	37	34	—	—	—	—	—	—	—	—
532	Nickel concentrate	50,232	53,279	—	—	—	—	61,097	—	—	61,097
533	Nickel ore	11,223	3,516	—	—	3,141	—	—	—	—	3,141
543	Zinc concentrate	3	2	3	—	—	—	—	—	—	3
	Total	**61,495**	**56,831**	**3**	**—**	**3,141**	**—**	**61,097**	**—**	**—**	**64,241**
				Palladium (kilograms)							
532	Nickel concentrate	555	422	—	—	—	—	373	—	—	373
				Platinum (kilograms)							
532	Nickel concentrate	126	112	—	—	—	—	64	—	—	64
				Selenium (tonnes)							
502	Copper concentrate	26	31	45	—	—	—	—	—	—	45
535	Lead concentrate	24	29	30	—	—	—	—	—	—	30
543	Zinc concentrate	6	18	1	—	—	—	—	—	—	1
	Total	**56**	**78**	**76**	**—**	**—**	**—**	**—**	**—**	**—**	**76**
				Silicon Dioxide (SiO_2) (tonnes)							
500	Bauxite	n.p.	n.p.	—	—	—	—	—	—	212	212
				Silver (kilograms)							
502	Copper concentrate	125,274	172,526	26,471	n.a.	32,018	13,205	36,902	64,169	—	172,765
509	Gold bullion(dore)(c)	50,988	(d)54,753	2,932	363	15,552	—	37,184	n.a.	1,254	(d)57,285
511	Gold concentrate	517	747	—	—	—	—	—	—	—	—
535	Lead concentrate	n.p.	n.p.	178,098	—	465,873	—	—	45,008	14,953	703,932
536	Lead-copper concentrate	10,018	—	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	24,557	14,676	—	—	—	—	—	10,856	—	10,856
532	Nickel concentrate	198	1,425	—	—	—	—	241	—	—	241
579	Pyrite ore	78	12	4	—	—	—	—	—	—	4
541	Silver-lead-zinc ore	—	53	—	—	—	—	—	—	—	—
543	Zinc concentrate	n.p.	n.p.	28,015	—	59,807	—	—	5,366	6,226	99,414
547	Zinc-lead concentrate	56,119	47,367	—	—	35,677	—	—	—	—	35,677
	Total	**n.p.**	**n.p.**	**235,520**	**363**	**608,927**	**13,205**	**74,327**	**125,399**	**22,433**	**1,080,174**
				Sulphur (tonnes)							
502	Copper concentrate	41,615	57,841	51,675	—	—	—	—	—	—	51,675
535	Lead concentrate	(d)54,710	(d)60,789	59,949	—	—	—	—	—	—	59,949
546	Lead-zinc concentrate	(d)39	(d)653	—	—	—	—	—	—	—	—
569	Pyrite concentrate	n.a.	—	—	—	—	—	—	n.a.	—	n.a.
543	Zinc concentrate	(d)301,794	(d)319,637	195,441	—	133,445	—	—	—	—	328,886
547	Zinc-lead concentrate	45,334	33,351	—	—	27,793	—	—	—	—	27,793
	Total	**(d)443,492**	**(d)472,271**	**307,065**	**—**	**161,238**	**—**	**—**	**n.a.**	**—**	**(d)468,303**

For footnotes see end of table.

CONTENTS OF METALLIC MINERALS PRODUCED, STATES AND AUSTRALIA, 1993–94 — *continued*

Commodity code	Mineral in which contained	1991-92 Australia	1992-93 Australia	1993-94 NSW	Vic	Qld	SA	WA	Tas	NT	Australia
				Tantalite-columbite (Ta_2O_5+Nb_2O_5) (kilograms)							
570	Tantalite-columbite concentrate	253,800	154,928	—	—	—	—	90,999	—	—	90,999
				Tin (tonnes)							
535	Lead concentrate	18	20	21	—	—	—	—	—	—	21
549	Tin concentrate (incl. tin-wolfram concentrate)	5,959	5,911	—	—	55	—	104	7,416	—	7,575
543	Zinc concentrate	29	51	53	—	—	—	—	—	—	53
	Total	**6,006**	**5,982**	**74**	**—**	**55**	**—**	**104**	**7,416**	**—**	**7,648**
				Titanium dioxide (TiO_2) (tonnes)							
500	Bauxite	n.p.	n.p.	—	—	—	—	—	—	178	178
522	Ilmenite concentrate (incl. beneficiated ilmenite)	906,842	977,966	2,823	—	71,508	—	913,318	—	—	987,649
523	Leucoxene concentrate	10,721	10,247	—	—	—	—	15,965	—	—	15,965
525	Rutile concentrate	161,376	176,149	37,951	—	55,682	—	65,624	—	—	159,257
	Total	**n.p.**	**n.p.**	**40,774**	**—**	**127,190**	**—**	**994,907**	**—**	**178**	**1,163,049**
				Tungstic oxide (WO_3) (tonnes)							
571	Scheelite concentrate	234	153	—	—	—	—	—	n.a.	—	—
				Uranium (tonnes)							
575	Uranium concentrate	n.p.	n.p.	—	—	—	1,892	—	—	1,456	3,348
				Zinc (tonnes)							
502	Copper concentrate	2,747	2,079	1,014	—	661	—	—	152	—	1,827
503	Copper ore	—	8	—	—	—	—	—	—	—	—
535	Lead concentrate	52,883	56,351	20,627	—	33,198	—	—	616	—	54,441
536	Lead-copper concentrate	211	8	—	—	—	—	—	—	—	—
546	Lead-zinc concentrate	28,155	24,632	—	—	—	—	—	20,134	—	20,134
579	Pyrite ore	24	—	1	—	—	—	—	—	—	1
543	Zinc concentrate	n.p.	n.p.	310,122	490	272,083	—	133,549	141,435	30,273	887,952
547	Zinc-lead concentrate	55,064	36,513	—	—	32,936	—	—	—	—	32,936
544	Zinc ore	2,807	472	—	—	—	—	—	—	—	—
	Total	**n.p.**	**n.p.**	**331,764**	**490**	**338,878**	**—**	**133,549**	**162,337**	**30,273**	**997,291**
				Zirconium dioxide (ZrO_2) (tonnes)							
529	Zircon concentrate	237,632	277,219	34,409	—	33,709	—	228,998	—	—	297,116

(a) Excludes Queensland.
(b) Excludes Western Australia.
(c) Includes alluvial gold.
(d) Excludes Tasmania.
(e) Commodity codes 507, 513, 515. Includes iron ore pellets.

FINANCIAL OPERATIONS

The data presented in this section are derived from the 1993–94 Census of Mining Operations and from some comparative statistics relating to earlier years. The scope of the annual census for 1993–94 included ANZSIC subdivisions 11 Coal mining, 12 Oil and gas extraction and 13 Metal ore mining industries. Every three years (including 1992–93) subdivision 14 Other mining is included. Information on subdivision 14, which includes construction material mining, may be found in the publication *Mining Industry, Australia, 1992–93* (8402.0). From 1994–95 ANZSIC class 1420 Mining n.e.c. will be included annually.

Some of the data published in the 1992–93 edition of *Mining Industry, Australia, 1992–93* (8402.0) have been revised to take account of changes to previously reported data.

Statistics are presented at both the management unit and establishment levels (see Explanatory Notes, Statistical unit). Statistics collected at the management unit level can contain data about activities normally associated with industries other than mining, because of the inclusion of establishments that are part of that management unit but are not predominantly engaged in the mining industry.

The tables presented in this chapter are summary tables only. The commentary refers to these tables and the more detailed tables appearing at the end of this chapter. The tables on pages 59–60 relate to management unit data while the tables on pages 61–68 relate to establishment data. Refer to the Glossary for definitions of terms used.

MANAGEMENT UNIT

The data in the table below covers management units.

MINING OPERATIONS — SUMMARY DETAILS BY INDUSTRY SUBDIVISION, AUSTRALIA

	Coal mining		*Extraction*		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*	
	1992–93	*1993–94*	*1992–93*	*1993–94*	*1992–93*	*1993–94*	*1992–93*	*1993–94*
Items	$m	$m	$m	$m	$m	$m	$m	$m
Income and expenditure								
Sales of goods and services	8 898	9 166	7 707	7 319	11 293	12 003	27 898	28 488
Purchases and selected expenses	5 197	5 260	1 334	1 328	6 114	6 640	12 645	13 227
Trading profit	3 758	3 812	6 372	5 992	5 173	5 369	15 302	15 174
Selected labour costs	1 934	2 025	417	421	1,651	1 620	4 002	4 066
Earnings before interest and tax	840	1 042	3 103	3 006	2 293	2 634	6 236	6 681
Operating profit before tax	522	733	2 745	2 606	1 915	2 187	5 182	5 526
Turnover	8 935	9 380	7 761	7 416	11 396	12 167	28 092	28 962
Industry gross product	3 795	4 026	6 426	6 089	5 275	5 533	15 496	15 648
Assets and liabilities								
Total assets	14 856	14 139	19 893	22 399	20 817	22 037	55 567	58 574
Total liabilities	7 890	7 399	11 472	11 329	9 642	9 619	29 004	28 348
Net worth	6 966	6 740	8 421	11 069	11 175	12 417	26 562	30 226
Capital expenditure								
Total acquisitions	1 029	1 023	1 765	1 486	1 728	1 973	4 522	4 482
Net capital expenditure	942	795	1 739	1 465	1 429	1 826	4 110	4 085

The following analysis relates to management unit data. The information collected at this level is generally available from standard financial statements of businesses (i.e. the profit and loss account and balance sheet). Users should note the inclusion of non-mining activity into aggregates at this level (see Explanatory Notes, Statistical unit).

TRADING PROFIT

Total trading profit decreased by $129 million (1%) from $15,302 million in 1992–93 to $15,174 million in 1993–94. An increase in the cost of purchases of goods and materials (up $702 million) and repair and maintenance expenses (up $230 million) offset the $587 million rise in the sales of goods and services.

Metal ore mining reported the largest increase in trading profit, increasing $197 million (4%) to $5,369 million in 1993–94. The cost of purchases increased by $647 million and the value of sales of goods and services increased by $710 million for the metal ore mining industry. Trading profit for the oil and gas extraction industry fell by $380 million (6%) to $5,992 million; this was mainly due to a decrease in the value of sales of goods and services, which fell by $388 million to $7,319 million in 1993–94.

EARNINGS BEFORE INTEREST AND TAX

Earnings before interest and tax (EBIT) was $6,681 million in 1993–94, up $445 million (7%) on the $6,236 million recorded in 1992–93. The coal mining industry recorded the largest relative increase in EBIT, rising $202 million (24%) to $1,042 million in 1993–94. Increases in the value of sales of goods and services resulted in an increase in EBIT of $341 million (15%) to $2,634 million in the metal ore mining industry. EBIT for the oil and gas extraction industry decreased by $97 million (3%) to $3,006 million. A decrease in sales revenue was the main factor in the fall.

OPERATING PROFIT BEFORE TAX

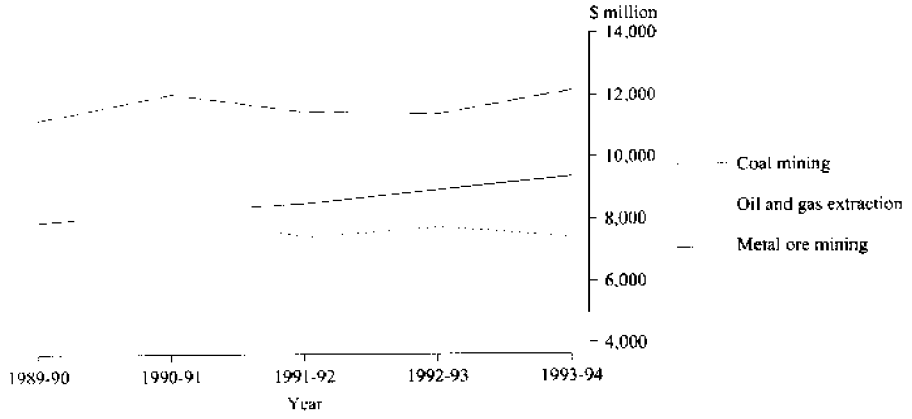
Operating profit before tax (OPBT) is calculated by deducting the cost of interest expenses from EBIT. OPBT increased by $343 million (7%) from $5,182 million in 1992–93 to $5,526 million in 1993–94. OPBT for the coal mining industry increased by $211 million (40%) to $733 million. Decreases in sales revenue and increases in interest expenses resulted in OPBT in the oil and gas industry decreasing by $139 million (5%) to $2,606 million.

TURNOVER

Turnover increased by $871 million (3%) from $28,092 million in 1992–93 to $28,962 million in 1993–94, largely due to increases in the revenue from the sale of goods and services of $590 million. In addition, the value of capital work done for own use increased by $219 million.

The metal ore mining industry recorded the largest increase in turnover (both relative and absolute) rising $771 million (7%) to $12,167 million. Turnover in the coal mining industry rose by $445 million (5%). Turnover in the oil and gas extraction industry decreased by $345 million (4%) to $7,416 million.

MANAGEMENT UNIT TURNOVER, 1989–90 TO 1993–94



Analysis of turnover for the period 1989–90 to 1993–94 for each of the major mining industry subdivisions shows a different pattern of performance (based on current prices). Growth in the coal mining industry has been steady but this has primarily been the result of increased production combined with lower prices. The oil and gas extraction industry shows a peak in 1990–91 which can be attributed to the effects of the Gulf War when the level of revenue generated by the industry rose quite markedly. The fall in 1993–94 is the result of a drop in production associated with the maintenance of the Challis and Jabiru fields. Variations in turnover for the metal ore mining industry are the result of variations in production levels and prices for the various commodities.

During 1993–94 metal ore mining was the largest contributor to turnover, accounting for 42% of the total. Coal, with a turnover of $9,380 million, accounted for 32%.

INDUSTRY GROSS PRODUCT

Industry gross product (IGP) increased by $152 million (1%) from $15,496 million in 1992–93 to $15,648 million in 1993–94. An increase in sales revenue was completely offset by an increase in the value of purchases and selected expenses.

IGP for the oil and gas extraction industry decreased by $337 million (5%) to $6,089 million. Both the coal mining and metal ore mining industries recorded increases in IGP; coal mining IGP increased by $231 million (6%) to $4,026 million and metal ore mining IGP rose by $258 million (5%) to $5,533 million. The majority of the increase in the value of purchases and selected expenses (up by $582 million) occurred in the metal ore mining industry.

The oil and gas extraction industry remained the largest contributor to IGP, accounting for 39%, despite the fall within the industry during 1993–94.

NET WORTH

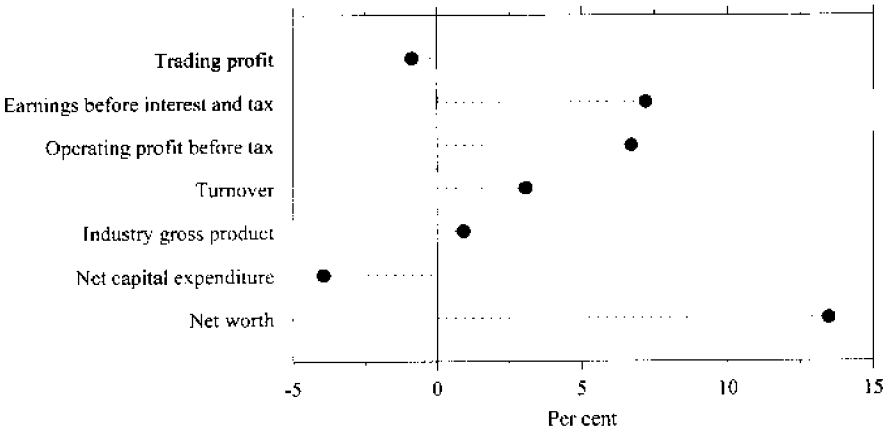
Net worth is an indicator of the unencumbered value of assets. It is derived by deducting total liabilities (gross indebtedness) from the total value of assets. Total net worth for 1993–94 was $30,226 million, an

increase of $3,664 million (14%) over the $26,563 million reported in 1992–93. Metal ore mining accounted for $2,417 million (41%) of total net worth while the oil and gas extract industry contributed $11,069 million (37%). Net worth for the oil and gas extraction industry increased by $2,648 million (31%). Net worth for the metal ore mining industry increased by $1,242 million (11%).

NET CAPITAL EXPENDITURE

Total net capital expenditure in 1993–94 decreased by $25 million (1%) to $4,085 million compared with 1992–93. An increase of $397 million (28%) in the metal ore mining industry was offset by a decrease of $147 million (16%) in the coal mining industry and $275 million (16%) in the oil and gas extraction industry.

PERCENTAGE CHANGE IN SELECTED INDICATORS BETWEEN 1992–93 AND 1993–94



The metal ore mining industry was the largest contributor to net capital expenditure accounting for $1,826 million (45%) in 1993–94. The oil and gas extraction industry was the next largest contributor with $1,465 million (36%).

Expenditure on plant, machinery and equipment remained the largest component of capital expenditure, accounting for $2,866 million (64%) of the overall total, although this was down $428 million (13%) on the $3,294 million reported in 1992–93. Expenditure on other buildings and structures rose by $382 million (33%) to $1,544 million.

ESTABLISHMENT SUMMARY

Statistics for detailed industry groupings and for each State are available at the establishment level. The following analysis relates to both the summary table below and the tables at the end of this chapter (see pages 61–70). The data for establishments vary from those for management units (see Explanatory Notes, Statistical unit) in that they reflect a more homogenous picture of the industry.

ESTABLISHMENT LEVEL[1] — SUMMARY OF OPERATIONS BY INDUSTRY CLASS, AUSTRALIA, 1993–94

	Turnover	Stocks		Purchases and selected expenses	Value added	Net capital expenditure
		Opening	Closing			
	$m	$m	$m	$m	$m	$m
Coal mining						
110 Coal mining[2]	9 897	796	690	4 300	5 491	863
Oil and gas extraction						
1200 Oil and gas extraction	7 758	216	201	631	7 113	1 381
Metal ore mining						
1311 Iron ore mining	3 208	346	338	1 023	2 177	492
1312 Bauxite mining	795	45	49	276	524	56
1313 Copper ore mining	967	181	153	342	596	120
1314 Gold ore mining	4 237	513	542	2 158	2 109	646
1315 Mineral sand mining	522	164	153	265	246	35
1317 Silver-lead-zinc ore mining	935	159	153	585	344	68
Other[3]	680	201	249	422	307	359
131 Total metal ore mining	11 344	1 608	1 637	5 071	6 302	1 776
Total 1993–94[2]	**29 000**	**2 620**	**2 529**	**10 002**	**18 907**	**4 020**
Total 1992–93	**28 870**	**2 613**	**2 603**	**9 590**	**19 270**	**4 004**

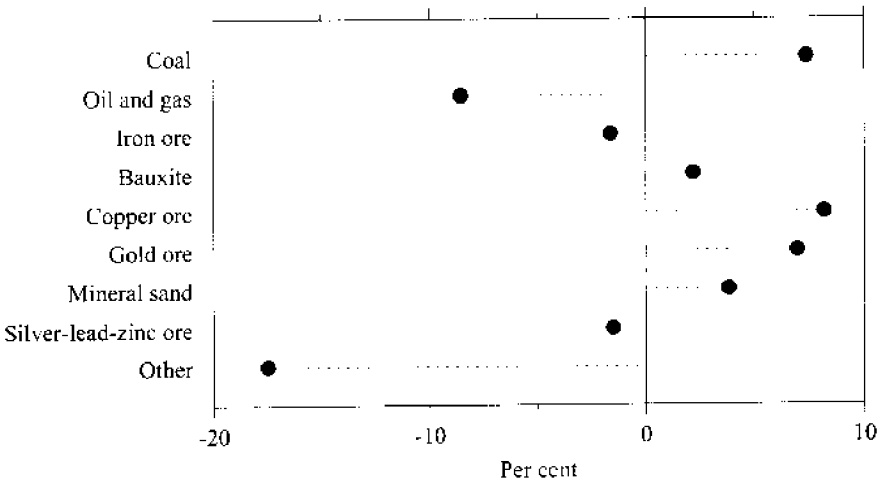
[1] See Explanatory Notes, Statistical unit.
[2] Brown coal mining operations of the former State Electricity Commission of Victoria are now included in the mining sector.
[3] Includes ANZSIC classes 1316 and 1319.

TURNOVER BY INDUSTRY

Turnover in 1993–94 was $29,000 million compared with $28,870 million for 1992–93, an increase of less than 1%. The largest absolute increase was in the coal mining industry, up 7% from $9,218 million to $9,897 million. Increased bullion prices and increased production in the gold ore mining industry resulted in turnover increasing by $276 million (7%) to $4,237 million. An increase also was reported in the copper ore mining industry where turnover rose $73 million (8%) to $967 million.

Decreases in turnover were recorded in several industries although the fall in the turnover in the oil and gas extraction industry was by far the largest (in both relative and absolute terms). Turnover in the oil and gas extraction industry decreased by $723 million (9%) to $7,758 million. Turnover fell in the silver-lead-zinc ore mining industry by $14 million (2%) to $935 million.

PERCENTAGE CHANGE IN TURNOVER BY INDUSTRY BETWEEN 1992–93 AND 1993–94



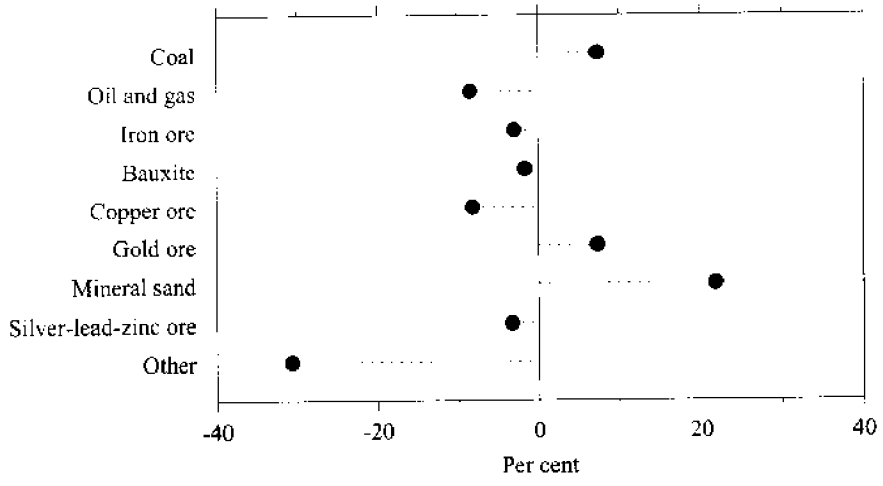
The coal mining industry was the largest contributor to turnover in 1993–94. Coal mining accounted for 34%, up from 32% in 1992–93. Oil and gas extraction accounted for 27% in 1993–94, down from 29% in 1992–93. The other main contributor was the gold ore mining industry which accounted for 15% of total turnover in 1993–94.

