

THE MINERAL INDUSTRY OF LATIN AMERICA AND CANADA¹

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INTRODUCTION

Mining and related activities in the countries of Latin America and Canada, including the Caribbean Islands, during 1997 are described in this regional summary. As with the United States, these other countries of the Western Hemisphere are endowed with a great diversity of minerals, comprising metals, industrial minerals, and fuel minerals. For most of these countries, the mining, processing, and marketing of the mineral commodities play a significant role in supporting their economies, in many instances creating earning export revenues and foreign exchange reserves and offering business opportunities via privatization of state-run corporations (foreign and domestic direct investment), joint-venture projects (investment in equity), and debt flows (credits).

Table 1 lists a synopsis of Latin America and Canada's production of their major mineral commodities during 1997. Table 2 lists the role of Latin America and Canada in world mineral production. Table 3 lists the significant flows of foreign direct investments (FDI) to such mineral-producing countries as Argentina, Brazil, Chile, and Peru, as well as domestic and U.S. investments and joint ventures in their respective mineral sectors.

The abundant and varied mineral endowment of Latin America and Canada complement the mineral resources of the United States. Interest and investment flows continued to many of these countries in spite of the Asian crisis, lower prices for Latin America's major mineral exports, and the El Niño weather phenomenon in the later part of the year as discussed in the ensuing country chapters.

Position in the World Mineral Economy

Latin America produced 48% of the world's copper and 42%, 32%, and 29% of the world's total output of silver, bauxite, and tin, respectively, and from 16% to 22% of the world's iron ore, zinc, lead, and nickel. The two areas produced even greater proportions of silver (50%), copper (54%), and zinc (35%)² as well as 33% of the world's nickel, 26% of its iron ore, 22% of its lead, and 21% of the world's primary aluminum. (*See tables 1 and 2*). Moreover, Latin America and Canada, separately and together, are of great significance to the global economy as producers of metals and steel, crude oil and natural gas, petroleum refinery derivatives, and coal, significant amounts of which were exported.

¹Based on information available as of December 31, 1997.

²Unless otherwise noted, all listings of mineral commodities or countries for enumerative or comparative purposes are listed in order of importance on the basis of volumes produced, exported, or imported.

Canada led the world in the production of uranium and was the second largest producer of zinc after China, with a strong showing in output of silver, gold, and nickel. Chile led the world in the production of copper, and Mexico led in the production of silver and strontium. Peru was second in world production of silver. Brazil led in output of columbium and, although not the largest producer of iron ore, was the leading exporter in recent years, as well as eighth largest steel producer in the world. Canada and Mexico, in the Western Hemisphere, were second and third largest producers of steel after Brazil. Brazil was also the sixth ranking source of manganese in the world, followed in Latin America by Mexico. After Russia, Canada was the second largest world nickel producer, with other significant production in the hemisphere by Cuba and the Dominican Republic. Jamaica was the world's third largest producer of bauxite.

The inclusion of the United States in summary table 1 shows the position of the entire Western Hemisphere in world supply of mineral commodities. This hemisphere produced significantly more than one-half of the world's copper (71%) and silver (60%), as well as 43% of its zinc, 38% of its lead, 38% of its aluminum, 33% of its nickel, and 32% of its iron ore. Among the industrial minerals, the Western Hemisphere produced 45% of the world's sulfur, 40% of its salt, 37% of its phosphate rock, and 35% of its gypsum. Of the mineral fuels, this hemisphere produced 45% of the world's output of natural gas, 28% of its crude oil, and 23% of its coal; farther in the processing stream, it produced 37% of refined petroleum products.

Production Trends

Nonfuel Minerals.—For Latin America, the most significant production in terms of share of world output includes silver, copper, tin, bauxite, iron ore, zinc, lead and nickel, gold, and primary aluminum, as listed in table 2. In the past 10 years, exploration, investment, and development have taken various new discoveries to the point of production, such that copper, bauxite, nickel, tin, silver, and iron ore mines have come on stream and increased Latin America's world position in production of these metals.

Latin America's world share of output of bauxite, gold, and silver has increased, and conspicuous effort is being exerted to find and produce these minerals. Gold has been the center of attention in the Guyana Shield of Venezuela and Guyana, as well as most of all the Andean countries. The bauxite industry has weathered the unusual surge of aluminum exports from the former Soviet Union during the early 1990's and is the object of increased interest in Brazil and Venezuela for domestic aluminum production. Jamaica, the biggest Latin American bauxite

producer, exports its production.

