

minerals and energy commodities



235 Summary of Australian statistics for bauxite and alumina

	Production		Alumina exports ^a		
	Bauxite kt	Alumina kt	Volume kt	Value \$m	Unit value ^b \$/t
1960	71	30	na	na	na
1961	16	30	na	na	na
1962	30	34	na	na	na
1963	360	47	na	na	na
1964	797	161	na	na	na
1965	1 186	202	na	na	na
1966	1 827	307	na	7	na
1967	4 244	854	na	29	na
1968	4 955	1 310	na	60	na
1969	7 921	1 931	na	72	na
1970	9 256	2 152	na	97	na
1971	12 733	2 713	2 148	115	53.5
1972	14 437	3 068	2 646	135	51.0
1973	17 596	4 089	3 507	181	51.6
1974	19 994	4 900	4 705	251	53.3
1975	21 033	5 129	4 514	344	76.2
1976	24 084	6 206	5 826	527	90.5
1977	26 086	6 659	6 119	629	102.8
1978	24 293	6 776	6 250	671	107.4
1979	27 583	7 415	6 476	775	119.7
1980	27 179	7 246	6 994	1 021	146.0
1981	25 441	7 079	6 510	1 082	166.2
1982	23 625	6 631	5 953	1 103	185.3
1983	24 372	7 231	6 378	1 185	185.8
1984	31 537	8 781	6 905	1 579	228.7
1985	31 839	8 792	7 169	1 433	199.9
1986	32 384	9 423	7 688	1 427	185.6
1987	34 008	10 109	8 301	1 545	186.1
1988	36 192	10 518	8 519	1 836	215.6
1989	38 579	10 800	8 636	2 725	315.5
1990	41 389	11 231	8 708	2 940	337.6
1991	40 504	11 713	9 275	2 490	268.5
1992	39 741	11 783	9 604	2 253	234.6
1993	41 320	12 598	9 753	2 383	244.3
1994	42 159	12 819	10 570	2 193	207.4
1995	42 655	13 161	10 727	2 504	233.4
1996	43 063	13 348	10 754	2 612	242.9
1997	44 464	13 384	10 902	2 735	250.8
1998	44 653	13 853	10 804	3 055	282.7
1999	48 416	14 532	11 130	2 879	258.6
2000	53 802	15 680	12 419	4 222	340.0
2001	53 799	16 313	12 972	4 430	341.5
2002	54 135	16 382	12 932	3 752	290.2
2003	55 602	16 529	13 498	3 655	270.8
2004	56 593	16 701	13 702	4 110	299.9

^a Alumina (hydrate and oxide) only. ^b Average export unit value. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; International Monetary Fund, *International Financial Statistics*, Washington DC; World Bureau of Metal Statistics, *World Metal Statistics*, London.

236 Summary of Australian statistics for aluminium

	Primary aluminium		Exports		
	Production	Consumption a	Volume b	Value	Unit value c
	kt	kt	kt	\$m	\$/t
1960	12	39	na	na	na
1961	13	30	na	na	na
1962	16	48	na	na	na
1963	42	49	5	2	400.0
1964	80	65	15	6	400.0
1965	88	67	22	9	409.1
1966	92	76	16	7	437.5
1967	93	82	11	5	454.5
1968	97	104	6	3	500.0
1969	126	107	21	10	476.2
1970	206	123	82	38	463.4
1971	224	138	85	35	411.8
1972	206	112	95	35	368.4
1973	207	151	57	24	421.1
1974	219	176	53	28	528.3
1975	214	138	77	46	597.4
1976	232	168	65	45	692.3
1977	248	170	78	70	897.4
1978	263	184	77	72	935.1
1979	270	198	76	86	1 131.6
1980	304	267	46	62	1 347.8
1981	379	254	79	97	1 227.8
1982	381	219	156	168	1 076.9
1983	478	245	235	333	1 417.0
1984	758	265	404	637	1 576.7
1985	851	288	564	862	1 528.4
1986	882	287	579	975	1 685.4
1987	1 004	319	711	1 423	2 001.4
1988	1 150	328	816	2 218	2 719.2
1989	1 244	324	922	2 347	2 546.4
1990	1 234	288	936	1 990	2 125.6
1991	1 235	298	954	1 771	1 857.2
1992	1 245	309	930	1 618	1 739.1
1993	1 388	338	1 056	1 822	1 725.2
1994	1 317	354	948	1 804	1 902.5
1995	1 297	343	957	2 431	2 540.7
1996	1 372	322	1 068	2 140	2 003.7
1997	1 495	352	1 156	2 527	2 186.3
1998	1 627	367	1 310	2 929	2 235.6
1999	1 718	344	1 381	2 919	2 114.2
2000	1 769	346	1 402	3 785	2 700.3
2001	1 797	317	1 489	4 233	2 842.3
2002	1 836	299	1 527	3 845	2 518.4
2003	1 857	329	1 528	3 426	2 242.4
2004	1 894	313	1 534	3 626	2 364.2

a Apparent primary consumption. b Aluminium ingot metal. c Average export unit value. na Not available.

Sources: Australian Aluminium Council, *Australian Aluminium Statistical Summary*, Canberra; ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; International Monetary Fund, *International Financial Statistics*, Washington DC; World Bureau of Metal Statistics, *World Metal Statistics*, London.

237 Australian supply, disposal and prices of alumina and aluminium

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Production									
Bauxite	kt	44 483	46 444	51 046	54 560	53 949	54 472	56 316	57 756
Alumina	kt	13 581	14 207	15 037	16 098	16 417	16 413	16 690	17 161
Aluminium	kt	1 589	1 686	1 742	1 788	1 809	1 855	1 877	1 890
Secondary metal ^a	kt	101	104	108	110	127	127	127	127
Exports									
Alumina ^b	kt	10 536	11 059	11 654	12 721	13 091	13 168	13 572	14 073
– value	\$m	2 887	2 910	3 471	4 507	4 114	3 660	3 781	4 383
Aluminium ^a	kt	1 233	1 365	1 364	1 471	1 490	1 551	1 546	1 512
– value	\$m	2 828	2 840	3 302	4 229	3 965	3 696	3 441	3 724
Imports									
Alumina	kt	0.5	0.7	0.9	0.8	0.9	1.6	1.1	1.3
– value	\$m	0.8	1.3	1.2	1.4	1.7	2.5	1.1	1.4
Aluminium ^a	kt	3.1	5.3	5.9	6.0	6.8	4.8	6.7	5.9
– value	\$m	11.4	14.1	18.2	20.5	20.5	14.3	16.2	16.6
Consumption ^c									
	kt	359.5	355.6	345.3	331.5	319.6	324.6	318.2	320.0
Export unit values									
Alumina	\$/t	274.06	263.13	297.80	354.29	314.25	277.97	278.60	311.47
Aluminium	\$/t	2 293.69	2 080.63	2 420.53	2 875.54	2 661.38	2 382.64	2 226.28	2 462.69

^a Ingot metal. ^b Includes aluminium hydroxide. ^c Estimated apparent consumption (primary and secondary). ^{na} Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Australian Aluminium Council, *Australian Statistical Summary*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

238 Volume of Australian exports of aluminium, by destination

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt	kt
China	11.8	11.2	4.8	17.7	18.6	20.0	46.4	72.0	75.2
Chinese Taipei	152.5	167.3	192.4	228.5	227.2	151.5	219.0	184.1	203.0
Hong Kong, China	77.5	68.5	90.4	71.8	102.1	61.6	74.3	90.0	108.8
Indonesia	51.9	50.8	31.2	52.7	51.1	47.6	51.3	56.3	57.1
Japan	426.7	520.7	562.4	528.4	610.3	610.8	577.5	569.9	551.9
Korea, Rep. of	154.2	193.9	182.3	256.3	230.5	210.2	234.8	217.2	188.5
Malaysia	48.4	27.2	39.0	41.9	24.4	52.1	53.4	61.8	75.2
Philippines	11.9	13.7	12.6	14.8	10.2	5.6	8.6	9.6	7.5
Singapore	11.4	7.1	4.9	9.0	4.1	5.3	5.4	6.0	13.5
Thailand	105.8	80.4	66.4	62.6	75.0	121.4	121.9	152.4	134.4
Other countries	15.9	15.3	123.8	97.0	48.0	203.1	133.9	108.6	118.6
Total	1 068.2	1 156.0	1 310.1	1 380.6	1 401.6	1 489.2	1 526.6	1 527.8	1 533.7

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra.

239 World production, consumption, stocks and prices for aluminium

	Production						Primary consumption kt	Stocks kt	Price ^b US\$/t
	Bauxite kt	Alumina ^a kt	Aluminium			Total kt			
			Primary kt	Secondary kt	Total kt				
1960	27 620	na	na	755	na	na	na	511.5	
1961	29 279	na	na	797	na	na	na	511.5	
1962	31 220	na	3 618	948	4 566	3 237	na	498.0	
1963	30 456	na	3 523	1 061	4 584	3 458	na	498.9	
1964	33 185	na	3 865	1 178	5 043	3 893	na	526.0	
1965	37 233	na	4 253	1 311	5 564	4 322	na	540.1	
1966	41 070	11 510	4 800	1 657	6 457	4 809	na	540.1	
1967	45 087	13 118	5 098	1 700	6 798	5 226	na	540.1	
1968	46 571	13 983	5 592	1 946	7 538	6 137	na	552.9	
1969	54 475	16 175	6 160	2 256	8 416	6 088	na	588.4	
1970	59 490	20 003	6 583	2 181	8 764	7 035	na	614.2	
1971	66 663	22 719	7 439	2 295	9 734	7 732	na	627.9	
1972	69 215	24 539	8 056	2 451	10 507	7 935	1 687	590.2	
1973	75 208	21 908	8 621	2 817	11 438	8 471	1 352	599.2	
1974	84 176	22 878	9 205	2 887	12 092	9 450	2 012	764.8	
1975	77 380	22 093	10 129	2 542	12 671	11 350	3 129	868.4	
1976	80 662	22 663	12 863	2 781	15 644	14 077	2 321	890.0	
1977	84 480	25 186	14 322	3 052	17 374	14 511	2 505	1 143.8	
1978	83 927	25 146	14 776	3 240	18 016	15 329	2 052	1 325.0	
1979	89 131	26 034	15 175	3 316	18 491	15 981	1 513	1 602.8	
1980	93 061	28 106	16 035	3 318	19 353	15 298	2 078	1 774.9	
1981	88 552	26 648	15 698	3 618	19 316	14 516	3 275	1 262.8	
1982	77 896	22 230	13 990	3 583	17 573	14 161	3 185	991.6	
1983	78 585	23 342	14 334	3 960	18 294	15 361	2 249	1 438.3	
1984	92 299	27 055	15 941	3 950	19 891	15 574	2 775	1 251.6	
1985	89 609	25 543	15 555	4 022	19 577	15 858	2 444	1 042.8	
1986	92 842	26 114	15 619	4 196	19 815	16 071	1 964	1 150.0	
1987	96 499	28 053	16 483	4 511	20 994	17 053	1 474	1 580.0	
1988	102 588	29 155	18 575	4 943	23 518	18 867	1 619	2 603.0	
1989	107 584	31 537	19 135	4 943	24 078	19 253	1 634	1 953.0	
1990	114 750	40 500	19 348	5 062	24 410	19 227	1 847	1 639.0	
1991	114 977	40 890	19 653	5 336	24 988	18 743	2 741	1 303.5	
1992	109 468	40 783	19 459	5 476	24 935	18 558	3 244	1 254.8	
1993	114 124	42 978	19 715	6 058	25 773	18 134	4 497	1 139.0	
1994	112 230	41 953	19 112	6 447	25 559	19 715	3 733	1 477.8	
1995	118 231	43 809	19 668	6 876	26 544	20 552	2 576	1 804.5	
1996	123 717	46 329	20 838	6 923	27 762	20 659	2 642	1 505.9	
1997	126 136	46 679	21 798	7 489	29 287	21 795	2 258	1 598.6	
1998	122 867	48 146	22 654	7 594	30 248	21 825	2 324	1 357.2	
1999	130 128	50 035	23 710	8 132	31 843	23 330	2 570	1 361.0	
2000	138 810	52 366	24 465	8 197	32 662	24 903	2 109	1 549.0	
2001	137 647	53 757	24 541	7 264	31 805	23 546	2 561	1 443.0	
2002	150 463	56 123	26 145	7 649	33 794	25 337	2 901	1 352.0	
2003	159 332	59 178	28 000	7 656	35 656	27 425	3 144	1 430.7	
2004	171 443	63 948	29 821	7 560	37 380	29 543	3 033	1 716.0	

^a Western world production to 1989, total world production from 1990. ^b London Metal Exchange, 99.5 per cent purity, spot cash settlement until 1988; 99.7 per cent purity from 1989. Before 1979, UK producer price. **na** Not available.

Sources: International Monetary Fund, *International Financial Statistics*, Washington DC; Metallgesellschaft AG, *Metallstatistik*, Frankfurt; World Bureau of Metal Statistics, *World Metal Statistics*, London.

240 World primary aluminium production, by region and country

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt	kt
Africa									
Cameroon	82	91	82	92	95	81	67	77	86
Egypt	179	178	187	187	189	191	195	195	216
Ghana	137	152	56	114	156	162	132	16	na
Nigeria	na	3	26	16	na	na	na	na	na
South Africa	617	683	693	687	683	654	704	733	864
Americas									
Argentina	184	187	187	206	262	245	269	272	272
Brazil	1 197	1 189	1 208	1 250	1 271	1 132	1 318	1 381	1 457
Canada	2 283	2 327	2 374	2 390	2 374	2 583	2 709	2 792	2 592
Mexico	62	66	62	63	61	52	38	18	na
Surinam	26	23	27	7	na	na	na	na	na
United States	3 577	3 603	3 713	3 779	3 668	2 637	2 705	2 705	2 517
Venezuela	635	641	584	567	569	572	605	606	631
Asia									
China	1 771	2 035	2 336	2 599	2 794	3 371	4 358	5 547	6 589
India	531	547	542	621	649	624	671	799	861
Japan	17	17	16	11	7	7	6	7	7
Tajikistan	198	189	196	229	300	324	308	319	358
Europe									
France	380	399	424	455	441	461	463	443	451
Germany	577	572	612	634	644	652	653	661	675
Greece	131	133	146	160	163	162	164	165	167
Hungary	34	34	34	34	34	35	35	35	34
Iceland	103	123	173	222	226	243	264	266	271
Italy	184	188	187	187	190	188	190	191	195
Netherlands	227	232	264	287	302	293	283	278	326
Norway	862	919	996	1 020	1 026	1 068	1 096	1 192	1 322
Poland	52	52	52	52	52	45	59	57	46
Romania	141	162	174	174	181	182	187	196	219
Russian Federation	2 874	2 906	3 010	3 149	3 247	3 302	3 347	3 478	3 594
Slovakia	111	110	117	109	110	110	112	131	157
Slovenia	66	74	71	77	76	77	88	110	121
Spain	362	360	360	364	366	376	380	389	398
Sweden	98	98	96	99	100	102	101	101	101
Switzerland	27	27	32	34	36	36	40	44	45
Ukraine	91	101	107	115	119	121	113	114	113
United Kingdom	240	248	258	270	305	341	344	343	360
Yugoslavia	51	81	77	81	96	108	117	120	121
Middle East									
Bahrain	461	490	501	503	509	522	517	526	524
Iran	70	91	111	138	140	145	166	172	203
Turkey	62	62	62	62	62	62	63	63	62
United Arab Emirates	259	378	387	441	536	536	536	536	683
Oceania									
Australia	1 372	1 495	1 627	1 718	1 769	1 797	1 836	1 857	1 894
New Zealand	285	310	318	327	328	322	334	334	351
Total	20 838	21 798	22 654	23 710	24 465	24 541	26 145	28 000	29 821

na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

241 World primary aluminium consumption, by region and country

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt	kt
Africa									
Cameroon	19	25	25	22	25	24	27	27	19
Egypt	79	98	92	83	82	97	91	101	98
Ghana	16	16	16	16	16	16	16	16	16
South Africa	101	124	143	125	186	198	180	180	180
Other Africa	27	18	24	24	27	27	32	32	32
Total	242	282	300	270	336	361	346	356	346
Americas									
Argentina	86	95	115	86	82	70	51	81	116
Brazil	497	479	521	463	514	553	578	589	651
Canada	620	644	721	777	799	760	747	697	761
Mexico	93	83	92	88	88	88	113	113	130
United States	5 348	5 390	5 814	6 158	6 050	5 229	5 509	5 667	5 800
Venezuela	207	193	180	122	183	165	173	181	151
Other Americas	53	93	74	65	87	85	99	99	110
Total	6 905	6 977	7 516	7 759	7 802	6 948	7 270	7 427	7 718
Asia									
China a	2 135	2 260	2 425	2 926	3 499	3 492	4 115	5 178	5 943
Chinese Taipei	310	374	301	464	502	321	407	431	497
Hong Kong, China	42	42	42	48	50	50	42	28	21
India	585	553	567	570	602	589	604	798	861
Indonesia	161	203	75	139	146	163	127	211	249
Japan	2 393	2 434	2 080	2 112	2 225	2 014	2 010	2 023	2 319
Korea, Rep. of	674	666	506	814	823	850	921	982	1 118
Malaysia	115	148	90	131	150	153	149	126	69
Philippines	26	34	24	34	33	25	30	26	29
Singapore	40	19	43	4	15	48	48	56	63
Thailand	220	233	129	156	195	227	250	323	378
Other Asia	116	107	116	112	129	131	178	185	189
Total	6 818	7 075	6 398	7 507	8 368	8 063	8 882	10 367	11 734
Europe									
Austria	155	162	163	143	168	201	208	241	234
Belgium	331	345	370	350	341	327	333	322	402
Croatia	21	22	24	30	28	38	41	28	56
Czech Republic	53	63	79	66	78	88	105	103	114
Denmark	27	36	39	39	41	44	56	60	66
Finland	30	33	33	37	39	37	32	29	33
France	672	724	734	774	780	761	762	754	749
Germany	1 355	1 558	1 519	1 439	1 490	1 580	1 690	1 916	1 802
Greece	156	204	213	213	231	218	220	243	266
Hungary	159	183	164	171	210	223	240	244	226
Italy	585	671	674	735	780	756	851	956	987
Netherlands	145	155	155	155	155	155	155	153	146
Norway	169	197	160	231	253	233	246	246	246
Poland	76	102	108	133	153	149	133	152	160
Portugal	58	69	68	82	78	67	78	72	90
Romania	36	63	80	98	128	113	112	163	163
Russian Federation	444	469	489	563	748	786	991	802	1 020
Slovakia	25	25	22	25	36	39	28	24	20
Slovenia	47	53	75	62	81	116	76	87	119
Spain	360	430	136	494	526	508	533	596	603

Continued

241 World primary aluminium consumption, by region and country *continued*

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt	kt
<i>Europe (continued)</i>									
Sweden	129	142	177	133	147	119	126	126	124
Switzerland	140	144	166	157	165	161	152	168	169
Ukraine	51	50	50	50	50	50	50	30	33
United Kingdom	571	583	579	497	576	433	428	302	439
Yugoslavia	17	24	19	16	16	19	23	33	36
Total	5 857	6 565	6 359	6 778	7 389	7 313	7 764	7 948	8 377
<i>Middle East</i>									
Bahrain	200	270	251	226	239	261	248	255	353
Iran	105	106	103	123	117	117	117	117	117
Saudi Arabia	25	25	25	25	60	65	70	77	77
Turkey	136	161	181	169	211	176	231	308	351
Total	546	638	634	618	707	698	735	860	1 000
<i>Oceania</i>									
Australia	322	352	367	344	346	317	299	329	313
New Zealand	39	37	34	43	42	41	41	55	55
Total	361	389	401	387	388	357	340	384	368
Total	20 659	21 795	21 825	23 358	24 872	23 546	25 337	27 425	29 543

^a Excludes Hong Kong.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

242 Volume of world aluminium trade, by country ^a

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt	kt
Exports									
Argentina	93.9	113.5	82.0	123.4	187.0	182.5	203.4	199.9	163.1
Australia	1 068.2	1 156.0	1 310.1	1 380.6	1 401.6	1 489.2	1 526.6	1 527.8	1 533.7
Austria	75.4	67.3	87.3	88.0	91.8	102.2	108.9	103.7	136.0
Bahrain	327.5	220.5	249.3	276.5	269.8	261.1	268.8	270.9	11.6
Belgium	62.3	75.2	111.1	66.7	61.6	184.4	287.3	198.7	308.7
Brazil	709.0	716.2	692.4	788.6	760.0	587.9	749.4	798.8	818.4
Cameroon	65.0	65.6	57.4	70.7	69.8	56.8	39.7	51.2	na
Canada	1 820.4	1 884.6	1 856.4	1 862.6	1 837.3	2 046.1	2 133.3	2 233.2	1 996.9
Chinese Taipei	126.0	137.8	148.9	94.4	103.1	96.1	113.6	121.1	125.8
Denmark	20.7	29.6	28.8	25.7	23.3	26.1	23.4	17.7	14.1
Egypt	108.2	89.4	86.1	109.7	114.4	95.1	108.7	99.2	119.8
Finland	29.9	33.6	37.1	39.6	38.9	33.7	23.5	18.6	17.3
France	230.7	166.6	139.8	153.3	157.4	151.0	156.7	139.0	148.1
Germany	260.3	229.6	236.7	300.3	374.8	366.7	387.6	389.3	413.4
Ghana	120.9	119.0	na	39.4	na	68.7	na	na	na
Greece	44.5	46.7	58.5	60.8	94.5	15.8	62.9	67.6	70.4
Hong Kong, China	316.3	252.7	249.6	215.0	193.0	134.4	145.9	183.4	203.3
Hungary	20.4	19.2	21.7	12.7	12.2	10.9	10.6	16.2	10.0
Iceland	101.1	119.8	162.1	221.4	209.7	258.0	282.5	286.0	278.0
India	94.7	80.4	na	100.3	91.4	101.5	135.7	71.4	76.2
Indonesia	180.3	166.2	148.1	79.9	172.2	149.6	142.7	119.9	167.7
Ireland	0.0	0.3	0.3	na	na	na	na	na	na
Italy	39.4	37.3	35.7	29.6	33.8	31.5	42.0	34.5	47.8
Japan	12.0	10.3	7.1	10.5	10.0	12.6	12.4	18.2	36.3
Korea, Rep. of	43.0	97.3	70.4	31.8	11.8	8.0	24.3	49.9	56.1
Mexico	2.8	0.4	0.8	7.1	10.3	7.5	5.5	4.7	14.7
Netherlands	483.8	472.6	468.7	480.5	450.5	470.0	581.7	635.6	609.6
New Zealand	258.2	283.2	294.0	287.2	296.1	293.5	298.5	289.7	316.1
Norway	875.7	915.3	989.1	988.0	1 041.8	1 187.6	1 127.8	1 362.5	1 485.0
Russian Federation	2 618.4	2 711.6	2 794.4	3 115.7	3 177.2	3 074.4	2 782.0	3 107.9	4 158.5
Singapore	139.4	92.0	58.4	77.8	75.0	88.8	127.5	127.9	102.6
South Africa	541.4	566.8	557.0	630.6	504.4	461.0	584.6	625.8	646.4
Spain	137.3	130.7	107.7	80.4	82.1	92.2	70.9	88.3	103.2
Surinam	26.6	27.5	26.8	6.8	na	na	na	na	na
Sweden	70.7	70.1	47.6	64.8	53.3	66.2	81.2	76.0	127.8
Switzerland	8.5	8.9	8.4	11.6	15.7	5.5	7.1	0.8	8.2
Tajikistan	193.7	182.9	186.6	224.3	288.0	287.0	304.0	150.5	na
United Arab Emirates	264.2	378.5	372.0	441.2	515.9	452.8	377.3	341.0	327.2
United Kingdom	205.3	372.9	225.8	233.6	347.7	263.3	250.4	271.2	335.9
United States	446.6	374.0	373.4	425.0	451.4	339.3	305.2	241.6	344.1
Venezuela	439.8	414.5	410.3	429.4	388.3	398.0	437.4	392.1	389.7
Yugoslavia	39.1	61.0	61.4	69.5	92.5	95.8	116.5	35.0	na
Total	13 050.2	13 607.7	13 693.9	14 792.9	15 285.4	15 176.2	15 911.4	16 685.9	18 147.2

Continued

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Volume of world aluminium trade, by country ^a *continued*

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt	kt
Imports									
Argentina	1.2	na	na	na	na	na	na	na	na
Australia	13.1	4.2	5.9	5.6	6.0	7.6	4.4	6.1	6.9
Austria	195.5	243.1	253.2	223.7	251.5	293.0	307.3	326.3	336.0
Belgium	351.5	388.3	496.7	413.2	431.9	599.8	669.7	599.6	749.6
Brazil	8.6	5.7	5.8	2.1	2.3	8.7	8.9	6.8	12.0
Canada	139.5	153.9	201.9	246.5	276.3	223.0	196.1	137.9	165.5
China	367.1	288.9	307.0	534.0	914.1	529.6	581.8	880.8	1 033.3
Chinese Taipei	436.3	512.1	449.6	558.5	604.7	417.4	520.8	552.1	622.5
Denmark	33.6	41.0	45.6	43.6	45.4	48.7	61.5	65.4	75.2
Finland	33.0	33.5	37.8	43.2	52.0	50.5	37.5	36.7	41.3
France	438.9	419.2	403.3	464.7	527.8	506.9	474.3	490.5	513.8
Germany	1 108.8	1 400.2	1 471.9	1 333.2	1 586.2	1 602.0	1 666.6	1 895.6	1 798.9
Greece	71.4	119.5	125.8	113.2	135.6	122.4	118.9	144.3	167.6
Hong Kong, China	465.6	479.5	401.3	262.4	242.8	162.9	188.1	211.2	228.5
Hungary	142.7	170.2	157.0	154.1	193.0	203.3	209.3	227.9	366.6
India	116.3	86.4	58.5	49.4	44.7	66.6	68.3	70.6	75.9
Ireland	4.0	11.1	13.5	16.4	12.2	11.5	6.8	6.5	6.6
Italy	484.9	575.1	608.0	652.8	704.8	670.2	781.2	871.5	903.3
Japan	2 762.0	3 027.5	2 551.8	2 657.4	2 905.2	2 611.6	2 575.1	2 941.3	3 021.4
Korea, Rep. of	728.7	771.3	584.1	880.4	889.7	880.6	973.3	1 080.2	1 197.1
Mexico	34.2	16.6	30.9	198.6	231.7	229.4	292.1	325.3	403.9
Netherlands	464.3	528.4	522.9	584.1	615.6	520.6	526.0	583.5	594.3
New Zealand	12.3	10.0	10.8	12.8	9.7	5.7	10.7	17.3	22.1
Norway	149.5	196.3	147.9	186.0	252.5	224.1	282.2	301.6	355.5
Portugal	67.7	79.8	109.2	159.7	194.9	175.0	172.9	193.2	211.2
Singapore	99.3	102.6	82.1	76.7	81.0	229.9	271.7	85.0	188.7
South Africa	1.7	3.8	7.3	6.0	8.2	5.4	4.8	7.7	3.9
Spain	127.6	188.3	177.0	220.7	231.0	216.1	222.7	283.3	326.5
Sweden	105.5	125.3	138.5	104.6	109.1	97.2	120.2	118.9	150.2
Switzerland	117.4	143.6	141.2	123.6	136.3	130.5	119.4	125.1	132.5
Thailand	220.8	238.1	196.3	159.6	356.1	232.2	259.3	330.3	390.7
Turkey	99.3	138.9	143.2	132.8	169.6	125.5	185.5	274.0	327.0
United Kingdom	651.4	436.9	496.0	444.0	277.1	346.9	371.1	294.7	234.2
United States	1 951.0	2 097.2	2 484.6	2 835.9	2 687.6	2 677.1	2 918.2	2 982.7	3 297.7
Yugoslavia	1.3	4.1	3.9	1.7	3.0	4.2	11.0	20.1	na
Total	12 194.2	13 350.3	13 160.8	14 308.7	15 720.8	14 686.3	15 642.8	17 008.3	18 550.8

^a Covers principal imports and exports of aluminium and aluminium alloys. **na** Not available or not applicable.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

243 Australian exports of clays, by destination ^a

	Japan	New Zealand	United Kingdom	Other	Total	
					Volume	Value
	t	t	t	t	t	\$'000
1960	na	976	na	na	1 024	42
1961	na	759	na	na	840	36
1962	na	775	na	na	874	26
1963	na	634	na	na	801	36
1964	na	2 193	na	na	2 756	77
1965	na	552	na	na	2 560	56
1966	na	714	na	na	3 514	120
1967	na	650	na	na	4 890	223
1968	na	657	na	na	4 544	224
1969	na	614	na	na	6 145	182
1970	2 894	973	2 433	1 004	7 304	324
1971	2 271	681	2 827	598	6 377	299
1972	1 554	703	1 998	489	4 744	211
1973	2 038	1 011	3 249	332	6 630	286
1974	1 198	895	3 953	201	6 247	278
1975	1 732	175	4 816	126	6 849	294
1976	1 500	101	3 025	326	4 952	228
1977	2 115	462	5 400	1 950	9 927	679
1978	1 609	600	5 001	6 198	13 408	1 054
1979	1 939	1 175	2 597	381	6 092	525
1980	735	125	1 206	327	2 393	281
1981	1 539	313	596	577	3 025	364
1982	1 364	463	1 376	2 133	5 336	983
1983	927	365	1 601	5 025	7 918	1 041
1984	2 878	829	2 234	11 074	17 015	1 683
1985	1 549	719	1 877	4 259	8 404	1 021
1986	9 670	1 241	2 106	4 428	17 445	1 980
1987	14 990	3 908	1 059	11 401	31 358	4 743
1988	40 983	9 003	1 965	16 133	68 084	10 480
1988-89	71 466	10 044	1 808	27 281	110 599	16 315
1989-90	94 507	6 779	2 303	39 601	143 190	19 953
1990-91	119 979	7 528	1 175	32 203	160 885	24 557
1991-92	97 614	5 260	135	46 424	149 433	23 408
1992-93	115 735	5 009	100	43 774	164 618	28 090
1993-94	122 866	5 495	0	43 209	171 570	30 926
1994-95	85 853	4 987	844	60 509	152 193	24 656
1995-96	103 848	5 226	1 224	68 504	178 802	33 523
1996-97	52 775	5 671	43	47 208	105 697	20 801
1997-98	1 194	2 939	796	14 234	19 163	4 834
1998-99	4 886	6 237	2 320	30 059	43 502	10 570
1999-00	4 039	11 760	3 474	60 069	79 342	10 203
2000-01	6 152	4 768	266	21 539	32 725	7 924
2001-02	31 119	7 963	332	100 828	140 242	11 109
2002-03	12 137	11 346	231	87 538	111 252	15 862
2003-04	18 364	7 869	232	33 132	59 597	13 738
2004-05	2 893	19 366	308	37 147	59 714	12 420

^a Excludes activated clays. **na** Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; ABARE.

244 Australian imports of clays

	Bentonite a		Kaolin b		Refractory clays c		Other clays d	
	t	\$'000	t	\$'000	t	\$'000	t	\$'000
1960	7 387	255	9 902	214	1 065	70	6 537	213
1961	7 006	239	15 789	278	298	23	5 684	232
1962	9 353	357	15 131	280	1 491	47	6 321	303
1963	10 938	492	24 589	448	1 649	65	5 960	250
1964	14 286	569	25 089	496	4 380	171	9 578	354
1965	16 312	644	26 128	517	3 524	182	14 793	271
1966	15 346	494	31 991	686	3 705	148	9 939	406
1967	21 263	615	37 908	878	2 391	101	14 270	519
1968	44 513	984	44 603	1 030	5 071	173	12 578	548
1969	54 597	1 134	43 606	1 075	4 825	112	13 177	590
1970	66 484	1 474	56 571	1 458	7 720	285	20 245	686
1971	88 803	1 887	42 579	1 268	10 565	267	12 178	726
1972	49 861	1 540	33 314	991	5 949	174	12 442	504
1973	57 965	1 390	38 344	1 130	2 154	70	16 920	665
1974	85 363	1 649	37 535	1 028	4 880	106	25 616	1 207
1975	54 736	1 142	5 572	387	16 139	561	26 654	1 286
1976	22 204	708	8 620	426	5 054	231	25 711	1 679
1977	13 191	558	7 488	521	6 665	367	29 342	2 051
1978	30 355	1 375	11 773	750	3 652	350	57 957	3 872
1979	57 241	2 028	6 751	537	2 610	198	45 635	3 842
1980	55 917	2 424	3 624	404	15 119	1 125	25 097	2 505
1981	43 034	1 828	11 737	1 113	16 564	1 431	36 658	2 720
1982	32 571	2 067	15 668	1 780	10 874	1 141	8 649	1 836
1983	17 767	1 611	9 829	1 663	3 327	461	9 261	1 373
1984	24 419	2 617	7 652	1 580	13 408	1 485	16 216	2 606
1985	30 531	3 474	2 586	870	904	209	29 166	5 412
1986	24 942	2 643	4 785	2 892	2 719	431	21 776	4 400
1987	8 654	1 822	12 641	6 002	17 367	2 079	14 021	3 773
1988	22 269	3 530	12 487	3 113	17 324	2 253	5 217	1 946
1988-89	21 344	2 553	17 174	3 927	30 795	3 793	9 441	4 410
1989-90	28 476	4 427	11 896	3 204	10 953	1 653	24 462	5 070
1990-91	28 348	3 858	11 331	3 172	4 979	813	18 574	4 146
1991-92	12 529	2 596	7 119	3 413	13 752	1 834	8 330	2 950
1992-93	21 004	4 078	11 965	6 104	1 442	371	10 569	3 806
1993-94	16 227	3 537	12 476	4 774	2 016	464	6 875	3 155
1994-95	29 151	3 290	17 686	7 450	6 038	1 717	26 312	5 524
1995-96	4 202	2 864	17 167	5 284	5 192	927	44 704	8 194
1996-97	9 633	2 481	19 535	6 919	1 910	473	23 648	5 340
1997-98	8 998	2 363	7 507	3 997	3 051	642	14 739	3 884
1998-99	7 035	3 179	13 525	8 510	1 539	443	19 873	6 553
1999-00	15 291	4 353	9 410	6 235	3 414	819	19 988	6 875
2000-01	25 611	5 524	11 629	9 321	8 985	1 559	23 333	9 563
2001-02	28 900	6 636	10 239	9 113	2 794	754	19 963	8 068
2002-03	26 841	4 870	6 957	4 097	10 402	2 176	12 086	5 702
2003-04	26 629	5 854	13 379	8 293	12 819	2 231	14 846	5 322
2004-05	22 009	5 130	13 376	6 714	6 417	1 071	11 856	4 755

a Includes bentonitic clay. b Includes ball and china clay. c Includes fireclay and chamotte. d Includes andalusite, mullite, kyanite, sillimanite and other clays.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; ABARE.

245 Summary of Australian statistics for black coal

	Production		Domestic consumption	Exports		Closing stocks ^b
	Raw Mt	Net ^a Mt		Volume Mt	Unit value \$/t	
1960-61	23.67	22.15	20.05	1.93	8.01	na
1961-62	25.37	23.48	20.14	3.51	7.77	na
1962-63	25.25	23.40	20.26	2.71	8.21	na
1963-64	27.86	25.49	21.32	3.86	8.39	na
1964-65	30.11	27.54	22.02	5.94	8.31	na
1965-66	34.23	31.22	22.85	8.87	8.12	na
1966-67	35.95	32.29	23.15	8.04	8.03	na
1967-68	39.06	34.71	24.04	10.48	8.21	na
1968-69	44.86	39.81	24.71	14.41	8.33	na
1969-70	50.41	44.30	25.57	17.97	9.32	na
1970-71	52.97	45.00	24.96	18.96	10.50	7.59
1971-72	58.86	49.02	25.49	21.85	10.89	9.27
1972-73	66.19	54.63	27.39	25.83	11.28	10.68
1973-74	66.58	54.74	27.68	28.39	12.50	9.35
1974-75	72.21	63.78	30.19	32.42	22.10	10.52
1975-76	77.13	62.33	29.45	30.43	34.96	12.97
1976-77	85.96	69.55	32.19	35.37	37.23	14.95
1977-78	87.79	71.01	32.56	37.91	39.14	15.50
1978-79	91.90	73.37	33.43	38.28	38.99	17.17
1979-80	90.20	73.59	35.62	43.16	39.35	11.97
1980-81	106.20	87.39	37.71	47.25	41.64	14.22
1981-82	110.20	91.08	36.79	46.12	49.64	21.34
1982-83	120.34	99.59	37.29	54.65	56.21	28.02
1983-84	129.44	105.55	38.64	64.33	51.77	27.98
1984-85	145.14	118.26	40.67	86.10	54.09	21.95
1985-86	163.62	134.31	42.56	90.30	57.49	23.93
1986-87	182.43	148.73	44.07	97.70	55.46	32.71
1987-88	167.69	136.35	46.01	102.10	46.61	20.59
1988-89	184.05	149.35	49.87	97.66	48.04	20.91
1989-90	196.85	160.41	50.68	104.58	55.74	27.37
1990-91	204.68	166.56	50.92	113.37	56.08	29.10
1991-92	218.20	176.47	52.81	123.30	55.38	29.61
1992-93	222.50	177.99	52.94	129.18	58.28	26.23
1993-94	221.50	177.98	54.18	129.06	55.49	21.81
1994-95	237.23	192.35	55.36	136.24	50.45	23.30
1995-96	243.02	194.53	57.41	138.55	56.00	21.29
1996-97	261.34	207.50	57.88	145.75	54.42	24.91
1997-98	278.64	222.37	61.26	162.61	58.62	25.77
1998-99	284.29	225.01	61.64	169.41	54.54	19.92
1999-00	298.66	239.43	61.30	175.78	47.20	20.03
2000-01	321.48	258.22	64.13	193.50	55.81	21.48
2001-02	344.44	272.59	66.16	197.87	67.37	21.46
2002-03	348.92	274.85	66.34	207.74	57.26	19.73
2003-04	362.22	285.86	66.72	218.43	49.82	16.13
2004-05	387.05	299.88	66.99	231.31	73.90	17.76

^a Before 1980-81, net production referred to raw coal production less rejects removed at coal industry washeries plus/less unexplained stock adjustments at mines and ports. From 1980-81, net production refers to raw coal production less rejects removed at coal industry washeries plus/less unexplained stock adjustments at mines only. Thus, from 1980-81, net production is identical to salable production. ^b Calendar year basis before 1984-85. **na** Not available.

Sources: Joint Coal Board, *Black Coal in Australia 1987-88*, Sydney; Coal Services Pty Ltd, *Australian Black Coal Statistics*, Sydney; Queensland Department of Natural Resources, Mines and Energy; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; ABARE.

246 Australian raw coal production, by state

	New South Wales Mt	Victoria ^a Mt	Queensland Mt	Western Australia Mt	South Australia Mt	Tasmania Mt
1960-61	18.45	15.98	3.07	0.75	1.02	0.29
1961-62	19.39	17.00	3.47	0.95	1.25	0.26
1962-63	19.03	18.05	3.48	0.95	1.50	0.24
1963-64	20.56	18.98	4.50	0.93	1.63	0.18
1964-65	22.16	19.87	4.86	0.97	1.94	0.13
1965-66	25.41	21.90	5.56	1.08	2.04	0.10
1966-67	26.63	22.87	6.06	1.10	2.05	0.08
1967-68	28.57	23.43	7.19	1.08	2.02	0.09
1968-69	32.24	23.50	9.20	1.12	2.18	0.11
1969-70	35.32	24.31	11.65	1.17	2.15	0.12
1970-71	35.72	23.18	14.32	1.18	1.62	0.12
1971-72	36.96	23.63	19.01	1.21	1.56	0.12
1972-73	38.66	24.12	25.27	1.15	1.58	0.13
1973-74	36.63	26.44	27.15	1.20	1.49	0.12
1974-75	42.31	27.54	32.10	1.88	1.79	0.14
1975-76	40.59	29.21	32.40	2.14	1.82	0.18
1976-77	46.79	30.99	34.66	2.38	1.95	0.20
1977-78	49.25	30.47	34.14	2.42	1.78	0.19
1978-79	50.52	32.10	37.26	2.41	1.47	0.25
1979-80	48.71	32.90	36.53	3.03	1.72	0.21
1980-81	58.29	32.10	42.76	3.12	1.73	0.30
1981-82	59.82	37.57	45.14	3.42	1.44	0.39
1982-83	67.46	34.71	46.91	3.96	1.45	0.56
1983-84	66.53	33.20	57.20	3.93	1.33	0.45
1984-85	70.03	38.38	69.21	3.65	1.75	0.49
1985-86	77.19	36.08	80.01	3.75	2.17	0.50
1986-87	88.51	41.81	87.09	3.78	2.43	0.62
1987-88	76.27	44.29	84.61	3.69	2.52	0.60
1988-89	81.27	48.65	95.48	3.89	2.76	0.65
1989-90	93.89	45.96	95.30	4.13	2.94	0.60
1990-91	96.70	49.39	99.67	5.21	2.53	0.59
1991-92	101.17	50.72	108.32	5.29	2.88	0.54
1992-93	102.91	47.90	110.93	5.40	2.79	0.48
1993-94	101.95	49.68	111.12	5.15	2.69	0.57
1994-95	107.78	49.92	119.97	5.82	3.04	0.61
1995-96	113.09	54.28	120.93	5.97	2.45	0.58
1996-97	123.68	60.79	128.92	5.59	2.59	0.56
1997-98	134.01	65.27	135.56	5.80	2.70	0.58
1998-99	131.38	66.65	143.79	5.74	2.80	0.57
1999-00	132.90	67.36	155.72	6.63	2.87	0.55
2000-01	138.78	64.96	172.88	6.19	3.16	0.47
2001-02	145.20	66.66	189.40	6.25	3.06	0.54
2002-03	143.07	66.81	195.96	6.14	3.24	0.52
2003-04	147.58	66.34	204.05	6.56	3.43	0.59
2004-05	150.25	67.15	225.91	6.37	3.83	0.69

^a Brown coal. Between 1960-61 and 1968-69, Victoria produced small quantities of black coal which are not included in this table.

