

THE REPUBLIC OF KOREA

By Pui-Kwan Tse

In 2000, the Republic of Korea's economy maintained rapid growth because of strong domestic demand and exports. Prices of domestic consumer goods were stable throughout the first half of the year but increased sharply in the second half because of the increase in international oil prices and the rising domestic demand for energy. Owing to uncertainties of the Japanese and the United States economies and the decline of consumer sentiment coupled with the effect of domestic corporate and financial restructuring, the economic growth rate dropped sharply in the fourth quarter. For the whole year, the gross domestic product registered an 8.8% growth rate against that of the previous year, and the consumer price index increased by only 2.3% (Bank of Korea, 2001b, p. 11). Manufacturing and service sectors led overall economic growth. Even though the economy improved, the construction sector continued to post negative growth because of the decline in private and Government construction. In the chemical and heavy industries, production of products used for industrial and transportation equipment dropped sharply in the fourth quarter of 2000. Since the financial crisis of late 1997, when local companies struggled to improve liquidity and reduce debt, foreign companies have played an important role in the Republic of Korea's industrial sectors. Numerous agreements have been concluded—BASF and Hanwha Chemicals; Singapore Power and Samsung General Petrochemical; Kawasaki Steel Corp. and Hyundai Steel Co.; and Oriental Chemical and Korea Iron and Steel Co. Ltd.

All evidence in the fourth quarter of 2000 pointed to a continuation of the downturn in the economy of the Republic of Korea in 2001. The country was heavily dependent on imported oil for its energy demand. Energy imports accounted for more than 90% of primary energy consumption. The unexpected long economic boom in the United States economy in the 1990s helped Korea recover from its economic crisis in 1997, but the weakened demand in the market of Europe and the United States, which were two major trading partners for the Republic of Korea, in the last quarter of 2000, may affect the country's exports in the future. Furthermore, the Japanese economy remained sluggish, and the Taiwanese economy appeared to decline. Domestically, the restructuring of the corporate and financial sectors did not proceed as smoothly as expected, and economists believed a more credit crunch in financial institutions would be likely to occur in 2001. In 2000, 175 financial institutions, mainly credit unions, finance companies, and mutual savings, were closed down. The Government provided about 35 trillion won (\$3.5 billion) to support financial institutions through their recapitalization, to repay deposits, and to purchase nonperforming loans (Bank of Korea, 2001a; Far Eastern Economic Review, 2001).

The Bank of Korea's revision of its regulations on foreign exchange transactions would become effective on January 1, 2001. The restrictions, which were imposed on the length of time for deposits of nonresidents of Korea, were abolished. The reserve requirement ratios for residents' foreign currency deposits were unified. To improve the corporate financial structure further, the Government issued the Financial Holding Company Act and its associated enforcement decree to strengthen the management of public funds, to accelerate the resolution of financial institutions' nonperforming assets, and to enhance the stability of the financial market (Bank of Korea, 2001a).

The Republic of Korea does not have significant natural resources. It relied on imports to meet its increasing demand for minerals. The Government continued to support state-owned or privately owned enterprises that invested in such mineral-rich countries as Australia, Brazil, Canada, and Chile.

LG-Nikko Copper Inc. planned to complete the expansion of the copper smelting and refining capacity at its Onsan plant by October 2002. The expansion of anode capacity had been completed, and the expansion construction work in the refining portion was scheduled for early 2001. After completion, the Onsan plant will have smelting capacity of 420,000 metric tons per year (t/yr) and a refining capacity of 450,000 t/yr. LG-Nikko's Changhang plant had a 60,000-t/yr refining capacity without any smelting capacity. Anodes were sourced from the Onsan plant and the Saganoseki plant in Japan (Metal Bulletin, 2000d).

After 4 years of prospecting in the Republic of Korea, Ivanhoe Mines Ltd. of Canada announced that the company has discovered two epithermal gold-silver veins near Haenam Township, in Cholla Province. Reconnaissance drilling indicated potentially high grade gold-silver mineralization up to 200 meters below the surface. Ivanhoe operated in the Republic of Korea through Korean Exploration Inc. (KEI) (a joint-venture company in which Ivanhoe held a 90% equity). KEI transferred its rights to Sun Shin Gold Mining Co. in which Ivanhoe owned 90% of the shares. Ivanhoe has secured all mining and surface rights to these discovery areas (Asian Journal of Mining, 2001a).