Energy Minerals.—World share of Latin American production of petroleum (crude) decreased to 12% from 14% in 1996, and resultant derivatives of petroleum (products) remained at the same level (8%) as that of the previous year; natural gas production (6%) climbed moderately in 1997 after fluctuating unevenly since 1985. Output of crude oil reached new highs in Argentina, Brazil, Colombia, Cuba, Ecuador, Mexico, and Venezuela. The top eight producers were Venezuela, Mexico, Brazil, Argentina, Colombia, Ecuador, Trinidad and Tobago, and Peru, representing 98.9% of the regional total. Mexico, Venezuela, Argentina, Colombia, Brazil, and Trinidad and Tobago also reached new highs in production of natural gas.

Canada likewise confirmed a new high in the production of crude oil and, when combined with Latin America and the United States, represented 45% of the world share of natural gas production and 28% of crude oil production, new high values in both cases. Brazil, Mexico, Venezuela, and Argentina led Latin American production of refinery derivatives, and, with Canada and the United States, the region achieved a world share of 37%, also a new high.

Coal output in Latin America was led by Colombia, Mexico, and Brazil, with products that were generally competitive in world markets and increased local and regional market share over the past 10 to 20 years. Depending upon the country, anthracite, semianthracite, bituminous, and subbituminous, plus some lignites (used locally in most cases) were mined. Latin American coals are suitable for metallurgical and thermal use, as are Canadian and U.S. coals. The Western Hemisphere coal output amounted to a 23% world share.

Trade Liberalization Developments

Canada, Mexico, and the United States, members of the North American Free Trade Agreement (NAFTA), constitute the largest and richest trading bloc in the world—370 million consumers and an annual output approximating \$7 trillion. The Southern Cone Common Market (MERCOSUR), including Argentina, Brazil, Paraguay, and Uruguay, plus Bolivia and Chile as associated members, followed NAFTA, with 230 million consumers and \$1.3 trillion economy. The excellent infrastructural connections between Canada, the United States, and Mexico, including railroads, highways, and pipelines, were a significant factor in the marketing of mineral commodities. MERCOSUR's share of the total trade with the major economic blocks was 25% within its membership, 42% of NAFTA, and 59% of the European Union. For other Latin American nations, Chile in particular, joining NAFTA would provide greater freedom of mineral trade and, ultimately, greater efficiencies of production. Canada, a NAFTA member, has signed with Chile a bilateral trade pact effective on November 19, 1996.

During the past 30 years or more, other Latin American countries, have entered trade agreements among themselves, such as Chile's bilateral Free Trade Agreement with Mexico; the Venezuelan/Colombian agreement with the Central American Common Market; Venezuela's agreement with Chile to begin phasing out tariffs over a 6-year period; and a free trade pact

among Colombia, Mexico, and Venezuela to phase out tariffs. In 1996, Chile signed an agreement with Colombia to eliminate tariffs entirely by 1999. In 1993, Argentina signed a bilateral investment treaty with the United States guaranteeing U.S. investors the best of national treatment or most-favored-nation treatment, free transfer of profits, and access to international arbitration.

Investment opportunities for U.S. and foreign companies have increased because of the liberalization of the MERCOSUR countries' economies and the privatization of many Latin American mineral, oil and gas, utilities, and infrastructure sectors. In the minerals industries, 100% of equity ownership was allowed by means of privatization or by direct acquisition, profits were allowed to be expatriated, and, more importantly, restrictions on foreign investments were removed. The U.S. Department of Commerce reported that Brazil received \$65.5 billion of FDI (industry, 41.5%; services, 56.7%; and other sectors, 1.8%) in 1997; Chile was the recipient of \$25.5 billion of FDI (mining, 43.8%; services, 22.8%; industry, 16.2%; and others, 17.2%) from 1974 to 1997; and Peru received \$36.5 billion of FDI (services, 50.1%; others, 30.6%; and minerals, 19.3%) from 1990 to 1998. In 1997, Argentina, Brazil, Chile, and Peru received \$1.65 billion, \$8.8 billion, \$17.4 billion, and \$9.1 billion, respectively, in the minerals sector. (See table 3). The Brazilian import average tariff was lowered to approximately 14% from 28% in 1990; an Industrial Products Tax, a Federal tax levied on most domestic and imported manufactured products, was set between 0% and 15%.

