

ASIA AND THE PACIFIC

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The economies of many Asian and Pacific countries had not recovered in 1998 following the financial crisis that began in Asia during 1997, and some economic futures remained bleak. The pace of economic growth in the region still was slow compared with that of 1996. Japan's economy was not robust; its economic prospects were discouraging for the near future. Owing to recession, Japanese consumption of metals and minerals was at a new low. China's economic growth was moderate at about 8% in 1998. In terms of economic development, the Asian tigers—Hong Kong, the Republic of Korea, Singapore, and Taiwan—were transformed into high-tech, high-quality, high-efficiency producing countries. China, Indonesia, Thailand, Vietnam, and the countries of the Indian subcontinent, however, have replaced the Asian tigers by becoming labor-intensive producers in the region. Australia's economy was the least affected by the 1997 Asian financial crisis, but its mineral industry was declining in 1998.

Countries of the Asia and Pacific region are endowed with abundant mineral resources. Australia has a significant resource base of a diverse range of mineral commodities and is a major producer of industrial minerals, metals, and mineral fuels including coal, uranium, and to a lesser extent, natural gas and petroleum, in the world. China is a world leader in proven reserves of antimony, barite, molybdenum, rare earths, titanium, tungsten, and vanadium. With the exception of chromium, China produces significant quantities of a wide array of metals and minerals. India has rich and varied mineral resources such as bauxite, chromite, coal, dolomite, iron ore, limestone, and manganese and a long history of mining and mineral processing. Indonesia also is a resource-rich country and a major world producer of copper, nickel, and tin. The Philippine Islands have previously been ranked among the world's top 10 in the production of copper and gold, but output has declined considerably in recent years owing to cyclone, flood, and volcanic eruption catastrophes as well as accidents such as mine tailings discharge, causing extensive environmental damage.

Significant mineral resources in other countries of the Asia and Pacific region include tin and associated titanium in Malaysia; copper, fluor spar, gold, and molybdenum in Mongolia; nickel in New Caledonia; gold and iron sands in New Zealand; magnesite in North Korea; copper, gold, and nickel-cobalt in Papua New Guinea; and gemstones in Sri Lanka. Burma, Cambodia, Laos, Thailand, and Vietnam have significant areas with mineral potential that have not been fully evaluated. Oil and gas occur throughout the region with commercial quantities recovered in Australia, Brunei, China, India, Indonesia, Malaysia, Pakistan, Thailand, and Vietnam.

Large deposits of coal are in Australia, China, India, and Mongolia. Most coal also occurs in Indonesia, North Korea, New Zealand, the Philippines, and Vietnam.

The Asia and Pacific region is a significant producer of mined mineral commodities and value-added mineral products. (*See table 1.*) The region produces more than 60% of the world's output of barite, cement, anthracite coal, graphite, mined manganese, mined and refined tin, titanium minerals, tungsten, and refined zinc. About 40% to 60% of the world's output of alumina, bauxite, fluor spar, iodine, iron ore and pig iron, mined and refined lead, and mica is produced in the region. In addition, the region accounts for 20% to 40% of the world's production of aluminum, refined copper, gold, mercury, mined nickel, salt, crude steel, and mined zinc.

Australia, China, Japan, and the newly industrialized economies of the Asia and Pacific region continue to be important users of minerals and materials. (*See table 2.*) Japan is by far the largest single user of minerals, metals, and mineral fuels in the region. Most of Japan's consumption of raw materials is for the manufacture of finished goods for domestic use and export. China also is a large user of minerals, metals, and fuel minerals, but principally produces end products for internal use. Per capita consumption of minerals continues to be very low in China.

In the 5-year period since 1994, consumption of selected metals by countries of Asia and the Pacific region indicated a steady increase with the exception of cadmium and refined tin. Japan's use of cadmium declined by 20% from 1997 to 1998. Hong Kong, Japan, the Republic of Korea, the Philippines, and Thailand used less tin in 1998 than in 1997. The region's consumption of these metals with respect to total world consumption remained constant throughout the period.