Sources: Joint Coal Board, *Black Coal in Australia 1987-88*, Sydney; Joint Coal Board and the Queensland Department of Mines and Energy, *Australian Black Coal Statistics*, Sydney; Victorian Department of Natural Resources and Environment; ABARE.

247 Australian consumption of coal, by major end use

	Black coal				Total Mt	Brown coal
	Electricity generation Mt	Iron and steel ^a Mt	Cement Industry Mt	Other consumers Mt		Electricity generation Mt
1982-83	26.91	6.46	1.02	2.89	37.29	33.42
1983-84	28.06	6.22	0.92	3.44	38.64	32.05
1984-85	29.74	6.25	1.02	3.67	40.67	37.09
1985-86	31.48	6.20	0.93	3.95	42.56	34.89
1986-87	32.76	6.44	0.70	4.18	44.07	40.49
1987-88	33.91	7.22	0.69	4.20	46.01	43.07
1988-89	36.82	7.92	0.79	4.34	49.87	47.35
1989-90	38.17	7.43	0.85	4.23	50.68	44.87
1990-91	38.41	7.40	0.86	4.25	50.92	48.17
1991-92	39.88	7.35	0.85	4.72	52.81	49.50
1992-93	40.68	7.11	0.87	4.28	52.94	46.78
1993-94	41.83	7.09	0.90	4.37	54.18	48.56
1994-95	42.82	7.55	0.74	4.26	55.36	48.72
1995-96	45.60	6.39	0.82	4.60	57.41	53.41
1996-97	46.15	6.24	0.80	4.68	57.88	59.75
1997-98	48.16	7.55	0.86	4.69	61.26	64.22
1998-99	49.68	6.48	0.87	4.61	61.64	65.54
1999-00	50.16	5.63	0.85	4.66	61.30	66.43
2000-01	53.54	5.20	0.74	4.66	64.13	63.98
2001-02	55.46	5.46	0.78	4.46	66.16	65.58
2002-03	55.55	5.41	0.85	4.52	66.34	66.14
2003-04	58.53	5.28	0.90	4.55	69.24	66.33

^a As received basis.

Sources: Joint Coal Board, *Black Coal in Australia 1987-88*, Sydney; Joint Coal Board and the Queensland Department of Mines and Energy, *Australian Black Coal Statistics*, Sydney; Victorian Department of Natural Resources and Environment; ABARE.

248 Australian exports of coal, by coal type

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Coking coal, high quality									
Volume	Mt	57.01	56.00	62.78	61.96	65.46	66.45	67.55	80.73
Value	\$m	4 162	3 868	3 587	4 241	5 353	5 122	4 340	7 692
Unit value	\$/t	73.00	69.07	57.14	68.44	81.77	77.08	64.26	95.28
Coking coal, excluding high quality									
Volume	Mt	27.07	29.26	34.03	43.56	40.37	41.34	44.19	44.19
Value	\$m	1 580	1 604	1 596	2 356	2 685	2 325	2 169	3 067
Unit value	\$/t	58.38	54.82	46.92	54.07	66.51	56.25	49.10	69.40
Total coking coal									
Volume	Mt	84.07	85.26	96.81	105.53	105.83	107.79	111.73	124.92
Value	\$m	5 742	5 472	5 184	6 597	8 038	7 448	6 510	10 758
Unit value	\$/t	68.30	64.18	53.54	62.51	75.95	69.09	58.26	86.12
Steaming coal									
Volume	Mt	78.54	84.15	78.97	87.98	92.04	99.95	106.69	106.40
Value	\$m	3 790	3 767	3 114	4 204	5 294	4 448	4 372	6 336
Unit value	\$/t	48.25	44.76	39.43	47.78	57.51	44.50	40.98	59.55

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Department of Foreign Affairs and Trade, computer database compiled from trade data supplied by the ABS.

249 Volume of Australian exports of steaming coal, by destination

	1997-98 Mt	1998-99 Mt	1999-00 Mt	2000-01 Mt	2001-02 Mt	2002-03 Mt	2003-04 Mt	2004-05 Mt
Asia								
ASEAN a	2.27	2.81	3.86	2.24	2.48	2.62	2.61	3.79
China b	1.53	1.65	0.88	0.60	2.95	3.99	2.45	1.75
Chinese Taipei	10.04	8.57	9.29	8.65	10.24	10.82	9.89	14.33
Hong Kong, China	1.87	2.06	0.73	0.42	0.26	0.73	1.20	0.37
Japan	40.29	39.28	43.01	49.99	49.62	52.44	58.78	57.28
Korea, Rep. of	15.56	13.77	11.38	12.80	13.40	14.20	16.22	17.95
Other Asia	1.46	2.38	3.31	4.92	3.45	2.79	3.51	2.42
Total	73.03	70.54	72.47	79.63	82.40	87.59	94.66	97.89
Europe								
European Union c	3.89	10.63	5.06	6.49	6.25	7.37	7.86	3.48
Denmark	0.45	0.48	0.32	0.16	0.19	0.41	0.79	0.00
Germany	0.00	1.23	0.00	0.00	0.17	0.00	0.26	0.12
Netherlands	1.76	2.82	1.88	1.39	1.51	1.82	1.59	0.73
United Kingdom	0.44	1.86	1.22	1.75	0.97	1.28	1.88	0.99
Other Europe	1.62	2.98	1.44	1.86	3.38	4.98	4.18	5.02
Total all countries	78.54	84.15	78.97	87.98	92.04	99.95	106.69	106.40

a Includes Brunei Darrusalam, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. **b** Excludes Hong Kong. **c** Regarded as twenty five countries for all years.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Department of Foreign Affairs and Trade, computer database compiled from trade data provided by the ABS.

250 Volume of Australian exports of high quality coking coal, by destination

	1997-98 Mt	1998-99 Mt	1999-00 Mt	2000-01 Mt	2001-02 Mt	2002-03 Mt	2003-04 Mt	2004-05 Mt
Asia								
China a	0.28	1.26	1.42	0.43	0.04	0.68	3.07	3.73
Chinese Taipei	4.16	2.79	2.93	3.90	4.01	3.82	3.43	3.51
India	9.27	8.03	8.57	9.09	9.67	11.08	10.09	13.41
Japan	15.16	14.94	18.54	16.76	17.37	18.22	17.78	22.87
Korea, Rep. of	5.64	5.23	5.10	6.43	6.63	7.44	6.80	8.01
Pakistan	0.53	0.48	0.41	0.42	0.49	0.44	0.43	0.59
Other Asia	2.46	2.47	1.44	1.55	2.11	1.80	1.20	1.18
Total Asia	37.50	35.22	38.40	38.57	40.33	43.50	42.82	53.32
Europe								
European Union b	13.83	15.50	17.60	17.31	18.43	16.60	17.77	19.49
France	2.15	2.63	3.12	3.22	2.94	2.54	2.32	2.47
Germany	1.01	1.38	1.74	1.40	1.24	1.46	1.37	1.58
Italy	2.19	2.26	2.23	2.24	2.34	1.63	1.93	2.53
United Kingdom	4.13	3.93	4.85	4.31	3.97	3.72	3.67	4.01
Other Europe	6.36	6.11	7.62	7.28	8.19	7.76	6.96	7.92
Total all countries	57.01	56.00	62.78	61.96	65.46	66.45	67.55	80.73

a Excludes Hong Kong. **b** Regarded as twenty five countries for all years.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Department of Foreign Affairs and Trade, computer database compiled from trade data provided by the ABS.

251 Volume of Australian exports of coking coal other than high quality, by destination

	1997-98 Mt	1998-99 Mt	1999-00 Mt	2000-01 Mt	2001-02 Mt	2002-03 Mt	2003-04 Mt	2004-05 Mt
Asia								
India	0.27	0.67	1.16	1.64	2.27	3.02	3.49	4.03
Japan	18.15	19.09	21.45	26.72	23.02	23.09	23.60	22.09
Europe								
European Union c	1.07	0.86	2.43	4.76	4.24	3.42	4.04	4.76
Americas								
Brazil	1.11	0.96	1.29	2.20	1.62	2.30	0.77	0.00
Total all countries	27.07	29.26	34.03	43.56	40.37	41.34	44.19	44.19

a Regarded as twenty five countries for all years.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Department of Foreign Affairs and Trade, computer database compiled from trade data provided by the ABS.

252 Volume of world exports of coal, by coal type and major exporters

	1997 Mt	1998 Mt	1999 Mt	2000 Mt	2001 Mt	2002 Mt	2003 Mt	2004 s Mt
Metallurgical coal								
Australia a	78.7	84.1	85.3	96.8	105.5	105.8	107.8	111.7
Canada	30.1	28.4	28.9	28.4	26.9	23.0	24.0	26.0
China	4.6	4.9	5.2	6.5	11.4	13.3	13.1	6.4
Poland	9.1	6.5	6.6	5.3	3.8	3.5	2.7	3.0
Russian Federation	9.9	6.7	6.6	7.6	14.4	9.2	9.5	14.1
United States	47.3	42.7	29.1	29.8	23.1	19.5	20.0	24.3
World a	184.6	179.4	168.6	181.6	193.1	179.1	198.6	208.3
Total seaborne	182.4	172.0	173.1	172.0	182.1	173.1	190.8	195.8
Thermal coal								
Australia	73.9	83.6	78.7	85.5	86.7	98.5	103.1	106.9
Canada	6.4	5.8	4.6	3.7	2.7	3.8	4.2	4.5
China a	30.7	27.4	32.2	48.6	78.7	70.6	80.9	80.2
Colombia	27.6	30.1	29.9	35.6	38.4	34.5	44.7	51.2
Indonesia	41.7	47.2	55.3	57.4	65.3	74.2	84.7	107.4
Poland	20.3	21.5	17.5	18.0	19.2	19.1	17.4	16.6
Russian Federation	15.0	17.6	21.3	29.4	27.1	34.3	45.2	51.4
South Africa	64.2	61.3	66.2	69.9	68.2	68.5	71.5	66.4
United States	27.4	27.8	20.4	22.1	12.0	9.1	10.5	11.5
World	347.0	365.2	373.7	418.9	463.5	474.0	509.0	543.2
Total seaborne	284.8	292.8	302.8	356.9	385.1	407.7	448.9	480.1

a Includes pulverised coal injection – coal used for metallurgical purposes. s ABARE estimate.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; International Energy Agency, *Coal Information*, OECD, Paris; Joint Coal Board and Queensland Department of Mines and Energy, *Australian Black Coal Statistics*, Sydney; ABARE.

253 Volume of Japanese imports of coal, by source

	Total imports Mt	Australia %	Canada %	China %	Indonesia %	Russian Federation %	South Africa %	United States %	Other %
Steaming coal									
1996	59.42	57.2	3.4	13.1	11.7	3.6	4.8	5.4	0.8
1997	65.97	59.4	3.1	12.7	12.9	2.8	4.1	3.8	1.2
1998	64.73	60.2	3.0	13.5	13.6	2.3	3.4	3.9	0.1
1999	71.92	58.2	1.9	13.9	13.5	2.9	3.7	4.0	1.9
2000	84.79	54.8	1.2	17.7	13.2	2.8	1.7	3.5	5.1
2001	90.50	55.9	6.4	17.3	10.6	3.6	0.7	1.4	4.1
2002	95.51	53.4	5.7	20.0	11.8	4.2	0.3	0.2	4.4
2003	100.68	53.4	5.2	18.9	12.5	4.6	0.1	0.0	5.3
2004 s	113.00	53.1	5.0	18.2	12.0	4.9	0.1	0.1	6.6
Coking coal									
1996	65.52	48.2	23.8	5.0	3.7	3.8	4.5	9.0	2.0
1997	65.92	51.8	24.5	4.6	4.8	3.8	3.0	7.4	0.1
1998	61.45	49.6	22.5	4.2	5.6	3.3	2.6	5.8	6.4
1999	63.77	57.8	19.6	4.3	5.6	2.6	0.9	3.1	6.1
2000	65.69	63.0	18.9	5.6	5.5	0.0	0.1	0.8	6.1
2001	64.59	63.5	6.7	12.0	11.0	3.7	0.7	1.5	0.9
2002	67.18	61.9	6.2	15.0	9.5	4.5	0.3	0.2	2.4
2003	67.63	63.5	5.7	17.6	8.0	5.0	0.1	0.0	0.1
2004 s	69.20	64.0	8.3	12.2	7.2	6.4	0.0	1.5	0.4

s ABARE estimate.

Source: ABS; International Energy Agency, *Energy Prices and Taxes*, OECD, Paris.

254 Volume of European Union imports of coal, by source ^a

	Total imports Mt	Australia %	Canada %	Columbia %	Poland %	South Africa %	United States %	Other %
Steaming coal								
1996	94.42	3.3	0.4	14.1	13.8	29.4	19.0	20.1
1997	99.73	5.7	0.7	15.2	15.2	26.7	12.9	23.6
1998	96.46	6.6	0.2	15.5	14.9	29.0	8.0	25.8
1999	99.94	8.6	0.2	15.6	14.7	31.6	5.7	23.6
2000	110.21	6.7	0.2	16.6	14.7	33.0	5.5	23.2
2001	126.66	6.4	0.2	14.3	12.8	31.9	6.9	27.6
2002	120.27	6.6	0.1	15.0	13.1	36.1	3.1	26.0
2003	134.83	6.9	0.0	15.6	10.8	36.9	2.1	27.8
2004	151.94	5.5	0.0	13.8	8.4	32.5	2.5	37.3
Coking coal								
1996	39.59	29.5	11.9	0.1	5.8	2.9	45.2	4.6
1997	39.97	30.4	12.0	0.5	6.4	4.7	42.5	3.6
1998	42.99	29.4	10.5	0.1	6.8	7.0	42.7	3.5
1999	39.81	38.3	13.2	0.6	4.9	2.7	36.0	4.2
2000	38.79	44.5	13.8	0.4	3.2	2.0	33.4	2.8
2001	36.72	47.4	14.5	0.2	2.6	4.6	27.3	3.3
2002	33.10	48.3	14.4	na	4.3	2.9	25.8	4.4
2003	34.96	45.4	12.9	0.5	2.2	7.0	26.4	5.6
2004	43.75	41.2	12.9	1.1	1.6	6.3	24.1	12.7

^a Imports from non-EU countries only. Regarded as fifteen countries. **na** Not available.

Source: International Energy Agency, *Energy Prices and Taxes*, OECD, Paris.

255 Japanese and European Union coal import unit values, by country of origin ^a

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t
Japan									
Steaming coal									
Australia	50.24	45.59	40.80	36.12	34.59	38.32	37.38	35.13	50.20
Canada	45.91	42.01	38.25	33.50	34.72	36.94	37.34	33.82	52.60
China	46.52	44.73	39.96	34.89	33.69	36.95	36.25	35.28	55.06
Indonesia	45.49	41.63	36.58	32.40	31.85	35.17	34.52	32.72	46.98
South Africa	49.86	46.58	41.50	37.34	35.82	38.05	40.30	35.21	na
United States	54.32	49.86	47.52	45.37	45.49	45.99	48.63	na	na
All sources b	49.29	45.26	40.68	35.87	34.59	37.95	36.95	34.93	51.48
Coking coal									
Australia	54.07	52.73	49.47	41.83	39.01	40.96	43.32	43.56	56.85
Canada	64.44	64.84	59.73	51.05	45.46	47.30	50.50	51.64	62.04
China	51.88	49.98	46.78	40.01	37.12	39.35	38.97	39.09	72.57
Indonesia	49.01	45.51	39.73	34.07	32.36	35.13	34.12	31.94	40.78
South Africa	50.94	49.64	47.06	39.74	39.99	47.09	na	na	na
United States	61.05	61.24	59.53	55.79	52.69	47.81	52.07	42.93	na
All sources b	56.39	55.19	50.98	42.95	39.46	41.13	42.14	41.73	61.40
European Union									
Steaming coal									
Australia	48.25	46.38	40.03	36.68	39.04	44.13	43.28	46.83	69.05
Indonesia	38.96	33.61	30.79	29.35	30.05	36.08	36.48	39.29	52.56
Poland	46.50	42.62	39.61	35.03	35.30	44.41	40.75	43.26	68.95
South Africa	42.23	40.33	36.30	31.78	33.83	42.32	36.65	39.10	58.00
United States	48.03	48.47	46.99	40.67	41.07	46.52	43.48	47.37	61.50
All non-EU sources c	45.07	43.13	39.40	34.12	34.93	42.79	38.57	41.88	62.06
Coking coal									
Australia	59.72	57.97	54.99	47.33	45.45	51.24	55.52	58.03	73.63
Poland	61.11	61.01	52.52	47.48	50.43	51.58	50.15	62.24	108.71
South Africa	47.44	43.31	35.83	35.83	39.09	42.10	38.69	39.20	61.31
United States	62.03	60.08	58.53	54.14	52.91	58.54	61.48	64.18	84.75
All non-EU sources c	59.81	58.08	54.55	49.00	47.85	53.50	56.50	59.09	78.42

^a Average unit value cif. ^b Average includes countries not listed separately. ^c Average includes non-EU countries not listed separately. **na** Not available.

Source: International Energy Agency, *Energy Prices and Taxes*, OECD, Paris.

256 Selected Australian–Japanese contract prices for coking and steaming coal ^a

	1998	1999	2000	2001	2002	2003	2004	2005
Coking coal								
Hard ^b								
US\$/t	53.50	50.95	41.90	39.75	42.75	48.10	46.20	57.00
A\$/t	74.92	82.24	64.97	71.25	83.07	85.53	66.60	78.89
Real A\$/t	86.52	94.17	73.32	77.99	88.24	88.21	66.60	76.80
Other coking ^c								
US\$/t	42.00	37.90	32.20	30.60	36.00	33.05	31.05	41.00
A\$/t	58.82	61.18	49.93	54.85	69.95	58.77	44.76	59.52
Real A\$/t	67.92	70.05	56.35	60.04	74.31	60.61	44.76	57.94
Steaming coal ^d								
US\$/t	37.65	34.50	29.95	28.75	34.50	31.84	26.75	45.00
A\$/t	52.72	55.45	46.44	51.53	67.04	51.12	38.56	62.28
Real A\$/t	60.89	63.49	52.41	56.41	71.21	52.73	38.56	60.63

^a Japanese fiscal year beginning 1 April. Prices are fob; real prices are in 2004 Australian dollar terms. ^b For example, Goonyella export coal. ^c Non-hard coking coal price based on Australian/Japanese contract settlements. ^d For steaming coal with a calorific value of 6700 kcal/kg.
 Sources: International Energy Agency, *Coal Information*, OECD, Paris; ABARE.

257 Australian and US coal export unit values, by destination ^a

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t	US\$/t
Australia									
Steaming coal									
France	34.02	35.12	25.88	22.37	19.14	31.38	22.62	24.05	29.77
Italy	na	na	24.50	22.27	21.30	31.07	25.26	24.77	31.26
Japan	38.89	35.40	31.50	27.02	24.72	29.69	29.20	26.00	38.45
Netherlands	32.65	29.50	23.89	20.49	20.65	26.45	24.65	26.69	42.90
All destinations b	37.77	34.35	30.10	26.49	24.27	28.71	28.01	25.41	37.65
Coking coal									
France	47.24	46.71	42.37	36.49	33.37	37.32	41.41	39.06	46.79
Italy	48.57	48.41	44.48	40.38	34.97	42.68	45.90	45.51	51.40
Japan	46.11	45.52	42.47	34.60	31.64	34.46	36.79	36.18	45.51
Netherlands	46.36	47.94	44.03	37.73	34.10	41.09	46.17	45.45	52.07
All destinations b	47.56	47.37	43.97	35.99	32.85	36.93	40.16	39.75	48.84
United States									
Steaming coal									
France	39.83	38.40	39.16	42.14	28.96	30.50	na	na	na
Italy	45.41	43.31	40.12	51.13	30.67	42.50	42.91	46.67	46.90
Japan	40.02	38.55	37.00	35.40	34.90	37.70	40.41	na	na
Netherlands	36.31	35.86	32.78	28.44	28.90	35.71	na	na	na
All destinations b	36.94	34.84	32.24	32.02	31.84	34.51	37.70	37.00	53.93
Coking coal									
France	51.95	52.03	50.64	47.10	44.19	48.54	54.96	55.56	71.81
Italy	52.80	53.85	52.93	51.02	49.45	53.11	56.41	54.49	66.99
Japan	46.51	45.94	45.98	44.46	41.99	na	na	56.01	98.14
Netherlands	52.13	51.92	51.25	47.90	45.46	48.90	na	na	na
All destinations b	50.05	49.99	48.55	46.19	42.98	45.88	50.06	49.11	70.14

a Average unit value, fob. **b** Average for all countries. **na** Not available.

Source: International Energy Agency, *Energy Prices and Taxes*, OECD, Paris.

258 World hard coal production, by country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	Mt	Mt	Mt	Mt	Mt	Mt	Mt	Mt
Australia	206.3	221.1	223.7	239.4	264.2	273.2	274.9	285.2
Brazil	5.6	5.5	5.7	6.7	5.7	5.1	4.6	5.6
Canada	41.2	38.1	36.5	33.8	34.0	29.6	26.6	29.3
China b	1 367.2	1 305.5	1 238.3	1 231.2	1 267.9	1 397.8	1 670.1	1 956.2
Colombia	35.6	33.7	32.7	38.1	43.4	39.5	50.0	56.7
Former Soviet Union c	274.6	268.5	272.6	285.8	307.5	302.8	326.0	355.4
Germany	51.2	45.3	43.8	37.4	30.7	29.2	28.8	29.2
India	296.0	292.3	301.2	311.4	324.8	337.8	358.4	373.2
Indonesia	54.9	62.0	73.8	76.6	92.5	103.4	115.3	129.1
Poland	137.8	115.7	110.2	103.3	104.0	103.7	102.9	100.0
South Africa	220.1	223.0	223.5	224.2	223.6	220.2	240.0	237.9
United Kingdom	48.5	41.2	37.1	31.2	31.9	30.0	28.3	25.0
United States	910.4	936.0	916.9	894.0	948.8	917.9	893.9	932.5
World total d	3 762.5	3 702.7	3 626.2	3 627.9	3 794.1	3 902.1	4 231.2	4 629.2

a Hard coal includes anthracite and bituminous coal, and for the United States and New Zealand, sub-bituminous coal. **b** Excludes Hong Kong. **c** Total of fifteen countries. **d** Includes countries not listed separately.

Sources: International Energy Agency, *Coal Information*, OECD, Paris; Joint Coal Board and the Queensland Department of Mines and Energy, *Australian Black Coal Statistics*, Sydney.

259 Summary of Australian statistics for dimension stone

	Production ^a	Exports		Imports
	Volume kt	Volume t	Value \$'000	Value \$'000
1960	323	na	15	363
1961	541	na	9	405
1962	385	na	8	439
1963	639	na	24	481
1964	599	na	7	613
1965	474	na	12	562
1966	245	1 629	32	440
1967	290	280	16	408
1968	280	657	32	407
1969	269	792	44	427
1970	90	1 821	84	466
1971	81 b	1 209	57	569
1972	318 b	731	42	708
1973	144 b	1 621	105	395
1974	143 b	2 347	155	440
1975	255 b	379	na	606
1976	112	112	na	489
1977	84	757	180	832
1978	115	387	133	2 371
1979	122 c	1 086	83	2 224
1980	116 c	2 762	220	4 472
1981	125 c	205	46	5 450
1982	129 d	84	33	7 768
1983	97 d	1 224	367	6 619
1984	102 d	4 244	1 861	9 980
1985	190 e	2 537	782	14 025
1986	106 e	5 226	1 893	12 097
1987	99 f	2 974	1 119	15 231
1988	149 g	1 659	776	16 295
1988-89	92 f	2 913	1 441	19 732
1989-90	198	1 665	1 520	17 455
1990-91	na	3 393	4 417	11 237
1991-92	na	11 672	2 963	11 466
1992-93	553	8 721	4 501	11 173
1993-94	na	10 007	5 829	10 604
1994-95	na	14 605	5 531	9 811
1995-96	na	17 372	6 220	8 411
1996-97	na	15 364	5 519	7 828
1997-98	na	5 074	4 223	5 377
1998-99	na	16 766	6 509	12 327
1999-00	119	21 747	6 249	14 818
2000-01	104	18 029	7 725	11 958
2001-02	111	39 651	8 716	6 902
2002-03	136	16 851	6 074	9 111
2003-04	na	27 067	8 606	8 875
2004-05	na	28 099	9 263	9 321

a Data incomplete because coverage differs between states. **b** Excludes the Australian Capital Territory, the Northern Territory and Queensland. **c** Excludes the Australian Capital Territory and the Northern Territory. **d** Excludes the Australian Capital Territory. **e** Excludes the Australian Capital Territory and Queensland. **f** Excludes the Australian Capital Territory, Queensland and Western Australia. **g** Excludes the Australian Capital Territory, Queensland and Tasmania. **na** Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, BMR, Canberra; state mines departments and their equivalents; ABARE.

260 Australian production of dimension stone, by state ^a

	New South Wales kt	Victoria kt	Queensland kt	Western Australia kt	South Australia kt	Tasmania kt	Australia kt
1960	160	4	5	114	39	na	323
1961	360	7	2	132	40	na	541
1962	201	9	3	130	37	1	385
1963	377	10	2	214	25	2	639
1964	387	10	3	151	32	6	599
1965	225	15	4	189	32	1	474
1966	45	10	2	149	31	1	245
1967	45	11	2	129	47	2	290
1968	42	7	5	148	42	4	280
1969	31	9	3	167	49	2	269
1970	23	8	na	4	51	2	90
1971	13	10	na	7	50	1	81 b
1972	27	13	na	228	47	1	318 c
1973	14	15	na	67	46	2	144 c
1974	14	11	na	67	49	2	143 c
1975	12	12	na	187	40	2	255 c
1976	15	11	na	30	36	2	112 c
1977	13	8	4	22	27	3	84 b
1978	14	13	2	45	29	4	115 b
1979	16	7	8	56	28	6	122 b
1980	14	26	12	31	32	3	116 d
1981	24	29	24	20	27	1	125 d
1982	16	20	44	24	24	1	129 e
1983	21	35	na	11	29	1	97 e
1984	22	18	na	25	35	1	102 e
1985	22	28	na	101	34	4	190 f
1986	21	19	na	32	31	2	106 f
1987	21	46	na	na	31	1	99 g
1988	32	31	na	50	34	2	149 h
1988-89	34	17	na	na	40	1	92 g
1989-90	32	52	9	72	31	2	198
1990-91	40	6	na	na	42	2	na
1991-92	35	na	na	na	61	2	na
1992-93	33	12	31	414	61	2	553
1993-94	na	na	25	na	na	na	na
1994-95	na	na	na	na	na	na	na
1995-96	29	na	na	na	31	na	na
1996-97	25	na	20	1	28	na	na
1997-98	25	na	17	3	37	na	na
1998-99	34	5	25	4	41	na	na
1999-00	32	4	20	3	52	7	119
2000-01	27	2	30	1	38	6	104
2001-02	28	2	39	2	36	4	111
2002-03	32	15	43	1	42	3	136
2003-04	na	16	na	3	na	na	na

^a Data incomplete because coverage differs between states. Australian totals may include estimates for states for which data are not available separately. ^b Includes the Australian Capital Territory, the Northern Territory and Queensland. ^c Excludes the Australian Capital Territory, the Northern Territory and Queensland. ^d Excludes the Australian Capital Territory and the Northern Territory. ^e Excludes the Australian Capital Territory. ^f Excludes the Australian Capital Territory and Queensland. ^g Excludes the Australian Capital Territory, Queensland and Western Australia. ^h Excludes the Australian Capital Territory, Queensland and Tasmania. **na** Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; state mines departments and their equivalents; ABARE.

261 Australian exports of dimension stone, by destination

	Italy	New Zealand	Other	Total	
				Volume	Value
	t	t	t	t	\$'000
1960	na	na	na	na	15
1961	na	na	na	na	9
1962	na	na	na	na	8
1963	na	na	na	na	24
1964	na	na	na	na	7
1965	na	na	na	na	12
1966	na	na	na	1 629	32
1967	na	na	na	280	16
1968	na	na	na	657	32
1969	na	na	na	792	44
1970	na	na	na	1 821	84
1971	na	na	na	1 209	57
1972	na	na	na	731	42
1973	na	na	na	1 621	105
1974	na	na	na	2 347	155
1975	na	na	na	379	na
1976	na	na	na	112	na
1977	na	na	na	757	180
1978	na	na	na	387	133
1979	na	na	na	1 086	83
1980	1 973	40	749	2 762	220
1981	0	4	201	205	46
1982	0	31	53	84	33
1983	1 178	6	40	1 224	367
1984	3 290	26	928	4 244	1 861
1985	2 364	133	40	2 537	782
1986	4 831	259	136	5 226	1 893
1987	1 903	324	747	2 974	1 119
1988	634	272	753	1 659	776
1988-89	530	290	2 092	2 913	1 441
1989-90	249	158	1 258	1 665	1 520
1990-91	910	110	2 373	3 393	4 417
1991-92	490	57	11 125	11 672	2 963
1992-93	1 324	54	7 343	8 721	4 501
1993-94	203	199	9 604	10 007	5 829
1994-95	136	178	14 292	14 605	5 531
1995-96	2 168	23	15 180	17 372	6 220
1996-97	2 546	148	12 670	15 364	5 519
1997-98	190	27	4 857	5 074	4 223
1998-99	220	186	16 359	16 766	6 509
1999-00	1 015	106	20 626	21 747	6 249
2000-01	2 565	25	15 439	18 029	7 725
2001-02	3 400	268	35 983	39 651	8 716
2002-03	6 715	21	10 115	16 851	6 074
2003-04	6 339	80	20 648	27 067	8 606
2004-05	6 958	81	21 060	28 099	9 263

na Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; ABARE.

262 Australian imports of dimension stone

	Slate		Marble a		Crystalline rock b		Quartzite c		Total
	Volume '000 m ²	Value \$'000	Volume t	Value \$'000	Volume t	Value \$'000	Volume t	Value \$'000	Value \$'000
1970	na	na	1 910	246	1 591	77	na	na	466
1971	na	na	3 372	330	2 007	110	na	na	569
1972	na	na	2 711	407	1 468	85	na	na	708
1973	na	na	1 309	206	1 898	118	na	na	395
1974	na	na	1 376	204	1 267	73	na	na	440
1975	na	na	1 634	289	1 610	133	na	na	606
1976	na	na	1 183	218	2 791	177	na	na	489
1977	na	na	1 706	397	1 862	215	na	na	832
1978	na	na	1 578	457	1 658	160	na	na	2 371
1979	na	na	1 752	507	2 479	287	na	na	2 224
1980	na	2 109	2 707	995	2 026	391	na	na	4 472
1981	na	3 728	2 800	1 205	1 982	369	207	94	5 450
1982	na	5 510	3 631	1 516	3 277	572	659	170	7 768
1983	689	4 535	3 049	1 493	1 993	420	3 521	171	6 619
1984	988	6 521	3 569	1 964	3 517	1 170	5 703	325	9 980
1985	1 266	8 911	4 449	2 999	3 859	1 956	222	159	14 025
1986	1 062	7 717	3 001	2 354	2 685	1 698	357	328	12 097
1987	1 343	9 105	3 221	2 982	8 873	2 663	349	481	15 231
1988	1 674	11 414	2 300	1 903	17 122	2 552	580	426	16 295
1988-89	2 139	14 023	2 688	2 058	28 732	3 120	905	530	19 732
1989-90	1 687	11 584	1 975	2 087	15 232	3 348	744	436	17 455
1990-91	1 255	7 598	960	784	5 291	2 598	483	257	11 237
1991-92	1 659	8 330	694	663	3 688	2 110	463	363	11 466
1992-93	1 410	7 406	557	499	4 181	2 613	1 071	655	11 173
1993-94	1 200	6 401	702	618	4 824	3 241	659	343	10 604
1994-95	1 044	5 475	689	718	6 172	3 273	364	346	9 811
1995-96	608	3 098	700	750	7 350	4 211	217	352	8 411
1996-97	509	2 778	702	675	7 915	4 160	128	215	7 828
1997-98	177	1 050	1 000	1 014	5 399	3 182	121	131	5 377
1998-99	333	2 350	1 809	2 659	10 323	7 114	112	204	12 327
1999-00	370	3 452	1 654	2 000	14 576	8 967	248	398	14 818
2000-01	269	1 406	1 368	1 648	12 018	8 660	152	244	11 958
2001-02	215	1 373	406	273	10 283	4 827	434	429	6 902
2002-03	177	1 381	947	975	13 324	6 114	880	641	9 111
2003-04	123	898	1 398	1 173	15 929	6 527	316	277	8 875
2004-05	250	948	1 315	1 069	16 530	6 855	695	450	9 321

a Includes calcareous stone. b Includes sandstone. c Predominantly quartzite. na Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; ABARE.

263 Australian production of sand, by state ^a

	New South Wales kt	Victoria kt	Queensland kt	South Australia kt	Tasmania kt	Northern Territory kt	Australia kt
1960	3 023	1 132	na	1 843	21	na	6 030
1961	2 984	2 568	na	1 893	35	na	7 547
1962	3 005	2 842	na	1 540	99	na	7 656
1963	3 729	3 048	na	2 026	113	na	9 196
1964	5 209	3 352	na	1 884	163	na	10 929
1965	5 045	3 989	na	1 823	280	na	11 628
1966	4 246	4 356	na	1 611	232	na	10 838
1967	4 598	4 278	na	1 784	234	na	11 328
1968	6 718	5 075	na	2 110	281	na	14 637
1969	6 686	6 680	1 022	2 930	265	na	18 199
1970	6 174	5 242	2 282	2 627	271	na	16 973
1971	6 353	5 747	3 031	2 707	185	371	18 394 b
1972	7 603	5 619	3 619	2 387	185	471 c	19 884 b
1973	8 798	6 660	4 182	2 525	179	581 c	22 925 b
1974	8 797	7 788	4 733	2 476	252	474 c	24 520 b
1975	8 415	7 541	4 933	2 567	190	766 c	24 412 b
1976	7 793	7 766	5 172	2 575	391	568 c	24 264 b
1977	7 676	9 040	4 137	3 919	439	389 c	25 600 b
1978	7 077	8 951	3 768	2 808	349	310 c	23 264 b
1979	8 263	8 357	4 410	2 526	448	285 c	24 290 b
1980	9 553	8 400	4 800	2 287	361	293 c	25 694 b
1981	10 738	7 929	5 787	2 753	334	460 c	28 002 b
1982	10 767	7 449	6 337	2 564	332	1 268 c	28 718 b
1983	8 403	6 884	5 583	2 094	388	192	23 543 d
1984	8 401	6 951	5 876	2 542	450	455	24 675 d
1985	8 989	7 437	6 386	2 852	576	399	26 640 d
1986	10 239	6 653	5 949	4 145	510	396	27 892 d
1987	9 501	8 476	6 179	2 961	572	377	28 067 d
1988	10 176	7 339	7 596	3 435	713	75	29 334 d
1988-89	11 188	7 339	6 970	3 195	518	154	30 121 e
1989-90	11 605	6 633	7 561	3 646	498	146	33 856 e
1990-91	10 098	5 693	na	2 694	426	na	18 912 f
1991-92	10 035	na	na	2 745	448	na	na
1992-93	10 647	9 984	5 733	3 129	495	186	32 970
1993-94	na	na	na	3 185	na	na	na
1994-95	na	na	na	na	na	na	na
1995-96	8 902	na	na	2 225	na	na	na
1996-97	7 109	na	na	2 286	na	578	na
1997-98	9 428	na	na	2 389	na	na	na
1998-99	10 378	na	na	2 892	na	na	na
1999-00	10 498	na	na	na	423	306	na
2000-01	8 769	5 981	na	661	316	165	na
2001-02	8 262	6 905	5 034	3 392	382	196	24 171
2002-03	9 642	7 092	5 560	3 846	383	194	26 717
2003-04	na	6 884	na	na	485	154	na

a Data incomplete because coverage differs between states. Australian totals may include estimates for states for which data are not available separately. **b** Excludes Western Australia. **c** Includes the Australian Capital Territory. **d** Excludes the Australian Capital Territory and Western Australia. **e** Excludes the Australian Capital Territory. **f** Excludes the Australian Capital Territory, Queensland, Western Australia and the Northern Territory. **na** Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; state mines departments and their equivalents; ABARE.

264 Australian production of gravel, by state ^a

	New South Wales	Victoria	Queensland	South Australia	Tasmania	Northern Territory	Australia
	kt	kt	kt	kt	kt	kt	kt
1960	1 798	158	na	666	348	8	2 979
1961	1 473	3 089	na	926	622	5	6 115
1962	1 516	2 990	na	759	656	na	6 007
1963	1 883	3 743	na	1 066	929	na	7 747
1964	2 046	4 105	na	887	1 092	62	8 248
1965	2 292	3 662	na	555	1 260	59	7 884
1966	2 474	3 326	na	871	1 449	na	8 686
1967	2 329	3 683	na	935	1 468	na	9 193
1968	3 043	3 247	na	350	1 621	na	8 473
1969	3 118	2 834	1 155	918	1 531	na	10 501
1970	3 869	2 797	2 106	820	1 295	na	12 093
1971	4 021	3 599	2 392	847	915	1 074 b	12 849 c
1972	3 341	3 486	3 306	833	1 034	770 b	12 771 c
1973	3 652	3 634	4 447	694	1 093	922 b	14 441 c
1974	3 667	4 858	5 481	754	1 016	1 725 b	17 500 c
1975	3 530	4 732	4 874	458	1 063	1 524 b	16 181 c
1976	3 498	4 493	5 045	490	1 004	1 110 b	15 640 c
1977	3 224	4 743	4 126	1 098	1 219	1 073 b	15 483 c
1978	3 522	4 807	3 178	806	1 184	679 b	14 176 c
1979	4 354	4 918	3 377	394	1 176	1 786 b	16 005 c
1980	4 736	5 131	3 030	331	1 102	1 336 b	15 667 c
1981	4 612	4 740	3 525	125	1 077	561 b	14 639 c
1982	5 552	5 053	3 513	74	1 156	1 323 b	16 813 c
1983	4 080	4 478	3 205	74	1 238	857	13 931 d
1984	4 486	3 494	3 777	284	1 165	1 824	15 031 d
1985	4 666	5 206	3 297	2 258	1 171	1 793	18 393 d
1986	5 461	4 176	3 186	221	986	1 870	15 900 d
1987	4 992	4 334	2 797	207	832	2 203	15 365 d
1988	5 003	3 558	3 548	442	314	2 819	15 684 d
1988-89	5 464	3 753	4 247	213	107	2 243	16 050 e
1989-90	6 532	1 002 f	3 069	176	91	1 380	12 259 e
1990-91	6 091	1 131	na	415	35	na	7 672 g
1991-92	6 241	na	na	424	33	na	na
1992-93	5 823	1 780	2 788	555	47	1 090	12 141
1993-94	na	na	na	na	na	na	na
1994-95	na	na	na	na	na	na	na
1995-96	5 871	na	na	na	na	na	na
1996-97	7 925	na	na	na	na	2 764	na
1997-98	5 495	na	na	na	na	na	na
1998-99	5 220	3 939	na	239	61	1 097	na
1999-00	4 565	2 479	na	181	64	276	7 771
2000-01	3 644	3 556	na	58	41	174	7 635
2001-02	3 087	3 404	1 072	89	25	270	7 947
2002-03	4 265	3 802	1 141	114	27	608	9 957
2003-04	na	3 542	na	54	40	413	na

a Data incomplete because coverage differs between states. Australian totals may include estimates for states for which data are not available separately. **b** Includes the Australian Capital Territory. **c** Excludes Western Australia. **d** Excludes the Australian Capital Territory and Western Australia. **e** Excludes the Australian Capital Territory. **f** Victorian data after 1988-89 includes only establishments holding titles under the *Extractive Industries Act 1966*. Previous details represent estimates for all establishments. **g** Excludes the Australian Capital Territory, Queensland, Western Australia and the Northern Territory. **na** Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, BMR, Canberra; state mines departments and their equivalents; ABARE.

265 Australian production of crushed and broken stone, by state ^a

	New South Wales kt	Victoria kt	Queensland kt	Western Australia kt	South Australia kt	Tasmania kt	Northern Territory kt	Australia kt
1960	3 147	8 189	2 216	923	7 986	520	229	23 209
1961	3 855	11 478	1 900	964	8 747	580	216	27 741
1962	4 011	11 384	2 401	1 341	8 436	627	na	28 392
1963	3 870	12 583	2 574	1 562	8 496	937	na	30 246
1964	4 033	13 198	2 497	2 060	11 638	1 026	89	34 723
1965	6 802	15 784	2 817	2 510	10 948	1 361	na	40 810
1966	8 434	19 409	3 174	3 011	10 978	2 149	na	47 547
1967	8 590	18 301	4 762	3 107	10 709	1 176	na	47 011
1968	9 345	17 575	3 917	3 719	9 016	1 206	na	45 087
1969	9 217	15 865	4 030	4 517	12 418	1 377	na	47 830
1970	10 867	15 451	4 159	4 743	1 027	1 313	na	50 793 b
1971	10 020	17 505	4 665	5 234	10 817	1 365	670 b	50 275 b
1972	11 322	16 079	4 218	4 574	12 680	1 336	906 b	51 115
1973	11 452	15 805	6 933	4 451	10 084	1 558	999 b	51 281
1974	11 451	17 499	8 246	5 128	9 864	1 486	996 b	54 671
1975	13 196	18 382	9 454	5 166	9 242	1 495	1 278 b	58 213
1976	10 581	16 885	8 241	5 043	9 765	1 697	820 b	53 033
1977	9 728	17 884	9 411	5 031	9 618	1 621	1 104 b	54 398
1978	10 699	18 665	10 811	5 258	8 848	1 582	1 046 b	56 910
1979	12 081	19 115	12 588	5 801	4 146	1 707	1 090	56 498
1980	14 436	18 001	12 722	4 762	4 460	1 746	1 611 b	57 737
1981	14 543	14 073	15 784	7 397	3 759	1 562	992 b	58 110
1982	12 765	13 279	19 601	5 145	4 189	1 719	303	57 100 c
1983	10 185	13 527	16 592	4 272	2 435	1 609	495	49 115 c
1984	10 452	14 756	19 869	5 067	3 613	2 023	551	56 331 c
1985	12 641	20 539	20 692	6 596	4 066	1 981	959	67 474 c
1986	13 819	20 658	21 597	6 160	4 335	3 040	646	70 255 c
1987	13 135	19 526	20 433	5 743	3 600	2 488	353	65 278 c
1988	12 575	20 001	22 644	6 297	3 432	2 361	193	67 503 c
1988-89	14 861	22 763	22 724	na	3 567	2 525	270	66 710 d
1989-90	15 437	21 232	25 623	8 176	3 703	2 460	367	76 998 d
1990-91	15 488	14 854	na	na	3 571	2 065	na	35 977 e
1991-92	14 326	na	na	na	3 192	2 013	na	na
1992-93	14 725	28 517	20 189	3 839	4 402	2 533	451	74 656
1993-94	na	na	na	na	na	na	na	na
1994-95	na	na	na	na	na	na	na	na
1995-96	na	na	na	na	na	na	na	na
1996-97	16 292	na	na	na	na	na	516	na
1997-98	16 675	na	na	na	na	na	na	na
1998-99	15 171	na	na	na	na	na	na	na
1999-00	17 620	21 864	na	480	3 445	1 452	626	58 556
2000-01	16 256	23 535	na	536	2 991	1 277	352	52 949
2001-02	15 110	23 876	22 431	900	4 200	1 874	1 548	69 939
2002-03	13 864	22 952	22 986	829	3 934	1 663	1 653	67 887
2003-04	na	na	na	826	na	1 930	765	na

^a Data incomplete because coverage differs between states. Australian totals may include estimates for states for which data are not available separately. ^b Includes the Australian Capital Territory and the Northern Territory. ^c Excludes the Australian Capital Territory. ^d Excludes the Australian Capital Territory and Western Australia. ^e Excludes the Australian Capital Territory, Queensland, Western Australia and the Northern Territory. **na** Not available.

