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LEAD-ZINC MINING INDUSTRY IN PERU[1/]

by

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C O N T E N T S

I.- GENERAL ASPECTS OF MINING IN PERU

Peru is located on the West Coast of South America, covers an area exceeding one million two hundred thousand square/ kilometers and its population is estimated at 13 million inhabitants.

The peruvian territory is divided lengthwise by the Andean Mountain Range, forming three zones of a well-defined nature: the Coast, the width whereof does not exceed 80 kilometers, except in the Northern part of the country, is contiguous to the Pacific Ocean and this region occupies a tenth part of the area of the country; the Highlands (Sierra) formed by three great Andean mountain ranges, occupies one fourth of Peru's area; the third zone comprises the jungle, whose main feature is an exuberant vegetation which to date, has prevented its incorporation into the country's economic life.

Upon emerging, the Andean mountain range has provided intense and diversified mineralization, constituting a fundamental resource for Peru's economy.

The mining industry, initiated during the Inca age with the exploitation of gold, silver, tin and copper, was greatly advanced during the Colonial era, and continues today as one of the country's main resources. During the Colonial era mining activities were directed extensively towards the search for, and exploitation of silver and gold

ores, as well as the extraction of mercury from the renowned "Santa Bárbara" mine, which continues to be exploited to this day. The association of silver with lead and zinc minerals allowed the awareness of important prospects from that time; the installation of the first ore treatment plant at Casapalca, by Backus & Johnston in 1925 led to the real initiation of zinc production and statistics show a production of 204 MT of zinc in 1933.

II.- IMPORTANCE OF THE MINING INDUSTRY IN PERUVIAN ECONOMY

Non-ferrous metallic mining is a purely export-oriented industry, since internal comsumption is under 2% of production.

As may be observed in chart Nº 1, metallic mining has participated in an ever increasing degree in the total value of Peru's exports. From 1950 to 1968, it has grown from 24.5% to 51.1%, i.e., a value of US$ 46.0 and US$ 442.3 million for the foregoing years.

During 1968, metallic mining exports consisted of the following:

TABLE 1

METAL MINING EXPORTS

AÑOS	Volumen (Miles TM)						Valor (Millones US$)					
	Minería Metálica		Otros		Total General		Minería Metálica		Otros		Total General	
	Miles TM	%	Miles TM	%	Miles TM	%	Millones US$	%	Millones US$	%	Millones US$	%
1950	155	8.6	926	91.4	1,081	100.0	46.0	24.5	141.1	75.5	187.1	100.0
1955	1,319	34.2	2,531	65.8	3,850	100.0	100.1	37.3	168.2	62.7	268.3	100.0
1960	3,571	43.8	4,575	56.2	8,146	100 0	195.5	45.2	236.7	54.8	432.2	100.0
1965	5,197	47.1	5,824	52.9	11,021	100.0	291.8	43.8	375.5	56.2	667.3	100.0
1966	5,472	48.1	5,895	51.9	11,367	100.0	364.3	47.7	400.1	52.3	764.4	100.0
1967	6,064	47.7	6,650	52.3	12,714	100.0	382.3	50.6	373.9	49.4	756'2	100.0
1968	6,119	44.8	7,539	55.2	13,658	100.0	442.3	51.1	423.8	48.9	866.1	100.0

Fuente: Superintendencia General de Aduanas.
(Source:) (General Superintendence of Customs)

CHART Nº 2

	Metallic Cont. Thousand MT	Value Million US$	%
Copper	206.5	233.8	52.9
Silver	1.0	68.0	15.4
Iron	5,450.1	63.3	14.3
Zinc	303.8	33.2	7.5
Lead	153.6	29.4	6.6
Others	4.1	14.6	3.3
		442.3	100.0

Source: General Customs Superintendency.

According to the value of 1967 exports, the item equivalent to Others in chart Nº 2 was composed of 35.0% bismuth, 13.6% molybdenum, 13.6% tungsten and the remaining 26.6% a combination of cadmium, antimony, gold and others.

The Gross Production Value of the Metallic Mining Sub-Sector during 1968 is shown on chart Nº 3, divided according to the percentage distribution obtained for the year 1967.

CHART Nº 3

	Millions US$	%
Utilized in the Country:	288.8	65.3
Remunerations	81.3	18.4
Purchase of national goods and services	59.3	13.4
Taxes	54.0	12.2
Reinvestment	94.2	21.3
Utilized Abroad:	153.5	34.7
Exported Profits	74.8	16.9
Purchases abroad	34.5	7.8
Depreciation of Assets	39.8	9.0
Interest charges	4.4	1.0
	442.3	100.0

Source: National Mining Society.

Preliminary estimates for 1968 indicate the participation of Mining in the country's Gross National Product to the amount of between 6.1% and 6.2%, not taking into account the contribution of smelting and refining activities, which have been included as a Manufacturing contribution. Chart Nº 4 shows the sectorial composition of the National Gross Product.

Mining employs 50,000 workers directly, and indirectly provides occupation to an equal number of persons through transport and manufacturing industries.

TABLE 4

GROSS NATIONAL PRODUCT

(Millions of US$ at 1963 Prices)

	1963		1964		1965		1966		1967	
	Millones US$	%	Millones US$	%	Millones US$	%	Millones US$	%	Millones US$	%
PRODUCTO NACIONAL BRUTO	2,937	100.0	3,138	100.0	3,239	100.0	3,477	100.0	3,636	100.0
1. Agropecuario	589	20.1	626	20.0	611	18.6	630	18.1	643	17.7
2. Minería	186	6.3	191	6.1	199	6.1	197	5.7	211	5.8
3. Manufactura	516	12.6	562	17.9	609	18.5	669	19.3	707	19.4
4. Construcción	115	3.9	128	4.1	144	4.4	157	4.5	165	4.5
5. Electricidad, Gas y Agua	25	0.8	26	0.8	31	0.9	33	0.9	37	1.0
6. Vivienda	177	6.0	183	5.8	189	5.7	194	5.6	200	5.5
7. Gobierno	245	8.3	259	8.2	273	8.3	290	8.3	308	8.5
8. Otros	1,084	36.9	1,162	37.0	1,232	37.5	1,306	37.6	1,365	37.6

Fuente: Cuentas Nacionales.
(Source: National Accounts)

Since mining is a basic activity for the national economy, the Government has given the highest priority thereto, with the objective of achieving a growth of 5.5% up to 1970 and 11% between 1970 and 1975. The latter expansion is fundamentally based on the increase of copper production.

For the purpose of submitting a clear view of mining activities in the light of their true figures, Chart Nº 5 shows a consolidation of balances of mining companies covering the 1967 fiscal year, Profit & Loss accounts and additional information concerning number of enterprises, mining concessions and an analysis of income and output. A distinction has been made between Large Mining and Medium-Small Mining; the former group is composed of three companies whose individual production values exceed US$10 million per annum; specifically, these are Southern Peru Copper Corporation, Marcona Mining Co. and Cerro de Pasco Corporation, all U.S. companies.

III.- ANALYSIS OF LEAD AND ZINC PRODUCTION IN PERU

The most recent statistical figures covering mining production presently available are for 1967. Those pertaining to lead and zinc and set forth on Charts Nos. 6 and 7 for a total of 157,627 MT of lead and 328,904 MT of zinc, contained in concentrates and ores.

[illegible]

[illegible]

	Large Companies 000 S/.	%	Medium and Small Companies 000 S/.	%	Total 000 S/.	%
Number of Companies	3	3.8	76	96.2		
1° Paid-up Capital Stock	113'776	73.6	42'843	27.4	156'548	
2° Mining Property (hectares)	11'769	39.8	29'677	60.2	[illegible]	100.0
2-1 Sole Ownership	990,612	27.5	778,146	72.5	1'068,758	89.0
2-2 Joint Ownership	3,200	12.1	16,536	88.0	16,786	1.4
2-3 Leased from other companies	66,987	66.9	33,221	33.1	100,208	4.5
2-4 Leased to other companies	1,583	76.3	491	23.7	2,074	5.1
3° Financial Statement						
3-1 Assets	786'503	78.9	212'577	21.1	1,009'080	100.0
3-1-1 Cash and Banks	9'870	37.7	16'320	62.3	26'190	2.6
3-1-2 Receivables	41'459	66.3	21'051	33.7	62'510	6.2
3-1-3 Stocks	77'336	72.3	29'608	27.7	107'022	10.6
3-1-4 Fixed Assets	475'784	87.8	66'300	12.2	542'084	53.7
3-1-5 Mining Property	107'258	82.6	22'602	17.4	130'256	12.9
3-1-6 Investment (Law 14080, art. 6)	2'028	12.8	14'961	88.0	16'989	1.7
3-1-7 Other assets	80'776	66.2	41'255	33.8	121'971	12.1
3-2 Liabilities and Net Worth	786'503	78.9	212'577	21.1	1,009'080	100.0
3-2-1 Capital Stock	113'983	69.8	49'226	30.2	163'209	16.2
3-2-2 Legal Reserve	301'496	82.5	59'645	17.5	361'141	33.8
3-2-3 Investment Reserve (Law 14080)	58'095	75.5	18'556	24.5	76'651	7.6
3-2-4 Current and Long-Term Debt	83'628	66.8	41'432	33.2	125'060	12.4
3-2-5 Other Liabilities	165'952	82.7	34'268	17.3	200'220	19.8
3-2-6 Surplus	93'640	91.4	8'788	8.6	102'428	10.2
3-2-6-1 Initial Surplus	25'360	105.9	(1'412)	(5.9)	23'948	
3-2-6-2 Profit for the year	68'080	87.0	10'200	13.0	78'491	
4° Income Statement						
4-1 Total Income	327'186	75.3	107'455	24.7	434'607	100.0
4-1-1 Gross Income	320'372	75.5	104'369	24.5	424'752	98.2
4-1-2 Year's increase in [illegible]	6'776	60.7	3'096	39.3	7'857	1.8
4-2 Expenses	203'040	72.2	77'130	27.8	281'169	100.0
4-2-1 Direct Expenses	157'423	75.2	38'944	24.8	157'767	95.2
4-2-2 Indirect Expenses	16'078	60.7	10'442	39.3	26'540	9.3
4-2-3 Selling Expenses	12'261	60.9	7'186	39.1	20'147	7.1
4-2-4 General Expenses	11'874	66.7	5'920	33.3	17'793	6.3
4-2-5 Financial Charges	3'197	70.2	1'354	29.8	4'551	1.6
4-2-6 Taxes, Mining Fees and Social Law Charges	41'957	82.1	9'195	17.9	51'152	16.2
4-2-7 Other Expenses	1'830	27.7	4'789	72.3	6'619	3.3
4-3 Gross Earnings of the year	102'114	81.2	20'325	18.8	162'439	100.0
4-3-1 Depreciation, Depletion, and Retirements	53'325	76.8	10'123	25.2	71'448	49.8
4-3-1-1 Depreciation of fixed assets	30'953	87.4	4'443	12.6	35'397	
4-3-1-2 Social Law Reserves	7'416	74.4	2'554	25.6	9'970	
4-3-1-3 Bad Debts and other legal reserves			2'755	100.0	2'755	
4-3-1-4 Reserves, Investment Law	15'486	74.0	5'443	26.0	20'929	
4-3-1-5 Management and Directors' Fees			950	100.0	950	
4-3-1-6 Other Reserves			1'998	100.0	1'997	
4-3-2 Net Profit for the year						
5° Appropriation of Earnings	93'640	86.7	14'346	13.3	107'985	100.0
5-1 Net Profit for the year	66'299	84.9	12'149	15.1	80'438	74.5
5-2 Retained Earnings at the beginning of the year	25'360	92.0	2'197	8.0	27'557	25.5
5-3 Distributable Net Profit	93'640	86.7	14'346	13.3	107'986	100.0
5-3-1 Employees' and workers' participation	-	-	-	-	-	-
5-3-2 Owners' and partners' drawings	-		158	100.0	158	0.1
5-3-3 Dividends paid	-		3'160	100.0	3'160	2.9
5-3-4 Funded Reserves	-		245	100.0	245	0.2
5-3-5 Tax Reserve	-		22	100.0	22	
5-3-6 Profits remitted abroad	84'939	99.6	356	0.4	85'295	79.0
5-3-7 Reinvested profits	-		767	100.0	767	0.7
5-3-8 Undistributed profits	8'700	48.7	9'248	51.3	17'948	16.6
5-3-9 Amortization of current and long-term liabilities	-	-	-	-	-	-
5-3-10 Other Profits	-		346	100.0	346	0.4
6° Analysis of Income	327'186	75.3	107'425	24.7	434'603	100.0
6-1 Sale of products	325'235	76.0	102'617	24.6	427'852	98.5
6-2 Sub-contracting	-	-	1'936	100.0	1'936	0.4
6-3 Sale of fixed assets	91	68.4	42	31.6	133	
6-4 Other income	1'856	39.7	4'782	60.3	6'609	1.1
7° Analysis of Expenses	203'040	72.2	77'130	27.8	281'169	100.0
7-1 Direct Expenses	157'423	75.2	38'944	24.8	196'366	95.2
7-1-1 Wages	31'542	64.7	11'976	35.3	53'978	
7-1-2 Salaries	10'368	75.1	3'412	24.9	13'670	
7-1-3 Equipment and Supplies	47'629	77.2	14'143	22.8	61'931	
7-1-4 Other Expenses	38'084	80.0	9'503	20.0	47'587	
7-2 Indirect Expenses	16'046	60.7	10'442	39.3	26'540	9.3
7-2-1 Wages	4'447	61.4	2'919	38.6	7'367	
7-2-2 Salaries	5'453	65.5	2'876	34.5	8'329	
7-2-3 Equipment and Supplies	5'630	72.8	1'979	27.2	6'609	
7-2-4 Other Expenses	962	26.0	2'768	74.0	3'735	
7-3 Selling Expenses	12'262	60.9	7'886	39.1	20'147	7.1
7-4 General Expenses	11'873	66.7	5'920	33.3	17'793	6.3
7-5 Interest paid	3'197	70.2	1'354	29.8	4'552	1.6
7-6 Taxes and Mining Fees	39'784	84.3	7'421	15.7	47'205	16.6
7-7 Social Law Charges	2'173	48.4	2'324	51.6	4'497	1.6
7-8 Other Expenses	1'830	27.7	4'789	72.3	6'619	3.3

