Minerals in the World Economy

By Stephen C. Brown [1] and L. Nahai [2]

The major developments of the world's mineral economy in 1965 were the continued rise in production and consumption of practically all major minerals, the sharp increase in output of the fertilizer minerals in response to demands for greater food output, the cutback in new investment for steel capacity in Europe and Japan, Europe's continuing decline as a producer of primary minerals, and the emergence of nuclear power as an economically competitive factor in the energy economies of the United States and Western Europe.

In resource development, discovery of new natural gas deposits in the North Sea and the continued development of Australia's bauxite and iron ore resources, making this country a major source for these commodities, were significant.

In nonferrous metal prices, higher prevailing prices for lead favored marginal producers as in the Federal Republic of Germany, and zinc prices remained fairly stable at a level higher than that of 1964. Introduction of producers' price for zinc in July 1964 may have contributed to narrowing the range of movement in the London Metal Exchange (LME) price of this commodity. World market price of copper in 1965 increased from January to April, declined somewhat between April and midyear as major producers started marketing copper at LME prices, and then increased continuously after mid-year so that yearend prices surpassed those of April.

Substantial progress in the Kennedy Round of tariff negotiations was delayed by the French boycott of the Council Meetings of the European Economic Community (EEC). Following the boycott the organization could not negotiate as a unit, however bilateral negotiations were carried out on industrial commodities.

Continuing expansion of the world economy in 1964 and 1965 raised both production and consumption of practically all major minerals to new heights, but there was a distinct slowing of the rate of growth in 1965 as compared with 1964. In 1965, it was chiefly the sustained growth of the United States economy that maintained the expansive forces in the world economy, as growth rates in Western Europe and Japan lagged behind those prevailing in 1964. The effects of this 1965 decline in growth rates were felt in smaller rates of increase in mineral production, consumption, and trade.

Gross national product (GNP) of the United States, in real terms, increased by 5 percent in 1964 and by 5.5 percent in 1965. In the EEC the corresponding rates were 5.6 percent for 1964 and 4 percent for 1965. The slowdown in the economic growth of the European Free Trade Association (EFTA) dominated by the performance of the British economy, was more than that recorded for the EEC. Increase in production in the United Kingdom was marginal. In Scandinavia, only Norway maintained the economic vigor of 1964. In Japan, the economy was still undergoing a recession phase which, however, did not deteriorate, because of increase in public expenditures. Increase in output dropped from about 14 percent in 1964 to about 3 to 4 percent in 1965. Industrial investment remained low but private consumption increased a little. Indices of industrial pro-

[1] International economist, Division of International Activities.

[2] Chief specialist, West Europe Area, Division of International Activities.

duction in these countries showed parallel changes.[3]

Latin America as a whole had favorable economic development and increased exports; in a number of countries inflation was brought under control. Argentina, Mexico and Brazil had the highest rate of expansion with Bolivia, Chile, and Peru following closely. Nonetheless, the less developed countries though still benefiting from high demand for their exports and (in the case of most minerals) rising export prices, were facing possible restrictions on further growth induced by their increasing burden of debt and the possibility of reduced aid from the industrialized countries arising from the latter's balance of payments problems.[4]

Thus the pattern of development exhibited in the past 2 years showed both the industrialized countries of the free world and the developing primary producing countries recording high but declining rates of economic growth, the former at a rate of about 4.5 percent for the 2 years together and the latter at a slightly lower rate. Yet the pattern also showed evidence of some strains. Among the industrialized countries the major problem seemed to be the control of steadily rising inflationary pressures as rapidly growing output overtook supplies of both manpower and capital resources; one after another the industrialized countries (France and Italy in 1963, the United Kingdom and Japan in 1964, a number of the smaller European countries in 1964 and 1965) were forced to take restrictive measures to slow down economic activity and restrain rises in unit costs of production.

World trade continued to grow in value and volume, rising by about 12 percent in 1964 and 8 percent in 1965, with mineral commodities participating in the increase. The reduced 1965 growth rate in volume of trade compared with that of 1964 resulted from protective measures in a number of countries and efforts to correct balance of payments by direct controls. United Kingdom maintained its surcharge and Ireland put a 10 percent surcharge on most consumer imports. Business slowdown in West Europe also was a contributing factor. Price increases for the major nonferrous metals, continuously rising demand for petroleum in Western Europe and Japan, and the rapid shift of European steel mills to dependence on imported ores improved the economic position of the primary producing countries, and together with rising prices for some other primary commodities helped improve their balances of payments and increase their rate of economic growth. Prices of primary products on the average rose about 5 percent in 1964, and export receipts of primary producing countries rose by about 13 percent in that year; in 1965 primary commodity prices declined somewhat, due chiefly to falling prices for agricultural products, but mineral and metal prices with few exceptions remained at high (and in some cases, rising) levels. Petroleum, iron ore, and steel were the chief causes of weak mineral prices.[5]

PRODUCTION

The index of world industrial production (1958=100), a much more accurate guide to world demand for minerals than changes in gross national product, rose by 14.5 percent from 1963 to 1965; while the production index for the mining and extractive industries rose by 9.4 percent the same period. Mining output in the less industrialized countries rose at about twice the rate of increase in the industrialized countries. Similarly, output of the mineral processing industries rose sharply in the 2 years, but with evidence of a considerable slowing down of the rate of increase between 1964 and 1965.

Production of most metals increased in both 1964 and 1965. In 1965, iron ore output rose by 5.4 percent, pig iron output (including ferroalloys) by 6.3 percent, and

[3] National Institute of Economic and Social Research, National Institute Economic Review, No. 33 (August 1965) pp. 22–32; No. 35 (February 1966) pp. 50–76; No. 36 (May 1966) pp. 21–29; U.S. Dept. of Commerce, Survey of Current Business, v. 45, No. 1 (January 1965), v. 46, No. 1 (January 1966); Economic Report of the President, 1966, pp. 31–34, pp. 140–148; EEC Commission, La Situation Economique de la Communaute, No. 1, Mars 1965, No. 1, Mars 1966; International Monetary Fund (IMF), Annual Reports, 1964 and 1965.

[4] National Institute of Economic and Social Research, National Institute Economic Review No. 37 (August 1966) pp. 20–32; IMF, 1965 Annual Report, pp. 3–8, pp. 41–48; IMF, 1966 Annual Report, pp. 3–5, pp. 62–71.

[5] National Institute of Economic and Social Research, National Institute Economic Review, No. 35 (February 1966), pp. 54–56; pp. 77–81. IMF, Annual Report, 1965, pp. 53–78.

Table 1.—United Nations Indexes of production [1]
(1958=100)

Index	1963	1964	1965 p
Industrial production total	138	148	158
Industrialized countries	136	147	156
Less industrialized countries	149	163	175
Mining, total	127	134	139
Industrialized countries	112	117	120
Less industrialized countries	172	186	199
Coal, total	100	101	101
Industrialized countries	97	99	97
Less industrialized countries	131	133	138
Metals, total	123	129	136
Industrialized countries	123	131	137
Less industrialized countries	121	127	136
Petroleum and natural gas, total	146	155	163
Industrialized countries	117	121	124
Less industrialized countries	198	216	232
Processing industries:			
Chemical, coal and petroleum products, total	157	172	186
Industrialized countries	158	173	188
Less industrialized countries	151	164	175
Nonmetallic mineral products, total	135	148	154
Industrialized countries	134	148	152
Less industrialized countries	136	152	166
Basic metals, total	136	154	164
Industrialized countries	133	152	161
Less industrialized countries	163	178	190

p Preliminary.
[1] World, excluding all Communist nations except Yugoslavia.
Source: United Nations Monthly Bulletin of Statistics, May 1966, Special Table A.

steel output by 5 percent over 1964 levels. Among the nonferrous metals, bauxite production increased by 9.9 percent and aluminum output by 10.3 percent; mine output of copper rose by 4.6 percent, of lead by 5 percent, and of zinc by 7 percent. Among the scarcer metals, tin production (content of ore) rose by 2 percent and silver output by 1.9 percent. Gold production continued its rising trend, increasing by 3.5 percent.

The most notable output increases in 1965 were recorded however by the fertilizer minerals. Potash production rose by 12.5 percent, phosphate rock production by 11.2 percent, and output of elemental sulfur by 9 percent. Of the other major nonmetallics, output of hydraulic cement rose by 4.5 percent.

Crude petroleum production in 1965 was 7 percent greater than in 1964 and natural gas production increased by 6.1 percent, while coal output increased by only 1.7 percent. The output of uranium (a metal, but economically significant as an emerging fuel mineral) declined for the fifth year in a row (by 21 percent), but technological breakthrough in the field of nuclear power and the placing of large orders for power reactors in the United States and Western Europe during 1965 suggested that this trend might be reversed in coming years.

The outlook for increased mineral production is favorable. Copper production capacity is expected to gain by 1.4 million tons per year by 1970[6] and that for iron ore to increase to 722 million tons per year by 1975. Growth rates of 6 to 7 percent per year for phosphate rock and 5 to 7 percent for potash are predicted. Lead and zinc may have additional mine capacity of 586,000 tons and 849,000 tons per year respectively by 1970.

Significant changes in the geographic distribution of mineral production since 1963 were especially notable in the cases of crude petroleum, zinc, bauxite, lead and iron ore. In the case of crude petroleum, the share of the Western Hemisphere dropped from 48 percent of the 1963 total to 43.8 percent of that for 1965, and the non-Communist European share declined marginally, while the African share increased from 4.6 percent to 7.3 percent, and that for the Middle East and Asia increased marginally. Similar increases in the African share of total output of bauxite and iron ore were recorded, the former rising from 5.8 percent in 1963 to 6.5 percent in 1965,

[6] Engineering and Mining Journal, McGraw Hill Publishing Co., New York, January 1966, pp. 74–88.

Table 2.—World production of selected mineral commodities

(Thousand metric tons unless otherwise specified)

Commodity	1961	1962	1963	1964	1965 [p]
Metals:					
Aluminum:					
Bauxite	[r] 29,340	[r] 31,250	[r] 30,675	[r] 33,685	37,035
Primary unalloyed ingot	4,705	5,065	[r] 5,510	[r] 6,100	6,730
Antimony	[r] 52	[r] 54	[r] 56	[r] 62	63
Arsenic, white [1,2]	[r] 54	[r] 45	[r] 55	[r] 59	62
Beryl	12	10	[r] 7	[r] [3] 5	[3] 5
Bismuth	3	3	3	4	4
Cadmium [4]	[r] 12	12	12	13	13
Chromite	4,225	[r] 4,370	[r] 3,955	[r] 4,265	4,900
Cobalt [1,5]	[r] 14	[r] 16	[r] 13	[r] 14	16
Columbium-tantalum [1]	5	4	4	5	7
Copper:					
Mine [6]	[r] 4,395	[r] 4,615	[r] 4,725	[r] 4,850	5,075
Smelter	4,640	[r] 4,845	[r] 4,950	[r] 5,195	5,465
Gold thousand troy ounces	[r] 39,650	42,300	44,250	46,100	47,700
Iron and steel:					
Iron ore	[r] 502,641	[r] 507,650	[r] 522,404	[r] 578,479	612,799
Pig iron and ferroalloys [5]	[r] 256,400	[r] 265,410	[r] 281,590	[r] 318,490	335,670
Steel ingots and castings	[r] 351,565	[r] 360,175	[r] 387,000	[r] 437,810	460,465
Lead:					
Mine	[r] 2,390	2,500	[r] 2,550	[r] 2,570	2,700
Smelter	[r] 2,400	[r] 2,380	[r] 2,460	2,560	2,630
Magnesium	105	134	145	151	159
Manganese ore [5]	[r] 13,579	[r] 14,272	[r] 14,760	[r] 15,818	17,612
Mercury thousand 76-pound flasks	240	245	239	[r] 255	275
Molybdenum [7]	41	34	41	[r] 43	52
Nickel	361	356	[r] 351	382	427
Platinum-group metals thousand troy ounces	[r] 1,345	[r] 1,625	[r] 1,540	[r] 2,550	2,960
Selenium [1] metric tons	[r] 952	950	[r] 922	[r] 952	789
Silver [5] thousand troy ounces	[r] 236,900	[r] 244,700	[r] 250,300	[r] 246,400	251,000
Tellurium [1] metric tons	170	180	144	[r] 126	153
Tin:					
Mine long tons	184,100	186,600	[r] 190,300	[r] 194,500	199,200
Smelter do	184,000	189,500	[r] 191,600	[r] 188,900	194,100
Titanium concentrates:					
Ilmenite [8]	[r] 2,115	[r] 1,969	[r] 1,987	[r] 2,348	2,475
Rutile [8]	[r] 117	[r] 136	[r] 201	[r] 193	[3] 220
Tungsten concentrate, 60 percent WO_3 basis	[r] 69	[r] 66	[r] 58	[r] 58	54
Uranium oxide (U_3O_8) [1]	[r] 33	31	[r] 28	[r] 24	19
Vanadium [1]	[r] 8	7	[r] 6	[r] 7	8
Zinc:					
Mine [9]	[r] 3,490	[r] 3,585	[r] 3,700	[r] 4,020	4,310
Smelter [9]	3,245	3,405	3,475	[r] 3,730	3,845
Nonmetals:					
Asbestos [5]	2,510	2,770	[r] 2,870	[r] 3,220	3,260
Barite [4]	[r] 2,850	[r] 3,120	[r] 2,930	[r] 3,100	3,450
Cement, hydraulic	[r] 333,665	[r] 358,541	[r] 377,974	[r] 415,128	434,009
Corundum	7	8	10	8	10
Diamond:					
Gem thousand carats	7,019	6,347	[r] 6,594	[r] 6,977	7,172
Industrial do	26,234	27,659	30,089	[r] 29,838	28,342
Diatomite [10]	[r] 1,495	[r] 1,510	[r] 1,580	[r] 1,720	1,585
Feldspar [11]	[r] 1,625	[r] 1,630	[r] 1,740	[r] 1,845	1,930
Fluorspar	2,070	[r] 2,150	[r] 2,130	[r] 2,480	2,880
Fertilizer materials, crude:					
Phosphate rock [5]	[r] 45,480	[r] 48,280	[r] 51,210	[r] 59,050	65,670
Potash, K_2O equivalent of marketable output	9,700	9,800	[r] 10,800	[r] 12,000	13,500
Graphite	410	[r] 535	[r] 710	[r] 635	615
Gypsum [5]	[r] 40,510	[r] 43,410	[r] 45,745	[r] 46,650	46,785
Magnesite	[r] 7,525	[r] 7,925	[r] 8,325	[r] 9,100	9,700
Mica [5]	165	180	180	185	200
Pumice [12]	[r] 11,930	[r] 12,350	[r] 15,180	[r] 14,790	15,020
Pyrites (including cupreous) [13]	19,600	20,100	[r] 19,850	[r] 20,600	21,500
Salt [5]	[r] 84,960	[r] 91,450	[r] 94,960	[r] 99,560	107,590
Strontium minerals [1,14]	[r] 12,616	[r] 11,659	[r] 16,618	[r] 23,024	8,439
Sulfur, elemental:					
Native	[r] 8,340	[r] 8,210	[r] 8,180	[r] 8,780	9,680
Byproduct, recovered	[r] 3,310	[r] 3,940	[r] 4,590	[r] 5,290	5,660
Talc, soapstone and pyrophyllite	[r] 2,805	[r] 2,770	[r] 3,090	[r] 3,485	3,510
Vermiculite [1,13]	[r] 256	[r] 268	[r] 298	[r] 311	346

See footnotes at end of table.