Sources: ABS, *Mineral Production, Australia* cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.L., *Australian Mineral Industry: Production and Trade, 1842-1964*, BMR, Canberra; state mines departments and their equivalents; ABARE.

266 Summary of Australian statistics for copper

	Production					Consumption c	Exports d		Price e
	Mine a	Smelter b	Primary	Refined Secondary	Total		Volume	Value	
	kt	kt	kt	kt	kt	kt	kt	\$m	\$/t
1961	97	64	64	5	69	63	53	28	603.0
1962	109	91	79	5	84	77	39	28	600.0
1963	115	92	86	7	93	84	37	21	600.0
1964	106	83	80	8	88	99	33	21	645.0
1965	92	80	60	14	74	102	37	27	718.0
1966	111	97	90	10	100	108	30	36	944.0
1967	92	79	66	18	84	88	30	30	1 026.0
1968	109	103	84	17	101	105	38	40	1 099.0
1969	131	124	101	19	120	106	54	66	1 324.0
1970	158	120	104	21	125	114	70	86	1 317.0
1971	177	150	127	15	142	116	96	85	991.4
1972	186	150	139	17	156	112	109	91	942.3
1973	220	166	145	14	159	133	106	112	1 234.3
1974	251	200	162	12	174	120	133	177	1 298.2
1975	219	183	166	12	178	97	176	139	950.1
1976	218	170	161	15	176	119	139	157	1 143.3
1977	222	172	152	15	167	106	126	146	1 190.1
1978	222	167	152	14	166	127	102	114	1 189.8
1979	238	169	138	16	154	127	122	206	1 768.0
1980	242	182	145	20	165	128	120	250	1 956.6
1981	231	177	164	15	179	143	114	201	1 535.7
1982	245	180	160	11	171	131	110	156	1 474.5
1983	262	182	169	34	203	115	158	276	1 790.5
1984	236	188	171	26	197	118	126	226	1 592.5
1985	260	175	164	30	194	126	139	274	2 064.8
1986	248	179	164	21	185	117	125	248	2 111.2
1987	233	183	172	36	208	124	119	267	2 528.7
1988	238	193	196	27	223	128	157	510	3 391.2
1989	296	240	230	35	265	129	175	601	3 748.1
1990	330	235	247	24	271	118	230	765	3 519.2
1991	320	258	252	20	272	111	243	723	3 144.7
1992	378	315	300	13	313	123	258	770	3 233.0
1993	430	344	318	13	331	139	271	723	2 964.3
1994	418	337	340	20	360	150	305	816	3 222.5
1995	379	224	266	24	290	158	215	804	4 133.4
1996	548	264	311	24	314	162	363	993	3 149.8
1997	549	216	276	25	276	159	402	1 098	3 244.7
1998	618	211	279	25	279	160	488	1 298	2 823.4
1999	738	332	412	25	412	164	560	1 429	2 604.6
2000	839	387	484	0	484	165	621	1 931	3 115.3
2001	898	460	558	0	558	163	754	2 318	3 042.2
2002	872	465	543	0	542	188	683	2 000	2 870.1
2003	830	416	484	0	484	184	704	2 024	2 733.5
2004	875	440	498	0	498	169	653	2 589	3 899.3

a Total metallic content of minerals produced. **b** Includes both primary and secondary (scrap) production of blister copper. **c** Primary refined; producers' shipments to domestic consumers plus imports. **d** Quantities refer to total metallic content of all ores, concentrates, intermediate products or refined metal; value of metals contained in host mine and smelter products (for example, copper in lead concentrate or lead bullion) is not available separately and is included in the value of the mineral product or metal in which it is exported. **e** Mount Isa Mines, cathode, for Townsville refinery, price discontinued end of June 2000. 2000 onwards based on average US\$ LME spot calendar price converted into A\$.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; Metallgesellschaft AG, *Metallstatistik*, Frankfurt.

267 Australian supply, disposal and prices of copper

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Production									
Mine a	kt	576	691	796	876	876	883	811	905
Smelter	kt	223	234	387	419	456	469	390	433
Refined	kt	308	331	502	542	561	537	459	478
Primary	kt	283	306	477	517	561	537	459	478
Secondary	kt	25	25	25	25	0	0	0	0
Exports b									
Ores and concentrates c	kt	1 097	1 227	936	1 150	1 271	1 193	1 286	1 327
Value	\$m	822	968	776	1 037	1 028	1 048	1 242	1 728
Refined d	kt	127	160	306	366	388	359	301	322
Value	\$m	372	398	840	1 249	1 131	956	924	1 331
Consumption e	kt	185	185	190	166	192	180	180	160
Export unit value									
Ores and concentrates	A\$/t	749.1	789.3	829.1	902.0	808.7	878.8	966.3	1 302.5
Refined	A\$/t	2 942.1	2 479.8	2 749.2	3 409.7	2 918.1	2 666.9	3 075.5	4 136.7

a Total metallic content of minerals produced. **b** Value of metals contained in host mine and smelter products is not available separately and is included in the value of the mineral product or metal in which it is exported. **c** Gross weight of ores and concentrates. **d** Refinery shapes, unworke. **e** Refined copper, domestic despatches and imports.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

268 Volume of Australian exports of copper, by destination

	1997 kt	1998 kt	1999 kt	2000 kt	2001 kt	2002 kt	2003 kt	2004 kt
Ores and concentrates								
China	168.0	317.2	225.5	285.1	453.2	370.9	361.7	216.3
Germany	63.0	71.2	8.6	0.9	0.0	14.8	4.8	4.0
India	49.9	171.8	267.0	340.4	453.7	362.5	451.1	452.7
Japan	505.3	392.0	332.6	271.5	261.9	322.2	415.7	346.8
Korea, Rep. of	62.0	189.1	111.2	39.9	20.3	38.1	105.5	36.8
Philippines	92.7	61.3	61.5	60.7	30.6	34.3	26.9	76.1
Other	39.1	31.4	29.4	16.9	25.3	11.7	0.8	49.9
Total	980.0	1 233.9	1 035.8	1 015.3	1 245.1	1 154.5	1 366.5	1 182.5
Total Cu content s	283.9	361.2	302.6	292.5	353.3	317.0	371.2	328.3
Refined								
Chinese Taipei	24.2	45.5	73.2	81.9	90.9	89.8	81.6	96.0
European Union a	25.7	14.4	71.4	55.8	72.6	34.8	31.6	2.6
Indonesia	18.2	5.3	7.6	6.0	7.3	12.4	13.1	31.1
Korea, Rep. of	0.0	6.3	31.3	39.9	51.8	57.6	19.6	6.7
Malaysia	28.7	33.4	41.9	75.0	81.7	83.8	81.8	72.6
Thailand	9.6	1.6	12.0	19.0	28.8	35.0	39.6	52.6
Other	9.7	20.3	16.2	45.8	65.4	50.5	56.3	61.1
Total	116.1	126.8	253.8	323.4	398.6	363.8	323.7	322.7

a Regarded as twenty five countries. **s** ABARE estimate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

269 World copper production, consumption, stocks and prices

	Production				Consumption kt	Stocks ^c kt	Price	
	Mine kt	Smelter kt	Refined				US producer ^d USc/lb	LME ^e US\$
			Secondary ^a kt	Total ^b kt				
1960	4 242	4 287	2 148	4 998	3 926	na	32.1	677.6
1961	4 394	4 364	2 173	5 144	4 271	na	29.9	632.8
1962	4 555	4 574	2 237	5 300	4 343	na	30.6	644.0
1963	4 624	4 635	2 341	5 406	4 607	na	30.6	644.0
1964	4 848	4 903	2 645	5 825	4 984	na	32.0	966.0
1965	5 070	5 119	2 850	6 181	5 033	na	35.0	1 288.0
1966	5 220	5 103	3 081	6 366	5 224	na	36.2	1 528.8
1967	5 062	4 897	2 872	6 004	5 032	na	38.2	1 135.0
1968	5 459	5 510	3 176	6 653	6 548	na	41.8	1 236.0
1969	5 935	5 965	3 452	7 205	7 136	na	47.5	1 464.0
1970	6 382	6 308	3 298	7 583	7 294	582	57.7	1 413.6
1971	6 458	6 374	3 155	7 393	7 295	610	51.4	1 080.5
1972	7 044	7 007	3 272	8 084	7 948	657	50.6	1 069.0
1973	7 498	7 286	3 639	8 525	8 754	394	58.9	1 781.1
1974	7 576	7 565	3 502	8 759	8 310	832	76.6	2 052.6
1975	7 185	7 280	2 699	8 177	7 445	1 744	63.2	1 232.2
1976	7 661	7 616	3 163	8 624	8 539	1 828	69.0	1 405.2
1977	7 856	7 810	3 109	8 878	9 057	1 985	66.2	1 308.3
1978	7 678	7 686	3 313	9 020	9 527	1 564	65.8	1 363.4
1979	7 767	7 738	3 668	9 181	9 848	1 116	92.2	1 978.1
1980	7 704	7 681	3 738	9 297	9 396	1 035	101.3	2 189.2
1981	8 164	8 036	3 671	9 545	9 522	1 133	84.2	1 740.2
1982	8 078	7 850	3 518	9 378	9 003	1 640	72.8	1 477.9
1983	8 101	8 379	3 688	9 694	9 099	1 709	76.5	1 590.1
1984	8 258	8 684	3 848	9 512	9 914	1 220	66.9	1 371.4
1985	8 365	8 933	3 837	9 689	9 665	1 074	67.0	1 415.5
1986	8 393	9 165	3 905	9 862	10 075	893	64.7	1 414.5
1987	8 747	9 287	3 996	10 160	10 449	522	81.1	1 764.9
1988	8 698	9 372	4 307	10 485	10 531	585	119.1	2 597.1
1989	9 025	9 720	4 250	10 858	10 969	636	129.5	2 838.8
1990	8 957	9 132	4 325	10 809	10 789	716	121.8	2 669.0
1991	9 099	9 066	4 317	10 688	10 695	843	107.9	2 338.1
1992	9 418	9 730	4 408	11 170	10 806	833	106.0	2 282.0
1993	9 475	9 671	4 948	11 306	10 996	1 116	91.6	1 910.8
1994	9 575	9 740	5 026	11 166	11 665	768	110.2	2 307.3
1995	10 180	9 745	5 337	11 817	12 152	699	138.3	2 935.6
1996	11 111	10 426	5 881	12 756	12 400	517	109.2	2 293.7
1997	11 482	10 759	6 146	13 599	13 080	897	106.8	2 277.1
1998	12 285	10 907	5 915	14 142	13 353	1 274	78.6	1 654.2
1999	12 789	11 480	5 932	14 463	14 038	1 360	75.9	1 572.6
2000	13 236	11 635	6 052	14 819	15 191	971	88.2	1 813.5
2001	13 738	12 135	5 721	15 683	14 676	1 636	76.9	1 577.5
2002	13 561	11 644	5 554	15 370	15 046	1 711	75.8	1 560.8
2003	13 687	11 657	5 627	15 262	15 363	1 411	85.2	1 779.5
2004	14 535	11 754	5 471	15 760	16 292	719	132.0	2 865.9

a Includes direct use by manufacturers. **b** Excludes copper recovered from secondary materials by simple remelting. **c** Unwrought copper. **d** Average price for US producer cathodes. **e** LME average cash settlement price, grade A copper. Before December 1981, wirebars; from 1982 to 1986, higher grade copper. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; Metallgesellschaft AG, *Metallstatistik*, Frankfurt; World Bureau of Metal Statistics, *World Metal Statistics*, London.

270 World copper production, by region and country

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Mine production a								
Africa	617	648	502	462	524	478	545	607
Congo, Dem. Rep. of	40	35	33	33	33	32	56	59
South Africa	186	188	163	146	142	90	89	86
Zambia	331	379	271	249	307	308	347	412
Americas	6 957	7 328	7 779	7 784	8 034	7 737	8 007	8 863
Argentina	30	170	210	145	192	204	199	177
Canada	660	706	620	634	633	603	557	564
Chile	3 392	3 687	4 395	4 602	4 739	4 581	4 904	5 417
Peru	503	483	536	554	722	845	843	1 036
Mexico	390	384	382	365	371	330	356	399
United States	1 940	1 860	1 601	1 450	1 340	1 140	1 120	1 170
Asia	1 695	1 974	2 014	2 331	2 441	2 514	2 402	2 208
China	496	487	520	593	587	568	604	608
Indonesia	548	809	790	1 006	1 047	1 163	1 003	824
Kazakhstan	316	338	373	430	470	473	485	462
Malaysia	19	14	10	0	0	0	0	0
Mongolia	125	128	128	127	136	135	132	130
Philippines	49	45	38	31	24	20	20	16
Uzbekistan	74	74.4	66	65	97	80	82	83
Europe	1 361	1 340	1 297	1 401	1 418	1 526	1 494	1 621
Bulgaria	76	41	53	76	80	84	69	53
Poland	415	436	464	454	474	503	503	531
Portugal	107	115	100	76	83	77	76	96
Russian Federation	510	518	510	580	600	685	665	767
Sweden	87	74	71	78	74	72	83	82
Middle East	183	202	205	222	221	216	207	191
Iran	119	128	130	147	146	141	146	141
Turkey	65	74	74	75	75	75	61	50
Oceania	670	759	899	1 035	1 100	1 090	1 032	1 027
Australia	549	618	738	839	898	872	830	875
Papua New Guinea	112	152	188	203	204	211	190	173
Other countries	12	12	12	0	0	0	0	0
Total	11 482	12 285	12 789	13 236	13 738	13 561	13 687	14 535

Continued

270 World copper production, by region and country *continued*

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Smelter production ^b								
Africa	510	470	482	493	509	440	480	469
South Africa	164	153	149	136	141	98	127	118
Zambia	264	255	289	308	306	311	320	320
Americas	4 597	4 606	4 289	3 928	3 994	3 568	3 292	3 390
Canada	627	625	609	604	643	539	457	476
Chile	1 390	1 403	1 472	1 460	1 503	1 439	1 542	1 567
Mexico	360	337	371	337	337	337	220	266
Peru	323	356	350	340	379	381	314	320
United States	1 720	1 718	1 293	1 002	919	683	539	542
Asia	2 991	3 134	3 787	4 143	4 246	4 355	4 584	4 551
China	657	667	837	1 014	1 145	1 180	1 379	1 323
Japan	1 350	1 304	1 390	1 481	1 445	1 499	1 516	1 465
Kazakhstan	316	336	384	415	433	446	432	445
Korea, Rep. of	151	281	390	390	390	390	410	390
Philippines	173	162	162	160	217	138	112	108
Uzbekistan	116	74	72	75	97	80	82	85
Australia	216	211	332	387	460	465	416	440
Europe	2 454	2 467	2 586	2 684	2 746	2 813	2 866	2 901
Belgium	143	138	143	145	138	126	120	130
Germany	349	320	330	330	330	330	330	330
Poland	431	432	485	483	514	540	584	581
Russian Federation	570	630	758	758	758	800	790	850
Spain	313	330	319	330	305	298	316	224
Total	10 759	10 907	11 480	11 635	12 135	11 644	11 657	11 754
Refined copper production								
Africa	514	478	423	380	453	449	465	509
South Africa	127	123	116	106	107	92	95	92
Zambia	328	306	259	226	308	347	360	408
Americas	6 017	6 428	6 382	6 074	6 398	5 921	5 737	5 900
Canada	561	562	549	551	568	494	455	527
Chile	2 117	2 335	2 661	2 668	2 882	2 850	2 902	2 895
Peru	384	411	434	452	472	503	517	505
United States	2 465	2 489	2 130	1 802	1 800	1 512	1 310	1 306
Asia	3 635	3 834	4 120	4 606	4 937	5 051	5 326	5 490
China	1 179	1 211	1 174	1 371	1 523	1 632	1 836	2 035
India	66	134	208	259	325	374	391	352
Japan	1 279	1 277	1 342	1 437	1 426	1 401	1 430	1 380
Kazakhstan	301	325	362	395	422	453	432	445
Korea, Rep. of	265	369	451	471	476	499	510	496
Philippines	147	152	148	139	165	144	171	175
Uzbekistan	116	90	72	75	97	80	82	85
Australia	276	279	412	484	558	542	484	498
Europe	3 162	3 120	3 112	3 276	3 337	3 404	3 250	3 372
Belgium	373	368	388	423	423	423	423	402
Germany	674	696	696	710	694	696	598	660
Poland	441	447	471	486	499	509	530	550
Russian Federation	640	656	737	824	888	860	818	885
Spain	280	304	305	316	280	322	293	228
Total	13 599	14 142	14 463	14 819	15 683	15 370	15 262	15 760

a Metal content. **b** Metal produced in the form of blister and anodes from ores, concentrates, other primary materials and secondary blister produced from scrap.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

271 Volume of world copper exports, by country

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Concentrates (Cu content)								
Australia	284	361	303	293	353	317	371	328
Canada	498	414	264	480	622	283	170	165
Chile	1 107	1 169	1 532	1 780	1 798	1 553	1 798	2 166
Indonesia	429	504	485	644	649	719	595	452
Papua New Guinea	95	182	184	186	189	177	222	163
Peru	74	63	48	80	93	371	280	502
Portugal	116	112	110	81	92	49	72	87
United States	128	37	76	175	45	23	10	24
Other	176	230	388	391	393	431	416	441
World total	2 930	3 113	3 444	4 110	4 234	3 923	3 946	4 328
Blister and anode copper								
Chile	158	157	157	170	155	182	276	366
Finland	39	33	32	42	52	43	33	25
Mexico	121	39	31	22	24	18	16	21
Namibia	21	0	0	0	0	0	0	0
Peru	57	45	31	24	31	25	22	0
South Africa	28	16	0	1	35	26	13	1
Spain	34	28	26	27	35	21	37	37
Other	155	170	173	145	193	189	151	181
World total	616	489	462	448	536	507	548	631
Refined copper								
Australia	116	127	254	323	397	364	323	323
Belgium	146	145	172	199	241	201	337	170
Canada	381	356	294	289	310	242	222	289
Chile	2 032	2 248	2 548	2 518	2 696	2 767	2 614	2 975
Germany	147	110	140	94	108	91	118	137
Japan	158	293	318	299	416	378	290	195
Kazakhstan	288	322	354	393	399	391	376	391
Peru	362	348	416	377	433	415	459	318
Philippines	90	102	143	129	157	143	167	159
Poland	209	182	221	240	227	263	284	280
Russian Federation	521	543	634	650	651	505	397	359
Singapore	202	106	137	77	61	59	38	39
United States	93	87	26	97	23	29	123	127
Zambia	304	228	206	217	308	339	363	394
Other	776	1 212	884	762	816	786	775	704
World total	5 823	6 407	6 746	6 664	7 243	6 973	6 886	6 860

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

272 Volume of world copper imports, by country

	1997 kt	1998 kt	1999 kt	2000 kt	2001 kt	2002 kt	2003 kt	2004 kt
Ores and concentrates								
Brazil	103	105	146	122	136	116	103	135
Canada	139	124	138	212	220	128	72	67
China a	234	296	313	453	564	516	671	721
Finland	116	136	129	114	126	125	136	132
Germany	160	151	210	177	259	259	220	286
Japan	942	994	1 062	1 348	1 285	1 261	1 246	1 273
Korea, Rep. of	130	243	292	294	293	320	331	327
Spain	222	234	251	234	226	264	263	194
United States	46	218	143	0	122	226	27	23
Other	303	216	326	456	478	416	219	477
Total	2 397	2 717	3 009	3 410	3 709	3 631	3 288	3 635
Blister and anode copper								
Belgium	101	94	140	215	149	209	291	291
Canada	27	20	28	12	21	59	127	149
China a	111	96	130	125	91	105	123	114
Germany	63	45	37	32	27	39	17	12
Korea, Rep. of	109	63	60	48	59	69	51	54
Mexico	7	19	128	82	119	73	62	70
United States	157	181	175	195	218	145	159	149
Other	73	146	102	50	42	26	21	38
Total	622	628	690	759	726	725	851	877
Refined copper								
Belgium	102	101	71	41	44	37	58	17
Brazil	117	138	116	158	141	103	151	154
China	88	163	405	668	835	1 181	1 357	1 200
Chinese Taipei	590	585	656	629	541	657	621	692
France	528	586	550	589	564	576	579	590
Germany	527	579	565	690	528	460	517	585
Greece	97	70	115	136	130	126	107	120
Italy	450	565	625	603	650	643	651	700
Japan	354	273	230	203	156	114	79	88
Korea, Rep. of	396	487	485	419	380	446	441	488
Malaysia	161	133	158	166	161	187	134	187
Singapore	212	198	116	58	67	40	34	48
Thailand	152	85	117	151	167	186	204	224
Turkey	81	116	141	181	137	187	230	217
United Kingdom	366	349	303	339	311	316	247	214
United States	647	725	916	1 022	1 199	1 062	687	704
Other	732	972	731	737	688	654	585	527
Total	5 600	6 125	6 300	6 790	6 698	6 885	6 668	6 755

a Imported from western world only.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

273 Summary of Australian statistics for gemstones

	Exports			Imports
	Diamonds \$m	Opals \$m	Sapphires ^a \$m	Gem diamonds \$m
1960	0.24	2.07	na	2.47
1961	0.44	2.81	na	2.38
1962	0.41	6.21	na	2.37
1963	0.37	5.39	na	2.62
1964	0.35	5.40	na	2.96
1965	0.42	5.33	na	3.69
1966	0.43	7.65	na	3.94
1967	0.33	8.62	na	4.23
1968	0.37	10.65	na	4.23
1969	0.39	12.21	3.09	5.25
1970	0.51	11.97	3.21	5.45
1971	0.77	11.20	3.32	6.57
1972	0.81	13.80	2.80	7.44
1973	1.63	17.68	2.91	11.74
1974	4.86	12.70	2.63	15.01
1975	4.61	14.60	3.01	15.45
1976	4.58	22.62	3.61	20.04
1977	5.28	19.21	4.03	24.05
1978	11.99	26.69	10.31	34.25
1979	13.25	24.98	17.17	33.36
1980	12.90	25.55	10.81	50.38
1981	11.16	23.69	14.57	38.25
1982	9.86	16.73	14.46	32.59
1983	36.54	22.69	13.48	31.48
1984	25.90	22.76	9.89	36.14
1985	29.83	17.67	7.78	48.16
1986	180.00	24.41	12.86	55.38
1987	285.00	45.99	19.95	66.62
1988	349.42	67.54	23.13	42.88
1989	410.19	77.19	31.60	108.16
1990	433.13	84.87	17.49	106.68
1991	453.80	83.67	11.27	110.99
1992	574.60	77.13	11.46	105.71
1993	482.30	78.07	22.46	90.24
1994	485.40	96.24	18.27	96.40
1995	480.24	99.79	13.65	103.60
1996	442.99	101.85	10.97	112.41
1997	421.19	75.64	8.52	154.85
1998	621.78	63.20	7.70	150.88
1999	560.57	53.86	5.94	172.28
2000	714.96	75.96	8.35	223.34
2001	517.01	69.78	6.43	241.97
2002	670.87	61.75	1.37	269.90
2003	765.98	56.16	1.11	301.69
2004	456.13	47.28	1.08	320.02

^a Excludes cut and polished sapphires from 1 July 1999, for which data are not available separately.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Department of Minerals and Energy Western Australia, *Statistics Digest*; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.L., *Australian Mineral Industry: Production and Trade, 1842–1964*, Bureau of Mineral Resources, Canberra.

274 Australian supply and disposal of gemstones

	Unit	1997	1998	1999	2000	2001	2002	2003	2004
Diamonds									
Production	'000 ct	40 175	40 843	29 784	26 647	26 176	33 648	31 013	20 620
Exports									
Unsorted s	'000 ct	40 387	52 218	51 703	42 386	21 722	34 442	28 193	22 535
	\$m	354	559	495	630	428	568	635	333
Sorted									
Gem	'000 ct	33	32	23	48	39	43	74	89
	\$m	66	62	64	85	89	103	126	122
Industrial	'000 ct	2.29	0.68	0.30	0.33	0.98	0.19	2 761.25	84.99
	\$m	0.75	1.28	0.74	0.62	0.18	0.50	5.19	0.51
Total exports	\$m	421	622	561	715	517	671	766	456
Imports									
Gem diamonds	\$m	155	151	172	223	242	270	302	320
Other gemstones									
Exports									
Opals	\$m	76	63	54	76	70	62	56	47
Sapphires a	\$m	9	8	6	8	6	1	1	1
Others b	\$m	16	14	11	15	13	14	10	8

a Excludes cut and polished sapphires from 1 July 1999, for which data are not available separately. b Includes cut and polished sapphires from 1 July 1999. s ABARE estimate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Department of Minerals and Energy Western Australia, *Statistics Digest*, Perth; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

275 World production of natural gem and cheap gem diamonds

	1996	1997	1998	1999	2000	2001	2002	2003
	million ct	million ct	million ct	million ct	million ct	million ct	million ct	million ct
Angola	0.92	1.31	2.76	3.57	4.01	5.10	5.70	6.30
Australia	41.99	40.18	40.84	29.78	26.65	26.18	33.65	31.01
Botswana	17.71	20.11	19.64	21.26	24.64	26.19	28.37	30.40
Congo, Dem. rep. of	22.24	20.98	21.36	22.00	16.50	19.64	21.99	29.00
Namibia	1.40	1.42	1.47	1.63	1.54	1.49	1.54	1.45
Russian Federation	19.20	19.40	19.80	16.20	20.50	20.50	20.00	24.00
South Africa	9.95	10.04	10.70	10.01	10.79	11.16	10.88	12.67
Other	3.39	3.76	3.33	6.75	6.87	7.74	8.97	15.27
Total	116.80	117.20	119.90	111.20	111.50	118.00	131.10	150.10

Sources: Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; British Geological Survey, *World Mineral Statistics*, Nottingham England.

276 Summary of Australian statistics for gold

	Mine production	Exports a		Price d	
		Volume b	Value c	A\$/oz	US\$/oz
		t	\$m		
1960	34	82	79	31.23	35.00
1961	33	37	34	31.29	35.00
1962	33	12	10	31.23	35.00
1963	32	17	15	31.32	35.00
1964	30	15	13	31.41	35.00
1965	27	27	23	31.36	35.00
1966	29	29	23	31.40	35.00
1967	25	22	17	31.40	35.00
1968	24	16	13	34.71	38.68
1969	22	22	21	36.92	41.09
1970	19	12	6	32.22	35.95
1971	21	7	3	36.15	41.16
1972	23	14	13	49.02	58.44
1973	17	9	11	68.43	97.59
1974	16	12	23	111.39	159.62
1975	16	8	17	122.87	161.23
1976	16	15	40	102.30	124.94
1977	19	14	43	133.37	147.98
1978	20	8	42	168.88	193.44
1979	19	10	59	271.77	303.22
1980	17	7	90	537.37	612.52
1981	18	7	56	398.19	458.06
1982	27	13	136	371.97	375.76
1983	31	21	270	469.65	423.83
1984	40	32	418	409.94	360.29
1985	59	50	668	455.70	317.28
1986	75	56	972	554.15	367.76
1987	110	85	1 694	639.18	446.43
1988	157	139	2 642	557.34	433.45
1989	204	166	2 559	483.54	381.49
1990	244	238	3 424	493.94	384.35
1991	236	259	3 684	465.21	362.29
1992	244	298	4 458	467.74	343.67
1993	248	275	4 672	530.94	359.89
1994	255	277	4 664	527.92	384.09
1995	253	316	5 251	521.02	384.15
1996	289	325	5 223	497.98	387.72
1997	314	340	4 912	446.17	331.14
1998	310	504	7 621	469.17	294.23
1999	300	334	4 720	433.07	279.08
2000	296	296	4 634	480.37	279.28
2001	280	304	5 086	521.30	269.88
2002	266	269	4 908	570.30	310.20
2003	283	312	5 551	559.68	363.68
2004	258	312	5 551	557.15	409.28

a Prior to July 1999 includes exports of refined gold that was imported as unrefined bullion, thereafter includes Australian origin gold only. **b** Quantities refer to total metallic content of all ores, concentrates, intermediate products or refined metal of which gold is the predominant constituent. **c** Value of metal contained in host mine and smelter products (for example, gold in copper concentrates or lead bullion) is not separately available; this is included in the value of the mineral product or metal product in which it is exported. **d** Average London AM fix. Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; London Bullion Market Association; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

277 Australian gold production, imports and exports

	Unit	1997	1998	1999	2000	2001	2002	2003	2004
Production									
Mine	t	314.1	310.3	299.7	296.4	280.1	266.1	283.4	258.1
Refined primary									
Australian origin	t	303.4	264.0	296.1	302.2	288.0	261.8	257.0	230.8
Overseas origin	t	29.3	17.6	13.2	15.1	16.8	40.5	74.1	81.7
Refined secondary									
Australian origin	t	0.8	11.0	4.6	7.6	23.3	7.2	4.3	4.3
Overseas origin	t	8.2	115.6	61.8	24.4	45.1	39.8	75.9	53.4
Exports									
Refined and unrefined bullion ^a									
Chinese Taipei	t	5.2	18.0	19.0	17.7	15.7	6.5	3.6	0.5
Hong Kong, China	t	49.7	41.5	31.6	25.5	49.1	29.6	11.7	1.2
India	t	0.4	11.5	3.3	0.5	9.8	13.8	66.1	161.0
Japan	t	14.0	25.6	21.7	23.1	16.0	24.5	8.5	9.4
Korea, Rep. of	t	128.0	82.1	39.6	58.1	45.1	50.3	41.7	30.6
Middle East	t	2.6	14.5	6.6	6.4	28.2	11.1	0.8	0.0
Switzerland	t	18.3	54.9	8.5	1.5	4.5	1.1	4.6	0.0
Thailand	t	9.4	8.5	8.9	8.3	5.1	22.5	11.5	27.2
United Kingdom	t	1.2	122.2	40.4	26.6	54.6	69.8	148.9	56.6
Other	t	30.1	118.2	26.7	12.3	13.3	4.6	5.6	10.2
Total	t	340.3	503.9	334.2	296.4	303.6	269.1	312.6	311.4
	\$m	4 911.8	7 620.8	4 719.7	4 634.5	5 085.8	4 907.9	5 551.2	5 550.8
Imports									
Refined and unrefined	\$m	794.9	3 158.8	1 999.7	1 643.3	2 145.6	2 503.8	2 910.4	2 448.5
Price ^b	\$/oz	446.17	469.17	433.07	480.37	521.30	570.30	559.68	557.15

^a Prior to July 1999 includes exports of refined gold that was imported as unrefined bullion, thereafter includes Australian origin gold only. ^b Average London AM fix price, expressed in Australian dollars.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; London Bullion Market Association; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

278 Australian gold production, by state

	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australia
	t	t	t	t	t	t	t	t
Mine production								
1982	0.61	0.10	0.58	na	20.60	1.74	3.32	26.95
1983	0.67	0.11	1.06	na	23.92	2.08	2.74	30.58
1984	1.11	0.41	1.75	na	32.11	1.93	2.99	40.30
1985	1.54	0.96	9.28	na	41.20	2.33	3.22	58.53
1986	0.96	1.15	11.12	na	53.88	2.67	5.30	75.10
1987	4.25	1.21	15.43	0.00	78.08	2.23	8.71	109.90
1988	5.63	1.77	24.78	0.01	110.75	2.03	11.97	156.95
1989	8.75	1.84	27.72	0.28	146.61	1.76	17.06	204.02
1990	8.05	3.93	29.73	0.89	180.79	1.68	19.04	244.10
1991	6.33	3.76	27.06	0.76	179.44	1.62	17.30	236.28
1992	5.65	3.35	32.61	1.05	181.29	1.15	18.64	243.74
1993	8.58	4.07	32.43	0.93	183.49	1.32	17.09	247.90
1994	8.13	3.83	30.67	1.10	192.48	1.39	17.42	255.01
1995	10.03	4.30	28.76	0.97	189.84	0.75	18.44	253.08
1996	11.31	4.52	28.65	1.25	220.19	1.74	21.89	289.03
1997	11.71	4.82	29.40	1.64	238.04	4.15	24.32	314.09
1998	14.76	4.89	32.38	1.74	231.98	4.18	20.38	310.32
1999	21.04	4.63	34.15	1.77	210.92	4.95	22.29	299.75
2000	18.58	4.23	37.10	2.95	203.74	6.68	23.14	296.41
2001	17.10	3.50	31.89	4.31	196.59	6.18	20.51	280.08
2002	23.48	3.24	25.06	3.14	187.20	6.05	17.95	266.14
2003	27.49	3.11	26.24	5.33	189.07	9.31	22.85	283.39
2004	29.14	3.46	23.16	5.12	164.32	10.60	22.27	258.07
Share of total	%	%	%	%	%	%	%	%
1982	2.26	0.37	2.15	na	76.44	6.46	12.32	
1983	2.19	0.36	3.47	na	78.22	6.80	8.96	
1984	2.75	1.02	4.34	na	79.68	4.79	7.42	
1985	2.63	1.64	15.86	na	70.39	3.98	5.50	
1986	1.28	1.53	14.81	na	71.74	3.56	7.06	
1987	3.87	1.10	14.04	0.00	71.04	2.03	7.93	
1988	3.59	1.13	15.79	0.01	70.57	1.29	7.63	
1989	4.29	0.90	13.59	0.14	71.86	0.86	8.36	
1990	3.30	1.61	12.18	0.36	74.06	0.69	7.80	
1991	2.68	1.59	11.45	0.32	75.94	0.69	7.32	
1992	2.32	1.38	13.38	0.43	74.38	0.47	7.65	
1993	3.46	1.64	13.08	0.37	74.02	0.53	6.89	
1994	3.19	1.50	12.03	0.43	75.48	0.55	6.83	
1995	3.96	1.70	11.36	0.38	75.01	0.30	7.28	
1996	3.91	1.56	9.91	0.43	76.18	0.60	7.57	
1997	3.73	1.54	9.36	0.52	75.79	1.32	7.74	
1998	4.76	1.58	10.43	0.56	74.75	1.35	6.57	
1999	7.02	1.55	11.39	0.59	70.37	1.65	7.44	
2000	6.27	1.43	12.52	0.99	68.73	2.25	7.81	
2001	6.11	1.25	11.39	1.54	70.19	2.21	7.32	
2002	8.82	1.22	9.42	1.18	70.34	2.27	6.75	
2003	9.70	1.10	9.26	1.88	66.72	3.29	8.06	
2004	11.29	1.34	8.98	1.98	63.67	4.11	8.63	

na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

279 World supply, demand and price of gold

	Unit	1996	1997	1998	1999	2000	2001	2002	2003	2004
Supply										
Mine production										
Australia	t	289	314	310	300	296	280	266	283	258
Asia	t	227	233	279	294	295	331	309	330	287
Canada	t	165	172	164	158	155	157	148	141	129
China	t	159	163	165	163	172	193	202	206	217
Europe	t	29	27	27	24	19	20	21	20	19
Latin America	t	308	316	339	381	377	375	393	407	411
Russian Federation	t	133	138	127	138	154	165	181	182	182
South Africa	t	495	493	464	450	428	394	395	376	343
Other Africa	t	129	146	169	185	193	221	237	230	214
United States	t	329	362	366	342	355	335	299	281	258
Other	t	111	130	132	139	147	145	138	140	143
Total mine production	t	2 372	2 493	2 544	2 573	2 593	2 615	2 592	2 593	2 460
Forward sales and option hedging	t	142	504	97	506	- 15	- 151	- 412	- 279	- 427
Net official sales	t	279	326	363	477	479	527	545	617	474
Net scrap sales	t	644	626	1 099	609	610	708	835	939	829
Net other sales	t	109	305	0	0	292	115	171	0	0
Total supply a	t	3 536	4 225	4 103	4 165	4 023	3 902	3 972	4 149	3 841
Demand										
Fabrication consumption										
Jewellery	t	2 842	3 300	3 176	3 143	3 209	3 016	2 667	2 481	2 615
Electronics	t	207	235	226	248	284	198	207	235	261
Dentistry	t	68	70	64	66	69	69	69	67	68
Official coins	t	79	118	147	155	77	82	96	105	113
Medals and unofficial coins	t	19	24	27	25	29	29	27	26	29
Other	t	113	115	103	99	99	97	83	80	83
Total fabrication	t	3 327	3 862	3 743	3 736	3 767	3 490	3 147	2 994	3 168
Net bullion purchases	t	209	362	360	429	242	261	413	876	246
Total demand a	t	3 536	4 225	4 103	4 165	4 023	3 902	3 972	4 149	3 841
Gold price b	US\$/oz	387.72	331.14	294.23	279.08	279.28	269.88	310.20	363.68	409.28

a Total supply is defined as the flow of new mine output, and the net sale of aboveground stocks, while total demand is equal to net gold purchases. This classification of annual gold flows is symmetric, so that total annual supply equals total annual demand. **b** Average London AM fix price, expressed in US dollars.

Sources: ABARE, *Australian Commodities*, Canberra; Gold Fields Mineral Services Ltd, *Gold*, London; London Bullion Market Association.

280 Summary of Australian statistics for gypsum

	Production	Exports ^a		
		Volume	Value	Unit value
	kt	kt	\$'000	\$/t
1960	590.2	87.0	479	5.51
1961	619.7	90.0	570	6.33
1962	641.0	141.6	747	5.27
1963	737.1	146.1	715	4.89
1964	807.8	208.8	1 008	4.83
1965	846.9	140.9	747	5.30
1966	814.4	235.2	1 100	4.68
1967	928.8	211.0	879	4.17
1968	857.3	251.9	1 135	4.51
1969	912.1	232.8	1 006	4.32
1970	845.4	218.4	1 051	4.81
1971	889.2	258.3	1 251	4.84
1972	959.1	282.3	1 444	5.12
1973	1 165.2	437.3	2 128	4.87
1974	1 068.9	303.2	1 778	5.86
1975	932.6	215.8	1 539	7.13
1976	941.9	187.7	1 527	8.13
1977	916.0	190.5	1 624	8.52
1978	939.9	181.0	1 640	9.06
1979	1 230.2	423.0	3 105	7.34
1980	1 309.3	389.3	3 814	9.80
1981	1 752.3	645.2	6 861	10.63
1982	1 863.7	604.5	7 982	13.20
1983	1 509.8	800.0	11 044	13.81
1984	1 931.2	726.0	9 653	13.30
1985	1 744.5	516.0	8 362	16.21
1986	1 671.0	423.2	7 702	18.20
1987	1 811.9	195.4	2 968	15.19
1988	1 655.9	116.2	1 391	11.97
1988-89	1 834.6	68.1	1 048	15.39
1989-90	1 885.5	na	na	na
1990-91	1 381.7	53.2	759	14.28
1991-92	1 347.5	160.7	1 775	11.04
1992-93	1 589.5	161.6	1 807	11.19
1993-94	1 691.6	151.7	2 036	13.42
1994-95	1 995.5	231.1	2 993	12.95
1995-96	1 916.3	85.6	1 476	17.24
1996-97	2 392.6	116.9	2 134	18.25
1997-98	3 052.3	290.9	6 323	21.73
1998-99	3 465.6	988.8	18 781	18.99
1999-00	3 796.5	1 121.2	21 059	18.78
2000-01	3 225.5	724.4	16 096	22.22
2001-02	4 087.5	1 010.0	21 835	21.62
2002-03	3 937.7	1 045.0	18 788	17.98
2003-04	na	1 083.0	16 570	15.30
2004-05	na	878.4	15 172	17.27

^a Raw gypsum. Bulk only to 1978; bulk and bagged thereafter. **na** Not available.

Sources: ABS, *International Trade, Australia*, cat. no. 5465.0, Canberra; ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; state mines departments and their equivalents; ABARE.