The Australian Government proposed several initiatives to assist the country's declining mining industry, which stemmed from the deterioration of the world economy. The key initiative was the introduction of a 10% goods and services tax (GST) to replace a number of indirect taxes. The GST would help exporters such as mining companies, because their taxes would be rebated at the point of export. The industry is also looking forward to the abolition of the fringe benefit tax on housing in remote areas and to replacement of the current system of rebates on the taxing of diesel fuel, a major expense in many mining operations. Additionally, the Government was planning to examine the tax status of some unrecoverable expenses, such as mineral exploration and feasibility studies, which are not currently tax-deductible. The Government also ended the policy that restricted Australia to just three uranium mining sites, one of which was depleted and closed in 1979.

As the economy of China continued to grow, the Government restructured its State Council in order to enhance economic reform and promote social development. The new Government structure has 29 ministries or commissions under the State Council's purview. For mineral production, four industry ministries (Coal, Machine Building, Metallurgical, and Chemical) and three corporations (China National Nonferrous Metals Industry, China National Petroleum and Natural Gas, and China Petrochemical) were abolished and reorganized as State Bureaus or Administrations under the State Economic and Trade Commission. The Ministry of Geology and Mineral Resources, the State Land Management Bureau, the State Marine Bureau, and the State Surveying Bureau were combined to form the Ministry of Land and Resources.

The Geological Survey of India identified new diamond and gold districts with potential for commercial extraction. Kimberlites in the Raipur district of Madhya Pradesh and in the Maddur region of Andhra Pradesh are geologic features that could host diamond resources. Four gold provinces were defined—Attapadi and Appil-Markada belts in Kerala, Dharwar-Shimoga belt in Karnataka, Siwalik belt in the Himalayan mountain range, and in the Gondwana basin in eastern India. New phosphorite deposits were discovered near the Chennai coast of India.

The Indian Government attempted to revive the financially troubled Indian Iron & Steel Co., a subsidiary of Steel Authority of India, Ltd., by including a global tender to privatize the company. The company's Burnpur steelworks was operating at only 38% of its 1.5-million-ton-per-year capacity because of a cash shortage and a lack of demand for its products. The Government also planned to sell a 30% stake in the aluminum producer, National Aluminium Co. Ltd. in 1999. The Government's equity in the company was 87.15% after selling a 12.85% stake in 1998. Additionally, the Government planned to dispose of a 49% stake in the Bharat Aluminium Co. Ltd. The Government already has sold 25% of its stake in Hindustan Zinc Ltd. and 27% of its interest in Hindustan Copper Ltd.

P.T. Freeport Indonesia focused on reducing costs and increasing production at its Grasberg copper-gold mine in Irian Jaya Province, Indonesia. With a fourth concentrator on line, Grasberg achieved a record average mill throughput of 201,200 metric tons per day (t/d) of ore during the second quarter of 1998. Current expansion plans project a mill throughput of 230,000 t/d by yearend. Further capacity was being added in the form of a new 200,000-metric-ton-per-year (t/yr) copper smelter and refinery, costing \$600 million, at Gresik. Finally, at the Batu Hijau operation in Sumbawa, capacity was being developed for a throughput of about 222,000 t/yr of copper, silver, and gold.

Since the end of World War II, and after several years of near stagnation, Japan's economy experienced the longest recession. The country's gross domestic product decreased 0.7% in 1997 and was projected to decline 1.8% in 1998. The depressed real estate and stock markets caused Japan's major banks to carry a heavy load of bad loans, with limited funds available for making loans to companies facing financial difficulty. As a result, the number of corporate bankruptcies reached a record

high in 1998. Japan's investment in mineral exploration, mining, and mineral processing, as well as consumption of major mineral commodities such as aluminum, cement, coal, copper, lead, steel, and zinc in 1998 was substantially lower than that of 1997. Exports of cement, refined copper, and steel were being pushed to a higher level to maintain production of these major commodities.