The Republic of Korea was the sixth largest producer of crude steel and the eighth largest producer of pig iron in the world. Domestic iron ore mines only supplied about 1% of the country's needs. In 2000, the country imported more than 37 million metric tons (Mt) of iron ore, mainly from Australia, Brazil, and India, and imported more than 18 Mt of coking coal for its iron and steel sector, mainly from Australia, Canada, and the United States (Korea Iron and Steel Association, 2001, p. 117). The country also consumed more than 22 Mt of steel scrap, of which about one-third was imported.

A slowdown in public and private construction had a major effect to the iron and steel sector. The output of reinforcing bars increased by 8.5% to 9.57 Mt, but it was more than 1 Mt less than that of 1997. Steel producers, such as INI Steel Co. (formerly Inchon Iron and Steel Co. Ltd.) and Dongkuk Steel Mill Co. Ltd., reduced their output by 15% in the last quarter of 2000. At yearend 2000, stockpiles in steel producers' and traders' warehouses increased by more than 10% compared with those at the end of 1999 (Korea Iron and Steel Association, 2001, p. 80). INI took over the financially troubled stainless steel producer Sammi Steel Co. Ltd. in December.

The Republic of Korea was among the nine nations cited in the complaint by Dofasco Inc. to the Canada Customs and Revenue Agency on unfair trade practice. Among the nine nations, the Republic of Korea was the largest exporter of cold-rolled sheet to Canada. The increase of cold-rolled sheet imported from the nine nations caused the market share of Canada's domestic mills to decline and profitability and inventories to increase in their warehouses. The Canadian International Trade Tribunal began its investigation and would announce its findings in 2001 (Metal Bulletin, 2001b).

Sumitomo Corp. of Japan planned to purchase \$50 million worth of redeemable preferred stock from Dongbu Steel Co. Ltd. Dongbu would redeem 30% of the stock after 2 years and 70% after 3 years and would pay a 6% dividend. Sumitomo secured the rights for supplying hot-rolled coil to Dongbu, which required the sourcing of about 1.5 Mt of hot-rolled coil for its 1.3-million-metric-ton-per-year (Mt/yr) new cold-rolling coil plant in Asan (Metal Bulletin, 2000b).

Danieli of Italy was awarded a contract by Kia Steel Co. Ltd. for supplying a three-strand continuous casting machine to produce special steel for the automotive industry. Installation was scheduled to be completed in 2001. The new caster will have an output capacity of 300,000 t/yr of high carbon and alloy structural steels. Danieli will also upgrade the 65-metric-ton (t) electric-arc furnace to reduce production costs by 20% (Metal Bulletin, 2000a).

After a 9-month delay, the Korea Development Bank finally sold off the Government equity in Pohang Iron and Steel Co. Ltd. (POSCO) in 2000. Since the Government announced the privatization of POSCO in 1998, the company has gone through internal restructuring to become more efficient and transparent. With the privatization of POSCO in 2000, the Government could no longer exert influence over the appointment of the company's executives, and the company would be free from parliamentary inspection of management. POSCO will be subjected to various legal regulations and under the supervision of outside directors who will be selected by shareholders. To compete in the world market, POSCO planned to diversify its business activities. POSCO allied with SK Telecom to form a strategic alliance in the information technology business and planned to bid on Powercomm shares, a leased-line and cable television network service supplier. POSCO signed cooperation agreements with Shanghai Baogang of China and Nippon Steel Corp. of Japan to form a strategic alliance by holding each other's stock as well as expanding such cooperative activities as research and development, overseas joint investment, and information technology (Korea Herald, 2000; Metal Bulletin, 2001e).

POSCO signed a letter of intent with BHP Ltd. to form a joint venture for the development of the C iron ore deposit within the larger Mining Area C reserves in the Pibara region of Western Australia. BHP held an 85% share of the reserve area. POSCO intended to have a 20% interest in the new venture, and BHP and its partners would hold the remaining 80% in the same ratio as the existing joint venture; the intent would be subject to the approval of BHP partners. The C deposit has proven reserves of 200 Mt of high-grade iron ore. POSCO and BHP jointly funded the feasibility study that was scheduled to be completed in mid-2001. The initial design called for an output of between 3 Mt/yr and 5 Mt/yr. POSCO would be the major customer (Metal Bulletin, 2001a).