Source: Sociedad Nacional de Minería y Petróleo
(National Society of Mining and Petroleum)

TABLE 6

PRODUCTION OF CONCENTRATES AND ORES FOR EXPORT - 1967

	Producto Comercial	TM Conc.	Ley %	Cont.Met. T.M.
CENTRO				
Junín				
Heraldos Negros	Pb	493	63.49	313
Río Pallanga	Pb	8,582	55.91	4,798
Volcan Minas	Pb	4,561	34.35	1,577
San Ignacio de Morococha	Pb	5,079	44.33	2,252
Yauli	Pb	7,093	55.29	3,922
Yauli	Cu	739	11.10	82
Santa Rita	Pb	2,582	31.63	1,604
Paquiococha	Cu-Pb	1,230	10.86	134
Carcapaquito	Pb-Ag	2,791	66.17	1,903
Cerro de Pasco (Mahr T.y S.Criet.)	Pb	7,936	45.53	3,451
Cerro de Pasco (" " " ")	Cu	5,257	7.43	391
Cerro de Pasco - Morococha	Cu	50,374	5.15	2,594
Banco Minero - Sacracancha	Cu	637	5.69	36
Banco Minero - Sacracancha	Ag	174	6.25	11
Lima				
Milloccocha	Pb	164	65.02	107
Milloccocha	Cu	249	5.00	12
Banco Minero - Huarochirí	Pb	205	62.96	129
Banco Minero - Huarochirí	Cu	312	2.69	8
Cerro de Pasco (Casapalca)	Pb	19,382	57.07	11,061
Cerro de Pasco (Casapalca)	Cu	3,452	10.01	345
Cerro de Pasco (Yauricocha)	Cu-Pb	29,302	8.29	2,429
Cerro de Pasco (Yauricocha)	Pb	7,427	44.37	3,295
Tacaacocha	Pb-Ag-Cu	671	20.85	140
Millotingo	Pb-Ag	21	63.60	13
Millotingo	Cu-Ag	175	2.39	4
Pacococha	Pb	533	68.36	364
Pacococha	Cu	6,028	2.40	145
Huampar	Pb	4,043	65.31	2,640
Santander	Pb	6,598	44.97	2,967
Pasco				
Milpo	Pb	17,681	63.94	11,305
Vinchos	Pb-Ag	3,986	34.76	1,386
Minera Cerro	Cu	3,409	0.84	29
Chúngar	Pb	781	54.41	425
Chúngar	Cu	4,841	1.95	94
El Pilar	Pb	543	35.91	195
El Brocal	Pb	7,773	49.70	3,863
Huarón	Pb	13,554	60.80	8,241
Cerro de Pasco	Pb	75,409	42.75	32,237
Atacocha	Pb	29,297	59.87	17,541
Huánuco				
Raura	Pb	15,166	62.55	9,486
Raura	Pb-Cu	1,230	10.86	134
Subtotal:		349,722		131,667

Table 6

	Producto Concent.	TM Conc.	Ley %	Cont.Met. T.M.
NORTE CHICO				
Ancash				
Sto.Toribio - Jacanca - Aija	Pb-Ag	,109	53.27	3,254
Alianza	Pb	551	59.62	334
Colquipocro	Pb	87	15.80	14
Giovani Rossen	Pb-Ag	158	67.09	106
Sub-Total:		6,915		3,708
N O R T E				
Cajamarca				
Banco Minero - Hualgayoc	Pb	1,488	61.85	920
Northern - Chilete	Pb	3,473	57.97	2,013
Sayapullo	Pb	892	53.47	477
Sayapullo	Cu	436	10.68	47
San Agustín	Pb	488	46.07	225
LA LIBERTAD				
Northern - Quiruvilca	Pb	936	43.46	407
Sub-Total:		7,713		4,089
SUR CHICO				
Huancavelica				
Cor. Minera Castrovirreyna	Pb	7,569	34.45	2,608
Chavin Mines	Pb	2,106	60.41	1,272
Buenaventura	Pb-Ag	11,201	45.65	5,113
Buenaventura	Cu	3,419	3.90	133
Castrovirreyna Metal Mines	Pb-Ag	3,166	27.29	864
Banco Minero - Huachocolpa	Pb	2,243	55.24	1,239
Banco Minero - La Virreyna	Pb	240	70.75	170
Banco Minero - La Virreyna	Cu	391	3.06	12
Arias Dávila, Jesús	Pb	657	69.85	459
Ayacucho				
Minas Canaria	Pb-Ag	1,840	55.00	1,012
Sub-Total:		32,832		12,882
S U R				
Cuzco				
Condoroma	Pb	1,578	52.00	821
Puno				
Llamoca-T.Edgard-San Antonio de Lloc	Pb	41	67.41	28
Korani	Pb	4,189	49.97	2,093
Palca	Pb	3,519	59.12	2,080
Arequipa				
Caylloma	Pb-Ag-Cu-Au	1,709	13.50	231
Arcata	Ag-Au-Pb	2,592	10.61	28
Sub-Total:		13,628		5,281
T O T A L:		410,818		157,627

Table 6

R E S U M E N

	Cont. Met.	%
Centro	131,667	83.5
Norte	4,089	2.6
Norte Chico	3,708	2.4
Sur	5,281	3.3
Sur Chico	12,882	8.2
TOTAL:	157,627	100.0

TABLE 7

PRODUCTION OF ZINC CONCENTRATES - 1967

	Producto Concent.	TM Conc.	Ley %	Cont.Met. T.M.
C E N T R O				
Lima				
Millococha	Zn	46	50.00	23
Banco Minero - Huarochirí	Zn	60	49.95	30
Cerro de Pasco (Casapalca)	Zn	31,173	59.92	18,679
Cerro de Pasco (Yauricocha)	Zn	19,610	51.10	10,021
Tacsacocha	Pb-Ag-Cu	671	13.86	93
Pacococha	Zn	3,161	49.80	1,574
Huampar	Zn	5,736	57.33	3,288
Santander	Zn	63,716	49.70	34,724
Junín				
Heraldos Negros	Zn	1,372	55.10	756
Río Pallanga	Zn	8,887	56.59	5,029
Volcan Mines	Zn	24,289	58.75	14,270
San Ignacio de Morococha	Zn	3,205	50.21	1,609
Yauli	Zn	9,805	55.20	5,442
Gran Bretaña	Zn	922	56.00	52
Santa Rita	Zn	4,620	58.48	2,702
Puquiococha	Zn	2,279	56.14	1,279
Carcapuquio	Zn	8,870	44.13	3,914
Cerro de Pasco (Mahr T.y S.Crist.)	Zn	36,819	57.26	21,083
Cerro de Pasco (Morococha)	Zn	5,471	48.26	2,640
Pasco				
Milpo	Zn	16,972	58.23	9,883
Chúngar	Zn	452	47.78	216
El Pilar	Zn	569	34.09	194
El Brocal	Zn	12,413	50.80	6,306
Huarón	Zn	25,302	54.50	13,790
Cerro de Pasco (Cerro)	Zn	231,113	49.64	114,724
Atacocha	Zn	24,193	56.37	13,638
Huánuco				
Raura	Zn	16,725	57.00	9,539
Sub-Total:		558,451		298,420
NORTE CHICO				
Ancash				
Santo Toribio	Zn-Ag	6,745	51.98	3,506
Aliansa	Zn	510	51.55	263
Sub-Total:		7,255		3,769
N O R T E				
Cajamarca				
Banco Minero - Hualgayoc	Zn	2,507	56.64	1,420
Northern Chilete	Zn	19,324	55.95	10,808
Sayapullo	Zn	2,112	53.66	1,133
San Agustín	Zn	331	54.05	178
La Libertad				
Northern Quiruvilca	Zn	3,122	50.00	1,561
Sub-Total:		27,396		15,100

Table 7

	Producto Concent.	TM Conc.	Ley %	Cont.Met. T.M.
SUR CHICO				
Huancavelica				
Corp.Minera Castrovirreyna	Zn	4,159	58.51	2,433
Chavín Mines	Zn	3,913	54.37	2,127
Buenaventura	Zn	6,610	58.51	3,868
Castrovirreyna Metal Mines	Zn	575	55.82	321
Banco Minero - Huachocolpa	Zn	1,889	54.42	1,028
Banco Minero - La Virreyna	Zn	311	56.62	176
Arias Dávila, Jesús	Zn	783	54.28	425
Sub-Total:		18,240		10,378
S U R				
Arequipa				
Arcata	Ag-Au-Zn	2,592	16.07	417
Cuzco				
Condoroma	Zn	1,996	54.31	1,084
Puno				
Palca	Zn	4,317	61.58	2,658
Sub-Total:		8,905		4,159
T O T A L:		620,247		328,904

R E S U M E N

	T.M.	%
Centro	295,428	89.8
Northo Chico	3,769	1.1
Norte	15,100	4.7
Sur Chico	10,378	3.1
Sur	4,159	1.3
	328,904	100.0

Part of the zinc and lead concentrates were utilised for smelting and refining thereof in the country. The statistical figures covering refining for 1967-68 are as follows:

CHART Nº 8

METALLIC PRODUCTION-EXPORTATION

(Metallic contents in M.T.)