281 Australian production of gypsum, by state

	New South Wales kt	Victoria kt	Queensland kt	South Australia kt	Western Australia kt	Australia kt
1960	97.0	102.0	na	346.2	44.9	590.2
1961	98.8	81.5	na	393.5	45.9	619.7
1962	73.0	80.0	na	435.6	52.5	641.0
1963	63.2	116.3	na	505.9	51.6	737.1
1964	65.6	105.9	na	590.5	45.7	807.8
1965	59.3	171.3	na	568.9	47.4	846.9
1966	45.7	113.1	na	613.1	42.6	814.4
1967	43.2	227.7	na	617.2	40.7	928.8
1968	32.8	78.7	na	640.1	105.6	857.3
1969	32.1	85.7	na	728.8	65.4	912.1
1970	39.0	47.6	na	667.4	91.4	845.4
1971	36.4	46.3	na	652.7	153.9	889.2
1972	39.1	42.1	na	721.5	156.5	959.1
1973	32.8	43.7	na	921.9	166.8	1 165.2
1974	42.6	43.0	na	769.8	213.5	1 068.9
1975	34.2	54.1	na	759.3	85.1	932.6
1976	36.2	69.0	na	721.0	115.8	941.9
1977	33.6	84.8	na	694.0	103.7	916.0
1978	18.0	107.4	na	648.1	166.3	939.9
1979	26.8	201.2	na	782.3	219.9	1 230.2
1980	25.0	269.4	na	768.6	246.3	1 309.3
1981	20.2	282.8	na	1 017.2	432.0	1 752.3
1982	17.4	235.9	na	1 159.3	451.2	1 863.7
1983	14.7	79.3	na	924.0	491.9	1 509.8
1984	38.9	236.4	na	1 018.2	637.7	1 931.2
1985	51.0	239.8	na	1 001.9	451.8	1 744.5
1986	47.3	173.4	na	1 135.8	314.5	1 671.0
1987	34.5	412.0	na	1 229.4	136.0	1 811.9
1988	33.7	233.0	na	1 277.2	112.0	1 655.9
1988-89	27.8	241.4	na	1 399.4	166.0	1 834.6
1989-90	29.0	301.5	na	1 400.0	155.0	1 885.5
1990-91	27.5	49.2	na	1 222.5	82.5	1 381.7
1991-92	18.7	53.1	na	1 173.9	101.8	1 347.5
1992-93	24.0	180.2	na	1 260.5	124.8	1 589.5
1993-94	0.0	176.8	3.8	1 315.8	195.2	1 691.6
1994-95	69.0	193.1	24.9	1 478.9	229.6	1 995.5
1995-96	37.3	198.7	25.6	1 401.8	252.9	1 916.3
1996-97	43.2	501.5	40.6	1 555.3	251.9	2 392.6
1997-98	105.2	479.8	36.4	1 596.0	834.9	3 052.3
1998-99	174.4	404.9	29.6	1 601.3	1 255.5	3 465.6
1999-00	161.7	462.8	11.0	1 824.1	1 336.9	3 796.5
2000-01	198.2	437.7	27.0	1 615.2	947.4	3 225.5
2001-02	284.8	600.9	78.7	1 776.6	1 346.3	4 087.5
2002-03	183.0	420.3	55.3	1 820.5	1 458.6	3 937.7
2003-04	na	439.9	69.2	1 902.8	1 528.6	na

na Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; state mines departments and their equivalents; ABARE.

282 Australian exports of gypsum

	Raw ^a							
	New				Total		Calcined	
	Indonesia	Zealand	Singapore	Other	Volume	Value	Volume	Value
kt	kt	kt	kt	kt	kt	\$'000	t	\$'000
1960	0.0	72.4	0.0	14.6	87.0	479	na	na
1961	0.0	70.3	0.0	19.7	90.0	570	na	na
1962	0.0	80.4	0.0	61.3	141.6	747	na	na
1963	0.0	78.2	0.0	67.9	146.1	715	na	na
1964	0.0	106.0	0.0	102.8	208.8	1 008	na	na
1965	5.1	102.2	0.0	33.6	140.9	747	na	na
1966	5.6	109.7	0.0	119.9	235.2	1 100	na	na
1967	14.0	87.7	0.0	109.3	211.0	879	na	na
1968	10.6	85.8	0.0	155.6	251.9	1 135	na	na
1969	21.1	101.5	17.0	93.2	232.8	1 006	na	na
1970	11.7	104.8	18.8	83.2	218.4	1 051	na	na
1971	15.9	100.3	12.1	129.9	258.3	1 251	na	na
1972	23.6	107.7	26.3	124.6	282.3	1 444	na	na
1973	26.2	147.5	42.1	221.4	437.3	2 128	na	na
1974	30.6	173.1	14.9	84.6	303.2	1 778	na	na
1975	15.6	151.7	27.3	21.2	215.8	1 539	na	na
1976	34.5	122.9	27.5	2.8	187.7	1 527	na	na
1977	37.9	113.0	15.9	23.8	190.5	1 624	na	na
1978	29.7	84.5	16.2	50.6	181.0	1 640	na	na
1979	148.1	63.7	49.7	161.5	423.0	3 105	1 696	223
1980	197.9	98.3	42.9	50.2	389.3	3 814	2 003	172
1981	183.0	104.6	67.1	290.5	645.2	6 861	1 771	188
1982	173.6	124.5	88.0	218.5	604.5	7 982	2 350	263
1983	174.4	98.2	110.4	416.9	800.0	11 044	3 187	416
1984	251.4	128.2	96.9	249.5	726.0	9 653	6 196	901
1985	192.6	143.0	57.0	123.5	516.0	8 362	4 751	728
1986	148.1	118.1	38.4	118.7	423.2	7 702	5 348	893
1987	15.5	122.7	0.0	57.2	195.4	2 968	4 866	848
1988	0.0	116.2	0.0	0.0	116.2	1 391	4 704	845
1988-89	0.1	68.0	0.0	0.0	68.1	1 048	3 940	752
1989-90	0.1	na	0.0	na	na	na	10 437	1 032
1990-91	0.0	15.5	0.0	37.6	53.2	759	5 702	1 100
1991-92	0.0	97.2	0.0	63.5	160.7	1 775	6 128	1 318
1992-93	0.0	111.5	12.0	38.1	161.6	1 807	8 610	1 958
1993-94	0.0	101.6	0.0	50.1	151.7	2 036	9 986	2 408
1994-95	0.0	155.2	12.4	63.5	231.1	2 993	8 836	2 338
1995-96	0.2	32.3	0.0	53.1	85.6	1 476	11 477	3 212
1996-97	1.3	0.4	0.1	115.0	116.9	2 134	12 012	3 487
1997-98	30.3	0.6	0.1	259.9	290.9	6 323	8 279	2 722
1998-99	38.5	0.1	0.0	950.2	988.8	18 781	6 926	2 046
2000-01	0.0	0.4	0.0	724.0	724.4	16 096	2 576	916
2001-02	0.0	0.1	0.0	1 009.8	1 010.0	21 835	779	494
2002-03	0.0	0.1	0.1	1 044.8	1 045.0	18 788	36 986	941
2003-04	0.0	0.1	0.1	1 082.8	1 083.0	16 570	30 921	1 589
2004-05	0.0	0.1	0.0	878.3	878.4	15 172	1 717	1 149

^a Bulk only to 1978; bulk and bagged thereafter. **na** Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

283 World mine production of gypsum, by country

	Australia kt	Canada kt	China a kt	France kt	Japan kt	Spain kt	United States kt	Other kt	Total kt
1960	590	4 620	na	3 777	735	2 487	8 913	19 520	40 642
1961	620	4 591	na	3 836	724	3 052	8 618	20 217	41 658
1962	641	4 837	na	3 997	800	3 557	8 221	22 653	44 706
1963	737	5 381	na	4 208	782	4 598	9 424	21 608	46 738
1964	808	5 770	na	4 913	751	2 854	9 692	21 951	46 738
1965	847	5 720	na	5 013	649	2 855	9 104	20 518	44 706
1966	814	5 427	na	5 272	597	2 947	8 751	20 898	44 706
1967	929	4 471	na	5 190	584	2 947	8 522	22 064	44 706
1968	857	5 664	na	5 162	572	3 963	9 235	23 064	48 516
1969	912	6 334	na	6 055	569	4 064	9 108	23 557	50 599
1970	845	5 844	na	6 088	581	4 288	8 584	24 570	50 800
1971	889	6 169	na	5 111	536	4 200	9 451	26 644	53 000
1972	959	7 200	na	5 850	465	4 100	11 840	27 236	57 650
1973	1 165	7 540	na	6 160	460	4 100	12 330	29 105	60 860
1974	1 069	7 470	na	6 220	na	4 400	10 890	31 941	61 990
1975	933	5 700	na	5 800	na	4 200	8 800	31 567	57 000
1976	942	6 002	na	5 900	na	4 200	10 868	34 858	62 770
1977	916	7 234	na	6 032	na	5 482	12 147	39 894	71 705
1978	940	8 075	1 500	6 036	na	5 369	13 509	40 280	75 709
1979	1 230	8 098	3 630	6 240	na	5 275	13 272	43 615	81 360
1980	1 309	7 209	3 360	5 889	na	5 223	11 227	43 150	77 367
1981	1 752	7 025	3 450	6 147	na	5 223	10 430	42 129	76 156
1982	1 864	5 987	3 540	6 039	6 363	5 048	9 560	33 913	72 314
1983	1 510	7 507	4 260	5 544	5 845	5 620	11 688	36 695	78 669
1984	1 931	7 756	4 810	5 400	6 100	5 365	12 990	36 378	80 730
1985	1 744	8 400	5 700	5 400	6 300	5 500	13 360	38 706	85 110
1986	1 671	8 500	6 500	5 500	6 300	5 500	14 300	39 309	87 580
1987	1 812	8 600	6 800	5 400	6 300	5 500	14 300	39 680	88 160
1988	1 656	8 500	8 100	5 400	6 300	5 500	14 870	49 534	99 860
1989	1 835	8 700	8 100	5 700	6 300	5 500	16 000	46 385	98 520
1990	1 886	8 200	8 000	5 620	6 350	5 000	14 550	48 055	97 660
1991	1 382	8 000	8 100	5 600	6 350	5 000	14 022	45 481	93 935
1992	1 348	7 054	10 977	5 715	5 443	4 990	14 759	47 257	97 791
1993	1 590	7 345	9 616	4 536	4 990	6 804	14 344	44 504	93 623
1994	1 692	8 500	10 500	5 000	5 300	7 250	17 200	45 735	101 000
1995	1 995	7 960	11 000	5 000	3 900	7 500	16 600	44 297	98 100
1996	1 916	8 330	8 000	5 000	5 350	8 000	17 500	45 802	99 700
1997	2 393	8 500	7 800	5 000	5 500	7 400	18 600	49 309	104 000
1998	3 052	8 100	9 000	4 500	5 300	7 400	19 000	51 128	107 000
1999	3 466	9 470	9 000	4 500	5 500	7 500	22 400	50 940	107 000
2000	3 796	8 550	6 800	4 500	5 600	7 500	19 500	45 233	106 000
2001	3 225	8 560	6 800	4 500	5 900	7 500	16 300	51 249	104 000
2002	4 087	8 850	6 850	3 500	5 900	7 500	15 700	48 613	101 000
2003	3 938	9 000	6 900	3 500	5 700	7 500	16 000	51 736	104 000
2004	na	9 000	6 900	3 500	5 700	7 500	18 000	na	106 000

a Excludes Hong Kong. na Not available.

Sources: Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; US Department of the Interior, US Geological Survey, *Mineral Commodity Summaries*, Washington DC; ABARE.

284 Summary of Australian statistics for iron ore and steel ^a

	Production				Iron ore consumption	Exports		
	Iron ore		Pig iron	Crude steel		Iron ore and pellets	Pig iron	Crude steel ^{bs}
	Pellets kt	Total kt	kt	kt		kt	kt	kt
1960	na	4 455	2 929	3 747	4 700	na	101	10
1961	0	5 463	3 211	3 844	5 700	0	301	88
1962	0	5 048	3 490	4 235	5 100	0	160	100
1963	0	5 689	3 683	4 652	5 600	0	135	32
1964	0	5 846	4 049	5 099	5 500	13	57	9
1965	0	6 805	4 252	5 464	6 500	152	46	10
1966	0	11 071	4 743	5 891	7 500	2 045	97	255
1967	0	17 314	5 058	6 268	7 900	9 164	152	344
1968	3 000	26 632	5 573	6 503	8 600	16 398	246	356
1969	5 871	38 576	6 107	7 016	9 300	26 858	375	545
1970	5 957	51 188	6 148	6 822	9 400	41 112	310	226
1971	6 800	62 063	6 128	6 737	9 600	52 796	519	122
1972	6 424	64 401	6 491	6 743	9 600	54 079	582	597
1973	10 153	84 828	7 658	7 682	11 300	74 181	853	771
1974	10 066	96 950	7 250	7 755	10 700	83 654	753	775
1975	9 469	97 651	7 475	7 843	11 000	80 363	520	1 636
1976	9 594	93 255	7 417	7 774	10 900	81 231	698	1 534
1977	10 226	95 932	6 753	7 313	9 900	78 908	647	1 280
1978	9 471	83 134	7 337	7 589	10 800	75 264	711	1 008
1979	9 303	91 717	7 811	8 125	11 500	78 447	643	611
1980	5 329	95 534	6 959	7 594	11 585	80 375	515	306
1981	3 887	84 661	6 830	7 635	11 810	71 729	158	378
1982	3 321	87 694	5 956	6 371	10 853	72 567	101	218
1983	3 043	71 040	5 045	5 657	8 923	74 088	469	384
1984	3 497	94 406	5 329	6 303	9 380	85 477	71	294
1985	3 725	92 900	5 607	6 578	8 673	84 746	26	583
1986	3 338	94 015	5 889	6 703	9 680	79 523	26	496
1987	3 309	101 748	5 569	6 125	9 319	77 829	165	523
1988	3 400	96 064	5 730	6 399	9 570	94 855	25	843
1989	3 600	105 810	6 094	6 735	8 836	101 681	24	948
1990	4 537	110 509	6 125	6 666	8 881	95 928	1	1 740
1991	3 475	117 673	5 647	6 017	8 188	111 557	0	1 934
1992	1 437	112 115	6 388	6 990	9 263	103 487	0	2 315
1993	1 512	120 534	7 284	7 837	10 926	111 527	0	2 621
1994	1 507	128 766	7 855	8 455	11 783	119 093	0	3 069
1995	1 596	142 964	7 861	8 431	11 791	130 369	0	2 950
1996	1 608	152 138	7 381	8 379	11 662	128 274	22	3 130
1997	168	156 286	7 884	8 837	12 131	146 757	4	3 188
1998	3 618	160 731	7 724	8 886	11 515	136 418	0	3 364
1999	1 932	151 558	7 147	8 162	10 303	139 278	3	2 999
2000	2 116	171 508	6 115	7 297	9 113	157 368	3	2 549
2001	2 073	181 435	6 029	7 076	8 738	156 718	0	1 998
2002	2 178	188 760	6 466	7 550	9 070	165 869	0	2 153
2003	2 294	212 881	6 611	7 714	9 394	187 570	0	2 304
2004	2 141	234 008	6 546	7 659	9 815	211 359	0	2 447

^a Iron ore figures expressed in dry weight. ^b Series up to and including 1987 do not include flat rolled products, bars and rods, and wire and steel sections. Subsequent series include all items in ABS, *Australian Harmonized Export Commodity Classification*, chapter 72, 'Iron and steel', excluding ferrous waste, scrap and ferroalloys. ^s ABARE estimate. ^{na} Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

285 Volume of Australian exports of iron and steel, by destination ^a

	1997	1998	1999	2000 ^b	2001 ^b	2002 ^b	2003 ^b	2004 ^b
	kt	kt	kt	kt	kt	kt	kt	kt
Africa	4	18	18	16	59	8	5	7
Americas								
North	456	1 123	986	544	88	270	254	259
Other	53	129	96	93	44	44	35	15
Total	509	1 252	1 082	637	132	314	289	274
Asia								
China	58	56	55	93	698	877	1 251	430
Chinese Taipei	445	287	230	183	78	39	65	155
Hong Kong, China	195	154	86	45	16	9	12	5
India	4	154	62	20	4	41	6	5
Indonesia	296	51	165	82	75	36	46	61
Japan	127	76	72	53	25	175	3	5
Korea, Rep. of	474	302	598	302	343	149	271	93
Malaysia	270	87	115	66	48	17	94	51
Philippines	232	88	56	11	19	2	3	3
Singapore	116	57	45	19	7	51	7	7
Thailand	181	154	194	124	29	51	70	81
Other	52	47	82	52	37	78	139	50
Total	2 451	1 512	1 760	1 049	1 379	1 525	1 966	946
Europe	59	464	230	212	73	224	77	6
New Zealand	111	90	138	92	91	137	112	117
Other	53	29	26	501	13	65	77	13
Total	3 188	3 364	3 253	2 507	1 747	2 275	2 526	1 364

^a Includes all items in ABS, *Australian Harmonized Export Commodity Classification*, chapter 72, 'Iron and steel', excluding ferrous waste, scrap and ferroalloys. ^b Data for slab, hot rolled, cold rolled and coated steel products became confidential in 2000. Estimates or export volumes are included in 'other' category.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra.

286 Australian supply and disposal of iron ore and steel

	Unit	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Production								
Iron ore and concentrate	kt	153 478	159 750	175 555	185 302	198 892	221 489	252 289
Pig iron	kt	7 453	6 489	6 096	6 169	6 634	6 624	6 520
Raw steel	kt	8 549	8 053	8 003	8 311	9 399	9 471	7 556
Exports								
Iron ore and pellets	kt	135 185	149 436	157 320	156 130	181 478	194 773	228 271
	\$m	3 844	3 779	4 903	5 160	5 342	5 277	8 101
Iron and steel s	kt	3 332	2 941	2 931	3 297	3 589	3 818	2 249
	\$m	1 311	1 265	1 484	1 484	1 855	2 004	1 952
Scrap	kt	697	754	1 063	934	890	955	1 009
	\$m	125	155	212	177	211	298	402
Export unit value								
Iron ore and pellets	\$/t	28.44	25.29	31.16	33.05	29.44	27.09	35.49

s ABARE estimate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

287 Volume of Australian iron ore exports, by destination ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Asia								
China	31 510	26 840	26 219	33 293	38 023	44 018	59 971	80 109
Chinese Taipei	7 788	7 306	8 017	9 089	9 904	9 347	8 664	9 095
Japan ^b	64 215	60 633	64 889	69 362	66 830	70 492	75 353	80 314
Korea, Rep. of	16 867	17 793	19 154	21 203	23 810	25 120	26 000	26 472
Other	1 137	725	830	828	922	865	594	494
United States	628	1 038	618	609	436	628	67	0
Western Europe	23 788	21 333	18 890	21 484	15 867	14 450	16 051	12 563
Other ^c	825	750	662	1 501	926	949	870	2 314
Total	146 757	136 418	139 278	157 368	156 718	165 869	187 570	211 359

^a Dry weight. ^b Includes exports to the Philippines which were subsequently re-exported to Japan. ^c Includes data for which details of export destinations are not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

288 Summary of world statistics for iron ore and steel

	Production				
	Iron ore a		Iron b	Crude steel	Iron ore exports a
	Pellets	Total			
Mt	Mt	Mt	Mt	Mt	
1960	16.1	522.0	241.5	347.1	151.9
1961	17.9	503.8	251.1	347.2	149.2
1962	22.0	523.4	257.2	353.6	157.9
1963	29.6	516.2	272.4	379.2	164.7
1964	40.5	568.9	307.9	429.9	198.7
1965	46.5	624.3	326.3	452.4	211.7
1966	58.0	625.9	335.8	471.3	214.9
1967	71.5	629.2	352.4	493.3	223.7
1968	94.5	687.7	378.4	523.9	256.7
1969	104.3	720.3	408.4	570.9	278.8
1970	117.9	773.9	426.5	595.3	323.1
1971	122.2	780.5	423.1	582.3	318.0
1972	127.5	781.7	447.1	630.2	311.4
1973	150.7	845.6	493.5	696.4	377.0
1974	153.6	896.3	503.4	703.5	411.8
1975	161.5	888.8	469.9	643.5	381.0
1976	174.5	922.9	489.4	675.1	379.8
1977	163.3	880.8	485.8	675.3	358.0
1978	182.6	891.3	506.7	716.5	350.6
1979	205.4	947.6	528.3	746.7	398.1
1980	186.3	917.9	508.1	716.3	384.6
1981	195.2	894.6	497.2	707.1	372.9
1982	155.1	818.2	452.6	644.9	329.3
1983	171.0	782.1	458.1	663.4	315.1
1984	192.8	882.2	490.7	710.3	372.4
1985	201.9	909.6	499.6	718.9	375.8
1986	196.5	920.7	496.3	714.0	370.0
1987	211.5	945.5	509.0	735.5	367.8
1988	230.2	964.4	538.4	780.1	400.9
1989	237.1	991.0	544.8	785.9	424.3
1990	225.3	980.6	531.6	770.1	397.1
1991	211.5	952.1	508.6	736.2	398.9
1992	205.9	907.8	476.4	719.6	334.0
1993	205.3	944.3	477.4	727.6	354.0
1994	218.7	967.8	482.6	725.1	383.0
1995	245.3	1 029.5	491.5	750.2	402.0
1996	238.9	1 026.2	486.6	749.6	391.0
1997	249.5	1 074.4	515.1	798.6	483.4
1998	242.6	1 036.8	502.6	777.4	466.1
1999	233.5	1 009.9	510.6	789.0	446.1
2000	259.1	1 078.0	544.5	847.4	505.8
2001	235.9	1 047.1	549.0	850.2	496.5
2002	265.8	1 108.5	583.3	903.8	545.0
2003	282.4	1 213.0	635.8	968.3	585.6
2004	303.2	1 349.3	687.6	1 056.7	585.5

a Natural weight. **b** Total production of primary iron less total production of directly reduced iron.

Sources: Association of Iron Ore Exporting Countries, *Iron Ore Statistics*, Geneva; International Iron and Steel Institute, *Steel Statistical Yearbook*, Brussels; United Nations Conference on Trade and Development, Trust Fund on Iron Ore, *Iron Ore Statistics*, Geneva; United Nations Conference on Trade and Development, *Review of Iron Ore Statistics, Iron Ore Statistics*, Geneva; United Nations Conference on Trade and Development, *Statistical Issues: Statistics on Iron Ore*, Geneva; United Nations Conference on Trade and Development, Trust Fund Project on Iron Ore Information, *The Iron Ore Market 1999-2000*, Geneva.

289 World iron ore production, by country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	Mt	Mt	Mt	Mt	Mt	Mt	Mt	Mt
Australia	165.0	163.3	153.0	176.3	180.5	187.2	212.0	234.7
Brazil ^b	188.0	183.1	188.7	208.8	210.0	215.0	235.0	270.5
Canada	38.2	38.7	34.0	35.9	27.9	30.9	33.2	28.3
China ^c	267.0	246.9	237.2	224.0	218.3	231.4	261.1	310.1
CIS ^d	136.9	132.1	138.1	157.2	151.3	158.6	171.6	181.3
India	69.4	71.7	70.2	74.9	49.2	86.4	99.1	120.6
South Africa	33.2	33.0	29.5	33.7	34.8	36.5	38.1	39.3
Sweden	21.9	20.9	18.9	20.6	19.5	20.3	21.5	22.3
United States	63.0	62.9	57.8	63.1	45.8	51.5	48.5	54.7
Venezuela	18.7	17.2	17.0	17.4	19.0	20.9	19.2	20.0
Other	73.2	67.0	65.5	66.1	90.8	69.8	73.7	67.5
Total	1 074.4	1 036.8	1 009.9	1 078.0	1 047.1	1 108.5	1 213.0	1 349.3

^a Natural weight. ^b Pellets not included. ^c Low Fe content. ^d Commonwealth of Independent States (CIS). Members of the former Soviet Union that are not part of the CIS are Lithuania, Latvia, Estonia and Georgia.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; United Nations Conference on Trade and Development, Trust Fund on Iron Ore, *Iron Ore Statistics*, Geneva; United Nations Conference on Trade and Development, *Review of Iron Ore Statistics*, Geneva.

290 Volume of world iron ore exports, by country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	Mt	Mt	Mt	Mt	Mt	Mt	Mt	Mt
Australia	155.5	144.7	146.2	165.2	164.5	175.6	187.5	210.7
Brazil	140.4	143.2	140.2	160.1	155.7	170.0	184.4	200.9
Canada	32.3	30.6	26.9	26.5	22.0	25.6	27.8	22.5
Former Soviet Union ^b	30.4	28.0	29.6	43.9	40.4	42.7	48.8	48.6
India	32.9	32.8	31.0	32.9	41.0	54.9	57.3	62.7
Mauritania	11.7	11.4	11.0	11.1	10.1	10.5	9.6	11.0
South Africa	20.7	22.1	21.1	21.4	23.5	24.3	24.1	24.7
Sweden	18.3	16.0	13.9	16.0	13.7	14.5	16.1	17.4
Venezuela	9.3	8.6	6.6	6.9	6.9	6.7	7.4	9.3
Other	31.9	28.7	19.6	21.8	18.7	20.2	22.6	25.7
Total	483.4	466.1	446.1	505.8	496.5	545.0	585.6	585.5

^a Natural weight. ^b Commonwealth of Independent States (CIS). Members of the former Soviet Union that are not part of the CIS are Lithuania, Latvia, Estonia and Georgia.

Sources: Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; United Nations Conference on Trade and Development, Trust Fund on Iron Ore Information, *Iron Ore Market 1999-2000*, Geneva; United Nations Conference on Trade and Development, *Review of Iron Ore Statistics*, Geneva.

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Volume of world iron ore imports, by region and country ^a

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	Mt	Mt	Mt	Mt	Mt	Mt	Mt	Mt	Mt
Africa and Middle East									
Qatar	0.6	0.6	0.6	0.5	0.5	0.4	0.3	0.4	0.4
Saudi Arabia	3.2	2.7	3.3	3.5	4.5	3.9	4.7	4.3	3.9
Other	8.0	9.3	7.8	7.4	11.2	9.6	10.0	10.3	11.3
Total	11.8	12.6	11.7	11.4	16.2	13.9	15.0	15.0	15.6
Americas									
Argentina	4.9	5.3	5.4	4.5	5.4	4.5	5.2	6.3	13.5
Canada	6.9	7.1	7.2	7.3	6.5	5.9	6.8	6.6	8.0
Mexico	2.2	2.8	4.0	3.9	3.2	2.1	2.7	3.6	4.0
United States	18.4	18.6	16.9	14.3	15.7	10.7	12.5	12.6	11.8
Other	1.7	1.7	1.7	2.1	2.5	3.3	3.2	3.2	3.8
Total	34.1	35.5	35.2	32.1	33.3	26.6	30.4	32.3	41.1
Asia and Oceania									
China	43.9	55.1	51.8	55.3	70.0	92.3	111.5	148.1	208.1
Chinese Taipei	10.1	14.0	14.2	13.3	14.9	15.6	15.2	15.6	15.7
Indonesia	2.5	1.9	1.3	2.4	2.2	1.3	1.5	1.6	2.0
Japan	120.7	127.6	118.6	123.0	131.5	125.3	131.8	132.4	134.9
Korea, Rep. of	34.8	38.6	33.6	35.5	39.0	45.9	43.3	43.1	44.2
Malaysia	1.7	2.6	1.1	1.4	1.7	1.6	1.3	1.6	2.2
Pakistan	1.6	1.7	1.4	1.6	1.5	1.4	1.5	1.0	1.0
Other	2.8	3.9	4.0	3.7	3.7	3.2	2.3	1.8	3.4
Total	218.1	245.3	226.0	236.2	264.5	286.6	308.4	345.2	411.5
Europe									
Austria	4.5	5.1	5.2	4.4	5.4	5.3	5.8	5.7	5.8
Belgium–Luxembourg	13.0	11.2	13.5	12.1	11.9	11.1	12.2	12.1	10.6
Bulgaria	2.1	2.2	2.1	1.7	1.8	1.3	1.5	1.7	1.7
Czech Republic	8.3	7.4	7.4	5.4	6.9	6.9	6.8	8.2	7.6
Finland	3.3	3.7	3.9	3.8	3.9	3.9	3.8	4.2	3.8
Former Yugoslavia	1.0	1.1	0.3	1.3	0.3	0.0	0.1	1.8	2.1
France	18.4	20.2	19.8	20.2	19.7	16.7	19.0	18.9	21.0
Germany	39.8	46.4	46.8	39.2	47.6	40.1	44.3	33.9	43.9
Hungary	2.3	1.5	2.1	1.7	2.1	1.7	1.7	1.8	1.9
Italy	16.0	16.7	15.7	15.6	17.6	15.8	14.9	15.3	16.7
Netherlands	8.4	8.6	8.8	7.9	8.9	6.3	7.4	7.8	12.6
Poland	9.5	10.3	9.7	7.3	9.7	7.7	7.0	8.7	10.9
Portugal	0.6	0.6	0.6	0.5	0.6	0.7	0.1	0.0	0.0
Romania	5.8	6.6	6.6	4.2	4.5	3.9	6.2	7.0	6.6
Russia	7.6	7.3	4.1	4.1	9.1	8.8	8.7	10.1	10.4
Slovakia	4.2	4.3	4.0	4.3	4.7	3.8	5.1	5.7	6.1
Spain	6.4	5.8	6.6	6.3	6.3	6.6	6.2	5.8	6.1
Turkey	6.1	5.9	6.6	6.3	6.3	6.6	6.2	5.8	5.4
Ukraine	2.4	3.4	3.1	3.0	4.1	2.6	5.1	5.5	3.3
United Kingdom	20.4	21.0	20.8	17.0	16.7	15.4	13.7	16.1	15.3
Other	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
Total	180.2	189.4	187.8	166.4	188.3	165.3	175.8	176.2	191.9
Total	440.7	480.7	458.1	442.0	501.6	491.9	528.0	571.7	659.7

^a Natural weight.

Sources: United Nations Conference on Trade and Development, Trust Fund on Iron Ore, *Iron Ore Statistics*, Geneva; United Nations Conference on Trade and Development, *Review of Iron Ore Statistics*, Geneva.

292 Iron ore prices

	Australian		Spot ^b		Negotiated ^d	
	export unit value ^a		Nominal	Real ^c	Fines	Lump
	A\$/t	US\$/t	US\$/t	US\$/t	US\$/dltu	US\$/dltu
1960	na	na	17.08	81.00	na	na
1961	na	na	17.79	83.44	na	na
1962	na	na	16.75	77.71	na	na
1963	na	na	15.69	71.79	na	na
1964	6.09	6.82	15.69	71.01	na	na
1965	8.26	9.25	15.69	69.82	na	na
1966	8.38	9.39	15.25	65.82	12.00	15.50
1967	8.36	9.36	13.50	56.79	12.00	15.50
1968	8.67	9.71	12.62	50.95	12.00	15.50
1969	8.69	9.73	11.68	44.65	12.00	15.10
1970	8.04	9.00	15.22	54.95	11.90	15.00
1971	7.69	8.72	13.40	46.43	11.80	14.90
1972	7.29	8.69	12.79	42.81	11.70	14.80
1973	6.19	8.80	17.13	53.99	13.30	17.30
1974	7.04	10.13	19.00	54.00	15.40	19.30
1975	9.32	12.21	22.81	59.37	17.40	21.20
1976	10.23	12.53	22.72	55.89	17.70	21.70
1977	12.06	13.38	21.59	49.92	20.20	24.70
1978	12.06	13.81	19.39	41.67	21.20	24.30
1979	12.87	14.39	23.44	45.21	23.10	26.10
1980	14.59	16.63	28.09	47.83	27.60	31.20
1981	15.79	18.15	28.09	43.36	29.70	34.20
1982	19.88	20.23	32.50	47.26	34.80	40.00
1983	21.23	19.16	29.00	40.85	30.45	34.85
1984	18.87	16.60	26.15	35.32	26.67	30.87
1985	22.98	16.10	26.56	34.65	27.05	31.55
1986	24.33	16.32	26.26	33.62	25.97	30.29
1987	21.54	15.10	24.50	30.25	24.67	28.78
1988	18.68	14.65	23.50	27.88	23.68	28.78
1989	20.53	16.27	26.50	29.99	26.76	33.76
1990	23.55	18.40	30.80	33.08	31.03	39.15
1991	25.92	20.20	33.25	34.26	33.49	41.48
1992	27.18	19.99	31.60	31.60	31.85	38.84
1993	25.93	17.63	28.11	27.30	28.35	35.34
1994	21.75	15.91	25.47	24.11	25.66	33.26
1995	22.49	16.68	27.00	24.86	27.15	35.89
1996	22.68	17.75	28.60	25.59	28.78	37.68
1997	24.29	18.07	28.71	25.09	29.10	37.68
1998	29.23	18.40	29.69	25.55	29.92	38.79
1999	25.63	16.54	26.96	22.70	26.63	34.83
2000	28.14	16.38	27.67	22.54	27.79	36.84
2001	33.38	17.28	28.92	22.92	28.98	38.03
2002	31.33	17.04	28.62	22.33	28.28	36.13
2003	27.15	17.70	31.04	23.44	30.83	39.35
2004	29.40	21.67	36.45	25.21	29.13	38.70

^a Australia commenced commercial exports of iron ore in 1964. ^b Before 1965, Liberia Nimba, 27 per cent fines, cif North Sea ports; after 1965, Brazilian Itabira standard sinterfeed, 61.5 per cent iron, cif German ports. ^c In 1992 dollar terms. ^d Negotiated Japanese fiscal year hematite ores, fob. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; International Monetary Fund, *International Financial Statistics*, Washington DC; TEX Report Co. Ltd, *Iron Ore Manual*, Tokyo.

293 Summary of Australian statistics for lead

	Production			Consumption	Exports d		Price e
	Mine a	Bullion b	Refined c		Volume	Value	
	kt	kt	kt	kt	kt	\$m	\$/t
1960	313	54	190	54	253	41	196.8
1961	274	49	162	52	282	41	195.5
1962	376	74	190	50	388	50	161.6
1963	416	82	225	64	380	53	166.5
1964	381	80	203	63	350	73	235.5
1965	368	68	193	64	340	86	276.6
1966	371	75	193	65	354	79	248.8
1967	382	103	191	66	335	80	217.5
1968	389	118	175	66	334	87	218.6
1969	453	156	186	71	342	97	259.2
1970	457	171	180	62	401	123	282.1
1971	404	162	163	63	338	87	239.1
1972	396	139	180	63	320	87	241.3
1973	403	150	190	74	329	107	275.2
1974	375	144	193	72	315	155	389.4
1975	408	152	158	72	298	126	324.2
1976	397	161	182	75	359	157	358.6
1977	432	156	182	77	339	226	531.8
1978	400	152	204	74	369	236	563.2
1979	422	169	215	72	351	437	1 031.2
1980	398	160	200	79	344	570	843.3
1981	388	163	208	66	329	315	662.5
1982	455	182	219	56	397	334	622.4
1983	481	183	196	56	409	383	592.2
1984	441	179	199	59	427	358	515.3
1985	498	183	200	59	430	358	568.1
1986	445	188	156	60	412	361	604.5
1987	489	197	202	62	388	512	867.6
1988	462	191	193	60	420	490	885.7
1989	495	183	212	61	338	382	892.8
1990	565	195	212	58	398	464	1 123.6
1991	579	182	220	56	425	331	801.6
1992	580	231	232	58	542	460	813.6
1993	510	221	221	62	496	334	670.7
1994	505	197	212	78	465	368	810.8
1995	455	164	215	77	479	429	912.6
1996	527	191	204	67	488	489	1 074.7
1997	526	179	203	63	517	431	919.2
1998	618	164	173	54	578	544	914.3
1999	677	162	239	56	696	571	860.2
2000	699	139	223	41	656	576	854.9
2001	759	195	237	41	717	709	1 017.8
2002	694	187	268	39	751	706	1 025.6
2003	688	169	270	38	723	638	950.2
2004	674	140	232	39	715	907	1 356.0

a Total metallic content of minerals produced. **b** Metal content. **c** Primary lead production (excludes scrap). **d** Quantities refer to the total metallic content of all ores and concentrates, intermediate products and refined metal; the value of lead contained in other mine and smelter products (for example, in zinc concentrates) is included in the value of the metal in which it is exported. **e** BHAS, 99.97–99.99 per cent, fob/for Port Pirie.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

294 Australian supply and disposal of lead

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Production									
Mine a	kt	571	661	690	724	744	695	677	682
Bullion b	kt	171	157	165	153	201	181	143	153
Refined									
Primary	kt	185	199	233	215	275	267	247	234
Secondary	kt	26	30	33	33	34	36	35	36
Exports									
Ores and concentrates	kt	253	397	436	433	380	366	417	417
	\$m	140.2	213.0	264.1	318.2	323.3	288.7	387.2	489.4
Bullion	kt	167	140	135	119	153	150	113	164
	\$m	179.1	143.9	155.1	151.5	194.8	164.8	141.9	245.8
Refined metal	kt	177	201	258	199	236	269	231	243
	\$m	172.9	180.0	187.5	167.2	210.6	203.4	198.8	305.1
Consumption c	kt	64	62	44	41	39	38	38	33
Export unit value									
Ores and concentrates	A\$/t	554.8	536.2	605.3	735.1	850.2	788.9	927.6	1 174.3
Bullion	A\$/t	1 075.5	1 026.6	1 150.9	1 276.4	1 276.7	1 097.3	1 253.4	1 498.9
Refined	A\$/t	978.9	894.2	727.4	841.2	891.2	755.5	860.9	1 256.0

a Total metallic content of minerals produced. **b** Metal content. **c** Refined metal only.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra.

295 Volume of Australian exports of lead, by destination ^a

	1997 kt	1998 kt	1999 kt	2000 kt	2001 kt	2002 kt	2003 kt	2004 kt
Ores and concentrates ^b								
Belgium	0	52	58	73	64	57	50	30
China	29	26	35	70	74	42	64	83
Japan	40	46	36	39	48	31	43	22
Korea, Rep. of	10	64	72	81	100	130	98	98
United States	6	14	15	9	6	na	na	na
Other	18	29	41	13	12	4	8	31
Total	103	231	257	285	304	264	263	264
Bullion								
United Kingdom	156	134	138	109	148	151	133	150
Total ^c	171	134	138	109	148	151	133	150
Refined metal								
Chinese Taipei	32	25	34	44	30	30	34	12
Hong Kong, China	0	0	15	9	12	13	17	11
India	17	14	13	24	21	20	13	23
Indonesia	23	16	19	21	16	13	17	11
Japan	3	3	2	2	na	na	na	na
Korea, Rep. of	32	23	28	26	28	33	42	49
Malaysia	14	12	43	16	13	15	18	13
South Africa	13	12	11	9	11	12	11	13
Thailand	8	5	7	10	16	21	25	14
United States	0	0	41	31	37	53	20	na
Other	27	25	42	27	23	53	70	65
Total	169	135	255	219	207	263	267	211

^a Excludes slags and residues and scrap. ^b Lead content of lead ores and concentrates only. ^c Includes a substantial amount of contained silver, for which separate details are not available. **na** Not available.

Source: International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

296 World production, consumption, stock and prices of lead

	Production				Consumption	Stocks b	Price c
	Refined metal			Total			
	Mine a	Primary	Secondary b				
kt	kt	kt	kt	kt	kt	US\$/t	
1960	2 372	2 479	748	3 227	3 080	457	195.7
1961	2 392	2 573	726	3 299	3 153	551	174.4
1962	2 531	2 568	728	3 296	3 275	478	153.0
1963	2 543	2 664	796	3 460	3 429	411	172.2
1964	2 604	2 695	910	3 605	3 633	370	275.0
1965	2 784	2 756	958	3 714	3 670	365	312.5
1966	2 937	2 885	940	3 825	3 847	368	258.5
1967	2 961	2 925	959	3 884	3 861	459	224.7
1968	3 034	3 094	1 044	4 138	4 200	338	236.9
1969	3 295	3 894	1 148	4 542	4 431	414	285.6
1970	3 443	3 616	1 287	4 688	4 502	500	303.8
1971	3 476	3 388	1 261	4 614	4 671	479	252.9
1972	3 585	3 491	1 324	4 803	4 863	470	303.8
1973	3 673	3 580	1 426	4 991	5 218	375	428.2
1974	3 642	3 593	1 462	5 042	5 173	523	591.5
1975	3 570	3 442	1 410	4 828	4 742	576	412.4
1976	3 464	3 539	1 487	5 049	5 183	482	452.8
1977	3 646	3 662	1 707	5 372	5 486	466	618.1
1978	3 622	3 697	1 738	5 459	5 583	396	658.0
1979	3 589	3 716	1 903	5 622	5 683	458	1 204.4
1980	3 495	3 600	1 815	5 417	5 429	525	910.3
1981	3 342	3 560	1 798	5 309	5 345	518	736.9
1982	3 366	3 641	1 649	5 210	5 179	560	543.9
1983	3 265	3 637	1 561	5 198	5 189	560	425.1
1984	3 126	3 470	1 829	5 299	5 312	535	444.3
1985	3 248	3 539	1 835	5 374	5 315	427	394.2
1986	3 082	3 345	1 891	5 236	5 380	480	406.9
1987	3 152	3 386	2 047	5 433	5 464	400	596.1
1988	3 151	3 475	2 102	5 577	5 527	443	656.3
1989	3 110	3 362	2 348	5 710	5 558	356	677.4
1990	3 110	3 087	2 369	5 456	5 411	540	820.0
1991	3 097	3 071	2 262	5 325	5 226	583	559.0
1992	3 047	3 238	2 268	5 437	5 174	735	541.0
1993	2 700	3 176	2 303	5 479	5 225	788	406.0
1994	2 707	2 968	2 483	5 462	5 488	750	549.0
1995	2 750	3 091	2 649	5 740	5 849	611	631.0
1996	3 006	3 074	2 784	5 822	5 987	438	774.0
1997	3 030	3 127	2 905	6 033	6 040	440	624.0
1998	2 990	3 095	2 918	6 010	6 049	420	528.6
1999	2 966	3 291	2 990	6 280	6 246	467	502.6
2000	3 046	3 546	3 109	6 655	6 518	440	453.9
2001	3 008	3 521	3 071	6 592	6 482	436	476.0
2002	2 831	3 565	3 110	6 675	6 647	483	452.6
2003	3 099	3 633	3 115	6 748	6 825	407	515.1
2004	3 071	3 653	3 183	6 836	7 082	295	888.4

a Metal content. **b** Western world refined metal. **c** Average London Metal Exchange cash price, midday, standard grade, minimum 99.97 per cent.
 Sources: ABARE, *Australian Mineral Statistics*, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

297 World lead production, by region and country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Mine								
Africa	180	182	179	178	150	130	102	105
Morocco	77	80	80	82	77	62	41	46
South Africa	83	84	80	75	51	50	40	37
Americas	1 129	1 146	1 111	1 053	1 092	1 022	1 033	1 007
Canada	186	190	162	149	154	97	81	77
Mexico	174	166	126	138	149	139	144	142
Peru	262	258	271	271	289	297	308	306
United States	459	491	513	458	463	449	458	439
Asia	858	721	688	805	728	772	1 100	1 102
China	712	581	549	660	599	641	955	951
India	33	38	38	36	32	32	44	51
Kazakhstan	29	26	31	39	43	43	44	44
Korea, Dem. Rep. of	35	25	16	12	9	10	20	20
Other	49	51	54	58	45	43	37	36
Australia	486	584	633	650	714	658	648	642
Europe	377	357	355	360	324	248	216	217
Bulgaria	32	22	14	14	16	24	17	13
Ireland	45	36	39	57	45	32	50	65
Poland	55	60	63	51	53	57	42	40
Sweden	109	112	118	107	88	44	51	55
Other	136	127	121	131	122	91	56	44
Total	3 030	2 990	2 966	3 046	3 008	2 831	3 099	3 071
Refined ^b								
Africa	124	127	131	125	125	144	138	101
Americas	2 182	2 182	2 135	2 216	2 087	2 095	2 093	2 009
Canada	271	266	266	284	231	252	223	241
Mexico	259	259	199	241	236	234	240	243
Peru	98	104	111	116	118	120	112	120
United States	1 431	1 436	1 447	1 457	1 376	1 364	1 392	1 269
Other	123	117	112	118	111	110	106	136
Asia	1 602	1 643	1 882	2 163	2 209	2 361	2 630	2 880
China	708	757	918	1 100	1 195	1 325	1 564	1 812
India	60	66	64	67	63	78	71	51
Japan	297	302	293	312	302	286	295	283
Kazakhstan	82	92	159	208	159	152	141	149
Korea, Rep. of	182	180	190	220	211	243	230	233
Other	243	246	258	256	278	277	323	352
Australia	229	200	271	259	271	302	307	273
Europe	1 890	1 852	1 855	1 881	1 893	1 766	1 573	1 551
France	283	289	273	262	230	203	101	104
Germany	329	353	353	387	375	378	357	411
Italy	212	199	215	231	227	196	214	202
Spain	90	94	98	120	122	116	102	105
United Kingdom	399	370	372	338	382	368	320	243
Other	577	547	544	545	557	505	475	486
Other countries	6	6	6	11	9	10	1	7
Total	6 033	6 010	6 280	6 655	6 592	6 675	6 748	6 836

^a Lead content by analysis of lead ores and concentrates plus the lead content of other ores and concentrates known to be intended for lead recovery. ^b Includes primary and secondary lead.