Privatization and Investment Interest

Latin America's economic growth is characterized by increased privatization, joint-venture projects, and reduced trade barriers. Privatization is changing the industrial operating mode to a privately owned/Government-regulated regime from a Government-owned/Government-operated regime. The establishment of joint ventures, such as in construction and management of infrastructure, energy and mining projects, and deregulated industries (electricity/gas/telecommunications), was a common practice in the region. Foreign investors viewed Latin America as an attractive region with open-market economies. These changes, coupled with the growing awareness of environmental protection, are leading to the establishment of more-comprehensive environmental regulations and controls (MERC's) for all Latin American industries, including mining and energy, for the benefit of present and future generations. With respect to environmental, geologic, economic, and social impacts in the region, MERC's, however, will require further consideration of many factors to find a balance between continued industrial profitability and environmental protection.

Governments of the region recognize that privatization and acceptance of foreign investment fosters vigorous growth, not least in the mining industry, leading to enhanced revenues and, for many countries, expanded overall economic strength in labor and wages.

The lure of rights to private ownership in Latin American countries, such as Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Mexico, Peru, and Venezuela, attracted great

interest in the mineral endowment of those countries. Seeking sources of hard currency for its economy, Cuba, increasingly allowed foreign companies to participate in exploration, production, and refining of metals and crude oil.

Significant investment flows of U.S., Canadian, European, Chinese, and Japanese capital for mining, energy, communications, utilities, and other development continued to entering Latin America. Among the most popular geologic exploration targets were the Cordillera and the Guyana Shield; the Cordillera extends southward through Mexico and Central America to the Andes of South America, virtually to Tierra del Fuego. The Guyana Shield is comprised by northwestern of Brazil, southeastern of Venezuela, French Guiana, Guyana, and Suriname.

Venezuela courted foreign exploration for metals, particularly gold, and encouraged joint efforts in petroleum operations. Interest in Venezuela's major gold project, Las Cristinas in the "ilometro 88" on Highway 10 south of El Dorado, has decreased significantly for several reasons—review of mining law, legal entanglement between Placer Dome and Crystallex on Las Cristinas, difficulty of governmental administrative procedures, and prevailing lower gold prices. Although public concern remained high over mercury pollution in the Las Cristinas area from old garimpeiros' (informal miners) panning operations, interest did not stop there. Many of the same companies explored for gold and diamonds toward the south and east throughout the Guyana Shield but north of the Brazil border through French Guiana, Guyana, and Suriname.

Brazil responded to the Asian economic crisis with a massive increase in interest rates to 46% a year from the 28% as of September 1997 to pull in foreign portfolio investment and a package of \$18 billion in emerging budget cuts, but uncertainty was looming.

After adopting new mining and environmental laws in 1992, Mexico concentrated on its privatizing efforts. After being hindered by the collapse of the peso at the end of 1994 and into 1995, that resulted in a deep economic recession and temporary financial uncertainty, its economy was bolstered by strong new foreign investments in many of its basic industries. Plans for privatization of the petrochemical industry stalled.

Foreign investment has played an important role in the modernization and growth of the Chilean economy, and mining continued to be the most attractive target sector, absorbing about 58% of this investment in 1997. According to the Chilean Copper Commission, most of the foreign capital went to 20 projects.

Government control policies in Peru have been replaced by a modern economic model, including the liberalization of foreign-exchange transactions, deep cuts in tariffs and subsidies, unfettered interest and foreign-exchange rates, and liberalized international investment rules. These have been part of the foundation for the sweeping privatization process that allowed price and investment decisions to be governed by open-market forces. Privatization of the mining, energy, telecommunications, and utility sectors created a new open-market outlook for the country.

The Corporacion Minera de Bolivia, once the leading mineral producer in the country, sought private partners to operate its

existing mines under joint-venture projects or other contracts. The Bolivian Government undertook significant legal and regulatory reforms, such as a single income tax rate of 25%, enactment of environmental laws to balance the need for environmental protection against the imperative of sustainable economic development, and a revised mining code ensuring equal treatment of foreign and domestic investors. The construction of the 3,150-kilometers Bolivian-Brazilian gas pipeline is being financed by a consortium led by the World Bank. An export market worth \$300 million, which could be created by the end of 1998, would increase Bolivia's annual export earnings to \$1.5 billion.