Table 2.—World production of selected mineral commodities—Continued
(Thousand metric tons unless otherwise specified)

Commodity	1961	1962	1963	1964	1965 p
Mineral fuels:					
Coal:					
Anthracite	r 176,100	r 179,100	r 182,800	r 190,400	189,700
Bituminous	r 1,648,472	r 1,689,968	r 1,757,363	r 1,821,696	1,873,194
Lignite	r 658,057	r 680,943	r 713,769	r 744,245	740,432
Total	r 2,482,629	r 2,550,011	r 2,653,932	r 2,756,341	2,803,326
Coke:					
Metallurgical	r 272,035	r 272,910	r 278,835	r 296,207	309,059
Other types [5]	r 44,970	r 45,450	r 45,350	r 44,150	41,980
Fuel briquets	113,100	r 119,100	r 121,500	r 121,800	116,500
Peat [5]	r 159,600	r 142,900	r 166,200	r 178,600	198,000
Petroleum, crude million 42-gallon barrels	8,184	r 8,882	r 9,537	r 10,309	r 11,063

p Preliminary. r Revised.
[1] Excludes production, if any, by Albania, Bulgaria, mainland China, Czechoslovakia, East Germany, Hungary, North Korea, Mongolia, Poland, Rumania, U.S.S.R., and North Viet-Nam.
[2] Excludes production by Argentina, Austria, Finland, United Kingdom, and Yugoslavia.
[3] Excludes production by United States; data withheld.
[4] Excludes production by Bulgaria.
[5] Excludes data on output, if any, by one or more countries that have not reported output and for which no reasonable basis for estimation exists; such countries however, are believed to have produced only relatively negligible quantities.
[6] Excludes production by Czechoslovakia, Hungary, Iran, Kenya, and Malaya.
[7] Excludes production by Argentina, Nigeria, North Korea, Rumania, South-West Africa, and Spain.
[8] Excludes U.S.S.R.
[9] Excludes production by Czechoslovakia and Rumania.
[10] Excludes production by Hungary and Rumania.
[11] Excludes production by mainland China and Rumania.
[12] Excludes production by Mexico and U.S.S.R.
[13] Excludes production by Brazil.
[14] Excludes production by East Germany, West Germany, Poland, and U.S.S.R.

and the latter rising from 4.1 percent to 6.4 percent. Africa also increased its share of mine copper output from 20.7 percent to 22.1 percent, of mine lead output from 7.4 percent to 8.3 percent, and of mine zinc output from 6.9 percent to 7.3 percent. The Western Hemisphere increased its share of iron ore, mine lead and mine zinc output, with its share of mine copper output rising marginally and of bauxite declining by a similar small margin. In general, the share of Europe in total primary mineral production declined. Oceania's share of total bauxite output rose sharply, from 1.2 percent in 1963 to 3.2 percent in 1965; its share of both mine lead and mine zinc output declined, however, the former from 16.4 percent to 13.4 percent and the latter from 9.9 percent to 8.1 percent. These shifts were all attributable to changes in Australian production.

In general, the relative shares of non-Communist world producers rose slightly during the period, while that of Communist nations of Europe and Asia declined slightly for most mineral commodities. Significant commodity exceptions to this pattern were gem and industrial diamond, mine and smelter lead, ingot aluminum, phosphate rock, pyrites and coal as shown in table 3.

Most of the changes in geographic distribution can be explained by relative rates of economic growth in the respective regions during the 2 years under review. High rates of growth in the United States and Canada stimulated output of most minerals in the Western Hemisphere, while slower growth rates in Europe (and during 1965, in Japan) tended to depress output elsewhere. The decline of mineral output in Western Europe and the contemporaneous rise in Africa's share, however, reflects more basic shifts in the resource positions of the two continents, resulting in growing European dependence on Africa's resources. Shifts in the relative positions of the other areas in general reflect this fundamental shift rather than declines in actual output.

Similar pressures for reliance on overseas ores and fuel products existed in Japan, but since a large part of its total requirements already were being met from Middle Eastern and Asian sources, this pressure is not reflected in statistics showing changes in a real distribution of production during 1963–65.

Details of production of major commodities by principal producing countries appear in tables 14 to 29.

Table 3.—Approximate percentage distribution of world mineral production by major areas in 1965 [1]

Mineral	Western Hemisphere			Eastern Hemisphere							World [2]	
	North and Central America	South America	Total	Europe [3] Non-Communist	Europe [3] Communist	Africa	Near East, South Asia and Far East [4] Non-Communist	Near East, South Asia and Far East [4] Communist Asia	Oceania	Total	Non-Communist	Communist
Metals:												
Aluminum:												
Bauxite	31.3	19.5	50.8	15.1	16.8	6.5	6.5	1.1	3.2	49.2	82.1	17.9
Ingot	48.7	.4	49.1	19.1	22.5	.8	5.7	1.5	1.3	50.9	76.0	24.0
Antimony	9.2	16.2	25.4	6.9	13.1	24.1	6.5	23.9	.1	74.6	63.0	37.0
Arsenic, white [5]	W	1.2	W	NA	NA	.1	.8	NA	----	NA	100.0	NA
Beryl	NA	26.2	26.2	.8	19.5	26.6	26.7	----	.2	73.8	80.5	19.5
Bismuth	W	W	61.1	5.5	2.6	.2	23.6	7.0	----	38.9	90.4	9.6
Cadmium	47.3	1.7	49.0	14.6	18.5	3.9	9.7	----	4.3	51.0	81.5	18.5
Chromite	1.0	.5	1.5	1.9	36.0	31.5	28.5	.6	(6)	98.5	62.4	37.6
Cobalt [5]	W	----	W	W	8.4	75.7	----	----	.1	W	100.0	NA
Columbium-tantalum [5]	30.3	24.1	54.4	1.7	NA	43.0	.7	----	.2	45.6	100.0	NA
Copper:												
Mine	35.3	15.2	50.5	2.7	16.2	22.1	4.7	2.0	1.8	49.5	81.7	18.3
Smelter	32.2	13.2	45.4	10.0	15.0	19.9	6.3	2.0	1.4	54.6	83.0	17.0
Gold	12.0	1.6	13.6	.7	13.6	67.6	2.0	.4	2.1	86.4	86.0	14.0
Iron and steel:												
Iron ore	20.8	8.8	29.6	22.5	27.1	6.4	6.0	7.3	1.1	70.4	65.6	34.4
Pig iron (including ferroalloys)	26.8	1.2	28.0	27.4	25.2	1.3	10.6	6.2	1.3	72.0	68.6	31.4
Steel ingots and castings	28.4	1.4	29.8	28.2	26.0	.7	10.5	3.6	1.2	70.2	70.4	29.6
Lead:												
Mine	27.0	7.7	34.7	13.2	20.5	8.3	4.0	5.9	13.4	65.3	73.6	26.4
Smelter	27.1	5.0	32.1	21.5	21.3	4.5	4.9	5.7	10.0	67.9	73.0	27.0
Magnesium	52.9	----	52.9	23.6	20.8	----	2.1	.6	----	47.1	78.6	21.4
Manganese ore	1.7	7.9	9.6	.8	46.2	25.3	11.4	5.7	1.0	90.4	47.7	52.3
Mercury	13.6	1.3	14.9	57.0	15.0	.1	3.5	9.5	----	85.1	75.5	24.5
Molybdenum	75.5	8.6	84.1	.4	11.8	NA	.8	2.9	----	15.9	85.3	14.7
Nickel	64.0	.2	64.2	.7	21.1	1.0	.8	----	12.2	35.8	74.9	25.1
Platinum-group metals	16.5	.4	16.9	----	57.4	25.6	.1	----	(6)	83.1	42.6	57.4
Selenium [5]	60.6	1.1	61.7	14.6	NA	3.4	20.1	----	.2	38.3	100.0	NA
Silver	46.4	17.9	64.3	6.5	13.8	2.6	5.5	.6	6.7	35.7	85.6	14.4
Tellurium [5]	83.3	10.7	94.0	----	NA	----	6.0	----	----	6.0	100.0	NA
Tin:												
Mine	.3	12.6	12.9	1.3	11.0	10.3	49.9	12.6	2.0	87.1	76.4	23.6
Smelter	1.8	2.7	4.5	22.0	11.1	6.5	41.4	12.9	1.6	95.5	76.0	24.0
Titanium:												
Ilmenite [5]	55.5	.4	55.9	17.0	NA	.3	8.3	----	18.5	44.1	100.0	NA
Rutile [5] [7]	NA	.1	.1	----	NA	----	.6	----	99.3	99.9	100.0	NA
Tungsten	13.7	5.5	19.2	3.9	21.3	1.1	11.3	39.5	3.7	80.8	39.2	60.8
Uranium oxide (U_3O_8) [5]	71.0	.2	71.2	9.2	NA	17.8	NA	----	1.8	28.8	100.0	NA
Vanadium	57.3	NA	57.3	12.1	NA	30.6	----	----	----	42.7	100.0	NA

263-927 O-67—2

Zinc:												
Mine	37.6	7.1	44.7	13.2	15.9	7.3	6.1	4.7	8.1	55.3	79.4	20.6
Smelter	33.4	2.2	35.6	24.3	18.9	2.7	8.9	4.3	5.3	64.4	76.8	23.2
Nonmetals:												
Asbestos	41.9	(6)	41.9	3.1	36.9	12.7	1.1	4.0	.3	58.1	59.1	40.9
Barite	38.3	5.7	44.0	31.9	10.2	4.8	3.6	5.2	.3	56.0	84.6	15.4
Cement, hydraulic	18.5	3.7	22.2	32.1	24.3	2.6	14.5	3.2	1.1	77.8	72.3	27.7
Corundum	----	----	----	----	49.5	45.1	5.4	----	----	100.0	50.5	49.5
Diamond:												
Gem	----	3.6	3.6	----	4.2	92.1	.1	----	----	96.4	95.8	4.2
Industrial	----	1.0	1.0	----	11.3	87.7	(6)	----	----	99.0	88.7	11.3
Diatomite	33.5	.9	34.4	26.4	20.1	6.2	12.6	----	.3	65.6	79.9	20.1
Feldspar	33.3	3.3	36.6	42.6	12.0	2.5	5.9	NA	.4	63.4	88.0	12.0
Fluorspar	36.2	.4	36.6	30.3	15.4	2.6	3.9	11.2	----	63.4	73.4	26.6
Graphite	W	W	W	W	10.9	3.0	44.5	17.9	----	W	71.2	28.8
Gypsum	34.5	1.5	36.0	36.4	12.3	2.3	9.8	1.4	1.8	64.0	86.3	13.7
Magnesite	W	W	10.9	28.6	36.0	1.3	3.3	19.6	.3	89.1	44.4	55.6
Mica, including scrap	55.9	.9	56.8	1.6	15.3	1.8	19.1	5.1	.3	43.2	79.6	20.4
Phosphate rock	41.2	.8	42.0	0.1	23.7	24.5	3.0	3.3	3.4	58.0	73.0	27.0
Potash, K_2O equivalent (marketable)	30.6	.1	30.7	36.0	31.0	----	2.3	----	----	69.3	69.0	31.0
Pumice [5]	21.0	1.0	22.0	76.2	NA	.3	.8	----	.7	78.0	100.0	NA
Pyrites, including cupreous	5.7	NA	5.7	34.1	21.4	2.8	25.9	9.1	1.0	94.3	69.4	30.6
Salt	35.8	2.0	37.8	23.3	15.0	1.9	8.8	12.7	.5	62.2	72.3	27.7
Strontium minerals [5]	34.6	NA	34.6	60.1	NA	----	5.3	----	----	65.4	100.0	NA
Sulfur:												
Native	80.1	1.0	81.1	.4	14.7	.1	2.5	1.2	----	18.9	84.1	15.9
By-product, elemental	53.8	----	53.8	33.1	9.8	.2	.8	2.3	----	46.2	87.9	12.1
Talc and soapstone	23.8	2.3	26.1	16.3	13.6	1.4	37.2	4.9	.5	73.9	81.5	18.5
Vermiculite [5]	65.3	1.1	66.4	----	NA	33.4	.2	----	----	33.6	100.0	NA
Mineral fuels:												
Coal, all grades including lignite	17.6	.3	17.9	20.6	40.8	1.8	5.4	11.5	2.0	82.1	47.7	52.3
Coke:												
Metallurgical	21.2	.7	21.9	31.7	30.6	1.0	8.1	5.7	1.0	78.1	63.7	36.3
Other types	.4	.8	1.2	36.1	43.0	.6	16.2	1.0	1.9	98.8	56.0	44.0
Fuel briquets	.4	----	.4	24.5	64.8	(6)	8.7	----	1.6	99.6	35.2	64.8
Peat	.4	(6)	.4	3.1	96.4	----	.1	----	----	99.6	3.6	96.4
Petroleum, crude	30.1	13.7	43.8	1.3	17.1	7.3	29.8	.7	(6)	56.2	82.2	17.8

NA Not available, no estimates have been included in computing percentage distribution.