The mineral industries of the region will gradually recover from the economic slump during 1998. As the financial crisis is over for some of the countries, confidence of the international investors in the region's mineral potential will increase. Because of the worldwide demand for minerals and energy, Australia is expected to continue its role as a significant supplier. Japan's nonferrous metal mining and coal sectors are expected to increase their production slightly in 1999. To secure and diversify its long-term supply of raw materials, Japan is expected to actively search for direct investment in mineral exploration and development projects in other countries.

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TABLE 1
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED MINERAL COMMODITIES, 1998

(Thousand metric tons unless otherwise specified)

Country	Aluminum			Barite	Cement	Coal		Copper		Fluorspar	Gold mine, Au content 1/	Graphite
	Bauxite	Alumina	Metal			Anthracite	Bituminous	Mine, Cu content	Refined, primary			
Afghanistan	--	--	--	2	116	--	190	5	--	--	--	--
Australia	44,553	13,853	1,627	15	6,500	--	222,100	607	285	--	312	--
Bangladesh	--	--	--	--	290	--	--	--	--	--	--	--
Bhutan	--	--	--	--	150	--	69	--	--	--	--	--
Brunei	--	--	--	--	--	--	--	--	--	--	--	--
Burma	--	--	--	22	365	--	28	7	4	--	(2/)	--
Cambodia	--	--	--	--	300	--	--	--	--	--	--	--
China	8,200	3,300	2,420	3,000	513,500	250,000	950,000	476	820	2,450	178	270
Fiji	--	--	--	--	80	--	--	--	--	--	4	--
Hong Kong	--	--	--	--	1,538	--	--	--	--	--	--	--
India	6,102	1,890	542	749	85,000	--	298,116	45	47	1	2	143
Indonesia	1,055	--	133	--	25,000	--	61,146	648	--	--	87	--
Japan	--	330	16	--	81,328	2	3,661	1	1,277	--	9	--
Korea, North	--	--	--	100	17,000	55,000	--	14	23	30	5	35
Korea, Republic of	--	--	--	--	46,791	4,356	--	--	373	--	23	(2/)
Laos	--	--	--	--	9	--	71	--	--	--	--	--
Malaysia	160	--	--	1	10,397	--	350	14	--	--	3	--
Mongolia	--	--	--	--	109	--	4,698	129	2	198	10	--
Nepal	--	--	--	--	330	--	8	--	--	--	--	--
New Caledonia	--	--	--	--	100	--	--	--	--	--	--	--
New Zealand	--	--	307	--	950	--	3,500	--	--	--	11	--
Pakistan	5	--	--	21	8,901	--	3,164	--	--	1	--	--
Papua New Guinea	--	--	--	--	--	--	--	190	--	--	58	--
Philippines	--	--	--	--	13,338	--	1,800	49	150	--	25	--
Singapore	--	--	--	--	2,000	--	--	--	--	--	--	--
Sri Lanka	--	--	--	--	920	--	--	--	--	--	--	5
Taiwan	--	--	--	--	19,538	--	79	--	--	--	(2/)	--
Thailand	--	--	--	105	21,000	--	--	--	--	24	--	--
Vietnam	--	--	--	--	6,000	10,800	--	--	--	--	--	--
Total	60,075	19,373	5,045	4,015	861,550	320,158	1,548,980	2,185	2,981	2,704	727	453
Share of world total, percent	49 3/	41	23	68	62 3/	88	47	18	21	58	29	78
United States	NA	5,590	3,713	476	NA	5,231	929,269	1,859	2,475	--	366	--

See footnotes at end of table.

TABLE 1--Continued
 ASIA AND THE PACIFIC: PRODUCTION OF SELECTED MINERAL COMMODITIES, 1998

(Thousand metric tons unless otherwise specified)