	Production		Local Sales		Exported	
	1967	1968	1967	1968	1967	1968
Electrolytic Zinc	61,659	65,788	3,734	4,035	60,514	60,698
Powdered Zinc	1,376	1,522	49	1,032		
Zinc Sulphate	36	722	29	36		
	63,071	68,032	3,812	5,103	60,514	60,698
Electrolytic Lead	81,651	86,346	3,566	3,542	76,617	81,105
Sheet lead	26	37	28	29		
Lead - tellurium	4	13			4	10
Lead - bismuth	42	25			45	29
Lead - antimony	95		101	40		
	81,818	86,421	3,695	3,611	76,666	81,144

Concerning zinc and lead, Peru's exports equal production; consumption thereof in the country amounts to approximately 5,000 M.T. and 3,500 M.T. respectively; thus, lacking full production statistics for 1968, those covering exports will be used.

During 1968, 303,800 M.T. of zinc and 153,600 M.T. of lead were exported, the value whereof represents 7.5 and 6.6% respectively, of metallic mining exports -Chart Nº 2-.

It is important to point out that lead and zinc production proceeds basically from the exploitation of complex minerals and ores, wherein silver is the most important element --Chart Nº 9--. Apart from copper exports from the Toquepala deposits owned by Southern Peru Copper Corporation, production of Cu-Ag-Zn-Pb mining is as follows:

	Fines Content (Thousands M.T.)	Values (Mill.US$)
Copper	74.5	75.8
Silver	1.011	66.0
Zinc	303.8	33.2
Lead	153.6	29.4

A large portion of exports proceed from the six main deposits owned by Cerro de Pasco Corporation, which have jointly produced during 1968, approximately 35 thousand M.T.

TABLE N°9

1967 LEAD, ZINC, COPPER AND SILVER PRODUCTION FROM MIXED ORES

Prod. Unit.	M.T.	GRADE Pb (%)	Zn (%)	Cu (%)	Ag (gr/MT)	METALIC CONT. Pb (MT)	Zn (MT)	Cu (MT)	Ag (Kgs.)
1. Cerro (C. de P. Corp.) (F)									
Lead Conc.	[illegible]	42.75			625	32,237			47,131
Copper Conc.	22,371			4.17	154			958	
Zinc Conc.	231,[illegible]		49.64		59		114,724		13,636
2. Atacocha (N)									
Lead Conc.	[illegible],297	59.67			1,472	17,541			43,418
Zinc Conc.	24,[illegible]		56.57		67		13,636		1,621
3. Casapalca (C. de P. Corp.) (F)									
Lead Conc.	19,392	57.07		4.46	2,613	11,001		864	50,645
Copper Conc.	3,462	10.01		25.94	12,[illegible]	349		903	44,632
Zinc Conc.	31,[illegible]		59.92		73		18,679		2,276
4. [illegible] (N)									
Lead Conc.	17,661	63.96			1,895	11,306			33,505
Zinc Conc.	16,972		58.23		78		9,843		1,128
5. Raura (F)									
Lead Conc.	15,166	62.55			1,122	9,466			16,865
Lead-Copper Conc.	4,230	10.86				136			
Copper Conc.	404			29.90	5,120			121	2,075
Zinc Conc.	16,785		57.00				9,539		
6. Huarón (F)									
Lead Conc.	13,554	60.80			2,636	8,241			36,773
Zinc Conc.	24,[illegible]		56.00		78		13,790		1,[illegible]
7. Yauricocha (C. de P. Corp.) (F)									
Lead Conc.	7,427	66.37			628	3,295			4,664
Copper - Lead Conc.	39,102	6.20			620	2,429			16,408
Zinc Conc.	19,610		51.10		116		10,081		2,278
8. Buenaventura (N)									
Lead Conc.	11,201	45.65		6.06	3,469	5,113		693	
Copper Conc.	3,[illegible]	3.90		31.30	3,469	133		1,075	
Zinc Conc.	6,[illegible]		56.92		3		3,446		20
9. Río Pallanga (N)									
Lead Conc.	8,982	55.98			2,514	4,798		81	21,575
Zinc Conc.	8,887		56.53		85		5,009		759
10. Yauli (N)									
Lead Conc.	7,093	55.29		2.17	2,[illegible]	3,922		154	16,508
Copper Conc.	739	11.10		23.46	9,[illegible]	82		175	6,906
Zinc Conc.	9,[illegible]		55.20		133		5,443		1,[illegible]
11. El Brocal (N)									
Lead Conc.	7,779	40.76		8.60	2,[illegible]	3,[illegible]		666	16,261
Zinc Conc.	12,[illegible]		50.60		196		6,306		2,433
12. San Cristóbal (C. de P.) (F)									
Lead Conc.	7,536	45.53		6.[illegible]	3,[illegible]	3,431		518	27,145
Copper Conc.	5,[illegible]	7.[illegible]		30.[illegible]	3,[illegible]	39[illegible]		859	18,936
Zinc Conc.	36,[illegible]		57.26			148	21,083		5,[illegible]
13. Santo Toribio (N)									
Lead Conc.	6,109	53.27			2,172	3,254			13,260
Zinc Conc.	6,746		52.00		93		3,508		627
14. Santander (F)									
Lead Conc.	6,598	46.97		6.37	1,761	2,069		420	11,619
Zinc Conc.	63,716		49.70		29		31,714		1,[illegible]
15. Huampar (N)									
Lead Conc.	4,043	65.31		3.46	1,302	2,640		139	5,307
Zinc Conc.	5,700		57.33		28		3,200		163
16. Corp. Castrovirreyna (N)									
Lead Conc.	7,509	34.[illegible]		9.78	4,4[illegible]	2,600		736	33,440
Zinc Conc.	4,109	54.[illegible]			244		2,433		1,010
17. Morococha (C. de P. Corp.) (F)									
Copper Conc.	50,374	5.18		11.83	9.5	2,596		6,400	46,092
Zinc Conc.	5,476		48.20		96		2,640		525
18. San Ignacio (N)									
Lead Conc.	5,079	44.33			1,[illegible]	2,252			26,778
Zinc Conc.	3,[illegible]		50.21	4.[illegible]	177		1,609	221	567
19. [illegible] (N)									
Lead Conc.	4,109	49.97			1,506	2,093			6,438
20. [illegible] (N)									
Lead Conc.	3,519	59.13		2.80	395	1,600		160	1,390
Zinc Conc.	4,327		61.50				2,650		
21. Chile's (Northern) (F)									
Lead Conc.	3,473	57.97		3.06	1,2[illegible]	2,013		126	4,366
Zinc Conc.	30,[illegible]		55.93		61		16,800		2,179
22. Volcan (N)									
Lead Conc.	4,491	34.[illegible]			3,336	1,577			15,270
Zinc Conc.	26,269		56.79			76	14,278		1,[illegible]
23. [illegible] (N)									
Lead Conc.	2,791	63.17			172	[illegible],963			480
Zinc Conc.	8,570		46.13				3,944		
24. Santa Rita (N)									
Lead Conc.	2,882	55.40		5.50	1,457	1,606		159	4,202
Copper Conc.	96			18.80	96			18	105
Zinc Conc.	4,680		58.40		67		2,76[illegible]		310
25. Chavín (N)									
Lead Conc.	[illegible]	60.41			590	[illegible]			1,243
Zinc Conc.	3,9[illegible]		56.[illegible]		108		[illegible]		423
SUB-TOTAL:						[illegible]	3[illegible],6[illegible]	[illegible]	6[illegible],225
Other (Lead, Zinc and Mixed Conc.) (N)						[illegible]	22,[illegible]	[illegible]	[illegible]7,257
TOTAL:						[illegible]	[illegible]	[illegible]	[illegible]

of copper, 62 thousand M.T. of lead, 165 thousand M.T. of zinc and 354 M. T. of silver; since this company owns its own smelter, it has smelted and refined therein its own copper, lead, silver and approximately 60 thousand M.T. of zinc production. In addition, it purchases concentrates and minerals from various companies in order to produce approximately 33 thousand M.T. of refined copper, 15 thousand M.T. of blister copper, 81 thousand M.T. of refined lead, 61 thousand M.T. of electrolytic zinc, 522 M.T. of refined silver, 92 M.T. of silver contained in the copper blister and any number of refining by-products. Barring the Cobriza deposit, which produces only copper, Cerro de Pasco's other five deposits produce copper, silver, zinc and lead.

Likewise, the remaining lead and zinc mining, composed of the sub-sectors denominated Medium and Small Mining, shares insofar as production is concerned, the same features as Peruvian Mining, i.e., lead or zinc contents are lower in value than the silver content. Chart Nº 9 details all producing units who exploit complex zinc, lead, silver and copper minerals, and which in 1967 have jointly produced:

	Fines Content M. T.
Lead in lead and copper Concentrates	157,627
Copper in copper and lead Concentrates	20,605
Zinc in zinc Concentrates	328,904
Silver in lead, copper and zinc Concentrates	722.002

The aforementioned Chart Nº 9 details National (N) producing units and Foreign (F) producing units.

Comparing these figures with the foregoing as exports over 1968, it is obvious that approximately 50 thousand M.T. of copper proceed from deposits wherein no significant lead and zinc values are to be found.

It can be indicated approximately that the silver production derived from the exploitation of complex lead, zinc, copper and silver ores is valued at US$50 million, zinc at US$33 million and lead at US$29 million.

IV.- IMPORTANCE OF PERUVIAN LEAD AND ZINC PRODUCTION IN WORLD MARKETS

Peruvian production of lead and zinc represents 7.6 and 5.5% respectively, of world production, placing Peru among world producers as the fifth producer of zinc and the sixth of lead.