The Colombian Government continued with efforts to privatize its mining sector and sold its remaining interest in Colombia's only nickel producer, Cerro Matoso, back to its South African owner. An international consortium was awarded a 30-year contract to develop the Cerrejón Zona Sur coal deposit in the Guajira Department. The same consortium combined two other important adjacent coal properties, the Cerrejón Zona Centro and the Oreganal, that produced about 3.3 million metric tons of coal in 1997. Expansion plans for the combined property project production to reach the level of 16 million metric tons per year of coal.

Gold mining activity in the Central American countries was centered primarily in Nicaragua, Panama, and Costa Rica, but exploration continued throughout the region.

In Canada, privatization was not a concern. That country has seen increasing environmental challenges to property development, mining, and closure or abandonment of mines. The mineral industries have striven to respond to criticism by adopting environmentally acceptable methods of operation. Some companies, however, have chosen to shift their interests elsewhere, particularly to Latin American countries. Groups of Canadian citizens representing all views have combined to reconcile conflicting interests between preservation and development. This effort brought together a coalition of Federal and local governments, native peoples, industry, labor unions, and nongovernmental organizations to formulate a common policy integrating public land use, resource development, and the environmental and economic concerns of the nation's people. Progress was evident as the work continued.

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TABLE 1
PRODUCTION OF SELECTED MINERALS IN LATIN AMERICA AND CANADA, 1997

(Thousand metric tons unless otherwise specified)

	Metals										
	Aluminum primary metal	Bauxite	Copper mine output	Gold (tons)	Iron ore, gross weight	Lead mine output	Nickel mine output	Silver (tons)	Steel, crude	Tin mine output	Zinc, mine output
Argentina	186	--	--	2	--	13	--	54	4,188	--	29
Belize	--	--	--	(1/)	--	--	--	--	--	--	--
Bolivia	--	--	(1/)	13	--	17	--	387	--	13	154
Brazil	1,200	12,500	40	41	187,900	--	25	49	25,100	18	153
Chile	--	--	3,392	49	8,738	1	--	1,091	1,168	--	34
Colombia	--	(2/)	(1/)	19	737	(1/)	31	4	710	--	(1/)
Costa Rica	--	--	--	1	--	--	--	(1/)	--	--	--
Cuba	--	--	4	--	--	--	62	--	240	--	--
Dominican Republic	--	--	--	2	--	--	52	12	--	--	--
Ecuador	--	--	(1/)	3	--	(1/)	--	2	35	--	(1/)
El Salvador	2	--	--	--	--	--	--	--	2	--	--
Guatemala	--	--	--	(1/)	3	(1/)	--	--	--	--	--
Guyana	--	2,100	--	13	--	--	--	--	--	--	--
Honduras	--	--	--	(1/)	--	2	--	35	--	--	25
Jamaica	--	11,875	--	--	--	--	--	--	--	--	--
Mexico	66	--	391	26	7,800	175	--	2,680	14,254	(1/)	379
Nicaragua	--	--	--	3	--	--	--	6	--	--	--
Panama	--	--	--	1	--	--	--	2	--	--	--
Paraguay	--	--	--	--	--	--	--	--	96	--	--
Peru	--	--	503	77	4,439	258	--	2,077	510	28	865
Suriname	32	4,000	--	(1/)	--	--	--	--	--	--	--
Trinidad and Tobago	--	--	--	--	--	--	--	--	736	--	--
Uruguay	--	--	--	2	6	--	--	--	40	--	--
Venezuela	634	5,000	--	22	18,359	--	--	--	5,258	--	--
Others 2/	--	--	--	3	--	--	--	--	--	--	--
Total Latin America	2,120	37,175	5,475	277	227,982	466	170	6,399	52,335	59	1,639
Share of world total (percent)	10	32	48	12	22	16	16	42	7	29	21
Canada	2,327	--	626	168	37,284	186	191	1,222	15,554	--	1,089
Total Latin America and Canada	4,447	37,175	6,101	445	265,266	652	361	7,621	67,889	59	2,728
Share of world total (percent)	21	32	54	19	26	22	33	50	9	29	35
United States	3,600	W	1,920	325	62,000	450	--	1,600	96,000	--	635
Total Western Hemisphere 3/	8,047	37,175	8,021	770	327,266	1,102	361	9,221	163,889	59	3,363
Share of world total (percent)	38	32	71	33	32	38	33	60	21	29	43
Total world	21,200	115,000	11,300	2,300	1,030,000	2,900	1,080	15,300	773,000	201	7,800

See footnotes at end of table.