Country	Iodine 1/	Iron		Steel, crude	Lead		Magnesite	Manganese mine, Mn content	Mercury mine, Hg content 1/	Mica	Nickel	
		Ore, gross weight	Pig		Mine, Pb content	Refined, primary					Mine, Ni content	Refined 4/
Afghanistan	--	--	--	--	--	--	--	--	--	--	--	--
Australia	--	153,964	7,724	8,888	583	173	361	729	--	--	144	81
Bangladesh	--	--	--	35	--	--	--	--	--	--	--	--
Bhutan	--	--	--	--	--	--	--	--	--	--	--	--
Brunei	--	--	--	--	--	--	--	--	--	--	--	--
Burma	--	--	--	--	2	2	--	(2/)	--	--	(2/)	--
Cambodia	--	--	--	--	--	--	--	--	--	--	--	--
China	500	210,000	118,600	114,350	556	600	2,400	6,100	600	120	48	41
Fiji	--	--	--	--	--	--	--	--	--	--	--	--
Hong Kong	--	--	--	450	--	--	--	--	--	--	--	--
India	--	72,532	21,000	18,547	39	70	355	610	--	1	--	--
Indonesia	70	560	--	3,500	--	--	--	--	--	--	78	--
Japan	6,142	4	74,981	93,548	6	145	--	--	--	--	--	55
Korea, North	--	10,000	5,000	1,000	70	60	1,500	--	--	--	--	--
Korea, Republic of	--	238	23,092	39,896	4	132	--	--	--	38	--	--
Laos	--	--	--	--	--	--	--	--	--	--	--	--
Malaysia	--	380	--	1,850	--	--	--	--	--	4	--	--
Mongolia	--	--	--	--	--	--	--	--	--	--	--	--
Nepal	--	--	--	--	--	--	--	--	--	--	--	--
New Caledonia	--	--	--	--	--	--	--	--	--	--	129	--
New Zealand	--	2,000	--	700	--	--	--	--	--	--	--	--
Pakistan	--	--	1,500	494	--	--	3	--	--	--	--	--
Papua New Guinea	--	--	--	--	--	--	--	--	--	--	--	--
Philippines	--	--	--	950	--	--	1	--	--	--	25	--
Singapore	--	--	--	600	--	--	--	--	--	--	--	--
Sri Lanka	--	--	--	--	--	--	--	--	--	5	--	--
Taiwan	--	--	8,800	17,192	--	--	--	--	--	8	--	10
Thailand	--	44	--	2,000	6	--	--	(2/)	--	--	--	--
Vietnam	--	--	--	320	--	--	--	--	--	--	--	--
Total	6,712	449,722	260,697	304,320	1,266	1,182	4,620	4,620	600	176	424	187
Share of world total, percent	46	44	45	39	41	42	11 3/	66	26 3/	43	37	18
United States	1,490	62,931	48,200	98,600	493	337	W	--	NA	87	--	--

See footnotes at end of table.

TABLE 1--Continued
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED MINERAL COMMODITIES, 1998

(Thousand metric tons unless otherwise specified)

Country	Petroleum crude 5/	Natural gas 6/	Salt	Tin 1/		Titanium		Tungsten mine, W content 1/	Zinc	
				Mine, Sn content	Refined, primary	Ilmenite	Rutile		Mine, Zn content	Refined, primary
Afghanistan	--	2,600	13	--	--	--	--	--	--	--
Australia	195	30,962	8,879	10,204	319	2,379	241	--	1,059	304
Bangladesh	1	6,300	350	--	--	--	--	--	--	--
Bhutan	--	--	--	--	--	--	--	--	--	--
Brunei	55	10,200	--	--	--	--	--	--	--	--
Burma	3	1,750	35	240	--	--	--	200	(2/)	--
Cambodia	--	--	40	--	--	--	--	--	--	--
China	1,200	23,000	22,420	79,000	78,800	170	--	24,700	1,100	1,468
Fiji	--	--	--	--	--	--	--	--	--	--
Hong Kong	--	--	--	--	--	--	--	--	--	--
India	245	20,500	9,502	--	--	300	14	--	143	172
Indonesia	535	74,800	660	53,959	53,401	--	--	--	--	--
Japan	5	2,301	1,390	--	500	--	--	--	68	514
Korea, North	--	--	550	--	--	--	--	800	200	180
Korea, Republic of	--	--	770	--	--	--	--	--	10	390
Laos	--	--	39	1	--	--	--	--	--	--
Malaysia	265	49,333	--	5,756	27,900	125	--	--	--	--
Mongolia	--	--	1	40	--	--	--	30	--	--
Nepal	--	--	8	--	--	--	--	--	--	--
New Caledonia	--	--	--	--	--	--	--	--	--	--
New Zealand	21	4	65	--	--	--	--	--	--	--
Pakistan	17	20,222	1,053	--	--	--	--	--	--	--
Papua New Guinea	--	--	--	--	--	--	--	--	--	--
Philippines	(2/)	--	550	--	--	--	--	--	--	--
Singapore	--	--	--	--	--	--	--	--	--	--
Sri Lanka	--	--	70	--	--	20	3	--	--	--
Taiwan	(2/)	870	7	--	--	--	--	--	--	--
Thailand	10	17,545	546	2,124	15,353	--	--	25	20	76
Vietnam	83	1,100	400	5,000	2,400	80	--	60	18	--
Total	2,635	261,487	47,348	156,324	178,673	3,074	258	25,815	2,618	3,104
Share of world total, percent	11	18	26	76	87	66 3/	61 3/	80 3/	35	62
United States	2,280	498,046	41,252	--	--	W	W	W	755	234