Even more outstanding is Peru's participation in the International Trade carried out with the foregoing metals,

since in 1968 her zinc exports amounted to 303,800 M.T., estimated at 12% of the world's volume of exports, and her lead exports amounted to 153,600 M.T., equivalent to 11% of world exports of concentrates and metals.

Peruvian zinc production has increased annually at the rate of 10.7% during the period 1959-68; this rate exceeds by far the rate of world consumption, estimated at 4.9% per annum, the average during 1950-68. Concerning lead production, growth amounts to only 2.1% per annum, equivalent to the growth rate of world consumption over the past years.

V.- FEATURES OF PERUVIAN LEAD AND ZINC DEPOSITS

Peru's lead and zinc production derives from replacement and lode deposits, the ores whereof are mainly sulfosalts of zinc, lead, copper and silver. The lead and zinc mineralization in general presents a continuity of irregular depth; in some cases it has been noted that lead values decrease with depth, whereas zinc values increase --here we have a partial explanation of the high rate of increase in zinc production with regard to lead--. Mineralization is usually distributed over a vertical distance upwards of 500 meters, barring certain cases such as Casapalca in particular, wherein it continues over more than 1,000 meters.

In general, it can be stated that in deposits of a complex mineral type, the silver value is higher than the lead or zinc contents.

Mineralized orebodies vary from 20 million tons of ore to 750,000 tons; such types of deposits yield approximately 65% of national production; the remainder is extracted from lodes of diverse sizes, mainly however, from those between 1.5 million tons to veins containing under 200,000 tons.

It is of interest to note that in the past years deposits have been uncovered, the ores of which consist only and exclusively of zinc sulphide; these are large pockets containing a minimum of 1.0 million tons as far as is known to date, but show prospects of much larger reserves.

VI.- GEOGRAPHICAL DISTRIBUTION OF LEAD AND ZINC DEPOSITS IN PERU

Lead as well as zinc production has been classified according to geographic location thereof on Charts Nos. 6 and 7. It is obvious that the greater part of the production of such metals is concentrated in the zone denominated "Central", corresponding to the Central Highlands or Sierras, of the country, wherein are located 89.8% of zinc and 83.5% of lead production. Of interest is the fact that merely 17 units produce 94% of zinc and 97% of lead proceeding

from the Central Sierras.

At national level, production is also limited to few units; thus 21 mines producing over 2 thousand M.T./ year of lead (fines content), yield 89% of the overall total and only 23, also producing over 2,000 M.T./year, yield 96% of the total zinc production in the country.- Chart Nº 9.-

VII.- LEAD AND ZINC MINERAL RESERVES

According to recent calculations, proven lead reserves are estimated at 2 million M.T. (metallic content) and those of zinc at 4 million; following the present rythm of exploitation, this would ensure supplies of 12 years for lead and 13 years for zinc.

Including prospective reserves, at the present rate of production lead minerals are available for 35 years and zinc for 50 years.

In the Central zone, wherein 85% of the country's reserves are concentrated, the growth of such reserves is based on 30 to 100 tons discovered per meter of exploration, representing an investment varying between 3 and 10% of the net value of production; this also signifies between US$0.40 and US$ 1.50 per ton of ore exploited. In this context between 20,000 m and 50,000 m of exploration-development per annum would suffice to replace extracted minerals

and maintain present exploitation levels over a long period of time.

Concerning the rythm of investment in prospecting activities, this is subject to great variations, having been faced by the companies as an occasional phenomenon required urgently only at the time of observing the probable depletion of their deposits. Today there is a marked change of attitude on the part of medium size companies, who find that survival is dependent on the expansion of their operations.

VIII.-TECHNOLOGY - MINING, CONCENTRATION AND REDUCTION

It is a feature of Medium/Small Mining in Peru that deposits are exploited prematurely, before obtaining full knowledge of volume, geometric shape and quality, and thus, a rational exploitation cannot be planned; basically, this situation arises due to the scarcity of capitals willing to undertake the risks inherent to mining exploration, and also capable of immobility during the period of time required for the planning of an exploitation suitable in volume to the size of the deposit.

Many of the deposits presently exploited commenced operations extracting rich ores, mainly lead and silver, which by means of hand-picking yielded grades which led to

direct export; either this way or in other cases/concentrating at a scale not exceeding 100 tons per day, exploitation was planned on the basis of a modest investment, whereof as usual only a small part is covered by the self-owned capital of the enterprise. This practice, still enforced due to the exploitation of surface zones of rich minerals, easily extracted by gravity, leads to a sacrifice of the deposit, leaving untouched minerals which, on a larger scale would/have been economically exploitable; however, their subsequent extraction would be costly and uneconomical. Also, lack of capital at the commencement of operations leads to machinery and equipment being adjusted to adapt to prevailing conditions.

When such conditions allowed, deposits commencing operations as described above achieved growth by reinvesting profits and utilizing credits; since such growth took place in units of 100 to 200 tons per day, forced solutions were used which are far from being an optimum exploitation plan.

Lead and zinc deposits, barring the Paracaha deposit owned by Cerro de Pasco Corporation, and part of Santander, owned by Minas Santander, S.A. are exploited by means of underground workings, the exploitation technique whereof varies, as is logical, according to the production scale,

which normally alternates between a few tons up to 1,000 tons/day, and per the nature itself of the deposit. A typical feature of the exploitation of deposits, is the limited use of machinery and equipment, since the cost thereof is increased by import costs, against the alternative of using qualified manual labor earning low wages —an average of US$3 for 8 hours' work--; another feature is that on occasions even upwards of 100 tons/day, there is justifiable cause to install autonomous hydroelectric plants, using the unexploited hydraulic resources which abound in the Peruvian sierras, in volumes which exceed the requirements of the mining works.

Usual exploitation costs vary from US$9 to 12 per ton, wherefrom between US$0.50 to 1.50 corresponds to exploration-development costs; US$3.0 to 5.0 to exploitation; US$1.50 to 3.0 to concentration; US$1.0 to 1.50 to transport and US$1.0 to 1.50 for general overhead. Obviously, costs will depend on the scale of exploitation and the conditions thereof.

It is major concern of miners to obtain high quality concentrates, with regard to a high grade of valuable elements as well as low content of impurities, since local internal transport costs, shipment and maritime freight represent a considerable portion of the final value of

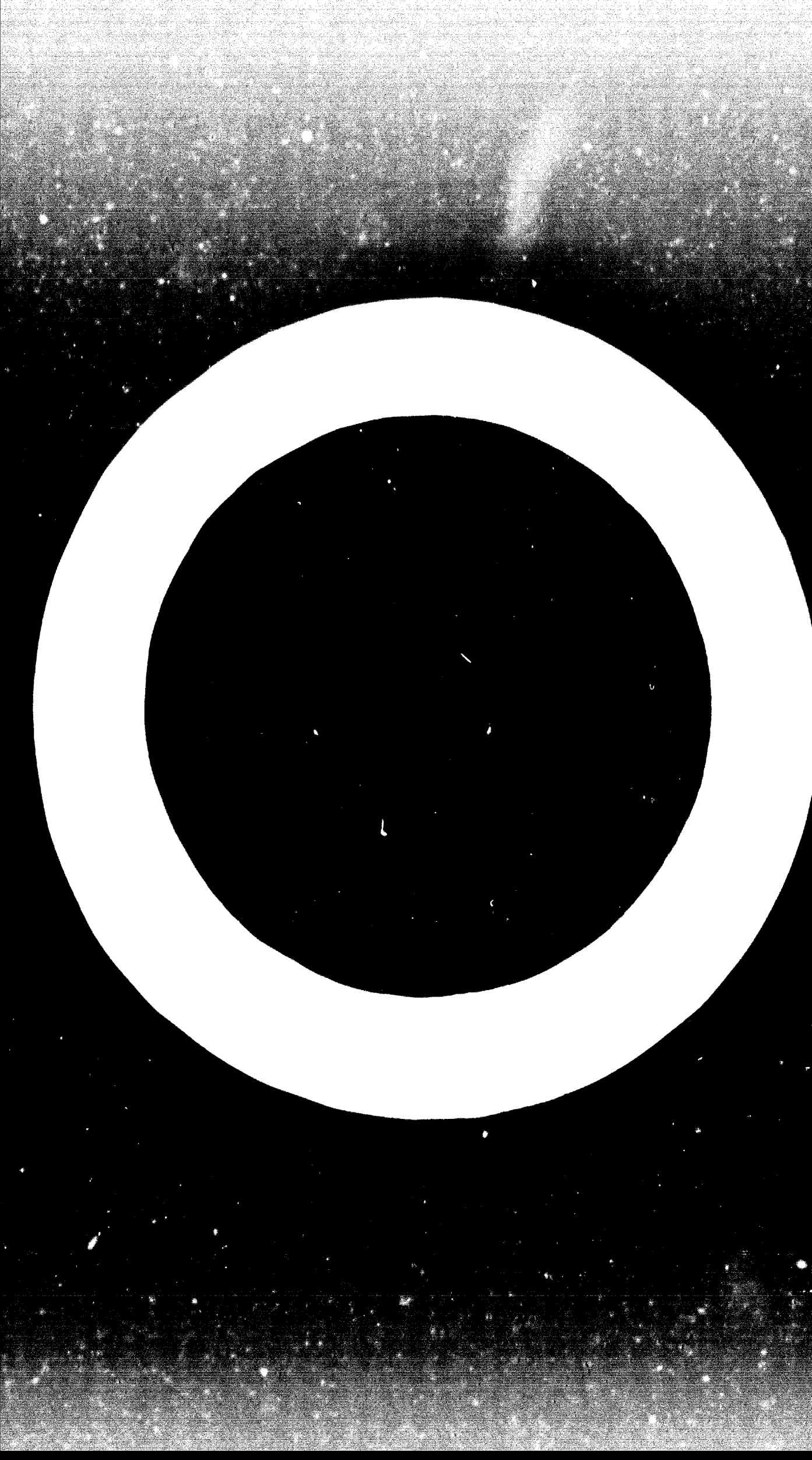
concentrates and ores; in the special case of zinc, a discount of 40% is imposed on the value received for such reasons.

Lead ores and concentrates are rich in silver; the content thereof usually varies between 30 and 90 oz. per ton, and precisely this element renders the exploitation of lead most attractive; in this context it is interesting to observe Chart Nº 9, wherein appears the grade of silver which accompanies main lead concentrates and ores. One other element present in lead concentrates is bismuth, the metallurgical extraction of which has led to the development in the country of the Betts electrolytic refining process, applied in the only lead smelter in Peru, La Oroya, owned by Cerro de Pasco Corporation.

As regards zinc concentrates, grades vary between 48 and 63%, the first containing as usual high quantities of iron; zinc ores also contain considerable amounts of silver, averaging 5 to 6 oz. per ton, but varying from 1 to 10 oz. per metric ton; likewise, the cadmium content is notable, averaging approximately 0.25%; in exceptional cases, such as the Cercapuquio Mines, it reaches 1.2%.

At present a project of expansion to 90,000 tons per annum is under consideration.

The zinc plant processes only concentrates proceeding



Impurities accompanying zinc concentrates, besides iron, are arsenic, antimony, fluor and chlorine all of which, except for very special cases, are low enough so as not to interfere even with electrolytic refinery.