TABLE 1--Continued
 PRODUCTION OF SELECTED MINERALS IN LATIN AMERICA AND CANADA, 1997

(Thousand metric tons unless otherwise specified)

	Industrial minerals						Fuels			
	Barite crude	Cement, hydraulic	Gypsum crude	Phosphate rock (P ₂ O ₅)	Salt, all forms	Sulfur, all forms	Coal, all grades	Natural gas, gross (million cubic meters)	Petroleum (million 42-gallon barrels)	
									Crude	Products
Argentina	15	6,858	600	--	1,100	--	200	35,000	305	177
Bolivia	4	1,035	(1/)	--	(1/)	--	--	5,500	11	11
Brazil	50	38,096	1,265	1,353	5,384	252	5,630	9,865	307	549
Chile	3	3,500	398	13	5,488	340	1,415	3,700	3	58
Colombia	1	7,854	565	45	326	70	32,362	13,019	238	115
Costa Rica	--	850	--	--	37	--	--	--	--	5
Cuba	--	1,500	130	--	180	5	--	37	11	60
Dominican Republic	--	1,500	113	--	11	--	1	--	--	12
Ecuador	--	2,688	--	--	--	14	--	190	144	51
El Salvador	--	960	6	--	32	--	--	--	--	6
Guatemala	3	1,200	30	--	48	--	--	25	8	7
Guyana	--	--	--	--	--	--	--	--	--	--
Honduras	--	980	28	--	25	--	--	--	--	2
Jamaica	--	550	264	--	18	--	--	--	--	6
Mexico	237	27,548	5,869	714 4/	7,933	1,340	11,052	43,507	1,052	465
Nicaragua	--	360	13	--	15	--	--	--	--	5
Panama	--	750	--	--	22	--	--	--	--	10
Paraguay	--	640	5	--	--	--	--	--	--	2
Peru	37	3,850	35	104	240	60	62	1,200	44	41
Suriname	--	50	--	--	--	--	--	--	2	--
Trinidad and Tobago	--	653	--	--	--	5	--	7,473	45	34
Uruguay	(1/)	770	183	--	--	2	--	--	--	10
Venezuela	--	7,600	80	319	350	319	5,284	40,000	1,180	372
Others 5/	--	607	--	--	1,466	71	--	35	(1/)	140
Total Latin America	350	110,399	9,584	2,548	22,675	2,478	56,006	159,551	3,350	2,138
Share of world total (percent)	8	7	10	6	12	5	1	6	12	8
Canada	103	11,736	8,503	--	13,264	10,171	78,867	199,422	770 6/	680
Total Latin America and Canada	453	122,135	18,087	2,548	35,939	12,649	134,873	358,973	4,120	2,818
Share of world total (percent)	10	8	18	6	19	23	3	13	15	11
United States	700	82,500	17,000	13,300	41,700	11,900	988,970	905,000	3,453	6,701
Total Western Hemisphere 3/	1,153	204,635	35,087	15,848	77,639	24,549	1,123,843	1,263,973	7,573	9,519
Share of world total (percent)	26	14	35	37	40	45	23	45	28	37
Total world	4,460	1,500,000	100,000	42,300	192,000	54,000	4,784,000	2,800,000	27,043	26,000

W Withheld to avoid disclosing company proprietary data.

1/ Less than 1/2 unit.

2/ Includes French Guiana.

3/ Excludes Greenland.

4/ Includes only output used to manufacture fertilizers.

5/ Includes Aruba, The Bahamas, Barbados, French Guiana, Guadeloupe, Haiti, Martinique, the Netherlands Antilles, and St. Kitts and Nevis.

6/ Includes synthetic crude (from oil shale and/or tar sands).