VALUE ADDED BY INDUSTRY

Value added decreased by 2%, falling from $19,270 million in 1992–93 to $18,907 million in 1993–94. A decrease was recorded in the oil and gas extraction industry, down $650 million (8%) to $7,113 million. Decreases also were recorded in the copper ore mining industry, down 8% from $650 million to $596 million.

Industries which recorded increases in value added for 1993–94 included coal mining up $374 million (7%) to $5,491 million, gold mining up $143 million (7%) to $2,109 million and mineral sand mining which increased $44 million (22%) to $246 million.

PERCENTAGE CHANGE IN VALUE ADDED BY INDUSTRY BETWEEN 1992–93 AND 1993–94



The increase in value added for both coal mining and gold mining resulted from turnover increasing faster than purchases and selected expenses. The oil and gas value added increase resulted from turnover decreasing less than purchases and selected expenses, while businesses in mineral sand mining reported an increase in turnover and decreases in purchases and selected expenses.

The oil and gas extraction and coal mining industries were the major contributors to national value added with 38% (40% in 1992–93) and 29% (27% in 1992–93), respectively.

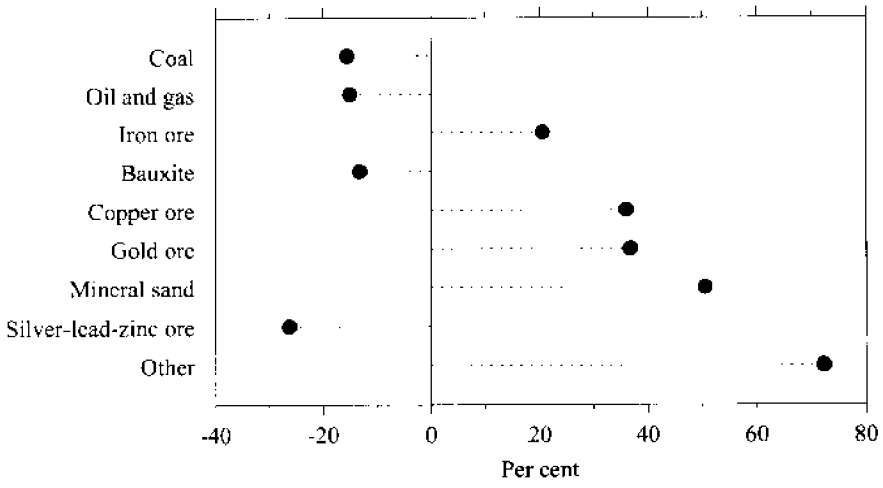
CAPITAL EXPENDITURE BY INDUSTRY

Capital expenditure less disposals increased by $16 million (less than 1%) from $4,004 million in 1992–93 to $4,020 million in 1993–94. The largest absolute increase in net capital expenditure occurred in the gold ore mining industry with a rise of $174 million (37%) to $646 million. Other industries to record increases were other metal ore mining up $151 million (72%), iron ore mining up $84 million (21%) and copper ore mining up $32 million (36%).

These increases were offset by falls in net capital expenditure in the oil and gas extraction industry, down $245 million (15%) and in the coal mining industry, down $158 million (16%).

The majority of fluctuations in total capital expenditure were due to variations in the level of expenditure on plant, machinery and equipment. This was particularly so for the oil and gas extraction industry where capital expenditure on plant, machinery and equipment fell by $478 million. Expenditure on plant, machinery and equipment accounted for 58% ($2,489 million) of the total capital expenditure in 1993–94. Expenditure on buildings and other structures rose by $403 million (30%) to $1,746 million.

PERCENTAGE CHANGE IN NET CAPITAL EXPENDITURE BY INDUSTRY BETWEEN 1992–93 AND 1993–94



Of total capital expenditure across all industries, establishments in the oil and gas extraction industry accounted for $1,438 million (33%). Coal mining with $994 million (23%) was the next major contributor.

Data may be available at the State level on an industry subdivision basis, subject to confidentiality restrictions. The following table summarises the data for each State for 1993–94. Detailed figures can be found in the tables at the end of this chapter.

ESTABLISHMENT LEVEL[1] — SUMMARY OF OPERATIONS BY STATE, 1993–94

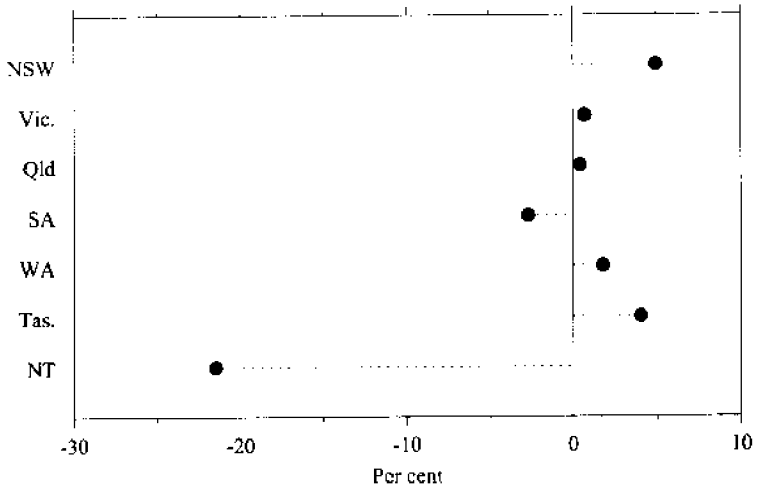
	Turnover	*Stocks*		*Purchases and selected expenses*	*Value added*	*Net capital expenditure*
		Opening	*Closing*			
	$m	$m	$m	$m	$m	$m
New South Wales	4 863	440	386	2 156	2 653	628
Victoria[2]	4 066	47	44	328	3 735	463
Queensland	6 797	764	691	3 032	3 692	561
South Australia	1 065	86	69	208	840	87
Western Australia	10 692	1 010	1 053	3 738	6 996	2 165
Tasmania	344	50	61	188	165	35
Northern Territory	1 174	223	226	352	825	81
Australia[2]	**29 000**	**2 620**	**2 529**	**10 002**	**18 907**	**4 020**

[1] See Explanatory Notes, Statistical unit.
[2] Brown coal mining operations of the former State Electricity Commission of Victoria are now included in the mining sector.

TURNOVER BY STATE

New South Wales recorded the largest increase in turnover, rising $229 million (5%) to $4,863 million in 1993–94. This was a result of slightly increased revenue from the sale of coal and a rise in the value of capital work done for own use within the coal mining industry. Tasmania recorded an increase of $13 million (4%) in turnover in 1993–94. Turnover in Western Australia rose by $184 million (2%) to $10,692 million. A decrease of $335 million in the revenue generated by the oil and gas extraction industry in the Northern Territory resulted in turnover decreasing by $321 million (21%) to $1,174 million.

PERCENTAGE CHANGE IN TURNOVER BY STATE BETWEEN 1992–93 AND 1993–94



Turnover in Victoria increased by $27 million (less than 1%) in 1993–94. However, this figure is not directly comparable to the one reported in 1992–93. Prior to 1993–94 information concerning the brown coal mining industry was unavailable at the establishment level. Virtually all of the brown coal mining industry in Victoria was operated by the State Electricity Commission of Victoria (SECV) with the result that all data relating to brown coal mining activities were subsumed into the electricity supply industry.

The recent restructuring of the SECV into independent bodies responsible for different facets of the SECV's former operations has resulted in data for brown coal mining being made available for 1993–94 at the establishment level. This is reflected in the increase in turnover for the combined category of metal ore mining and coal mining.

With the exclusion of the $441 million turnover generated by the coal industry in 1993–94, turnover became $3,626 million. In comparison with the 1992–93 figure for turnover for the total of coal mining, oil and gas extraction and metal ore mining, this represented a decrease of $414 million (10%).

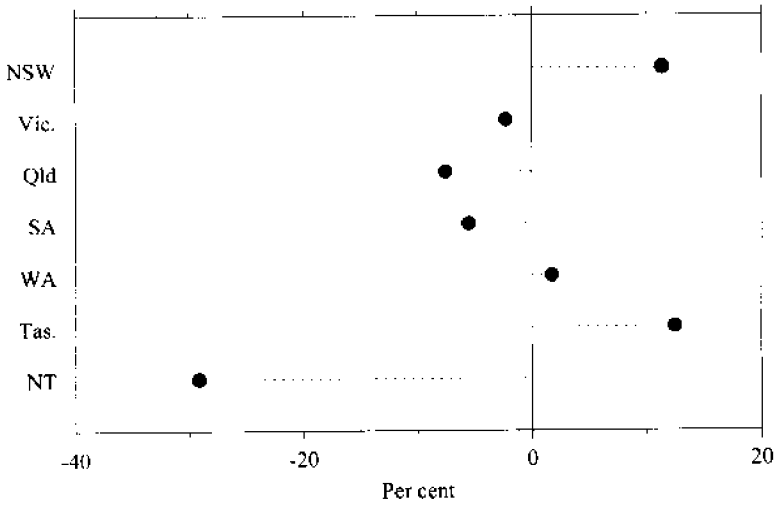
Western Australia retained its position as the largest contributor to national turnover, accounting for $10,692 million (37%). Queensland, with $6,797 million (23%), was the second largest contributor.

VALUE ADDED BY STATE

Movements in value added were generally more pronounced than those of turnover. Value added in Queensland decreased by $301 million (8%) falling from $3,992 million in 1992–93 to $3,692 million in 1993–94. This was a direct result of an increase in the level of purchases and selected expenses in the coal mining and metal ore mining industries. In New South Wales value added increased by $271 million (11%) to $2,653 million in 1993–94.

Value added in Victoria decreased by $86 million (2%) in 1993–94. Although brown coal mining is now included, the value of sales revenue generated by the oil and gas extraction industry fell by $449 million (11%) to $3,502 million. Depressed world oil prices and reduced production were the main reasons for the decline. In the Northern Territory, value added decreased by $339 million (29%) because of the decrease in revenue from oil and gas. The main reason for the fall in revenue was the 104 day maintenance shutdown of the Jabiru field between October 1993 and January 1994 *(Source: Register of Australian Mining, 1994–95)*.

PERCENTAGE CHANGE IN VALUE ADDED BY STATE BETWEEN 1992–93 AND 1993–94

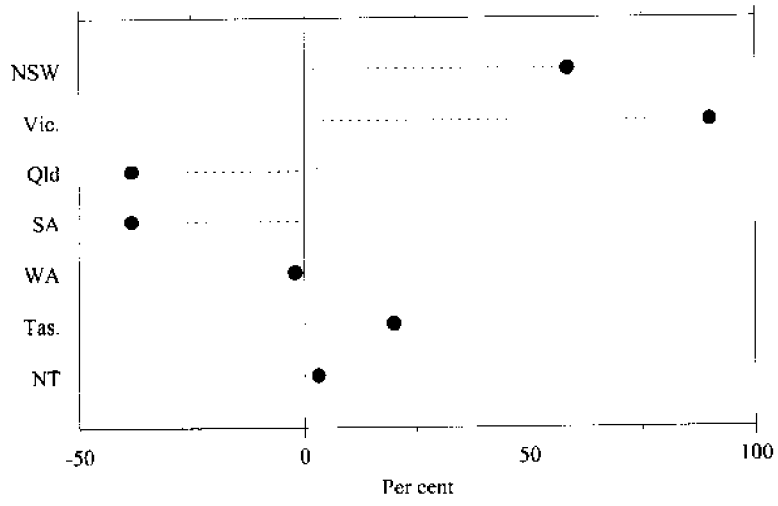


Western Australia was the largest contributor to national value added, accounting for $6,996 million (37%). Queensland with $3,692 million and Victoria with $3,735 million each contributed just under 20% during 1993–94.

CAPITAL EXPENDITURE BY STATE

Western Australia was the largest contributor to net capital expenditure during 1993–94, accounting for $2,165 million (54%), although this represented a $41 million (2%) decrease on the figure reported in 1992–93. New South Wales recorded an increase of $232 million (58%), rising to $628 million in 1993–94. An increase in the value of capital expenditure on plant, machinery and equipment in both the coal mining and metal ore mining industries was the main reason for the increase. Similar increases in expenditure occurred in Victoria where net capital expenditure increased by $219 million (90%). Part of this increase can be attributed to the inclusion of brown coal mining within the Mining industry.

PERCENTAGE CHANGE IN NET CAPITAL EXPENDITURE BY STATE BETWEEN 1992–93 AND 1993–94



Queensland recorded the largest decrease of $348 million (38%) to $561 million in 1993–94. The decrease occurred in the coal mining industry where capital expenditure on plant, machinery and equipment fell by $302 million (54%).

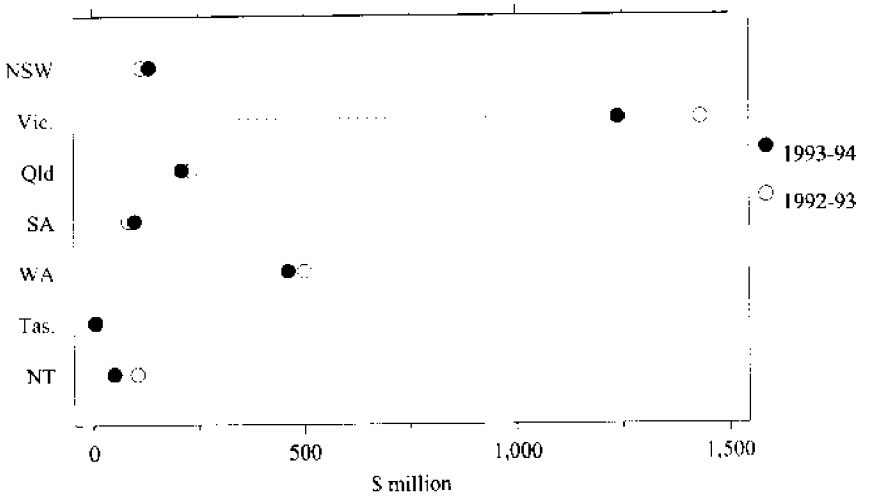
ROYALTIES

Royalties data appear in the last two tables at the end of this chapter. The data are presented at establishment level (by industry and State). Royalty payments are a reflection of production and/or sales, the data for which are collected at the establishment level.

Royalties totalling $2,199 million were paid during 1993–94. This represented a decrease of $275 million (11%) on the $2,474 million reported in 1992–93. The oil and gas extraction industry recorded the largest decrease, with royalties paid falling $277 million (15%) to $1,558 million. This was the result of a decrease in the value of sales in Victoria and the Northern Territory. The industry, however, remained the largest contributor to royalties paid, accounting for 71%. Royalties paid by the coal mining industry rose by $29 million (12%) to $284 million. This represented 13% of all royalties paid. The value of royalties paid in the silver-lead-zinc ore mining industry decreased by $11 million (31%) to $24 million.

Victoria, with its oil and gas extraction industry, contributed $1,240 million to total royalties paid. This was a fall of 13% from 1992–93, but was 56% of the total royalties paid in 1993–94. Western Australia was the second largest contributor to royalties paid, accounting for $461 million (21%) in total royalty payments. Queensland contributed $211 million (10%).

ROYALTIES PAID BY STATE, 1992–93 AND 1993–94



MANAGEMENT UNIT LEVEL[a] — INCOME AND EXPENDITURE BY INDUSTRY SUBDIVISION, AUSTRALIA ($ million))

	Coal mining		*Oil and gas extraction*		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods and services	8,897.6	9,166.1	7,706.7	7,318.8	11,293.5	12,003.2	27,897.9	28,488.1
Less								
Purchases of goods and materials	1,475.5	1,523.5	177.6	184.4	2,200.7	2,848.0	3,853.8	4,555.8
Rent, leasing and hiring expenses								
Motor vehicles	4.5	8.7	3.0	2.5	9.5	10.0	17.0	21.2
Plant, machinery and other equipment	53.3	41.6	18.0	13.0	64.3	69.1	135.6	123.6
Land, buildings and other structures	27.0	72.3	35.3	34.6	55.8	70.6	118.0	177.4
Outward freight and cartage	1,779.7	1,746.0	73.5	80.7	256.0	261.4	2,109.3	2,088.2
Motor vehicle expenses	13.0	11.8	10.9	10.1	42.0	41.1	65.8	62.9
Repair and maintenance expenses	632.2	767.8	190.0	184.6	699.2	799.0	1,521.4	1,751.4
Payment for contract, sub-contract and commission work	436.9	525.0	308.2	279.4	1,818.4	1,700.2	2,563.5	2,504.6
Other selected expenses	775.2	563.1	517.4	538.8	968.2	840.5	2,260.8	1,942.3
Purchases and selected expenses	5,197.2	5,259.7	1,333.9	1,327.9	6,114.1	6,639.7	12,645.3	13,227.4
Plus								
Opening stocks	780.5	816.0	249.0	215.4	1,848.3	1,844.3	2,877.8	2,875.7
Less								
Closing stocks	838.0	721.8	248.2	216.8	1,841.5	1,849.9	2,927.7	2,788.6
Cost of sales	*5,139.8*	*5,353.9*	*1,334.8*	*1,326.6*	*6,120.9*	*6,634.0*	*12,595.5*	*13,314.5*
Trading profit	**3,757.9**	**3,812.2**	**6,372.0**	**5,992.2**	**5,172.6**	**5,369.2**	**15,302.4**	**15,173.6**
Plus								
Rent, leasing and hiring income	17.5	17.7	36.7	82.2	19.1	21.1	73.4	121.0
Government subsidies	1.1	13.3	0.1	0.0	19.9	21.3	21.1	34.6
Interest income	83.3	91.3	58.3	48.7	183.4	266.0	325.1	406.0
Other income	18.1	165.2	61.2	31.4	100.8	141.9	180.1	338.5
Less								
Wages and salaries	1,776.0	1,869.0	391.5	395.7	1,547.1	1,514.3	3,714.6	3,779.0
Superannuation	115.8	114.9	22.3	22.1	61.6	68.9	199.8	205.8
Workers' compensation	42.3	41.0	3.4	3.4	42.3	37.1	88.0	81.5
Selected labour costs	*1,934.0*	*2,024.9*	*417.2*	*421.1*	*1,651.1*	*1,620.3*	*4,002.4*	*4,066.4*
Less								
Depreciation	790.0	743.4	1,171.7	1,183.5	1,179.2	1,205.8	3,140.9	3,132.7
Insurance premiums	50.4	52.9	48.5	32.4	41.9	51.8	140.8	137.0
Royalties expenses	246.6	236.1	1,787.8	1,508.0	325.8	302.8	2,360.1	2,046.9
Bad debts	17.4	0.7	0.0	3.7	4.4	4.9	21.8	9.2
Earnings before interest and tax	**839.5**	**1,041.7**	**3,103.1**	**3,005.7**	**2,293.4**	**2,634.0**	**6,236.1**	**6,681.4**
Less								
Interest expenses	317.9	309.0	357.8	400.1	378.1	446.6	1,053.8	1,155.7
Operating profit before tax	**521.7**	**732.7**	**2,745.4**	**2,605.6**	**1,915.3**	**2,187.4**	**5,182.3**	**5,525.7**

[a] See Explanatory Notes, Statistical unit.

MANAGEMENT UNIT LEVEL[a] — INDUSTRY GROSS PRODUCT BY INDUSTRY SUBDIVISION, AUSTRALIA ($ million)

	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods and services	8,897.6	9,166.1	7,706.7	7,316.8	11,293.5	12,003.2	27,897.9	28,488.1
Rent, leasing and hiring income	17.5	17.7	36.7	82.2	19.1	21.1	73.4	121.0
Government subsidies	1.1	13.3	0.1	0.0	19.9	21.3	21.1	34.6
Plus								
Capital work done for own use	18.6	182.5	17.7	15.0	63.2	121.3	99.5	318.8
Turnover	**8,934.9**	**9,379.5**	**7,761.2**	**7,416.0**	**11,395.7**	**12,167.0**	**28,091.8**	**28,962.5**
Plus								
Closing stocks	838.0	721.8	248.2	216.8	1,841.5	1,849.9	2,927.7	2,788.6
Less								
Opening stocks	780.5	816.0	249.0	215.4	1,848.3	1,844.3	2,877.8	2,875.7
Less								
Purchases and selected expenses	5,197.2	5,259.7	1,333.9	1,327.9	6,114.1	6,639.7	12,645.3	13,227.4
Industry gross product	**3,795.2**	**4,025.7**	**6,426.5**	**6,089.4**	**5,274.8**	**5,532.9**	**15,496.4**	**15,648.0**

[a] Includes items listed plus value of Capital Work Done for Own Use.

MANAGEMENT UNIT LEVEL[a] — ASSETS AND LIABILITIES BY INDUSTRY SUBDIVISION, AUSTRALIA ($ million)

	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Assets:								
Current assets:								
Closing stocks	838.0	721.8	248.2	216.8	1,841.5	1,849.9	2,927.7	2,788.6
Other current assets	2,107.2	2,123.3	1,638.2	1,808.1	3,847.6	5,494.0	7,593.0	9,425.4
Non-current assets	11,911.3	11,293.5	18,006.3	20,373.6	15,128.3	14,692.8	45,045.9	46,359.9
Total value of assets	**14,856.4**	**14,138.7**	**19,892.8**	**22,398.5**	**20,817.4**	**22,036.7**	**55,566.6**	**58,574.0**
Liabilities:								
Current liabilities	3,427.4	3,168.0	2,515.3	2,372.5	4,781.4	5,150.6	10,724.1	10,691.2
Non-current liabilities	4,462.5	4,230.8	8,956.4	8,957.0	4,861.0	4,468.5	18,280.0	17,656.3
Total value of liabilities	**7,889.9**	**7,398.8**	**11,471.8**	**11,329.4**	**9,642.4**	**9,619.3**	**29,004.1**	**28,347.6**
Net worth	**6,966.5**	**6,739.8**	**8,421.0**	**11,069.1**	**11,175.0**	**12,417.5**	**26,562.5**	**30,226.4**

[a] Includes items listed plus value of Capital Work Done for Own Use.