Metal reduction constitutes an attainable way to increase hard currency income to the country. However, except for Cerro de Pasco Corporation private capital has not ventured into this activity.

With regard to zinc reduction there exists in the country conditions that fully justify such investment.

..Ore reserves
..An existing fertilizer market on which the manufacture of 140,000 tons/year of sulfuric acid could be absorbed at an attractive price
..Excess electric power at reasonable price
..Abundant labor at low salaries

Government is, therefore, promoting the erection of zinc and fertilizer plants which project is described later in this paper.

Lead and zinc are only smelted and refined at Cerro's Oroye works.

Oroye is located at the central "Sierra" at an altitude of 12 thousand feet. At this smelter the company treats their own concentrates as well as some copper and lead concentrates purchased from others.

Zinc refinery started in a 4 ton per day electrolytic pilot plant in 1940. In 1951 a 12,000 ton per day plant was finished and this capacity has been increased to 32,000 tons in 1957 and 54,000 tons in 1962. Presently another expansion to 90,000 tons per year is being considered.

The zinc plant processes only concentrates proceeding

from the Cerro de Pasco deposit, located at 83 miles from the plant; the latter has roasting facilities by means of fluid-solid ovens recently installed; the leaching stage is performed in simple baths, the separation of residues takes place with Burt filters. Purifying is done in one stage, with a cut-off point of 0.5 mg/l of cadmium. Power density used in electrolysis is from 69 to 72 Amp/sq.ft. Zinc recovery as from concentration is 77.0%; leaching residues are being processed independently by means of a variation of the segregation process.

The lead plant uses one-stage sintering using a lineal type Dwight Lloyd machine. Smelting takes place in blast furnaces and lead bullion refining is effected by the Betts process, slightly modified to allow treatment of high concentrations of antimony.

Refined bismuth, silver, gold, tellurium, selenium, antimony, cadmium and iridium are produced as by-products of lead and zinc refining.

IX.- GROWTH OF LEAD AND ZINC PRODUCTION AND PROJECTIONS

During the period comprised between 1959-68, peruvian zinc production has increased at an annual rate of 10.7%, and lead at only 2.1%. Judging by projections for the period 1969-72, shown on Charts Nos. 10 and 11, the same growth rate is assured for zinc, but a larger rate, estimated

TABLE 10

FORECAST OF ZINC PRODUCTION (1969 - 1972)

(Metallic Content, MT)

	1967	1968	1969	1970	1971	1972
Heraldos Negros	760	1,200	500	-	-	-
Río Pallanga	5,030	5,030	5,200	5,200	7,700	7,700
Volcan Mines	14,270	14,000	14,000	17,000	17,000	17,000
San Ignacio	1,610	1,600	2,000	2,000	2,000	2,000
Yauli	5,440	5,400	5,400	5,400	5,400	5,400
Gran Bretaña	50	-	-	10,000	20,000	32,000
Santa Rita	2,700	3,000	3,300	3,300	3,300	3,300
Puquiococha	1,200	1,300	1,300	1,300	1,300	1,300
Cercapuquio	3,910	2,500	2,000	1,500	1,200	1,200
Millococha	20	-	-	-	-	-
Tacsacocha	90	150	150	800	1,000	1,500
Pacococha	1,600	1,600	1,800	3,000	3,000	3,000
Huampar	3,290	3,300	3,700	6,200	6,200	6,200
Santander	34,720	34,500	34,500	34,500	34,500	34,500
Milpo	9,880	10,000	10,000	13,000	16,000	16,000
Chúngar	220	200	200	200	200	200
El Pilar	200	200	250	300	300	300
El Brocal	6,310	6,300	6,300	6,300	6,300	6,300
Huarón	13,790	13,800	13,800	14,000	14,000	14,000
Atacocha	13,640	15,000	17,000	18,000	19,000	19,000
Raura	9,540	10,000	12,000	12,000	12,000	12,000
Huanzalá	-	6,000	14,000	14,000	14,000	14,000
Santo Toribio-Aija	3,510	4,000	6,000	6,000	6,000	6,000
Alianza	260	300	4,000	8,000	8,000	8,000
Sayapullo	1,130	1,200	1,200	1,200	1,200	1,200
Northern Chilete	10,810	4,000	-	-	-	-
Northern Quiruvilca	1,560	1,500	1,500	1,500	1,500	1,500
Cemsa	180	200	100	100	100	100
Banco Minero-Hualgayoc	1,420	1,400	2,000	2,300	3,000	3,000
Corp. Castrovirreyna	2,430	2,400	2,400	2,400	2,400	2,400
Chavín	2,130	3,000	3,000	3,000	3,000	1,500
Buenaventura	3,870	4,000	4,000	7,000	10,000	10,000
Castrovirreyna Metal Mines	320	300	300	300	300	300
Banco Minero-Huachocolpa	1,030	1,000	1,000	1,200	1,500	1,500
Banco Minero-La Virreyna	180	-	-	-	-	-
Arias Dávila, Jesús	420	800	1,000	1,000	1,000	1,000
Minas Canaria	-	-	3,000	4,000	5,000	5,000
Arcata	420	400	400	300	800	800
Condoroma	1,080	1,000	1,000	1,000	1,000	1,000
Palca	2,660	2,400	2,500	2,500	2,500	2,500
Cerro de Pasco	167,150	165,800	182,647	188,058	216,744	204,716
Madrigal	-	-	-	-	9,000	9,000
Farallón	-	-	-	-	8,000	8,000
San Vicente	-	-	-	20,000	25,000	30,000
TOTAL:	328,940	328,780	363,547	418,358	490,444	494,416

TABLE 11

FORECAST OF PERUVIAN LEAD PRODUCCION (1969 - 1972)

(Metallic Concent, MT)

	1967	1968	1969	1970	1971	1972
Heraldos Negros	310	500	200	-	-	-
Río Pallanga	4,800	4,800	5,000	5,000	7,300	7,300
Volcan	1,580	1,500	1,500	1,800	1,800	1,800
San Ignacio	2,250	2,250	3,000	3,000	3,000	3,000
Yauli	4,000	4,000	4,000	4,000	4,000	4,000
Santa Rita	1,600	1,800	2,000	2,000	2,000	2,000
Puquiococha	130	150	150	150	150	150
Cercapuquio	1,900	1,600	1,500	1,300	1,000	1,000
Millococha	120	-	-	-	-	-
Tacsacocha	160	200	200	800	1,000	1,500
Millotingo	20	100	200	1,000	1,200	1,500
Pacococha	510	500	600	1,000	1,000	1,000
Huampar	2,640	2,600	3,000	5,000	5,000	5,000
Santander	2,970	3,000	3,000	3,000	3,000	3,000
Milpo	11,300	12,000	12,000	15,000	18,000	18,000
Vinchos	1,400	1,400	1,400	1,400	1,400	1,400
Chungar	520	500	500	500	500	500
El Pilar	200	200	250	300	300	300
El Brocal	3,860	4,000	4,000	4,000	4,000	4,000
Huarón	8,240	8,200	8,200	8,500	8,500	8,500
Atacocha	17,540	20,000	22,000	23,000	23,500	23,500
Raura	9,620	10,000	12,000	12,000	12,000	12,000
Huanzalá	-	4,000	10,000	10,000	10,000	10,000
Sto.Toribio,Jecanca,Aija	3,250	4,000	6,000	6,000	6,000	6,000
Alianza	330	300	4,000	8,000	8,000	8,000
Sayapullo	520	500	500	500	500	500
Northern-Chilete	2,010	1,000	-	-	-	-
Cemsa	220	300	300	300	300	300
Northern-Quiruvilca	410	400	400	400	400	400
Corp.Castrovirreyna	2,610	2,600	2,600	3,000	3,500	3,500
Chavín	1,270	2,000	2,000	2,000	2,000	2,000
Buenaventura	5,250	5,000	5,000	7,000	10,000	10,000
Castrovirreyna Metal	860	850	850	850	850	850
Arias Dávila	460	800	1,000	1,000	1,000	1,000
Canaria	1,010	1,000	4,600	5,000	8,000	8,000
Condorama	820	800	800	800	800	800
Korani	2,090	2,000	2,000	2,000	2,000	2,000
Palca	2,080	2,000	1,000	1,000	1,000	1,000
Banco Minero	2,530	2,500	3,000	3,000	4,000	4,000
Otros	440	500	1,000	1,500	2,000	2,500
Cerro de Pasco	55,790	61,960	62,000	62,000	65,000	66,700
Madrigal	-	-	-	-	6,000	6,000
Farallón	-	-	-	-	3,000	3,000
T O T A L:	157,620	171,810	191,750	207,100	233,500	236,000

at 7 to 8% is envisioned for lead.

Charts Nos. 10 and 11 have been drawn up on the basis of inquiries formulated directly with mining company officials. Concerning zinc, it is estimated that production for 1968 has approximated that of 1967, but that as from 1968 it shall grow at a rate exceeding 10%, mainly due to the start-up of three new projects, Magrigal, Faralión and San Vicente, and the re-initiation on a larger scale of Gran Bretaña; a large contribution to the present rate of increase are the expansions contemplated by Cerro de Pasco Corporation, Atacocha and Milpo, and the start-up or expansion on the stipulated dates is assured.

Lead production, over the period 1969-72 shall maintain a higher rate of growth, approximately 7 to 8%. This increase is based mainly on the capacity expansion of existing units; the contribution of new production, as observed, amounts to only 9,000 M.T./year.

Various interesting projects exist for zinc as well as lead, which are as yet in their initial exploration phase, and thus it is estimated that operations thereof will commence after 1972.

X.- DIFFICULTIES PREVENTING A GREATER INCREASE OF ZINC AND LEAD PRODUCTION

Notwithstanding the fact that lead and zinc production

increases, shown to be 2.1% and 10.7%, represent a rather sustained growth in this sector of peruvian mining, it is estimated that the increase itself has been hindered by a series of factors which, in order to achieve a rational presentation thereof, have been classified as external and internal.

Among the external factors, the fluctuations in quotations are especially important, since an uncertain future implies many hazards to the investor; however, this factor has lately exerted less influence because of quite stable quotations varying by less than 10%. One other negative factor in mining development, is the distance of export markets, which undoubtedly places Peru in an unfavorable light as compared with other producing countries. It is of interest to note that the bulk of production, which proceeds from the Central Sierras, suffers a transport cost to port of US$8, shipping costs of US$5 and maritime freight of between US$10 to 15, in total, between US$23 to 28 per M.T. of concentrates. Concretely, for zinc this signifies a lower price equivalent to 40-50% of smelter liquidations.

A basic factor of an internal nature which is at present being studied by the Government in all its aspects, is the/ lack of knowledge of the country's mining potential; in this context the termination of the geological chart is being

expedited, and measures have been taken to ensure that concessionaires shall undertake exploration work on their concessions on a short term basis. One other internal factor is the existence of unfinished highway networks, mainly as regards penetration roads from the coast to the sierras.