TABLE 2
THE ROLE OF LATIN AMERICA IN WORLD MINERAL PRODUCTION

(Percentage of world output) 1/

Commodity	1985	1990	1994	1995	1996	1997
Copper	26	26	31	33	36	48
Silver	35	35	39	33	40	42
Bauxite	20	24	28	30	30	32
Tin	25	28	32	31	32	29
Iron ore	17	21	22	22	22	22
Zinc	17	17	19	20	21	21
Lead	15	13	16	16	16	16
Nickel	6 e/	11	15	14	15	16
Crude oil	12	11	15	12	14	12
Gold	10	9	9	10	12	12
Aluminum	8	10	10	10	10	10
Petroleum products	7	9	8	7	8	8
Cement	7	7	7	6	7	7
Steel	5	5	6	6	6	7
Coal	1	1	1	1	1	1

e/ Estimated.

1/ By volume.

TABLE 3
SIGNIFICANT INVESTMENT FLOWS TO ARGENTINA, BRAZIL, CHILE, AND PERU 1/ 2/

(Million dollars unless otherwise specified)

Country/project	Major operating companies and major equity owners	Country investment	Product	Year
ARGENTINA				
Las Flechas, San Juan	Minas Argentinas S.A., 50%; Ima Resources Corp., 50%	Argentina/Canada	Au/Ag	1997
Del Carmen, San Juan	Argentina Gold Corp., 40%; Barrick Gold Corp., 60%	do.	Gold	1997
El Pachón, San Juan	Cía. Minera San José S.A., 50%; Cambior Inc., 50%	do.	Copper	2000
Bajo La Alumbra, Catamarca	Mount Isa Pacific Pty. Ltd., 50%; Australian North Ltd., 25%; Rio Algom Ltd., 25%	do.	Au/Cu	2000
Agua Rica, Catamarca	BHP Minerals Inc., 70%; Northern Orion Exploration Ltd., 30%	do.	Au/Cu-feasibility	1997
Fenix/Salar del Hombre Muerto, Ca.	Minera del Altiplano S.A. (FMC Lithium Corp., 100%)	USA	Lithium	2000
Cerro Vanguardia, Santa Cruz	Minera Mincorp S.A. (Anglo American Corp., 100%)	South Africa	Gold	2000
Rio Colorado, Mendoza	Potasio Rio Colorado S.A. (CRA-Minera TEA S.A., 100%)	Australia	Potassium	2000
San Jorge, Mendoza	Grupo Minero Aconcagua S.A., (private, 100%)	Canada	Au/Cu-feasibility	2000
Total Investment in the Minerals Sector in 1997			1,650	
Total U.S. Investments in the Minerals Sector in 1997			110	
Foreign Direct Investments			NA	
BRAZIL				
Serra dos Carajás, Pará State	Companhia Vale do Rio Doce (CVRD); Consortium led by Cia. Siderurgica Nacional (private, 100%)	Brazil	Privatization Fe/Mn/Au	1997
Salobo Metais, Pará State	CVRD/Anglo American Corp./BNDES	Brazil/South Africa	Cu-evaluation	1997
Sossego Metais, Pará State	CVRD/Phelps Dodge	Brazil/USA	Cu-prefeasibility	1997
Nickel Tocantis, Tocantins State	Cia. Niquel Tocantins	Brazil	Ni-expansion	1997
Saramenha-refinery, Minas Gerais	Alcan Alumínio do Brazil S.A. (Alcan Aluminum Ltd. (private, 100%))	Canada	Al-expansion	1997
São Luis-refinery, Maranhao State	Alcoa Alumínio S.A. (Aluminum Co. of America (Alcoa) (private, 100%))	USA/Netherlands	do.	1997