MANAGEMENT UNIT LEVEL[a] — ACQUISITIONS AND DISPOSALS OF FIXED TANGIBLE ASSETS[a] BY INDUSTRY SUBDIVISION, AUSTRALIA ($ million)

	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Capital expenditure on:								
Land	8.2	9.6	0.4	0.3	20.6	21.4	29.1	31.3
Dwellings	17.3	14.2	0.1	0.5	20.7	27.2	38.1	41.9
Other buildings and structures	165.0	259.4	390.7	555.6	606.0	728.8	1,161.8	1,543.7
Plant, machinery and equipment	838.6	739.8	1,374.1	929.9	1,080.9	1,195.5	3,293.5	2,865.3
Total acquisitions	**1,029.0**	**1,023.1**	**1,765.2**	**1,486.3**	**1,728.2**	**1,972.9**	**4,522.4**	**4,482.2**
Disposal of assets	**87.4**	**228.2**	**25.8**	**21.5**	**288.9**	**147.1**	**412.1**	**396.8**
Net capital expenditure	**941.6**	**794.9**	**1,739.4**	**1,464.8**	**1,429.2**	**1,825.8**	**4,110.3**	**4,085.4**

[a] Includes items listed plus value of Capital Work Done for Own Use.

ESTABLISHMENT LEVEL[a] — INCOME AND EXPENDITURE BY INDUSTRY CLASS, AUSTRALIA ($ million)

	Coal mining (b)		Oil and gas extraction		Iron ore mining		Bauxite mining		Copper ore mining		Gold ore mining	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods												
Produced by this business(c)	8,923.9	9,392.1	8,430.3	7,693.4	3,144.1	3,047.7	773.8	793.5	875.1	948.3	3,905.0	4,191.0
Not produced by this business(c)	170.8	194.8	—	—	—	70.0	—	—	—	—	—	—
Service income	84.1	95.9	30.1	46.3	110.8	71.9	0.1	0.1	0.2	1.1	29.6	23.8
Rent, leasing and hiring income	12.2	11.6	3.0	1.8	5.1	7.9	—	—	1.7	2.1	2.3	2.2
Government subsidies	1.2	13.3	0.1	—	0.5	0.7	0.1	0.1	5.1	6.2	3.7	4.4
Plus												
Capital work done for own use	26.0	189.8	17.7	17.0	0.1	10.3	4.2	1.4	11.2	8.8	21.2	15.8
Turnover	**9,218.3**	**9,897.5**	**8,481.1**	**7,758.5**	**3,260.6**	**3,208.3**	**778.2**	**795.2**	**893.3**	**966.5**	**3,961.7**	**4,237.3**
Plus												
Closing stocks	784.3	690.3	220.3	201.1	346.4	337.9	44.8	49.2	151.3	153.4	579.6	542.4
Less												
Opening stocks	788.3	796.1	221.5	215.7	363.2	345.6	42.8	45.2	103.5	181.1	541.4	513.0
Less												
Purchases:												
Materials, components, containers etc.(d)(e)	767.9	738.2	93.7	86.3	169.5	159.8	83.9	85.1	125.8	131.5	453.9	599.8
Electricity and fuels	359.1	363.8	20.9	24.5	161.0	144.5	78.9	80.6	43.7	49.1	266.9	292.0
Goods for resale(d)	149.0	166.4	—	—	—	36.0	—	—	—	—	—	1.8
Rent, leasing and hiring expenses:												
Motor vehicles	4.3	9.2	1.7	1.6	0.5	1.3	0.1	0.2	1.5	1.7	4.9	2.8
Plant, machinery and other equipment	48.3	44.6	18.1	10.3	8.9	8.6	4.7	3.5	4.2	4.3	57.7	30.7
Land, buildings and other structures	32.6	46.3	19.1	19.6	30.2	33.5	2.4	16.4	0.1	1.5	5.8	9.0
Outward freight and cartage(f)	1,692.5	1,643.6	91.2	84.8	11.9	17.6	4.4	4.4	21.9	25.6	15.4	12.6
Motor vehicle expenses	10.7	11.2	8.8	7.8	10.4	8.3	1.6	1.2	1.7	2.2	14.0	14.9
Repair and maintenance expenses	652.8	807.1	181.0	172.1	238.9	223.3	45.9	44.9	37.8	49.0	192.9	246.5
Payment for contract, sub-contract and commission work(g)	379.4	462.1	283.1	224.0	342.2	361.8	26.2	39.3	54.8	77.6	1,022.8	947.4
Purchases and selected expenses	*4,096.7*	*4,300.4*	*717.7*	*631.1*	*1,000.1*	*1,023.4*	*248.0*	*275.6*	*291.6*	*342.5*	*2,034.3*	*2,157.5*
Value added	**5,117.6**	**5,491.3**	**7,762.3**	**7,112.8**	**2,243.7**	**2,177.3**	**532.2**	**523.6**	**649.5**	**596.3**	**1,965.7**	**2,109.1**

For footnotes see end of table.

ESTABLISHMENT LEVEL[a] — INCOME AND EXPENDITURE BY INDUSTRY CLASS, AUSTRALIA ($ million) — *continued*

Items	Mineral sand mining		Silver-lead-zinc ore mining		Other metal ore mining		Total metal ore mining		Total coal mining, oil and gas extraction and metal ore mining (b)	
	1992-93	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods										
Produced by this business(c)	499.6	516.0	934.7	913.8	790.9	668.6	10,923.2	11,078.9	28,277.4	28,164.3
Not produced by this business(c)	0.7	3.3	—	—	—	—	0.7	73.3	171.5	268.1
Service income	0.1	—	0.3	1.3	25.2	4.6	166.2	102.6	280.4	244.9
Rent, leasing and hiring income	0.3	0.4	1.6	1.8	4.8	4.5	15.8	19.0	31.0	32.4
Government subsidies	—	—	6.6	5.6	0.1	0.5	16.2	17.4	17.4	30.7
Plus										
Capital work done for own use	1.9	1.9	6.2	12.5	3.6	2.2	48.3	52.9	92.0	259.7
Turnover	**502.5**	**521.7**	**949.3**	**934.9**	**824.5**	**680.3**	**11,170.3**	**11,344.1**	**28,869.6**	**29,000.1**
Plus										
Closing stocks	131.3	152.9	157.5	152.9	187.8	248.7	1,598.7	1,637.5	2,603.4	2,528.9
Less										
Opening stocks	140.8	164.1	206.2	158.8	205.2	200.6	1,603.0	1,608.2	2,612.8	2,620.0
Less										
Purchases:										
Materials, components, containers etc.(d)(e)	126.7	88.9	196.5	235.5	94.8	92.6	1,251.0	1,393.2	2,112.6	2,217.7
Electricity and fuels	61.2	62.4	73.4	70.6	70.7	62.5	755.7	761.6	1,135.7	1,149.9
Goods for resale(d)	0.5	3.1	—	—	—	—	0.5	40.9	149.5	207.3
Rent, leasing and hiring expenses:										
Motor vehicles	0.3	0.3	2.7	1.6	0.2	0.4	10.1	8.2	16.1	19.1
Plant, machinery and other equipment	9.8	11.5	5.3	1.7	5.4	6.7	95.9	67.0	162.3	121.9
Land, buildings and other structures	0.8	1.3	—	0.1	1.8	1.3	41.3	63.0	93.0	128.9
Outward freight and cartage(f)	19.0	18.0	97.8	116.4	21.3	24.6	191.7	219.2	1,975.3	1,947.5
Motor vehicle expenses	2.4	2.2	3.4	3.8	3.4	4.3	36.9	37.1	56.5	56.1
Repair and maintenance expenses	36.1	34.3	92.6	88.7	50.8	65.5	695.1	752.3	1,528.9	1,731.6
Payment for contract, sub-contract and commission work(g)	34.6	42.7	72.7	66.8	116.6	163.9	1,670.0	1,699.6	2,332.4	2,385.7
Purchases and selected expenses	*291.4*	*264.8*	*545.3*	*585.3*	*365.0*	*421.8*	*4,775.5*	*5,070.9*	*9,589.9*	*10,002.4*
Value added	**201.7**	**245.7**	**355.5**	**343.8**	**442.1**	**306.6**	**6,390.4**	**6,302.4**	**19,270.3**	**18,906.6**

(a) See Explanatory Notes, Statistical unit.
(b) Data for Victorian Coal, which was not collected in 1992-93, has been included in 1993-94.
(c) Includes transfers out to other establishments of the same management unit where appropriate.
(d) Includes transfers in from other establishments of the same management unit where appropriate.
(e) Includes minerals for further processing.
(f) Includes imputed charges for freight out by other establishments of the same management unit.
(g) Includes imputed commission charged for work done by other establishments of the same management unit. Includes payments to mining contractors.

ESTABLISHMENT LEVEL[a] — FIXED CAPITAL EXPENDITURE[b] BY TYPE OF ASSET AND INDUSTRY CLASS, AUSTRALIA ($ million)

	Coal mining		*Oil and gas extraction*		*Iron ore mining*		*Bauxite mining*		*Copper ore mining*		*Gold ore mining*	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Capital expenditure on:												
Fixed tangible assets												
Land	11.5	10.5	0.5	0.2	0.5	1.4	0.1	0.1	0.1	1.1	18.1	15.7
Dwellings	22.3	15.9	0.6	0.5	1.5	1.2	13.1	8.4	0.9	1.6	5.9	8.9
Buildings and other structures	208.2	279.8	450.7	716.3	202.2	116.6	5.2	2.6	59.7	84.2	250.2	392.3
Plant, machinery and equipment	873.9	687.9	1,198.1	720.6	267.2	415.2	49.0	48.7	119.7	41.6	239.0	267.0
Total	*1,115.9*	*994.0*	*1,649.8*	*1,437.5*	*471.4*	*534.6*	*67.4*	*59.8*	*180.3*	*128.6*	*513.2*	*683.9*
Intangible assets	9.3	17.7	84.1	81.0	1.8	—	—	—	—	3.7	12.4	12.7
Disposals of fixed tangible assets	94.9	131.4	24.2	56.7	63.4	42.5	2.4	3.4	92.5	9.1	40.7	37.6
Disposals of intangible assets	0.1	1.6	0.8	8.0	—	2.5	—	—	—	—	1.4	0.3
Fixed capital expenditure less disposals:												
Land, buildings and other structures	228.3	281.5	451.6	715.8	194.1	99.4	18.1	9.6	58.0	82.5	268.9	402.3
Plant machinery and equipment	792.7	581.1	1,174.0	665.1	213.9	392.7	46.9	46.8	29.9	37.0	203.6	244.0
Total net capital expenditure	*1,021.0*	*862.6*	*1,625.6*	*1,380.9*	*408.0*	*492.1*	*65.0*	*56.4*	*87.9*	*119.5*	*472.5*	*646.3*

	Mineral sand mining		*Silver-lead-zinc ore mining*		*Other metal ore mining*		*Total metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining (c)*	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Capital expenditure on:										
Fixed tangible assets										
Land	0.3	0.5	0.3	—	2.3	1.4	21.6	20.1	33.6	30.8
Dwellings	0.1	0.5	0.5	0.5	4.0	12.0	26.0	33.1	49.0	49.5
Buildings and other structures	3.5	6.4	39.9	34.7	123.6	113.3	684.2	750.2	1,343.1	1,746.3
Plant, machinery and equipment	22.1	28.9	55.9	42.4	91.6	236.5	844.5	1,080.4	2,916.4	2,489.0
Total	*26.0*	*36.3*	*96.6*	*77.5*	*221.4*	*363.2*	*1,576.4*	*1,883.9*	*4,342.1*	*4,315.5*
Intangible assets	1.5	1.7	2.9	4.6	—	—	18.6	22.8	112.0	121.5
Disposals of fixed tangible assets	2.7	1.4	4.5	9.5	13.2	4.3	219.4	107.8	338.5	295.9
Disposals of intangible assets	—	—	—	—	—	—	1.4	2.8	2.3	12.4
Fixed capital expenditure less disposals:										
Land, buildings and other structures	3.4	6.8	39.9	34.6	127.3	126.0	709.6	761.1	1,389.5	1,758.4
Plant machinery and equipment	19.8	28.1	52.2	33.4	81.0	232.9	647.3	1,015.0	2,614.1	2,261.2
Total net capital expenditure	*23.2*	*34.9*	*92.1*	*68.0*	*208.3*	*358.9*	*1,357.0*	*1,776.1*	*4,003.6*	*4,019.6*

[a] See Explanatory Notes, Statistical unit. [b] Excludes Capital Work Done for Own Use — reported in table on pages 57–58. Also excluded is Mine Development which is a component of Capital Work Done for Own Use. [c] Data for Victorian Coal which was not collected in 1992-93, has been included in 1993–94.

ESTABLISHMENT LEVEL[a] — INCOME AND EXPENDITURE BY STATE, INDUSTRY SUBDIVISION ($ million)

	New South Wales						Victoria						
	Coal Mining		Metal ore mining		Total coal mining and metal ore mining		Coal mining (b)	Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining(b)	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods													
Produced by this business(c)	3,965.1	4,014.0	477.7	460.6	4,432.8	4,474.6	422.7	3,950.6	3,501.8	73.9	103.2	4,024.6	4,027.7
Not produced by this business(c)	154.2	173.2	—	—	154.2	173.2	—	—	—	—	—	—	—
Service income	22.1	34.1	—	0.8	22.1	34.9	1.2	5.3	2.4	—	0.2	5.3	3.9
Rent, leasing and hiring income	7.6	5.6	1.3	1.5	8.9	7.1	0.9	—	0.4	—	—	0.1	1.3
Government subsidies	0.6	0.2	1.0	1.1	1.5	1.3	12.4	—	—	0.1	0.1	0.1	12.5
Plus													
Capital work done for own use	13.1	170.0	0.8	1.6	13.9	171.6	3.3	9.1	13.7	—	3.7	9.1	20.7
Turnover	**4,152.6**	**4,397.1**	**480.8**	**465.5**	**4,633.4**	**4,862.6**	**440.5**	**3,965.0**	**3,518.3**	**74.2**	**107.2**	**4,039.2**	**4,066.1**
Plus													
Closing stocks	384.6	312.1	64.6	73.8	449.2	385.9	4.1	36.3	31.8	8.4	7.9	44.7	43.8
Less													
Opening stocks	388.0	381.5	119.0	58.2	506.9	439.7	—	51.7	36.3	10.1	10.6	61.8	46.9
Less													
Purchases:													
Materials, components, containers etc.(d)(e)	396.8	298.4	122.1	101.8	519.0	400.3	17.9	21.4	25.0	4.6	9.6	25.9	52.5
Electricity and fuels	153.3	153.7	43.1	38.6	196.4	192.3	13.0	4.8	6.0	5.5	5.0	10.3	24.0
Goods for resale(d)	133.9	148.3	—	—	133.9	148.3	—	—	—	—	—	—	—
Rent, leasing and hiring expenses:													
Motor vehicles	1.4	1.8	0.4	0.6	1.8	2.4	0.8	0.1	0.1	0.2	0.2	0.3	1.1
Plant, machinery and other equipment	30.9	28.5	6.7	0.5	37.6	29.0	0.4	0.9	0.7	2.0	1.2	2.9	2.3
Land, buildings and other structures	26.0	30.9	0.2	1.7	26.2	32.6	7.8	0.7	0.3	0.3	0.2	1.0	8.3
Outward freight and cartage(f)	665.9	642.0	43.8	41.5	709.7	683.5	3.4	3.6	3.5	4.3	6.4	7.9	13.4
Motor vehicle expenses	4.8	5.3	2.3	2.2	7.1	7.5	0.7	0.8	1.0	0.4	0.7	1.2	2.3
Repair and maintenance expenses	331.2	379.5	52.9	63.6	384.0	443.2	25.7	84.2	77.6	2.3	6.8	86.5	110.0
Payment for contract, sub-contract and commission work(g)	129.8	168.9	48.1	40.0	177.9	208.9	58.8	51.0	43.7	13.9	11.4	64.9	113.9
Purchases and selected expenses	*1,874.2*	*1,865.2*	*319.6*	*290.6*	*2,193.7*	*2,155.8*	128.3	*167.4*	*158.0*	*33.5*	*41.5*	*200.9*	*327.8*
Value added	**2,275.1**	**2,462.5**	**106.8**	**190.4**	**2,381.9**	**2,653.0**	**316.292**	**3,782.2**	**3,355.9**	**38.9**	**63.0**	**3,821.1**	**3,735.1**

For footnotes see end of table.

ESTABLISHMENT LEVEL[a] — INCOME AND EXPENDITURE BY STATE, INDUSTRY SUBDIVISION ($ million) — *continued*

	Queensland								South Australia	
	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods										
Produced by this business(c)	4,601.8	4,585.3	316.5	289.2	1,705.0	1,765.4	6,623.3	6,639.9	1,091.5	1,058.9
Not produced by this business(c)	16.6	21.6	—	—	—	—	16.6	21.6	—	—
Service income	60.2	59.0	20.3	17.4	0.7	2.1	81.1	78.6	1.5	3.4
Rent, leasing and hiring income	3.9	4.1	0.1	0.1	1.0	1.2	5.0	5.4	1.7	2.5
Government subsidies	0.6	0.7	—	—	10.6	10.9	11.2	11.6	—	—
Plus										
Capital work done for own use	10.8	15.9	0.5	0.3	21.1	23.5	32.4	39.7	0.1	0.3
Turnover	**4,693.9**	**4,686.5**	**337.4**	**307.0**	**1,738.4**	**1,803.2**	**6,769.7**	**6,796.7**	**1,094.8**	**1,065.1**
Plus										
Closing stocks	386.4	364.5	19.5	21.6	322.4	304.4	728.3	690.5	90.8	69.3
Less										
Opening stocks	378.3	401.9	20.0	22.2	267.2	339.4	665.6	763.5	92.0	86.2
Less										
Purchases:										
Materials, components, containers etc.(d)(e)	353.6	405.4	27.9	19.6	222.9	257.0	604.4	682.0	45.2	40.4
Electricity and fuels	183.9	178.4	0.5	0.4	107.0	115.0	291.4	293.7	19.7	19.6
Goods for resale(d)	15.1	18.0	—	—	—	—	15.1	18.0	—	—
Rent, leasing and hiring expenses:										
Motor vehicles	1.9	5.7	0.4	0.4	3.0	2.3	5.3	8.3	1.3	1.2
Plant, machinery and other equipment	13.0	10.8	1.3	1.0	8.9	10.6	23.2	22.4	4.6	4.5
Land, buildings and other structures	6.1	7.0	0.5	0.2	3.5	17.9	10.1	25.2	4.8	4.3
Outward freight and cartage(f)	1,000.8	972.4	70.0	67.1	66.1	76.0	1,136.9	1,115.5	28.0	26.8
Motor vehicle expenses	4.1	4.2	0.7	0.6	4.4	3.7	9.2	8.6	5.6	5.1
Repair and maintenance expenses	279.4	362.7	2.9	2.2	55.9	78.5	338.2	443.4	64.1	75.4
Payment for contract, sub-contract and commission work(g)	246.6	231.3	9.2	14.6	149.8	169.3	405.6	415.2	31.5	30.9
Purchases and selected expenses	*2,104.6*	*2,196.0*	*113.3*	*106.0*	*622.2*	*730.2*	*2,840.1*	*3,032.2*	*204.9*	*208.2*
Value added	**2,597.4**	**2,453.1**	**223.7**	**200.4**	**1,171.3**	**1,038.0**	**3,992.4**	**3,691.6**	**888.7**	**840.0**

For footnotes see end of table.

ESTABLISHMENT LEVEL[a] — INCOME AND EXPENDITURE BY STATE, INDUSTRY SUBDIVISION ($ million) — *continued*

	Western Australia						*Tasmania*		*Northern Territory*					
	Coal mining and oil and gas extraction		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*		*Total coal mining and metal ore mining*		*Oil and gas extraction*		*Metal ore mining*		*Total oil and gas extraction and metal ore mining*	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Sales of goods														
Produced by this business(c)	2,870.2	2,998.5	7,432.0	7,465.6	10,302.2	10,464.1	325.7	338.5	727.5	390.0	749.9	770.6	1,477.3	1,160.6
Not produced by this business(c)	—	—	0.7	73.3	0.7	73.3	—	—	—	—	—	—	—	—
Service income	4.0	22.8	160.3	96.3	164.3	119.0	—	—	0.9	2.8	5.2	2.3	6.1	5.1
Rent, leasing and hiring income	2.5	1.2	11.3	13.5	13.8	14.7	0.2	0.3	0.4	0.2	0.9	0.9	1.3	1.1
Government subsidies	0.1	—	0.6	1.7	0.7	1.7	0.2	0.1	—	—	3.6	3.6	3.6	3.6
Plus														
Capital work done for own use	10.1	2.7	16.5	16.8	26.6	19.6	4.3	4.8	0.1	0.6	5.5	2.5	5.7	3.0
Turnover	**2,886.9**	**3,025.2**	**7,621.3**	**7,667.1**	**10,508.2**	**10,692.3**	**330.4**	**343.7**	**728.9**	**393.6**	**765.1**	**779.9**	**1,494.0**	**1,173.5**
Plus														
Closing stocks	81.1	85.3	929.7	967.4	1,010.8	1,052.7	48.9	60.5	38.9	26.3	191.8	199.9	230.7	226.2
Less														
Opening stocks	75.0	89.5	897.0	921.0	972.1	1,010.4	58.3	50.5	42.9	28.3	213.2	194.5	256.0	222.8
Less														
Purchases:														
Materials, components, containers etc.(d)(e)	41.2	37.2	769.1	895.8	810.4	932.9	53.0	54.4	3.8	4.4	51.0	50.8	54.8	55.2
Electricity and fuels	20.5	21.6	521.5	511.2	542.0	532.8	27.4	29.6	0.1	0.2	48.4	57.8	48.5	57.9
Goods for resale(d)	—	—	0.5	40.9	0.5	40.9	—	—	—	—	—	—	—	—
Rent, leasing and hiring expenses:														
Motor vehicles	1.3	1.4	6.0	4.6	7.3	5.9	0.1	0.1	—	—	0.1	0.1	0.1	0.1
Plant, machinery and other equipment	18.3	10.9	71.4	49.9	89.7	60.7	0.9	—	0.1	0.1	3.4	2.8	3.4	2.9
Land, buildings and other structures	13.5	15.1	35.1	41.6	48.6	56.7	0.1	0.1	—	0.3	2.1	1.5	2.1	1.7
Outward freight and cartage(f)	3.9	3.0	62.6	71.7	66.5	74.7	14.8	23.7	9.8	7.5	1.6	2.5	11.5	10.0
Motor vehicle expenses	4.1	3.1	25.5	25.9	29.5	29.0	1.5	1.3	0.1	0.2	2.2	2.2	2.3	2.4
Repair and maintenance expenses	51.6	59.2	482.5	482.6	534.1	541.8	53.0	43.3	37.5	24.3	31.4	50.1	68.9	74.5
Payment for contract, sub-contract and commission work(g)	189.4	135.0	1,327.5	1,298.9	1,516.9	1,433.9	23.1	35.7	14.3	13.1	98.3	134.1	112.6	147.1
Purchases and selected expenses	*343.8*	*286.6*	*3,328.4*	*3,451.7*	*3,672.2*	*3,738.3*	*173.8*	*188.3*	*65.7*	*50.0*	*238.5*	*301.8*	*304.2*	*351.8*
Value added	**2,549.1**	**2,734.5**	**4,325.6**	**4,261.8**	**6,874.8**	**6,996.3**	**147.1**	**165.4**	**659.2**	**341.6**	**505.3**	**483.6**	**1,164.4**	**825.2**

[a] See Explanatory Notes, Statistical unit.
[b] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1993–94.
[c] Includes transfers out to other establishments of the same management unit where appropriate.
[d] Includes transfers in from other establishments of the same management unit where appropriate.
[e] Includes minerals for further processing.
[f] Includes imputed charges for freight out by other establishments of the same management unit.
[g] Includes imputed commission charged for work done by other establishments of the same management unit. Includes payments to mining contractors.