W Withheld to avoid disclosing individual company confidential data. Data however have been used in determining percentages in total column.

[1] Based on production data (including estimates) presented in world production tables in commodity chapters of Volumes I and II. In some cases, revised figures have been incorporated in individual country chapters of Volume IV, thus percentages given here will not necessarily agree with any totals of production based on data in individual country chapters. Regional divisions of totals conform to those used in the Table of Contents of Volume IV except as noted.

[2] Includes Communist countries of Europe and Asia as listed in footnotes 3 and 4 respectively as well as Cuba.

[3] Of the European countries listed in the Table of Contents of Volume IV, the following are included under the heading Communist Europe in this table: Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania and the U.S.S.R. Yugoslavia, although Communist, is included in non-Communist Europe for Statistical purposes.

[4] Of the Far Eastern countries listed in the Table of Contents of Volume IV, the following are included under the heading Communist Asia in this table: mainland China, Mongolia, North Korea, and North Viet-Nam.

[5] Distribution of output by non-Communist countries, Yugoslavia and Cuba only; no estimate of production for other Communist countries has been made.

[6] Less than 0.05 percent.

[7] U.S. data excluded.

CONSUMPTION AND TRADE

As in the case of production, consumption of most major minerals (except coal) rose significantly in 1965 but at a slower rate than in 1964. Statistical estimates exist for only a few minerals, however. Indicators of consumption changes for the ferrous group of minerals (iron and ferroalloy ores such as manganese, tungsten, vanadium, and molybdenum) are provided by pig iron and steel production data, which showed increases of 5.4 percent and 5 percent respectively. In the case of nonferrous metals, aluminum consumption continued to show the most rapid rate of increase (9.7 percent) in 1965, while copper consumption expanded by 1.5 percent, lead consumption by less than 1 percent and zinc consumption by 2.6 percent. Tin consumption declined by 1.2 percent. The higher levels of consumption for aluminum, copper, lead, and zinc were chiefly the result of large increases by U.S. consumers; demand in other industrialized areas generally declined. Tin consumption in 1965 declined in all industrialized areas except the United Kingdom. U.S. stockpile releases accounted for significant supplies of copper, lead, zinc, and tin coming on the market in both years. Among the nonmetals, consumption of sulfur, phosphates, and potash rose sharply in 1964 and 1965 as production of fertilizers and sulfuric acid reached new highs. Sulfur markets became especially tight as consumption expanded to the limits of output.

With increasing realization of the urgency of greater food production to meet increasing world needs, it is likely that the sharply rising consumption trend of these minerals will continue. One source gives a growth rate of 7 to 8 percent annually through 1980[7] stating that if all announced projects go on stream as planned, worldwide capacity and demand by 1970 will be as follows:

Commodity	Million tons	
	Capacity	Demand
Nitrogenous fertilizers (nitrogen content)	34	31
Phosphate rock	80	72
Potassic fertilizers (K_2O equivalent)	21.1	19.7

Producers' stocks of lead declined by 45,000 tons in 1964 but rose by 12,000 tons in 1965, while a 1964 decline of 39,000 tons in producers' stocks of zinc was reversed to a gain of 23,000 tons in 1965.[8]

Estimates of overall stock changes of the nonferrous metals in 1965 show increases for copper, zinc, and tin and a decline of 4,000 tons for lead.

A perhaps significant trend in the world's mineral economy is the slow but steady growth of the developing countries' share of total world consumption of major mineral products. Data provided by UNCTAD (United Nations Conference on Trade and Development) commodity studies show, for example, that the developing countries' share of world pig iron output (a guide to iron ore consumption) rose from 3.6 percent in 1961 to 4 percent in 1965. Their share in consumption of primary aluminum rose from 3.5 percent in 1960 to 4.1 percent in 1964; of refined copper, from 4.4 per-

[7] World Fertilizer Review, v. 1, No. 5, July 1966.

[8] United Nations Conference on Trade and Development, TD/B/C.1/PSC/7, 26 May 1966, "Preparation of a Summary of the Current Market Situation in Selected Commodities," pp. 44–46.

Table 4.—Estimated world consumption of major nonferrous metals [1]

Commodity		1963	1964	1965
Aluminum [2]	thousand metric tons	r 5,304	5,800	6,363
Copper [3]	do	r 5,385	5,909	5,999
Lead	do	2,657	2,788	2,810
Tin [4]	thousand long tons	161	166	164
Zinc	thousand metric tons	3,456	3,850	3,951

r Revised.

[1] Refined metals including secondary; including estimates for U.S.S.R. and Communist nations of Europe and Asia.

[2] Partial.

[3] Source, British Bureau of Non-ferrous Metal Statistics.

[4] As reported by International Tin Council.

Source: Yearbook of the American Bureau of Metal Statistics (Forty-fifth Annual Issue for the Year 1965). Data for aluminum, copper, lead and zinc converted from short tons.

cent in 1960 to 5.3 percent in 1965; of refined lead from 6.4 percent in 1960 to 8.6 percent in 1964; of slab zinc from 7 percent in 1960 to 8.4 percent in 1964; of tin, from 8.3 percent in 1953–1955 to 9.5 percent in 1965.[9] In the case of petroleum, the developing countries have maintained their share of consumption at about 14 percent of the total over the period since 1955. In the cases of most of these commodities it was rising consumption in India and a few of the Latin American countries that accounted for the increasing share of the developing countries.

The significance of this, in a period when total world consumption of most minerals has increased rapidly, should not be underestimated. Many of the developing countries are themselves major producers of the minerals they are now beginning to consume in significant quantities and it is logical to expect that the usual economies of locating mineral processing industries in rapidly growing markets for their products will result in the build-up of mineral processing industries in the developing countries, especially when many of them are also major producers of the mineral raw materials. Such a development might well have effects both on trade patterns and (depending on the location and elasticity of mineral supplies) on the terms of trade.

UN data show that world trade in minerals (mineral fuels, metallurgical ores, and scrap metals) expanded by about 6.5 percent in terms of value in 1963 and again by about 13.5 percent in 1964, the latest year for which this analysis is available. As a proportion of total world trade, the share of these commodities fell from 21 percent in 1962 to 20.3 percent in 1963, but increased again to 20.6 percent in 1964. The addition of trade in nonmetals would raise the total trade in minerals, and probably its proportion of total trade, by a significant amount.

In terms of volume only scanty data are available but UN figures indicate that crude petroleum and petroleum products alone accounted for 54 percent of total international seaborne commerce in 1964, while trade in iron ore acounted for another 13 percent of total world trade in that year.[10]

In 1963 and 1964 of the three industrialized areas North America, western Europe and Japan took an increasing proportion of the world's exports of the major minerals, the combined share of the three areas rising from 67.8 percent in 1962 to 68 percent in 1963 and 69.8 percent in 1964. The shares of western Europe and Japan in the total rose, the former taking nearly half (48.7 percent) of total mineral exports in 1964, and the latter 6.4 percent. The share of North America declined from 17 percent in 1962 to 16.6 percent in 1964. These shifts, as well as the rising proportion of the total going to the three areas, in large part reflect sharply rising European and Japanese imports of petroleum and iron ore from other regions.

Data exhibiting the patterns of international trade in individual mineral commodities confirm the growing importance of western Europe and Japan as importing areas and illustrate the effects of transport costs in determining the directions of trade. A third factor, the partial isolation of the United States markets for some minerals and maintenance of prices below world levels by means of quota restrictions and stockpile releases, is probably reflected also to some extent but its effect is not specifically distinguishable. Tables 30 to 45 show trade patterns for iron ore, steel products, bauxite, solid fuels, crude petroleum, and lead and zinc ores and concentrates, for the most recent years available.

INVESTMENT

Except for figures on iron and steel industry investment, data for 1965 investments in the mineral industries are not available on a worldwide basis. There was a sharp decline however in investments in the European and Japanese steel industries as compared with the period from 1960 to 1962.

[9] United Nations Conference on Trade and Development, Preparation of a Summary of the Current Market Situation in Selected Commodities, TD/B/C.1/PSC/7 add. 1, pp. 8, 65, 78, 90; idem, TD/B/C.1/PSC/7, pp. 49 and 55.

[10] United Nations Monthly Bulletin of Statistics, January 1966, Special Table C; United Nations Conference on Trade and Development; Preparation of a Summary of the Current Market Situation in Selected Commodities, TD/B/C.1/PSC/7/Add 1, p. 201.

Table 5.—World exports of major classes of minerals in 1964, by value and region[1]

(Million dollars)

Exporters	Destinations										
	North America	Latin America	Western Europe[2]	Middle East[3]	Australia, New Zealand South Africa	Central Africa[4]	Japan	Other Free Asia	Eastern Europe[5]	China (mainland), etc.[6]	Other[7]
North America	1,765	322	1,595	37	84	25	466	348	11	---	27
Latin America	1,685	306	1,020	1	14	24	149	6	37	---	740
Western Europe[2]	660	265	7,670	267	161	176	41	211	362	30	158
Middle East[3]	350	62	3,140	380	300	115	780	385	10	---	85
Australia, New Zealand, South Africa	159	3	201	2	65	29	130	40	1	1	16
Central Africa[4]	86	1	865	2	45	20	71	12	11	3	2
Japan	352	80	63	34	59	24	---	19	---	---	---
Other free Asia	174	13	185	8	76	6	335	371	33	1	8
Eastern Europe[5]	12	136	1,047	77	---	7	105	62	2,905	120	10
China (mainland), etc.[6]	---	1	27	3	---	---	74	23	95	---	---
Other[7]	405	81	750	7	8	38	15	12	---	---	70
Total	5,648	1,270	16,563	818	812	464	2,166	1,489	3,465	155	1,116

[1] Includes mineral fuels and related materials (SITC Section 3), metalliferous ores and metal scrap (SITC–Revised, 28) and base metals (SITC–Revised, 67 and 68 less 681 excluding precious metals).

[2] Includes Turkey and Yugoslavia.

[3] Includes Aden, Cyprus, Jordan, Iraq, Israel, Lebanon, Syria, Libya, Ethiopia, Sudan, U.A.R., data covers only exports of mineral fuels.

[4] Africa less Morocco, Algeria, Tunisia, Libya, U.A.R. Sudan, Ethiopia, Somalia, French Somaliland, and South Africa.

[5] U.S.S.R., Albania, Bulgaria, Czechoslovakia, Eastern Germany, Hungary, Poland, and Rumania.

[6] China (mainland), Mongolia, North Korea, and North Viet-Nam.

[7] Includes Morocco, Algeria, and Tunisia. Data covers only exports of mineral fuels.

Source: United Nations, Monthly Bulletin of Statistics, March 1966, Special Table E; Monthly Bulletin of Statistics, May 1966, Special Table B.

Much of the recent European and Japanese investment in steel has been for purposes of rationalization and modernization rather than explicitly for new capacity. A large part has gone into conversion to oxygen processes; in 1964 and 1965 no less than 70 percent of steel mill investment in the European Coal and Steel Community was for this purpose.[11]

The shift to oxygen processes is proceeding rapidly in the world's steel industries. In 1965, over 19 percent of ECSC output was produced by these processes; in Japan 55 percent of 1965 production was accounted for by oxygen process plants, while the corresponding figures for the United Kingdom and United States were about 17 percent in each case.

A second area of investment has been in the expansion of iron ore sintering and pelletization plants. In 1964 about 45 percent of world output of iron ore was agglomerated mainly as sinter, while about 50 million tons was pelletized. Pelletizing capacity, mainly in North America, totaled 57 million tons at the end of 1965, with an additional 22 million tons of capacity under construction. The bulk of both sinter and pelletizing capacity is in the developed countries.

The trend towards beneficiation of ores, plus the opening up of large new deposits such as Australia's Hammersley mines, appears likely to keep total world investments in the iron and steel industry at a high level despite the current cutback (except in the United States) in steel industry expansion.

Finally, a trend in developed countries (particularly in Western Europe) towards the construction of new seacoast steel plants to benefit from the advantages of cheap access to high-grade overseas ores may well contribute a second stimulus to investment in the industry.

Data on investment in the nonferrous metal industries are fragmentary and do not permit construction of a worldwide statistical summary, but evidence from the aluminum, copper, lead and zinc industries suggests a rising level of investment expenditures.

Free world petroleum investments were maintained at a high level in 1963 and 1964; estimates for 1965 are not yet available. Chase Manhattan Bank estimates show total capital expenditures in 1963 of $11,150 million, practically unchanged from 1962; a 10 percent increase, to $12,275 million, is shown for 1964. The industry's capital expenditures were divided about equally between the United States and other free world countries in both years. In 1964, 45.3 percent of the total was invested in production, 15.6 percent in transportation facilities, 12.7 percent in refining, and 17.8 percent in marketing.[12]

United States Department of Commerce estimates of U.S. direct investments in the mining, smelting and petroleum industries outside the United States show a rising trend in the period 1962–1966. Perhaps most notable is the sharply rising trend of mining investments in Australia, attributable to U.S. interest in the development of recently discovered bauxite and iron ore deposits. Similarly, the rising trend of mining and petroleum investment in Africa

[11] European Coal and Steel Community High Authority, 14ᵉ Rapport General sur l'activite de la Communaute (Mars 1966), p. 228.

[12] Chase Manhattan Bank, Petroleum Department, Capital Investments by the World Petroleum Industry, 1963; Capital Investments by the World Petroleum Industry, 1964.

Table 6.—Investments in iron and steel
(Billion dollars)

Country or area	1963	1964	1965
United States [1]	1.24	1.69	1.93
European Coal and Steel Community	1.48	1.29	[2] .99
United Kingdom	.22	.15	.14
Japan [3]	.52	.53	.51
Total	3.46	3.66	3.57

[1] New plant and equipment expenditures.
[2] Planned as of January 1, 1965.
[3] Fiscal years beginning April 1 and ending March 31 of succeeding year.