Source: International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

298 Volume of world lead trade, by major countries

	1997 kt	1998 kt	1999 kt	2000 kt	2001 kt	2002 kt	2003 kt	2004 kt
Exports								
Ores and concentrates a								
Australia	103	231	257	285	304	264	263	264
Belgium	49	64	59	63	58	64	51	68
Canada	74	37	49	49	58	42	8	1
Ireland	43	35	40	57	49	31	49	64
Peru	142	142	148	145	151	179	178	186
South Africa	86	21	66	77	38	45	39	44
Sweden	51	79	71	73	68	36	34	34
United States	42	72	93	117	185	245	257	295
Refined lead								
Australia	169	135	255	219	207	263	267	211
Belgium	98	87	69	104	81	62	75	62
Bulgaria	65	na	70	72	68	58	60	54
Canada	159	157	166	167	144	163	149	150
China	186	236	450	443	448	399	438	448
France	74	86	76	76	61	56	11	5
Germany	74	93	80	114	145	133	100	79
Mexico	102	72	28	20	13	9	12	9
Morocco	52	59	54	56	52	70	58	21
Peru	na	100	101	111	115	109	109	113
Sweden	56	57	57	65	52	58	66	63
United Kingdom	79	100	81	84	89	100	62	38
United States	37	24	23	21	17	31	92	59
Imports								
Ores and concentrates a								
Belgium	37	58	58	71	61	69	48	72
Canada	35	23	56	47	53	68	70	93
China	71	127	93	158	255	216	374	454
France	123	120	115	133	109	88	0	0
Germany	37	85	111	115	146	122	108	121
Italy	55	59	110	95	66	63	52	59
Japan	116	118	122	128	117	117	109	94
Korea, Rep. of	52	99	90	126	145	138	151	43
United Kingdom	39	33	25	14	8	0	0	0
Refined lead								
Austria	44	50	36	39	40	42	38	30
Chinese Taipei	114	101	121	126	121	122	98	125
France	50	47	67	80	74	74	101	86
Germany	87	95	87	112	157	136	134	89
Italy	95	75	91	68	77	107	61	95
Korea, Rep. of	140	90	117	113	131	147	153	157
Malaysia	39	56	100	79	74	77	125	62
Singapore	23	36	96	80	89	86	17	41
Spain	81	95	100	104	114	171	119	150
Thailand	35	21	161	51	48	65	79	77
United Kingdom	17	29	38	105	31	29	20	35
United States	265	267	311	357	270	211	176	199

a Metal content. na Not available.

Source: International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

299 Summary of Australian statistics for limestone

	Production	Exports		Imports	
		Volume	Value	Volume	Value
	kt	t	\$'000	kt	\$'000
1970	9 996	na	na	511	708
1971	10 335	na	na	713	1 018
1972	10 494	na	na	605	1 001
1973	11 224	na	na	1 130	1 890
1974	11 046	na	na	1 432	2 572
1975	10 854	na	na	1 490	3 775
1976	10 583	na	na	1 527	4 475
1977	10 552	na	na	1 100	4 433
1978	10 924	na	na	1 380	7 085
1979	11 450	na	na	1 317	6 522
1980	11 730	na	na	1 077	4 928
1981	11 983	na	na	1 323	6 345
1982	12 698	15	1	977	4 344
1983	10 131	80	6	833	4 393
1984	9 608 a	35	8	940	5 381
1985	8 570 b	76	8	1 022	7 292
1986	10 747 a	21	10	996	10 794
1987	10 803 a	63	7	859	10 065
1988	10 614 a	30	6	1 004	11 480
1988-89	12 915	24	8	1 038	10 656
1989-90	13 283	15	17	na	9 382
1990-91	12 566	65	16	971	10 194
1991-92	na	258	49	1 161	12 412
1992-93	15 895	1 729	165	819	11 859
1993-94	na	18 893	1 145	1 011	17 156
1994-95	na	463	206	1 038	14 618
1995-96	na	133 080	1 889	991	14 777
1996-97	na	178 758	2 241	1 027	12 712
1997-98	na	130 256	1 559	636	8 182
1998-99	na	170 795	2 500	1 066	15 881
1999-00	15 853	229 934	4 515	705	10 540
2000-01	14 743	213 469	4 101	665	10 835
2001-02	15 740	241 526	4 683	595	9 995
2002-03	18 100	242 446	5 132	582	9 170
2003-04	na	332 931	6 516	547	8 695
2004-05	na	331 515	6 568	455	7 218

a Excludes Western Australia. **b** Excludes Queensland and Western Australia. **na** Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; ABS, *Mining Operations*, cat. no. 8415.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; state mines departments and their equivalents; ABARE.

300 Australian production of limestone, by state

	New South Wales kt	Victoria kt	Queensland kt	Western Australia kt	South Australia kt	Tasmania kt	Australia kt
1960	2 439	1 176	531	315	1 081	218	5 760
1961	2 617	1 263	645	390	1 123	206	6 245
1962	2 471	1 233	706	361	1 422	324	6 518
1963	2 565	1 248	711	356	1 599	351	6 829
1964	2 743	1 415	803	462	1 567	358	7 348
1965	2 850	1 483	818	555	1 587	343	7 637
1966	2 738	1 831	886	571	1 478	350	7 854
1967	2 749	2 024	1 038	710	1 617	351	8 489
1968	2 729	1 849	1 198	745	1 583	504	8 608
1969	2 955	2 058	1 240	996	1 801	559	9 608
1970	3 155	2 022	1 242	1 201	1 853	523	9 996
1971	3 224	2 200	1 470	1 175	1 782	486	10 335
1972	3 403	2 127	1 590	1 301	1 484	581	10 494
1973	3 656	2 248	1 740	1 227	1 719	634	11 224
1974	3 779	2 192	1 758	1 157	1 562	599	11 046
1975	3 295	2 255	1 872	1 378	1 508	545	10 854
1976	3 096	2 068	1 959	1 104	1 720	635	10 583
1977	2 787	2 105	1 952	1 221	1 827	659	10 552
1978	2 903	2 245	1 802	1 365	1 890	718	10 924
1979	3 315	1 653	2 224	1 369	2 136	754	11 450
1980	3 496	2 211	1 951	1 232	1 120	720	11 730
1981	3 620	2 249	1 842	1 382	2 119	771	11 983
1982	3 417	2 303	2 235	1 762	2 061	910	12 698 a
1983	2 881	2 143	1 478	1 203	1 826	581	10 131 b
1984	3 234	2 507	1 634	na	1 469	763	9 608 c
1985	3 222	2 749	na	na	1 798	800	8 570 d
1986	3 420	2 776	1 687	na	2 012	852	10 747 c
1987	3 429	2 463	2 160	na	1 942	809	10 803 c
1988	3 411	2 580	1 880	na	1 918	826	10 614 c
1988-89	3 667	2 684	1 987	1 739	1 918	920	12 915
1989-90	3 972	2 639	2 121	1 699	1 889	963	13 283
1990-91	3 318	2 346	2 309	1 738	1 903	951	12 566
1991-92	3 410	na	2 369	2 054	2 014	na	na
1992-93	3 529	4 566	2 432	2 104	2 429	835	15 895
1993-94	na	na	2 485	2 147	2 666	na	na
1994-95	na	na	2 596	2 195	2 456	na	na
1995-96	3 746	na	na	2 612	1 729	na	na
1996-97	3 953	na	2 127	2 353	2 760	na	na
1997-98	3 887	na	1 994	2 280	2 476	na	na
1998-99	4 194	na	2 407	3 046	2 272	na	na
1999-00	4 164	2 127	2 552	3 008	2 580	1 843	15 853
2000-01	4 071	1 776	689	3 835	2 478	1 894	14 743
2001-02	4 077	1 716	2 776	3 196	2 041	1 934	15 740
2002-03	4 534	1 822	2 791	4 884	2 742	1 961	18 100
2003-04	na	1 201	2 754	4 606	1 892	1 924	na

a Includes 10 000 tonnes for the Northern Territory. **b** Includes 18 000 tonnes for the Northern Territory. **c** Excludes Western Australia. **d** Excludes Queensland and Western Australia. **na** Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; ABS, *Mining Operations*, cat. no. 8415.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; state mines departments and their equivalents; ABARE.

301 Australian imports of limestone and lime

	Limestone				Lime	
	Japan	Other	Total		Volume	Value
	kt	kt	Volume	Value	t	\$'000
			kt	\$'000		
1970	511	0	511	708	na	na
1971	713	0	713	1 018	na	na
1972	605	0	605	1 001	na	na
1973	1 130	0	1 130	1 890	na	na
1974	1 432	0	1 432	2 572	na	na
1975	1 449	41	1 490	3 775	na	na
1976	1 526	0	1 527	4 475	na	na
1977	1 099	0	1 100	4 433	na	na
1978	1 332	48	1 380	7 085	na	na
1979	1 269	48	1 317	6 522	na	na
1980	978	99	1 077	4 928	na	na
1981	1 275	48	1 323	6 345	3 445	355
1982	946	31	977	4 344	8 158	1 050
1983	833	0	833	4 393	1 999	273
1984	940	0	940	5 381	28 026	2 145
1985	1 022	0	1 022	7 292	16 927	1 556
1986	996	0	996	10 794	230	103
1987	859	0	859	10 065	511	322
1988	1 004	0	1 004	11 480	470	211
1988-89	1 038	0	1 038	10 656	467	275
1989-90	na	na	na	9 382	478	372
1990-91	969	3	971	10 194	189	105
1991-92	1 120	41	1 161	12 412	369	114
1992-93	777	42	819	11 859	449	182
1993-94	948	63	1 011	17 156	334	125
1994-95	916	122	1 038	14 618	1 659	374
1995-96	986	5	991	14 777	342	103
1996-97	1 010	17	1 027	12 712	3 444	431
1997-98	580	57	636	8 182	135	32
1998-99	943	123	1 066	15 881	426	102
1999-00	680	25	705	10 540	289	74
2000-01	615	50	665	10 835	2 786	397
2001-02	553	42	595	9 995	2 848	435
2002-03	525	56	582	9 170	307	106
2003-04	473	75	547	8 695	556	87
2004-05	396	58	455	7 218	1 176	191

na Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

302 Summary of Australian statistics for manganese

	Mine production (ore) kt	Exports		Prices ^b US\$/t
		Ore kt	Ferromanganese ^a kt	
1960	62	46	0	28.00
1961	89	53	0	26.00
1962	73	64	0	31.00
1963	37	17	0	29.00
1964	62	54	0	24.00
1965	102	67	0	23.00
1966	318	144	0	23.00
1967	558	320	0	22.00
1968	744	565	0	19.00
1969	903	664	0	18.12
1970	751	631	0	18.85
1971	1 051	794	0	17.82
1972	1 165	na	0	25.00
1973	1 522	1 513	na	30.20
1974	1 522	1 203	1	39.00
1975	1 555	1 132	na	58.00
1976	2 154	1 711	1	64.00
1977	1 389	811	13	65.00
1978	1 257	936	19	59.00
1979	1 724	1 157	32	57.00
1980	2 020	1 328	23	65.00
1981	1 449	900	16	67.00
1982	1 127	906	17	63.00
1983	1 370	1 004	29	54.00
1984	1 849	1 460	19	56.00
1985	2 003	1 403	20	57.00
1986	1 649	1 145	44	55.00
1987	1 854	1 306	47	50.00
1988	1 986	1 553	41	68.64
1989	2 119	1 620	27	108.00
1990	1 950	1 600	43	160.80
1991	1 390	1 075	20	160.80
1992	1 239	902	46	141.60
1993	1 887	1 720	59	108.00
1994	1 985	1 590	76	99.96
1995	2 177	1 630	73	97.92
1996	2 109	1 740	59	105.12
1997	2 136	1 541	41	99.86
1998	1 501	1 067	57	97.92
1999	1 912	1 213	na	91.20
2000	1 613	1 411	na	97.44
2001	2 084	1 591	na	101.28
2002	2 324	1 836	na	94.56
2003	2 555	2 308	na	103.06
2004	3 401	2 818	na	117.50

^a Data became confidential in 1999. ^b Before 1970, average unit export value in A\$/t; subsequently, high grade ore (48 per cent Mn) to Japan in US\$/t for Japanese fiscal year commencing 1 April. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

303 Australian supply and disposal of manganese

		1997	1998	1999	2000	2001	2002	2003	2004
Production									
Manganese ore	kt	2 136	1 501	1 912	1 613	2 084	2 324	2 555	3 401
Exports									
Manganese ore s	kt	1 541	1 067	1 213	1 411	1 591	1 836	2 308	2 818
Ferromanganese a	kt	41	57	na	na	na	na	na	na
	\$m	18	37	na	na	na	na	na	na
Imports									
Ferromanganese	kt	7.8	11.7	6.1	4.7	5.8	6.0	6.9	9.8
	\$m	7.8	12.2	6.2	4.7	6.3	5.4	5.8	12.5
Ferrosilicon and silicomanganese	kt	36.1	34.2	33.1	29.1	28.1	30.7	31.7	33.5
	\$m	40.1	37.4	32.5	30.8	33.2	34.5	31.6	35.3
Prices									
Japanese negotiated b	US\$/t	99.86	97.92	91.20	97.44	101.28	94.56	103.06	117.50

a Data became confidential in 1999. b High grade ore (48 per cent Mn) to Japan for Japanese fiscal year commencing 1 April. s ABARE estimate. na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

304 World production of manganese ore, by country

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Australia	2 136	1 501	1 912	1 613	2 084	2 324	2 555	3 401
Brazil	2 400	1 940	1 656	1 925	1 970	2 529	2 544	3 375
China	6 000	5 300	5 300	5 300	5 300	5 300	5 300	5 300
Gabon	1 904	2 092	1 908	1 743	1 791	1 856	2 000	2 460
Georgia	50	50	50	63	98	103	174	175
Ghana	332	384	639	895	1 077	1 136	1 509	1 597
India	1 751	1 583	1 490	1 604	1 483	1 625	2 017	2 149
Kazakhstan	426	634	944	1 202	1 385	1 835	2 361	2 400
Mexico	507	533	445	411	259	172	294	357
South Africa	3 112	3 051	3 050	3 635	3 271	3 082	3 799	4 206
Ukraine	3 000	2 200	1 985	2 741	2 740	2 762	2 523	2 278
Others	279	277	251	263	268	131	259	280
Total	21 897	19 545	19 630	21 396	21 726	22 855	25 335	27 978

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; World Bureau of Metal Statistics, *World Metal Statistics Yearbook*, London.

305 Summary of Australian statistics for nickel

	Production a							
	Smelter and refinery b				Exports f s	Exports s	Imports	Price g
	Mine	Intermediate products c	Refined	Refined				
			nickel class 2 d	nickel class 1 e				
kt	kt	kt	kt	kt	\$m	\$m	A\$/t	
1968	4.6	0.0	0.0	0.0	na	na	9.9	1 852.7
1969	11.2	0.0	0.0	0.0	na	na	9.8	2 109.8
1970	29.8	0.0	0.0	9.0	na	na	23.3	2 541.1
1971	35.5	0.0	0.0	15.0	na	na	11.9	2 585.0
1972	35.5	0.0	0.0	16.5	na	na	8.3	2 583.2
1973	40.1	5.8	0.0	19.8	na	na	13.3	2 372.9
1974	45.9	14.6	0.0	20.5	na	96.0	12.8	2 657.3
1975	75.8	32.2	10.3	22.6	na	172.6	12.1	3 487.9
1976	82.5	32.0	18.0	21.8	na	260.9	18.5	4 059.1
1977	85.9	33.2	17.4	16.7	na	252.5	21.0	4 691.4
1978	82.4	32.7	18.7	18.6	na	222.1	25.1	4 026.3
1979	69.7	38.7	17.4	21.9	na	327.2	21.6	5 354.5
1980	74.3	32.5	17.9	17.4	na	427.0	30.4	5 730.8
1981	74.3	32.9	19.3	23.2	na	388.1	21.4	5 197.2
1982	87.6	49.4	20.6	25.3	na	393.7	19.7	4 765.6
1983	76.6	49.8	12.3	29.5	na	321.6	7.2	5 199.6
1984	76.9	51.1	13.1	25.6	na	386.0	15.2	5 413.4
1985	85.8	51.6	17.9	23.0	na	498.6	17.5	7 006.6
1986	76.7	49.1	20.4	21.6	na	440.3	22.3	5 788.0
1987	74.6	47.8	19.9	24.6	na	390.0	24.1	6 950.4
1988	58.0	40.0	21.1	20.3	62.1	633.5	7.4	18 096.7
1989	63.1	41.6	21.9	18.3	65.0	851.7	20.2	16 825.6
1990	67.8	49.2	22.3	25.2	73.7	666.5	30.2	11 385.0
1991	67.6	54.8	24.9	27.8	82.7	682.5	37.6	10 471.4
1992	57.9	47.8	25.9	29.5	75.4	768.7	48.5	9 525.7
1993	65.4	43.9	26.0	35.4	95.3	574.3	49.4	7 847.9
1994	75.9	68.4	23.0	43.5	111.4	765.0	57.3	8 667.9
1995	102.7	75.9	18.6	58.3	122.9	1 188.6	71.8	11 097.5
1996	113.0	76.8	12.6	61.4	132.0	1 081.0	70.0	9 586.8
1997	123.9	85.8	14.8	58.9	144.4	1 094.4	66.0	9 308.9
1998	143.9	100.1	15.3	64.3	171.6	985.7	66.0	7 357.7
1999	119.0	79.7	10.2	73.4	149.9	1 117.9	60.4	9 320.5
2000	170.2	100.9	13.5	98.7	198.6	2 366.8	80.8	14 852.4
2001	197.0	96.7	11.2	116.9	207.9	2 076.2	88.1	11 482.1
2002	188.2	98.3	11.4	120.8	209.7	2 199.4	89.8	12 450.0
2003	191.2	107.5	13.6	115.8	216.0	2 687.0	92.1	14 782.6
2004	186.8	106.7	10.7	111.5	206.4	3 347.0	104.5	18 776.0

a Total metallic content of minerals produced. **b** Includes imported ores for processing at the Yabulu refinery in Queensland. **c** Includes matte and speiss for further refining. **d** Product with a nickel content of less than 99 per cent. Includes ferronickel, oxides and oxide sinter. Excludes nickel-cobalt sulphides. **e** Products with a nickel content of 99 per cent or more. **f** Total metallic content. **g** London Metal Exchange average cash settlement price for refined nickel, melting grade, in Australian dollar equivalent. **s** ABARE estimate. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, AGPS, Canberra; International Nickel Study Group, *World Nickel Statistics*, The Hague, Netherlands; World Bureau of Metal Statistics, *World Metal Statistics*, London.

306 World production, consumption and prices of nickel

	Production		Stocks ^a	Consumption ^s	Price ^b
	Mine ^s	Smelter/refinery ^s			
	kt	kt	kt	kt	US\$/t
1960	361	345	na	321	1 631.0
1961	404	384	na	357	1 711.0
1962	398	395	na	358	1 761.0
1963	393	374	na	384	1 742.0
1964	422	411	na	441	1 742.0
1965	462	440	na	473	1 735.0
1966	443	429	na	512	1 739.0
1967	508	493	na	524	1 936.0
1968	580	524	na	537	2 075.0
1969	547	517	na	549	2 363.0
1970	702	645	na	625	2 846.0
1971	718	655	na	577	2 932.0
1972	662	624	na	618	3 080.0
1973	719	703	na	696	3 373.0
1974	792	765	na	751	3 825.0
1975	794	741	171	627	4 570.0
1976	814	790	179	728	4 973.0
1977	830	767	247	701	5 203.0
1978	684	651	149	755	4 609.0
1979	721	720	87	811	5 986.0
1980	786	788	204	774	6 530.3
1981	765	762	218	718	5 973.3
1982	687	695	202	722	4 848.5
1983	718	745	183	761	4 692.0
1984	815	822	126	852	4 761.5
1985	879	850	131	834	4 910.3
1986	844	829	126	838	3 883.0
1987	889	875	92	909	4 871.3
1988	928	917	85	930	14 191.8
1989	970	935	97	911	13 334.8
1990	983	931	88	926	8 895.0
1991	946	921	113	886	8 158.3
1992	897	886	176	809	7 004.3
1993	908	809	226	785	5 337.5
1994	877	825	236	871	6 342.1
1995	1 007	919	148	984	8 228.8
1996	1 051	953	144	943	7 506.0
1997	1 073	1 012	156	1 016	6 926.4
1998	1 117	1 034	157	1 009	4 631.0
1999	1 058	1 028	124	1 082	6 014.8
2000	1 177	1 082	93	1 123	8 649.2
2001	1 216	1 163	100	1 104	5 943.6
2002	1 229	1 185	97	1 176	6 771.6
2003	1 272	1 201	98	1 228	9 636.5
2004	1 327	1 210	98	1 253	13 837.9

a Commercial stocks excluding those held by the former Soviet Union. **b** London Metal Exchange cash settlement price for refined nickel, melting grade. Prior to 1980, US producer price for electrolytic cathodes. **s** ABARE estimates prior to 1989. **na** Not available.

Sources: International Nickel Study Group, *World Nickel Statistics*, The Hague, Netherlands; World Bureau of Metal Statistics, *World Metal Statistics*, London; ABARE.

307 World nickel smelter/refinery production, by region and country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Africa	52.5	53.9	53.4	50.2	52.9	55.0	53.5	14.3
South Africa ^b	34.8	36.4	36.2	36.6	33.4	32.7	40.8	1.0
Zimbabwe	17.6	17.4	17.2	13.6	19.5	22.3	12.7	13.3
Americas	257.5	264.1	238.5	252.9	274.8	290.4	281.4	313.6
Brazil	18.2	21.1	22.9	23.2	22.5	23.7	24.6	26.2
Canada	131.6	146.7	124.3	134.2	140.6	144.5	124.4	151.5
Colombia	25.2	28.1	28.3	27.7	38.4	44.0	47.9	48.8
Cuba	34.0	38.7	38.5	40.0	41.2	39.2	40.1	39.6
Dominican Republic	32.5	25.2	24.5	27.8	22.3	23.6	27.2	29.5
United States	16.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0
Venezuela	0.0	0.0	0.0	0.0	9.7	15.5	17.2	18.0
Asia	178.3	175.1	187.7	221.8	213.5	220.3	238.1	249.4
China	39.9	40.1	44.8	50.9	49.5	53.5	64.7	72.6
Indonesia	10.0	8.5	9.2	10.1	10.3	8.9	8.3	7.3
Japan	128.4	126.5	133.7	160.7	153.7	157.9	165.1	169.5
Europe	406.0	417.3	419.2	403.1	448.5	438.9	449.6	466.2
Austria	2.0	1.8	1.5	1.3	1.5	1.0	1.5	1.3
Finland	39.2	46.0	52.8	54.3	54.6	55.3	52.5	49.6
France	10.7	11.8	11.7	12.3	13.0	11.4	10.6	9.6
Greece	17.6	15.0	13.0	17.5	17.7	19.2	18.0	18.1
Macedonia ^c	5.3	5.8	0.0	0.0	6.0	10.3	5.6	5.2
Norway	62.7	70.2	74.1	58.7	68.2	68.5	77.2	71.4
United Kingdom	36.1	39.1	38.1	38.0	33.8	33.8	24.2	38.6
Serbia	2.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Russian Federation	230.0	227.0	228.0	221.0	252.2	239.3	260.0	260.4
Ukraine	0.0	0.0	0.0	0.0	1.5	0.0	0.0	12.0
Oceania	118.0	124.1	128.9	156.1	173.3	180.7	180.1	165.2
Australia	73.6	79.6	83.6	112.2	128.1	132.2	129.4	122.2
New Caledonia (Fr)	44.3	44.5	45.3	43.9	45.2	48.5	50.7	43.0
World total	1 012.3	1 034.4	1 027.7	1 082.4	1 163.0	1 185.3	1 201.2	1 209.8

^a Includes the metal content of smelter/refinery production of electrolytic nickel, nickel pellets, briquettes, steel making powder, nickel salts, chemical grade nickel oxide, ferronickel, nickel oxide sinter and utility nickel. ^b Includes Bophuthatswana production. ^c Former Yugoslavian Republic of Macedonia.

Sources: International Nickel Study Group, *World Nickel Statistics*, The Hague, Netherlands; World Bureau of Metal Statistics, *World Metal Statistics*, London; ABARE.

308 World nickel mine production, by region and country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Africa	68.8	74.0	73.1	69.3	67.7	73.2	81.5	75.4
Botswana	22.9	24.8	25.8	24.4	23.9	26.7	31.0	25.2
South Africa ^b	34.8	36.4	36.2	36.6	36.4	38.8	42.7	42.6
Zimbabwe	11.2	12.7	11.1	8.3	7.4	7.8	7.8	7.6
Americas	336.3	363.1	349.5	386.9	391.6	398.8	393.0	423.5
Brazil ^c	20.5	32.5	32.5	35.6	34.2	36.8	36.0	36.0
Canada	190.5	208.2	186.2	190.7	194.1	189.3	163.8	186.5
Colombia	31.2	29.4	39.3	58.9	53.0	58.5	70.8	75.0
Cuba	61.5	67.8	67.0	71.4	76.5	75.2	78.0	78.0
Dominican Republic ^c	32.5	25.2	24.5	27.8	22.3	23.5	27.4	30.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Venezuela	0.0	0.0	0.0	2.5	11.4	15.5	17.0	18.0
Asia	140.0	146.1	151.6	173.1	176.7	200.3	224.2	222.7
China	46.7	47.7	50.1	51.0	51.5	54.6	60.8	63.0
Indonesia	71.1	74.1	89.1	98.2	102.1	121.6	143.9	142.7
Kazakhstan	4.0	3.6	0.0	3.6	0.0	0.0	0.0	0.0
Philippines	18.1	20.7	12.4	20.2	23.1	24.1	19.5	17.0
Europe	267.1	264.9	254.7	260.2	265.7	267.5	269.6	300.3
Finland	3.3	2.0	0.7	3.3	2.6	2.5	2.6	3.4
Greece ^c	18.4	17.0	16.1	19.5	20.8	22.7	21.4	21.7
Macedonia ^d	5.3	7.2	0.0	0.0	3.0	5.2	5.6	5.2
Norway	2.5	3.0	2.9	2.3	2.8	2.1	0.0	0.0
Russian Federation	235.0	235.0	235.0	235.0	235.0	235.0	240.0	264.0
Serbia	2.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Ukraine	0.0	0.0	0.0	0.0	1.5	0.0	0.0	6.0
Oceania	261.0	269.2	229.0	287.8	314.6	288.2	303.1	305.5
Australia	123.9	143.9	119.0	170.2	197.0	188.2	191.2	186.8
New Caledonia (Fr)	137.1	125.3	110.1	117.6	117.6	100.0	111.9	118.7
World total	1 073.2	1 117.3	1 057.9	1 177.3	1 216.3	1 228.5	1 272.0	1 327.4

^a Nickel content of all ores and concentrates. ^b Includes Bophuthatswana production. ^c Figures refer to nickel content of ferronickel. ^d Former Yugoslavian Republic of Macedonia.

Sources: International Nickel Study Group, *World Nickel Statistics*, The Hague, Netherlands; World Bureau of Metal Statistics, *World Metal Statistics*, London; ABARE.

309 World primary refined nickel consumption, by region and country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Africa	31.0	31.2	33.2	32.2	31.2	35.9	45.5	44.1
South Africa	30.0	30.0	32.0	31.0	30.0	34.7	44.0	42.6
Other	1.0	1.2	1.2	1.2	1.2	1.2	1.5	1.5
Americas	185.1	183.0	193.2	192.4	169.7	158.8	159.8	164.2
Brazil	14.4	15.7	19.6	21.7	21.1	23.6	25.3	23.3
Canada	10.6	11.5	15.0	15.0	14.8	10.5	10.0	8.0
Mexico	2.0	2.8	3.2	2.2	2.0	1.6	2.0	2.2
United States	155.6	150.0	152.0	150.0	129.1	120.6	120.0	128.2
Other	2.0	2.7	3.1	3.2	2.2	2.0	2.5	2.5
Asia	408.6	376.3	429.6	463.9	440.4	500.0	553.3	577.7
China	43.0	42.0	46.5	62.0	83.0	93.6	125.0	150.0
Chinese Taipei	68.0	70.0	89.0	90.0	81.0	91.0	97.0	86.4
Hong Kong, China	1.8	1.8	1.8	1.3	4.5	4.7	5.5	5.8
India	16.0	16.0	19.2	22.5	25.0	25.5	27.0	27.4
Japan	202.4	169.2	182.7	200.1	161.5	191.2	192.8	191.6
Korea, Rep. of	66.0	67.8	80.7	78.0	75.4	83.2	95.0	103.2
Thailand	2.0	1.6	2.1	2.0	2.2	2.2	2.0	2.4
Turkey	1.8	2.4	2.4	2.2	1.9	1.8	2.0	3.3
Other	7.6	5.5	5.2	5.8	5.9	6.8	7.0	7.6
Europe	389.8	416.6	423.5	432.0	460.5	478.1	467.5	465.2
Austria	3.0	3.3	3.3	4.2	5.6	4.8	5.0	5.5
Belgium-Luxembourg	28.0	30.0	28.0	28.5	28.2	32.5	38.0	41.5
Czech Republic	1.2	1.6	1.6	2.3	2.4	2.0	2.0	2.3
Finland	36.0	37.1	40.8	43.3	38.6	40.6	55.0	60.0
France	49.8	55.0	52.3	49.8	51.0	55.3	43.6	34.0
Germany	91.0	97.4	101.2	103.5	110.2	106.6	99.7	99.6
Italy	49.5	53.3	55.0	52.6	57.0	66.0	65.2	61.9
Norway	0.6	0.8	0.4	0.4	0.4	0.4	0.4	0.4
Poland	2.4	2.5	2.5	2.3	2.4	2.4	2.0	2.0
Russian Federation	20.0	18.0	17.0	21.0	28.0	27.0	27.0	26.6
Spain	30.0	31.0	37.8	37.8	43.8	47.0	47.0	45.0
Sweden	29.8	33.9	34.6	36.8	36.6	37.9	34.7	36.0
Switzerland	1.0	1.5	1.1	0.5	0.5	0.5	0.7	0.7
Ukraine	1.2	2.7	3.6	4.5	4.8	4.8	4.5	4.1
United Kingdom	33.0	31.5	29.2	32.4	37.5	34.4	28.7	33.3
Other	12.8	16.4	13.9	10.9	12.7	15.4	14.0	12.3
Oceania	1.9	2.1	2.1	2.0	2.0	2.0	2.0	2.0
Australia	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
New Zealand	0.3	0.5	0.5	0.4	0.4	0.4	0.4	0.4
World total	1 016.4	1 009.2	1 081.6	1 122.6	1 103.8	1 175.8	1 228.1	1 253.2

^a Metal content. The consumption of primary unwrought nickel including refined nickel and nickel contained in other smelter/refinery products.

Sources: International Nickel Study Group, *World Nickel Statistics*, The Hague, Netherlands; World Bureau of Metal Statistics, *World Metal Statistics*, London; ABARE.

310 Summary of Australian statistics for primary petroleum ^a

	Production of crude oil condensate and LPG	Exports of crude oil and other refinery feedstocks ^b	Exports of liquefied petroleum gas	Imports of crude oil and other refinery feedstocks	Production of natural gas and ethane ^c	Exports of liquefied natural gas ^{ds}
	ML	ML	ML	ML	Gm ³	Mt
1961-62	na	na	na	14 895	0.00	0
1962-63	na	na	na	16 766	0.00	0
1963-64	80	na	na	17 561	0.00	0
1964-65	347	na	na	18 665	0.00	0
1965-66	504	na	na	19 965	0.00	0
1966-67	645	na	na	22 543	0.00	0
1967-68	1 902	na	na	23 013	0.01	0
1968-69	2 236	na	na	23 897	0.06	0
1969-70	4 919	na	na	23 176	0.78	0
1970-71	15 688	241	661	13 913	1.96	0
1971-72	20 266	1 090	1 193	11 174	2.63	0
1972-73	22 464	330	1 672	10 004	3.74	0
1973-74	25 223	305	1 984	10 469	4.45	0
1974-75	25 306	234	2 000	10 171	4.88	0
1975-76	26 059	243	1 950	9 702	5.45	0
1976-77	27 128	206	2 253	10 116	6.50	0
1977-78	28 287	221	2 855	11 214	7.18	0
1978-79	28 067	371	3 031	10 407	8.01	0
1979-80	26 823	127	2 764	11 263	9.24	0
1980-81	26 077	86	2 569	11 450	10.66	0
1981-82	25 419	44	2 622	12 460	11.80	0
1982-83	24 978	61	2 334	11 780	11.92	0
1983-84	29 960	1 056	2 851	8 553	12.49	0
1984-85	34 820	5 819	2 620	7 294	13.37	0
1985-86	35 750	5 051	2 977	6 186	14.69	0
1986-87	35 431	5 702	2 675	7 724	15.08	0
1987-88	35 187	6 453	2 402	9 577	15.68	0
1988-89	32 080	4 789	2 177	12 058	16.15	0
1989-90	36 003	7 202	1 983	11 603	20.27	2.01
1990-91	35 755	8 830	1 507	13 389	21.23	3.40
1991-92	35 171	8 967	1 568	15 332	23.49	4.66
1992-93	34 776	10 098	1 483	19 421	24.61	4.98
1993-94	32 960	9 538	1 290	20 296	26.76	6.03
1994-95	35 158	11 445	1 189	20 639	29.47	7.02
1995-96	34 365	10 899	1 469	23 703	30.24	7.48
1996-97	35 302	12 401	2 421	24 768	30.66	7.49
1997-98	38 862	14 785	2 824	25 017	31.92	7.65
1998-99	32 265	14 291	2 486	29 729	32.78	7.82
1999-00	42 279	20 877	2 857	26 936	34.04	7.92
2000-01	42 761	24 044	2 785	26 489	34.82	7.53
2001-02	40 712	23 936	3 211	27 308	36.20	7.60
2002-03	38 002	20 950	3 194	27 958	37.22	7.83
2003-04	32 515	17 526	2 916	23 498	37.41	7.91
2004-05	29 995	15 731	2 844	26 055	41.85	10.59

^a Export volumes for primary petroleum up to June 1977 are direct from ABS overseas trade reports. As a result of changes in ABS classifications from July 1977, other statistics are taken from Department of Resources and Energy and ABARE publications. ^b Before 1983 exports were principally semiprocessed and re-export feedstocks. ^c Includes ethane, methane and noncommercial natural gas. ^d 1 million tonnes (Mt) of LNG is approximately equal to 1.31 billion cubic metres (Gm³) of gas; production began in 1989-90. ^s ABARE estimate. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *Overseas Trade, Part 1 – Exports and Imports*, cat. no. 5409.0, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

311 Summary of Australian statistics for refined petroleum products ^a

	Domestic		Imports		Exports ^c		Bunkers ^d
	Production	consumption ^b	Volume	Value	Volume	Value	
	ML	ML	ML	\$m	ML	\$m	
1960-61	14 082	13 614	2 005	na	2 106	na	na
1961-62	14 931	14 320	1 869	na	2 420	na	na
1962-63	16 522	15 490	2 148	na	2 809	na	na
1963-64	17 514	17 479	2 066	na	2 285	na	na
1964-65	18 821	19 268	2 013	na	1 459	na	na
1965-66	20 353	20 953	1 899	na	1 099	na	na
1966-67	23 110	22 734	1 227	na	1 365	na	na
1967-68	25 229	24 837	1 123	na	1 374	na	na
1968-69	26 651	27 423	1 741	na	970	na	na
1969-70	27 884	29 317	2 860	na	1 440	na	na
1970-71	28 846	30 355	3 256	63	1 740	23	43
1971-72	29 524	31 754	3 978	78	2 321	46	44
1972-73	30 575	32 518	4 126	75	1 846	42	42
1973-74	33 853	36 587	4 422	133	2 488	96	70
1974-75	34 066	36 637	4 083	247	1 954	146	136
1975-76	34 106	36 991	4 009	290	2 192	144	137
1976-77	35 744	39 042	4 193	347	1 904	190	190
1977-78	36 992	39 813	4 104	360	1 956	224	na
1978-79	36 671	38 921	4 215	450	2 344	306	na
1979-80	36 654	39 315	4 540	710	1 882	427	na
1980-81	35 292	37 937	3 748	770	1 990	577	na
1981-82	35 877	37 676	2 939	629	1 955	539	na
1982-83	34 692	35 511	2 666	608	2 427	707	438
1983-84	35 586	36 929	2 526	559	2 925	803	394
1984-85	35 924	37 204	2 823	683	2 207	641	460
1985-86	35 171	36 260	2 761	712	2 383	673	437
1986-87	34 826	37 713	4 078	732	2 270	459	338
1987-88	37 579	39 395	3 319	629	2 738	563	406
1988-89	38 210	41 173	4 863	664	2 769	520	371
1989-90	39 424	41 678	5 855	930	2 422	520	416
1990-91	40 487	41 468	3 821	727	2 952	787	631
1991-92	41 440	41 804	3 131	455	3 819	769	522
1992-93	42 933	43 349	3 940	634	3 711	830	568
1993-94	43 104	44 561	3 057	606	3 507	747	512
1994-95	44 421	46 746	3 479	676	3 289	719	511
1995-96	46 343	48 193	3 522	765	4 101	933	586
1996-97	46 872	47 829	4 286	955	5 041	1 147	547
1997-98	47 400	48 395	3 263	766	4 941	1 097	505
1998-99	47 030	48 973	4 129	868	4 236	866	397
1999-00	47 630	50 450	4 632	1 375	4 116	1 202	666
2000-01	47 690	50 010	4 746	1 816	4 564	1 844	899
2001-02	46 677	51 260	4 655	1 625	3 409	1 234	760
2002-03	46 723	51 906	5 497	2 050	3 140	1 198	775
2003-04	43 486	52 908	10 542	3 595	2 474	918	696
2004-05	44 555	53 909	11 200	5 127	1 847	844	951

^a Export and import values up to June 1977 are direct from ABS overseas trade reports. As a result of changes in ABS classifications from July 1977, other statistics are taken from Department of Industry, Tourism and Resources and ABARE publications, with ABARE estimates of import values used from 1977-78 to 1980-81. ^b Includes fuels not marketed commercially and domestic sales of all ships and aircraft stores. ^c Excludes LPG. ^d Ships' and aircraft stores. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *Overseas Trade, Part 1 – Exports and Imports*, cat. no. 5409.0, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*).