ESTABLISHMENT LEVEL[a] — FIXED CAPITAL EXPENDITURE[b] BY TYPE OF ASSET, STATE AND INDUSTRY SUBDIVISION ($ million)

	New South Wales						Victoria						
	Coal Mining		Metal ore mining		Total coal mining and metal ore mining		Coal mining (c)	Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining(c)	
Items	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Capital expenditure on:													
Fixed tangible assets													
Land	2.1	3.3	0.3	2.5	2.4	5.8	—	0.3	0.2	0.3	0.9	0.6	1.0
Dwellings	1.1	2.0	—	3.5	1.1	5.5	0.1	—	—	0.8	—	0.8	0.1
Buildings and other structures	92.5	171.8	36.8	48.2	129.3	220.0	7.3	163.6	282.3	3.4	3.6	167.0	293.2
Plant, machinery and equipment	290.5	388.6	26.1	62.9	316.6	451.5	11.7	77.8	159.2	7.3	7.1	85.1	177.9
Total	*386.1*	*565.6*	*63.2*	*117.1*	*449.4*	*682.7*	*19.0*	*241.7*	*441.7*	*11.9*	*11.6*	*253.6*	*472.2*
Intangible assets	4.8	15.1	1.5	1.7	6.3	16.8	19.0	—	—	0.1	0.2	0.1	0.2
Disposals of fixed tangible assets	48.4	49.3	4.7	5.4	53.1	54.7	2.1	7.5	2.6	2.0	4.3	9.5	9.0
Disposals of intangible assets	—	1.6	—	—	—	1.6	—	—	—	0.6	—	0.6	—
Fixed capital expenditure less disposals:													
Land, buildings and other structures	87.7	161.4	35.0	50.5	122.7	211.9	7.3	163.9	282.5	4.3	4.4	168.2	294.2
Plant machinery and equipment	250.0	354.9	23.5	61.1	273.5	416.0	9.5	70.3	156.6	5.5	2.9	75.8	169.0
Total net capital expenditure	*337.7*	*516.3*	*58.5*	*111.7*	*396.2*	*628.0*	*16.8*	*234.2*	*439.1*	*9.8*	*7.3*	*244.1*	*463.2*

	Queensland								South Australia	
	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Capital expenditure on:										
Fixed tangible assets										
Land	9.3	7.1	—	—	0.9	1.2	10.3	8.3	—	—
Dwellings	21.2	13.7	—	—	7.1	2.8	28.3	16.5	—	—
Buildings and other structures	112.6	98.5	29.8	92.0	71.6	69.1	214.0	259.6	80.7	44.0
Plant, machinery and equipment	560.0	257.7	59.1	30.7	85.4	90.2	704.4	378.6	151.0	46.9
Total	*703.1*	*377.1*	*88.9*	*122.7*	*165.0*	*163.3*	*957.0*	*663.1*	*231.8*	*90.9*
Intangible assets	4.5	2.6	18.1	30.1	—	8.4	22.6	41.1	18.0	19.0
Disposals of fixed tangible assets	41.6	53.3	0.1	40.7	6.5	8.2	48.2	102.2	91.1	4.2
Disposals of intangible assets	—	—	—	8.0	—	—	—	8.0	0.8	—
Fixed capital expenditure less disposals:										
Land, buildings and other structures	137.3	110.8	29.8	90.8	78.7	70.1	245.8	271.7	79.8	43.5
Plant machinery and equipment	524.2	213.0	59.0	—	79.7	85.0	663.0	289.1	60.9	43.2
Total net capital expenditure	*661.5*	*323.8*	*88.8*	*82.0*	*158.5*	*155.1*	*908.8*	*560.9*	*140.7*	*86.7*

For footnotes see end of table.

ESTABLISHMENT LEVEL[a] — FIXED CAPITAL EXPENDITURE[b] BY TYPE OF ASSET, STATE AND INDUSTRY SUBDIVISION ($ million) — *continued*

	Western Australia						*Tasmania*		*Northern Territory*					
	Coal mining and oil and gas extraction		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*		*Total coal mining and metal ore mining*		*Oil and gas extraction*		*Metal ore mining*		*Total oil and gas extraction and metal ore mining*	
Items	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Capital expenditure on:														
Fixed tangible assets														
Land	0.2	—	16.3	13.9	16.5	14.0	0.2	—	—	—	3.7	1.7	3.7	1.7
Dwellings	0.6	0.6	17.9	26.8	18.5	27.4	—	—	—	—	0.2	—	0.2	—
Buildings and other structures	196.0	317.1	475.4	536.4	671.4	853.5	22.5	25.4	12.6	5.2	45.6	45.4	58.2	50.6
Plant, machinery and equipment	1,015.3	515.4	603.5	874.4	1,618.9	1,389.8	10.4	12.4	13.7	2.4	16.3	29.4	30.0	31.8
Total	*1,212.1*	*833.1*	*1,113.2*	*1,451.6*	*2,325.3*	*2,284.7*	*33.2*	*37.8*	*26.3*	*7.6*	*65.8*	*76.5*	*92.0*	*84.1*
Intangible assets	46.5	29.3	12.6	11.7	59.1	41.0	0.9	—	1.5	2.6	3.5	0.8	5.0	3.4
Disposals of fixed tangible assets	20.2	38.3	99.0	81.8	119.2	120.0	4.1	2.9	0.2	—	13.1	2.8	13.3	2.8
Disposals of intangible assets	—	—	0.4	2.7	0.4	2.7	—	—	—	—	0.4	—	0.4	—
Fixed capital expenditure less disposals:														
Land, buildings and other structures	196.6	317.3	493.6	543.3	690.2	860.5	21.9	24.5	12.6	5.2	48.3	46.7	60.8	51.9
Plant machinery and equipment	995.3	477.6	520.6	826.5	1,515.9	1,304.1	7.1	10.4	13.5	2.4	4.4	27.0	17.9	29.4
Total net capital expenditure	*1,191.9*	*794.8*	*1,014.2*	*1,369.8*	*2,206.1*	*2,164.6*	*29.0*	*34.8*	*26.0*	*7.6*	*52.7*	*73.7*	*78.7*	*81.3*

[a] See Explanatory Notes, Statistical unit.
[b] Excludes Capital Work Done for Own Use — reported in table on pages 61–62. Also excluded is Mine development which is a component of Capital Work Done for Own Use.
[c] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1993–94.

ESTABLISHMENT LEVEL[a] — MINERAL ROYALTIES PAID BY INDUSTRY CLASS, AUSTRALIA ($ million)

	Coal mining(b)		*Oil and gas extraction*		*Iron ore mining*		*Bauxite mining*		*Copper ore mining*		*Gold ore mining*	
	1992-93	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
To: Governments	239.9	268.2	1,721.6	1,466.2	180.7	172.2	67.1	56.7	31.6	32.8	19.0	20.2
Others(c)	14.4	15.4	113.5	91.6	6.8	9.1	2.3	2.3	1.5	—	6.0	7.0
Total	*254.3*	*283.6*	*1,835.2*	*1,557.9*	*187.4*	*181.3*	*69.4*	*59.0*	33.2	32.8	*25.0*	*27.1*

	Mineral sand mining		*Silver-lead-zinc ore mining*		*Other metal ore mining*		*Total metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining(b)*	
	1992-93	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
To: Governments	12.8	13.5	34.5	23.9	19.5	16.4	365.2	335.6	2,326.8	2,070.0
Others(c)	0.2	2.0	—	—	3.0	1.8	19.7	22.1	147.6	129.1
Total	*12.9*	*15.4*	*34.5*	*23.9*	*22.4*	*18.2*	*384.9*	*357.6*	*2,474.3*	*2,199.1*

(a) See Explanatory Notes, Statistical unit.
(b) Data for Victorian Coal, which was not collected in 1992–93, has been included in 1993–94.
(c) Includes 'Mineral royalties paid to others' and 'Other royalties'.

ESTABLISHMENT LEVEL[a] — MINERAL ROYALTIES PAID BY STATE, INDUSTRY SUBDIVISION ($ million)

	New South Wales						Victoria						
	Coal Mining		Metal ore mining		Total coal mining and metal ore mining		Coal mining (b)	Oil and gas extraction		Metal ore mining		and gas extraction and metal ore mining(b)	
	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
To: Governments	106.6	122.8	5.6	6.3	112.2	129.1	7.5	1,356.8	1,161.1	0.2	—	1,357.0	1,168.7
Others(c)	1.7	4.2	0.1	0.1	1.8	4.3	0.5	76.0	71.0	0.3	0.3	76.3	71.7
Total	*108.3*	*127.0*	*5.7*	*6.3*	*113.9*	*133.4*	*8.0*	*1,432.8*	*1,232.1*	*0.5*	0.3	*1,433.3*	*1,240.4*

	Queensland								South Australia	
	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
To: Governments	118.9	123.9	22.3	19.2	73.8	51.7	214.9	194.8	72.8	89.3
Others(c)	11.9	10.6	4.3	3.8	1.3	1.7	17.5	16.2	12.1	9.6
Total	*130.7*	*134.6*	*26.6*	*23.0*	*75.1*	*53.4*	*232.4*	*211.0*	*84.8*	*99.0*

	Western Australia						Tasmania		Northern Territory					
	Coal mining and oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining		Total coal mining and metal ore mining		Oil and gas extraction		Metal ore mining		Total oil and gas extraction and metal ore mining	
	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
To: Governments	237.0	198.9	251.6	242.9	488.6	441.8	4.2	4.2	56.4	21.3	20.7	20.8	77.1	42.1
Others(c)	1.5	5.6	9.7	13.9	11.2	19.5	0.7	0.6	21.6	1.7	6.6	5.6	28.1	7.3
Total	*238.5*	*204.5*	*261.3*	*256.8*	*499.7*	*461.3*	*5.0*	*4.8*	*77.9*	*23.0*	*27.3*	*26.4*	*105.2*	*49.4*

[a] See Explanatory Notes, Statistical unit.
[b] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1993–94.
[c] Includes 'Mineral royalties paid to others' and 'Other royalties'.

INDUSTRY PERFORMANCE MEASURES

A range of performance measures, usually expressed as 'ratios', are produced from the data available from profit and loss accounts and balance sheets of businesses. A selection of these are presented in the tables at the end of this chapter. Information on the uses and limitations of these measures can be found in the Explanatory Notes, Industry performance measures.

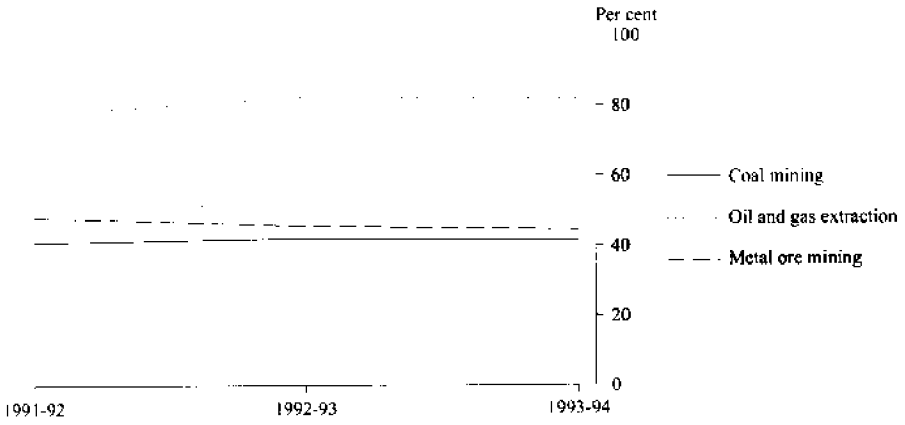
PERFORMANCE RATIOS

Performance ratios presented at the management unit level are based on data items relating to businesses (i.e. balance sheet items). Principal features for 1993–94 that appear in detail in the first table at the end of this chapter are:

- the profitability ratio of trading profit margin decreased from 55% to 53%.
- the profitability ratio of return on assets remained steady at 10%. Return on assets in the oil and gas extraction industry decreased by 2 percentage points to 12%. The ratio increased from 4% to 6% for the coal mining industry.
- the debt ratio of interest coverage decreased slightly, from 5.9% to 5.8.% Within the oil and gas extraction industry, the debt ratio of interest coverage decreased from 8.7% to 7.5%, while in the coal mining industry the ratio rose from 2.6% to 3.4%.
- the debt ratio of debts to assets fell from 55% to 51%. All mining industry sectors covered by the Census reported decreases in this ratio, the largest fall being in the oil and gas extraction industry where the ratio fell from 58% to 51%.
- the capital expenditure ratio of acquisitions to disposals remained steady at 11.3%. Decreases in this ratio for the coal mining industry (down from 13.4% to 4.5%) were offset by an increase in the metal ore mining industry (up from 5.8% to 13.4%).
- the liquidity ratio increased from 0.7% in 1992–93 to 0.9%.

Analysis of a number of these ratios between 1991–92 and 1993–94 for each of the major mining industry subdivisions show different patterns of performance. Trading profit margin for the oil and gas extraction industry is higher than for either coal mining or metal ore mining during this period. This reflects the lower level of purchases incurred by the industry.

TRADING PROFIT MARGIN, 1991–92 TO 1993–94

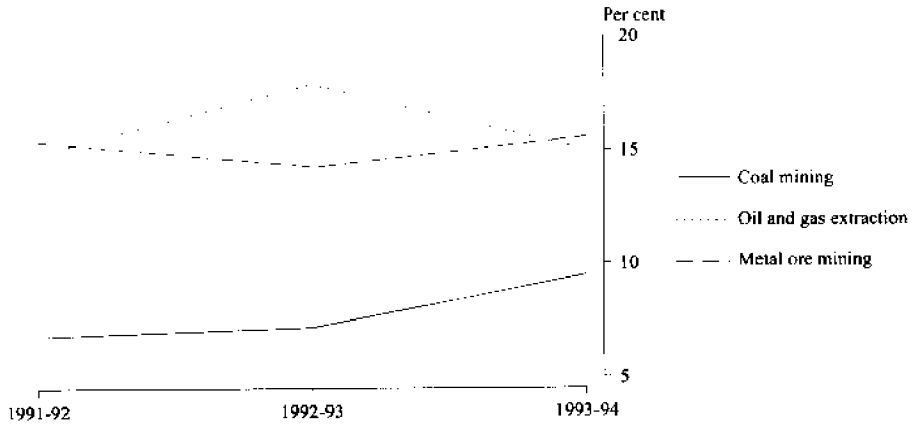


Return on funds displays a different pattern. The return on funds is much lower in the coal mining than for the other mining industries. Although the return for oil and gas extraction was greatest in 1991–92 and 1992–93 the return for the metal ore mining industry was higher in 1993–94. This is largely due to the fall in generated revenue for oil and gas extraction during 1993–94 resulting from the maintenance program conducted in the Challis and Jabiru fields.

OPERATING RATIOS

There are a number of operating ratios that can be calculated from data collected at the establishment level. Principal features of the 1993–94 operating ratios for establishment data, presented in the tables on pages 76–78 were:

RETURN ON FUNDS, 1991–92 TO 1993–94



- turnover per person employed increased from $497,900 to $513,800 (up 3%);
- value added per person employed increased from $332,300 to $335,000 (up 1%); and
- wages and salaries per person employed increased from $60,100 to $64,000.

At an industry class level the main features of the operating ratios in 1993–94 were:

- oil and gas extraction had the highest turnover per person employed ($1,745,800) while the mineral sand mining industry had the lowest ($294,700);
- the oil and gas extraction industry had the highest level of value added per person employed ($1,600,500) while the silver-lead-zinc ore mining industry recorded the lowest level ($115,600); and
- wages and salaries paid per person employed was $73,000 in both the coal mining and oil and gas extraction industries, compared with $42,900 in the mineral sand mining industry.

At the State level the main features of the operating ratios were:

- Victoria recorded the highest level of turnover per person employed ($1,848,200) while Tasmania recorded the lowest level with $245,800 per person employed;
- value added per person employed was greatest in Victoria ($1,697,800) and lowest in Tasmania ($118,300 per person employed); and
- wages and salaries paid per person employed ranged from $87,100 in Western Australia down to $50,600 per person employed in South Australia.

MANAGEMENT UNIT LEVEL[a] — SELECTED PERFORMANCE RATIOS BY INDUSTRY SUBDIVISION, AUSTRALIA

		Coal mining		*Oil and gas extraction*		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Turnover ratios:									
Asset turnover	per cent	0.6	0.7	0.4	0.3	0.5	0.5	0.5	0.5
Profitability ratios:									
Trading profit margin	per cent	42.2	41.6	82.7	81.9	45.6	44.7	54.9	53.3
Return on funds	per cent	7.4	9.5	17.9	15.0	14.3	15.6	13.9	14.0
Return on assets	per cent	3.7	5.5	14.0	11.8	10.1	10.8	9.9	9.9
Liquidity ratios:									
Liquidity ratio	times	0.6	0.7	0.7	0.8	0.8	1.1	0.7	0.9
Current ratio	times	0.9	0.9	0.8	0.9	1.2	1.4	1.0	1.1
Debt ratios:									
Interest coverage	times	2.6	3.4	8.7	7.5	6.1	5.9	5.9	5.8
Debt to assets	per cent	56.3	55.2	58.4	51.1	50.8	47.7	55.1	50.8
Capital expenditure ratios:									
Acquisitions to disposals	times	11.8	4.5	68.4	69.2	5.8	13.4	11.0	11.3
Net capital expenditure to assets	per cent	6.7	5.9	6.9	6.6	7.5	9.0	7.8	7.3

[a] See Explanatory Notes, Statistical unit.

ESTABLISHMENT LEVEL[a] — SELECTED OPERATING RATIOS BY INDUSTRY CLASS, AUSTRALIA

Items	Unit	Coal mining(b)		Oil and gas extraction		Iron ore mining		Bauxite mining		Copper ore mining		Gold ore mining	
		1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Value per person employed(c):													
Wages and salaries(d)	$'000	66.5	73.0	67.9	73.0	62.8	63.1	45.2	49.0	52.7	57.7	45.7	45.3
Turnover	$'000	344.3	375.5	1,751.9	1,745.8	465.7	506.4	406.0	454.7	355.6	361.5	522.1	529.5
Value added	$'000	191.2	208.4	1,603.5	1,600.5	320.5	343.6	277.6	299.4	258.6	223.0	259.1	263.5
Net capital expenditure(e)	$'000	38.1	32.7	335.8	310.7	58.3	77.7	33.9	32.2	35.0	44.7	62.3	80.8
Ratio of:													
Value added to turnover	times	0.6	0.6	0.9	0.9	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.5
Wages and salaries to value added	times	0.4	0.4	—	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2

Items	Unit	Mineral sand mining		Silver-lead-zinc ore mining		Other metal ore mining		Total metal ore mining		Total coal mining, oil and gas extraction and metal ore mining(b)	
		1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Value per person employed(c):											
Wages and salaries(d)	$'000	38.3	42.9	55.7	58.0	53.5	53.9	52.3	53.3	60.1	64.0
Turnover	$'000	269.9	294.7	272.8	314.3	409.2	318.9	423.5	442.4	497.9	513.8
Value added	$'000	108.3	138.8	102.2	115.6	219.4	143.7	242.3	245.8	332.3	335.0
Net capital expenditure(e)	$'000	12.5	19.7	26.5	22.9	103.4	168.3	51.5	69.3	69.0	71.2
Ratio of:											
Value added to turnover	times	0.4	0.5	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7
Wages and salaries to value added	times	0.4	0.3	0.6	0.5	0.2	0.4	0.2	0.2	0.2	0.2

[a] See Explanatory Notes, Statistical unit.
[b] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1994–94.
[c] Includes working proprietors.
[d] Excludes amounts drawn by working proprietors.
[e] Fixed capital expenditure less disposals.