As a developing country, Peru lacks an adequate capital market and those who are willing to undertake the hazards of mining exploration are scarce; since credits are obtained from the very beginning the operation is slow and many times solutions of a forced nature are found which lead to the premature exploitation of deposits, and thus, to the sacrifice thereof.

The country's sierra region, wherein are located lead and zinc deposits at altitutes fluctuating between 4,000 and 5,000 meters, lacks suitable conditions for human life; the climate is frigid and the altitude hinders the normal development of human beings; it is only natural that the mining promotor who inhabits the lowlands, usually residing in Lima, encounters difficulties in undertaking normal work.

XI.- PERUVIAN LEAD AND ZINC MARKETS

Domestic consumption of lead and zinc represent merely 1.7% and 2.4% respectively of production thereof, which is

mainly destined to the export trade.

Charts Nos. 12 and 13 show tonnage and values exported during the period 1958-67, detailing the destination of the exports; distinction is made among those relating to concentrates and ores and those exported as metals. Graph Nº 1 outlines metallic zinc exports for the United States, European Common Market and Japan. In this context it is well to point out that metallic zinc exports destined to Japan as well as those for the European Common Market have gradually decreased to very low levels; to the contrary, exports to the United States have doubled over the past two years, and take 96% of peruvian production. As regards the exports of concentrates (Graph Nº 2) those pertaining to the U.S. decreased in the period 1958-62, as a consequence of the import quotas imposed by that country; they subsequently rose during the years 1964-65, coinciding with the increase in zinc quotations. Concerning the European Common Market, it is clearly appreciated that it substituted the U.S. during the period wherein imports decreased. The Japanese market has increased its intake of peruvian concentrates and at present purchases over 60% thereof; the better purchase conditions of the Japanese market is one of the reasons why peruvian zinc production has increased at such a high rate as 10.7% per annum.

TABLE No. 9
1958 - 1967 ZINC IMPORTS
(in 000 MT)

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
TOTAL	136,436	155,759	156,091	208,442	191,168	185,083	175,985	267,616	278,011	285,967
Concentrates	107,519	129,932	131,578	176,013	165,110	160,175	199,775	211,198	216,031	224,109
Metal	28,917	25,827	24,493	30,429	36,048	25,908	75,216	56,418	58,980	61,548
U.S.A.	92,188	75,577	57,487	63,859	69,858	57,577	70,852	85,323	105,999	75,867
Concentrates	83,753	64,536	52,046	57,109	60,109	51,471	63,065	75,886	71,979	55,661
Metal	8,435	11,041	5,441	6,750	9,749	6,106	7,887	9,437	34,990	20,106
JAPAN	-.-	2,121	16,660	36,263	39,178	21,593	66,979	36,916	111,409	128,283
Concentrates	-.-	2,121	16,660	35,963	30,378	20,577	66,649	30,564	111,409	128,283
Metal	-.-	-.-	-.-	300	-.-	1,016	4,330	-.-	-.-	-.-
GERMANY	7,255	6,252	9,121	12,368	4,799	6,010	16,109	11,513	9,439	6,021
Concentrates	-.-	536	-.-	1,360	2,097	2,656	4,960	2,110	1,935	1,939
Metal	7,255	5,716	9,121	10,608	2,693	3,354	11,149	9,301	4,046	2,082
BELGIUM	10,905	28,762	41,751	42,662	25,479	37,718	18,596	8,351	6,967	10,676
Concentrates	10,905	28,762	41,751	41,646	25,479	37,367	17,283	8,351	6,713	8,417
Metal	-.-	-.-	-.-	1,016	-.-	351	1,067	-.-	254	2,200
FRANCE	3,688	-.-	1,691	7,510	13,077	4,160	12,830	10,896	16,825	15,761
Concentrates	3,688	-.-	1,590	7,459	13,077	4,160	12,830	10,896	16,825	15,254
Metal	-.-	-.-	101	51	-.-	-.-	-.-	-.-	-.-	507
HOLLAND	3,838	7,361	5,411	11,604	10,087	6,471	10,329	1,790	663	1,872
Concentrates	290	5,893	3,528	6,830	9,226	5,201	5,417	-.-	-.-	535
Metal	3,548	1,470	1,883	4,774	861	1,270	5,933	1,790	663	1,867
ITALY	108	-.-	456	108	930	6,730	2,400	1,365	1,466	1,300
Concentrates	-.-	-.-	-.-	-.-	-.-	4,096	-.-	-.-	-.-	-.-
Metal	108	-.-	456	108	930	2,636	2,400	1,365	1,466	1,300
EUROPEAN E.C. TOTAL	25,723	42,357	58,230	74,226	56,138	65,371	61,121	35,983	35,180	37,278
Concentrates	14,817	35,171	46,871	57,675	49,939	57,458	40,290	21,207	27,075	26,149
Metal	10,906	7,186	11,359	16,551	6,199	7,913	20,831	14,676	8,105	11,149
ARGENTINA : Metal	-.-	-.-	-.-	-.-	-.-	-.-	-.-	808	-.-	-.-
BRAZIL : Metal	390	90	508	8,950	16,976	10,961	16,200	10,019	7,401	8,300
COLOMBIA : Metal	-.-	100	-.-	-.-	-.-	124	206	144	45	270
CHILE : Metal	578	553	1,031	878	1,443	1,304	1,500	3,200	1,906	1,490
URUGUAY : Metal	-.-	60	35	58	-.-	870	5,000	1,761	5,610	5,700
VENEZUELA : Metal	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	108	-.-
L.A.F.T.A. : Metal	967	805	1,644	3,886	18,419	18,089	33,030	17,996	15,090	16,093
CANADA : Concentrates	8,967	20,085	9,675	20,466	10,647	7,764	11,893	6,090	-.-	-.-
INDIA	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	553	-.-
Concentrates	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	553	-.-
Metal	-.-	-.-	-.-	-.-	-.-	97	934	-.-	-.-	-.-
ENGLAND	5,678	12,852	12,344	7,788	8,474	4,609	3,081	9,400	3,218	3,303
Concentrates	-.-	6,906	6,280	5,249	4,463	1,433	-.-	-.-	-.-	-.-
Metal	5,678	5,946	6,064	2,539	4,011	3,176	3,081	9,400	3,218	3,303
COMMONWEALTH TOTAL	14,645	32,877	22,019	27,854	19,621	14,439	21,862	16,139	3,799	3,303
Concentrates	8,967	26,909	15,955	25,315	15,460	9,197	11,893	6,090	553	-.-
Metal	5,678	5,966	6,064	2,539	4,011	5,273	10,012	9,440	3,218	3,303
DENMARK : Metal	605	25	-.-	-.-	-.-	306	658	608	106	55
SPAIN	762	-.-	-.-	-.-	-.-	-.-	268	-.-	-.-	-.-
Concentrates	-.-	-.-	-.-	-.-	-.-	-.-	268	-.-	-.-	-.-
Metal	762	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-
FORMOSA : Metal	-.-	-.-	60	60	-.-	-.-	-.-	-.-	-.-	-.-
ISRAEL : Concentrates	-.-	-.-	-.-	-.-	-.-	-.-	400	-.-	-.-	-.-
KOREA : Metal	21	100	-.-	-.-	1,458	2,210	330	3,070	1,405	-.-
NORWAY : Concentrates	-.-	795	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-
POLAND : Concentrates	-.-	-.-	-.-	-.-	-.-	7,450	20,436	10,425	4,670	-.-
PORTUGAL : Metal	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	30	-.-
SWEDEN	1,264	108	35	177	466	1,016	2,607	1,335	1,277	306
Concentrates	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	364	-.-
Metal	1,264	108	35	177	466	1,016	2,607	1,335	913	306
OTHER	2,838	1,082	85	237	1,836	10,993	26,770	14,676	7,638	411
Concentrates	-.-	795	-.-	-.-	-.-	7,462	23,384	10,425	5,083	-.-
Metal	2,838	287	85	237	1,836	3,531	3,386	4,251	2,470	411

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	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	-
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] : Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible] : Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] : Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] : Ores and Concentrates	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] : Metal	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] : Metal	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] : Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible] TOTAL										
Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible] :										
Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible] :										
Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Metal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Ores and Concentrates	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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CHART N° 1

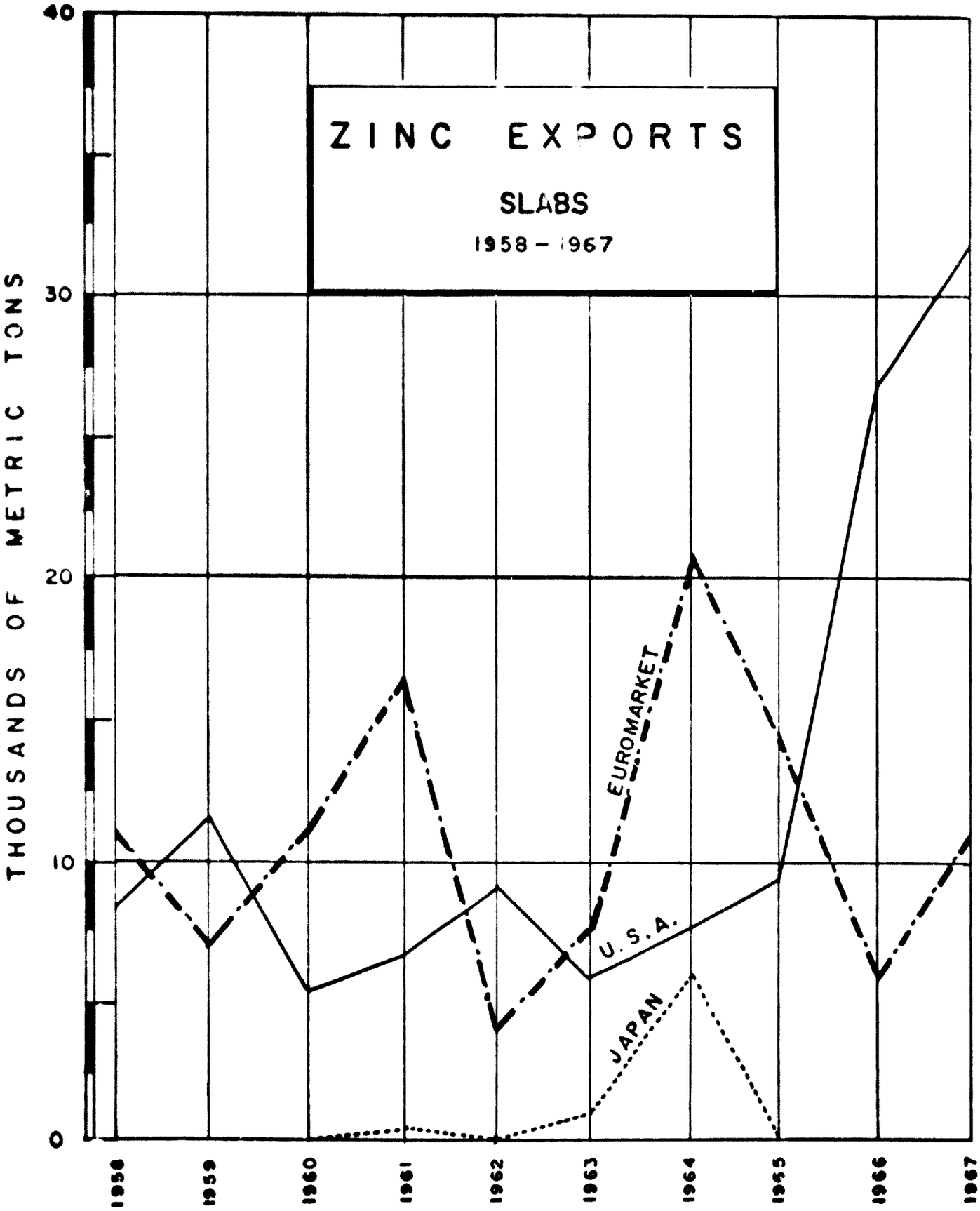

ZINC EXPORTS
SLABS
1958 - 1967
THOUSANDS OF METRIC TONS
40
30
20
10
0
EUROMARKET
U.S.A.
JAPAN
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967

