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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Secretary Of The Interior

Federal Encouragement Of Mining Investment In Developing Countries For Strategic And Critical Minerals Has Been Only Marginally Effective

During the last 5 years, the United States has supported several multilateral and bilateral initiatives to encourage mining investment in developing countries as a means of both increasing global minerals supplies and assuring greater access to needed strategic and critical minerals. However, these initiatives have not resulted in significantly increased funding for mining projects and projects supported by multilateral agencies have not sought minerals of strategic and critical importance to the United States.

Depressed minerals markets and a variety of financial, procedural, and policy-related restictions have limited the attractiveness of these initiatives to the mining industry. Before considering any financial or operational changes, however, the U.S. Government should correct two general conditions that have impaired the effectiveness of these initiatives since their inceptions--the initiatives have not addressed mineral-specific needs and they have not been implemented as part of a coherent, well-directed, long-term investment strategy.





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UNITED STATES GENERAL ACCOUNTING OFFICE WASHINGTON, D.C. 20548

HERGY AND MINERALS
DIVISION

B-208750

The Honorable James G. Watt The Secretary of the Interior

Dear Mr. Secretary:

This report discusses recent U.S. Government efforts to encourage mining investment in developing countries.

The report contains recommendations to you, as Chairman pro tem of the Cabinet Council on Natural Resources and Environment, on page 47. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget, and to the cognizant congressional appropriation and authorization committees.

Sincerely,

J. Dexter Peach

Director



GENERAL ACCOUNTING OFFICE REPORT TO THE SECRETARY OF THE INTERIOR

FEDERAL ENCOURAGEMENT OF MINING INVESTMENT IN DEVELOPING COUNTRIES FOR STRATEGIC AND CRITICAL MINERALS HAS BEEN ONLY MARGINALLY HELPFUL

DIGEST

More than 4 billion tons of new minerals are needed annually to sustain the U.S. economy; and the United States could not maintain a modern defense capability without access to a select group of minerals used to produce specialty metals and alloys. Although the United States is relatively resource rich, it must rely heavily on imports of certain strategic and critical minerals. Consequently, an important U.S. foreign policy objective has been to promote the continued availability of foreign minerals at reasonable prices for domestic industry and defense.

The steady decline of mining investment in developing countries during the last decade has caused considerable concern among U.S. policymakers and mining experts about the long-term availability and cost of foreign supplies. Developing countries account for significant shares of some U.S. strategic and critical minerals imports and frequently produce these minerals at lower costs than do developed countries due to the high quality of their deposits. Nevertheless, international mining firms have become increasingly reluctant to invest because perceived political risks have diminished the economic attractiveness of the deposits and developing countries generally have been unable to develop their resources because they have lacked the financial means and technical expertise.

Since the mid-1970s, the United States has sponsored or supported multilateral and bilateral initiatives to promote mining investment in developing countries in an attempt to assure sufficient, reasonably priced world production. The most important of these have included multilateral development bank financing and technical assistance for mining projects; the U.N. Revolving Fund for Natural Resources Exploration; and the Overseas Private Investment

Corporation's (OPIC) minerals and energy program. Recently, U.S. policymakers have cited them as a means of insuring U.S. access to the strategic and critical minerals it needs as well.

GAO undertook this study to evaluate the U.S. Government's efforts to encourage mining investment in developing countries as one method of assuring long-term strategic and critical minerals supplies. Its intent was to assist the Congress and appropriate executive agencies in formulating and implementing strategic minerals policy.

PROGRAMS PROMOTING MINING INVESTMENT ONLY MARGINALLY HELPFUL

Responding to U.S. encouragement, the multilateral development banks took steps in 1977-78 to increase their support for mining projects in their member countries. Since that time, however, mining's share of total bank funding has not increased significantly due generally to depressed minerals markets, which have affected economic viability of projects, and competing bank funding priorities. Even more importantly, the banks have not and probably cannot successfully address U.S. strategic and critical minerals needs. (See ch. 2.)

The United States pledged \$3.5 million in 1977 and 1978 to support the U.N. Revolving Fund for Natural Resources Exploration. The Fund has the potential to assist developing countries by identifying their holdings and to assist investors by updating the catalog of the world's richest and most economical deposits. However, financial and operational difficulties so far have prevented the Fund from fully demonstrating its capabilities, and U.S. support has declined, partly as a result. (See ch. 2.)