ESTABLISHMENT LEVEL[a] — SELECTED OPERATING RATIOS BY STATE, INDUSTRY SUBDIVISION

		New South Wales						Victoria						
		Coal Mining		Metal ore mining		Total coal mining and metal ore mining		Coal mining (b)	Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining(b)	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Value per person employed(c):														
Wages and salaries(d)	$'000	68.4	73.3	54.1	55.5	66.7	71.0	68.6	62.7	66.1	48.9	36.9	57.9	62.9
Turnover	$'000	281.3	325.0	231.9	234.5	275.3	313.4	340.7	6,489.4	6,385.4	228.2	301.2	4,315.4	1,848.2
Value added	$'000	154.1	182.0	51.5	95.9	141.5	171.0	244.6	6,190.2	6,090.5	119.6	176.8	4,082.3	1,697.8
Net capital expenditure(e)	$'000	22.9	38.2	28.2	56.3	23.5	40.5	13.0	383.3	797.0	30.3	20.4	260.7	210.6
Ratio of:														
Value added to turnover	times	0.6	0.6	0.2	0.4	0.5	0.6	0.7	1.0	1.0	0.5	0.6	1.0	0.9
Wages and salaries to value added(d)	times	0.4	0.4	1.1	0.6	0.5	0.4	0.3	—	—	0.4	0.2	—	—

		Queensland								South Australia	
		Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Value per person employed(c):											
Wages and salaries(d)	$'000	66.5	72.6	59.3	62.8	45.7	51.5	59.6	66.2	46.7	50.6
Turnover	$'000	461.5	462.6	892.7	1,013.3	350.4	413.6	436.5	459.4	489.4	493.1
Value added	$'000	255.4	242.1	591.7	661.5	236.1	238.1	257.4	249.5	397.3	388.9
Net capital expenditure(e)	$'000	65.0	32.0	235.0	270.5	31.9	35.6	58.6	37.9	62.9	40.2
Ratio of:											
Value added to turnover	times	0.6	0.5	0.7	0.7	0.7	0.6	0.6	0.5	0.8	0.8
Wages and salaries to value added(d)	times	0.3	0.3	0.1	0.1	0.2	0.2	0.2	0.3	0.1	0.1

[a] See Explanatory Notes, Statistical unit.

ESTABLISHMENT LEVEL[a] — SELECTED OPERATING RATIOS BY STATE, INDUSTRY SUBDIVISION — *continued*

		Western Australia						*Tasmania*		*Northern Territory*					
		Coal mining and oil and gas extraction		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*		*Total coal mining and metal ore mining*		*Oil and gas extraction*		*Metal ore mining*		*Total oil and gas extraction and metal ore mining*	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Value per person employed(c):															
Wages and salaries(d)	$'000	70.7	87.1	53.9	53.3	56.9	58.8	58.4	60.6	95.5	123.0	51.1	53.8	56.6	61.4
Turnover	$'000	802.8	973.4	477.7	485.2	537.5	565.4	216.5	245.8	4,262.5	2,460.2	625.6	598.5	1,071.7	802.1
Value added	$'000	708.9	879.8	271.1	269.7	351.7	370.0	96.4	118.3	3,854.8	2,135.0	413.1	371.1	835.3	564.0
Net capital expenditure(e)	$'000	331.4	255.7	63.6	86.7	112.8	114.5	19.0	24.9	152.2	47.6	43.1	56.6	56.5	55.6
Ratio of:															
Value added to turnover	times	0.9	0.9	0.6	0.6	0.7	0.7	0.5	0.5	0.9	0.9	0.7	0.6	0.8	0.7
Wages and salaries to value added(d)	times	0.1	0.1	0.2	0.2	0.2	0.2	0.6	0.5	—	0.1	0.1	0.1	0.1	0.1

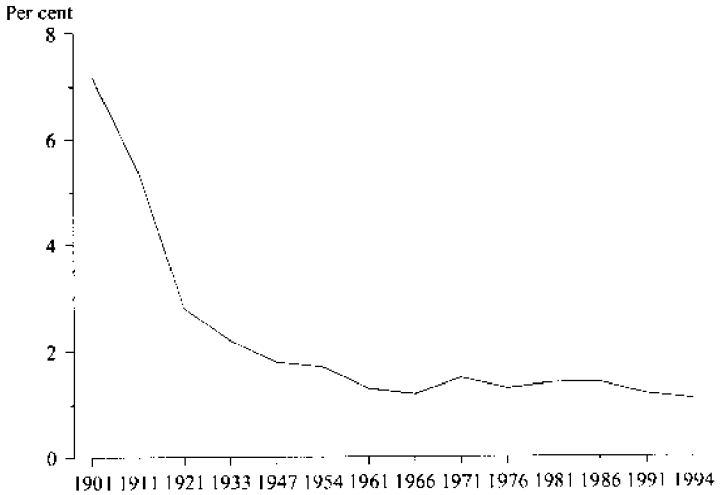
[a] See Explanatory Notes, Statistical unit.
[b] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1994–94.
[c] Includes working proprietors.
[d] Excludes amounts drawn by working proprietors.
[e] Fixed capital expenditure less disposals.

EMPLOYMENT

HISTORICAL EMPLOYMENT

The proportion of employed persons in mining in Australia is estimated to have declined during this century from a high of around 7% in 1901 to just over 1% in 1994. The following graph illustrates the changes in the proportion of employed persons involved in mining in Australia.

PROPORTION OF LABOUR FORCE EMPLOYED IN MINING



Source: Year Book, Australia (1301.0).

The number of persons working in mining decreased from a high of over 100,000 persons at the beginning of the century to less than half that number by the early 1960s. Mining employment slowly edged up until the mid-1980s. In recent years the Mining Census has recorded a tapering in the number employed.

This tapering in recorded employment may be explained by changes occurring within the mining industry. These include increased productivity including changes to working practices at a number of mines and greater use of contractors whose industry of employment is specific to the activities they undertake.

USE OF CONTRACTORS

Contractors are engaged to perform tasks such as the stripping of overburden, the crushing of ore or the setting up of mine site infrastructure and may be primarily classified to industry categories that are out of scope of the Mining Census. The use of such contract arrangements has been noted by industry commentators as occurring in gold, coal and iron ore mining (see Explanatory Notes, Scope).

The table below shows the numbers recorded in the annual Mining Census, the Population Census and the Labour Force Survey. The latter two cover the whole of ANZSIC Division B and includes Services to Mining (which is out of scope of the Mining Census). It should be noted that there are qualifications to these time series and any one year may not be directly comparable with another but the time series are included as indicative of the long-term changes that have taken place in mining.

EMPLOYMENT IN MINING, AUSTRALIA, 1901 TO 1994

	Employment at mining establishments from the Mining Census[1]	*Employment in the mining industry*	
		Population Census	*Labour Force Survey*
1901	113 462	118 289	
1911	94 762	105 804	
1921	53 164	66 766	
1933	58 092	68 520	
1947	48 992	57 574	
1954	56 613	62 107	
1961	46 125	54 401	
1966	47 777	56 343	
1971	62 642	76 023	
1976	67 609	72 687	
1981	77 788	88 993	
1986	78 969	91 741	103 745
1991	[2]65 778	86 360	88 428
1992	[2]61 348	n.a.	88 504
1993	66 462	n.a.	89 631
1994	[2]56 440	n.a.	88 174

[1] Excludes ANZSIC Subdivision 15 Services to mining.
[2] Excludes ANZSIC Subdivision 14 Other mining which employed 8 799 persons in 1990 and 8 415 persons in 1993.

Source: *Year Book, Australia* (1301.0).

ESTABLISHMENT EMPLOYMENT

Data collected in the 1993–94 annual census of mining operations is presented in the tables on pages 85–88 and is summarised below. At the establishment level, employment decreased 3% to 56,440 persons at the end of June 1994. Most industries reported employment decreases in end of June employment.

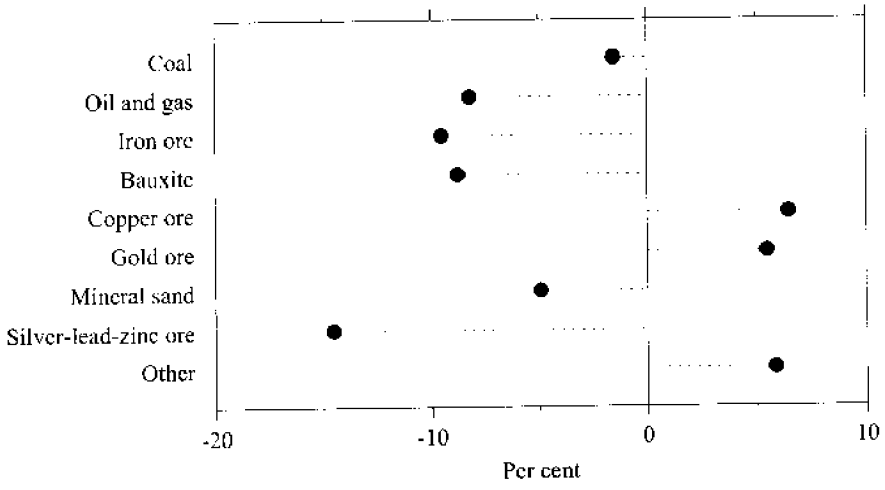
ESTABLISHMENT LEVEL[1] — EMPLOYMENT BY INDUSTRY CLASS, AUSTRALIA, AT END OF JUNE 1994

		Establishments	*Employment*			*Wages and salaries*
			Males	*Females*	*Total*	
		no.	no.	no.	no.	$m
Coal mining						
110	Coal mining[2]	153	25 678	678	26 356	1 924
Oil and gas extraction						
1200	Oil and gas extraction	101	3 696	748	4 444	325
Metal ore mining						
1311	Iron ore mining	18	5 624	712	6 336	400
1312	Bauxite mining	9	1 719	30	1 749	86
1313	Copper ore mining	15	2 515	159	2 674	154
1314	Gold ore mining	168	6 928	1 075	8 003	363
1315	Mineral sand mining	16	1 503	267	1 770	76
1317	Silver-lead-zinc ore mining	17	2 800	175	2 975	173
	Other[3]	18	1 860	273	2 133	115
131	Total metal ore mining	261	22 949	2 691	25 640	1 366
Total 1993–94[2]		**515**	**52 323**	**4 117**	**56 440**	**3 615**
Total 1992–93		**494**	**53 840**	**4 147**	**57 987**	**3 487**

[1] See Explanatory Notes, Statistical unit.
[2] Brown coal mining operations of the former State Electricity Commission of Victoria are now included in the mining sector.
[3] Includes ANZSIC classes 1316 and 1319.

Employment in the oil and gas extraction industry declined by 397 persons (8%) and in the coal mining industry by 415 persons (2%), the latter mainly due to the closure of an underground mine in New South Wales. The real decrease in the numbers employed in coal mining is greater than 415 because the 26,356 persons reported in coal mining for 1993–94 included 1,293 previously included in the electricity industry in Victoria.

PERCENTAGE CHANGE IN EMPLOYMENT BY INDUSTRY BETWEEN JUNE 1993 AND JUNE 1994



A number of new projects led to an increase in employment in the gold ore mining industry where employment rose by 415 persons (5%) to 8,003 persons.

The coal mining industry remained the largest contributor to national mining employment, accounting for 26,356 persons (47%). Gold ore mining was next with 14% of the total employed.

The number of production and other employees declined by 1,484 persons (3%). Most of this decrease occurred in the iron ore mining and silver-lead-zinc ore mining industries. The number of administrative, office and sales employees fell by 127 persons (1%) to 9,464 persons.

STATE EMPLOYMENT

Victoria and the Northern Territory showed increases in employment. Reported employment in Victoria increased by 1,264 persons to 2,200 persons with most of this attributable to the separate identification of the brown coal industry. If that effect is excluded, there was little change.

ESTABLISHMENT LEVEL[1] — EMPLOYMENT BY STATE, JUNE 1994

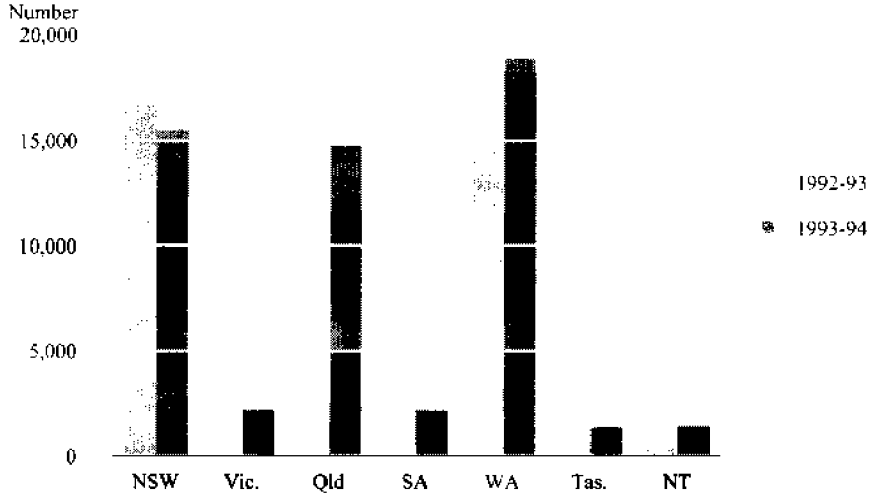
	Establishments	Employment			Wages and salaries
		Males	Females	Total	
	no.	no.	no.	no.	$m
New South Wales	105	15 217	297	15 514	1 101
Victoria[1]	28	2 086	114	2 200	138
Queensland	126	14 079	715	14 794	979
South Australia	16	1 908	252	2 160	109
Western Australia	201	16 428	2 483	18 911	1 112
Tasmania	9	1 298	100	1 398	85
Northern Territory	30	1 307	156	1 463	90
Australia[2]	**515**	**52 323**	**4 117**	**56 440**	**3 615**

[1] See Explanatory Notes, Statistical unit.
[2] Brown coal mining operations of the former State Electricity Commission of Victoria are now included in the mining sector.

Employment in New South Wales fell by 1,319 persons (8%) to 15,514 persons. Most of these were employees within the coal mining industry. Queensland and Western Australian mining employment also decreased by 717 persons (5%) and 639 persons (3%), respectively.

Businesses in Western Australia employed the majority of persons within the mining industry (18,911 persons, or 34% of the total). New South Wales with 15,514 persons (27%) and Queensland with 14,794 persons (26%) were the next largest States of employment.

EMPLOYMENT BY STATE



MANAGEMENT UNIT EMPLOYMENT

Employment information is also collected at the management unit level (which may cover activities other than the operation of mine sites). The total employment recorded at this level will often be greater than that recorded at the establishment unit level. Details reported in the 1993–94 annual census appear in the table on page 85.

Total employment at the management unit level at the end of June 1994 decreased by 2,174 persons (3%) to 61,107 persons. All industry subdivisions recorded decreases in employment with the metal ore mining industry reporting the largest decrease, a fall of 1,294 persons

(4%) to 28,747 persons. Employment in the coal mining industry fell by 580 persons (2%).

MANAGEMENT UNIT LEVEL[1] — EMPLOYMENT BY INDUSTRY SUBDIVISION, AUSTRALIA, JUNE 1994

ANZSIC subdivision	Management units	Employment	Wages and salaries
	no.	no.	$m
11 Coal mining	91	26 706	1 869
12 Oil and gas extraction	40	5 654	396
13 Metal ore mining	175	28 747	1 514
Total 1993–94	**306**	**61 107**	**3 779**
Total 1992–93	**279**	**63 197**	**3 715**

[1] See Explanatory Notes, Statistical unit.

The metal ore mining industry was the major contributor to national employment in mining with 28,747 persons (47%). The coal mining industry was next with 26,706 persons (44%) in 1993–94.

The following information is drawn from a range of ABS labour surveys covering businesses included in ANZSIC Division B Mining which is a broader scope than the Mining Census, with the inclusion of Services to mining. While details are not strictly comparable with the Mining Census information, they enable a broad comparison of the mining industry to be made against all industries.

EMPLOYMENT CHARACTERISTICS OF WORKERS, MAY 1994

	Unit	*Mining industry*	*All industries*
Sex of employed persons			
Proportion of male workers	%	88.1	57.3
Proportion of female workers	%	11.9	42.7
Occupation of employed persons			
Plant and machine operators	%	30.8	7.1
Tradespersons	%	15.9	14.4
Professionals	%	12.5	13.5
Labour and related workers	%	18.9	15.0
Clerks	%	11.7	16.8
Managers and administrators	%	4.3	11.2
Other	%	5.8	22.0
Superannuation, 1993–94			
Proportion covered by superannuation	%	96.6	91.5
Average annual employer contribution	$	3 596	1 829
Overtime			
Average weekly overtime hours worked per employee	hrs	4.51	1.31
Percentage of employees working overtime	%	42.2	17.8
Average weekly overtime hours per employee working overtime	hrs	10.7	7.3
Composition of average weekly earnings			
Base pay	$	778	563
Payment by measured result	$	131	8
Over-award pay	$	14	7
Overtime	$	139	45
Other			
Employer expenditure on training (July–Sept. 1993)	$	687	192
Average weekly hours worked	hrs	45.8	36
Unemployment rate	%	6.0	9.7

Sources: Labour Costs, Australia, 1993–94 (6348.0); *Job Vacancies and Overtime, Australia, May 1994* (6354.0); *Labour Force, Australia, May 1994* (6353.0); *Distribution and Composition of Employee Earnings and Hours, Australia* (6306.0); *Employer Training Expenditure, Australia* (6353.0).

MANAGEMENT UNIT LEVEL[a] – EMPLOYMENT (AT END OF JUNE) BY INDUSTRY SUBDIVISION, AUSTRALIA

Items	Unit	Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
		1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Number of management units(a) at 30 June	No.	83	91	43	40	153	175	279	306
Employment at end of June	No.	27,286	26,706	5,870	5,654	30,041	28,747	63,197	61,107
Persons employed per management unit	No.	328.8	293.5	136.5	141.4	196.4	164.3	226.5	199.7
Labour ratios:									
Profit to employment	$'000/employee	19.1	27.4	467.7	460.8	63.8	76.1	82.0	90.4
Industry gross product									
To employment	$'000/employee	139.1	150.7	1,094.8	1,077.0	175.6	192.5	245.2	256.1
To selected labour costs	times	2.0	2.0	15.4	14.5	3.2	3.4	3.9	3.9
Selected labour costs									
To employment	$'000/employee	70.9	75.8	71.1	74.5	55.0	56.4	63.3	66.6

[a] See Explanatory Notes, Statistical unit.

ESTABLISHMENT LEVEL[a] — EMPLOYMENT (AT END OF JUNE) BY INDUSTRY CLASS, AUSTRALIA

Items	Unit	Coal mining(b)		Oil and gas extraction		Iron ore mining		Bauxite mining		Copper ore mining		Gold ore mining	
		1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Number of establishments at 30 June(c)	No.	147	153	103	101	18	18	11	9	13	15	152	168
Employment at end of June(d)													
Males	No.	26,080	25,678	4,000	3,696	6,235	5,624	1,731	1,719	2,416	2,515	6,664	6,928
Females	No.	691	678	841	748	766	712	186	30	96	159	924	1,075
Total	*No.*	*26,771*	*26,356*	*4,841*	*4,444*	*7,001*	*6,336*	*1,917*	*1,749*	*2,512*	*2,674*	*7,588*	*8,003*
Persons employed per establishment(c)(d)	No.	182.1	172.3	47.0	44.0	388.9	352.0	174.3	194.3	193.2	178.3	49.9	47.6
Employment type													
Administrative, office and sales employees(d)	No.	3,247	3,126	2,094	1,832	2,008	1,963	111	55	157	189	974	1,217
Production and all other employees	No.	23,512	23,212	2,739	2,538	4,983	4,369	1,806	1,694	2,355	2,485	6,607	6,772
Employees working below ground	No.	9,002	7,441	—	—	—	—	—	—	1,315	1,257	1,031	1,227
Wages and salaries(e)	$m	1,779.1	1,924.1	328.9	324.6	439.8	399.8	86.7	85.8	132.5	154.4	347.1	362.8

Items	Unit	Mineral sand mining		Silver-lead-zinc ore mining		Other metal ore mining		Total metal ore mining		Total coal mining, oil and gas extraction and metal ore mining(b)	
		1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
Number of establishments at 30 June(c)	No.	19	16	17	17	14	18	244	261	494	515
Employment at end of June(d)											
Males	No.	1,629	1,503	3,317	2,800	1,768	1,860	23,760	22,949	53,840	52,323
Females	No.	233	267	163	175	247	273	2,615	2,691	4,147	4,117
Total	*No.*	*1,862*	*1,770*	*3,480*	*2,975*	*2,015*	*2,133*	*26,375*	*25,640*	*57,987*	*56,440*
Persons employed per establishment(c)(d)	No.	98.0	110.6	204.7	175.0	143.9	118.5	108.1	98.2	117.4	109.6
Employment type											
Administrative, office and sales employees(d)	No.	365	298	233	282	402	502	4,250	4,506	9,591	9,464
Production and all other employees	No.	1,497	1,472	3,241	2,693	1,610	1,631	22,099	21,116	48,350	46,866
Employees working below ground	No.	—	—	1,880	1,717	562	478	4,788	4,679	13,790	12,120
Wages and salaries(e)	$m	71.3	75.9	193.8	172.5	107.7	114.9	1,378.9	1,366.1	3,486.9	3,614.8

[a] See Explanatory Notes, Statistical unit. [b] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1993–94. [c] See Glossary of Terms. [d] Includes working proprietors.
[e] Excludes amounts drawn by working proprietors.

ESTABLISHMENT LEVEL[a] — EMPLOYMENT (AT END OF JUNE) BY STATE, INDUSTRY SUBDIVISION

		New South Wales						Victoria						
		Coal Mining		Metal ore mining		Total coal mining and metal ore mining		Coal mining (b)	Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining(b)	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Number of establishments at 30 June(c)	No.	89	86	14	19	103	105	5	2	3	13	20.0	15	28
Employment at end of June(c)														
Males	No.	14,570	13,341	1,974	1,876	16,544	15,217	1,248	560	511	298	327.0	858	2,086
Females	No.	190	188	99	109	289	297	45	51	40	27	29.0	78	114
Total	*No.*	*14,760*	*13,529*	*2,073*	*1,985*	*16,833*	*15,514*	*1,293*	*611*	*551*	*325*	356.0	*936*	*2,200*
Persons employed per establishment(c)(d)	No.	165.8	157.3	148.1	104.5	163.4	147.8	258.6	305.5	183.7	25.0	17.8	62.4	78.6
Employment type														
Administrative, office and sales(d)	No.	1,736	1,572	182	214	1,918	1,786	127	197	186	43	44.0	240	357
Production and all other	No.	13,023	11,949	1,891	1,768	14,914	13,717	1,166	414	365	282	312.0	696	1,843
Employees working below ground	No.	7,625	6,284	910	875	8,535	7,159	—	—	—	97	114.0	97	114
Wages and salaries(e)	$m	1,009.8	991.3	112.2	110.1	1,122.0	1,101.4	88.7	38.3	36.4	15.9	13.1	54.2	138.3

		Queensland								South Australia	
		Coal mining		Oil and gas extraction		Metal ore mining		Total coal mining, oil and gas extraction and metal ore mining		Total coal mining, oil and gas extraction and metal ore mining	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Number of establishments at 30 June(c)	No.	51	57	34	34	40	35	125	126	16	16
Employment at end of June(c)											
Males	No.	9,759	9,757	322	238	4,592	4,084	14,673	14,079	1,972	1,908
Females	No.	413	374	56	65	369	276	838	715	265	252
Total	*No.*	*10,172*	*10,131*	*378*	*303*	*4,961*	*4,360*	*15,511*	*14,794*	*2,237*	*2,160*
Persons employed per establishment(c)(d)	No.	199.5	177.7	11.1	8.9	124.0	124.6	124.1	117.4	139.8	135.0
Employment type											
Administrative, office and sales(d)	No.	1,151	1,178	111	110	421	301	1,683	1,589	364	287
Production and all other	No.	9,010	8,943	259	193	4,534	4,059	13,803	13,195	1,873	1,873
Employees working below ground	No.	1,048	1,105	—	—	1,649	1,517	2,697	2,622	112	164
Wages and salaries(e)	$m	676.1	735.6	22.4	19.0	226.5	224.3	925.0	979.0	104.5	109.4

For footnotes see end of table.