CHART Nº 2

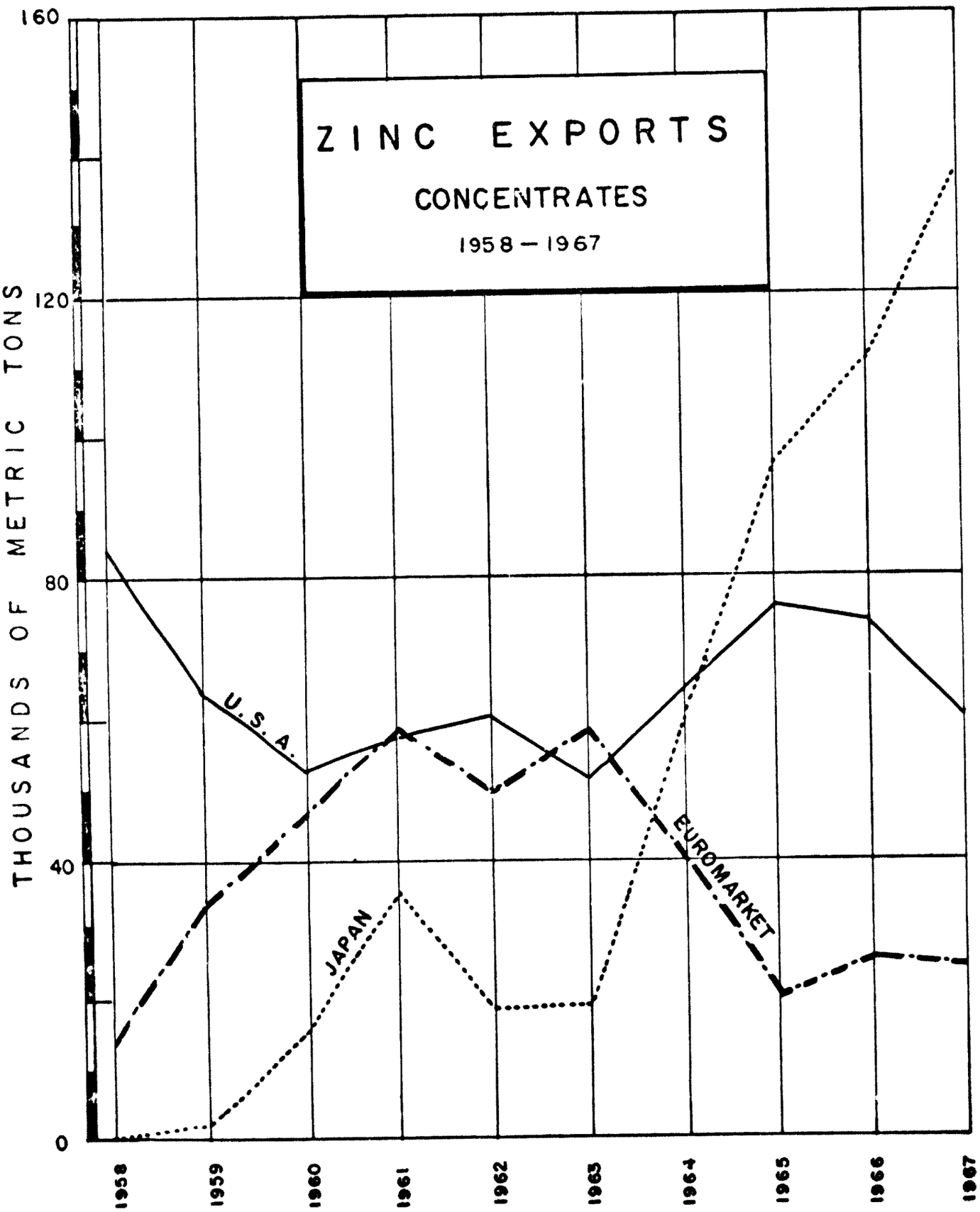

ZINC EXPORTS
CONCENTRATES
1958 – 1967
THOUSANDS OF METRIC TONS
160
120
80
40
0
U.S.A.
JAPAN
EUROMARKET
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967

CHART Nº 3

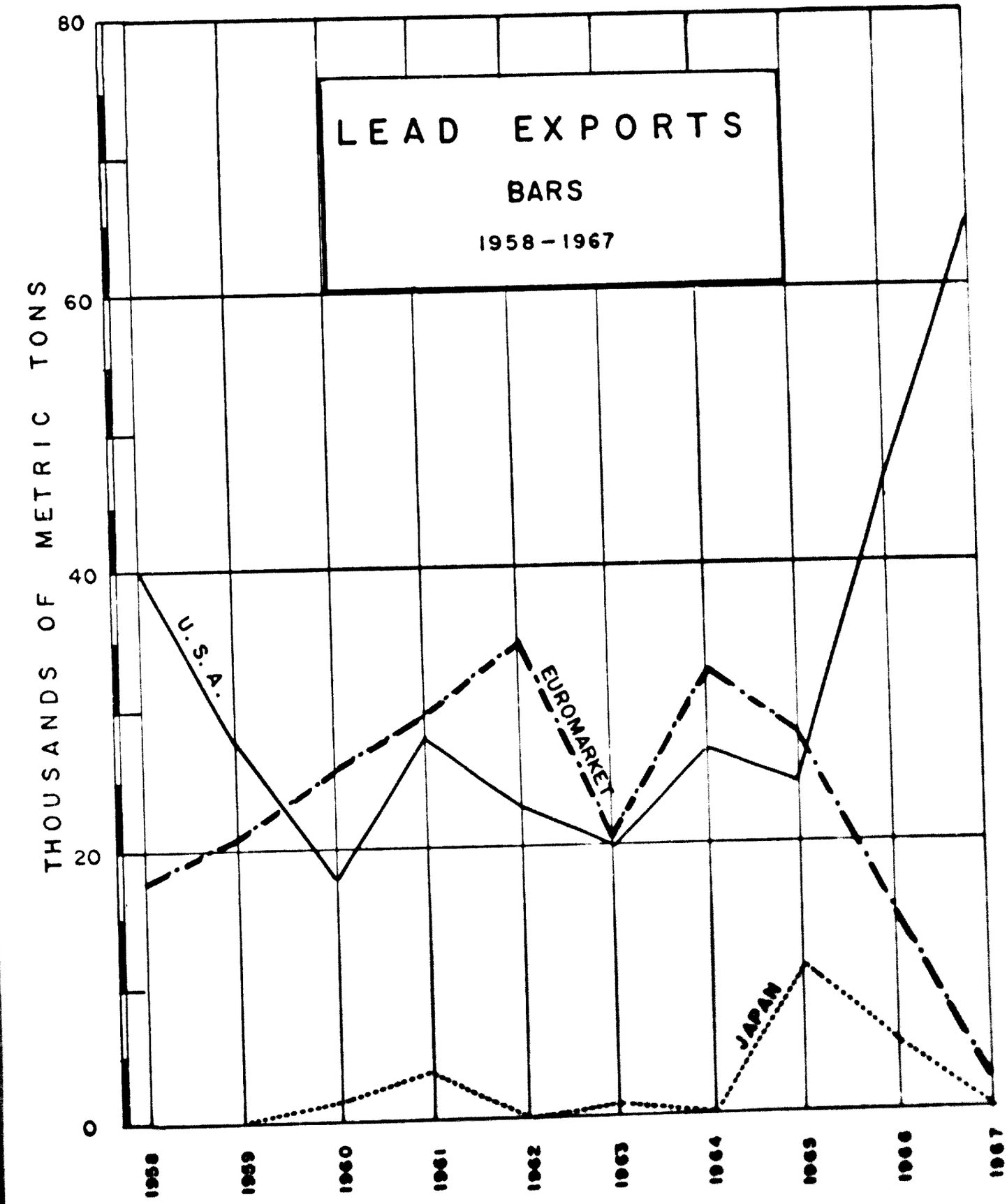
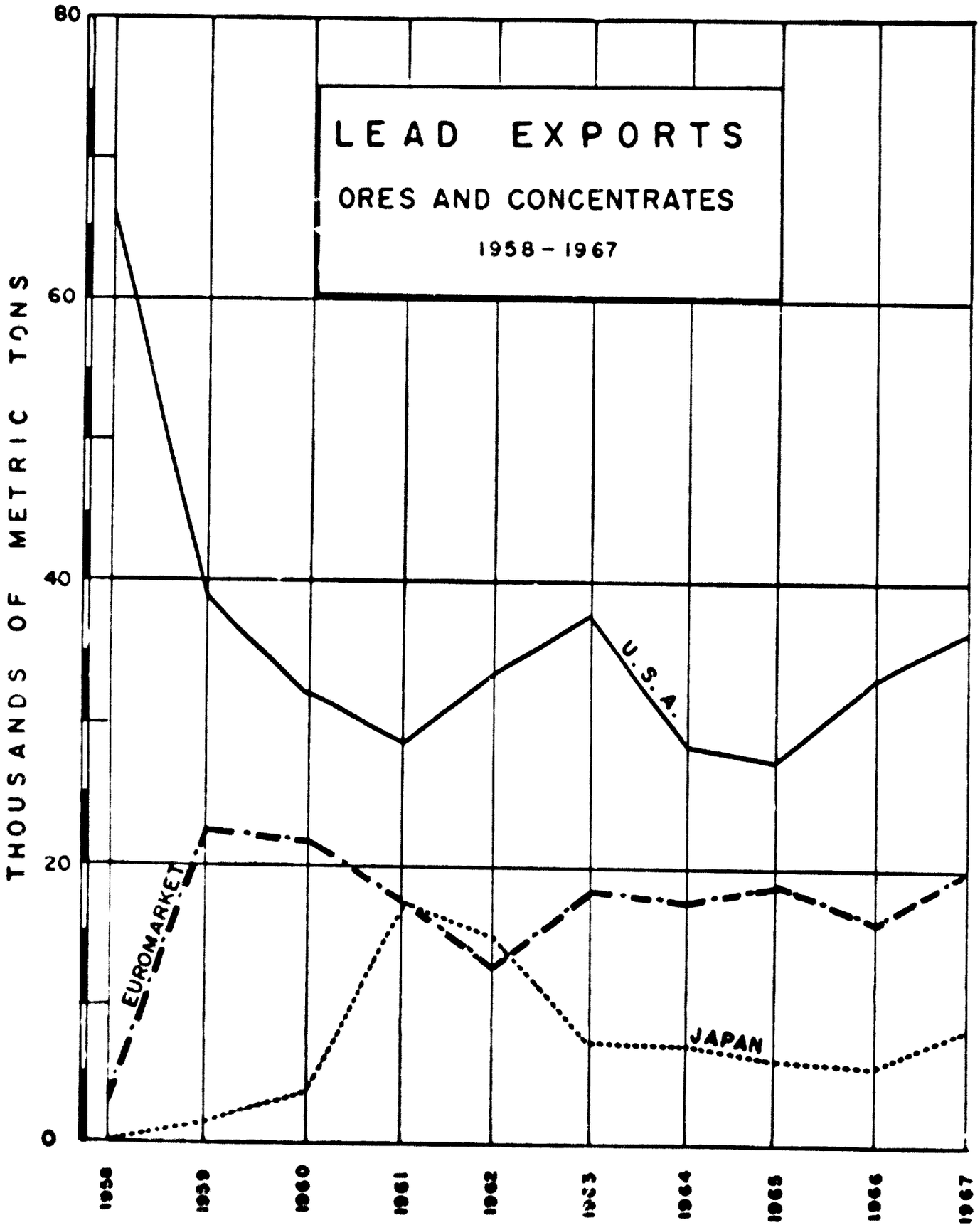