Sources: U.S. Department of Commerce, Survey of Current Business, v. 45, No. 9 (September 1965), p. 6; v. 46, No. 9, (September 1966) p. 7; European Coal and Steel Community High Authority, 14th General Report on the Activity of the Community (March 1966), p. 228; The Iron and Steel Board, Annual Report 1965, p. 86; The Foreign Capital Research Society (Tokyo), Japanese Industry 1965, p. 50; U.S. Foreign Service Reports.

Table 7.—U.S. direct investments in mineral industries in foreign countries, plant and equipment expenditures only

(Millions of dollars)

Area and country	1962		1963 [r]		1964 [r]		1965		1966 [e]	
	Mining and smelting	Petroleum	Mining and smelting	Petroleum	Mining and smelting	Petroleum	Mining and smelting	Petroleum	Mining and smelting	Petroleum
Canada	193	325	195	375	220	385	265	503	340	552
Latin America:										
South America	58	233	68	203	61	237	89	NA	NA	NA
Other	5	24	7	42	11	35	13	NA	NA	NA
Total	63	257	75	245	72	272	102	246	169	260
Other Western Hemisphere	32	62	34	62	54	55	55	61	45	76
Europe:										
EEC	(1)	269	1	386	1	395	3	306	2	474
Non-EEC:										
United Kingdom	---	125	1	140	(1)	126	(1)	177	(1)	220
Other	4	100	3	116	2	124	2	120	2	179
Total	4	225	4	256	2	250	2	297	3	399
Total Europe	4	494	5	642	3	645	5	603	5	873
Africa:										
Northern Africa	(1)	137	---	129	---	191	---	176	---	187
Western Africa	43	11	38	8	19	47	27	72	23	124
Central and southern Africa	26	13	20	(2)	44	(2)	74	(2)	57	(2)
Total	69	[3] 176	58	[3] 164	63	[3] 271	101	[3] 284	80	[3] 349
Middle East	---	72	---	125	---	111	---	233	(1)	246
Far East	1	106	2	172	3	169	4	197	3	254
Oceania:										
Australia	9	(2)	29	(2)	45	(2)	145	(2)	182	(2)
Other	---	(2)	---	(2)	6	(2)	2	(2)	2	(2)
Total	9	76	29	64	51	65	147	74	184	72
International shipping	---	65	---	40	---	100	---	66	---	61
Grand total	371	1,633	398	1,889	463	2,073	682	2,267	826	2,743

[e] Estimates based on company projections. [r] Revised. NA Not available.
[1] Less than $500,000.
[2] Included in area total.
[3] Includes other Africa.
Note: Details may not add to totals due to rounding.
Source: U.S. Department of Commerce, Survey of Current Business, v. 44, No. 8, (August 1964), p. 13; v. 45, No. 9 (September 1965), p. 30.

is noteworthy, while the expansion of petroleum investments in Europe (chiefly in refining and marketing) continued at a more normal rate.

Earnings on United States mineral investments abroad rose sharply in dollar terms from 1963 to 1965 in the case of mining and smelting industries, but were static in the petroleum industry. As a proportion of total capital invested, earnings in the mining and smelting industries rose from 10.6 percent in 1963 to 15 percent in 1965, while earnings of the petroleum industry declined slightly from 13.4 percent in 1963 to 13.3 percent in 1965.

TRANSPORTATION

Changes in transport facilities during 1964 and 1965 centered mainly around the continuing increase in total tonnage and average size of the world's bulk carrier and tanker fleets, and the expansion of pipeline facilities for petroleum and natural gas both in producing areas and in the main product markets (chiefly Europe). Concurrently plans were made in importing countries (again, chiefly in Europe) for deepening channels and harbors and improving cargo handling facilities to accommodate the newer and larger ships. Also in some European countries plans were made to enlarge shipbuilding yards to enable them to compete with Japanese yards, which hitherto have dominated the construction of very large vessels.

In the two years 1963–64 the deadweight tonnage of the world's bulk carrier fleet increased by 32 percent, from 19.9 million tons to 26.4 million tons. The increase in 1964 alone totaled 2.6 million tons, or 11 percent. At the end of 1964, bulk carriers accounted for 12.4 percent of the world's sea-going merchant fleet. In the first half of 1965 bulk carriers with an additional 1,850,700 deadweight tonnage were delivered and an additional 10.5 million deadweight tons of capacity were under construction or on order. The bulk of this new capacity was in vessels of 30,000 tons and over, and more than 40 percent of the total in vessels of 40,000 tons and over.

Tanker tonnage (deadweight) increased by 17 percent in the 2 years, rising to 81.7 million tons, or 40 percent of the world's merchant fleet, at the end of 1964. An additional 4.2 million tons were delivered in the first half of 1965, and a further 19.2 million tons were under construction or on order at mid-year. The average size of new tankers was rising even more rapidly than that of new bulk carriers; of those on order at mid-year 4.5 million tons were of 100,000 deadweight tons or over.[13]

The principal sea-borne mineral products, by volume, are petroleum and its products, and iron ore. In 1964, petroleum and petroleum products accounted for 800 million tons of cargo, and iron ore for 176.4 million tons, out of a total of 1,520 million tons. Other mineral cargoes important on a tonnage basis included other ores (mainly bauxite and alumina) and coal. The growth of sea-borne trade in iron ore has provided a special stimulus for the increase of the world's bulk carrier fleet.

Limitations on the increase in average size of vessels appear to be more restrictive in the case of bulk carriers than in that of tankers, since the former are restricted not only by harbor depths but also to a greater degree by the cargo-handling capacities of ports and terminals. These facilities are better developed for tankers because of the much larger volume of trade involved.

In the past, the maximum depth of the Suez Canal, the principal international waterway for oil traffic, limited the maximum size of tankers. Development of large producing areas west of Suez and routing of supertankers from the Persian Gulf area around Africa have lessened the influence of Suez on tanker size. Another factor is that there has been a substantial increase in the eastward flow of oil from the Persian Gulf; this does not involve international waterways.

Freight rates for dry cargo and tanker vessel moved in opposite directions in 1965 with dry cargo rates (both trip charter and time charter) moving upwards and tanker rates weakening. Tanker owners, a group of whom in 1963 devised a scheme to stabilize rates by laying up idle vessels, (which has become known as the Tanker Recovery Scheme), attempted to revive the

[13] Data in this and the preceding paragraph are from U.S. Department of Commerce, Maritime Administration. A Statistical Analysis of the World's Merchant Fleet as of December 31, 1964.

Table 8.—U.S. direct foreign investment in mineral industries: value, earnings and income
(Million dollars)

Area and country	Mining and smelting			Petroleum		
	Value	Earnings [1]	Income [1]	Value	Earnings [1]	Income [1]
1963:						
Canada	1,549	94	53	3,134	150	80
Latin American Republics:						
South America:						
Venezuela	(2)	(2)	(2)	2,166	431	422
Other	(2)	(2)	(2)	645	46	41
Total	932	127	122	2,811	477	463
Other	161	20	20	284	3	2
Other Western Hemisphere	210	72	69	541	52	78
Europe:						
EEC	10	(2)	(2)	1,330	47	56
Non-EEC:						
United Kingdom	2	(2)	(2)	886	12	11
Other	43	(2)	(2)	561	8	6
Total Europe	55	4	6	2,776	67	73
Africa:						
Republic of South Africa	63	17	10	(2)	(2)	(2)
Other	286	14	10	(2)	(2)	(2)
Total	349	31	20	702	65	59
Middle East	2	---	1	1,206	926	825
Far East	30	2	1	714	75	68
Oceania:						
Australia	82	8	3	(2)	(2)	(2)
Other	---	---	---	(2)	(2)	(2)
Total	82	8	3	496	4	−4
International shipping	---	---	---	988	10	9
Grand total	3,370	358	295	13,652	1,829	1,653
1964:						
Canada	1,667	191	114	3,187	170	118
Latin American Republics:						
South America:						
Venezuela	(2)	(2)	(2)	2,139	460	461
Other	(2)	(2)	(2)	665	36	35
Total	926	158	151	2,804	496	496
Other	178	26	21	298	14	7
Other Western Hemisphere	250	76	73	488	34	33

Europe:						
EEC	13	(2)	(2)	1,523	−38	24
Non-EEC:						
United Kingdom	2	(2)	---	902	44	28
Other	41	(2)	(2)	677	2	13
Total Europe	56	3	5	3,102	8	64
Africa:						
Republic of South Africa	68	20	15	(2)	(2)	(2)
Other	290	18	17	(2)	(2)	(2)
Total	358	38	32	883	227	223
Middle East	2	---	---	1,240	867	893
Far East	31	3	1	814	45	68
Oceania:						
Australia	100	10	3	(2)	(2)	(2)
Other	---	---	---	(2)	(2)	(2)
Total	100	10	3	453	−6	−6
International shipping	---	---	---	1,064	6	26
Grand total	3,568	505	400	14,333	1,861	1,922
1965:						
Canada	1,755	198	110	3,320	183	122
Latin American Republics:						
South America:						
Venezuela	(2)	(2)	(2)	2,033	405	408
Other	(2)	(2)	(2)	679	71	52
Total	957	181	167	2,712	476	460
Other	157	25	18	322	20	8
Other Western Hemisphere	310	85	82	500	24	18
Europe:						
EEC	16	(2)	(2)	1,617	−32	18
Non-EEC:						
United Kingdom	2	(2)	(2)	1,084	−6	−4
Other	37	(2)	(2)	727	−4	+3
Total Europe	55	8	8	3,429	−42	17
Africa:						
Republic of South Africa	65	34	35	(2)	(2)	(2)
Other	296	27	20	(2)	(2)	(2)
Total	361	61	55	1,020	240	233
Middle East	8	---	---	1,491	816	813
Far East	34	5	2	893	76	107

See footnotes at end of table.

Table 8.—U.S. direct foreign investment in mineral industries: value, earnings and income—Continued

(Million dollars)

Area and country	Mining and smelting			Petroleum		
	Value	Earnings [1]	Income [1]	Value	Earnings [1]	Income [1]
1965—Continued						
Oceania:						
Australia	161	10	3	(2)	(2)	(2)
Other	(3)	−2	−2	(2)	(2)	(2)
Total	162	8	1	499	−6	−11
International shipping	---	---	---	1,133	37	30
Grand total	3,794	571	443	15,320	1,825	1,798

[1] Earnings is the sum of the U.S. share in the net earnings of subsidies and branch profit; income is the sum of dividends, interest, and branch profits.
[2] Combined in other industries.
[3] Less than $500,000.
Note: Details may not add to totals due to rounding.

Sources: U.S. Dept. of Commerce, Survey of Current Business, v. 44, No. 8 (August 1964) pp. 10–11; v. 45, No. 9 (September 1965) pp. 24–25; vol. 46, No. 9 (September 1966) pp. 34–35.

scheme in mid-1965 after it had been dormant since the end of 1964. It was apparently aimed chiefly at stabilizing rates during the summer seasonal slack in trade.

Under the scheme, any tanker of 15,000 deadweight tons and up, built in 1947 or later, is eligible to join; some 7 million tons were said to be eligible at the initiation of the scheme but only about half this tonnage was reported to have joined. Some observers believed that tanker owners relied chiefly on shifting idle vessels to the grain trade in the summer, in which nearly 5.8 million tons of tanker capacity was said to be engaged in August 1965.[14]

The expansion of petroleum and natural gas pipeline capacity continued in 1965, especially in Western Europe. In this area the rapid development of the Netherlands' domestic natural gas network, the commencement of work on gas export lines from the Netherlands to West Germany and Belgium, and expansion of the Mediterranean central Europe crude petroleum lines were the main factors. Work started on the Trans-Alpine pipeline from Trieste, Italy, to Ingolstadt, West Germany, while the line from Genoa to the Danube was completed except for a short section near Lake Constance. Product pipelines in western Europe also continued to multiply.

Meanwhile the Soviet Union continued work on the expansion of its COMECON system to provide petroleum to its East European neighbors. In the producing areas of the Middle East and Africa, additional pipelines for gathering and shipping crude to ports and refineries were planned or under construction.

Table 9.—Indexes of ocean freight rates
(1958=100)

	1963	1964	1965
Trip charter (general):			
Netherlands [1]	88	100	100
United Kingdom	120	124	140
Trip charter (dry cargo):			
West Germany	117	117	128
Norway	109	110	115
Trip charter (tankers):			
West Germany	130	117	115
Norway [2]	135	124	121
Trip charter: United Kingdom:			
Coal trade	127	122	133
Ore trade	99	102	118
Fertilizer trade	97	108	131
Time charter (dry cargo):			
Norway	124	139	155
United Kingdom	123	140	158
London Tanker Brokers Panel (tankers)	71	65	NA

NA Not available.
[1] 1960=100.
[2] £ market.

PRICES

The United Nations export price indexes for minerals (1958 = 100) rose for the second year in a row, even the index for fuels showing a slight increase. The sharpest rise occurred in the index for metal ores, and within this group, for nonferrous metals.

Table 10.—Minerals export price indexes [1]
(1958=100)

Year	Metal ores	Fuels	Total
1963	96	91	92
1964	104	91	94
1965	110	92	96

[1] United Nations, Monthly Bulletin of Statistics, June 1966, Special Table C II.

As usual, the rise in export prices of all minerals taken as a group benefited the developed countries more than the underdeveloped areas, but the latter benefited significantly from the rise in export prices of nonferrous metals.

The chief features of the metals markets in 1965 were the fluctuations in nonferrous metal prices and the efforts of metal producers and governments of producing countries to manage the prices of these metals. These efforts were particularly notable in

[14] Petroleum Press Service, v. 32, No. 6, June 1965, pp. 219–221; v. 33, No. 4, April 1966, p. 147.

the case of copper, whose price on the free markets fluctuated sharply in response to political events and labor troubles affecting or threatening to affect the availability of supplies, but were also significant in the zinc markets.

Table 11.—Analysis of export price indices [1]

(1958=100)

Year	Developed areas		Underdeveloped areas	
	Minerals	Nonferrous metals	Minerals	Nonferrous metals
1963	99	106	90	116
1964	102	128	92	147
1965	105	143	93	176

[1] United Nations, Monthly Bulletin of Statistics, June 1966, Special Table C III.