ESTABLISHMENT LEVEL[a] — EMPLOYMENT (AT END OF JUNE) BY STATE, INDUSTRY SUBDIVISION — *continued*

		Western Australia						*Tasmania*		*Northern Territory*					
		Coal mining and oil and gas extraction		*Metal ore mining*		*Total coal mining, oil and gas extraction and metal ore mining*		*Total coal mining and metal ore mining*		*Oil and gas extraction*		*Metal ore mining*		*Total oil and gas extraction and metal ore mining*	
Items	*Unit*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*	*1992-93*	*1993-94*
Number of establishments at 30 June(c)	No.	40	40	151	161	191	201	9	9	20	16	15	14	35	30
Employment at end of June(c)															
Males	No.	3,031	2,644	14,097	13,784	17,128	16,428	1,419	1,298	168	145	1,078	1,162	1,246	1,307
Females	No.	565	464	1,857	2,019	2,422	2,483	107	100	3	15	145	141	148	156
Total	*No.*	*3,596*	*3,108*	*15,954*	*15,803*	*19,550*	*18,911*	*1,526*	*1,398*	*171*	*160*	*1,223*	*1,303*	*1,394*	*1,463*
Persons employed per establishment(c)(d)	No.	89.9	77.7	105.7	98.2	102.4	94.1	169.6	155.3	8.6	10.0	81.5	93.1	39.8	48.8
Employment type															
Administrative, office and sales(d)	No.	1,787	1,506	3,115	3,356	4,902	4,862	177	239	5	20	302	324	307	344
Production and all other	No.	1,809	1,528	12,819	12,432	14,628	13,960	1,349	1,159	166	140	921	979	1,087	1,119
Employees working below ground	No.	221	—	1,408	1,419	1,629	1,419	602	560	—	—	118	82	118	82
Wages and salaries(e)	$m	254.2	270.7	859.1	841.5	1,113.2	1,112.2	89.1	84.7	16.3	19.7	62.5	70.1	78.9	89.8

[a] See Explanatory Notes, Statistical unit.
[b] Data for Victorian Coal, which was not collected in 1992–93, has been included in 1993–94.
[c] Includes transfers out to other establishments of the same management unit where appropriate.
[d] Includes transfer in from other establishments of the same management unit where appropriate.
[e] Includes minerals for further processing.

INDUSTRIAL RELATIONS

TRADE UNION MEMBERSHIP

In August 1994, 45% of employees in the mining industry in Australia were members of a trade union, compared with 35% for all industries. While some other industries have higher rates of unionisation, this is a relatively high level for what is a mainly private sector industry. Across all industries 26% of all private sector employees are trade union members. The mining industry also has a comparatively high level of unionisation among part-time workers of 35% compared with 23% for all industries.

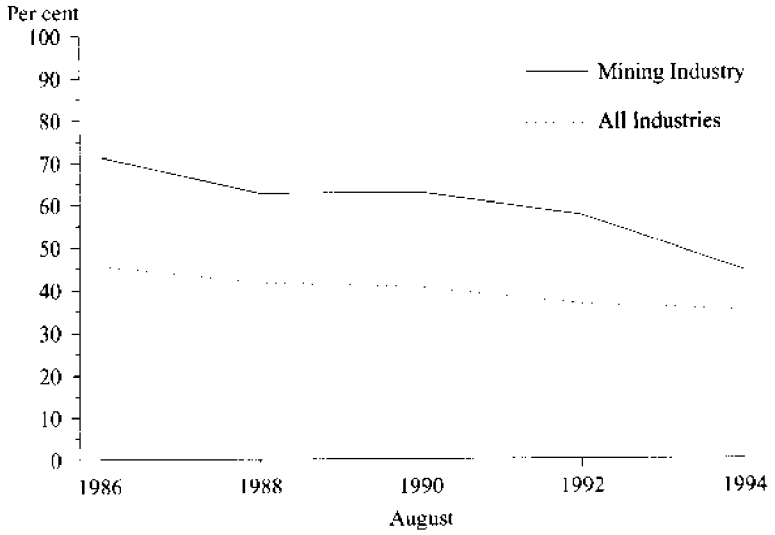
INDUSTRIAL DISPUTES, TRADE UNION MEMBERS, AUSTRALIA, AUGUST 1994

	Proportion of all employees who were trade union members		
	Full-time employees in main job	*Part-time employees in main job*	*Total*
Selected industries	%	%	%
Mining	45.0	34.8	44.5
Manufacturing	43.8	13.9	40.8
Electricity, gas and water	67.2	42.2	66.4
Construction	37.4	5.7	34.1
Retail trade	19.1	27.9	23.3
Accommodation, cafes and restaurants	20.3	18.4	19.3
Property and business services	15.1	12.7	14.6
Cultural and recreational services	27.3	18.9	23.8
All industries	**39.1**	**22.9**	**35.0**

Source: Trade Union Members, Australia (6325.0).

Along with all industries, the level of unionisation in the mining industry is falling. The decline has been more marked in mining, having fallen from 72% in 1986 to 45% in 1994. Total all industries dropped from 46% to 35% over the same period. The fall of almost 28 percentage points represents the largest decline among industrial groups and compares with a drop of 11 percentage points for all industries.

PROPORTION OF EMPLOYEES WHO WERE MEMBERS OF A TRADE UNION



Source: Trade Union Members, Australia (6325.0).

INDUSTRIAL DISPUTES

In 1994 the mining industry suffered a loss of 1,962 working days per thousand employees, which was 22 times the level of all industries (86 days). This high level of disputation is principally attributable to workers in the coal industry where the level of working days lost per thousand employees in 1994 was almost 15 times the level of other than coal mining (6,803 days compared with 460 days).

WORKING DAYS LOST PER THOUSAND EMPLOYEES

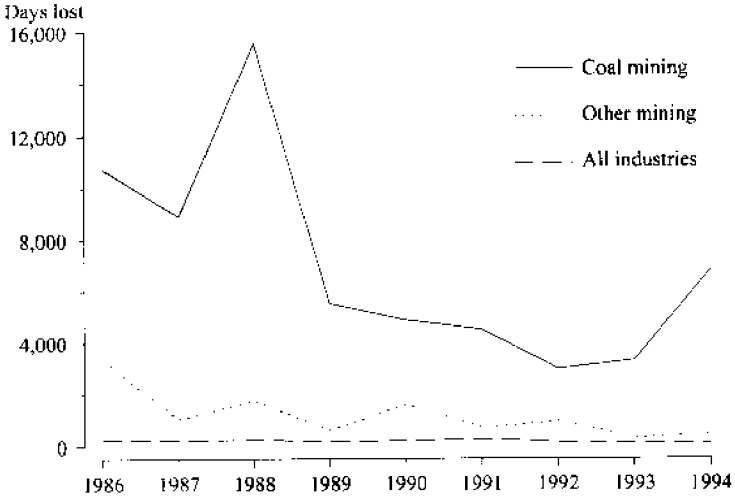
	Coal mining	*Other mining*	*Total mining*	*All industries*
1986	10 741	3 328	5 308	242
1987	8 920	1 072	3 410	223
1988	15 543	1 777	5 941	269
1989	5 505	642	1 930	190
1990	4 879	1 631	2 405	217
1991	4 507	735	1 801	265
1992	2 970	997	1 443	158
1993	3 288	322	1 045	108
1994	6 803	460	1 962	86

Source: Industrial Disputes, Australia (6322.0).

In recent years the severity of disputation in mining other than coal mining has declined. During 1993 the 322 working days lost per thousand employees was the lowest number recorded since the start of the series in 1972.

Of the 189 disputes that were reported in the mining industry in 1994, 153 were from coal mining.

INDUSTRIAL DISPUTES: MINING INDUSTRY, AUSTRALIA, WORKING DAYS LOST PER THOUSAND EMPLOYEES



Source: Industrial Disputes, Australia (6322.0).

ENVIRONMENTAL PROTECTION EXPENDITURE

For the 1993–94 financial year, a number of questions were asked of mining establishments in order to determine their total expenditure on pollution abatement and control measures. These included capital and current expenditure on environment protection; research and development expenditure on environment protection; and expenditure on environmental impact assessments, audits, and energy audits.

Capital expenditure on environment protection in the mining industry is defined as expenditure on any element of the production processes specifically concerned with protecting the environment by reduction or elimination of pollutants and wastes. This could be by either remedial (end of line) or preventative (change in production) measures. Remedial refers to the cost of treating pollutants after they have been produced by installing distinct abatement and control facilities, expenses to remove and dispose of wastes, construction of civil works, or facilities to recreate ecosystems by ripping compacted surfaces or revegetation. Change in production, on the other hand, reduces or eliminates the production of pollution by preventing its occurrence. This can be achieved by improved mining techniques or equipment alteration including the use of equipment converted to use fuels that generate less pollutants. These two methods are further elaborated by considering the pollution involved, i.e. water pollutants, hazardous and non-hazardous solid wastes, air pollutants, noise, other pollutants and land rehabilitation.

Current expenditure on environment protection in the mining industry is defined as expenditure to operate or maintain plant and equipment to abate pollution, payments to contractors to remove and dispose of waste, costs associated with wind and water erosion, ongoing site rehabilitation, regular sampling tests, related research and development expenditure and outlays on either environmental impact assessments or audits.

The table below summarises both current and capital environment expenditure during 1993–94. Detailed tables at industry subdivision and State level appear at the end of this chapter. Data are also presented in the ABS publication *Cost of Environment Protection, Australia: Selected Industries* (4603.0).

SUMMARY OF ENVIRONMENTAL EXPENDITURE, 1993–94

	Expenditure		
	Current	*Capital*	*Total*
	$m	$m	$m
Industry subdivision			
Coal	47	16	63
Oil and gas extraction	7	6	12
Metal ore mining	68	36	103
Total	*121*	*57*	*178*
State/Territory			
New South Wales	15	6	21
Victoria	9	1	10
Queensland	39	15	54
South Australia	3	0	3
Western Australia	49	30	79
Tasmania	2	0	2
Northern Territory	5	5	10
Total	*121*	*57*	*178*

CURRENT EXPENDITURE

For the 1993–94 financial year, total pollution abatement and control (PAC) expenditure in the mining industry was $178 million. Current expenditure accounted for 68% of total pollution abatement expenditure while capital expenditure accounted for 32%.

Highest total pollution abatement and control expenditure was recorded by the metal ore mining ($103 million) and the coal mining ($63 million) industries. The former made up 58% of total PAC expenditure and the latter 35%.

Reported data indicates that a substantial portion (82%) of current expenditure is in the 'other' category (e.g. environmental impact statements, environmental audits, energy audits). This category includes the cost of mine site rehabilitation which is a significant environmental remediation measure undertaken by mining establishments.

CAPITAL EXPENDITURE

Capital expenditure on pollution abatement and control is split into two separate elements, end of line and change in production. End of line techniques accounted for 90% of capital expenditure while change in production accounted for the remaining 10%. End of line measures are seen as most appropriate for mining activity. The ability to accurately report change in production expenditure specifically attributable to environmental protection is problematic as this may be undertaken for other reasons, including cost savings.

In the case of end of line measures, land rehabilitation and abatement of other pollutants exceeded other categories with a 35% share of expenditure. The amount spent to abate air pollutants accounted for a further 29% of expenditure.

Protection against water pollutants accounted for 41% of change in production expenditure. Measures applied to land rehabilitation and other pollutants accounted for 39%.

In terms of total capital expenditure, spending on measures to rehabilitate land and abate other pollution accounted for 36% of spending ($21 million). Measures to abate air pollution accounted for a further 28% ($16 million) of capital expenditure while abatement of water pollutants represented 25% ($14 million).

Further information providing background about the impact of mining activities on the environment, and a guide to the types of activities for which the pollution abatement and control expenditures reported in this chapter are incurred, can be found in the publication *Ecologically Sustainable Development Working Groups — Final Report — Mining, November 1991*.

ESTABLISHMENT LEVEL[a] — REPORTED EXPENDITURE ON ENVIRONMENT PROTECTION BY INDUSTRY SUBDIVISION, AUSTRALIA, 1993–94 ($ million)

Items	*Coal mining*	*Oil and gas extraction*	*Metal ore mining*	*Total coal mining, oil and gas extraction and metal ore mining*
Reported expenditure on environment protection				
Current expenditure:				
Government fees, charges and taxes	7.1	0.4	1.0	8.4
Purchased services	5.5	1.4	6.9	13.8
Other expenditure	34.3	4.8	59.8	98.8
Total	*46.8*	*6.5*	*67.7*	*121.0*
Capital expenditure:				
End-of-line techniques;				
Land rehabilitation and other pollutants	9.1	0.9	8.1	18.2
Water pollutants	2.7	3.0	6.0	11.7
Solid waste pollutants;				
Non-hazardous	0.5	0.4	1.9	2.8
Hazardous	0.1	0.2	3.0	3.2
Air pollutants	1.2	0.6	13.4	15.1
Noise pollutants	—	—	0.2	0.2
Change-in-production processes;				
Land rehabilitation and other pollutants	0.3	0.1	1.9	2.3
Water pollutants	1.8	0.1	0.5	2.4
Solid waste pollutants;				
Non-hazardous	—	—	—	—
Hazardous	—	—	0.1	0.1
Air pollutants	0.2	0.3	0.3	0.8
Noise pollutants	—	—	0.1	0.1
Total	*16.0*	*5.6*	*35.5*	*57.1*
Total expenditure	**62.7**	**12.1**	**103.2**	**178.0**
Expenditure on environment protection compared with total mining expenditure:				
Current expenditure on environment protection	46.8	6.5	67.7	121.0
Total current expenditure	4,300.4	631.1	5,070.9	10,002.4
Percentage spent on environment protection (%)	1.1	1.0	1.3	1.2
Capital expenditure on environment protection	16.0	5.6	35.5	57.1
Total capital expenditure	994.0	1,437.5	1,883.9	4,315.5
Percentage spent on environment protection (%)	1.6	0.4	1.9	1.3

[a] See Explanatory Notes, Statistical unit.

ESTABLISHMENT LEVEL[a] — REPORTED EXPENDITURE ON ENVIRONMENT PROTECTION BY STATE, AUSTRALIA, 1993–94 ($ million)

Items	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*Australia*
Reported expenditure on environment protection								
Current expenditure:								
Government fees, charges and taxes	1.0	2.1	4.2	0.2	0.5	0.4	—	8.4
Purchased services	4.5	1.4	0.7	1.3	5.7	—	—	13.8
Other expenditure	9.7	5.0	33.9	1.1	42.4	1.7	4.9	98.8
Total	*15.2*	*8.5*	*38.8*	*2.7*	*48.7*	*2.2*	*4.9*	*121.0*
Capital expenditure:								
End-of-line techniques;								
Land rehabilitation and other pollutants	0.7	—	9.0	0.2	5.2	—	2.9	18.2
Water pollutants	2.0	0.4	2.8	—	5.8	—	0.8	11.7
Solid waste pollutants;								
Non-hazardous	0.3	0.5	0.5	—	1.2	—	0.4	2.8
Hazardous	—	0.1	0.1	—	3.0	—	—	3.2
Air pollutants	1.2	0.1	0.1	—	13.1	—	0.6	15.1
Noise pollutants	0.1	—	—	—	0.1	—	—	0.2
Change-in-production processes;								
Land rehabilitation and other pollutants	1.6	—	0.5	—	0.1	—	—	2.3
Water pollutants	0.1	—	1.7	—	0.5	—	—	2.4
Solid waste pollutants;								
Non-hazardous	—	—	—	—	—	—	—	—
Hazardous	—	—	—	—	0.1	—	—	0.1
Air pollutants	0.1	0.1	0.1	—	0.5	—	—	0.8
Noise pollutants	—	—	—	—	0.1	—	—	0.1
Total	*6.2*	*1.1*	*14.8*	*0.3*	*29.9*	—	*4.7*	*57.1*
Total expenditure	**21.4**	**9.7**	**53.6**	**3.0**	**78.6**	**2.2**	**9.6**	**178.0**
Expenditure on environment protection compared with total mining expenditure:								
Current expenditure on environment protection	15.2	8.5	38.8	2.7	48.7	2.2	4.9	121.0
Total current expenditure	2,155.8	327.8	3,032.2	208.2	3,738.3	188.3	351.8	10,002.4
Percentage spent on environment protection (%)	0.7	2.6	1.3	1.3	1.3	1.2	1.4	1.2
Capital expenditure on environment protection	6.2	1.1	14.8	0.3	29.9	—	4.7	57.1
Total capital expenditure	682.7	472.2	663.1	90.9	2,284.7	37.8	84.1	4,315.5
Percentage spent on environment protection (%)	0.9	0.2	2.2	0.4	1.3	—	5.6	1.3

[a] See Explanatory Notes, Statistical unit.

OVERSEAS TRADE

EXPORTS

Australia is the world's largest exporter of black coal, alumina, diamonds, lead, zinc, ilmenite, rutile and zircon and the second largest exporter of iron ore and refined gold.

Exports of mining products rose in value by 2% from $14,603 million in 1993–94 to $14,914 million in 1994–95. The value of coal exports decreased by 4% from $7,189 million in 1993–94 to $6,893 million in 1994–95. The value of coal exports fell $296 million, despite increased export volumes, because of lower negotiated contract prices with Japanese steel mills and electricity utilities. The value of oil and gas exports rose by $417 million (16%).

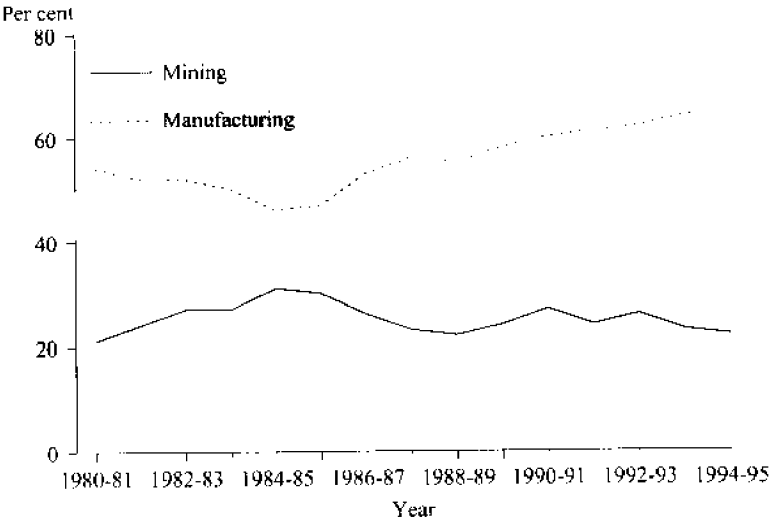
MERCHANDISE EXPORTS BY INDUSTRY OF ORIGIN

	1992–93		*1993–94*		*1994–95*	
ANZSIC Division/subdivision	$m	%	$m	%	$m	%
Mining						
11 Coal mining	7 542	12	7 189	11	6 893	10
12 Oil and gas extraction	3 036	5	2 581	4	2 998	5
13 Metal ore mining	5 061	8	4 553	7	4 787	7
14 Other mining	222	—	281	—	236	—
Total	15 860	26	*14 603*	23	*14 914*	22
Manufacturing	37 448	62	41 458	64	43 685	65
Agriculture, forestry, fishing and hunting	6042	10	7 114	11	6 982	10
Other industries[1]	1428	2	1 478	2	1 454	2
Total exports	**60 778**	**100**	**64 651**	**100**	**67 037**	**100**

[1] Includes commodities subject to a 'No Commodity Details' restriction. See Explanatory Notes in *International Merchandise Trade, Australia* (5422.0) for details.

Source: International Merchandise Trade, Australia, June Quarter 1995 (5422.0).

PROPORTION OF AUSTRALIAN EXPORTS BY VALUE, MINING AND MANUFACTURING INDUSTRY



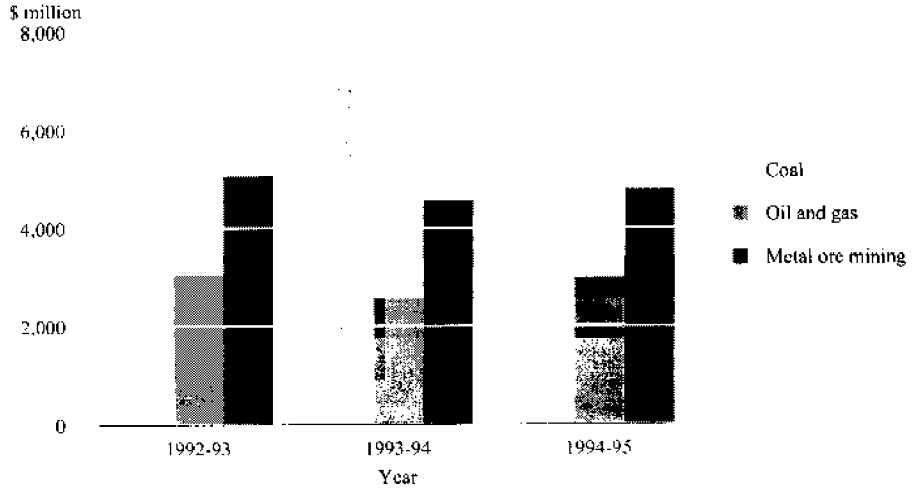
Source: Year Book, Australia (1301.0) — various issues.

Black coal was the largest mineral commodity exported in 1994–95 with a total value of $6,893 million (46% of mining exports and 10% of total exports). Japan bought $3,226 million (47%) of coal, followed by the Republic of Korea with $881 million (13%).