NA Not available. W Withheld to avoid disclosing company proprietary data.

1/ Metric tons.

2/ Less than 1/2 unit.

3/ Excludes U.S. production.

4/ Includes Ni content of oxide but excludes ferroalloy.

5/ Million 42-gallon barrels.

6/ Million cubic meters.

TABLE 2
ASIA AND THE PACIFIC: CONSUMPTION OF SELECTED METALS

(Thousand metric tons unless otherwise specified)

Country	Aluminum, primary		Cadmium 1/		Copper, refined		Lead, refined		Nickel		Tin, refined 1/		Zinc, slab	
	1994	1998	1994	1998	1994	1998	1994	1998	1994	1998	1994	1998	1994	1998
Australia	354	336	25	24	141	143	78	56	1	2	500	2,900	193	127
China	1,500	2,508	600	600	798	1,397	298	507	42	34	32,100	34,400	755	1,185
Hong Kong	42	42	(2/)	(2/)	3	5	1	4	(2/)	(2/)	2,000	1,200	6	6
India	475	554	411	446	137	160	75	104	18	18	1,200	1,200	188	226
Indonesia	179	73	(2/)	(2/)	60	65	91	22	(2/)	(2/)	1,800	2,200	84	55
Japan	2,345	2,080	6,615	5,795	1,375	1,255	346	327	181	151	28,700	24,400	721	659
Korea, Republic of	604	466	380	380	476	560	220	210	41	72	9,800	8,400	318	302
Malaysia	66	70	(2/)	(2/)	106	133	57	72	(2/)	(2/)	5,600	5,700	24	44
New Zealand	40	34	(2/)	(2/)	7	6	4	4	(2/)	(2/)	--	--	19	24
Philippines	30	24	(2/)	(2/)	45	45	27	22	(2/)	(2/)	100	--	38	34
Singapore	30	34	(2/)	(2/)	20	26	10	11	(2/)	(2/)	--	--	15	15
Taiwan	355	301	20	20	547	584	100	133	26	80	7,900	8,800	170	240
Thailand	183	187	(2/)	(2/)	173	86	62	37	(2/)	(2/)	5,100	4,300	100	62
Asia and the Pacific, unspecified	73	153	119	119	25	20	23	44	9	11	300	1,000	69	100
Total, Asia and the Pacific	6,276	6,862	8,170	7,384	3,913	4,485	1,392	1,553	318	368	95,100	94,500	2,700	3,079
Asia and the Pacific as a percent of World total	32	32	45	50	34	34	26	27	35	38	43	41	38	39
United States	5,407	5,814	2,237	1,012	2,678	2,883	1,495	1,618	131	152	33,900	44,200	1,118	1,293

1/ Metric tons.

2/ Included in Asia and the Pacific, unspecified.

Source: World Bureau of Metal Statistics. World Metal Statistics, April 1999.