OPIC's minerals and energy program is considered the primary bilateral means by which the United States has attempted to interest

mining investors in developing countries. Like the multilateral development banks, however, OPIC has not increased its support for mining projects significantly since the program began in 1977. Low future minerals demand expectations have dampened investor interest in OPIC's services. Additionally, certain policy and procedural restraints have limited OPIC's attractiveness to the mining industry. On the other hand, a large portion of the mining projects that OPIC has supported have sought strategic and critical minerals the United States needs. (See ch. 3.)

LACK OF DEFINED MINERALS NEEDS AND COHERENT STRATEGY HAS IMPAIRED RECENT INITIATIVES

Two basic conditions affect all the efforts undertaken in the last 5 years to encourage mining investment in developing countries. The first is that they have not addressed specific minerals needs. However, individual differences among minerals are significant and affect strategies to assure access. The Export-Import Bank (Eximbank) programs of the 1940s and 1950s were successful in large part because they met specific needs. By not focusing the more recent initiatives on specific minerals needs, the likelihood of obtaining the highest priority minerals has been greatly diminished. (See ch. 4.)

The second condition is that recent initiatives have not been implemented as part of a coherent, well-directed, long-term investment strategy that has considered and weighed the costs and benefits of both domestic and foreign options. The minerals policy submitted by the Reagan administration to the Congress in April 1982 does not mention foreign initiatives undertaken in the last 5 years, leaving their importance as well as their expected future contributions unclear.

RECOMMENDATIONS

This report demonstrates that significant funding and operational changes would be required to increase the effectiveness of some current U.S. efforts to encourage mining investment

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in developing countries as a means of securing strategic and critical minerals resources. However, such changes would be premature until the Secretary of the Interior, as Chairman protem of the Cabinet Council on Natural Resources and Environment:

- --Requires that acquisition initiatives be based on a clear demonstration of individual minerals needs.
- --Clarifies the roles that OPIC's minerals and energy program, U.S. support for the multilateral development bank programs and the U.N. Revolving Fund for Natural Resources Exploration, and Eximbank are to play in securing strategic and critical minerals supplies. (See ch. 4.)

AGENCY COMMENTS AND OUR EVALUATION

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The Department of the Interior concurred in GAO's recommendations and provided additional comments on the U.N. Revolving Fund for National Resources Exporation and on the Department's international activities in the minerals area. The Departments of State and Treasury and OPIC's comments were largely technical in nature and were incorporated in the report. State also provided updated information on U.S. progress in negotiating bilateral investment treaties with developing countries.

Eximbank stressed that its recent low levels of financing for mining projects was principally attributable to market conditions, not to a lack of competitive financing. Eximbank also took exception to GAO's statements that the bankers and mining industry representatives contacted by GAO generally viewed Eximbank as not competing well against foreign counterparts. Eximbank stated that in the last 3-1/2 years U.S. exporters have won over three-quarters of the mining project cases they brought to Eximbank and that the cases lost were all due largely to price or quality considerations,

not financing. GAO does not dispute the primary importance of market conditions in determining the demand for Eximbank financing. Eximbank's comments miss GAO's point, however, that its attractiveness to the mining industry may be impaired by users' perceptions that Eximbank does not compete well against its foreign counterparts.

The Department of the Interior's comments and those of Eximbank are reproduced in appendixes I and II.

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	ABBREVIATIONS				
ADB AID GAO IDB IFC OPIC TDP	Asian Development Bank Agency for International Development General Accounting Office Inter-American Development Bank International Finance Corporation Overseas Private Investment Corporation Trade and Development Program				

CHAPTER 1

INTRODUCTION

The United States, like other industrialized nations, requires a steady supply of minerals 1/ for industrial production. Currently, more than 4 billion tons of new minerals are needed annually to sustain the economy. Minerals also are vital to the U.S. defense effort—a modern defense capability could not be maintained without access to a select group of minerals used to produce specialty metals and alloys.

Despite an enormous wealth of minerals resources, the United States relies almost exclusively on imports of several essential minerals. 2/ For example, according to U.S. Bureau of Mines estimates for 1981, the United States imported 90 percent or more of the bauxite and alumina, chromium, columbium, manganese, and tantalum and 80 percent or more of the fluorspar, platinum-group metals, and tin it consumed. These minerals make a crucial contribution to a healthy U.S. economy and defense through their steelmaking and aerospace applications. Chromium, for example, is a key component of stainless steel and manganese is indispensable for the production of virtually all steels. Columbium and tantalum play vital roles in the aerospace industry as components of superalloys used in jet engines and gas turbine parts. Columbium also is used in steels for oil and gas pipelines and in structural steels. Other important industries that require these minerals include the electronics industry (tantalum, platinum-group metals), aluminum industry (bauxite/alumina, fluorspar), and chemicals industry (fluorspar, chromium, platinum-group metals).