Caraiba Metais-refinery, Bahia State	Paranapanema Group	Brazil	Cu-expansion	1997
Corumba-plant, Mato Grosso State	Mineração Corumbaense (Rio Tinto Group)	United Kingdom	Hot-briq-iron	2000
Total Investments in the Minerals Sector in 1997			8,756	
Total U.S. Investments in the Minerals Sector in 1997			25	
Foreign Direct Investments for 1997 (Industry, 41.5%; services, 56.7%; others, 1.8%)			65,507	
Total U.S. Investments for 1997 (Manufacturing, 74%; banking and finance, 16%; others, 10%)			17,210	
CHILE				
Rodomiro Tomic	Corporación Nacional del Cobre de Chile S.A., 100%	Chile	Copper	1998
Collahuasi, Region I	Falcombrige Ltd., Minorco Plc.	Canada/Luxembourg	do.	1998
Cerro Colorado, Region I	Rio Algom Inc.	Canada	do.	1998
Quebrada Blanca, Region I	Cominco Ltd., Teck Resources International Ltd., and Empresa Nacional de Minería of Chile (ENAMI)	Canada/Chile	do.	1997
El Abra, Region II	Cyprus-Amox Minerals Co., 51%; Corporación Nacional del Cobre de Chile S.A., 49%	USA/Chile	do.	1997
La Disputada, Region II	Exxon Minerals Company	USA	do.	1995
Zaldívar, Region II	Placer Dome Ltd., Outokumpu Copper Resources Chile B.V.	Finland/Chile	do.	1995
Santa Barbara (expans.), Region II	Mantos Blancos S.A., Anglo American Corp.	Chile/South Africa	do.	1995
Lomas Bayas, Region II	Gibraltar Mines Ltd.	Canada	do.	1998
La Escondida (expansion), Region II	Broken Hill Proprietary Company Ltd., Rio Tinto Zinc Corp., Japan Escondida Corp., and International Finance Corp.	Australia/United Kingdom Japan/World Bank	do.	1997
Los Pelambres (expans.), Region IV	Luksic Group of Chile and Japanese Group	Chile/Japan	do.	1999
Tulna, Region II	Minera Mahogany and Minera Northern	USA/Chile	do.	TBD
Fundición La Negra, Region II	American Barrick Resources Corp., and Noranda Inc.	Canada	do.	1997
Andacollo Cobre, Region IV	ENAMI, Tungsten Inc., Cía. Minera del Pacífico S.A.	Canada/Chile	do.	1997
Refimet, Region III	Inversiones Mineras del Pacífico, American Barrick Resources Corp., and Noranda Inc.	do.	do.	1999
Refugio, Region III	Amox Gold Refugio Inc., Bema Gold Ltd.	USA/Canada	Gold	1996
Fachinal, Region XI	Coeur d'Alene Mines Corp.	USA	Gold/silver	1996
Leonor/El Tesoro, Region II	Luksic Group of Chile and Equatorial of Australia	Australia/Chile	Copper	2000
Yolanda, Region II	KAP Resources Ltd., and Yukon Ltd.	Canada	Nitrates/iodine	1997
Minsal, Region II	Sociedad Química y Minera de Chile S.A.	Chile	Lithium	1994
Ivan-Zar, Region II	Rayrock Yellow Knife Resources Inc.	Canada	do.	1996
Manto Verde, Region III	Anglo American Corp., Minorco Ltd.	Canada/South Africa	Copper	1995