312 Australian production of primary petroleum

	Crude oil	Condensate ^b	Crude oil and condensate	Liquefied petroleum gas	Natural gas ^c	Ethane
	ML ^a	ML	ML	ML	Gm ³	Gm ³
1966-67	645	na	645	na	0.00	0.00
1967-68	1 902	na	1 902	na	0.01	0.00
1968-69	2 236	na	2 236	na	0.06	0.00
1969-70	4 882	na	4 882	37	0.78	0.00
1970-71	14 936	na	14 936	752	1.96	0.00
1971-72	19 038	na	19 038	1 228	2.63	0.00
1972-73	20 668	na	20 668	1 796	3.71	0.03
1973-74	23 193	na	23 193	2 030	4.40	0.05
1974-75	23 134	na	23 134	2 172	4.82	0.06
1975-76	23 827	na	23 827	2 232	5.38	0.07
1976-77	24 598	na	24 598	2 530	6.40	0.10
1977-78	25 369	na	25 369	2 918	7.05	0.13
1978-79	24 896	na	24 896	3 171	7.86	0.14
1979-80	23 711	na	23 711	3 112	9.09	0.15
1980-81	23 093	na	23 093	2 984	10.52	0.14
1981-82	22 386	na	22 386	3 033	11.65	0.15
1982-83	21 085	984	22 069	2 909	11.75	0.17
1983-84	25 732	1 096	26 828	3 132	12.31	0.18
1984-85	29 241	1 715	30 956	3 864	13.17	0.20
1985-86	29 782	1 952	31 734	4 016	14.50	0.20
1986-87	29 457	2 047	31 504	3 927	14.90	0.18
1987-88	28 551	2 713	31 264	3 923	15.48	0.20
1988-89	25 574	2 681	28 255	3 825	15.96	0.19
1989-90	28 744	3 250	31 994	4 009	20.08	0.19
1990-91	28 661	3 294	31 955	3 800	21.05	0.18
1991-92	27 780	3 529	31 309	3 862	23.30	0.19
1992-93	27 037	3 666	30 703	4 073	24.42	0.19
1993-94	25 216	3 730	28 945	4 015	26.57	0.19
1994-95	26 795	4 395	31 190	3 969	29.26	0.20
1995-96	24 058	6 193	30 251	4 113	30.04	0.20
1996-97	24 164	6 885	31 049	4 253	30.23	0.43
1997-98	25 779	8 183	33 961	4 901	31.35	0.57
1998-99	19 937	7 960	27 897	4 368	32.22	0.56
1999-00	29 594	7 861	37 447	4 832	33.43	0.61
2000-01	31 664	7 041	38 705	4 558	34.34	0.48
2001-02	28 933	7 167	36 100	4 647	35.80	0.41
2002-03	25 816	7 503	33 321	4 681	36.81	0.41
2003-04	20 668	7 207	27 876	4 639	37.03	0.38
2004-05	18 172	7 197	25 368	4 628	41.20	0.65

^a 58 030 million litres equals 1 million barrels a day. ^b Before 1982-83, condensate production is included in crude oil. ^c Includes noncommercial natural gas and methane from other than natural gas fields. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; Bureau of Resource Economics, *Australian Energy Projections, Australia: 1961-62 to 1998-99*, AGPS, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

313 Australian production of refined petroleum products

	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
	ML	ML	ML	ML	ML	ML	ML	ML	ML
Automotive gasoline	18 084	18 589	18 705	18 652	17 887	18 000	17 984	17 375	17 913
Automotive diesel oil	12 968	13 183	12 968	12 737	13 212	13 064	13 335	12 544	12 822
Aviation turbine fuel	5 284	5 423	5 218	5 539	5 836	5 390	5 149	4 964	5 325
Fuel oil	1 796	1 662	1 634	1 839	1 951	1 684	1 441	1 105	1 092
Liquefied petroleum gas a	1 605	1 518	1 691	1 674	1 795	1 718	1 657	1 062	995
Industrial and marine diesel fuel	45	48	32	60	98	105	117	84	22
Bitumen	638	689	695	719	693	725	751	678	1 091
Lubricants	788	771	680	649	641	564	521	259	202
Aviation gasoline	137	152	174	158	137	147	134	114	144
Heating oil	243	216	167	217	194	192	195	118	106
Other a	5 284	5 147	5 065	5 387	5 245	5 088	5 439	5 183	4 844
Total products	46 872	47 400	47 030	47 630	47 690	46 677	46 723	43 486	44 555

a Includes byproducts of petrochemical and downstream processing.

Sources: ABARE, *Australian Energy Projections 1961-62 to 1998-99*, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

314 Australian consumption of petroleum

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Crude oil and other refinery feedstock									
Stock	days a	23	22	23	24	29	26	26	22
Refinery input	ML	45 591	44 401	44 500	44 708	42 911	44 548	39 508	40 334
Refined products									
Automotive gasoline	ML	17 950	18 230	18 477	18 168	18 669	18 872	19 962	19 876
Automotive diesel oil	ML	12 564	12 825	13 245	12 952	13 441	13 888	14 462	15 185
Aviation turbine fuel	ML	4 863	4 791	5 023	5 319	4 603	4 250	4 329	4 730
Fuel oil	ML	1 774	1 861	2 200	1 705	1 777	1 423	1 466	1 595
Liquefied petroleum gas	ML	4 362	4 620	4 650	4 746	4 009	4 674	4 253	4 700 s
Industrial and marine diesel fuel	ML	62	14	18	22	46	18	17	15
Bitumen	ML	714	716	781	716	755	671	742	812
Lubricants	ML	517	502	526	532	555	598	625	470
Aviation gasoline	ML	104	106	103	101	97	90	90	91
Heating oil	ML	106	77	81	63	50	48	46	34
Other b	ML	5 047	5 278	5 303	6 138	6 300 s	5 600 s	5 900 s	5 200 s
Total products	ML	48 063	49 021	50 407	50 462	50 302	50 132	51 891	52 707

a Days of forward consumption. **b** Includes petrochemical and noncommercial use of all products plus refinery fuel, but petroleum products produced from the conversion of other petroleum products have been netted off. **s** ABARE estimate

Sources: ABARE; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

315 Australian production of primary petroleum, by basin

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
	ML	ML	ML	ML	ML	ML	ML	ML
Crude oil								
Adavale	0	0	0	0	0	2	0	0
Amadeus	131	107	91	80	72	59	58	60
Bonaparte	804	663	6 177	8 898	5 985	4 918	2 589	1 868
Bowen–Surat	80	64	35	45	39	27	28	24
Canning	8	8	5	6	4	4	3	2
Carnarvon								
Barrow Island	744	711	683	646	580	547	502	448
North West Shelf	3 552	1 883	5 495	6 815	8 609	8 317	7 234	6 807
Other	6 439	6 261	5 191	5 739	4 855	4 284	3 116	3 318
Cooper–Eromanga								
Queensland	609	585	512	474	432	450	390	387
South Australia	629	559	422	439	490	413	447	385
Gippsland	12 769	9 088	10 987	8 523	7 860	6 676	5 954	4 359
Otway	0	0	0	0	0	0	0	0
Perth	13	9	6	1	5	119	345	507
Total	25 779	19 938	29 604	31 664	28 933	25 816	20 668	18 166
Condensate								
Adavale	0	0	0	0	0	1	0	0
Amadeus	0	0	0	0	0	0	0	0
Bonaparte	0	0	0	0	0	0	0	0
Bowen–Surat	28	18	18	18	13	12	15	23
Canning	0	0	0	0	0	0	0	0
Carnarvon								
Barrow Island	185	202	300	365	366	349	203	120
North West Shelf	6 545	6 346	6 038	5 121	5 224	5 705	5 611	5 544
Other	72	71	205	118	110	101	142	250
Cooper–Eromanga								
Queensland	142	181	198	141	203	239	242	270
South Australia	412	490	447	467	378	349	176	221
Gippsland	789	644	652	805	859	743	810	766
Otway	6	7	2	4	12	2	7	7
Perth	2	1	2	2	1	2	1	1
Total	8 183	7 960	7 861	7 041	7 167	7 504	7 208	7 201
Liquefied petroleum gas								
Adavale	0	0	0	0	0	0	0	0
Amadeus	0	0	0	0	0	0	0	0
Bonaparte	0	0	0	0	0	0	0	0
Bowen–Surat	54	25	20	22	18	18	20	24
Canning	0	0	0	0	0	0	0	0
Carnarvon								
Barrow Island	0	0	0	0	0	0	0	0
North West Shelf	1 280	1 355	1 564	1 493	2 028	1 911	1 817	1 963
Other	0	0	0	0	0	0	0	0
Cooper–Eromanga								
Queensland	0	0	0	0	0	0	0	0
South Australia	810	890	895	816	768	783	827	663
Gippsland	2 292	1 634	1 889	1 725	1 799	1 970	1 976	1 977
Otway	0	0	0	0	0	0	0	0
Perth	0	0	0	0	0	0	0	0
Total	4 437	3 904	4 368	4 056	4 612	4 682	4 639	4 628

Continued

315 Australian production of primary petroleum, by basin *continued*

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
	GL	GL	GL	GL	GL	GL	GL	GL
Naturally occurring ethane and natural gas ^a								
Adavale	43	28	21	19	15	9	8	10
Amadeus	461	459	476	459	471	452	424	479
Bonaparte	0	0	0	0	0	0	0	0
Bowen–Surat	723	682	713	614	518	641	613	697
Canning	0	0	0	0	0	0	0	0
Carnarvon								
Barrow Island	500	606	942	929	452	1 116	1 023	545
North West Shelf	15 837	16 343	16 357	16 042	16 561	17 753	17 827	21 437
Other	1 031	1 171	1 027	1 384	1 359	1 113	1 533	2 364
Cooper–Eromanga								
Queensland	0	0	0	0	0	0	19	0
South Australia	5 829	6 274	6 456	5 764	6 308	5 753	4 288	4 149
Gippsland	5 971	5 308	5 329	6 304	6 355	6 432	7 487	7 477
Otway	154	157	209	203	316	100	260	281
Perth	339	215	263	286	188	197	178	236
Total	30 889	31 243	31 792	32 004	32 543	33 568	33 659	37 674

^a Does not include methane or ethane produced from other than natural gas fields.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

316 Volume of Australian trade in petroleum

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Exports									
Automotive gasoline	ML	1 521	1 533	1 371	1 288	1 186	1 058	774	774
Diesel fuel	ML	1 305	1 231	1 070	1 276	948	1 052	872	367
Aviation turbine fuel	ML	658	547	579	755	549	645	528	240
Fuel oil	ML	633	253	585	724	293	95	81	201
Aviation gasoline	ML	56	74	79	28	71	52	36	38
Kerosene	ML	33	31	10	10	2	0	0	0
Lubricants	ML	401	319	258	278	163	163	122	156
Other	ML	335	249	164	203	197	75	60	70
Total refined products	ML	4 941	4 236	4 116	4 564	3 409	3 140	2 474	1 847
Liquefied petroleum gas ^a	ML	2 824	2 486	2 857	2 785	3 211	3 194	2 916	2 844
Bunkers ^b	ML	2 203	2 305	2 314	2 291	2 267	2 238	2 216	2 207
Crude oil and other refinery feedstock	ML	14 785	14 291	20 877	24 044	23 936	20 950	17 526	15 731
Liquefied natural gas ^c	MT	7.650	7.819	7.923	7.530	7.600	7.826	7.914	10.589
Imports									
Automotive gasoline	ML	483	890	1 065	1 189	1 436	1 673	3 242	3 125
Diesel fuel	ML	770	1 435	1 400	1 129	1 280	1 627	3 374	3 961
Aviation turbine fuel	ML	111	140	171	387	225	429	681	984
Fuel oil	ML	795	596	799	814	557	611	1 285	1 281
Lubricants	ML	39	57	82	33	57	216	195	327
Liquefied petroleum gas	ML	511	496	519	633	588	299	785	540
Other	ML	555	514	597	561	511	643	979	981
Total refined products	ML	3 263	4 129	4 632	4 746	4 655	5 497	10 542	11 200
Crude oil and other refinery feedstock	ML	25 017	29 729	26 936	26 489	27 308	27 958	23 498	26 055

^a Mostly naturally occurring. ^b Ship and aircraft stores. ^c 1 tonne of LNG is approximately equal to 2174 litres of LNG. ^s ABARE estimate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade, Australia*, cat. no. 5465.0, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

317 Value of Australian trade in petroleum

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Exports								
Automotive gasoline	304	262	366	500	389	367	280	339
Diesel fuel	256	198	268	498	308	366	292	166
Aviation turbine fuel	135	93	169	301	184	228	172	108
Fuel oil	86	28	116	183	70	29	21	51
Aviation gasoline	20	24	34	17	33	29	20	26
Kerosene	6	5	2	5	1	0	0	0
Lubricants	214	196	184	238	164	141	100	112
Other products	76	60	65	103	85	39	33	41
Total refined products	1 097	866	1 202	1 844	1 234	1 198	918	844
Liquefied petroleum gas	367	297	648	830	721	855	647	804
Bunkers ^a	505	397	666	899	760	775	696	951
Crude oil and other refinery feedstock	2 251	1 881	5 292	8 137	6 390	6 402	5 055	6 330
Liquefied natural gas	1 599	1 425	1 949	2 671	2 613	2 607	2 174	3 199
Imports								
Automotive gasoline	93	134	321	432	448	569	1 168	1 459
Diesel fuel	149	225	377	438	414	561	1 134	1 941
Aviation turbine fuel	22	24	48	154	68	146	220	483
Fuel oil	96	59	150	222	143	180	313	364
Lubricants	81	107	111	60	126	190	206	288
Liquefied petroleum gas	68	64	108	160	116	76	166	143
Other products	257	255	262	350	310	328	388	448
Total refined products	766	868	1 375	1 816	1 625	2 050	3 595	5 127
Crude oil and other refinery feedstock	3 707	3 794	6 313	8 753	7 458	8 610	6 594	9 996

^a Ships and aircraft stores.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra.

318 Australian exports of petroleum, by destination ^a

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Quantity									
Crude oil and other refinery feedstock									
China	ML	319	758	1 675	912	1 160	1 699	2 389	732
Chinese Taipei	ML	2 066	2 200	2 561	3 712	1 920	580	125	916
Japan	ML	2 832	2 954	3 528	4 068	3 168	3 402	2 079	1 927
Korea, Rep. of	ML	1 564	2 005	4 338	4 358	5 521	4 012	3 778	2 787
New Zealand	ML	880	779	556	613	1 426	784	722	1 425
Singapore	ML	1 613	1 691	3 831	6 079	6 215	6 567	3 948	2 861
United States	ML	3 558	2 768	3 462	2 962	2 674	2 944	1 808	1 154
Other	ML	1 954	1 135	927	1 339	1 851	962	2 677	3 929
Total	ML	14 785	14 291	20 877	24 044	23 936	20 950	17 526	15 731
Liquefied petroleum gas									
China	ML	771	778	606	416	441	154	696	598
Japan	ML	1 541	1 167	1 841	2 241	2 575	2 783	2 109	2 081
Korea, Rep. of	ML	0	215	188	61	127	234	0	81
Other	ML	511	326	222	67	68	23	111	84
Total b	ML	2 824	2 486	2 857	2 785	3 211	3 194	2 916	2 844
Refined products									
Fiji	ML	633	576	624	748	473	384	122	7
Japan	ML	197	180	67	18	71	26	29	53
New Zealand	ML	1 206	1 305	1 245	1 086	1 247	1 250	828	1 113
Singapore	ML	906	319	561	697	367	246	127	471
Other Pacific	ML	1 681	1 627	1 296	1 564	921	861	818	37
United States	ML	233	179	254	328	153	99	123	0
Other	ML	87	50	70	123	177	273	427	164
Total	ML	4 941	4 236	4 116	4 564	3 409	3 140	2 474	1 847
Value ^c									
Crude oil and other refinery feedstock									
China	\$m	52	106	431	317	316	528	671	309
Chinese Taipei	\$m	304	287	629	1 284	508	179	33	372
Japan	\$m	443	400	899	1 394	854	1 058	582	782
Korea, Rep. of	\$m	226	253	1 117	1 486	1 490	1 217	1 057	1 091
New Zealand	\$m	155	115	142	213	406	256	238	602
Singapore	\$m	243	211	943	1 973	1 597	1 956	1 118	1 080
United States	\$m	517	367	892	1 012	693	883	527	473
Other	\$m	311	141	239	458	525	324	828	1 620
Total	\$m	2 251	1 881	5 292	8 137	6 390	6 402	5 055	6 330
Liquefied petroleum gas									
China	\$m	94	97	131	125	96	36	159	169
Japan	\$m	196	136	432	667	580	755	466	595
Korea, Rep. of	\$m	0	26	42	19	30	59	0	18
Other	\$m	78	37	43	19	15	6	22	21
Total b	\$m	367	297	648	830	721	855	647	804
Refined products									
Fiji	\$m	128	99	165	293	161	140	43	8
Japan	\$m	41	37	23	9	25	14	13	22
New Zealand	\$m	273	262	379	461	437	460	310	516
Singapore	\$m	165	58	117	201	112	95	41	170
Other Pacific	\$m	411	348	414	669	367	349	290	41
United States	\$m	48	39	72	143	56	39	47	0
Other	\$m	30	24	31	68	76	101	174	86
Total	\$m	1 097	866	1 202	1 844	1 234	1 198	918	844

^a Does not include LNG exports or ships and aircraft stores. ^b Includes confidential exports. ^c Actual values are used and aggregated for each category.

Sources: DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; ABARE.

319 Australian imports of petroleum, by source

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Quantity									
Crude oil and other refinery feedstock									
Indonesia	ML	7 131	9 648	4 176	3 788	6 795	5 380	4 012	3 328
Malaysia	ML	888	1 576	2 811	2 249	2 290	2 299	4 073	4 761
New Zealand	ML	1 544	1 792	1 251	1 104	1 089	990	708	663
Other Middle East	ML	432	1 751	985	453	42	334	42	158
Papua New Guinea	ML	2 987	3 228	3 549	2 772	2 208	1 683	1 189	1 717
Qatar	ML	854	211	470	439	646	191	0	77
Saudi Arabia	ML	3 706	2 828	3 294	4 016	3 004	3 680	1 517	3 101
Singapore	ML	622	257	61	287	554	719	596	652
United Arab Emirates	ML	3 081	1 197	1 642	3 170	2 305	2 294	2 207	1 917
Viet Nam	ML	3 259	6 086	6 157	6 282	5 652	6 699	5 778	6 560
Other	ML	512	1 156	2 538	1 930	2 724	3 690	3 375	3 122
Total	ML	25 017	29 729	26 936	26 489	27 308	27 958	23 498	26 055
Refined products									
Indonesia	ML	84	56	41	121	80	57	281	162
Korea, Rep. of	ML	47	139	406	144	289	144	280	237
Malaysia	ML	64	42	69	8	27	45	97	93
Middle East	ML	375	666	555	846	474	140	1 036	588
New Zealand	ML	115	51	83	20	42	17	3	4
Singapore	ML	943	1 726	1 730	1 692	2 110	2 832	5 904	7 395
United States	ML	430	365	379	401	462	407	434	423
Other a	ML	1 206	1 084	1 368	1 549	1 171	1 855	3 370	2 334
Total	ML	3 263	4 129	4 632	4 781	4 655	5 497	11 405	11 236
Value									
Crude oil and other refinery feedstock									
Indonesia	\$m	1 109	1 266	942	1 295	1 846	1 671	1 141	1 335
Malaysia	\$m	134	214	666	770	647	735	1 199	1 925
New Zealand	\$m	231	234	307	379	309	316	212	275
Other Middle East	\$m	59 s	214	227	138	12	101	11	59
Papua New Guinea	\$m	463	435	867	974	601	527	347	711
Qatar	\$m	116	27	90	141	191	58	0	24
Saudi Arabia	\$m	493	317	751	1 201	758	1 074	408	1 114
Singapore	\$m	96	32	13	98	149	224	152	201
United Arab Emirates	\$m	442	146	363	1 041	674	664	584	659
Viet Nam	\$m	477	765	1 454	2 115	1 528	2 095	1 584	2 517
Other	\$m	86	143	633	601	743	1 145	956	1 174
Total	\$m	3 707	3 794	6 313	8 753	7 458	8 610	6 594	9 996
Refined products									
Indonesia	\$m	13	11	11	41	23	17	92	75
Korea, Rep. of	\$m	18	23	121	64	101	56	108	126
Malaysia	\$m	12	11	18	3	11	18	36	49
Middle East	\$m	64	91	112	243	94	39	260	165
New Zealand	\$m	19	7	19	8	12	6	3	4
Singapore	\$m	194	281	481	655	684	1 000	2 061	3 537
United States	\$m	256	251	240	255	321	277	236	250
Other a	\$m	190	194	374	547	379	637	799	922
Total	\$m	766	868	1 375	1 816	1 625	2 050	3 595	5 127

a Includes confidential imports of refined products. s ABARE estimate.

Sources: DITR, *Australian Petroleum Statistics* (previously *Major Energy Statistics*), Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; ABARE.

320 World crude oil supply and demand ^a

	Unit	1997	1998	1999	2000	2001	2002	2003	2004
Supply									
OPEC ^b	mbd	29.9	30.8	29.4	30.8	30.1	28.8	30.7	33.0
Non-OPEC									
Asia Pacific	mbd	2.8	3.0	3.0	3.2	3.2	3.1	3.3	3.3
China	mbd	3.2	3.2	3.2	3.2	3.3	3.4	3.4	3.5
Europe	mbd	8.0	8.1	8.3	8.4	8.4	8.5	8.3	8.3
Mexico	mbd	3.4	3.5	3.4	3.5	3.6	3.6	3.8	3.4
Middle East Africa	mbd	4.6	4.6	4.7	4.8	4.9	5.1	5.0	5.3
North America	mbd	11.2	11.0	10.7	10.8	10.9	11.0	10.8	10.8
Russian Federation	mbd	6.1	6.1	6.2	6.5	7.0	7.7	8.5	9.2
South America	mbd	3.4	3.6	3.8	3.8	3.8	3.9	4.0	4.1
Total ^c	mbd	74.3	75.5	74.1	76.7	76.7	76.9	79.6	83.1
Demand									
Africa	mbd	2.3	2.4	2.3	2.4	2.5	2.7	2.7	2.8
China	mbd	4.1	4.2	4.5	4.8	4.9	5.0	5.5	6.4
Japan and Korea, Rep. of	mbd	8.0	7.4	7.6	7.6	7.5	7.6	7.8	7.5
Latin America	mbd	6.3	6.7	6.8	6.9	6.8	6.8	6.7	6.8
Middle East	mbd	4.2	4.2	4.3	4.7	4.9	5.4	5.6	5.6
North America	mbd	20.9	21.2	21.9	22.1	21.9	22.2	22.6	23.4
Russian Federation	mbd	2.9	2.4	2.4	2.4	2.5	2.5	2.5	2.6
Western Europe ^{4 d}	mbd	8.6	8.7	8.5	8.4	8.4	8.3	8.3	8.3
Other Asia Pacific	mbd	7.8	7.7	8.0	8.3	8.4	8.9	9.1	9.6
Other Europe	mbd	8.7	8.8	8.5	8.6	8.7	8.6	8.9	9.2
Total	mbd	73.8	73.5	74.7	76.2	76.5	77.9	79.7	82.2
OECD stocks ^e	days	56	56	51	52	54	50	50	51

^a Includes crude oil, marine bunkers, refinery fuel, nonconventional oil and natural gas liquids. ^b Includes natural gas liquids produced by OPEC (around 3 million barrels a day). ^c Includes around 1.7 million barrels a day net gain in the processing of primary fuels other than crude oil. ^d France, Germany, Italy and United Kingdom. ^e Industry stocks measured in days of forward consumption at 31 December.

Sources: BP Statistical Review of World Energy; International Energy Agency, *Monthly Oil Market Report*, OECD, Paris; Energy Information Administration, US Department of Energy, Washington DC.

321 Prices for crude oil, by origin ^a

	World trade weighted ^b US\$/bbl	Dubai ^c US\$/bbl	Brent ^d US\$/bbl	WTI ^e US\$/bbl	Gippsland ^f US\$/bbl	
1987 quarter						
March	17.28	16.91	18.46	17.28	28.59	(Australian IPP)
June	17.57	17.07	18.53	19.30	28.34	(Australian IPP)
September	17.73	17.40	19.11	20.47	28.63	(Australian IPP)
December	17.12	16.34	17.97	18.65	27.44	(Australian IPP)
1988 quarter						
March	15.20	14.66	15.53	16.68	16.47	(Australian IPP)
June	15.00	14.55	15.90	17.52	16.23	(Australian IPP)
September	13.34	12.09	13.78	14.54	14.36	(Australian IPP)
December	11.72	11.09	13.45	14.70	13.18	(Australian IPP)
1989 quarter						
March	15.49	15.00	17.39	18.46	17.80	
June	17.33	15.72	18.20	20.25	19.17	
September	16.26	15.32	17.54	19.85	17.75	
December	17.42	16.18	19.04	20.02	18.86	
1990 quarter						
March	18.14	16.63	19.76	21.75	19.97	
June	14.43	14.01	16.35	17.84	16.50	
September	24.12	25.58	26.64	26.57	24.29	
December	29.15	27.53	32.27	31.88	34.08	
1991 quarter						
March	17.98	15.85	20.37	21.12	21.50	
June	16.56	15.57	18.93	20.86	19.05	
September	17.61	16.91	19.91	21.66	20.33	
December	18.57	17.54	20.48	21.75	22.45	
1992 quarter						
March	16.37	15.55	17.89	18.86	18.78	
June	18.49	17.94	20.15	21.17	20.10	
September	19.04	18.42	20.27	21.33	22.15	
December	18.08	17.26	19.20	20.46	20.27	
1993 quarter						
March	16.87	15.84	18.29	19.83	19.25	
June	16.95	15.93	18.16	19.74	19.25	
September	15.16	14.32	16.46	17.63	17.61	
December	14.02	13.54	14.86	16.83	15.67	
1994 quarter						
March	13.34	12.75	14.00	14.83	14.86	
June	15.28	14.74	16.17	17.81	15.74	
September	16.45	15.85	16.95	18.50	17.43	
December	16.15	15.63	16.57	17.66	16.38	
1995 quarter						
March	16.90	16.34	17.04	18.40	17.80	
June	17.80	16.96	18.12	19.38	18.36	
September	15.98	15.33	16.15	17.87	17.01	
December	16.55	15.87	17.03	18.17	17.62	
1996 quarter						
March	18.13	16.49	18.64	19.78	19.53	
June	19.09	17.24	19.24	21.72	19.26	
September	20.22	19.51	21.10	22.43	20.08	
December	22.75	21.64	23.30	24.65	23.68	

Continued

321 Prices for crude oil, by origin ^a *continued*

	World trade weighted ^b US\$/bbl	Dubai ^c US\$/bbl	Brent ^d US\$/bbl	WTI ^e US\$/bbl	Gippsland ^f US\$/bbl
1997 quarter					
March	20.69	20.93	19.94	22.81	22.68
June	17.53	18.04	17.83	19.98	19.56
September	17.59	17.73	18.73	19.80	19.46
December	17.80	17.97	18.93	19.92	20.23
1998 quarter					
March	12.78	12.59	14.54	16.01	15.01
June	11.95	12.30	13.86	14.72	14.62
September	11.87	11.69	12.75	13.59	12.85
December	11.11	11.56	11.73	13.00	12.57
1999 quarter					
March	10.93	11.13	11.53	13.11	11.57
June	15.33	15.28	15.85	17.67	16.15
September	20.10	19.68	20.89	21.63	20.00
December	23.46	23.55	24.51	26.72	24.34
2000 quarter					
March	26.33	25.57	26.72	29.05	26.75
June	26.31	24.17	25.29	27.33	27.98
September	28.79	25.72	26.95	28.97	31.89
December	28.58	28.56	30.77	32.28	31.10
2001 quarter					
March	24.33	23.63	26.14	28.60	26.81
June	25.57	25.15	27.28	27.93	28.18
September	24.24	24.16	25.40	26.78	25.26
December	18.40	18.52	19.40	20.50	20.27
2002 quarter					
March	19.78	20.32	21.29	21.82	21.03
June	23.95	24.33	25.06	26.29	25.49
September	25.54	25.49	26.81	28.26	26.95
December	25.41	25.03	26.76	28.18	27.86
2003 quarter					
March	29.71	28.62	31.58	34.17	32.40
June	24.37	24.47	26.14	29.06	27.05
September	27.25	26.88	28.87	31.07	29.15
December	27.67	27.22	29.38	30.44	30.85
2004 quarter					
March	29.60	29.80	31.98	35.17	34.25
June	32.78	32.33	34.71	38.35	37.32
September	36.50	36.53	41.61	43.91	43.54
December	38.74	36.38	44.14	48.30	45.68
2005 quarter					
March	42.34	41.84	47.60	49.71	49.84
June	47.13	48.15	51.58	53.16	53.11

^a Based on daily prices unweighted and averaged over the period using posted or official selling prices with Rotterdam spot prices for Middle East and North Sea crudes after 1980. ^b Quarterly averages of weekly rates; average contract selling prices fob of internationally traded crude oils only, weighted by estimated export volume. ^c Middle East crude, 32 API gravity. ^d North Sea crude, 38 API gravity. ^e North American crude, 40 API gravity. ^f Australian crude, 42 API gravity. Price series discontinued in 1988.

Sources: ABARE averaging of daily prices using: Middle East Petroleum and Economic Publications, *International Crude Oil and Product Prices*, London; Department of Resources and Energy, *Australian Energy Statistics*, AGPS, Canberra; Energy Information Administration, US Department of Energy, Washington DC; *Platts Oilgram Price Reports*, London; Reuterlink; Tokyo Commodity Exchange.

322 Summary of Australian statistics for salt

	Production kt	Exports		
		Volume kt	Value \$m	Unit value ^a \$/t
1960	471	19	0.3	15.79
1961	517	61	0.7	11.48
1962	545	76	0.7	9.21
1963	591	122	0.8	6.56
1964	554	119	0.8	6.72
1965	665	115	0.6	5.22
1966	655	95	0.5	5.26
1967	714	89	0.5	5.62
1968	914	228	0.9	3.95
1969	1 680	775	2.1	2.71
1970	3 071 b	2 331	8.2	3.52
1971	3 788 b	2 815	9.0	3.20
1972	3 340 b	2 417	7.0	2.90
1973	4 204	3 475	10.6	3.05
1974	5 009	4 211	15.4	3.66
1975	4 660	3 652	17.5	4.79
1976	5 489	4 258	26.9	6.32
1977	4 716	4 057	29.5	7.27
1978	5 873	4 654	32.9	7.07
1979	5 215	4 513	33.3	7.38
1980	5 665	4 515	44.3	9.81
1981	6 716	3 964	44.0	11.10
1982	4 811	4 144	55.2	13.32
1983	5 170	4 535	69.4	15.30
1984	5 695	4 783	74.7	15.62
1985	5 835	5 166	97.4	18.85
1986	6 131	5 213	102.0	19.57
1987	6 486	2 745 c	56.0 c	20.40
1988	6 958 b	6 206	117.2	18.89
1989	7 070 d	6 194	121.5	19.61
1990	7 229 d	6 466	136.3	21.08
1991	7 768 d	7 061	165.6	23.46
1992	7 693 d	7 028	174.9	24.89
1993	7 553 d	6 982	185.5	26.56
1994	7 792 d	7 259	174.1	23.99
1995	8 298 d	7 649	176.5	23.08
1996	7 993 d	7 651	166.6	21.77
1997	8 883 d	8 187	190.9	23.32
1998	9 033 d	8 701	233.4	26.82
1999	9 888 d	8 418	213.7	25.38
2000	8 847 d	8 257	221.7	26.85
2001	9 254 d	8 817	267.1	30.29
2002	9 961 d	9 504	259.6	27.32
2003	10 569 d	10 114	200.6	19.83
2004	11 221 d	11 181	194.6	17.40

a Average export unit value of all salt, bulk, bagged and table. **b** Excludes Victoria. **c** Excludes salt, common, in bulk from 1 January to 30 June. **d** Excludes Victoria and the Northern Territory.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

323 Australian supply and disposal of salt

	Unit	1998	1999	2000	2001	2002	2003	2004
Production								
Queensland	kt	342	249	137	150	217	273	277
South Australia	kt	501	587	1 004	693	577	560	556
Western Australia ^a	kt	8 191	9 052	7 706	8 410	9 167	9 736	10 388
Total	kt	9 033	9 888	8 847	9 254	9 961	10 569	11 221
Exports (all types)								
Total	kt	8 701	8 418	8 257	8 817	9 504	10 114	11 181
	\$m	233	214	222	267	260	201	195
Imports								
Common salt	t	12 310	14 070	14 988	14 869	17 285	15 157	16 578
	\$'000	3 299	3 327	3 447	3 591	4 445	4 540	5 280

^a Sales.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

324 World production of salt, by country

	1997	1998	1999	2000	2001	2002	2003	2004
	Mt	Mt	Mt	Mt	Mt	Mt	Mt	Mt
Argentina	0.8	0.8	1.3	1.0	1.0	1.0	na	na
Australia	8.9	9.0	9.9	8.8	9.3	10.0	10.6	11.2
Brazil	6.5	6.8	6.0	6.1	5.6	5.6	6.1	6.1
Canada	13.3	13.3	12.7	12.2	13.7	12.3	13.3	13.3
Chile	5.5	6.2	6.1	5.1	6.0	6.0	na	na
China ^a	30.8	22.4	28.1	31.3	34.1	32.8	32.4	34.0
Egypt	1.2	2.4	2.4	2.4	2.4	2.4	na	na
France	7.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Germany	15.8	15.7	15.7	15.7	15.7	15.7	15.7	16.0
India	14.3	12.0	14.5	14.5	14.5	14.5	15.0	15.0
Iran	1.4	1.9	1.6	1.6	2.0	2.0	na	na
Italy	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Japan	1.3	1.3	1.3	1.4	1.4	1.4	na	na
Mexico	7.9	8.4	8.2	8.9	8.5	8.5	8.0	8.0
Netherlands ^b	5.6	5.5	5.0	5.0	5.0	5.0	na	na
Poland	3.9	4.0	4.2	4.2	4.2	4.3	1.5	2.0
Romania	2.6	2.2	2.2	2.3	2.2	2.3	na	na
Russian Federation	2.1	2.2	3.2	3.2	2.8	2.8	2.8	3.0
Spain	4.0	3.5	3.2	3.2	3.2	3.2	3.2	3.2
Turkey	2.3	2.2	2.1	2.1	2.1	2.1	na	na
Ukraine	2.5	2.5	2.2	2.3	2.3	2.3	2.3	2.5
United Kingdom	6.6	6.6	5.8	5.8	5.8	5.8	5.8	5.8
United States	41.5	41.3	45.0	45.6	44.8	40.3	43.7	45.1
Other	17.6	19.2	18.7	18.7	19.9	19.2	39.8	40.0
Total	207.0	200.0	210.0	212.0	217.0	210.0	210.0	215.0

^a Marketable salt. ^b Includes the Antilles. ^{na} Not available.

Sources: Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; British Geological Survey, *World Mineral Statistics*, Nottingham, England; US Department of the Interior, US Geological Survey, *Mineral Yearbook*, Washington DC; ABARE.

325 Summary of Australian statistics for silica

	Production	Exports a		Imports	
	Volume	Volume	Value	Volume	Value
	kt	kt	\$'000	t	\$'000
1960	213	na	na	96	20
1961	218	na	na	49	6
1962	234	na	na	24	10
1963	247	na	na	46	38
1964	330	na	na	97	25
1965	337	na	na	44	55
1966	354	na	na	533	33
1967	446	na	na	478	na
1968	550	na	na	438	31
1969	652	na	na	624	37
1970	879	178 b	575 b	785 b	53 b
1971	1 112	211 b	736 b	1 126 b	85 b
1972	1 058	219 b	658 b	1 000 b	86 b
1973	1 259	557 b	1 836 b	696	259
1974	1 443 c	555 b	1 838 b	846	74
1975	1 219	513 b	2 193 b	1 121	119
1976	1 381	389 b	1 867 b	343	52
1977	1 224	495 b	3 030 b	441	77
1978	1 290	467 b	3 112 b	283	45
1979	1 768	647	4 896	368	77
1980	1 828	649	5 762	199	49
1981	1 743	383	4 075	569	169
1982	1 813	519	5 399	3 678	589
1983	1 928	670	6 879	2 464	647
1984	2 242	686	7 430	3 087	550
1985	2 091	895	9 972	1 267	648
1986	2 091	1 137	13 590	852	567
1987	2 361	1 094	13 249	535	397
1988	2 667	1 577	20 973	3 633	609
1988-89	2 795 d	1 660	23 319	3 473	523
1989-90	3 116 d	2 226	34 848	2 029	282
1990-91	3 835 d	2 398	37 685	6 835	667
1991-92	3 347 e	2 547	40 175	9 025	1 205
1992-93	3 570 e	2 488	41 825	2 231	906
1993-94	na	2 600	43 083	1 130	631
1994-95	4 576	3 007	49 163	2 431	989
1995-96	na	3 227	49 538	1 731	1 153
1996-97	na	3 074	52 062	4 237	2 681
1997-98	na	1 447	27 460	811	483
1998-99	na	2 986	58 401	2 704	975
1999-00	4 266	3 232	64 567	2 427	1 159
2000-01	3 997	3 213	75 376	2 658	1 455
2001-02	4 461	2 629	57 598	4 084	1 933
2002-03	3 949	2 794	59 900	4 330	2 004
2003-04	na	2 687	62 290	3 477	1 572
2004-05	na	1 844	52 643	2 708	1 375

a Includes quartz sand from July 1999, data not available separately. b Year ended 30 June. c Excludes Western Australia. d Excludes Victoria. e Excludes Tasmania and Victoria. na Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.L., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; state mines departments and their equivalents; ABARE.

326 Australian production of silica, by state

	New South Wales kt	Victoria kt	Queensland kt	Western Australia kt	South Australia kt	Tasmania kt	Australia kt
1960	168.1	na	16.1	8.8	14.8	5.3	213.2 a
1961	153.3	na	29.7	8.3	23.1	1.4	218.0 a
1962	173.4	na	26.0	10.5	23.8	0.5	234.2 a
1963	176.7	na	32.5	10.1	25.3	2.7	247.3 a
1964	241.9	na	38.2	10.2	25.4	13.8	329.6 a
1965	234.9	na	46.2	9.4	36.4	10.1	337.0 a
1966	234.1	na	39.4	28.7	46.2	5.5	353.9 a
1967	289.1	na	70.2	42.4	35.1	8.7	445.6 a
1968	283.6	na	164.5	20.9	67.1	14.3	550.4 a
1969	315.4	na	208.9	49.7	49.4	28.3	651.7 a
1970	335.2	114.5	295.0	39.3	43.2	51.8	879.1
1971	430.2	108.1	405.7	57.8	74.0	36.7	1 112.4
1972	464.2	98.8	395.4	20.9	60.5	18.1	1 058.0
1973	459.7	109.0	568.1	27.4	66.2	28.1	1 258.5
1974	474.9	141.8	712.4	na	75.2	38.4	1 442.8 b
1975	392.9	142.6	544.1	28.3	77.6	33.3	1 218.8
1976	511.7	166.3	516.5	40.6	118.7	27.7	1 381.4
1977	410.3	199.4	458.7	78.1	104.4	51.5	1 224.3
1978	417.3	184.3	520.2	91.2	114.8	53.1	1 289.7
1979	544.9	196.2	627.3	217.7	91.7	89.9	1 767.6
1980	588.1	255.3	670.7	148.1	99.9	65.5	1 827.6
1981	548.5	288.2	581.4	168.1	120.4	36.5	1 743.1
1982	557.5	361.0	563.7	144.0	146.8	40.1	1 813.2
1983	471.5	348.5	627.4	322.8	114.5	43.3	1 927.8
1984	448.4	406.9	866.7	352.6	124.4	43.1	2 242.1
1985	338.5	273.7	924.6	373.1	143.4	37.1	2 090.5
1986	412.3	267.0	839.4	390.4	141.3	40.9	2 091.3
1987	464.8	224.0	1 079.2	386.0	147.2	59.5	2 360.7
1988	457.6	218.7	1 467.0	348.9	96.8	78.0	2 667.0
1988-89	480.2	na	1 682.6	364.5	109.7	158.0	2 794.9 a
1989-90	574.0	na	1 802.0	478.0	112.0	150.0	3 116.0 a
1990-91	551.1	na	2 145.1	861.7	104.4	172.3	3 834.6 a
1991-92	552.5	na	2 019.8	654.6	119.8	na	3 346.7 c
1992-93	495.0	na	2 421.0	518.0	136.0	na	3 570.0 c
1993-94	na	na	2 494.2	568.4	na	na	na
1994-95	565.0	220.0	2 828.7	614.5	174.0	174.0	4 576.0
1995-96	636.2	na	na	741.9	132.0	na	na
1996-97	699.1	na	2 680.5	700.2	157.0	na	na
1997-98	489.4	na	2 851.1	821.5	131.0	na	na
1998-99	438.4	na	2 087.2	583.0	126.1	na	na
1999-00	442.2	443.0	2 637.0	599.6	114.8	139.9	4 265.8
2000-01	433.5	78.0	2 619.0	557.3	145.3	163.4	3 996.5
2001-02	441.0	531.0	2 488.0	653.0	185.0	163.3	4 461.4
2002-03	492.0	20.0	2 406.3	752.5	149.4	128.9	3 949.1
2003-04	na	na	2 510.4	644.2	239.1	135.2	na

a Excludes Victoria. **b** Excludes Western Australia. **c** Excludes Tasmania and Victoria. **na** Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; state mines departments and their equivalents; ABARE.

327 Australian imports of silica based products

	Silicon		Ferrosilicon		Ferrosilicomanganese		Piezoelectric crystals
	Volume t	Value \$'000	Volume t	Value \$'000	Volume t	Value \$'000	Value \$'000
1960	na	188	3 968	na	na	na	na
1961	na	210	8 308	1 217	na	na	na
1962	797	168	6 307	1 004	na	na	na
1963	830	249	5 720	710	na	na	na
1964	1 593	466	10 348	1 167	na	na	na
1965	638	194	13 211	1 747	na	na	na
1966	na	142	7 620	1 061	na	na	na
1967	na	422	9 440	1 379	na	na	na
1968	na	na	6 327	923	na	na	na
1969	na	625	7 722	1 180	na	na	na
1970	na	621	13 603	2 272	na	na	na
1971	3 403	1 192	12 281	2 073	na	na	112
1972	1 950	688	9 771	1 794	na	na	259
1973	2 366	777	9 202	1 526	na	na	159
1974	2 496	1 047	14 286	3 048	na	na	330
1975	2 602	2 723	21 578	8 528	na	na	558
1976	1 845	1 229	14 258	5 249	na	na	467
1977	3 896 a	2 982 a	6 437	3 114	390 a	200 a	738 a
1978	2 006 a	1 492 a	6 363	2 893	414	271	536 a
1979	2 573 a	2 950 a	7 149	3 640	488	392	819 a
1980	4 888 a	5 749 a	14 598	8 856	532	376	971 a
1981	3 093 a	3 553 a	9 716	4 675	217	180	1 040 a
1982	2 961	3 685	10 761	6 222	193	127	1 886
1983	2 695	4 064	7 174	4 280	336	300	1 859
1984	4 572	7 422	9 461	5 273	774	709	2 402
1985	4 914	9 447	13 890	7 153	940	1 183	3 782
1986	5 852	10 461	11 469	6 873	392	558	3 407
1987	5 083	11 853	12 897	8 894	656	913	4 106
1988	3 759	6 592	9 095	7 533	433	571	3 444
1988-89	3 714	8 062	14 100	12 065	293	401	4 347
1989-90	2 908	10 160	21 507	18 566	205	308	4 470
1990-91	2 443	10 545	19 330	13 929	231	316	3 475
1991-92	2 301	11 469	13 229	11 460	913	922	8 486
1992-93	3 611	11 910	24 738	21 091	932	832	4 423
1993-94	3 025	11 393	35 732	31 342	510	548	6 114
1994-95	2 863	15 083	32 593	25 699	377	375	6 607
1995-96	4 899	14 862	34 506	38 060	288	482	7 951
1996-97	3 226	10 408	52 952	38 258	279	468	6 305
1997-98	1 391	4 607	18 597	19 732	80	128	3 077
1998-99	4 110	15 289	32 044	33 968	451	752	9 431
1999-00	4 887	14 683	29 189	27 749	329	474	12 066
2000-01	5 966	23 530	29 004	33 006	468	723	20 325
2001-02	3 857	13 719	28 965	34 115	259	439	8 509
2002-03	6 437	21 935	29 692	30 695	240	368	8 863
2003-04	6 134	19 553	35 474	35 501	540	817	9 716
2004-05	6 284	21 039	34 877	38 631	398	714	13 092

a Year ended 30 June. na Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra.