Other major exports were iron ore $2,771 million (19% of mining exports), of which $1,267 million was exported to Japan; crude oil $1,644 million (11%) of which $529 million was exported to Japan and $228 million to Indonesia. Exports of zinc ores accounted for $404 million (3%) and uranium $188 million (1%).

Refined gold exports fell 9% from $5,286 million in 1993–94 to $4,820 million in 1994–95 because of lower Australian and overseas origin bullion production. The three main countries to which refined gold was exported in 1994–95 were Singapore ($1,573 million), Japan ($1,327 million) and the Republic of Korea ($1,004 million).

VALUE OF EXPORTS BY MAJOR MINING SUBDIVISION



Source: International Merchandise Trade, Australia, June Quarter 1995 (5422.0).

JAPAN AND OTHER REGIONS

The Northeast Asia region (includes Japan, Republic of Korea, China and Taiwan) was the main market for Australian mining commodities taking 66% of the total value of mining exports in 1994–95. Shares for other regions were, Europe 12%, Southeast Asia (includes Indonesia, Singapore, Thailand) 3% and Southern Asia (includes India) 4%.

The Northeast Asia sales were predominantly to Japan, and to a lesser extent, Republic of Korea, Taiwan and China. In 1994–95, 47% of coal, 60% of oil and gas and 36% of metal ore was exported to Japan, 13% of coal and 12% of metal ore was exported to the Republic of Korea, 6% of coal was exported to Taiwan and 12% of metal ore was exported to China.

The European region was equally divided between the United Kingdom, Germany and the Netherlands. The United Kingdom received 3% of Australia's coal and metal ore exports, the Netherlands received 2% of coal exports and Germany received 3% of metal ore exports.

EXPORTS BY COUNTRY OF DESTINATION

Principal country/region	*1992-93* $m	*1993-94* $m	*1994-95* $m
Coal mining			
Total Oceania	8	5	10
Total Europe	1 154	1 106	1 081
United Kingdom	231	231	197
Netherlands	222	204	172
France	208	173	162
Total Middle East and North Africa	243	220	211
Total Southeast Asia	66	43	39
Japan	3 762	3 391	3 226
Republic of Korea	918	934	881
Taiwan	441	433	399
Total Northeast Asia	5 340	4 943	4 679
India	377	487	538
Total Southern Asia	442	556	582
Total Northern America	6	4	6
Total South America and Central America	281	311	283
Total Africa (excluding North Africa)	2	—	—
No country details[1]	—	—	—
Total coal mining	*7 542*	*7 189*	6 893
Oil and gas extraction			
Total Oceania	43	60	86
Total Europe	27	40	86
Total Middle East	—	—	19
Indonesia	231	248	219
Singapore	232	241	159
Thailand	143	18	29
Total Southeast Asia	638	564	413
Japan	1 767	1 559	1 808
Total Northeast Asia	1 979	1 690	2 121
Total Southern Asia	11	—	22
Total Northern America	179	158	252
No country details[1]	159	69	—
Total oil and gas extraction	3 036	*2 581*	*2 999*
Metal ore mining			
Germany	123	121	142
United Kingdom	80	126	124
Italy	77	45	57
France	71	71	83
Total Europe and the USSR	481	495	615
Total Middle East	2	11	12
Total Southeast Asia	295	55	61
Japan	1 906	1 708	1 718
Republic of Korea	666	570	570
China	442	445	586
Total Northeast Asia	3 282	2 885	3 001
Total Southern Asia	41	43	52
Total Northern America	74	39	44
Total South and Central America	24	16	3
Total Africa (excluding North Africa)	1	—	—
No country details[1]	860	1 008	1 000
Total metal ore mining	*5 061*	*4 552*	*4 787*
Total other mining	*222*	*281*	*237*
Total mining exports[2]	**15 860**	**14 603**	**14 914**

[1] Includes commodities subject to a No Country Details restriction.

[2] Excludes commodities subject to a No Commodity Details restriction. See Explanatory Notes in *International Merchandise Trade, Australia* (5422.0) for details.

EXPORT PRICES

Despite firmer world minerals prices and flatter energy prices, a stronger Australian dollar meant that the mining export price index fell by 7% in 1994–95. Coal mining decreased by 10%, the drop mainly reflecting the exchange rate variations. Metal ore mining and oil and gas extraction fell by 5% and 1%, respectively. The fall in metal ore mining is mostly due to declining metal prices over that period.

The index measures changes in the prices of all exports of merchandise from Australia.

EXPORT PRICE INDEX[1,2]

ANZSIC Division/subdivision	*1992–93*	*1993–94*	*1994–95*
11 Coal mining	110.3	106.3	96.1
12 Oil and gas extraction	128.5	115.1	113.8
13 Metal ore mining	101.9	92.9	88.6
Mining	**108.0**	**101.0**	**94.2**

[1] Base: 1989–90 = 100.0.
[2] The indexes of aggregate Australian export prices are compiled by weighting together components of the *Export Price Index, June 1995* (6405.0).

IMPORTS

Mining imports into Australia were principally crude oil. The value of imports of mining products rose by $231 million (9%) from $2,573 million in 1993–94 to $2,804 million in 1994–95. The major contributor to the increase was crude oil, up $208 million to $2,506 million.

IMPORTS BY INDUSTRY OF ORIGIN

	1992–93		*1993–94*		*1994–95*	
ANZSIC Division/subdivision	$m	%	$m	%	$m	%
Mining						
11 Coal mining	1	—	14	—	12	—
12 Oil and gas extraction	2 279	4	2 298	4	2 506	3
13 Metal ore mining	130	—	117	—	130	—
14 Other mining	140	—	143	—	157	—
Total	2 551	4	2 573	4	2 804	4
Manufacturing	56 174	94	61 113	95	70 763	95
Agriculture, forestry, fishing and hunting	570	1	545	1	824	1
Other industries[1]	283	—	241	—	246	—
Total imports	**59 577**	**100**	**64 469**	**100**	**74 638**	**100**

[1] Includes commodities subject to a No Commodity Details restriction. See Explanatory Notes in *International Merchandise Trade, Australia* (5422.0) for details.

Source: International Merchandise Trade, Australia, June Quarter 1995 (5422.0).

IMPORT PRICES

The mining import price index rose by 5% to 102.5; oil and gas extraction showed a similar increase, rising 4% to 102.8.

IMPORT PRICE INDEX[1,2]

ANZSIC Division/subdivision	*1992–93*	*1993–94*	*1994–95*
Mining	113.7	97.8	102.5
12 Oil and gas extraction	115.8	98.6	102.8
Manufacturing	111.7	115.5	113.8
Agriculture, forestry and fishing	102.6	107.3	141.7

[1] Base: 1989–90 = 100.0.

[2] The indexes of aggregate Australian import prices are compiled by weighting together components of the *Import Price Index, June 1995* (6414.0).

WORLD COMPARISON

WORLD PRODUCTION

As a leading mineral resource nation Australia is the world's largest producer of bauxite, diamonds, lead and the mineral sand, zircon. In 1993 Australia produced 41 million tonnes of bauxite (41% of world production), 42 million carats of diamonds (39%), 600,000 tonnes of lead (19%) and 300,000 tonnes of zircon concentrate (41%). As well in the world context, significant amounts of zinc, iron ore, uranium, gold, silver and nickel were produced.

SELECTED MINERALS, AUSTRALIAN AND ESTIMATED WORLD PRODUCTION, 1993

Mineral	*Unit*	*Estimated world production*	*Australian production*	*Australian proportion of estimated world production*
		%	%	%
Bauxite[1]	megatonnes	101	41	40.6
Black coal — saleable	megatonnes	3 432	180	5.2
Copper in ores and concentrates	kilotonnes	9 300	300	3.2
Diamonds[2]	megacarats	107	42	39.1
Gold in ores and concentrates	tonnes	2 290	240	10.5
Iron ore	megatonnes	940	120	12.8
Lead in ores and concentrates	kilotonnes	3 200	600	18.8
Manganese ore	kilotonnes	20 400	1 400	6.9
Mineral sands				
Ilmenite concentrate[1]	kilotonnes	3 300	n.a.	n.a.
Rutile concentrate[1]	kilotonnes	430	n.a.	n.a.
Zircon concentrate[1]	kilotonnes	703	300	41.1
Nickel in ores and concentrates	kilotonnes	826	60	7.3
Salt	megatonnes	185	8	4.3
Silver in ores and concentrates	tonnes	14 900	1 200	8.1
Tin in ores and concentrates[1]	kilotonnes	175	6	3.4
Tungsten in concentrates[1]	kilotonnes	25 500	200	0.8
Uranium in concentrates[3]	tonnes	21 957	2 256	10.3
Zinc in ores and concentrates	kilotonnes	7 000	1 000	14.3

[1] Excludes United States production.
[2] Includes industrial diamonds.
[3] Excluding centrally planned economies.

Source: Australian Bureau of Agricultural and Resource Economics, Commodity Statistical Bulletin, 1994; United States Department of the Interior, Bureau of Mines, Mineral Commodity Summaries 1994.

The Australian proportion of world production increased in 1993 for a number of minerals. The most significant increases were in bauxite, up from 38% to 41% and diamonds, up from 36% to 39%. Australia's production of diamonds has increased substantially since 1990 when the production was 34.7 megacarats.

PRINCIPAL COUNTRIES

The worlds leading producers of selected minerals in 1993 are shown in the following table. The most marked difference in production between 1992 and 1993 was in tungsten concentrate. Production of tungsten in China fell from 17,000 kilotonnes in 1992 to 15,000 kilotonnes in 1993, a drop of 12%, reflecting a global downturn.

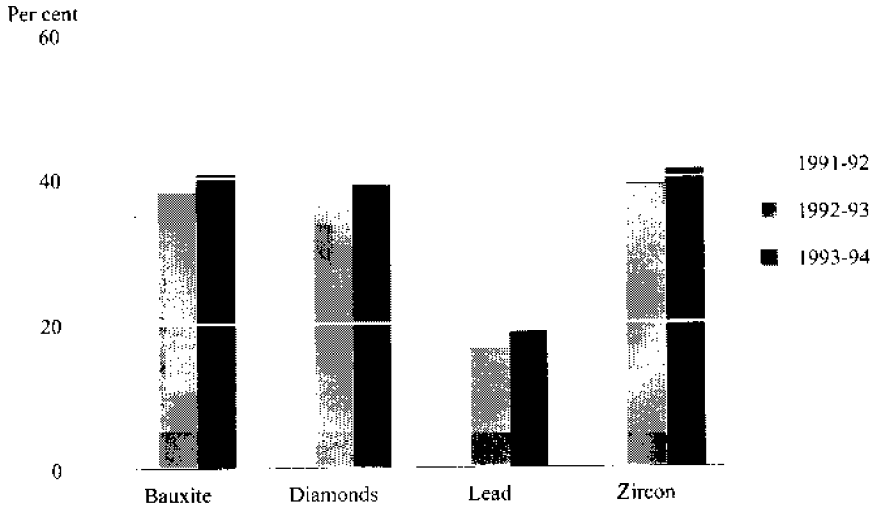
PRINCIPAL PRODUCING COUNTRIES OF SELECTED MINERALS, 1993

Mineral	*Unit*	*Country*	*Production*
Bauxite	megatonnes	Australia	41
Black coal — saleable	megatonnes	China	1 141
Copper in ores and concentrates	kilotonnes	Chile	2 020
Diamonds[1]	megacarats	Australia	42
Gold in ores and concentrates	tonnes	South Africa	630
Iron ore	megatonnes	Former USSR & China	200
Lead in ores and concentrates	kilotonnes	Australia	600
Manganese ore	kilotonnes	Former USSR	6 200
Zircon concentrate	kilotonnes	Australia	300
Nickel in ores and concentrates	kilotonnes	Russia	185
Salt	megatonnes	United States	38
Silver in ores and concentrates	tonnes	Mexico	2 200
Tin in ores and concentrates	kilotonnes	China	43
Tungsten in concentrates	kilotonnes	China	15 000
Uranium in concentrates	tonnes	Canada	9 070
Zinc in ores and concentrates	kilotonnes	Canada	1 200

[1] Includes industrial diamonds.

Source: Australian Bureau of Agricultural and Resource Economic, Commodity Statistical Bulletin, 1994. United States Department of the Interior, Bureau of Mines, Mineral Commodity Summaries 1994.

PERCENTAGE OF WORLD PRODUCTION FOR SELECTED COMMODITIES, AUSTRALIA, 1991–92 TO 1993–94



EXPLANATORY NOTES

INTRODUCTION

1 A range of financial statistics appearing in this publication have been derived from the 1993–94 Census of Mining Operations. The Census aims to meet demands of users who require annual financial statistics which can be related to other industry sectors in Australia on a consistent basis. In addition, some tables contain statistical information that has been obtained from other ABS collections or sources external to the ABS.

2 The Census of Mining Operations is conducted as a component of the ABS integrated economic statistics system. Data collected at the industry level within this framework conforms to the same basic conceptual standards, allowing comparative analysis between different industries and industry sectors.

3 The findings for 1992–93 are now final and replace those previously issued in the 1992–93 issue of the publications *Mining Industry, Australia* (8402.0) released on 5 August 1994 and *Mining Production, Australia* (8405.0) released on 26 August 1994.

SCOPE

4 The 1993 edition of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC) (1292.0) has been used to classify management units (and establishments) included in the Census of Mining Operations. The Mining classifications as listed in Division B are as follows:

110 Coal mining
- 1101 Black coal mining
- 1102 Brown coal mining

120 Oil and gas extraction
- 1200 Oil and gas extraction

131 Metal ore mining
- 1311 Iron ore mining
- 1312 Bauxite mining
- 1313 Copper ore mining
- 1314 Gold ore mining
- 1315 Mineral sand mining
- 1316 Nickel ore mining
- 1317 Silver-lead-zinc ore mining
- 1319 Metal ore mining n.e.c.

141 Construction material mining
- 1411 Gravel and sand quarrying
- 1419 Construction material mining n.e.c.

142 Mining n.e.c.
- 1420 Mining n.e.c.

5 Mining 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, operation

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 Establishments mainly engaged in refining or smelting of minerals or ores (other than preliminary smelting of gold), or in the manufacturing of such products of mineral origin as coke, cement and fertilisers are excluded. Also excluded from the collection are any establishments with no employees (i.e. sole proprietors). These have been omitted because they are not considered to be statistically significant. Typical of these are itinerant and part-time miners, particularly in the gemstone industry and, to a lesser extent, in the copper and tin industries.

7 It should be noted that companies engaged in providing contract mining services are not always collected within the scope of the annual census. Under the principles set down within ANZSIC, contract mining organisations will only be included in the annual census if they are responsible for all facets of the mining operation at a particular site.

8 In situations where companies provide contract mining services to the mining industry, these companies are classified to the activity they are performing rather than to the industry they are serving. Hence companies that are 'contracted' to perform tasks such as mine site preparation (and/or construction), and removal of overburden are classified to the Construction industry whilst companies that are engaged in providing other services on a fee or contract basis are classified to Services to mining which are outside the scope of the annual census.

9 The annual Census of Mining Operations covers the ANZSIC classes for coal mining, oil and gas extraction and metal ore mining. On a triennial basis data are collected for construction material mining and mining n.e.c.. The next such collection is scheduled for the 1995–96 financial year.

10 It should be noted that industry performance measures for the mining industry published in *Business Operations and Industry Performance Measures, Australia* (8140.0) include ANZSIC subdivisions 14 (Other mining) and 15 (Services to mining). In 1993–94 these subdivisions accounted for less than 5% of the economic activity of ANZSIC Division B.

11 Information on mineral production is collected from the State Mines departments or equivalents. All producers engaged in mineral production activity provide data to these departments. This information therefore covers not only the production of establishments classified according to ANZSIC for coal mining, oil and gas extraction, metal ore mining,

construction material mining and mining n.e.c., but also establishments that would be classified to other ANZSIC industries (e.g. industries which carry out mining or quarrying as a secondary activity) that are out of scope of the annual census.

STATISTICAL UNIT

12 This publication principally presents statistics relating to management units. Such statistics are compiled differently from establishment statistics. Each management unit is classified to a single industry irrespective of any diversity of activities undertaken. The industry allocated is the one which provides the main source of income for the management unit. This means, for example, that a management unit which derives most of its income from mining activities would have all operations included in the aggregates and ratios for the mining industry group, even if significant secondary activities (e.g. manufacturing, construction) were undertaken.

13 The basic unit for which statistics are reported in ABS integrated industry collections is the establishment. This publication also includes some data on the establishment basis. Prior to the 1989–90 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 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 information under the locational definition. This has required increasing degrees of estimation to maintain the statistical series.

14 To overcome these quite significant reporting problems, the ABS modified its units definitions to align them more closely with industry practices.

MANAGEMENT UNIT

15 The *management unit* is the highest-level unit within a business, having regard to industry homogeneity requirements, for which accounts are maintained; in nearly all cases it coincides with the legal entity owning the business (i.e. company, partnership, trust, sole operator, etc.). In the case of large diversified businesses, however, there may be more than one management unit, each coinciding with a 'division' or 'line of business'. A division or line of business is recognised where separate and comprehensive accounts are compiled for it.

ESTABLISHMENT

16 The *establishment* is the smallest accounting unit of a business, within a State or Territory, controlling its productive activities and maintaining a specified range of detailed data including data enabling calculation of value added. In general an establishment covers all operations at a physical location, but may consist of a group of locations provided they are within the same State or Territory and classified to a single industry. The majority of establishments operate at one location only.

17 The differences in definition of management unit and establishment sometime result in different values being obtained for certain data items. For example, employment at the establishment level only includes those employees that are involved in that industry, whilst employment at the management unit level includes all employees of that business unit. This often includes employees who would be included in a different industry at the establishment level (e.g. sales staff, head office staff and staff involved in manufacturing activity using mining products).

18 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 constitute a separate accounting unit, in which case they are defined as a separate establishment.

19 The majority of establishments continue to cover the operations at a single physical location.

REFERENCE PERIOD

20 The period covered by the Census is, in general, the twelve months ended 30 June. Where businesses are unable to supply information on this basis, an accounting period for which data can be provided is used for data other than that relating to employment.

MINERAL PRODUCTION DATA

21 Statistics on mineral production were derived from information supplied to the various State Mines Departments and the ABS, supplemented in some cases by information made available by the Department of Primary Industries and Energy and the Joint Coal Board. The statistics for New South Wales, Queensland and the Northern Territory were compiled using data supplied by the State Mines Department or equivalent in those states. Data for Victoria and South Australia were compiled using the data supplied by the State Mines Department or equivalent with the exception of the oil and gas table. Value of oil and gas production figures were extracted from ABS data in order to publish an Australian total.

22 Statistics for Western Australia and Tasmania use State Mines data for quantities of production. Value of production has been extracted from ABS data. An exception to this was the use of ABS data for quantity as well as value of gold bullion and bauxite production in Western Australia.

23 In addition details are presented about the quantity and value of minerals produced during the year ended June 1994 for each State, the Northern Territory and Australia with some comparative statistics relating to preceding years. (Generally details are not available for publication for the Australian Capital Territory).

PRINCIPLES FOR MEASURING QUANTITY AND VALUE OF MINERALS

24 The quantities of individual minerals produced are recorded, in general, in the form in which the minerals are dispatched from the mine or from associated treatment works in the locality of the mine. For metallic minerals, the output is recorded as ore if no treatment is

undertaken at or near the mine, and as concentrate if ore dressing operations are carried out in associated works in the locality of the mine. In addition to the basic quantity data, the contents of metallic minerals (based on assay) are recorded; no allowance has been made for losses in smelting and refining and the quantities shown are therefore, in general, greater than the contents actually recovered.

25 Quantity statistics in this publication are quantities produced during the year. The data cover, in addition to quantities produced for sale, quantities for transfer to other establishments of the management unit and quantities for consumption by the mine itself. In the case of some minerals (e.g. those which do not have a marketable value until they are sold or dispatched from a mine) the quantities reported are dispatches or sales from the mine, rather than production, and the corresponding value of production refers to value of minerals dispatched or sold.

26 The production of individual minerals is valued at the mine or at associated treatment works in the locality of the mine. The valuation is derived, in general, by valuing the quantity produced during the year at the unit selling value, less any transport costs from the mine or associated treatment works to the point of sale.

INDUSTRY PERFORMANCE MEASURES

27 A range of performance measures expressed as ratios are produced from the data available from profit and loss statements and balance sheets of businesses. This publication presents only a selection of these. While these are a useful way of presenting summaries of performance, users of these statistics should note the limitations referred to below before making any judgments based on these results. Comment from analysts on the need for, and use of these or other measures would be welcomed by the ABS.

28 Users should take particular note of the following limitations in respect of the ratios presented in this publication. The usefulness of the ratios for analytical purposes depends on how they are calculated. Comparison between industries on a total industry basis may be best served by the estimates presented here, i.e. based on industry estimates for numerators and denominators. Users should be aware that assessment of individual businesses performance based on comparisons with industry estimates may be misleading for other reasons. There may be circumstances peculiar to the business in question which should be taken into account. For example, is it undertaking a program of expansion, contraction, diversification or amalgamation during the period under review. Analysis of movements in performance indicators of the business and industry over a number of years would be more appropriate.

29 Differences in accounting policy and practices across businesses and industries lead to some inconsistencies in the data input to these estimates. While much of the accounting process is subject to standards, there is still some flexibility left to managers in the accounting policy and practices they adopt. For example, acceptable methods of asset

valuation include historical cost, replacement cost and current market value. The timing of asset revaluations also varies considerably across businesses. The way profit is measured is affected by management policy on such things as depreciation rates, bad debt provisions and write off and goodwill write off. The varying degrees to which businesses decide to consolidate their accounts may affect the quality of the ratios calculated. In general, the effect of consolidation is to 'net out' some of the transactions between related business units and this may affect some ratios.

30 Finally, use of a single ratio in any analysis is to be avoided because taken alone it could be misleading. Often the interpretation of one ratio is influenced by the value of others.

31 The above limitations are not meant to imply that analysis based on ratios should be avoided. However, they should be borne in mind when making any commentary or decisions based on these types of statistics.

32 The ratios presented in this publication are categorised as follows.

- *Turnover ratios* indicate the efficiency of selling activities (including the sale of services as well as goods).
- *Profitability ratios* measure rates of profit on sales, funds and assets.
- *Liquidity ratios* measure the ability of businesses to meet short-term financial obligations, i.e. how quickly can it convert selected assets into cash.
- *Debt ratios* indicate the extent to which debt is used as an alternative to financing through equity and the ability of businesses to meet the cost of such financing.
- *Labour ratios* measure the relative profitability, product and costs of labour.
- *Capital expenditure ratios* indicate the extent to which businesses invest in capital assets.