See footnotes at end of table.

TABLE 3--Continued
SIGNIFICANT INVESTMENT FLOWS TO ARGENTINA, BRAZIL, CHILE, AND PERU 1/ 2/

(Million dollars unless otherwise specified)

Country/project	Major operating companies and major equity owners	Country investment	Product	Year	
CHILE--Continued					
La Candelaria, Region III	Phelps Dodge Co., Sumitomo Corp., Minorco Services Ltd., and Falconbridge Ltd.	USA/Japan/Canada	1,500	Copper	1994
La Coipa, Region III	Placer Dome and TVX Mining	Canada	400	Gold/silver	1992
Andacollo Oro, Region IV	Andacollo Gold Inc., La Serena Inc. (Dayton Mining Corp.)	do.	50	Copper	1996
Nevada, Region III	Cía. Minera San José Inc. (American Barrick Resources Corp.)	do.	168	Gold	1997
Tambo (expansion), Region IV	El Indio Property	Chile	105	do.	1995
Quebrada de Pascua, Region IV	Barrick of Canada	Canada	300	do.	NA
Santa Catalina	Outupunko of Finland	Finland	100	Copper	TBD
La Negra, Region II	Noranda Inc.	Canada	158	do.	2000
Pucobre	Punta del Cobre S.A.	Chile	50	do.	2000
Atacama Kosan	Cía. Minera Cominor S.A.	do.	130	do.	1998
Sierra Gorda	Yuma Gold Mines Ltd.	Canada	85	do.	TBD
Aldebarán, Region III	Placer Dome Ltd.	do.	800	Gold	1997
Chimberos, Region III	do.	do.	20	Silver	1999
Pascua, Region III	Barrick of Canada	do.	400	Gold	TBD
Cerro Casale, Region III	Placer Dome Ltd.	do.	792	do.	TBD
Lobo Marte, Region III	do.	do.	300	do.	TBD
Los Colorados	Mitsubishi of Japan	Japan	100	Iron ore	1998
Total Investments in the Minerals Sector in 1997			17,409		
Total U.S. Investments in the Minerals Sector in 1997			1,074		
Foreign Direct Investments from 1974 to 1997 (Mining, 43.8%; services, 22.8%; industry, 16.2%; others, 17.2%): 25,535					
Total U.S. Investments from 1974 to 1997 (Mining, 43.8%; services, 22.8%; industry, 16.2%; others, 17.2%): 9,518					
PERU					
Smelter-refinery, La Oroya	Doe Run Resources Corp., 90% (USA); Renco Resources Inc., 10% (Canada)	USA/Canada	247	Expansion Base/precious metals	1997
Casapalca Mine, Lima	Glencore International, 80% (Switzerland); Group Gubbins, 20% (Peru)	Switzerland/Peru	120	Cu/Pb/Zn/Ag	1998
Cuajone, Moquegua Depart., and Toquepala, Tacna Department Smelter at Ilo, Moquegua Depart. Refinery at Ilo, Moquegua Depart.	Southern Peru Limited (USA) (Asarco Corp., 63.0%; Phelps Dodge Overseas Capital Corp., 16.3%; The Marmon Group Inc., 20.7%)	USA	1,816	Expansion Cu/Pb/Mo/Au	1997
San Cristóbal, Mahr Túnel, and Andaychagua, Junín Depart.	Cía. Minera Volcán S.A., 100% (Peru)	Peru	73	Cu/Pb/Zn/Ag	1998
Yauricocha, Junín Department	Cía. Minera San Ignacio de Morococha, 100% (Peru)	do.	4	do.	1997
La Granja, Cajamarca Department	Cambior S.A., 100% (Canada)	Canada	2,300	Copper	1999
Cerro Negro, Arequipa Department Electrowon at Cerro Verde	Sociedad Minera Cerro Verde S.A., (Cyprus-Amax Minerals Co., 90.9% (USA); Cía. de Minas Buenaventura, 9.1% (Peru)	USA	100	do.	1998
Antamina, Ancash Department	Cía. Minera Antamina S.A., (Canada) (Noranda Inc., 37.5%; Rio Algom Limited, 37.5%; Teck Corporation, 25%)	Canada	2,520	Copper/zinc	2002
Cerro Yanacocha Mine, Cajamarca Department	Minera Yanacocha S.A., (Newmont Mining Corp., 51.4%; Cía. de Minas Buenaventura S.A., 43.6%; World Bank's IFC, 5%)	USA/Peru/IFC	50	Gold	1997
Pierina, La Libertad Department	Minera Barrick Misquichilca S.A., (Canada)	Canada	316	do.	1998
Quellaveco, Moquegua Department	Minorco of Luxembourg, 50%; Anglo American Corp, 50%	Luxemb/South Africa	800	Copper	2000
Refinery at Cajamarquilla, Lima	Refinería Cajamarquilla S.A., (Cominco Ltd. of Canada, 87%; Marubeni Corp. of Japan, 13%)	Canada/Japan	356	Expansion, zinc	2000
Tintaya, Cusco Department	Minera Tintaya S.A., (USA, 100%)	USA	273	Copper	1994
Marcona, Ica Department	Shougang Hierro Perú S.A., (private, 100%)	China	120	Iron ore	1992
Total Investments in the Minerals Sector in 1997			9,099		
Total U.S. Investments in the Minerals Sector in 1997			2,437		
Foreign Direct Investments from 1990 to May 31, 1998 (Services, 50.1%; others, 30.6%; and minerals, 19.3%): 36,487					
Total U.S. Direct Investments from 1995 to May 31, 1998 (Minerals, 84.0%; electricity, 12.5%; and industry, 3.5%): 6,037					

NA Not available. TBD To be developed.

1/ Ministries of Mines and Energy of Argentina, Brazil, Chile, and Peru.

2/ U.S. Department of Commerce: National Trade Data Bank, The Export Connection, September 1998.