The copper market provided an interesting example of the dual price system which had first been introduced by producers in the years of price weakness prior to 1963. During 1965, producers (who supply direct to consumers most of the metal coming on the markets) found it necessary to follow the upward movement of London Metal Exchange quotations for the marginal supplies required by consumers. However, producer prices lagged considerably behind the levels reached by the volatile LME market.

In the case of zinc, producers' price policies were necessarily different. Whereas strong demand and threats of supply interruption led to rising prices of copper on the free markets, with producers' quotations lagging behind, production increases and larger available supplies of zinc caused a downward tendency in zinc prices, and producers adopted a policy of support buying of the metal on the London Metal Exchange, without however attempting to peg prices at a fixed level.

Prices of most other nonferrous metals were firm in 1965. Lead prices showed a rising tendency in the first half but were stabilized at lower levels after U.S. stockpile releases early in the year. Aluminum prices (entirely on a producers' price basis) were relatively unchanged. Tin prices fluctuated within a narrower range than in 1964, but remained at high levels.

One significant fact that became clear during the years 1964 and 1965 was the extent to which the world's reserve stocks of major metals have been held (and of course, financed) by the United States Government through the operation of its stockpiles. In both years these stockpiles were drawn on to a considerable extent to alleviate actual supply shortages in, and to moderate price movements of, copper, lead, zinc and tin, as well as in the case of silver, where releases came from U.S. Treasury rather than stockpile sources.

Table 12.—Nonferrous metal prices in the United States in 1965

(Monthly averages, cents per pound) [1]

Month	Aluminum [2]	Copper [3]	Lead [4]	Zinc [5]	Tin [6]
January	24.500	33.600	16.000	14.500	156.219
February	24.500	33.600	16.000	14.500	154.875
March	24.500	33.600	16.000	14.500	165.011
April	24.500	33.600	16.000	14.500	180.714
May	24.500	35.454	16.000	14.500	192.056
June	24.500	35.600	16.000	14.500	189.136
July	24.500	35.600	16.000	14.500	184.185
August	24.500	35.600	16.000	14.500	187.227
September	24.500	35.600	16.000	14.500	192.196
October	24.500	35.678	16.000	14.500	185.464
November	24.589	36.414	16.000	14.500	177.007
December	24.500	35.861	16.000	14.500	174.339

[1] As reported by Engineering and Mining Journal (New York).
[2] Unalloyed ingot, 99.5 percent.
[3] Electrolytic, domestic refineries, Atlantic seabroad.
[4] Refined lead, New York.
[5] Prime Western slab, f.o.b., East St. Louis
[6] Straits, New York.

Source: Yearbook of the American Bureau of Metal Statistics, Forty-fifth Annual Issue for the year 1965.

Table 13.—Nonferrous metal prices in the United Kingdom in 1965
(Monthly averages, £ per long ton)[1]

Month	Aluminum [2]	Copper [3]	Lead [4]	Zinc [5]	Tin [6]
January	196.000	363.125	126.262	116.937	1,256.325
February	196.000	428.125	141.362	116.258	1,231.675
March	196.000	448.979	143.442	114.629	1,302.175
April	196.000	489.250	128.104	114.658	1,433.000
May	196.000	500.237	109.862	117.525	1,531.429
June	196.000	474.954	101.150	114.113	1,500.692
July	196.000	389.954	98.567	112.608	1,441.113
August	196.000	439.096	98.688	110.204	1,485.596
September	196.000	481.842	104.979	108.754	1,528.067
October	196.000	508.713	111.346	111.650	1,456.429
November	196.000	533.138	108.550	108.408	1,387.771
December	196.000	550.729	109.238	109.917	1,405.113

[1] London Metal Exchange, monthly average settlement prices.
[2] 99.5 percent ingots, producers price.
[3] London Metal Exchange, electrolytic wirebars.
[4] London Metal Exchange, refined pig lead, 99.97 percent.
[5] London Metal Exchange, virgin zinc, 98 percent.
[6] London Metal Exchange, standard tin.

Source: Yearbook of the American Bureau of Metal Statistics, Forty-fifth Annual Issue for the year 1965.

POLICIES AND PROGRAMS AFFECTING MINERAL PRODUCTION AND TRADE

A Third International Tin Agreement, adopted at a United Nations Tin Conference in April 1965, was open for signature by adhering producer and consumer countries until December 31, 1965. Although Malaysia (the chief producer) at first refused to sign, which would have prevented the Agreement from coming into effect, its Government eventually signed at the last moment. Upon ratification by the required number of adherents the Agreement was to become effective as soon after June 30, 1966 as possible. Seven producing countries and 16 consuming countries signed the Third Agreement, including all members of the Second Agreement except India. The United States did not become a member.

The general provisions of the Third Agreement are similar to those of the Second Tin Agreement, which was to expire of its own terms on June 30, 1966. Although it, like the Second Agreement, provides for a buffer stock, the International Tin Council under the Third Agreement will (at least initially) hold no actual metal, the buffer stock having been exhausted long ago and tin prices in the past 2 years so high as to avoid the necessity of buying for the Council's buffer stock. The new Agreement has a duration of 5 years.

In both 1964 and 1965 the Tin Council consulted with the United States Government regarding the latter's tin stockpile disposal policies.

STATISTICAL SUMMARY OF WORLD PRODUCTION AND TRADE FOR MAJOR COMMODITIES

The 30 tables that follow extend statistical series started in the 1963 edition of this chapter. They are provided both as a supplement to the statistical data within the body of the chapter and as a summary of international production and trade data for major commodities covered in greater detail on a commodity basis in individual commodity chapters of volumes I and II of Minerals Yearbook and on a regional basis in individual country chapters of volume IV. For various reasons, data presented here may not correspond exactly to that presented in the individual country chapters of volume IV. In the case of production tables (tables 14 through 29), the foremost of these reasons is that they are shortened versions of world tables prepared for use in volume I commodity chapters. These source tables in most instances were prepared considerably earlier in the year than the individual country production tables, and as a result, may not include revisions based on later receipt of data. In the case of the trade tables (tables 30 through 45), differences result primarily from the fact that most of these tables have been obtained from single sources which have already processed a wide variety of official and unofficial trade data to reach the listed aggregates, and in some cases, sources used have not been identical with those used in individual country chapters.

Nevertheless, differences in figures in most cases are small enough that for the purposes of the tables—to indicate relative importance of countries and/or regions—they can be regarded as unimportant.

Table 14.—Leading world producers of bauxite [1]

(Thousand metric tons)

Country	1961	1962	1963	1964	1965 p
Jamaica	6,770	7,615	7,014	[2] 7,937	[2] 8,651
U.S.S.R. e [3]	4,000	4,200	4,300	4,300	4,700
Surinam	r 3,453	r 3,297	r 3,438	r 3,993	4,360
British Guiana	2,412	r 3,085	2,380	2,508	2,680
France	2,225	2,194	2,029	r 2,433	2,652
Guinea, Republic of	1,767	r 1,468	1,664	1,678	1,870
United States	1,248	1,391	1,549	1,626	1,680
Yugoslavia	1,232	1,332	1,285	1,293	1,574
Hungary	1,366	1,473	1,362	1,488	1,478
Greece	1,120	r 1,287	1,281	e 1,300	e 1,100
Total	25,593	27,342	26,302	28,556	30,745
All others [4]	3,747	3,908	4,373	5,129	6,290
World total e	r 29,340	r 31,250	r 30,675	r 33,685	37,035

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Bone dry equivalent of bauxite shipments and bauxite converted into alumina.

[3] Excludes nepheline concentrates and alunite ores.

[4] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 15.—Leading world producers of aluminum [1]

(Thousand metric tons)

Country	1961	1962	1963	1964	1965 p
United States	1,727	1,921	2,098	2,316	2,499
U.S.S.R. e	890	r 900	960	1,000	1,280
Canada	602	626	653	r 765	762
France	279	295	298	r 316	341
Japan	154	171	224	266	293
Norway	172	206	r 216	253	276
Germany, West	173	178	209	220	234
Italy	83	r 83	r 91	116	124
China, mainland e	100	100	100	100	100
Australia	13	16	42	r 80	88
Austria	68	74	76	78	79
Total	4,261	4,570	4,967	5,510	6,076
All others [2]	444	495	543	590	654
World total e	4,705	r 5,065	r 5,510	r 6,100	6,730

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 16.—Leading world mine producers of copper [1]

(Copper content of ore, recoverable where indicated, thousand metric tons)

Country	1961	1962	1963	1964	1965 p
United States [2]	1,057	1,114	1,101	1,131	1,226
U.S.S.R. e [3]	550	650	700	700	750
Zambia	r 575	562	588	r 632	696
Chile	551	593	604	r 622	583
Canada [2]	398	415	411	r 442	469
Congo, Republic of the (Léopoldville) [3]	295	r 297	271	r 277	289
Peru [2]	198	167	177	176	177
Japan	96	104	107	r 106	107
Australia	97	r 109	r 115	r 106	93
China, mainland e	80	90	90	90	90
Total	3,897	r 4,101	4,164	4,282	4,480
All others [4]	498	r 514	561	568	595
World total e	r 4,395	r 4,615	r 4,725	r 4,850	5,075

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Recoverable.

[3] Smelter output.

[4] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 17.—Leading world producers of iron ore, iron ore concentrates, and iron ore agglomerates [1]

(Thousand metric tons)

Country	1961	1962	1963	1964	1965 p
U.S.S.R. [2]	117,633	r 128,111	r 137,502	r 145,856	153,000
United States [3]	72,474	72,982	74,780	86,198	86,700
France	66,606	66,301	57,892	r 60,938	59,525
China, mainland e [4]	35,000	30,000	35,000	37,000	39,000
Canada	18,469	24,820	27,346	r 34,768	36,097
Sweden	23,593	r 22,526	r 23,637	r 26,660	29,485
India (including Goa)	18,753	18,802	r 19,995	r 20,971	23,391
Brazil	10,220	10,737	11,219	r 16,962	e 17,500
Venezuela	14,565	13,266	11,747	15,650	17,400
Liberia	3,251	3,607	[5] 6,557	10,456	15,959
United Kingdom	16,783	15,522	15,151	r 16,588	15,661
Chile	6,989	8,092	8,507	9,853	11,409
Germany, West	18,866	16,643	12,898	11,613	10,847
Peru	8,737	5,949	6,574	6,605	e 7,312
Malaysia	6,842	6,612	7,381	6,569	6,983
Australia	5,428	4,921	5,603	r 5,760	6,750
Luxembourg	7,458	6,507	6,990	6,680	6,315
Mauritania	([6])	1,000	r 1,678	r 5,080	6,000
Total	451,667	456,398	470,457	524,207	549,334
All others [7]	50,974	51,252	51,947	54,272	63,465
World total e	502,641	r 507,650	r 522,404	r 578,479	612,799

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Data represents concentrates containing approximately 60 percent iron.

[3] Includes byproduct ores.

[4] Roughly equivalent to ore containing 50 percent iron.

[5] Exports.

[6] Less than ½ unit.

[7] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 18.—Leading world producers of steel ingots and castings [1]

(Thousand metric tons)

Country	1961	1962	1963	1964	1965 p
United States [2]	88,917	89,201	99,119	115,281	119,259
U.S.S.R.	70,755	r 76,306	r 80,198	85,038	91,000
Japan	28,268	27,546	31,501	39,799	44,161
Germany, West	33,458	32,563	31,597	37,339	36,821
United Kingdom	22,441	20,820	22,881	26,234	27,439
France	17,428	r 17,107	r 17,431	r 19,505	19,604
China, mainland	9,500	10,000	12,000	e 14,000	e 15,000
Italy	9,329	9,757	r 10,157	9,793	12,681
Belgium	7,011	7,362	7,528	8,731	9,168
Canada	5,886	6,508	7,430	8,283	9,098
Poland	7,234	7,684	8,004	8,572	9,088
Czechoslovakia	7,043	7,639	7,598	8,377	8,880
Total	307,270	312,493	335,444	380,952	402,199
All others [3]	r 44,295	r 47,682	r 51,556	56,858	58,266
World total e	r 351,565	r 360,175	r 387,000	r 437,810	460,465

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Data from American Iron and Steel Institute. Excludes production of castings by companies that do not produce steel ingots.

[3] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 19.—Leading world mine producers of lead [1]

(Lead content of ore, recoverable where indicated, thousand metric tons)

Country	1961	1962	1963	1964	1965 p
U.S.S.R. e [2]	350	350	350	360	370
Australia	274	376	r 417	r 382	361
Canada	166	192	181	187	275
United States [3]	238	215	230	259	273
Mexico	181	193	190	r 175	170
Peru [3]	136	128	r 147	r 151	147
Yugoslavia	97	102	r 114	r 113	106
China, mainland e	90	90	100	100	100
Bulgaria	80	94	89	91	e 100
South-West Africa [3]	r 70	r 75	r 75	r 94	88
Morocco	88	90	r 74	r 71	77
Sweden	64	68	r 71	r 68	67
Korea, North e	50	50	50	r 55	60
Spain	80	71	62	r 58	56
Japan	46	53	53	r 54	55
Germany, West	r 50	r 50	r 53	r 49	48
Poland	38	38	39	38	46
Total	2,098	2,235	2,295	2,305	2,399
All others [4]	292	265	255	265	301
World total e	r 2,390	r 2,500	r 2,550	r 2,570	2,700

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Smelter production.

[3] Recoverable.

[4] Derived figure; difference between indicated world total and sum of output of individually listed countries.

Table 20.—Leading world producers of manganese ore [1]

(Thousand metric tons)

Country	Percent Mn [e]	1961	1962	1963	1964	1965 [p]
U.S.S.R. [2]	NA	5,972	6,402	6,663	[r] 7,096	[e] 7,800
India (including Goa)	32-50	1,330	[r] 1,313	[r] 1,296	[r] 1,406	1,615
South Africa, Republic of	30+	1,418	1,465	1,308	1,320	1,567
Gabon	50-53	---	203	[r] 637	948	1,286
Brazil	38-50	1,016	1,171	1,254	1,352	1,177
China, mainland [e]	30+	800	800	1,000	1,000	1,000
Ghana (dry weight)	48	[r] 438	[r] 379	[r] 407	[r] 462	604
Congo, Republic of the (Léopoldville)	48+	316	316	270	310	378
Morocco	35-50	571	469	335	341	376
Japan	32-40	304	309	277	[r] 285	307
Mexico [e]	44-46	141	168	172	187	184
Ivory Coast	32-47	125	107	139	136	180
Hungary	30−	125	129	152	[r] 171	[e] 176
British Guiana	40-42	[r] 196	275	143	119	169
Rumania	35	206	189	260	[r e] 100	[e] 100
Total	NA	12,958	13,695	14,313	15,233	16,919
All others [3]	NA	621	577	447	585	693
World total [e]	NA	[r] 13,579	[r] 14,272	[r] 14,760	[r] 15,818	17,612

[e] Estimate. [p] Preliminary. [r] Revised. NA Not available.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Grade unstated.