POSCO announced that it planned to invest \$518 million to add a 450,000-t/yr stainless steel output capacity to its hot-rolling mill. A new electric-arc furnace for stainless steel, casting, and rolling equipment will be installed at its Pohang site. Construction of the project will begin in July 2001 and will be commissioned in May 2003. After completion, POSCO will have a total stainless steel output capacity of 1.66 Mt/yr (Metal Bulletin, 2000e, 2001d).

Korea Nickel Corp. (KNC) had planned to operate its 32,000-t/yr Onsan nickel plant at full capacity in 2000; because of a shortage of raw material, however, the plant produced only about 29,000 t in 2000. KNC imported all its nickel oxide feeds from Inco Ltd. of Canada (a minor shareholder of the corporation). Owing to the difficulty of sourcing raw material in the world market and weak demand, the projected nickel output for 2001 was 26,000 t. The steel sector accounted for about 70% of consumption (Metal Bulletin, 2001c).

Korea Zinc Group has become one of the largest primary zinc producers in the world. In 2000, Korea Zinc had a total zinc output capacity of 745,000 t/yr from its four plants—Onsan and Sukpo in the Republic of Korea, Saugat in the United States, and Townsville in Australia. Sun Metals Corp. (a subsidiary at Townsville) produced 170,000 t of zinc in 2000 in its first full year of operation and was expected to increase output to 200,000 t in 2001. The Onsan complex and the Sukpo plant will produce a total of about 620,000 t in 2001. The main market for Korea Zinc's refined zinc was Southeast Asia (Metal Bulletin, 2000c; Asian Journal of Mining, 2001b).

The Republic of Korea's oil sector was dominated by four refiners—SK Group (30%), LG-Caltex (26%), Hyundai-Hanwha (16%), and Ssangyong Oil Refining (16%); the rest was held by independents. The country imported all its crude oil and natural gas. In 2000, the demand for oil and oil products increased by 3.7% compared with that of 1999. State-owned Korea National Oil Corp. invested \$200 million to build a gas-production platform and pipelines in 2000 to bring the Donghai-1 Gasfield in the Ullung Basin, 60 kilometers off Ulsan, on-stream in 2002. The field had about 200 billion cubic meters of gas. Royal Dutch/Shell Group expressed interest in equity investment in Korea Gas Corp. and urged the Republic of Korea to invest in oil and gas projects in Sakhalin in the Yurubcheno-Toklomsy zone in Russia (Oil & Gas Journal, 2000).

The restructuring of the Republic of Korea's refining and petrochemical sectors continued in 2000. The majority of shareholders approved LG Chemical's plan to split into three entities. The three units will be LG Chem Ltd., which will

produce industrial chemicals; LG Household & Healthcare Ltd., which will manufacture cosmetics and household products; and LG Chem Investment Ltd., which will be a holding company. LG Chemical considered selling a \$250 million in shares of its polycarbonate unit (a joint venture with Dow Chemical Co. of the United States) to fund LG Chem Investment. LG Chemical was the Republic of Korea's largest chemical company with sales of \$3.5 billion in 1999 (Chemical & Engineering News, 2001).

The Government continued its support to companies and universities by providing funds for undertaking research in technology for the petrochemical sector. In 2000, the Government provided \$7.8 million in grants and loans for these institutions. The Government had proposed consolidating eight domestic polyolefin companies into four and then into one. The merge of Hyundai Chemical Ltd. and Samsung General Co. was not an easy task for the Government. Many domestic analysts questioned the feasibility of consolidating eight companies into one (Asian Chemical News, 2001).