328 Summary of Australian statistics for silver

	Production		Exports a		Price b \$/kg
	Mine t	Refinery t	Volume t	Value \$m	
1970	808	374	304	na	59.39
1971	678	328	203	na	47.92
1972	681	313	219	na	49.75
1973	707	261	115	na	60.08
1974	670	256	112	na	104.75
1975	726	283	134	na	109.17
1976	779	255	100	na	115.17
1977	856	280	136	na	135.00
1978	813	299	76	na	153.00
1979	832	320	85	na	319.25
1980	777	355	85	na	598.00
1981	744	376	90	na	297.17
1982	907	357	234	na	253.67
1983	1 033	329	222	na	411.33
1984	972	302	164	na	299.75
1985	1 086	329	167	na	285.33
1986	1 023	336	192	na	264.58
1987	1 119	362	178	na	325.83
1988	1 134	359	26 c	26 d	275.75
1989	1 075	376	23 c	28 d	229.67
1990	1 173 s	419	16 c	43 d	205.92
1991	1 180 s	387	106 c	38 d	175.58
1992	1 218 s	369	200 c	49 d	181.25
1993	1 152 s	357	257 c	60 d	212.25
1994	1 045 s	363	190 c	53 d	240.92
1995	939 s	346	192 c	52 d	234.06
1996	974 s	220	316 c	73 d	222.42
1997	1 107 s	174	215 c	54 d	220.70
1998	1 473 s	292	365 c	123 d	291.56
1999	1 715 s	437	428 c	117 d	268.62
2000	2 059	404	427	138	285.31
2001	1 970	584	524	159	287.72
2002	2 070	644	540	154	290.78
2003	1 868	649	432	109	258.89
2004	2 209	650	477	150	308.13

a Refined silver only. b Pasmenco Metals, fob/fot Port Pirie. c Refined bullion only. d Includes refined bullion, powder, unwrought silver and semi-manufactured forms. s ABARE estimate. na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Australian Associated Press Financial News Wire; Factiva.

329 Australian supply and disposal of silver

	Unit	1997	1998	1999	2000	2001	2002	2003	2004
Production									
Mine									
New South Wales	t	200	151	147	146	133	88	82	91
Queensland	t	574	985	1 187	1 576	1 545	1 760	1 582	1 910
Western Australia	t	83	99	133	137	107	68	70	41
South Australia	t	15	15	25	34	34	26	20	34
Tasmania	t	168	147	171	118	104	78	67	89
Northern Territory	t	68	76	54	47	48	50	46	45
Total s	t	1 107	1 473	1 715	2 059	1 970	2 070	1 868	2 209
Refinery	t	174	292	437	404	584	644	649	650
Exports									
Refined silver									
India	t	29	54	140	131	190	192	124	92
Japan	t	102	131	162	185	178	143	204	267
Korea, Rep. Of	t	11	19	39	53	42	34	34	37
Singapore	t	1	40	1	17	72	5	9	20
United Kingdom	t	0	67	10	0	0	42	0	0
Other	t	71	54	76	42	41	125	62	59
Total	t a	215	365	428	427	524	540	432	477
	\$m b	54	123	117	138	159	154	109	150
Silver content of lead bullion	t	494	405	419	332	411	455	402	419
Prices									
World	US\$/troy oz	489.12	553.74	524.97	499.91	434.98	460.04	487.65	664.98
Australia c	A\$/kg	220.70	291.56	268.62	285.31	287.72	290.78	258.89	308.13

a Refined bullion only. **b** Includes refined bullion, powder, unwrought silver and semimanufactured forms. **c** Pasmaico Metals, fob/fot Port Pirie.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Australian Associated Press Financial News Wire; Factiva; London Bullion Market Association.

330 World mine production of silver

	1996	1997	1998	1999	2000	2001	2002	2003	2004
	t	t	t	t	t	t	t	t	t
Australia s	974	1 107	1 473	1 715	2 059	1 970	2 070	1 868	2 209
Bolivia	385	386	404	424	434	408	450	464	201
Brazil	140	135	130	130	130	130	130	130	130
Canada	1 309	1 224	1 196	1 246	1 212	1 320	1 408	1 309	1 336
Chile	1 130	1 088	1 337	1 380	1 245	1 349	1 205	1 313	1 330
China	1 100	1 265	1 260	1 330	1 330	1 908	2 000	2 000	2 000
Indonesia	255	279	349	292	335	348	289	377	377
Japan	85	87	95	94	104	80	81	79	76
Kazakhstan	414	389	536	816	816	943	856	805	690
Korea, Dem. Rep. of	200	200	200	200	200	50	50	50	50
Mexico	2 528	2 679	2 688	2 483	2 483	2 760	2 749	2 551	2 531
Morocco	200	262	307	270	290	240	277	200	200
Peru	1 912	2 059	2 004	2 231	2 438	2 571	2 870	2 921	3 060
Poland	935	1 038	1 097	1 093	1 088	1 231	1 342	1 332	1 330
Russian Federation	250	250	240	240	240	400	400	400	400
South Africa	168	153	145	152	144	112	111	87	71
Spain	103	66	66	66	66	66	66	66	66
Sweden	256	283	280	284	304	285	294	307	330
United States	1 570	2 182	2 060	1 952	2 017	1 606	1 419	1 236	1 246
Uzbekistan	150	150	150	150	150	218	157	187	187
Other	737	677	663	658	660	819	799	835	797
Total a	14 802	15 959	16 677	17 208	17 747	18 815	19 030	18 517	18 591

a Excludes countries for which data are not available. s ABARE estimate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

331 Summary of Australian statistics for talc

	Production b t	Exports a			Imports a	
		Volume t	Value \$'000	Unit value \$/t	Volume t	Value \$'000
1960	15 794	3 968	129	32.56	504	24
1961	13 664	4 258	149	35.05	1 489	45
1962	13 754	5 068	164	32.34	2 156	72
1963	12 790	4 090	142	34.63	2 591	81
1964	15 439	5 264	177	33.69	2 351	75
1965	19 695	6 887	234	33.98	2 404	68
1966	21 616	7 758	231	29.78	2 903	62
1967	20 431	8 787	277	31.52	2 199	74
1968	37 860	24 875	661	26.57	3 590	117
1969	52 259	34 134	863	25.28	1 823	77
1970	47 517	31 037	791	25.49	3 441	164
1971	41 280	32 662	861	26.36	4 091	197
1972	43 849	32 051	897	27.99	1 186	69
1973	50 850	36 179	996	27.53	1 109	66
1974	63 992	51 325	1 428	27.82	1 606	10
1975	67 242	45 457	1 527	33.59	947	72
1976	77 447	62 306	2 425	38.92	370	62
1977	112 920	87 271	4 052	46.43	335	65
1978	137 553	107 177	5 338	49.81	527	103
1979	138 266	107 849	6 330	58.69	420	86
1980	159 962	83 059	5 286	63.64	382	82
1981	74 840	82 641	5 529	66.90	329	105
1982	143 325	80 512	5 428	67.42	93	30
1983	167 009	131 914	8 401	63.69	147	68
1984	179 709	163 370	10 810	66.17	215	111
1985	132 074	122 306	9 577	78.30	352	196
1986	179 467	183 357	15 028	81.96	151	85
1987	206 865	129 656	11 012	84.93	266	189
1988	201 740	168 758	13 073	77.47	509	223
1988-89	208 998	126 597	9 447	74.62	578	216
1989-90	234 579	200 870	18 158	90.39	631	297
1990-91	173 803	137 260	12 770	93.03	528	237
1991-92	179 678	152 009	13 717	90.24	563	298
1992-93	172 273	119 830	14 184	118.36	629	372
1993-94	154 073	152 297	15 440	101.38	534	328
1994-95	125 701	133 060	12 672	95.23	1 053	353
1995-96	176 163	182 600	17 388	95.22	1 066	423
1996-97	185 601	143 227 c	12 861 c	89.80	1 262	451
1997-98	199 315	714 c	251 c	351.70	384	201
1998-99	190 037	3 333 c	1 053 c	315.82	886	695
1999-00	178 545	184 559	20 391	110.48	1 115	893
2000-01	173 446	135 771	24 298	178.96	1 234	707
2001-02	160 741	144 216	21 768	150.94	1 058	630
2002-03	165 980	148 281	22 040	148.63	1 742	856
2003-04	123 080	132 782	18 884	142.22	1 992	750
2004-05	na	129 756	19 104	147.23	1 853	827

a Includes pyrophyllite. b Excludes pyrophyllite. c Excludes uncrushed product from 1 June 1997 to 31 May 1999. na Not available.

Sources: ABS, *International Trade, Australia*, cat. no. 5465.0, Canberra; ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; state mines departments and their equivalents; ABARE.

332 Australian production of talc and pyrophyllite, by state

	Talc				Pyrophyllite
	New South Wales	South Australia	Western Australia	Australia	New South Wales
	t	t	t	t	t
1960	1 154	9 082	5 558	15 794	509
1961	838	7 594	5 232	13 664	1 309
1962	732	7 962	5 061	13 754	1 303
1963	878	7 168	4 744	12 790	1 176
1964	1 388	8 533	5 518	15 439	723
1965	1 710	10 783	7 202	19 695	0
1966	1 426	6 611	13 580	21 616	266
1967	2 169	7 303	10 958	20 431	564
1968	2 153	10 586	25 121	37 860	985
1969	2 925	12 459	36 876	52 259	3 165
1970	1 162	14 559	31 796	47 517	7 707
1971	698	11 506	29 076	41 280	6 596
1972	650	11 336	31 863	43 849	12 299
1973	765	14 088	35 997	50 850	12 820
1974	430	12 773	50 789	63 992	15 845
1975	280	12 975	53 987	67 242	15 145
1976	305	16 892	60 250	77 447	14 650
1977	90	16 391	96 439	112 920	16 039
1978	105	14 070	123 378	137 553	9 401
1979	150	15 565	122 551	138 266	19 209
1980	77	16 414	143 471	159 962	11 002
1981	76	21 046	53 718	74 840	8 146
1982	0	20 497	122 828	143 325	9 467
1983	63	14 913	152 033	167 009	9 569
1984	145	18 588	160 976	179 709	7 051
1985	239	16 804	115 031	132 074	7 317
1986	38	18 061	161 368	179 467	8 588
1987	120	17 471	189 274	206 865	6 036
1988	126	18 840	182 774	201 740	3 932
1988-89	155	13 536	195 307	208 998	3 436
1989-90	88	14 228	220 263	234 579	2 965
1990-91	136	12 107	161 560	173 803	1 032
1991-92	0	10 787	168 891	179 678	1 260
1992-93	0	13 484	158 789	172 273	1 175
1993-94	na	13 016	141 057	154 073	na
1994-95	27	12 950	112 724	125 701	777
1995-96	0	14 751	161 412	176 163	595
1996-97	0	8 061	177 540	185 601	337
1997-98	0	8 018	191 297	199 315	702
1998-99	0	8 428	181 609	190 037	347
1999-00	0	9 410	169 135	178 545	1 727
2000-01	0	9 126	164 320	173 446	na
2001-02	0	8 372	152 369	160 741	868
2002-03	0	8 616	157 364	165 980	na
2003-04	0	6 440	116 640	123 080	na

na Not available.

Sources: ABS, *Mineral Production, Australia*, cat. no. 8405.0, Canberra; ABS, *The Australian Mining Industry*, cat. no. 8414.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Kalix, Z., Fraser, L.M. and Rawson, R.I., *Australian Mineral Industry: Production and Trade, 1842-1964*, Bureau of Mineral Resources, Canberra; state mines departments and their equivalents; ABARE.

333 Australian exports of talc, by destination ^a

	Belgium	Japan	Nether-lands	New Zealand	Korea, Rep. of	United States	Other	Total	
								Volume	Value
	t	t	t	t	t	t	t	t	\$'000
1960	na	na	na	1 161	na	na	na	3 968	129
1961	na	na	na	957	na	na	na	4 258	149
1962	na	na	412	1 116	na	na	na	5 068	164
1963	na	na	0	1 259	na	na	na	4 090	142
1964	na	na	217	1 049	na	na	na	5 264	177
1965	na	na	1 852	1 421	na	na	na	6 887	234
1966	na	na	4 864	1 198	na	na	na	7 758	231
1967	na	78	6 971	1 235	na	na	503	8 787	277
1968	na	190	19 026	1 285	na	na	4 374	24 875	661
1969	na	9 976	22 236	1 474	na	na	448	34 134	863
1970	na	16 445	12 786	1 567	na	na	239	31 037	791
1971	na	20 754	10 048	1 740	na	na	120	32 662	861
1972	na	14 953	14 991	2 029	na	na	78	32 051	897
1973	na	20 061	14 346	1 661	na	na	111	36 179	996
1974	na	30 889	18 703	1 644	na	na	89	51 325	1 428
1975	na	28 329	12 163	2 060	na	na	2 905	45 457	1 527
1976	na	39 050	15 107	2 802	na	na	5 347	62 306	2 425
1977	na	66 557	13 422	2 461	na	na	4 831	87 271	4 052
1978	na	90 577	11 291	1 860	na	na	3 449	107 177	5 338
1979	na	85 511	12 868	3 099	na	na	6 371	107 849	6 330
1980	3 150	64 152	13 500	1 868	na	na	389	83 059	5 286
1981	6 096	60 406	6 215	2 917	na	na	7 007	82 641	5 529
1982	12 597	51 096	10 063	2 419	na	na	4 337	80 512	5 428
1983	5 004	93 988	14 655	1 325	5 023	9 990	1 929	131 914	8 401
1984	11 213	119 678	14 327	1 988	14 167	0	1 997	163 370	10 810
1985	20 051	66 765	14 980	1 848	15 420	0	3 242	122 306	9 577
1986	15 007	120 312	15 252	1 069	15 745	14 003	1 969	183 357	15 028
1987	8 084	84 701	5 001	1 079	9 311	15 472	6 008	129 656	11 012
1988	12 112	124 843	11 960	669	0	18 030	1 144	168 758	13 073
1988-89	5 000	107 482	5 507	548	0	7 019	1 041	126 597	9 447
1989-90	21 754	137 648	13 565	366	4 648	18 510	4 379	200 870	18 158
1990-91	6 000	87 984	35 167	476	0	6 003	1 630	137 260	12 770
1991-92	5 255	103 279	30 200	421	0	4 728	8 126	152 009	13 717
1992-93	17 002	70 331	14 630	686	0	8 166	9 015	119 830	14 184
1993-94	6 317	94 451	37 356	689	0	10 911	2 573	152 297	15 440
1994-95	6 300	68 657	46 800	679	0	9 300	1 324	133 060	12 672
1995-96	12 803	85 375	48 300	797	680	30 100	4 545	182 600	17 388
1996-97 b	6 300	69 029	45 625	669	4 815	5 262	11 527	143 227	12 861
1997-98 b	0	0	0	427	3	0	284	714	251
1998-99 b	0	1 200	0	944	99	0	1 090	3 333	1 053
1999-00	2 501	65 101	78 939	1 013	43	12 400	24 562	184 559	20 391
2000-01	0	62 567	57 550	1 138	129	0	14 387	135 771	24 298
2001-02	0	55 436	61 767	2 574	178	4 200	20 061	144 216	21 768
2002-03	0	42 547	78 318	1 625	21	6 300	19 470	148 281	22 040
2003-04	0	28 261	77 958	3 928	0	20	22 615	132 782	18 884
2004-05	0	15 811	87 257	3 146	38	6 010	17 494	129 756	19 104

a Includes pyrophyllite. **b** Excludes uncrushed product from 1 June 1997 to 31 May 1999. **na** Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

334 Australian imports of talc, by source ^a

	Norway	United Kingdom	United States	Other	Total	
					Volume	Value
	t	t	t	t	t	\$'000
1960	na	na	na	na	504	24
1961	na	na	na	na	1 489	45
1962	34	na	64	na	2 156	72
1963	41	na	119	na	2 591	81
1964	61	na	135	na	2 351	75
1965	82	na	139	na	2 404	68
1966	19	na	256	na	2 903	62
1967	13	na	381	na	2 199	74
1968	40	na	469	na	3 590	117
1969	9	na	442	na	1 823	77
1970	23	na	560	2 858	3 441	164
1971	31	na	732	3 328	4 091	197
1972	65	na	765	356	1 186	69
1973	86	na	647	376	1 109	66
1974	97	na	355	1 154	1 606	10
1975	2	na	244	701	947	72
1976	62	na	188	120	370	62
1977	26	na	186	123	335	65
1978	51	na	236	240	527	103
1979	41	na	168	211	420	86
1980	23	na	187	172	382	82
1981	60	na	228	41	329	105
1982	22	na	49	22	93	30
1983	27	29	82	9	147	68
1984	39	61	111	4	215	111
1985	46	47	248	11	352	196
1986	43	61	36	11	151	85
1987	66	47	107	46	266	189
1988	31	17	431	30	509	223
1988-89	45	34	338	161	578	216
1989-90	25	23	571	13	631	297
1990-91	58	75	368	28	528	237
1991-92	17	65	451	29	563	298
1992-93	30	99	354	146	629	372
1993-94	35	50	297	152	534	328
1994-95	20	46	287	700	1 053	353
1995-96	4	24	305	733	1 066	423
1996-97	11	44	185	1 022	1 262	451
1997-98	8	20	119	237	384	201
1998-99	6	24	224	632	886	695
1999-00	8	5	280	822	1 115	893
2000-01	39	0	250	945	1 234	707
2001-02	59	0	168	830	1 058	630
2002-03	16	4	185	1 537	1 742	856
2003-04	0	1	412	1 578	1 992	750
2004-05	1	2	344	1 506	1 853	827

^a Includes pyrophyllite. **na** Not available.

Sources: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

335 World mine production of talc, by country ^a

	Australia kt	Brazil kt	China ^b kt	Japan kt	Korea, Rep. of kt	United States kt	Other kt	Total kt
1960	16	na	150	592	na	666	833	2 520
1961	15	na	150	635	na	692	914	2 708
1962	15	na	150	589	na	700	931	2 712
1963	14	na	150	654	na	730	993	2 857
1964	16	na	150	1 055	na	807	1 032	3 485
1965	20	na	150	1 008	na	783	1 038	3 444
1966	22	na	150	1 109	na	812	1 003	3 526
1967	21	na	150	1 370	na	819	1 003	3 831
1968	39	na	150	1 689	na	869	1 058	4 298
1969	55	112	150	1 705	180	934	1 280	4 490
1970	55	130	150	1 676	204	932	1 413	4 940
1971	48	130	150	1 895	212	932	1 203	4 950
1972	56	130	150	1 507	236	1 005	1 290	4 764
1973	64	90	150	1 564	417	1 131	1 457	5 272
1974	80	201	150	1 542	443	1 170	1 276	5 272
1975	82	221	270	1 192	416	841	1 430	4 872
1976	92	247	300	1 345	496	963	1 532	5 415
1977	129	254	150	1 359	605	1 093	1 601	5 641
1978	147	240	150	1 272	665	1 202	1 577	5 723
1979	157	366	150	1 709	778	1 318	1 889	6 847
1980	171	413	916	1 749	719	1 125	1 946	7 529
1981	83	503	898	1 545	565	1 218	1 912	7 224
1982	153	384	898	1 492	591	1 030	1 780	6 838
1983	177	396	950	1 466	632	967	1 982	7 070
1984	187	413	952	1 498	848	1 023	2 177	7 615
1985	139	425	1 000	1 434	932	1 151	2 257	7 855
1986	188	425	1 000	1 334	900	1 181	2 190	7 735
1987	213	600	na	1 260	900	1 120	3 763	7 856
1988	206	400	na	1 266	850	1 249	3 678	7 649
1989	212	620	1 000	1 286	800	1 253	2 279	7 980
1990	238	720	1 000	1 293	910	1 267	2 823	8 251
1991	175	570	2 300	1 295	840	1 037	2 715	8 932
1992	181	480	2 650	1 123	760	997	2 673	8 864
1993	173	440	2 700	1 090	750	968	2 579	8 700
1994	na	440	2 400	999	710	935	2 396	7 880
1995	126	460	2 400	994	730	1 060	1 380	7 150
1996	177	510	2 400	965	820	994	2 324	8 190
1997	186	625	2 350	1 010	810	1 050	2 439	8 470
1998	200	452	2 300	965	822	971	2 340	8 050
1999	190	452	3 900	800	875	925	2 526	9 470
2000	180	452	3 500	743	776	851	2 294	9 640
2001	173	450	3 500	668	1 100	853	2 176	8 920
2002	162	450	3 600	665	1 100	775	2 893	8 870
2003	166	400	3 600	640	940	869	2 305	8 920
2004	123	500	2 700	600	950	911	2 336	8 120

^a Includes pyrophyllite. ^b Excludes Hong Kong. **na** Not available.

Sources: BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; US Department of the Interior, US Geological Survey, *Mineral Commodity Summaries*, Washington DC; ABARE.

336 Summary of Australian statistics for tin

	Production		Exports		Price ^c A\$/t
	Mine ^a t	Refinery t	Volume ^b t	Value \$m	
1960	2 202	2 254	0	0	2 196.0
1961	2 745	2 546	0	0	2 450.0
1962	2 715	2 704	0	0	2 470.0
1963	2 860	2 626	97	0	2 506.0
1964	3 642	3 021	253	1	3 416.0
1965	3 849	3 179	633	2	3 892.0
1966	4 807	3 640	1 327	4	3 570.0
1967	5 586	3 594	1 690	5	3 339.0
1968	6 537	3 692	3 238	8	3 125.0
1969	8 177	4 156	4 075	10	3 427.0
1970	8 828	5 211	4 681	14	3 669.0
1971	10 035	6 333	5 249	14	3 497.0
1972	11 997	7 027	8 129	23	3 761.0
1973	10 801	6 904	7 414	21	4 802.0
1974	10 481	6 714	6 755	30	8 167.0
1975	9 577	5 254	6 977	32	6 841.0
1976	10 611	5 603	5 670	30	7 650.0
1977	10 634	5 561	7 405	60	10 788.0
1978	11 864	5 129	9 071	89	12 867.0
1979	12 571	5 423	8 450	103	15 419.0
1980	11 588	4 819	8 919	118	16 795.0
1981	12 233	4 286	8 622	98	14 244.0
1982	12 093	3 105	7 779	92	12 764.0
1983	9 252 ^d	2 913	6 692	120	12 995.0
1984	7 923 ^d	2 899	6 577	83	12 217.0
1985	6 363 ^d	2 683	5 667	85	12 161.0
1986	8 508 ^d	1 399	7 512	58	11 581.0
1987	7 691	563	7 163	60	12 004.0
1988	7 009	439	7 376	60	11 299.0
1989	7 709	424	7 511	85	13 352.0
1990	7 425	312	6 187	55	9 913.0
1991	5 380	268	5 770	35	9 054.0
1992	6 609	240	6 569	45	4 663.2
1993	8 057	222	8 161	53	7 589.8
1994	7 400	320	7 234	44	7 502.4
1995	8 656	570	8 574	59	8 432.0
1996	8 733	481	8 779	56	7 892.3
1997	10 326	646	10 160	63	7 611.5
1998	10 306	684	10 066	73	8 831.9
1999	10 040	586	10 556	70	8 373.8
2000	9 070	733	9 057	67	9 335.9
2001	9 983	1 094	9 325	66	8 646.7
2002	7 078	791	6 995	43	7 469.4
2003	3 910	597	2 885	18	7 521.1
2004	1 306	481	218	0	11 581.3

^a Metallic content. ^b Tin content of all ores, concentrates, slags, residues and refined tin. ^c London Metal Exchange cash settlement price for refined tin, 99.75 per cent purity, expressed in Australian dollars; between 1 January 1986 and 31 May 1989, Kuala Lumpur Tin Market. ^d Excludes content of copper-tin concentrate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

337 Australian supply and disposal of tin

	Unit	1997	1998	1999	2000	2001	2002	2003	2004
Production									
Mine a									
New South Wales	t	30	30	0	0	0	750	1 031	429
Queensland	t	70	40	40	10	0	0	0	0
Tasmania	t	9 610	9 582	9 414	8 327	8 961	5 609	2 282	396
Western Australia	t	646	684	586	733	1 022	719	597	481
Total	t	10 326	10 306	10 040	9 070	9 983	7 078	3 910	1 306
Refinery	t	646	684	586	733	1 094	791	597	481
Exports									
Tin ore and concentrate									
Malaysia	t	11 115	11 542	9 548	8 067	5 728	1 199	605	41
Thailand	t	5 951	3 834	6 626	6 076	9 426	10 342	4 123	0
Other	t	0	0	0	0	0	0	0	0
Total	t	17 066	15 376	16 174	14 143	15 154	11 541	4 728	41
	\$m	59.94	73.03	69.55	67.43	66.08	43.36	18.41	0.25
Refined									
Malaysia	t	35	0	20	50	1	0	65	180
Thailand	t	0	0	109	27	0	0	0	0
United States	t	500	480	199	1	0	0	0	0
Other	t	3	62	165	217	96	12	4	15
Total	t	537	542	493	295	97	12	69	195
	\$m	3.63	4.36	3.01	0.97	0.53	0.17	0.25	1.06
Tin content of primary materials exported b	t	10 160	10 066	10 556	9 057	9 325	6 995	2 885	218
Prices c									
World	US\$/t	5 644.3	5 542.4	5 399.9	5 434.8	4 483.6	4 062.0	4 896.3	8 512.0
Australia	A\$/t	7 611.5	8 831.9	8 373.8	9 335.9	8 646.7	7 469.4	7 521.1	11 581.3

a Metallic content. **b** Tin content of all ores, concentrates, slags, residues and refined tin. **c** London Metal Exchange cash settlement price for refined tin, 99.75 per cent purity.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

338 World mine production of tin in concentrates, by country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Australia	10.3	10.3	10.0	9.1	10.0	7.1	3.9	1.3
Bolivia	12.9	11.3	12.4	12.5	12.0	13.2	16.4	17.6
Brazil	19.1	14.2	13.2	13.8	13.0	12.0	12.2	12.5
China	67.5	70.1	80.1	97.1	99.4	81.0	101.8	117.2
Indonesia	55.2	55.9	47.8	51.6	56.3	78.6	64.0	78.4
Kazakhstan	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2
Laos	1.0	0.6	0.4	0.4	0.8	1.1	1.1	1.1
Malaysia	5.1	5.8	7.3	6.3	5.0	4.2	3.4	2.7
Myanmar	0.1	0.1	0.2	1.6	0.6	0.3	0.5	0.4
Nigeria	2.8	1.9	1.5	2.0	1.3	0.9	0.9	0.9
Peru	28.0	25.7	30.6	37.4	38.2	38.8	40.2	41.6
Portugal	3.5	3.1	2.2	1.2	1.2	0.3	0.2	0.2
Rwanda	0.2	0.4	0.4	0.4	0.4	0.2	0.2	0.2
Russian Federation	7.5	7.0	5.2	6.6	5.5	7.2	7.2	7.2
Thailand	0.7	1.7	2.7	2.2	2.5	1.1	0.9	0.7
United Kingdom	2.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Viet Nam	4.8	4.5	4.5	1.8	1.7	1.7	2.1	3.5
Other ^s	0.0	0.0	0.1	0.1	0.0	0.2	0.0	0.1
Total ^s	221.5	213.5	219.1	244.6	248.4	248.4	254.6	285.8

^a Recoverable tin content of ores and concentrates produced. ^s ABARE estimate; excludes some small producer countries.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; World Bureau of Metal Statistics, *World Metal Statistics*, London.

339 Summary of Australian statistics for titanium

	Ilmenite concentrate				Rutile concentrate			
	Production a	Exports			Production a	Exports		
	Volume kt	Volume kt	Value \$m	Unit value \$/t	Volume kt	Volume kt	Value \$m	Unit value \$/t
1960	108	77	1	7.8	90	95	8.1	85.3
1961	169 b	146	1	8.9	103	101	6.4	63.4
1962	182 b	158	1	8.9	121	119	7.3	61.3
1963	205 b	155	2	9.7	185	157	10.6	67.5
1964	309 b	250	2	9.2	185	197	14.1	71.6
1965	448 b	367	4	9.5	221	243	17.1	70.4
1966	522	362	4	10.2	251	235	17.8	75.7
1967	554	391	4	10.0	270	263	19.7	74.9
1968	562	402	4	10.2	293	290	21.9	75.5
1969	721	576	6	10.4	326	304	25.5	83.9
1970	886	648	7	10.2	371	374	34.8	93.0
1971	814	657	7	10.2	375	325	35.8	110.2
1972	707	410	4	10.7	313	354	41.1	116.1
1973	720	650	7	11.1	335	336	40.5	120.5
1974	817	739	9	11.9	319	345	48.2	139.7
1975	991	534	7	12.7	348	319	60.0	188.1
1976	959	951	14	14.2	390	347	72.5	208.9
1977	1 033	1 083	18	16.2	325	247	53.5	216.6
1978	1 255	994	16	16.2	257	371	69.2	186.5
1979	1 181	907	15	16.8	275	318	69.3	217.9
1980	1 385	1 059	20	19.0	312	315	88.8	281.9
1981	1 321	908	21	23.6	231	216	64.1	296.8
1982	1 149	879	22	25.4	221	199	50.9	255.8
1983	893	817	23	28.2	163	218	54.0	247.7
1984	1 493	1 173	34	28.9	170	192	58.0	302.1
1985	1 419	1 152	40	34.5	212	212	83.5	393.9
1986	1 238	1 034	49	46.9	216	230	116.4	506.1
1987	1 349	1 046	61	58.3	249	257	149.9	583.7
1988	1 610	1 046	68	65.3	231	238	137.5	576.9
1989	1 690	1 001	73	72.5	243	252	165.0	655.0
1990	1 616	1 041	83	79.5	244	186	143.9	775.3
1991	1 466	977	82	84.0	192	175	124.1	708.8
1992	1 787	945	77	81.1	183	196	111.6	568.5
1993	1 795	962	79	82.6	187	182	98.9	543.3
1994	1 777	1 084	90	82.8	233	209	113.4	541.3
1995	1 980	1 075	98	91.1	204	221	132.1	598.0
1996	2 030	1 062	103	97.4	192	169	128.5	761.3
1997	2 233	1 350	137	101.6	245	208	150.3	724.1
1998	2 413	1 286	141	110.0	233	218	176.1	807.9
1999	1 976	1 051	135	128.4	182	157 s	117.7 s	747.2 s
2000	2 146	1 148	160	139.2	207	189 s	146.4 s	776.4 s
2001	2 019	915	144	157.6	207	188 s	165.8 s	880.2 s
2002	1 954	969	139	143.1	219	204 s	171.7 s	840.4 s
2003	2 006	868	105	120.4	173	164 s	112.2 s	685.9 s
2004	1 934	756	77	101.4	163	147 s	98.2 s	666.4 s

a Ex mine. **b** Despatches. **s** ABARE estimate.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

340 Australian exports of ilmenite, by destination

	Japan	Spain	United	United	Other	Total	
			Kingdom	States		Volume	Value
	kt	kt	kt	kt	kt	kt	\$m
1960	23	na	32	18	na	77	0.6
1961	29	na	70	32	na	146	1.3
1962	28	na	77	53	na	158	1.4
1963	23	na	73	37	na	155	1.5
1964	51	na	124	16	na	250	2.3
1965	46	na	205	66	na	367	3.5
1966	45	na	197	49	na	362	3.7
1967	63	na	169	49	na	391	3.9
1968	68	na	157	30	na	402	4.1
1969	121	na	235	37	na	576	6.0
1970	227	na	208	83	na	648	6.6
1971	180	9	294	44	130	657	6.7
1972	68	na	193	2	na	410	4.4
1973	112	na	239	45	na	650	7.2
1974	134	na	199	94	na	739	8.8
1975	110	na	134	62	na	534	6.8
1976	178	24	214	226	309	951	13.5
1977	131	68	232	329	323	1 083	17.5
1978	74	56	227	260	377	994	16.1
1979	51	94	196	150	416	907	15.2
1980	56	35	184	340	444	1 059	20.1
1981	36	88	176	250	358	908	21.4
1982	61	80	162	329	247	879	22.3
1983	65	89	93	284	286	817	23.0
1984	214	106	145	425	283	1 173	33.9
1985	240	96	128	489	199	1 152	39.7
1986	152	79	165	453	185	1 034	48.5
1987	162	105	198	384	197	1 046	61.0
1988	100	105	203	455	183	1 046	68.3
1989	95	97	143	431	236	1 001	72.6
1990	152	50	238	384	217	1 041	82.8
1991	164	75	178	293	266	977	82.0
1992 a	36	27	26	23	832	945	76.6
1993 a	na	na	na	na	na	962	79.4
1994 a	na	na	na	na	na	1 084	89.7
1995 a	na	na	na	na	na	1 075	98.0
1996 a	na	na	na	na	na	1 062	103.4
1997 a	na	na	na	na	na	1 350	137.2
1998 a	na	na	na	na	na	1 286	141.4
1999 a	na	na	na	na	na	1 051	135.0
2000 a	na	na	na	na	na	1 148	159.8
2001 a	na	na	na	na	na	915	144.2
2002 a	na	na	na	na	na	969	138.6
2003 a	na	na	na	na	na	868	104.6
2004 a	na	na	na	na	na	756	76.6

a Confidentiality provisions prevent full reporting after 1991. na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

341 Australian exports of rutile, by destination

	Japan kt	Netherlands kt	United Kingdom kt	United States kt	Other kt	Total	
						Quantity kt	Value \$m
1960	8	10	13	27	37	95	8.1
1961	12	12	15	24	38	101	6.4
1962	8	16	17	32	46	119	7.3
1963	11	10	15	80	41	157	10.6
1964	16	14	16	98	53	197	14.1
1965	21	11	17	138	56	243	17.1
1966	22	9	16	124	64	235	17.8
1967	30	19	16	132	66	263	19.7
1968	31	17	17	149	76	290	21.9
1969	29	22	32	153	68	304	25.5
1970	34	37	38	196	69	374	34.8
1971	30	31	22	184	58	325	35.8
1972	31	30	48	168	77	354	41.1
1973	33	27	65	132	79	336	40.5
1974	24	29	57	157	78	345	48.2
1975	20	19	45	167	68	319	60.0
1976	17	30	60	155	85	347	72.5
1977	17	29	40	101	60	247	53.5
1978	26	28	48	195	74	371	69.2
1979	27	22	81	121	67	318	69.3
1980	35	35	55	130	60	315	88.8
1981	31	13	41	83	48	216	64.1
1982	29	8	59	71	32	199	50.9
1983	27	12	56	85	38	218	54.0
1984	19	27	38	83	25	192	58.0
1985	34	14	48	88	28	212	83.5
1986	26	25	69	79	31	230	116.4
1987	14	46	67	86	44	257	149.9
1988	21	25	45	104	43	238	137.5
1989	28	29	51	111	33	252	165.0
1990	29	20	20	89	28	186	143.9
1991	26	26	26	71	25	175	124.1
1992 a	na	na	na	na	na	196	111.6
1993 a	na	na	na	na	na	182	98.9
1994 a	na	na	na	na	na	209	113.4
1995 a	na	na	na	na	na	221	132.1
1996 a	na	na	na	na	na	169	128.5
1997 a	na	na	na	na	na	208	150.3
1998 a	na	na	na	na	na	218	176.1
1999 a	na	na	na	na	na	157 s	117.7 s
2000 a	na	na	na	na	na	189 s	146.4 s
2001 a	na	na	na	na	na	188 s	165.8 s
2002 a	na	na	na	na	na	204 s	171.7 s
2003 a	na	na	na	na	na	164 s	112.2 s
2004 a	na	na	na	na	na	147 s	98.2 s

a Confidentiality provisions prevent full reporting after 1991. s ABARE estimate. na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

342 World ilmenite production, by country

	Australia a kt	India kt	Malaysia kt	Norway kt	Ukraine s kt	United States kt	Other s kt	Total s kt
1960	108	250	120 b	246	127	714	1 015	2 580
1961	169	174	109 b	311	135	710	1 217	2 825
1962	182	138	103 b	245 c	144	727	923	2 470
1963	205	26	149 b	242	153	806	1 079	2 660
1964	309	11	131 b	272	163	908	1 516	3 310
1965	448	30	124 b	284	174	879	1 591	3 530
1966	522	34	118 b	370	185	876	1 635	3 740
1967	554	42	91 b	427	197	874	1 565	3 750
1968	562	59	126 b	402	210	888	1 723	3 970
1969	721	48	133 b	491	224	845	1 728	4 190
1970	886	79	223 b	579	238	787	2 537	5 340
1971	814	140 c	156 b	595	254	618	2 559	5 150
1972	707	165 c	153 b	610	270	659	2 195	4 770
1973	720	185 c	154 b	750	288	735	2 247	5 090
1974	817	132 c	154 b	844	307	685 c	2 246	5 200
1975	991	140 c	112 b	516 c	327	632	1 990	4 725
1976	959	150 c	180 b	759	381	590	2 249	5 280
1977	1 033	185 c	185 b	823	399	576	1 988	5 200
1978	1 255	185 c	187 b	763	408	535	2 141	5 490
1979	1 181	160	187 b	820	408	580	2 162	5 520
1980	1 385	160	189 b	828	417	498	2 439	5 940
1981	1 321	189	173 b	656	426	462	2 954	6 200
1982	1 149	190	77 b	552	431	239	2 642	5 300
1983	893	180	223 b	544	435	235	1 777	4 300
1984	1 493	150	177 b	661	440	240	2 906	6 100
1985	1 419	143	247 b	736	445	240	3 756	7 000
1986	1 238	140	415	804	450	240	3 599	6 900
1987	1 349	140	509	852	454	240	4 496	8 200
1988	1 610	140 d	506 d	898 d	460	240 d	4 164	8 030
1989	1 690	160 d	520 d	930 d	460	240 d	5 116	9 140
1990	1 616	305 d	250 d	814 d	350	255 d	4 109	7 699
1991	1 466	270 d	200 d	625 d	350	220 d	3 641	5 306
1992	1 787	215 d	338 d	708 d	200	240 d	4 296	7 784
1993	1 795	260	279	713	180	240	4 030	7 497
1994	1 777	290	155	826	150	315	4 139	7 652
1995	1 980	290	179	833	180	330	4 201	7 993
1996	2 030	330	101	747	270	300	4 653	8 431
1997	2 233	305	167	558	162	270	4 815	8 510
1998	2 413	368	67	590	192	360	5 247	9 237
1999	1 976	395	100	590	230	389	5 091	8 759
2000	2 146	416	110	750	260	418	5 488	9 588
2001	2 019	457	170	750	319	437	5 908	10 060
2002	1 954	522	185	790	356	410	5 883	10 238
2003	2 006	632	175	850	365	474	5 622	10 179
2004	1 934	698	175	870	365	526	5 761	10 417

a Includes leucoxene. b Exports to 1985. c Bureau of Mineral Resources estimate. d DEMA Pty Ltd estimates. s ABARE estimate.

Sources: British Geological Survey, *World Mineral Statistics*, Keyworth, Nottingham, United Kingdom; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; Metal Bulletin, *Prices and Data*, Surrey, England; Mining Journal, *Mining Annual Review*, London; TZ Minerals International, *Mineral Sands Annual Review*, Surrey, England; TZ Minerals International, *Mineral Sands Report*, Surrey, England; US Department of the Interior, Bureau of Mines, *Mineral Commodity Summaries*, Washington DC; ABARE.

343 World rutile concentrate and titaniferous slag production, by country

	Rutile concentrate					Titaniferous slag		
	Australia	Sierra Leone	South Africa	United States	Other s	Total s	Canada	South Africa
	kt	kt	kt	kt	kt	kt	kt	kt
1960	90	0	0	8	26	124	312	0
1961	103	0	0	8	25	136	374	0
1962	121	0	0	9	26	156	273	0
1963	185	0	0	11	24	220	344	0
1964	185	0	0	7	22	214	494	0
1965	221	0	0	5	22	248	495	0
1966	251	0	0	5	22	278	476	0
1967	270	24 a	0	5	23	322	547	0
1968	293	14 a	0	2	24	333	610	0
1969	326	28 a	0	0	26	380	680	0
1970	371	44 a	0	0	25	440	766	0
1971	375	12	0	0	25	412	774	0
1972	313	0	0	0	28	341	835	0
1973	335	0	0	8 a	27	370	855	0
1974	319	0	0	6 a	26	351	845	0
1975	348	0	0	10 a	28	386	748	0
1976	390	0	0	8 a	26	424	812	0
1977	325	0	0	7	30	362	691	0
1978	257	0	20	4	35	316	848	100
1979	275	7	42	0	40	364	476	316
1980	312	47	48	10	38	456	875	379
1981	231	51	50	15	40	387	762	408
1982	221	48	47	15	33	364	653	420
1983	163	72	56	18	34	343	612	420
1984	170	91	56	20	33	371	726	417
1985	212	81	55	30 a	35	413	844	435
1986	216	97	60	30 a	37	440	850	435
1987	249	113	56	30 a	35	480	915	632
1988	231	126	55	25 s	38	475	1 025	700
1989	243	128	61	25 s	42	499	1 035	692
1990	244	144	60	29 s	39	516	1 046	672
1991	192	155	90	27 s	79	543	701	808
1992	183	149	95	29 s	65	521	753	884
1993	187	150	100	21	64	522	653	892
1994	233	144	90	24	56	547	765	772
1995	204	0	92	19	50	365	816	988
1996	192	0	108	32	55	387	954	1 065
1997	245	0	108	35	32	420	914	1 075
1998	233	0	108	35	45	421	1 033	1 083
1999	182	0	118	37	46	383	928	1 100
2000	207	0	123	38	78	447	893	1 090
2001	207	0	122	30	83	442	990	1 030
2002	219	0	134	22	82	458	864	975
2003	173	0	108	26	82	389	842	928
2004	163	0	110	23	82	378	829	1 018

a Bureau of Mineral Resources estimate. s ABARE estimate.