[3] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 21.—Leading world mine producers of tin [1]

(Tin content of ore, long tons)

Country	1961	1962	1963	1964	1965 [p]
Malaysia	56,028	58,603	59,947	60,004	63,670
China, mainland [2]	30,000	28,000	28,000	25,000	25,000
Bolivia (exports)	20,408	21,492	22,752	[r] 24,186	23,349
U.S.S.R. [2]	17,000	17,000	20,000	20,000	21,000
Thailand	13,270	14,679	[r] 15,585	[r] 15,597	18,843
Indonesia	18,574	17,310	[r] 12,927	16,345	14,823
Nigeria	7,779	8,210	8,723	8,721	9,547
Congo, Republic of the (Léopoldville)	6,314	6,875	6,883	7,688	6,211
Australia	2,745	2,715	[r] 2,860	[r] 3,638	[e] 4,000
South Africa, Republic of	1,430	1,408	1,530	1,586	1,671
Rwanda	1,474	[r] 1,325	1,271	[e] 1,680	1,424
Brazil [e]	582	731	1,150	[r] 1,300	1,400
Total	175,604	178,348	181,628	185,745	190,938
All others [3]	8,496	8,252	8,672	8,755	8,262
World total [e]	184,100	[r] 186,600	[r] 190,300	[r] 194,500	199,200

[e] Estimate. [p] Preliminary. [r] Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Estimated smelter output.

[3] Derived figure; difference between indicated world total and sum of output of individually listed producers.

263-927 O-67—3

Table 22.—Leading world mine producers of zinc [1]

(Zinc content of ore, recoverable where indicated, thousand metric tons)

Country	1961	1962	1963	1964	1965 [p]
Canada	402	455	451	662	827
United States [2]	421	459	480	522	554
U.S.S.R. [e] [2]	400	410	410	410	412
Australia	316	343	[r] 357	350	351
Peru	[2] 174	[2] 162	[2] 196	237	259
Mexico	269	251	240	[r] 236	225
Japan	168	192	198	[r] 216	221
Poland	140	145	147	151	185
Congo, Republic of the (Léopoldville)	100	96	104	106	119
Germany, West	[r] 122	[r] 113	[r] 108	[r] 111	116
Italy	136	[r] 131	107	[r] 111	116
Korea, North [e]	90	90	100	100	105
China, mainland [e]	100	100	100	100	100
Yugoslavia	60	61	[r] 88	[r] 92	92
Total	2,898	3,008	3,086	3,404	3,682
All others [3]	592	577	614	616	628
World total [e]	[r] 3,490	[r] 3,585	[r] 3,700	[r] 4,020	4,310

[e] Estimate. [p] Preliminary. [r] Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Recoverable.

[3] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 23.—Leading world producers of hydraulic cement [1]

(Thousand metric tons)

Country	1961	1962	1963	1964	1965 [p]
U.S.S.R.	[r] 50,864	57,328	61,018	64,493	72,396
United States (including Puerto Rico)	57,753	60,022	62,832	65,728	66,318
Germany, West	27,144	28,593	29,217	[r] 33,632	34,132
Japan	24,636	28,787	29,948	[r] 32,981	32,689
France	15,381	16,882	[r] 18,134	[r] 21,537	22,584
Italy	18,031	20,172	22,088	22,840	20,234
United Kingdom	14,376	14,256	[r] 14,060	16,968	16,968
China, mainland	8,000	8,000	10,000	[e] 10,500	[e] 11,000
India	[r] 8,245	[r] 8,586	9,355	9,690	10,608
Spain (includes Canary Islands)	6,628	7,294	7,748	[r] 8,500	9,840
Poland	7,364	7,544	[r] 7,674	8,761	9,573
Canada (sold or used by producers)	5,630	6,240	6,364	7,176	7,578
Total	244,052	263,704	278,438	302,806	313,920
All others [2]	89,613	94,837	99,536	112,322	120,089
World total [e]	[r] 333,665	[r] 358,541	[r] 377,974	[r] 415,128	434,009

[e] Estimate. [p] Preliminary. [r] Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 24.—Leading world phosphate rock production [1]

(Thousand metric tons)

Country	1961	1962	1963	1964	1965 p
United States	18,857	19,692	20,174	23,328	26,863
U.S.S.R. e 2	8,800	10,000	11,000	13,000	15,500
Morocco	7,950	8,162	8,548	10,098	9,824
Tunisia	1,982	2,097	2,371	2,751	3,040
Naurum Island (exports)	1,303	1,540	1,572	1,849	1,496
Viet-Nam, North	622	712	e 975	e 1,050	e 1,050
Senegal	546	639	596	798	1,002
Togo	118	r 192	r 515	r 752	974
China, mainland e	500	600	700	800	900
Jordan	423	r 681	r 614	r 604	828
Christmas Island (Indian Ocean exports)	705	529	662	787	751
South Africa, Republic of	297	307	455	579	610
United Arab Republic (Egypt)	627	602	644	r 613	594
Israel	220	210	300	240	388
Ocean Island (exports)	343	261	362	328	375
Makatea Island (French Oceania)	381	317	335	r 388	3 319
Brazil	659	566	279	r 246	e 260
Korea, North (apatite) e	150	200	200	200	200
Peru (guano)	159	206	192	205	169
Netherlands Antilles (exports)	152	132	128	r 120	e 112
Poland	47	56	65	r 89	e 89
Algeria	440	390	348	73	86
Total	45,281	48,091	51,035	58,898	65,430
All others 4	199	189	175	152	240
World total e	45,480	r 48,280	r 51,210	r 59,050	65,670

e Estimate. p Preliminary. r Revised.

[1] Includes output of all major crude mineral sources of phosphate, including apatite, guano, and similar materials. Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Includes a category of material described by the Russians as "sedimentary rock."

[3] Exports.

[4] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 25.—Leading world producers of marketable potash [1]

(Thousand metric tons, K_2O equivalent)

Country	1961	1962	1963	1964	1965 p
United States	2,479	2,225	2,598	2,628	2,849
Germany, West	2,044	1,940	1,948	r 2,201	e 2,400
U.S.S.R. e	1,322	1,500	1,530	r 1,900	2,300
Germany, East	1,675	1,752	1,845	r 1,857	e 1,900
France	1,710	1,722	r 1,722	r 1,868	1,879
Canada	---	e 135	569	r 779	1,297
Total	9,230	9,274	10,212	11,233	12,625
All others 2	470	526	588	767	875
World total e	9,700	9,800	r 10,800	r 12,000	13,500

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 26.—Leading world producers of pyrite [1]
(Gross weight, thousand metric tons)

Country	1961	1962	1963	1964	1965 p
Japan	3,931	4,016	3,894	r 4,146	4,323
U.S.S.R. e	2,800	3,000	3,200	3,200	3,300
Spain	2,131	2,129	2,027	r 2,393	2,385
China, mainland e	1,000	1,100	1,200	1,300	1,500
Italy	1,580	r 1,584	r 1,402	r 1,395	1,401
Cyprus	837	822	919	r 666	962
United States	1,003	931	838	861	889
Norway	733	r 810	r 721	710	709
Portugal	653	641	602	r 607	613
Finland	274	r 475	r 541	547	582
Sweden	r 438	r 378	r 403	r 485	e 485
Korea, North e	300	350	400	420	450
Germany, West	r 508	r 386	r 355	r 424	439
South Africa, Republic of	447	441	419	432	428
Rumania	263	305	333	r 409	e 410
Yugoslavia	r 364	r 414	r 356	r 428	407
Czechoslovakia	369	401	347	361	370
Canada (sales)	469	469	432	r 319	320
Total	18,100	18,652	18,389	19,103	19,973
All others [2]	r 1,500	r 1,448	1,461	1,497	1,527
World total e	19,600	20,100	r 19,850	r 20,600	21,500

e Estimate. p Preliminary. r Revised.

[1] Includes cupreous pyrites. Data presented conform to that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Derived figure; difference between indicated world total and sum of output of individually listed producers.

Table 27.—Leading world elemental sulfur producers [1]
(Thousand metric tons)

Country	1961	1962	1963	1964	1965 p
United States	6,437	6,020	5,922	6,350	7,449
Canada (sales)	358	631	r 1,134	r 1,622	1,731
Mexico	1,244	1,447	1,553	1,725	1,585
France	1,097	1,347	r 1,409	r 1,511	1,522
U.S.S.R. e	1,175	1,320	1,350	1,350	1,430
Poland	r 133	r 210	r 235	295	431
China, mainland e	r 250	r 250	r 250	250	250
Japan	251	233	r 234	r 260	233
Germany, East	117	120	120	e 120	e 120
Germany, West	84	91	86	78	77
Spain	49	43	69	r 77	e 77
Finland	---	---	38	68	74
United Kingdom	59	53	r 47	r 55	e 55
Chile	45	64	r 57	r 60	46
Italy	72	r 56	r 43	r 30	37
Netherlands Antilles:					
Aruba and Curacao e	40	40	30	30	30
Netherlands	28	31	35	r 29	e 29
Sweden	r 31	30	26	r 27	e 27
Total	11,470	11,986	12,638	13,937	15,203
All others [2]	180	164	132	133	137
World total e	r 11,650	r 12,150	r 12,770	r 14,070	15,340

e Estimate. p Preliminary. r Revised.

[1] Includes Frasch-process sulfur, sulfur from sulfur ores, and byproduct sulfur from other ores, natural gas, oil refinery gas, and from oil shale. Data presented conform with that given in world production table in commodity chapter, volume I. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Derived figure; difference betwen indicated world total and sum of output of individually listed producers.

Table 28.—Leading world producers of coal (all grades)[1]

(Million metric tons)

Country	1961			1962			1963			1964			1965 p			Percent of world
	Lignite	Bituminous and anthracite	Total	Lignite	Bituminous and anthracite	Total	Lignite	Bituminous and anthracite	Total	Lignite	Bituminous and anthracite	Total	Lignite	Bituminous and anthracite	Total	
U.S.S.R.	134	377	511	r 131	r 386	517	137	r 395	r 532	r 145	r 409	554	150	430	580	20.7
United States	3	379	382	3	395	398	2	431	433	3	455	458	3	475	478	17.0
China, mainland	NA	250	250	NA	250	250	NA	270	270	NA	290	290	NA	e 300	e 300	10.7
Germany:																
East	237	3	240	247	3	250	r 254	2	r 256	257	2	259	251	2	253	9.0
West	97	[2] 146	243	101	[2] 144	245	r 107	[2] 144	251	111	[2] 144	255	102	[2] 137	239	8.5
United Kingdom	---	r 194	194	---	r 201	201	---	199	199	---	197	197	---	191	191	6.8
Poland	10	107	117	11	110	121	15	113	128	20	117	137	23	119	142	5.1
Czechoslovakia	65	26	91	69	27	r 96	73	28	r 101	76	r 28	104	72	28	100	3.6
India	([3])	56	56	([3])	61	r 61	1	r 66	67	2	r 64	66	2	67	69	2.5
France	3	52	55	3	52	r 55	2	48	r 50	r 2	r 53	55	3	51	54	1.9
Australia	17	24	41	17	25	42	19	25	44	r 19	r 28	47	21	32	53	1.9
Japan	1	54	55	1	54	r 55	1	r 52	53	1	r 51	52	1	50	51	1.8
South Africa, Republic of (marketable)	---	40	40	---	41	41	---	42	42	---	45	45	---	48	48	1.7
Hungary	25	3	28	25	3	28	27	4	r 31	27	4	31	27	4	31	1.1
Yugoslavia	23	1	24	24	1	25	26	1	27	28	1	29	29	1	30	1.1
Bulgaria	18	1	19	21	1	22	20	1	21	24	1	25	26	1	27	1.0
Belgium	---	22	22	---	21	21	---	21	21	---	21	21	---	20	20	0.7
Total	633	[4] 1,735	2,368	653	[4] 1,775	2,428	684	[4] 1,842	2,526	715	[4] 1,910	2,625	710	[4] 1,956	2,666	95.1
All others [5]	25	[4] 90	115	28	[4] 94	122	30	[4] 98	128	29	[4] 102	131	30	[4] 107	137	4.9
World total e	658	1,825	2,483	681	1,869	2,550	714	1,940	2,654	744	2,012	2,756	740	2,063	2,803	100.0

e Estimate. p Preliminary. r Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume II. In some cases, revised figures for individual countries have been incorporated in individual country chapters of volume IV. Revisions in totals and in figures derived by subtraction have not been indicated by footnote.

[2] Includes pitch coal.

[3] Less than ½ unit.

[4] Derived by subtraction.

[5] Derived figures; difference between indicated world total and sum of individually listed producers.

Table 29.—Leading world producers of crude oil [1]

(Million 42-gallon barrels)

Country	1961	1962	1963	1964	1965 [p]
United States	2,622	2,676	2,753	[r] 2,787	2,849
U.S.S.R.	1,212	1,360	1,504	[r] 1,644	1,786
Venezuela	1,066	1,168	1,186	1,242	1,268
Kuwait	600	669	705	775	792
Saudi Arabia	508	555	595	628	739
Iran	432	482	538	619	688
Iraq	366	367	423	[r] 462	482
Libya	7	67	168	316	445
Canada	221	244	258	275	297
Algeria (including Sahara)	121	158	184	[r] 204	206
Indonesia	155	168	165	[r] [2] 169	[2] 178
Kuwait-Neutral Zone	65	89	115	[r] 131	132
Mexico	107	112	115	116	118
Trucial States	---	6	18	67	103
Nigeria	17	25	28	44	99
Argentina	84	98	97	100	98
Rumania	86	88	91	92	94
Qatar	64	68	70	78	84
Colombia	53	52	60	63	73
China, mainland [e]	45	50	55	62	73
Germany, West	45	49	53	[r] 55	57
Total	7,876	8,551	9,181	9,929	10,661
All others [3]	308	331	356	380	402
World total [e]	8,184	[r] 8,882	[r] 9,537	[r] 10,309	11,063

[e] Estimate. [p] Preliminary. [r] Revised.