33 A further explanation of each ratio can be found in the Glossary.

34 Industry concentration statistics provide measures of the extent to which a few management units predominate in individual industries. They are useful in assessing the degree of competition in an industry. These statistics provide measures of concentration in industries as a whole and therefore are not measures of concentration in the market for commodities or activities. The concentration statistics provided in this publication relate to Australia as a whole. Similar information is not available for States or other regional areas.

35 The following steps outline the method used to calculate concentration ratios for each industry.

- Establishments engaged in an industry and belonging to the same management unit were brought together and the data reported for

them were aggregated. In this way it was possible to identify the contribution to industry totals by establishments operating under common ownership or control.

- Management units were ranked in descending order according to the size of the contribution of their establishments to the total turnover of the industry.
- For the purpose of the total concentration statistics table, the *ranked management units* were brought together into the following cumulative categories:
  - largest 12 management units;
  - largest 25 management units;
  - largest 50 management units;
  - largest 100 management units; and
  - largest 200 management units.
- For the purpose of the industry class concentration statistics table, the *ranked management units* were brought together into categories of four units, in the following sequence:
  - largest 4 management units;
  - second largest 4 management units;
  - third largest 4 management units;
  - fourth largest 4 management units;
  - fifth largest 4 management units;
  - sixth largest 4 management units; and
  - remaining management units owning or controlling establishments in the industry.

36 However, this break up is not available for a number of the industries because of the need to avoid disclosure of confidential data.

37 Each of the five categories of four management units comprises statistics of units which were in operation in the industry concerned at any time during the year 1993–94. Included also are particulars of establishments which had not commenced operation by the end of June 1994, but had paid wages and salaries and/or had incurred capital expenditure. In a small number of cases, however, the item 'number of management units' for a category is not '4' for the following reasons.

38 Where a management unit ceased operation before the end of June 1994 within the industry concerned, the management unit is not counted in the 'number of management units', but its activities are included where appropriate, in the items turnover, value added etc. Where there are fewer than twenty management units owning or controlling establishments in an industry, the last category in which data

are shown is a residual category. The break up is not available for a number of the industries because of the need to avoid disclosure of confidential data.

39 For each of the categories ranked management units in paragraph 35 the contribution of the category to the total for the industry was determined for each of the data items. The contribution is shown in the tables as an absolute amount and as a proportion of the total for the industry. Categories of four management units were chosen to conform with international practice and to facilitate comparison of concentration patterns in Australian industries with those in other countries.

DATA SOURCES

40 Data contained in this publication are obtained mostly from the annual mining census (available as special data service) and from various ABS publications and in some cases unpublished data.

ABS DATA

41 The following is a list of ABS publications containing mining and related statistics for Australia used in the preparation of this publication.

Year Book, Australia (1301.0)

1991 Census Characteristics (2710.0)

Cost of Environment Protection, Australia (4603.0)

International Merchandise Trade, Australia (5422.0)

Foreign Trade, Australia, Merchandise Exports (5432.0) — discontinued

Foreign Trade, Australia, Merchandise Imports (5433.0) — discontinued

Foreign Trade, Australia, Merchandise Exports (5434.0) — discontinued

Foreign Trade, Australia, Merchandise Imports (5435.0) — discontinued

Foreign Trade, Australia, Merchandise Exports, Detailed Commodity Tables (5436.0) — discontinued

Foreign Trade, Australia, Merchandise Imports, Detailed Commodity Tables (5437.0) — discontinued

Average Weekly Earnings, States and Australia (6302.0)

Superannuation, Australia (6319.0)

Industrial Disputes, Australia (6322.0)

Trade Union Members, Australia (6325.0)

Labour Costs, Australia (6348.0)

Job Vacancies and Overtime, Australia (6354.0)

Export Price Index (6405.0)

Import Price Index (6414.0)

Research & Experimental Development Business Enterprises, Australia (8114.0)

Business Operations and Industry Performance, Australia (8140.0)

Electricity and Gas Operations, Australia (8208.0)

Manufacturing Industry, Australia (8221.0)

Manufacturing Production, Australia, Preliminary (8301.0) which includes details of the production quantity of 27 important manufactured commodities (including electricity and gas) — issued approximately four weeks after the month to which it relates.

Mining Industry, Australia, Preliminary (8401.0)

Mining Industry, Australia (8402.0) — final issue 1992–93

Mining Production, Australia (8405.0) — final issue 1992–93

Actual and Expected Private Mineral Exploration (8412.0)

Mining Technology Statistics, Australia (8413.0)

42 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 *Release Advice* (1105.0) which lists publications to be released in the next few days. The Catalogue and the Release Advice are available from any ABS office.

NON-ABS DATA

43 The following publications containing other mining and related statistics for Australia are published by the Bureau of Resource Sciences (BRS formerly the Bureau of Mineral Resources or BMR) or the Australian Bureau of Agricultural and Resource Economics (ABARE).

Australia's Identified Mineral Resources (BRS)

Ecologically Sustainable Development Working Groups — Final Report — Mining

Commodity Statistical Bulletin, (ABARE)

Mineral Commodity Summaries, United States Department of the Interior, Bureau of Mines

UNPUBLISHED STATISTICS

44 The statistics presented in this publication represent only a portion of the information which is available from the Census of Mining Operations. Unpublished information is generally made available on request, subject to it satisfying quality and confidentiality guidelines associated with the release of such data. The charges for these services vary according to the time required to extract, tabulate and evaluate the data.

INDUSTRY AND RELATED STATISTICS

45 The following publications are released by the BRS or ABARE. Users are also referred to the annual reports of the State Mines Departments, which contain mineral statistics.

Australian Commodities: Forecasts and Issues (ABARE)

Quarterly Mineral Statistics (ABARE)

Oil and Gas Resources of Australia (BRS)

Australian Petroleum Exploration and Development Statistics (BRS)

46 The following symbols have been used in this publication:

—	nil or rounded to zero
. .	not applicable
n.a.	not available
n.c.	not collected (but included in totals where applicable)
n.e.c.	not elsewhere classified
n.p.	not available for separate publication (but included in totals where applicable)

47 Where figures have been rounded, discrepancies may occur between the sum of component items and the total.

48 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 Helen Shannon on Adelaide (08) 237 7382.

49 The following abbreviations are used within this publication:

ABS	Australian Bureau of Statistics
ABARE	Australian Bureau of Agricultural and Resource Economics
ANZSIC	Australian and New Zealand Standard Industrial Classification
BRS	Bureau of Resource Sciences
EAR-I	Estimated additional resources category 1
EBIT	Earnings before interest and tax
EDR	Economic demonstrated resource
GDP	Gross domestic product
IGP	Industry gross product
MU	Management unit
OPBT	Operating profit before tax
RAR	Reasonably assured resource
R&D	Research and development
UJV	Unincorporated joint venture

GLOSSARY

Data presented in this publication have been compiled from the standard financial accounts of businesses. The definition of each reported item aligns closely with that adopted in standard business accounting practice. In those instances where more than one standard or definition is available, the following paragraphs indicate which one has been chosen.

Presented data relate to management units and establishments which operated at any time during the year. Unless otherwise stated, details for management units and establishments which are being set up but are not yet in productive operation also are included.

Acquisitions to disposals The number of times that dollars spent on acquiring assets exceed dollars received for disposal of assets, i.e. Total acquisitions/Total disposals.

Asset turnover ratio A measure of the number of times the value of sales exceeds the value of assets, i.e. Sales of goods and services/Total assets.

Bad debts Represents the amount of bad debts written-off, net of bad debts previously written-off but recovered.

Capital expenditure Includes all capitalised costs and progress payments made to contractors for capital work on land, dwellings, buildings and structures and plant, machinery and equipment (both new and second-hand).

Capital work done for own use Work that is done by the employees of the business for its own use or, for rental or lease purposes. This value includes the wages of the employees as well as materials withdrawn from stock.

Change-in-production processes The reducing or eliminating of pollutants by employing material substitution, improved catalysts, re-use of waste or water and equipment alteration. These changes may involve converting equipment to handle the use of substitute fuels that generate fewer pollutants.

Cost of sales The sum of purchases, selected expenses and opening stocks minus closing stocks.

Current assets Refers to the value of closing trading stock (i.e. at the end of the financial year) plus the value of other current assets such as cash, short-term deposits, prepayments and short-term loans to employees.

Current liabilities The book value of current liabilities at the end of the financial year. This includes provisions for taxation, leave, claims, trade creditors and other accounts payable and bank overdrafts.

Current ratio The number of times current assets exceed current liabilities, i.e. Current assets/Current liabilities.

Debt to assets The percentage of assets financed by debt instead of equity, i.e. (Total liabilities/Total assets) x 100.

Depreciation Includes depreciation allowed on buildings and other fixed tangible assets.

Disposal of assets Includes the proceeds from the sale of land, dwellings, buildings, plant, machinery and equipment.

Earnings before interest and tax EBIT A measure of profit prior to the deduction of interest expense and income tax.

Employment Includes working proprietors, working partners, permanent, part-time, temporary and casual employees, employees on paid leave and managerial and executive employees working for a business during the last pay period ending in June.

End-of-line techniques Treating pollutants after generation in production processes by the use of separately identifiable abatement facilities. These are installed exclusively for the purpose of abating pollutant emissions from plants or property.

Environment protection expenses Expenses associated with the control and abatement of pollution. All activities directly aimed at the prevention, reduction and elimination of pollution arising from the production process or the consumption of goods and services are included.

Establishments at 30 June Refers to the number of establishments in operation at 30 June.

Government subsidies Includes bounties, subsidies and export grants.

Industry gross product A measure of the unduplicated gross product of a business derived by subtracting from the gross output of the business its intermediate consumption of goods and services. The formula for industry gross product (IGP) is as follows:

IGP = Sales of goods and services
plus
Rent, leasing and hiring income
Government subsidies
Capital work done for own use
Closing stocks
less
Opening stocks
Purchases and selected expenses.

Industry gross product to employment The average amount, expressed in thousands of dollars, of industry gross product for each employee, working proprietor and working partner, i.e. Industry gross product/Employment.

Industry gross product to selected labour costs The average amount of the value of each dollar of gross product generated by each dollar input of labour, i.e. Industry gross product/Selected labour costs.

Insurance premiums Includes premiums for fire, general, accident, public liability, optional third-party and comprehensive motor vehicle insurance, professional indemnity insurance and common law liability.

Interest coverage The number of times that businesses can meet their interest expenses from their earnings before interest, i.e. Earnings before interest and tax/Interest expenses.

Interest expenses Includes interest paid on loans from banks, finance companies, insurance companies and related companies.

Interest income Includes interest received from bank accounts, loans and finance leases and earnings on discounted bills. Excludes charges between companies of the same management unit.

Liquidity ratio The number of times current assets other than stocks exceed current liabilities i.e. (Current assets — Closing stocks)/Current liabilities.

Management units at 30 June Refers to the number of management units in operation at 30 June. (See Explanatory Notes, Statistical units for the definition of management unit).

Motor vehicle expenses Includes expenditure on registration fees, compulsory third party insurance, fuel and repairs.

Net capital expenditure The difference between total acquisitions and disposals of these assets.

Net capital expenditure to assets The percentage of the total book value of assets spent on net capital expenditure, i.e. (Net capital expenditure/Total assets) x 100.

Net worth Total assets minus total liabilities, and is equal to the interest of shareholders or other owners in the assets of the business.

Non-current assets The book value of non-current assets at the end of the financial year. This includes plant and machinery needed for normal operations, capitalised interest, property and goodwill.

Non-current liabilities The book value of non-current liabilities at the end of the financial year. This includes bank loans, debentures and unsecured notes.

Operating profit before tax OPBT A measure of profit before extraordinary items are brought to account and prior to the deduction of income tax and appropriations to owners (e.g. dividends paid).

Other income Includes royalty income, dividends, net profit (or loss) on the sale of fixed tangible assets and net profit (or loss) on foreign exchange. It excludes extraordinary profits or losses such as those associated with the sale of a segment of the business or goodwill revaluations.

Other selected expenses Includes expenditure on management fees/charges paid to related and unrelated businesses, office supplies and printing costs, telephone and postage charges, travelling and entertainment expenses, accounting and legal services, advertising costs, payroll tax, fringe benefits tax, land tax and rates.

Outward freight and cartage Excludes the cost of delivery by own vehicles and employees.

Payment for contract, subcontract and commission expenses Includes payments to other businesses and self-employed persons for work done or sales made on a contract or commission basis. Payments to persons paid by commission without a retainer also are included.

Profit to employment The average amount of operating profit before tax contributed by each employee, working proprietor and working partner, i.e. Operating profit before tax/Employment.

Purchases and selected expenses At the establishment level, includes purchases of goods and materials, rent leasing and hiring expenses, outward freight and cartage, motor vehicle expenses, repair and maintenance expenses and payment for contract, subcontract and commission work. At the management unit level, Other selected expenses also are included.

Purchases of goods and materials Include purchases of materials, components, containers, packaging materials, fuels, electricity and water, and purchases of other goods for resale.

Note that at the establishment level, Purchases of goods and materials includes the value of any transfers in of fuels, materials and/or other goods for resale.

Rent, leasing and hiring expenses for motor vehicles Excludes expenses for off-road motor vehicles and finance lease payments.

Rent, leasing and hiring expenses for land, buildings and other structures Includes rent paid for land, premises, shops, warehouses, etc.

Rent, leasing and hiring expenses for plant, machinery and equipment Includes hiring of equipment without an operator.

Rent, leasing and hiring income Includes proceeds from the rent, lease or hiring of land, buildings, machinery, vehicles and equipment.

Repair and maintenance expenses Excludes wages and salaries paid to own employees and the repair and maintenance costs of motor vehicles.

Research expenses Includes expenses incurred in research and development carried out by the organisation on its own behalf or on behalf of others. It also

includes the funding of other organisations or individuals to carry out research on behalf of the organisation using their own facilities.

Return on assets Derived by expressing total operating profit before tax as a percentage of the total book value of assets, i.e. (Operating profit before tax/Total assets) x 100.

Return on funds Derived by expressing earnings before interest and tax as a percentage of the total of shareholders funds and non-current liabilities, i.e. (Earnings before interest and tax)/(Net worth + Non-current liabilities) x 100.

Royalties expenses Includes any payments made for the use of rights, information or material owned by another company or person.

Sales of goods and services Includes revenue from the sale of minerals (net of coal export levy and petroleum production excise duty) and other goods (e.g. minerals bought for re-sale, waste materials) and service income (e.g. repair and service income, contract, subcontract and commission income, installation charges).

Note that at the establishment level Sales of goods and services includes the value of any transfers out of minerals and/or other goods for resale. These transfers 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.

Selected labour costs The sum of wages and salaries, superannuation and workers' compensation. Wages and salaries include gross wages and salaries and amounts paid as severance, termination and redundancy payments to permanent, temporary, casual and part-time employees. Superannuation includes all employer contributions to superannuation schemes and any benefits paid by employers operating unfunded schemes. Workers' compensation includes premiums and any other costs incurred by the employer, not reimbursed by an insurance company. Other labour costs (e.g. payroll tax, fringe benefits tax, accommodation, meal and travelling allowances) are excluded.

Selected labour costs to employment The average amount, expressed in thousands of dollars, of selected labour costs incurred by business (including wages, salaries, superannuation, workers compensation premiums) for each employee, working proprietor and working partner, i.e. Selected labour costs/Employment.

Stocks — opening/closing The value of all stocks of finished goods, work-in-progress, raw materials, fuels, containers, etc. at the beginning and end of the financial year, respectively.

Superannuation Includes all employer contributions to superannuation schemes and any benefits paid by employers operating unfunded schemes.

Trading profit A measure of profit directly attributable to trading in goods and services. It is derived by subtracting the cost of sales from the value of sales of goods and services.

It should not be inferred that all of this profit is available surplus as other expenses such as selected labour costs, depreciation, insurance premiums, royalties, bad debts and interest have not been taken into account. In addition other income items such as rent, leasing and hiring income, government subsidies and interest income have not been included.

Trading profit margin Derived by expressing total trading profit as a percentage of total sales of goods and services, i.e. (Trading profit/Sales of goods and services) x 100.

Turnover Includes all proceeds from operating revenue (i.e. sales, transfers out for establishment data, service income, rent, leasing and hiring income and government subsidies) plus the value of capital work done for own use, or for rental or lease.

Value added A measure of the production attributable to each industry. Its derivation is the same as industry gross product except that it does not take into account other selected expenses.

Wages and salaries Refers to payments made to all permanent, part-time and temporary employees on the payroll during the financial year. Such payments include severance, termination and redundancy payments, overtime earnings, penalty payments and shift allowances, all paid leave, leave loadings and bonuses.

Waste management Includes the collection, transportation and disposal of unwanted by-products of the production process. It also includes the payments to contractors and/or fees and levies paid to local government or other agencies to remove and dispose of waste.

Workers' compensation Includes premiums and any other costs incurred by the employer not reimbursed by an insurance company.

For more information . . .

The ABS publishes a wide range of statistics and other information on Australia's economic and social conditions. Details of what is available in various publications and other products can be found in the ABS Catalogue of Publications and Products available from all ABS Offices.

ABS Products and Services

Many standard products are available from ABS bookshops located in each State and Territory. In addition to these products, information tailored to the needs of clients can be obtained on a wide range of media by contacting your nearest ABS Office. The ABS also provides a Subscription Service for standard products and some tailored information services.

National *Dial-a-Statistic* Line

0055 86 400

Steadycom P/L: premium rate 25c/21.4 secs.

This number gives 24-hour access, 365 days a year, for a range of important economic statistics including the CPI.

Internet

http://www.statistics.gov.au

A wide range of ABS information is available via the Internet, with basic statistics available for each State, Territory and Australia. We also have Key National Indicators, ABS product release details and other information of general interest.

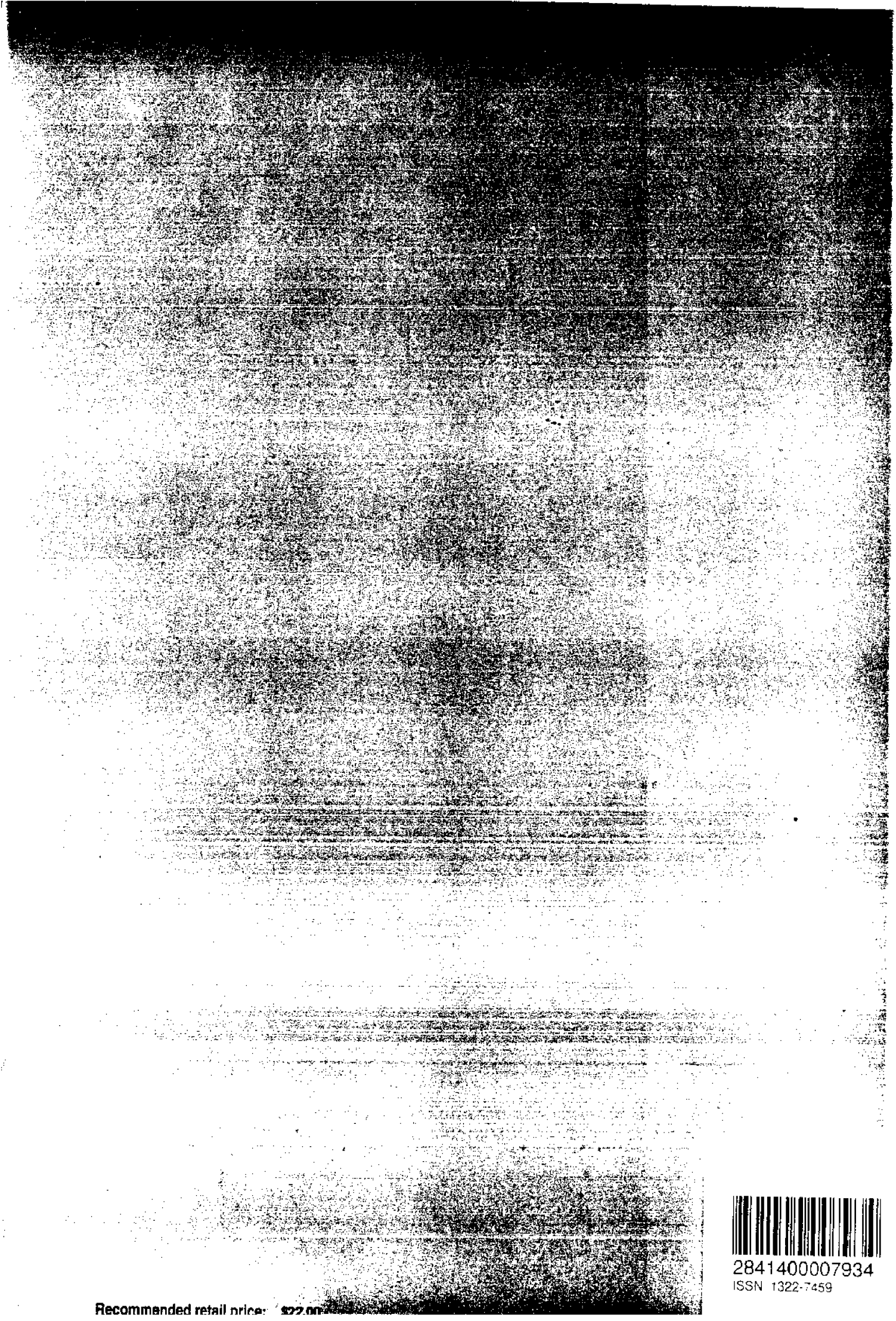
Sales and Inquiries

Keylink	STAT.INFO/ABS
X.400	(C:Australia,PUB:Telememo,O:ABS,FN:STAT,SN:INFO)
Internet	stat.info@abs.telememo.au

National Mail Order Service	(06) 252 5249
Subscription Service	1800 02 0608

	Information Inquiries	Bookshop Sales
SYDNEY	(02) 268 4611	268 4620
MELBOURNE	(03) 9615 7755	9615 7755
BRISBANE	(07) 3222 6351	3222 6350
PERTH	(09) 360 5140	360 5307
ADELAIDE	(08) 237 7100	237 7582
HOBART	(002) 205 800	205 800
CANBERRA	(06) 252 6627	207 0326
DARWIN	(089) 432 111	432 111

Client Services, ABS, PO Box 10, Belconnen ACT 2616



2841400007934
ISSN 1322-7459

Recommended retail price: $22.00