References Cited

- Asian Chemical News, 2001, S Korea govt to boost funding for tech improvements: Asian Chemical News, v. 7, no. 296, January 22-29, p. 5.
 Asian Journal of Mining, 2001a, High-grade gold results from South Korea prospects: Asian Journal of Mining, February-April, p. 36.
 ———2001b, Koreans move up production: Asian Journal of Mining, November 2000-January 2001, p. 12.
 Bank of Korea, 2001a, Financial sector restructuring in 2000: Bank of Korea Quarterly Bulletin, March, p. 35.
 ———2001b, Principal economic indicators (V): Bank of Korea Monthly Statistical Bulletin, March, 336 p.
 Chemical & Engineering News, 2001, LG Chemical splits itself into three parts: Chemical & Engineering News, v. 79, no. 2, January 8, p. 10.
 Far Eastern Economic Review, 2001, Back in the doldrums: Far Eastern Economic Review, March 1, p. 62.

- Korea Herald, 2000, Privatization pushes POSCO into period of great change: Korea Herald, October 21, p. 16.
 Korea Iron and Steel Association, 2001, Steel statistical yearbook: Korea Iron and Steel Association, 461 p.
 Metal Bulletin, 2000a, Kia Steel upgrades engineering steel output: Metal Bulletin, no. 8507, September 11, p. 31.
 ———2000b, Sumitomo invests in Korea's Dongbu: Metal Bulletin, no. 8533, December 11, p. 23.
 ———2000c, Sun Metals looks at boosting Townsville production in 2001: Metal Bulletin, no. 8511, September, 25, p. 9.
 ———2000d, LG-Nikko expansion to be completed in 2002: Metal Bulletin, no. 8514, October 5, p. 5.
 ———2000e, Posco goes ahead with stainless expansion plan: Metal Bulletin, no. 8481, June 5, p. 17.
 ———2001a, BHP and POSCO plan joint venture iron mine: Metal Bulletin, no. 8546, February 1, p. 17.
 ———2001b, Korea is major target in Canadian cold rolled sheet case: Metal Bulletin, no. 8563, April 2, p. 29.
 ———2001c, Korea Nickel forecasts output decline: Metal Bulletin, no. 8573, May 10, p. 11.
 ———2001d, Posco accelerates stainless expansion: Metal Bulletin, no. 8586, June 25, p. 17.
 ———2001e, Posco and Shanghai Baosteel sign co-operation agreement: Metal Bulletin, no. 8542, p. 20.
 Oil & Gas Journal, 2000, S. Korean hydrocarbon output to start in 2002: Oil & Gas Journal, v. 98, no. 16, April 17, p. 80.

Major Sources of Information

Korea Institute of Geology, Mining, and Materials
 30, Kajungdong, Yusongku, Taejon
 Ministry of Trade, Industry, and Energy
 1, Chungang-dong, Kwach on, Kyonggi, Seoul

Major Publications

Economic Planning Board, Seoul. Monthly Statistics of Korea.
 Korea Energy Economic Institute, Seoul. Yearbook of Energy Statistics.