[1] Data presented conform with that given in world production table in commodity chapter, volume II. In some cases, revised figures for individual countries have been incorporated in country chapters of volume IV.

[2] Beginning May 1, 1963 West Irian transferred to Indonesia, production data for West Irian included for the years 1964 and 1965 under Indonesia.

[3] Derived figure; difference between indicated world total and sum of output of individually listed producers above.

Table 30.—World trade in bauxite in 1963 by areas

(Thousand metric tons)

Exporters	Destination						
	Canada	United States	Europe		Japan	Other countries	Total
			East [1]	West			
United States	123	---	---	25	---	58	206
Caribbean America	---	6,577	---	---	---	---	6,577
South America	1,221	3,316	---	98	33	177	4,845
Europe:							
Communist [1]	---	---	584	91	---	---	675
Non-Communist	---	19	505	1,779	---	25	2,328
Non-Communist Asia	---	---	2	92	1,222	69	1,385
Africa	48	8	---	233	---	---	289
Oceania	---	---	---	37	108	---	145
Total	1,392	9,920	1,091	2,355	1,363	329	16,450

[1] Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R. (excludes Yugoslavia).

Table 31.—World trade in bauxite in 1964, by areas

(Thousand metric tons)

Exporters	Destination						
	Canada	United States	Europe		Japan	Other countries	Total
			East [1]	West			
United States	210	---	---	17	---	71	298
Caribbean America	---	7,389	---	---	---	---	7,389
South America	1,196	3,851	---	199	68	13	5,327
Europe:							
Communist [1]	---	---	686	75	---	---	761
Non-Communist	---	30	568	1,732	---	17	2,347
Non-Communist Asia	---	---	5	111	1,378	100	1,594
Africa	53	---	125	386	---	7	571
Oceania	---	---	---	158	243	11	412
Total	1,459	11,270	1,384	2,678	1,689	219	18,699

[1] Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania and U.S.S.R. (excludes Yugoslavia).

Table 32.—Exports of unrefined and refined copper by major world producers in 1963 [1]

(Thousand metric tons)

Destinations	Exporting countries											
	Canada	United States	Chile	Peru	Belgium-Luxembourg	West Germany	U.S.S.R.	United Kingdom	Republic of the Congo (Leopoldville)	Zambia	Other countries [2]	Total
United States	67	XX	211	74	10	---	(3)	(4)	(3)	21	22	405
Belgium-Luxembourg	2	3	9	18	XX	4	(3)	31	178	4	6	255
France	6	35	12	(3)	84	6	(3)	(4)	30	25	3	201
West Germany	6	63	69	18	50	XX	(3)	4	1	75	8	294
Italy	2	51	32	---	22	(3)	(3)	(4)	28	53	3	191
U.S.S.R.	(3)	(3)	(3)	(3)	5	10	XX	1	(3)	10	10	36
United Kingdom	90	30	103	22	2	6	(3)	XX	3	221	6	483
Japan	---	14	(4)	(4)	2	---	(3)	---	4	37	13	70
Other	30	89	104	13	73	47	72	23	27	141	11	630
Total	203	285	540	145	248	73	72	59	271	587	82	2,565

XX Not applicable.

[1] Data presented in this table are not exactly comparable to that given in table 41 of 1963 chapter, Minerals in the World Economy, because of change of source.

[2] Mexico, Austria, France, Netherlands, Sweden, Japan and Australia.

[3] Shipments to this destination, if any, included in "Others" column at right.

[4] Less than ½ unit.

Source: Metallgesellschaft Aktiengesselschaft. Metal Statistics 1956–1965, 53rd Annual Issue. Frankfurt am Main, 1966, pp. 135–189.

Table 33.—Exports of unrefined and refined copper by major world producers in 1964 [1]

(Thousand metric tons)

Destinations	Exporting countries: Canada	United States	Chile	Peru	Belgium-Luxembourg	West Germany	U.S.S.R.	United Kingdom	Republic of the Congo (Leopoldville)	Zambia	Other countries [2]	Total
United States	77	XX	229	94	1	(3)	(4)	2	1	20	13	437
Belgium-Luxembourg	2	1	15	21	XX	4	(4)	(3)	196	13	7	259
France	14	32	18	(4)	91	5	(4)	4	27	40	4	235
West Germany	3	53	58	26	77	XX	(4)	7	(2)	102	13	339
Italy	2	50	22	(4)	18	1	(4)	1	34	53	1	182
U.S.S.R.	(4)	(4)	(4)	(4)	---	3	XX	---	(4)	1	(4)	4
United Kingdom	100	50	92	10	5	7	(4)	XX	3	236	3	506
Japan	---	19	(4)	(4)	1	---	(4)	---	3	81	11	115
Other	5	87	89	5	57	57	90	25	12	136	10	573
Total	203	292	523	156	250	77	90	39	276	682	62	2,650

XX Not applicable.
[1] Data presented in this table not exactly comparable to that given in table 41 of 1963 chapter, Minerals in the World Economy, because of change in source.
[2] Mexico, Austria, France, Netherlands, Sweden, Japan and Australia.
[3] Less than ½ unit.
[4] Shipments to this destination, if any, included in "Others" column at right.

Source: Metallgesellschaft Aktiengessellschaft. Metal Statistics 1956-1965, 53 Annual Issue. Frankfurt am Main, 1966, pp. 135–189.

Table 34.—World trade in iron ore, concentrates, and agglomerates in 1963, by areas

(Thousand metric tons)

Exporters	Destination: Canada	United States	South America	Europe: East [1]	Europe: West	Japan	Other countries	Total
Canada	---	18,623	---	---	3,604	2,011	---	24,238
United States	5,066	---	---	---	139	1,709	4	6,918
South America (including Mexico)	443	13,148	577	1,132	11,113	7,032	6	33,451
Europe:								
Communist [1]	---	---	---	20,085	721	---	1	20,807
Non-Communist	---	34	---	1,283	44,429	---	5	45,751
Non-Communist Asia	---	---	---	1,561	1,367	13,768	74	16,770
Africa	---	1,357	---	591	12,665	262	660	15,535
Oceania	---	---	---	---	---	1	295	296
Total	5,509	33,162	577	24,652	74,038	24,783	1,045	163,766

[1] Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R. (Excludes Yugoslavia).

Table 35.—World trade in iron ore, concentrates and agglomerates in 1964, by areas
(Thousand metric tons)

Exporters	Destination: Canada	United States	South America	Europe: East [1]	Europe: West	Japan	Other countries	Total
Canada	---	25,191	---	---	4,061	1,704	7	30,963
United States	4,912	---	---	---	108	2,053	2	7,075
South America (including Dominican Republic and Mexico)	379	14,400	1,053	635	13,829	8,672	---	38,968
Europe:								
Communist [1]	---	---	---	21,466	919	---	245	22,630
Non-Communist	---	38	---	1,292	50,206	---	44	51,580
Africa	---	3,248	---	717	21,279	1,489	362	27,095
China, mainland and North Korea	---	---	---	---	---	403	1	404
Non-Communist Asia	---	---	---	1,590	1,888	15,502	54	19,034
Oceania	---	---	---	---	---	---	293	293
Total	5,291	42,877	1,053	25,700	92,290	29,823	1,008	198,042

[1] Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.

Table 36.—Major world trade in steel ingots and semimanufactures in 1963, by areas [1]
(Thousand metric tons)

Exporters	Destinations by area: North America	Latin America	Europe: Non-Communist	Europe: Communist	Africa	Asia: Near East [2]	Asia: South Asia and Far East [3]	Oceania	Unallocated	Total, world
North America:										
Canada	576.6	136.3	211.5	---	8.0	9.0	83.4	12.4	---	1,037.2
United States	285.2	302.2	247.6	2.8	66.5	68.7	963.7	15.1	---	1,951.8
Total	861.8	438.5	459.1	2.8	74.5	77.7	1,047.1	27.5	---	2,989.0
Europe:										
European Economic Community:										
Belgium-Luxembourg	1,128.0	259.0	5,227.0	98.0	223.0	330.0	163.0	22.0	---	7,450.0
France	395.3	186.4	3,381.8	171.6	571.9	241.4	93.0	16.2	---	5,057.6
Germany, West	592.4	274.2	5,935.9	382.5	204.1	270.9	180.4	7.8	---	[4] 7,848.2
Italy	11.1	163.0	277.1	267.3	82.6	28.1	8.1	.7	12.1	[5] 850.1
Netherlands	14.3	34.5	1,307.6	112.1	40.7	15.4	16.8	.4	---	1,541.8

Subtotal	2,141.1	917.1	16,129.4	1,031.5	1,122.3	885.8	461.3	47.1	12.1	[4]22,747.7
European Free Trade Association:										
Austria	4.7	6.9	860.3	263.4	1.6	20.8	6.1	.8	7.7	1,172.3
Norway	17.8	.3	242.4	15.3	2.1	4.2	.5	---	---	282.6
Sweden	55.0	14.8	550.1	80.0	39.1	28.4	26.2	3.5	---	797.1
United Kingdom	427.0	229.2	1,367.8	380.6	266.9	143.5	373.5	186.0	---	3,374.5
Subtotal	504.5	251.2	3,020.6	739.3	309.7	196.9	406.3	190.3	7.7	5,626.5
European Communist Nations:										
Czechoslovakia	---	18.6	234.0	1,234.5	40.6	32.8	43.0	---	---	1,603.5
Hungary	---	.1	191.0	391.7	26.0	48.1	54.7	---	---	711.6
Poland	7.0	75.1	184.4	651.8	33.9	47.0	36.2	---	---	1,035.4
U.S.S.R.	---	103.8	382.0	3,006.7	44.2	69.2	244.2	---	59.5	3,909.6
Yugoslavia	.3	---	107.2	54.3	12.0	7.0	7.9	---	---	188.7
Subtotal	7.3	197.6	1,098.6	5,339.0	156.7	204.1	386.0	---	59.5	7,448.8
Total	2,652.9	1,365.9	20,248.6	7,109.8	1,588.7	1,286.8	1,253.6	237.4	79.3	[4]35,823.0
Africa: Republic of South Africa	98.5	1.9	68.7	---	105.4	.6	.2	.6	.2	276.1
Asia: Japan	1,623.0	411.4	606.5	356.3	163.2	75.1	1,824.6	222.4	---	5,282.5
Oceania: Australia	29.7	12.1	47.5	---	5.0	.5	47.6	166.0	4.4	312.8
Grand total	5,265.9	2,229.8	21,430.4	7,468.9	1,936.8	1,440.7	4,173.1	653.9	83.9	[4]44,683.4

[1] Based on export data or countries listed in left hand column; although list of exporting countries is not complete, the table covers all significant producers and exporters.

[2] Includes Bahrain, Iran, Iraq, Israel, Kuwait, Lebanon, Saudi Arabia and Syria.

[3] Includes Afghanistan, Burma, Ceylon, mainland China, Hong Kong, India, Indonesia, Japan, Laos, North Korea, North Viet-Nam, Malaysia, Pakistan, Philippines, South Korea, South Viet-Nam, Taiwan, and Thailand.

[4] Excluding 179,900 metric tons exported to East Germany.

[5] Excludes 12,000 tons of railway materials.

Source: United Nations, Statistics of World Trade in Steel 1963. Economic Commission for Europe, New York, 1964. 43 pp.

Table 37.—Major world trade in steel ingots and semimanufactures in 1964, by areas [1]

(Thousand metric tons)

Exporters	Destinations by area									
	North America	Latin America	Europe: Non-Communist	Europe: Communist	Africa	Asia: Near East [2]	Asia: South Asia and Far East [3]	Oceania	Unallocated	Total, world
North America:										
Canada	612.0	214.7	182.2	---	14.6	5.3	20.7	17.8	---	1,067.3
United States	648.4	391.5	781.9	1.0	78.9	37.1	1,163.0	16.9	---	3,118.7
Total	1,260.4	606.2	964.1	1.0	93.5	42.4	1,183.7	34.7	---	4,186.0
Europe:										
European Economic Community:										
Belgium-Luxembourg	1,278.0	364.0	6,184.0	57.0	230.0	284.0	131.0	47.0	---	8,575.0
France	503.7	262.3	4,114.4	161.0	620.5	215.3	120.2	36.6	---	6,034.0
Germany, West	723.8	276.2	6,293.1	381.6	205.5	220.7	203.5	11.9	---	[4] 8,316.3
Italy	50.3	89.8	658.7	254.3	173.8	107.0	32.4	1.4	9.3	[5] 1,377.0
Netherlands	16.5	43.0	1,463.7	15.7	39.6	20.1	46.0	.4	4.8	1,649.8
Subtotal	2,572.3	1,035.3	18,713.9	869.6	1,269.4	847.1	533.1	97.3	14.1	[4] 25,952.1
European Free Trade Association:										
Austria	4.8	9.0	836.6	258.4	2.6	33.8	5.7	.7	7.3	1,158.9
Norway	22.9	2.7	305.0	18.7	4.3	3.5	1.7	---	---	358.8
Sweden	69.7	20.7	748.9	70.5	14.7	19.7	29.6	4.6	---	978.4
United Kingdom	414.4	288.8	1,609.3	156.4	425.0	149.1	430.4	245.1	---	3,718.5
Subtotal	511.8	321.2	3,499.8	504.0	446.6	206.1	467.4	250.4	7.3	6,214.6
European Communist Countries:										
Czechoslovakia	4.8	22.3	394.6	1,402.2	74.7	85.4	60.0	---	---	2,044.0
Hungary	---	---	240.2	396.7	8.2	83.2	35.5	---	---	763.8
Poland	60.3	18.1	177.8	564.5	25.3	72.0	33.8	---	---	951.8
U.S.S.R.	---	149.2	426.4	3,597.9	84.2	84.1	188.5	---	53.6	4,583.9
Yugoslavia	.3	51.9	40.1	45.0	3.5	1.9	13.2	---	---	155.9
Subtotal	65.4	241.5	1,279.1	6,006.3	195.9	326.6	331.0	---	53.6	8,499.4
Total	3,149.5	1,598.0	23,492.8	7,379.9	1,911.9	1,379.8	1,331.5	347.7	75.0	[4] 40,666.1
Africa: Republic of South Africa	14.3	.1	13.9	---	120.4	---	.6	.9	2.2	152.4
Asia: Japan	2,481.0	504.0	469.0	146.0	262.0	136.0	2,139.0	394.0	8.0	6,539.0
Oceania: Australia	49.0	8.9	81.2	---	4.9	.6	80.6	224.7	6.2	456.1
Grand total	6,954.2	2,717.2	25,021.0	7,526.9	2,392.7	1,558.8	4,735.4	1,002.0	91.4	[4] 51,999.6

[1] Based on export data of countries listed in left hand column; although list of exporting countries is not complete, the table covers all significant producers and exporters.
[2] Includes Bahrain, Iran, Iraq, Israel, Kuwait, Lebanon, Saudi Arabia, and Syria.
[3] Includes Afghanistan, Burma, Ceylon, mainland China, Hong Kong, India, Indonesia, Japan, Laos, North Korea, North Viet-Nam, Malaysia, Pakistan, Philippines, South Korea, South Viet-Nam, Taiwan, and Thailand.
[4] Excluding tonnages delivered to Eastern Germany.
[5] Excludes 12,000 tons of railway materials.