Sources: British Geological Survey, *World Mineral Statistics*, Keyworth, Nottingham, United Kingdom; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; TZ Minerals International, *Mineral Sands Annual Review*, Surrey, England; TZ Minerals International, *Mineral Sands Report*, Surrey, England; US Department of the Interior, Bureau of Mines, *Mineral Commodity Summaries*, Washington DC.

344 Summary of Australian statistics for uranium

	Production a	Exports		
		Volume b	Value	Unit value
	t	t	\$m	\$/kg U ₃ O ₈
1960-61	1 557	na	na	na
1961-62	1 362	na	na	na
1962-63	1 193	na	na	na
1963-64	367	na	na	na
1964-65	na	na	na	na
1965-66	na	na	na	na
1966-67	na	na	na	na
1967-68	na	na	na	na
1968-69	na	na	na	na
1969-70	na	na	na	na
1970-71	na	na	na	na
1971-72	na	na	na	na
1972-73	na	na	na	na
1973-74	na	na	na	na
1974-75	na	na	na	na
1975-76	484	na	na	na
1976-77	480	750	26.9	35.87
1977-78	696	1 452	87.0	59.92
1978-79	951	1 317	102.3	77.68
1979-80	1 837	1 210	98.4	81.32
1980-81	3 944	1 625	120.0	73.85
1981-82	5 968	5 460	415.0	76.01
1982-83	4 334	3 233	296.0	91.56
1983-84	5 836	3 259	312.1	95.77
1984-85	4 327	3 441	317.0	92.12
1985-86	4 450	3 210	296.0	92.21
1986-87	4 505	4 364	389.0	89.14
1987-88	4 193	4 552	411.0	90.29
1988-89	4 507	5 061	402.6	79.54
1989-90	4 089	4 812	314.8	65.42
1990-91	4 367	6 129	331.7	54.12
1991-92	4 329	4 729	244.8	51.76
1992-93	2 686	2 289	122.6	53.55
1993-94	2 733	3 992	193.3	48.42
1994-95	2 622	4 069	187.9	46.18
1995-96	5 088	5 286	241.8	45.75
1996-97	5 975	5 701	245.2	43.01
1997-98	5 788	6 415	288.2	44.93
1998-99	6 387	5 989	287.8	48.05
1999-00	8 217	8 025	366.6	45.68
2000-01	9 549	9 722	497.3	51.15
2001-02	7 823	7 367	360.7	48.96
2002-03	9 172	9 593	427.0	44.52
2003-04	9 569	9 099	364.5	40.05
2004-05	10 964	11 249	475.1	42.24

a Tonnes of uranium oxide (U₃O₈). **b** Before 1983-84, exports are tonnes of concentrate; from 1983-84, exports are tonnes of U₃O₈. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra.

345 World uranium production, by country ^a

	Australia kt	Canada kt	Gabon kt	Namibia kt	Niger kt	South Africa kt	United States kt	Total ^b kt
1970	0.25	3.52	0.40	0.00	0.00	3.17	9.90	18.90
1971	0.00	3.83	0.54	0.00	0.43	3.22	9.40	19.10
1972	0.00	4.00	0.21	0.00	0.87	3.20	9.90	20.11
1973	0.00	3.71	0.40	0.00	0.95	2.74	10.20	20.00
1974	0.00	3.42	0.44	0.00	1.12	2.71	8.90	18.70
1975	0.00	3.56	0.80	0.00	1.31	2.49	8.90	19.35
1976	0.36	4.85	0.85	0.65	1.46	2.76	9.80	23.17
1977	0.36	5.79	0.91	2.34	1.61	3.36	11.50	28.58
1978	0.52	6.80	1.02	2.70	2.06	3.96	14.20	34.12
1979	0.71	6.82	1.10	3.84	3.62	4.80	14.40	38.34
1980	1.56	7.15	1.03	4.04	4.13	6.15	16.80	44.24
1981	2.92	7.72	1.02	3.97	4.36	6.13	14.80	44.20
1982	4.42	8.08	0.97	3.78	4.26	5.82	10.30	41.46
1983	3.21	7.14	1.01	3.72	3.43	6.06	8.20	36.99
1984	4.32	11.17	0.92	3.70	3.28	5.73	5.70	38.85
1985	3.21	10.88	0.94	3.40	3.18	4.88	4.30	34.87
1986	4.15	11.72	0.90	3.30	3.11	4.60	5.20	37.21
1987	3.78	12.44	0.80	3.50	2.97	3.96	5.00	36.96
1988	3.53	12.29	0.93	3.51	2.97	3.80	5.04	36.43
1989	3.66	11.32	0.87	3.08	2.96	2.94	5.32	34.09
1990	3.53	8.73	0.70	3.21	2.83	2.49	3.42	28.36
1991	3.78	8.16	0.54	2.45	2.96	1.71	3.06	26.99
1992	2.33	9.30	0.54	1.68	2.96	1.67	2.20	23.88
1993	2.24	9.12	0.68	1.65	2.92	1.69	1.23	23.48
1994	2.20	9.69	0.65	1.90	2.98	1.69	1.40	23.64
1995	3.70	10.52	0.63	2.01	2.97	1.42	1.36	26.22
1996	4.96	11.40	0.56	2.45	3.16	1.44	1.81	29.32
1997	5.48	11.17	0.47	2.91	3.50	1.10	1.81	29.72
1998	4.89	10.92	0.73	2.78	3.71	0.97	1.81	27.57
1999	5.98	8.21	0.29	2.69	2.91	0.93	1.77	24.15
2000	7.58	10.68	0.00	2.72	2.91	0.80	1.52	27.65
2001	7.72	12.52	0.00	2.24	2.92	0.87	1.01	28.42
2002	6.85	11.60	0.00	2.33	3.08	0.82	0.92	26.98
2003	7.60	10.46	0.00	2.04	3.14	0.76	0.78	26.02
2004	8.98	11.60	0.00	3.04	3.28	0.76	0.85	29.73

^a Uranium (U); excludes current and former centrally planned economies. ^b Includes other Western producers not listed.

Sources: International Atomic Energy Agency, *Uranium: Resources, Production and Demand*, Vienna; Nuexco, *Annual Review*, Denver, Colorado; World Nuclear Association.

346 World uranium consumption, by country ^a

	Canada kt	France kt	Germany ^b kt	Japan kt	United Kingdom kt	United States kt	Other kt	Total kt
1980	1.00	3.70	2.76	4.00	1.90	7.40	3.59	24.35
1981	1.10	4.40	1.95	4.70	1.30	8.30	4.84	26.59
1982	1.30	6.00	3.20	4.70	2.20	11.80	6.90	36.10
1983	1.40	6.50	2.70	3.50	1.50	8.90	5.85	30.35
1984	1.30	6.00	3.40	5.00	1.50	10.50	6.50	34.20
1985	1.30	6.00	3.20	4.70	2.20	11.80	6.90	36.10
1986	1.40	6.20	3.30	4.80	1.50	11.85	7.22	36.27
1987	1.60	6.20	3.30	6.00	1.55	11.15	7.70	37.50
1988	1.70	6.50	3.30	6.40	1.70	14.19	6.77	40.56
1989	1.80	7.20	3.30	6.60	1.90	14.50	7.39	42.69
1990	1.90	7.20	3.30	6.90	2.00	11.40	7.64	40.34
1991	1.90	7.30	3.30	7.10	2.00	16.00	8.30	45.90
1992	1.90	7.80	3.20	7.60	2.33	17.30	7.31	47.44
1993	1.90	7.90	3.20	8.10	2.04	17.30	9.34	49.77
1994	1.90	8.90	3.00	7.70	2.43	15.60	9.90	49.43
1995	1.90	8.90	3.30	7.70	2.51	18.40	9.74	52.45
1996	1.80	8.90	3.20	8.70	2.62	17.40	9.81	52.43
1997	1.80	8.60	2.90	7.50	2.62	21.30	8.41	53.13
1998	1.20	8.20	3.10	7.81	2.36	17.70	12.33	52.69
1999	1.30	8.20	3.10	9.29	2.36	18.10	12.19	54.54
2000	1.80	8.88	3.35	7.50	2.25	20.57	12.84	57.19
2001	1.80	8.57	3.20	11.10	2.25	18.42	12.32	57.66
2002	1.40	8.57	3.20	7.84	1.93	22.70	13.23	58.87
2003	1.70	8.57	3.20	8.38	1.76	22.80	13.32	59.73
2004	na	na	na	na	na	na	na	na

^a Annual reactor related requirements; excludes current and former centrally planned economies. ^b West Germany until 1991; unified Germany from 1992. **na** Not available.

Note: Uranium: Resources, production and Demand publication is only released every two years.

Source: International Atomic Energy Agency, *Uranium: Resources, Production and Demand*, Vienna.

347 Uranium prices ^a

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av.
1971	6.20	6.20	6.20	6.20	6.15	6.05	6.00	5.95	5.95	5.95	5.95	5.95	6.06
1972	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95
1973	5.95	6.00	6.10	6.20	6.45	6.50	6.50	6.50	6.50	6.50	6.75	7.00	6.41
1974	7.70	7.90	8.00	9.00	9.50	10.50	11.50	12.00	12.50	14.00	14.75	15.00	11.03
1975	16.00	16.00	18.00	20.00	21.00	23.00	24.70	26.00	26.00	28.50	30.00	35.00	23.68
1976	35.20	37.00	39.25	40.00	40.00	40.00	40.00	40.40	41.00	41.00	41.50	41.00	39.70
1977	41.35	41.50	41.60	41.60	42.00	42.25	42.25	42.25	42.40	42.75	43.20	43.20	42.20
1978	42.90	43.25	43.25	43.25	43.40	43.40	43.40	43.10	43.25	43.00	43.25	43.25	43.23
1979	43.25	43.25	43.25	43.25	43.25	43.00	42.70	42.70	42.20	42.20	41.00	40.75	42.57
1980	40.00	38.00	35.00	32.00	32.00	31.50	31.50	30.00	28.50	28.00	28.00	27.00	31.79
1981	25.00	25.00	25.00	25.00	25.00	24.25	23.50	23.50	23.50	23.50	23.50	23.50	24.19
1982	23.00	23.00	22.50	20.75	20.50	19.25	18.25	17.00	17.00	17.50	19.75	20.25	19.90
1983	21.50	21.75	22.25	23.25	23.50	23.50	24.00	24.00	24.00	23.50	22.50	22.00	22.98
1984	20.50	17.50	17.00	17.75	17.75	17.50	17.50	17.50	17.50	16.00	15.50	15.25	17.27
1985	15.00	15.00	15.00	14.25	15.00	15.00	15.75	16.00	16.00	16.50	16.75	17.00	15.60
1986	17.00	17.00	17.25	17.25	17.00	17.00	17.00	17.00	17.00	17.00	16.75	16.75	17.00
1987	16.65	16.75	17.00	17.00	17.00	17.20	17.20	17.00	16.75	16.75	16.75	16.50	16.88
1988	16.50	16.25	16.00	16.00	15.50	15.25	14.55	14.10	13.85	13.20	12.30	12.00	14.63
1989	11.50	11.25	10.75	10.20	9.75	9.65	9.65	9.60	9.60	9.40	9.30	9.00	9.97
1990	8.90	8.80	8.80	8.90	9.35	11.00	11.75	11.50	10.50	8.50	9.50	9.65	9.76
1991	9.20	9.40	9.40	9.00	9.25	9.10	8.75	9.00	8.25	7.50	7.40	8.75	8.75
1992	7.90	8.00	7.90	7.90	7.70	7.90	7.90	8.10	8.60	10.25	10.50	10.00	8.55
1993	9.80	10.10	10.20	10.35	10.10	10.30	9.90	10.10	10.30	10.30	10.00	9.90	10.11
1994	9.50	9.50	9.50	9.40	9.25	9.25	9.40	9.20	9.10	9.20	9.50	9.60	9.37
1995	9.70	10.35	11.00	11.50	11.75	11.75	11.90	11.90	11.80	11.80	11.80	12.25	11.46
1996	12.90	15.25	15.90	16.15	16.50	16.60	16.50	16.40	15.90	15.50	15.00	14.70	15.61
1997	14.25	13.75	13.00	12.25	11.50	10.70	10.60	10.30	10.85	12.50	12.75	12.15	12.05
1998	12.00	11.00	10.70	10.80	10.90	10.90	10.50	10.25	9.90	9.25	8.75	8.75	10.31
1999	10.50	10.50	10.85	10.85	10.65	10.40	10.30	10.10	9.90	9.70	9.70	9.60	10.25
2000	9.50	9.40	9.20	9.00	8.45	8.15	8.05	7.80	7.45	7.25	7.10	7.10	8.20
2001	7.25	7.90	8.20	8.60	8.90	8.90	8.90	9.10	9.30	9.45	9.50	9.60	8.80
2002	9.70	9.90	9.90	9.90	9.90	9.90	9.85	9.85	9.75	9.90	9.90	10.20	9.89
2003	10.20	10.20	10.10	10.75	11.00	10.90	10.90	11.30	12.20	12.75	13.75	14.50	11.55
2004	15.50	16.50	17.50	17.60	17.85	18.50	18.50	19.25	20.00	20.25	20.50	20.70	18.55
2005	21.00	21.75	22.50	24.00	29.00	29.00	29.50	30.20	31.25	33.25	na	na	na

^a Restricted exchange value after 1993, using Nuexco's exchange value up to 1996 and an average of four prices after 1996, US\$/lb U₃O₈. **na** Not available.

Sources: TradeTech, *The Nuclear Review*, Denver, Colorado (previously Nuexco, *Monthly Report*); Ux Consulting.

348 Nuclear power reactors in operation

	2000 Reactors in operation a		2001 Reactors in operation a		2002 Reactors in operation a		2003 Reactors in operation a	
	No. of Units	Capacity MW(e) b	No. of Units	Capacity MW(e) b	No. of Units	Capacity MW(e) b	No. of Units	Capacity MW(e) b
Argentina	2	935	2	935	2	935	2	935
Armenia	1	376	1	376	1	376	1	376
Belgium	7	5 712	7	5 760	7	5 760	7	5 760
Brazil	2	1 901	2	1 901	2	1 901	2	1 901
Bulgaria	6	3 538	4	2 722	4	2 722	4	2 722
Canada	14	10 018	14	10 018	17	12 113	17	12 113
China	3	2 167	7	5 318	9	6 587	9	6 587
Czech Republic	5	2 560	6	3 468	6	3 548	6	3 548
Finland	4	2 656	4	2 656	4	2 656	4	2 656
France	59	63 073	59	63 073	59	63 363	59	63 363
Germany	19	21 283	19	21 283	18	20 643	18	20 643
Hungary	4	1 755	4	1 755	4	1 755	4	1 755
India	14	2 503	14	2 503	14	2 550	14	2 550
Japan	54	44 289	54	44 287	54	45 464	54	45 464
Korea, Rep. of	16	12 990	18	14 890	19	15 850	19	15 850
Lithuania	2	2 370	2	2 370	2	2 370	2	2 370
Mexico	2	1 360	2	1 360	2	1 310	2	1 310
Netherlands	1	450	1	450	1	449	1	449
Pakistan	2	425	2	425	2	425	2	425
Romania	1	655	1	655	1	655	1	655
Russia	30	20 793	30	20 793	30	20 793	30	20 793
South Africa	2	1 800	2	1 800	2	1 800	2	1 800
Slovakia	6	2 408	6	2 408	6	2 442	6	2 442
Slovenia	1	676	1	676	1	656	1	656
Spain	9	7 524	9	7 574	9	7 584	9	7 584
Sweden	11	9 432	11	9 432	11	9 451	11	9 451
Switzerland	5	3 200	5	3 200	5	3 220	5	3 200
United Kingdom	33	12 498	31	12 252	23	11 852	27	12 052
Ukraine	13	11 207	13	11 207	14	12 157	13	11 207
United States	104	97 860	104	98 230	104	98 298	104	98 298
Total	438	353 298	441	358 661	439	364 569	442	363 819

a At end of year. b Annual electricity generating capacity in megawatts.

Source: International Atomic Energy Agency, annual press release: IAEA releases nuclear power statistics, Vienna.

349 Summary of Australian statistics for zinc

	Production		Consumption c	Exports d		Price e
	Mine a	Refined b		Volume	Value	
	kt	kt	kt	kt	\$m	\$/t
1960	323	122	92	175	17	222.8
1961	316	141	79	169	19	202.5
1962	343	171	86	210	23	196.8
1963	357	183	94	216	26	200.8
1964	350	189	110	184	37	284.2
1965	355	202	98	194	39	286.0
1966	375	198	90	241	47	270.5
1967	407	198	104	254	43	260.7
1968	416	198	102	267	44	262.0
1969	510	253	117	331	59	277.8
1970	487	268	115	390	71	295.0
1971	453	266	109	359	68	314.8
1972	507	304	114	346	80	339.8
1973	480	306	121	418	102	385.9
1974	464	284	120	374	139	543.2
1975	510	200	82	295	117	627.0
1976	462	249	86	388	159	655.7
1977	492	256	81	327	148	657.7
1978	473	295	92	465	157	533.6
1979	529	310	102	382	165	712.5
1980	495	306	100	481 f	251 f	713.1
1981	518	300	97	406	235	798.5
1982	665	296	81	521	323	849.0
1983	699	298	83	645	392	952.3
1984	677	302	77	661	469	1 187.7
1985	759	289	87	633	515	1 255.2
1986	712	303	81	662	489	1 242.2
1987	778	310	82	663	526	1 249.3
1988	760	302	90	674	631	1 560.7
1989	803	294	88	670	962	2 298.9
1990	933	303	82	825	1 159	2 094.7
1991	1 023	324	71	915	900	1 569.8
1992	1 019	332	71	995	1 135	1 816.9
1993	990	316	75	987	851	1 568.2
1994	955	323	79	978	785	1 499.9
1995	937	320	77	907	797	1 559.7
1996	1 070	326	73	983	808	1 478.4
1997	1 011	307	81	965	953	1 889.8
1998	1 063	311	93	1 002	1 025	1 806.6
1999	1 162	344	96	1 109	1 105	1 752.6
2000	1 419	493	85	1 333	1 718	2 046.7
2001	1 517	556	83	1 484	1 669	1 921.2
2002	1 469	566	87	1 544	1 485	1 614.4
2003	1 479	553	85	1 466	1 316	1 431.5
2004	1 335	470	82	1 324	1 232	1 609.3

a Metal content. b Excludes secondary (scrap) and zinc dust production. c Refined metal only. d Quantities refer to the total metallic content of all ores and concentrates, intermediate products and refined metal. The value of zinc contained in other mine and smelter products (for example, zinc in lead concentrates) is included in the value of the product in which it is exported. e EZ Industries, Prime Western, 98.5 per cent purity. Before 1968, Prime Western grade zinc at Cockle Creek. f Zinc export code classifications changed substantially between 1979 and 1980, creating a break in the continuity of the series.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

350 Australian supply and disposal of zinc

	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Production									
Mine a	kt	1 038	1 142	1 265	1 483	1 490	1 529	1 355	1 352
Refined									
Primary	kt	304	323	405	534	572	570	502	464
Secondary b	kt	10	7	5	5	6	6	6	6
Exports									
Ores and concentrates	kt	1 450	1 729	1 496	1 903	1 849	1 913	1 844	1 965
	\$m	581	690	682	977	735	670	677	851
Refined metal	kt	198	274	317	452	496	486	396	397
	\$m	407	444	550	905	794	757	557	614
Consumption c									
	kt	90	90	89	81	88	86	84	79
Export unit value									
Ores and concentrates	A\$/t	400.9	399.0	456.2	513.5	397.5	350.3	366.9	432.8
Refined metal	A\$/t	2 048.7	1 617.8	1 734.0	2 000.5	1 600.8	1 558.2	1 408.6	1 549.1

a Metal content. **b** Includes remelted zinc and direct use of secondary materials. **c** Refined metal only.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra.

351 Volume of Australian exports of zinc, by destination ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Ores and concentrates b								
Belgium	102	103	100	40	27	89	64	45
China	57	16	0	5	94	63	116	131
Germany	29	17	6	22	33	28	27	32
India	30	36	27	14	0	18	19	34
Italy	20	22	34	33	21	67	21	5
Japan	231	239	226	217	216	185	202	181
Korea, Rep. of	170	239	257	173	252	173	186	234
Netherlands	5	10	23	238	188	219	225	230
Thailand	25	27	43	52	32	25	24	na
United Kingdom	28	46	43	31	42	65	5	na
Other	43	21	57	65	119	84	118	na
Total	740	776	816	890	1 024	1 016	1 007	995
Metal								
Bangladesh	19	10	3	12	18	22	16	2
Chinese Taipei	36	49	67	72	63	61	42	39
Hong Kong, China	45	50	66	74	87	92	105	119
India	12	5	4	9	13	12	14	5
Indonesia	46	34	37	39	32	33	31	18
Malaysia	24	35	55	33	33	30	19	36
Netherlands	na	na	13	3	18	21	33	na
Saudi Arabia	1	1	6	11	15	21	24	17
Thailand	9	4	3	4	9	15	7	6
United States	7	6	5	124	89	58	8	8
Other	40	34	21	46	80	118	162	75
Total	239	228	280	427	457	483	461	325

a Excluding slags, residues and scrap. **b** Metal content. **na** Not available.

Source: ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

352 World production, consumption, stocks and prices of zinc

	Production				Consumption c	Stocks b	Price d
	Mine a	Refined metal		Total			
		Primary	Secondary b				
kt	kt	kt	kt	kt	kt	US\$/t	
1960	3 384	2 993	163	3 156	3 114	448	246.9
1961	3 476	3 199	149	3 348	3 282	478	214.3
1962	3 600	3 322	155	3 477	3 438	477	186.5
1963	3 660	3 426	167	3 593	3 644	392	211.8
1964	4 083	3 683	177	3 860	3 986	390	324.0
1965	4 352	3 848	215	4 063	4 099	433	310.6
1966	4 550	4 045	242	4 287	4 292	461	280.4
1967	4 958	4 142	222	4 364	4 323	479	271.9
1968	5 113	4 613	224	4 837	4 701	452	261.7
1969	5 472	5 073	205	5 278	5 092	519	285.2
1970	5 590	4 975	259	5 234	5 013	682	294.5
1971	5 675	4 862	248	5 110	5 164	614	310.0
1972	5 866	5 247	269	5 516	5 679	586	378.4
1973	6 070	5 543	283	5 826	6 195	457	846.8
1974	6 129	5 720	274	5 994	6 000	759	1 237.5
1975	6 176	5 219	264	5 483	5 062	1 185	746.0
1976	6 249	5 545	266	5 811	5 779	1 140	711.7
1977	6 567	5 710	279	5 989	5 857	1 194	590.0
1978	6 401	5 801	237	6 038	6 329	833	593.3
1979	6 299	6 169	287	6 456	6 444	868	741.2
1980	6 108	5 958	285	6 243	6 289	787	761.3
1981	6 004	5 969	318	6 287	6 199	875	859.6
1982	6 275	5 701	355	6 056	6 043	800	745.7
1983	6 289	6 016	368	6 384	6 370	668	765.5
1984	6 523	6 327	351	6 678	6 539	626	891.0
1985	6 651	6 545	325	6 870	6 532	606	763.9
1986	6 534	6 085	295	6 380	6 747	615	753.1
1987	6 885	6 330	293	6 623	6 959	568	816.2
1988	6 714	6 579	299	6 878	6 848	496	1 240.5
1989	6 785	6 426	368	6 794	6 726	572	1 719.6
1990	5 166	6 296	395	6 724	6 663	534	1 520.0
1991	7 214	6 427	428	6 868	6 622	650	1 116.0
1992	7 208	6 605	425	6 957	6 555	989	1 240.0
1993	6 758	6 755	455	7 169	6 588	1 474	961.0
1994	6 812	6 700	467	7 131	6 987	1 669	998.0
1995	6 982	6 850	497	7 359	7 545	1 170	1 031.0
1996	7 296	6 919	524	7 443	7 549	913	1 025.0
1997	7 337	7 283	500	7 783	7 782	901	1 313.0
1998	7 569	7 503	518	8 021	7 912	762	1 023.0
1999	8 065	7 816	552	8 368	8 496	734	1 076.3
2000	8 839	8 382	599	8 981	8 997	662	1 128.4
2001	8 933	8 599	622	9 221	8 920	946	885.5
2002	8 904	9 093	628	9 721	9 391	1 095	778.9
2003	9 579	9 277	593	9 870	9 828	1 181	828.0
2004	9 635	9 587	580	10 167	10 465	1 020	1 047.4

a Metal content. b Excludes former Soviet Union, eastern Europe and China. c Refined primary metal only. d Average London Metal Exchange cash settlement price, registered brands, minimum 98 per cent purity.

Sources: BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London; Metallgesellschaft AG, *Metallstatistik*, Frankfurt.

353 World zinc mine production, by region and country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Africa								
Algeria	4	4	5	6	7	10	3	5
Morocco	90	112	112	105	89	91	69	87
Namibia	37	42	35	40	37	41	108	198
South Africa	71	70	70	63	61	64	41	32
Tunisia	3	28	45	41	41	37	38	31
Total	208	257	267	256	236	242	259	353
Americas								
Argentina	33	36	34	35	40	37	30	26
Bolivia	154	151	145	151	145	142	145	146
Brazil	124	88	99	100	111	133	147	165
Canada	1 077	1 062	1 021	1 002	1 065	916	788	791
Chile	34	16	32	31	33	36	33	27
Honduras	40	37	41	43	48	46	44	41
Mexico	379	395	363	393	429	446	472	462
Peru	868	869	900	910	1 056	1 219	1 369	1 209
United States	632	755	852	852	842	784	768	739
Total	3 341	3 408	3 483	3 517	3 769	3 759	3 795	3 606
Asia								
China	1 210	1 273	1 476	1 780	1 572	1 624	2 029	2 264
India	142	195	185	208	222	234	305	341
Iran	77	86	98	102	105	121	111	114
Japan	72	68	64	64	45	43	45	48
Kazakhstan	223	224	283	322	320	376	392	384
Korea, Dem. Rep. of	60	44	37	34	28	32	52	62
Korea, Rep. of	9	11	10	12	5	na	na	na
Thailand	15	25	24	27	24	25	31	40
Turkey	64	58	57	48	36	43	40	39
Viet Nam	16	18	18	22	32	42	45	40
Total	1 890	2 005	2 258	2 623	2 400	2 549	3 058	3 340
Australia								
Australia	972	1 020	1 110	1 379	1 476	1 444	1 447	1 298
Europe								
Bulgaria	21	18	11	10	11	14	12	11
Finland	32	31	20	16	20	35	39	37
Greece	18	20	18	17	32	35	3	na
Ireland	193	180	200	263	298	253	419	438
Macedonia	21	24	21	25	20	10	4	na
Poland	158	158	155	157	153	152	154	148
Romania	29	25	27	27	29	29	26	25
Russian Federation	121	114	161	163	164	162	159	179
Spain	147	128	154	204	161	70	15	na
Sweden	155	161	175	177	159	149	188	199
Total	925	880	947	1 063	1 052	910	1 019	1 037
Total	7 337	7 569	8 065	8 839	8 933	8 904	9 579	9 635

^a Recovered metal zinc content by analysis of zinc ores and concentrates, plus the zinc content of other ores and concentrates known to be intended for zinc recovery. **na** Not available.

Source: International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

354 World zinc metal production, by region and country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Africa								
Algeria	30	27	27	26	26	34	32	30
South Africa	110	107	108	103	109	111	112	105
Total	140	134	135	129	135	147	193	258
Americas								
Argentina	39	39	40	36	40	39	39	34
Brazil	186	177	187	192	193	255	258	266
Canada	704	745	777	780	661	793	761	805
Mexico	230	229	219	235	304	302	319	338
Peru	173	184	191	200	190	170	202	195
United States	366	368	372	371	329	344	353	355
Total	1 698	1 741	1 785	1 814	1 717	1 904	1 932	1 993
Asia								
China	1 434	1 486	1 703	1 957	2 038	2 155	2 319	2 519
India	166	180	189	204	234	248	280	270
Iran	7	19	24	47	65	82	101	96
Japan	603	608	633	654	644	640	651	635
Kazakhstan	185	240	243	262	277	286	279	336
Korea, Dem. Rep. of	55	43	40	37	31	34	55	70
Korea, Rep. of	335	390	430	477	508	608	645	669
Thailand	84	89	95	101	105	105	107	103
Uzbekistan	53	52	27	34	35	30	30	30
Total	2 959	3 143	3 412	3 774	3 936	4 189	4 450	4 729
Australia	307	311	344	494	556	567	553	474
Europe								
Belgium	203	205	232	264	256	239	244	257
Bulgaria	82	86	84	84	88	82	86	98
Finland	176	199	225	223	249	235	266	285
France	317	320	318	318	329	334	253	260
Germany	348	361	361	357	357	378	388	358
Italy	268	232	145	170	179	176	123	118
Macedonia	53	54	49	58	52	56	28	na
Netherlands	203	217	221	217	206	203	223	225
Norway	136	138	144	138	145	145	142	140
Poland	171	175	179	173	175	159	154	154
Romania	30	29	29	52	52	48	48	50
Russian Federation	189	197	232	242	250	257	253	240
Spain	378	385	383	391	437	503	519	525
United Kingdom	93	79	89	76	90	98	14	na
Other	31	14	1	7	12	1	0	5
Total	2 678	2 691	2 692	2 770	2 877	2 914	2 741	2 715
Total	7 783	8 021	8 368	8 981	9 221	9 721	9 870	10 167

^a Total production by smelters and refineries of zinc in marketable form or used directly for alloying, including production on toll in the reporting country, regardless of the type of source material. Remelted zinc and zinc dust are excluded. **na** Not available.

Source: International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

355 Volume of world zinc trade, by country ^a

	1997	1998	1999	2000	2001	2002	2003	2004
	kt	kt	kt	kt	kt	kt	kt	kt
Exports								
Ores and concentrates ^b								
Australia	740	776	816	890	1 024	1 016	1 007	955
Canada	473	391	327	311	428	409	258	228
China	191	95	119	70	7	2	na	na
Ireland	185	169	214	257	305	249	417	445
Mexico	135	155	141	138	117	131	105	62
Peru	618	592	601	620	747	906	900	879
Sweden	158	145	163	169	130	140	150	188
United States	461	552	531	523	698	827	822	746
Metal								
Australia	239	228	280	427	457	483	461	325
Belgium	143	105	86	99	90	107	110	138
Canada	547	577	611	603	495	598	591	614
China	544	354	507	561	544	472	451	224
Finland	129	156	187	168	175	189	212	236
CIS	167	253	255	254	236	226	147	na
France	177	144	128	112	127	143	110	115
Korea, Rep. of	97	159	154	177	209	261	302	320
Mexico	109	125	74	130	151	161	181	189
Netherlands	193	263	245	223	284	197	421	285
Norway	124	117	122	117	113	133	126	127
Peru	109	125	124	125	121	127	137	113
Spain	180	114	136	96	94	79	246	295
Imports								
Ores and concentrates ^b								
Belgium	238	221	505	442	412	409	571	704
Canada	182	210	266	208	140	276	397	267
China	83	26	22	39	384	393	373	306
Finland	146	193	203	216	204	218	218	240
CIS	90	207	130	141	92	70	60	na
France	317	282	301	318	287	279	241	229
Germany	166	208	120	156	175	176	186	240
Italy	259	248	126	158	156	141	96	125
Japan	512	486	564	531	575	559	544	563
Korea, Rep. of	330	400	441	480	537	582	616	627
Netherlands	172	209	221	213	152	38	214	204
Spain	258	255	287	283	344	451	537	459
United Kingdom	102	73	114	160	108	115	8	0
Metal								
Belgium	248	232	189	237	233	237	222	269
Chinese Taipei	225	241	273	294	277	304	332	344
France	114	117	129	129	127	98	115	103
Germany	240	265	252	251	260	231	253	249
Italy	97	149	198	213	176	202	226	273
Japan	181	113	57	81	64	17	41	42
Korea, Rep. of	69	72	113	130	97	115	108	72
Netherlands	118	154	125	172	178	138	182	220
Singapore	240	167	131	158	204	142	68	18
United Kingdom	137	161	112	119	111	106	174	142
United States	876	882	1 070	923	827	878	792	868

^a Metal content. ^b Metal content of zinc ores and concentrates only. **na** Not available.
Source: International Lead-Zinc Study Group, *Lead and Zinc Statistics*, London.

356 Summary of Australian statistics for zircon and monazite

	Zircon concentrate				Monazite concentrate			
	Production a	Exports b			Production a	Exports		
	Volume kt	Volume kt	Value \$m	Unit value \$/t	Volume kt	Volume kt	Value \$m	Unit value \$/t
1960	101	103	2.7	26.2	0.4	0.2	0.0	0.0
1961	134	138	3.4	24.6	1.6	1.8	0.1	61.1
1962	132	130	3.3	25.4	0.8	1.5	0.1	80.0
1963	181	177	4.4	24.9	2.1	2.4	0.2	79.2
1964	181	196	5.1	26.0	2.1	2.1	0.2	85.7
1965	223	213	6.8	31.9	2.3	2.3	0.2	95.7
1966	232	207	9.0	43.5	2.0	2.1	0.2	114.3
1967	290	243	10.7	44.0	2.4	1.9	0.2	126.3
1968	292	262	11.0	42.0	2.1	2.6	0.4	134.6
1969	363	306	12.4	40.5	3.9	2.7	0.3	125.9
1970	389	380	13.9	36.6	4.4	4.8	0.6	129.2
1971	406	366	13.3	36.3	4.4	4.6	0.7	145.7
1972	357	386	13.8	35.8	5.1	4.6	0.6	121.7
1973	375	431	15.9	36.9	4.2	5.1	0.7	127.5
1974	368	384	32.2	83.9	3.6	3.8	0.5	142.1
1975	382	299	58.2	194.6	4.5	2.5	0.4	172.0
1976	420	345	54.5	158.0	5.3	3.2	0.5	165.6
1977	398	323	36.2	112.1	9.4	7.5	1.2	161.3
1978	392	390	29.4	75.4	15.0	11.6	2.4	205.2
1979	445	479	33.1	69.1	16.3	13.2	3.1	233.3
1980	492	502	35.1	69.9	14.1	10.3	3.4	329.1
1981	434	444	37.0	83.3	13.3	14.0	5.4	382.1
1982	462	405	43.1	106.4	9.6	15.3	6.1	400.0
1983	382	380	44.7	117.6	15.1	17.7	7.2	406.8
1984	458	438	51.8	118.3	16.3	18.1	7.6	421.5
1985	501	496	63.9	128.8	18.7	18.0	9.2	512.2
1986	452	446	74.5	167.0	14.8	14.1	9.2	651.1
1987	466	465	108.4	233.1	12.8	10.5	7.7	735.2
1988	480	464	189.6	409.0	12.2	9.7	7.6	787.5
1989	479	474	303.7	641.2	12.8	15.9	13.6	855.3
1990	443	332	205.0	616.7	11.1	11.1	9.9	894.0
1991	288	324	136.0	419.4	6.6	8.7	3.3	383.2
1992	355	310	71.6	230.8	5.6	5.7	1.7	300.0
1993	413	348	62.9	180.7	6.5	6.5	1.9	296.5
1994	511	504	124.1	246.2	2.3	2.7	0.8	290.3
1995	505	514	190.1	370.2	0.2	0.0	0.0	na
1996	460	424	248.3	585.8	0.0	0.0	0.0	na
1997	416	342	204.9	599.4	0.0	0.0	0.0	na
1998	401	399	225.9	566.6	0.0	0.0	0.0	na
1999	359	370 s	174.4 s	471.6 s	0.0	0.0	0.0	na
2000	374	372 s	198.0 s	532.2 s	0.0	0.0	0.0	na
2001	393	391 s	262.5 s	671.2 s	0.0	0.0	0.0	na
2002	412	407 s	279.8 s	687.6 s	1.6	1.6	0.4	249.8
2003	462	452 s	261.3 s	578.1 s	0.0	0.0	0.0	na
2004	441	437 s	285.0 s	652.4 s	0.0	0.0	0.0	na

a Ex mine. b All grades, bulk and bagged, before January 1992; standard grade only until June 1993; all grades until August 1999. s ABARE estimate. na Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat. no. 5465.0, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

357 Australian exports of zircon, by principal destination

	Italy kt	Japan kt	Netherlands kt	United States kt	Other kt	Total ^a	
						Volume kt	Value \$'000
1960	4	13	12	29	45	103	2.7
1961	6	25	21	33	53	138	3.4
1962	11	17	24	25	53	130	3.3
1963	16	22	24	55	60	177	4.4
1964	14	32	29	46	75	196	5.1
1965	17	28	29	52	87	213	6.8
1966	17	31	20	62	77	207	9.0
1967	21	57	22	64	79	243	10.7
1968	21	60	21	58	102	262	11.0
1969	25	72	31	75	103	306	12.4
1970	33	116	33	84	114	380	13.9
1971	24	91	27	71	153	366	13.3
1972	32	141	33	54	126	386	13.8
1973	41	155	38	88	109	431	15.9
1974	38	154	29	48	115	384	32.2
1975	31	102	16	41	109	299	58.2
1976	43	125	27	52	98	345	54.5
1977	32	89	38	60	104	323	36.2
1978	43	109	39	59	140	390	29.4
1979	65	188	35	66	125	479	33.1
1980	81	176	51	94	100	502	35.1
1981	57	156	53	64	114	444	37.0
1982	59	156	38	61	91	405	43.1
1983	44	163	45	20	108	380	44.7
1984	58	169	50	46	115	438	51.8
1985	60	197	48	30	161	496	63.9
1986	67	160	34	35	150	446	74.5
1987	56	171	30	59	149	465	108.4
1988	83	138	72	54	117	464	189.6
1989	63	139	65	68	139	474	303.7
1990	46	103	60	12	107	332	205.0
1991	41	122	29	19	113	324	136.0
1992 ^b	36	97	27	17	133	310	71.6
1993 ^b	6	47	4	16	275	348	62.9
1994 ^b	na	na	na	na	na	504	124.1
1995 ^b	na	na	na	na	na	514	190.1
1996 ^b	na	na	na	na	na	424	248.3
1997 ^b	na	na	na	na	na	342	204.9
1998 ^b	na	na	na	na	na	399	225.9
1999 ^b	na	na	na	na	na	370 ^s	174.4 ^s
2000 ^b	na	na	na	na	na	372 ^s	198.0 ^s
2001 ^b	na	na	na	na	na	391 ^s	262.5 ^s
2002 ^b	na	na	na	na	na	407 ^s	279.8 ^s
2003 ^b	na	na	na	na	na	452 ^s	261.3 ^s
2004 ^b	na	na	na	na	na	437 ^s	285.0 ^s

^a All grades, bulk and bagged, before January 1992; standard grade only until June 1993; all grades until August 1999. ^b Confidentiality provisions prevent full reporting after 1991. Confidential country data included under Other. ^s ABARE estimate. **na** Not available.

Sources: ABARE, *Australian Mineral Statistics*, Canberra; ABS, *International Trade*, Australia, cat no. 5465.0, Canberra; BMR, *Australian Mineral Industry Annual Review*, AGPS, Canberra; BMR, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra.

358 World zircon production, by major producing country

	Australia kt	South Africa a kt	Ukraine kt	United States a kt	Other a kt	Total a kt
1960	101	na	na	na	na	na
1961	134	na	na	na	na	na
1962	132	7	na	45	11	195
1963	181	2	na	45	12	240
1964	181	0	na	54	10	245 b
1965	223	0	na	54	8	286 b
1966	232	0	na	70	18	320 b
1967	290	0	na	60	6	356 b
1968	292	0	na	60	8	360 b
1969	363	0	na	63	9	435 b
1970	389	0	na	56	7	452 b
1971	406	1	na	60	12	479 b
1972	357	1	na	75	52	485 b
1973	375	2	na	90	33	500 b
1974	368	12	na	110	30	520 b
1975	382	12	na	100	16	510 b
1976	420	11	na	80	9	520 b
1977	398	17	na	90	15	520 b
1978	392	50	na	75	33	550 b
1979	445	50	na	70	45	610 b
1980	492	80	na	60	28	660 b
1981	434	100	73	70	36	713
1982	462	125	82	78	33	780
1983	382	127	82	64	48	703
1984	458	153	82	67	44	804
1985	501	161	86	70	67	885
1986	452	140	86	85	60	823
1987	466	140	86	90	64	837
1988	480	130	86	115	103	918
1989	479	150	85	118	111	975
1990	443	150	50	102	111	856
1991	288	200	50	103	60	701
1992	355	220	50	108	56	789
1993	413	220	50	105	47	835
1994	511	205	50	114	51	931
1995	505	245	50	115	56	971
1996	460	302	53	117	57	989
1997	416	297	55	123	64	955
1998	401	279	57	152	69	958
1999	359	310	60	188	79	996
2000	374	317	60	181	90	1 022
2001	393	377	60	173	87	1 090
2002	412	420	60	132	104	1 129
2003	462	370	65	144	96	1 137
2004	441	379	60	172	116	1 168

a Bureau of Mineral Resources estimates until 1987; other sources thereafter. **b** Excludes former centrally planned economies. **na** Not available. Sources: Bureau of Mineral Resources, *Australian Mineral Industry Annual Review*, AGPS, Canberra; Bureau of Mineral Resources, *Australian Mineral Industry, Quarterly Summary Statistics*, Canberra; TZ Minerals International, *Mineral Sands Report*, Surrey, England; TZ Minerals International, *Mineral Sands Annual Review*, Surrey, England; US Department of the Interior, Bureau of Mines, *Mineral Commodity Summaries*, Washington DC; ABARE.