LEAD EXPORTS
BARS
1958 - 1967
THOUSANDS OF METRIC TONS
80
60
40
20
0
U.S.A.
EUROMARKET
JAPAN
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967

CHART Nº 4


LEAD EXPORTS
ORES AND CONCENTRATES
1958 - 1967
THOUSANDS OF METRIC TONS
80
60
40
20
0
U.S.A.
EUROMARKET
JAPAN
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967

Charts Nos. 14 and 15 include tonnages and values of peruvian zinc exports for the period 1958-67, divided into countries of destination for concentrates and metals. In the same manner as for lead, in graphs Nos. 3 and 4, exports to the United States, Japan and the European Common Market have been grouped accordingly.

A feature of metal exports is that the United States is absorbing 87% of the total, a percentage reached by succeeding increases commencing in 1965, when purchases amounted to only 30% thereof.

As with zinc, the imposition of import quotas by the U.S. led to a decrease in peruvian exports during that period, maintaining approximately the same tonnage up to 1965, and the European Common Market countries absorbed that part of the production that no longer was exported to the U.S. As in the case of Japan, exports of metallic lead to the European Common Market are insignificant.

Concerning the export of lead concentrates, over the period 1958-60 U.S. exports diminished and those destined to the ECM and Japan increased. As from 1960, exports to each of these markets have been stable, with the U.S., characteristically, remaining as the principal market.

XII.- ROLE OF FOREIGN CAPITAL IN LEAD AND ZINC PRODUCTION

Per peruvian exports for 1968 which have increased to US$442.3 million, it is estimated that 80.1% thereof proceeds from foreign companies and the remaining 39.9% from national companies; however, foreign participation is truly higher, since many national companies work with considerable contributions of foreign capital, even if the latter does not constitute a majority large enough to warrant the denomination of foreign company; on the other hand, national participation in foreign companies seems to be insignificant.

Chart Nº 8, wherein main producing units have been separated into national and foreign for 1967, clearly shows the significant participation of the foreign sector in the mixed lead-zinc-silver mining field. In summary form we have extracted from this Chart the global portion of tonnage produced corresponding to foreign and national units.

	LEAD		ZINC		SILVER	
	MT	%	MT	%	MT	%
Foreign	78,770	50.0	236,008	71.8	355.754	49.5
National	78,857	50.0	92,896	28.2	362.710	50.5
	157,627	100.0	328,904	100.0	718.464	100.0

Peruvian Law in general, and the Mining Law in particular, grants equal treatment to capitals, whatever their origin and thus, within the substantially promotional framework of the Mining Code enacted in 1950, foreign mining companies have grown mainly on the basis of reinvesting their depletion reserves; outstanding examples are the iron producer, Marcona Mining Co., and Cerro de Pasco Corporation.

Chart Nº 5, covering a summary of the consolidation of economic-financial information obtained from mining companies, is separated into two groups, the first of which corresponds to the three companies denominated "Large", i.e., Toquepala, Marcona and Cerro de Pasco, and their participation in the totals for Mining is clearly visible. The second group also includes several foreign mining companies.

Basically, foreign mining companies established in Peru originate in the U.S., barring Cia. des Mines de Huaron, which is French and produces approximately US$4.5 million per annum, and three Japanese consortiums operating two copper mines (Chapi and Condestable) and one lead-zinc-silver-copper mine (Huanzalá).

Presently established foreign capital participation is highly significant for the country; there is also much hope that peruvian economic growth, which in the future will

depend to an increasing degree on mining activities, shall be aided by foreign investments presently contemplated in large scale porphyritic copper deposits.

XIII.-ROLE OF THE STATE IN PERU'S MINING INDUSTRY

Commencing on April 1, 1969, the Ministry of Power and Mining was created, in charge of planning, directing, coordinating and controlling power generating and mining activities undertaken by the Public Sector, and orienting, promoting, regulating and controlling private activities within the Power and Mining Sector, in order to facilitate the social and economical development of the country.

As specified in Decree Law Nº 17525, enacted on March 21, 1969, the specific functions of this new Ministry are the following:

a) To formulate and direct the power and mining policies of the country;

b) To collect data, evaluate and investigate the power and mining resources of the country;

c) To formulate, promote and undertake projects related to the Sector;

d) To establish the credit policy of the Sector, channeling same towards priority objectives;

e) To dictate measures concerning technical assistance to small and medium producers and entrepreneurs,

promoting the formation of production and service cooperatives in the Sector;

f) To promote infrastructure and the formation of the qualified personnel required by the Sector;

g) To grant concessions and enter into contracts, per special legislation therefor, observing that regulating legal norms shall allow the optimum use of the Sector's resources;

h) To coordinate and control the general sales policy of the Sector, and the suitability of commercial transactions;

i) To promote and diffuse scientific and technological research related to the Sector;

j) To guard human resources by the regulation, enforcement and fulfillment of legal norms governing security, hygiene and welfare.

The Government created the Mining Bank of Peru as an enterprise in charge of promoting, through credit grants, the development of the mining industry. Fulfilling this objective, the Mining Bank finances projects undertaken by national mining companies --those with over 60% of the capital thereof held by national capitalists-- and also functions as purchasing agent for minerals and the supply of imported machinery and materials.

The Government has sustained its promotional attitude towards mining activities, which has materialized in the Mining Code and the modifications and expansions thereto, deserving separate remarks which are included in chapter 14.

At present the Government, through the Mining Bank, is participating directly in a mining investment and is studying its possible participation in combined enterprises associated with private capitals. Thus, it has promoted the installation of a zinc refinery, which shall be executed shortly and for which it shall in due course take into consideration the proposals for association received from various foreign companies.

Project for Zinc Refinery and Fertilizer Plant.-

We believe it advisable to refer specifically to the project underway for the installation of a zinc refinery and a fertilizer plant, sponsored by the Government, who has declared same to be of preferential national interest.

This project is especially related to the objectives of UNIDO and thus we believe it deserves special mention in this report.

We have already stated that Peru's lead and zinc mining industry is an export industry. The project is directed towards the export of natural resources submitted to a higher degree of processing.

The project consists of the erection of a zinc electrolytic plant with a capacity of 40,000 metric tons per annum, a sulphuric acid factory with a capacity of 70,000 metric tons and a sulphate of ammonium plant with a capacity of 90,000 metric tons per annum. This latter plant would use up the entire output of sulphuric acid.

Originally, it had been thought to install a triple superphosphate plant, but it was decided to commence with the ammonium sulphate plant, since a market already exists for this product, whilst the market for triple superphosphates would have to be developed; on the other hand, the supply of imported ammonium is reasonably assured under suitable conditions.

The project would be carried out by a public enterprise, but the act of constitution thereof foresees partial transfer to private entities, preferably to the producers of zinc concentrates themselves.

The electrolytic process has been chosen because apart from its technical and economic advantages, it utilizes the largest proportion of national inputs. It also allows the use of unused available resources, such as electric power.

The total investment in the project amounts to US$30 million, including working capital, of which US$10 million shall be contributed by the State and US$20 million

by external financing.

The start-up of this project shall signify a higher annual foreign exchange revenue amounting to US$4 million, during the amortization period, and US$9 million after 10 years' operation.

Since this type of project is of special interest to UNIDO, we have submitted the full studies relating to this industrial complex separately, in order to receive additional suggestions for the execution thereof.

XIV.- MINING LEGISLATION

Mining activities in Peru are undertaken under a special legal regime contained in the Mining Code, which was enacted in May, 1950.

The Mining Code establishes that all kinds of mineral substances contained in the surface and subsoil of the national territory, are the property of the State, and that all matters relating to the exploitation thereof by concessionaires is of public utility and is governed by the provisions of this Code.

The State grants the right to explore and exploit mineral substances under a governing system conditioned to the payment of a ground rent or patent. It also provides that the concessionaires are under the obligation of exploiting the concession at a speed determined by the

volume of mineral reserves, and the failure to fulfill such stipulations leads to the enforcement of mining extra ground rents, which are progressive.

Concessions may be granted to natural or juridical persons, national or foreign, of a private nature, with no further limitations as regards foreign concessions, than the prohibition acquiring concessions located within the 50 Km. national borders

The Code is of a promotional nature. The development of mining activities is of interest to the economic development of the country and thus, the Mining Code contains provisions which stimulate investment, guarantee the recovery thereof and tax profits with income tax payable on net benefits. The sales tax imposed on other industrial and commercial activities, is not applied to the sale of mineral products. It grants exonerations for the import of equipment and materials required for the mining exploration and exploitation and also allows the application of part of the taxes paid by mining, to the construction of communication roads to join the mining centers with the main highways.

The Code grants that the concessionaire is entitled to reinvest, free of taxes, in the same mine

profits and finally, contains a guarantee that during the term --which originally was 25 years-- but has been extended to February 10, 1985, the concessionaire is only obliged to pay the ground rent and income tax on revenues derived from mining profits, and is exonerated from the payment of any other tax or encumbrance in existence or to be created, whether national or local, as well as any other tax on the concession or on the products thereof.

The Code also contains provisions applicable to large mining, which allow the subscribing of special contracts between the State and the concessionaires, in order that the latter may undertake the exploitation of new mines or expand existing exploitations, by means of encouragement for investment, guarantees for the recovery thereof within a certain period of time, special tax treatment, freedom to sell the products after satisfying domestic needs, and the availability of foreign currency for the repayment of the investments, the loans and the acquisition of materials for use in mining, which are not produced in Peru.

During the first months of 1968 certain provisions of the Code were modified in order to expand and regulate the benefits and incentives applicable to special contracts for new exploitatinns or expansions.

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