Source: United Nations, Statistics of World Trade in Steel 1964. Economic Commission For Europe, New York, 1965. 39 pp.

Table 38.—World trade of lead ores and concentrates in 1964 [1]
(Thousand metric tons of contained metal unless otherwise specified)

Destinations	Exporting regions								
	North America [2]	Latin America [2]	Western Europe [3]	Eastern Europe [3]	Africa	Asia	Oceania	Origin not reported by continent	Total
United States	25.3	37.4	---	---	31.0	---	17.4	0.5	111.6
Western Europe:									
Belgium-Luxembourg [4]	44.2	7.6	4.5	---	12.2	---	---	3.9	72.4
France	9.7	4.3	11.5	1.4	46.1	3.0	19.6	1.1	96.7
West Germany	10.8	16.8	22.2	3.8	7.9	.2	---	---	61.7
United Kingdom	5.2	---	---	---	---	---	11.7	12.9	29.8
Other [5]	---	---	3.0	---	6.0	---	---	4.5	13.5
Total [6]	69.9	28.7	41.2	5.2	72.2	3.2	31.3	22.4	274.1
Japan	1.2	8.4	---	---	---	3.1	12.9	---	25.6
Grand total	96.4	74.5	41.2	5.2	103.2	6.3	61.6	22.9	411.3

[1] Compiled from import data of countries listed in destination column only, therefore incomplete; however, imports by countries not listed are regarded as being relatively small with respect to total.
[2] Mexico included with Latin America.
[3] Eastern Europe comprises Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.; Yugoslavia included with Western Europe.
[4] Data are for gross weight of ore and concentrates rather than for contained metal and cover period from January through October only.
[5] Includes Austria and Italy only.
[6] Gross weight of ore and concentrate for Belgium-Luxembourg plus contained metal for other countries listed.

Source: International Lead and Zinc Study Group. Lead and Zinc Statistics. V. 5, No. 5, May 1965, p. 24.

Table 39.—World trade of lead ores and concentrates in 1965 [1]

(Thousand metric tons of contained metal unless otherwise specified)

Destinations	Exporting regions								
	North America [2]	Latin America [2]	Western Europe [3]	Eastern Europe [3]	Africa	Asia	Oceania	Origin not reported by continent	Total
United States	21.7	25.2	---	---	1.1	---	13.6	---	61.6
Western Europe:									
Belgium-Luxembourg [4]	10.6	.4	2.7	---	18.3	---	---	3.1	35.1
France	1.5	.7	7.6	---	20.4	0.5	10.5	---	41.2
West Germany	10.3	11.0	23.1	5.4	6.6	2.7	---	---	59.1
United Kingdom	4.3	---	---	---	---	.1	4.4	3.0	11.8
Other [5]	---	---	.9	---	5.3	---	---	---	6.2
Total [6]	26.7	12.1	34.3	5.4	50.6	3.3	14.9	6.1	153.4
Japan	---	2.7	---	---	---	4.1	10.6	---	17.4
Grand total	48.4	40.0	34.3	5.4	51.7	7.4	39.1	6.1	232.4

[1] Compiled from import data of countries listed in destination column only, therefore incomplete; however imports by countries not listed are regarded as being relatively small with respect to total.

[2] Mexico included with Latin America.

[3] Eastern Europe comprises Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.; Yugoslavia is included with Western Europe.

[4] Data are for gross weight of ore and concentrates rather than for contained metal, and cover January through April only.

[5] Includes Austria and Italy only.

[6] Gross weight of ore and concentrates for Belgium-Luxembourg plus contained metal for other countries listed.

Source: International Lead and Zinc Study Group. Lead and Zinc Statistics. V. 6, No. 11, November 1966, p. 24.

Table 40.—World trade of zinc ores and concentrates in 1964 [1]

(Thousand metric tons of contained metal unless otherwise specified)

Destinations	Exporting regions								
	North America [2]	Latin America [2]	Western Europe [3]	Eastern Europe [3]	Africa	Asia	Oceania	Origin not reported by continent	Total
United States	141.9	162.9	---	---	6.5	---	3.1	9.6	324.0
Western Europe:									
Belgium-Luxembourg [4]	121.5	12.3	135.9	---	68.5	---	---	27.0	365.2
France	28.4	37.6	48.2	---	81.7	9.6	---	---	205.5
West Germany	13.4	5.8	39.4	2.1	2.0	2.0	6.3	---	71.0
United Kingdom	6.7	---	---	---	---	---	98.6	25.4	130.7
Other [5]	20.7	9.5	52.0	---	3.7	1.4	9.7	8.0	105.0
Total [6]	190.7	65.2	275.5	2.1	155.9	13.0	114.6	60.4	877.4
Japan	12.3	100.7	5.1	---	---	12.2	13.6	---	143.9
Grand total	344.9	328.8	280.6	2.1	162.4	25.2	131.3	70.0	1,345.3

[1] Compiled from import data of countries listed in destination column only, therefore incomplete; however, imports by countries not listed are regarded as relatively small with respect to total.

[2] Mexico included with Latin America.

[3] Eastern Europe comprises Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.; Yugoslavia is included with Western Europe.

[4] Data are gross weight of ore and concentrates rather than for contained metal and cover period from January through October only.

[5] Includes Austria, the Netherlands, and Norway only.

[6] Gross weight of ore for Belgium-Luxembourg plus contained metal for other countries listed.

Source: United Nations, International Lead Zinc Study Group. Lead and Zinc Statistics. V. 5, No. 5, May 1965, p. 25.

Table 41.—World trade of zinc ores and concentrates in 1965 [1]

(Thousand metric tons of contained metal unless otherwise specified)

Destinations	Exporting regions								
	North America [2]	Latin America [2]	Western Europe [3]	Eastern Europe [3]	Africa	Asia	Oceania	Origin not reported by continent	Total
United States	93.9	92.6	---	---	9.7	---	1.9	0.3	198.4
Western Europe:									
Belgium-Luxembourg [4]	64.6	---	---	---	29.3	---	9.0	27.5	130.4
France	21.4	11.9	31.8	---	37.8	3.2	4.2	---	110.3
West Germany	5.3	4.0	10.3	0.8	4.1	3.7	---	---	28.2
United Kingdom	5.3	---	---	---	---	1.0	42.5	6.2	55.0
Other [5]	1.2	.6	19.1	---	2.5	.4	3.4	.2	27.4
Total [6]	97.8	16.5	61.2	.8	73.7	8.3	59.1	33.9	351.3
Japan	2.6	77.3	---	---	---	13.5	9.0	.5	102.9
Grand total	194.3	186.4	61.2	.8	83.4	21.8	70.0	34.7	652.6

[1] Compiled from import data of countries listed in destination column only, therefore incomplete; however imports by countries not listed are regarded as relatively small with respect to total.
[2] Mexico included with Latin America.
[3] Eastern Europe comprises Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.; Yugoslavia is included with Western Europe.
[4] Data are for gross weight of ore and concentrates rather than for contained metal, and cover January through April only.
[5] Includes Austria, Netherlands, and Norway only.
[6] Gross weight of ore for Belgium-Luxembourg plus contained metal for other countries listed.

Source: International Lead Zinc Study Group. Lead and Zinc Statistics. V. 6, No. 11, November 1966, p. 25.

Table 42.—World movement of solid fuels[1] in 1963

(Thousand metric tons, standard coal equivalent)

Destinations	Exporting regions						
	North America	Western Europe	Africa	Far East	Oceania	Other countries[2]	Total[3]
North America	13,900	40	---	---	---	60	14,000
Caribbean America	60	---	---	---	---	60	120
Other America	1,790	200	60	---	---	90	2,000
Western Europe	25,000	48,000	670	---	15	21,700	95,400
Africa	---	---	---	---	---	---	---
Middle East	40	25	---	---	---	265	330
Far East	6,165	651	340	1,330	3,070	2,080	13,050
Oceania	3	20	6	---	180	---	210
Other countries[2]	160	1,040	---	---	12	32,650	33,900
Total[3]	35,700	45,750	1,950	1,340	3,290	56,900	131,800

[1] Data based on general trade system (that is, including reexports). Lignite, lignite briquets and coke reduced to standard coal equivalent. Bunkers excluded.
[2] Includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.
[3] Reported totals; details do not add to listed total because of inclusion of data for other areas not listed separately.

Source: United Nations. World Energy Supplies 1960–63. Statistical Papers. Ser. J, No. 8, New York 1965, pp. 40–45.

Table 43.—World movement of solid fuels[1] in 1964

(Thousand metric tons, standard coal equivalent)

Destinations	Exporting regions						
	North America	Western Europe	Africa	Far East	Oceania	Other countries[2]	Total[3]
North America	14,180	20	---	---	---	---	14,190
Caribbean America	70	---	---	---	---	60	130
Other America	1,950	300	---	---	---	90	2,340
Western Europe	23,180	41,100	680	---	10	23,200	88,180
Africa	10	40	2,070	---	---	120	2,240
Middle East	20	20	---	---	---	500	540
Far East	6,840	30	320	1,530	4,690	2,090	15,500
Oceania	---	10	20	---	260	---	290
Other countries[2]	370	1,070	---	---	20	35,420	36,880
Total[3]	46,620	42,590	3,090	1,530	4,980	61,480	160,470

[1] Data based on general trade system (that is, including reexports). Lignite, lignite briquets and coke reduced to standard coal equivalent. Bunkers excluded.
[2] Includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and U.S.S.R.
[3] Reported totals; details do not add to listed total because of inclusion of data for other areas not listed separately.

Source: United Nations. World Energy Supplies 1961–64. Statistical Papers. Ser. J, No. 9, New York 1966, pp. 40–45.

Table 44.—World movement of crude petroleum [1] in 1963

(Thousand metric tons)

Destinations	Exporting regions: North America	Caribbean America	Other America	Western Europe	Africa [2]	Middle East [2]	Far East	Other countries [3]	World
North America	12,300	40,700	300	---	90	22,650	2,600	---	[4] 78,700
Caribbean America	---	52,200	160	---	---	3,925	---	3,770	[4] 60,100
Other America	---	6,500	320	---	590	5,250	---	570	[4] 13,200
Western Europe	60	23,200	180	2,040	27,330	180,900	55	12,240	[4] 246,000
Africa [2]	---	---	---	---	375	3,175	---	285	3,835
Middle East [2]	---	10	---	90	35	26,150	---	930	[4] 27,220
Far East	170	420	---	---	---	58,300	10,970	2,030	71,890
Oceania	---	---	---	---	---	10,600	4,260	---	14,860
Other [3]	---	---	---	540	---	230	---	11,000	11,770
World	[4] 12,500	[4] 123,100	960	2,670	[4] 28,770	[4] 311,400	[4] 17,900	[4] 30,800	[4] 528,100

[1] Data based on general trade system (that is, including reexports).
[2] Data for Libya and United Arab Republic are included under Middle East.
[3] Includes Czechoslovakia, East Germany, Hungary, Poland, and U.S.S.R.
[4] Reported totals; details do not add to listed total because of inclusion of data for other areas not listed separately.

Source: United Nations. World Energy Supplies 1960–63. Statistical Papers. Ser. J, No. 8. New York 1965, pp. 74–79.

Table 45.—World movement of crude petroleum [1] in 1964

(Thousand metric tons)

Destinations	Exporting regions: North America	Caribbean America	Other America	Western Europe	Africa [2]	Middle East [2]	Far East	Other countries [3]	World
North America	13,680	43,750	---	---	290	21,890	3,150	---	[4] 82,770
Caribbean America	---	56,200	---	---	80	4,160	30	3,430	63,900
Other America	---	6,910	280	---	270	5,220	---	1,880	14,560
Western Europe	40	22,510	160	640	30,230	218,590	530	13,890	[4] 286,600
Africa [2]	---	---	---	---	1,310	7,880	---	300	[4] 9,500
Middle East [2]	---	---	---	20	---	27,270	---	710	28,000
Far East	140	350	40	---	---	70,310	12,280	2,560	[4] 85,670
Oceania	---	---	---	---	---	12,240	3,830	---	16,070
Other [3]	---	---	---	40	---	840	---	14,240	15,120
World	[4] 13,860	[4] 129,720	480	700	[4] 32,180	[4] 368,400	[4] 19,790	[4] 37,010	[4] 602,190

[1] Data based on general trade system (that is, including reexports).
[2] Data for Libya and United Arab Republic are included under Middle East.
[3] Includes Czechoslovakia, East Germany, Hungary, Poland and U.S.S.R.
[4] Reported totals; details do not add to listed total because of inclusion of data for other areas not listed separately.

Source: United Nations. World Energy Supplies 1961–64. Statistical Papers. Ser. J, No. 9, New York 1966, pp. 76–81.