TABLE 1
REPUBLIC OF KOREA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000
METALS					
Bismuth, metal	--	112	117	108 r/	71
Cadmium, smelter	501	570	1,178	1,791	1,911
Copper:					
Mine output, Cu content	3	--	41	--	--
Metal:					
Smelter e/	225,000	225,000	293,000	370,000	380,000
Refined, primary	246,305	265,426	373,305	450,444	470,537
Gold, metal kilograms	14,096	14,872	22,822	25,730 r/	22,605
Iron and steel:					
Iron ore and concentrate:					
Gross weight thousand tons	440 r/	500 r/	486 r/	410 r/	336
Fe content do.	247 r/	280 r/	272 r/	230 r/	188
Metal:					
Pig iron do.	23,010	22,712	23,092	23,329	24,938
Ferrous alloys:					
Ferromanganese	126,135	158,755	158,418	140,208	146,373
Ferrosilicomanganese	83,375	77,375	106,997	116,091	103,522
Other	4,687	2,174	2,785	4,639	4,676
Total	214,197	238,304	268,200	260,938	254,571
Steel, crude thousand tons	38,903	42,554	39,896	41,042	43,107
Lead:					
Mine output, Pb content	5,131	3,632	3,558	1,822	2,724
Metal, smelter	88,584	122,631	133,066	143,583 r/	170,704
Nickel	18,000 e/	18,452	20,183	20,235	29,890
Silver, metal kilograms	254,386	267,911	339,442	488,792	591,130
Zinc:					
Mine output, Zn content	8,384	8,992	10,488	9,832	11,474
Metal, primary	286,604	335,390	390,260	429,766 r/	473,897
INDUSTRIAL MINERALS					
Asbestos e/	1,500	--	--	--	--
Barite	80	105	--	--	30
Cement, hydraulic thousand tons	58,434	60,317	46,791	48,579 r/	51,424
Clays, kaolin do.	2,502	2,688	2,260	1,858	2,098
Diatomaceous earth	69,543	53,538	37,649	30,222	34,143
Feldspar	319,112	341,018	248,493	409,334	330,417
Fluorspar, metallurgical-grade	--	617	--	--	--
Graphite, all types	1,113	83	62	62	65
Mica, all grades	35,923	34,489	38,459	24,733	65,249
Nitrogen, N content of ammonia	611,000	526,000	496,000	489,000	400,000 e/
Salt e/	770,000	770,000	770,000	750,000	800,000
Soda ash, manufactured e/	320,000	320,000	300,000	310,000	310,000
Stone, sand and gravel:					
Limestone thousand tons	84,740	88,937	69,871	74,061	77,868
Quartzite do.	2,814	2,478	1,821	2,160	2,321
Sand, including glass sand do.	1,690	1,222	1,257	1,306	879
Sulfur, byproduct: e/					
Metallurgy do.	260	265	270	290	290
Petroleum do.	200	200	200	200	200
Total do.	460	465	470	490	490
Talc and related materials:					
Pyrophyllite	780,062	994,366	843,609	754,657	917,973
Talc	19,066	25,751	24,411	15,313	11,344
MINERAL FUELS AND RELATED MATERIALS					
Carbon black	354,837	425,605	384,318	438,128	454,699
Coal, anthracite thousand tons	4,978	4,572	4,356	4,197	4,174
Coke e/	-- r/	-- r/	-- r/	-- r/	--
Fuel briquets, anthracite briquets e/	12,000	13,000	12,500	13,000	13,000
Petroleum refinery products e/	602,000	731,000	618,000	661,000	654,000

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through August 30, 2001.

2/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2
REPUBLIC OF KOREA: STRUCTURE OF THE MINERAL INDUSTRY IN 2000

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, primary	Aluminium of Korea Ltd.	Ulsan	18
Bismuth, metal metric tons	Korea Tungsten Mining Co. Ltd.	Sangdong	135
Cement	Ssangyong Cement Industrial Co. Ltd.	Plants at Chandong, Kwang Yang, Mungyong, Pukyong, and Yongwol	17,900
Do.	Sung Shin Cement Manufacturing Co. Ltd.	Tanyang plant	13,700
Do.	Tong Yang Major Corp.	Plants at Pukpyong and Samchok	12,600
Do.	Lafarge Halla Cement Corp.	Plants at Kwang Yang and Okkye	9,500
Do.	Hyundai Cement Co. Ltd.	Plants at Tanyang and Yongwol	8,600
Do.	Hanil Cement Manufacturing Co.	Plants Chungbuk and Tanyang	7,900
Do.	Asia Cement Manufacturing Co. Ltd.	Plants at Daegu and Jaechon	4,600
Copper, metal, primary	LG-Nikko Copper Inc.	Changhang	60
Do.	do.	Onsan	460
Graphite	Kaerion Graphite Ltd.	Kangwon	NA
Do.	Wolmyong Mining Co.	do.	NA
Lead, metal, primary	Korea Zinc Co. Ltd.	Onsan	200
Nickel, metal	Korea Nickel Corp.	do.	51
Steel, crude	Pohang Iron and Steel Co. Ltd.	Kwangyang plant	15,000
		Pohang plant	13,000
Do.	INI Steel Co.	Donggu plant	4,750
		Pohang plant	3,140
Do.	Dongkuk Steel Mill Co. Ltd.	Inchon Works	1,450
		Pohang Works	3,600
Do.	Kia Steel Co. Ltd.	Kunsan	720
Talc	Dongyang Talc Mining Co.	Chungju mine	NA
Zinc, metal, primary	Korea Zinc Co. Ltd.	Onsan	350
Do.	Young Poong Corp.	Sukpo	110

NA Not available.