^{1/}Unless otherwise noted, the term minerals as used in this report refers to nonfuel minerals and therefore excludes coal, oil, and uranium.

^{2/}Such minerals are frequently referred to as strategic and critical. Under the Strategic and Critical Materials Stock Piling Revision Act of 1979, strategic and critical materials are those that are (a) needed to supply military, industrial, and essential civilian needs during a national emergency and (b) not found or produced in the United States in sufficient quantities to meet such need. A national emergency is defined as a general declaration of emergency with respect to the national defense made by the President or the Congress. This report considers eight of these minerals in particular, and when the term "strategic and critical" is used in the report it carries the meaning presented above.

The heavy U.S. dependence on imports of these minerals has occurred primarily because domestic resources 1/ cannot meet demand. In most cases, known resources capable of being mined profitably at today's prices (reserves) are negligible (bauxite and tin) or nonexistent (tantalum, chromium, columbium, and manganese ore). 2/ Generally, the subeconomic nature of these deposits is due to their small size, low ore grade, and/or inaccessible location.

It is unlikely that U.S. dependence on foreign sources for significant supplies of many strategic and critical minerals will decrease appreciably in the foreseeable future. Demand for them in the United States and throughout the rest of the world is expected to increase through the end of the century, indicating their continued importance to the world economy. Table 1 lists U.S. Bureau of Mines statistics on the demand for seven of these minerals.

World Primary Minerals Demand in 1978
with Projected Demand in 2000

Probable (notes a and b) average annual growth rate 1978-2000 (percent) 2000 1978 Rest of Rest of Rest of U.S. world U.S. World U.S. World Minerals Units -(000 omitted)-3.2 3.3 6,100 2,956 1,100 544 short tons Chromium 62,000 6.1 6.1 22,000 17,005 Columbium pounds 6,585 2.7 3.7 591 1,635 1,065 3,650 short tons Fluorine 17,600 1.4 2.9 1,363 2,000 8,219 short tons Manganese 2.2 2.4 2,590 7,190 2,003 4,224 Platinum Group Troy ounces 4.1 2,980 1,790 4.1 1,058 c/ 680 Tantalum pounds .9 .9 256.5 40.4 210.6 49.5 metric tons Tin

a/Primary mineral demand = total demand - secondary or old scrap.
b/Statistics unavailable for bauxite, but annual demand expected to increase
at somewhat lower rate than that for aluminum, which is projected to be
4 percent for 1978-2000 in the United States and 5.7 percent in the rest
of the world.
c/Estimated

Source: U.S. Bureau of Mines, Minerals Facts and Problems, 1980 edition

Resource - Concentration of naturally occurring solid, liquid, or gaseous material in or on the earth's crust in such form that economic extraction of a commodity is currently or potentially feasible.

^{2/}Containing 35 percent or more manganese.

Despite growing world demand for strategic and critical minerals, projections indicate that there are sufficient reserves to meet demand through the year 2000 in nearly every case. However, the existence of adequate minerals reserves alone will not assure the availability of reasonably priced future supplies. In the long run, sufficient investment also is necessary to insure that the exploration needed to replace depleted deposits will occur and the capacity to provide needed supplies will be created.

Mining investment in developing countries has declined steadily during the last decade, causing considerable concern among U.S. policymakers and mining experts about the availability and cost of critical foreign supplies in the long term. More than 90 percent of the columbium, 60 percent of the tantalum and tin, and 55 percent of the bauxite reserves are located in developing countries. Between 1977-80, developing countries provided over 60 percent of U.S. columbium, manganese ore, bauxite, tin, and fluorspar imports; and in 1975 they supplied 45 percent of all raw materials required by the European Economic Community. Developing country deposits frequently are of high grade, providing the opportunity for low-cost development. Nevertheless, concern persists because developing countries generally have maintained production by exploiting the results of exploration undertaken by international mining companies. Most, however, do not possess the capital or technological expertise to conduct the new exploration and development needed to continue long-term production, and foreign mining companies have become increasingly reluctant to explore in their stead.

U.S. mining and smelting investment in developing countries has fallen absolutely and as a percentage of total overseas mining investment in the last decade. Table 2 illustrates this decline in terms of property, plant, and equipment expenditures made by U.S. majority-owned foreign affiliates $\underline{1}$ / between 1966-79.

^{1/}A foreign business enterprise in which a U.S. company owns, directly or indirectly, at least 50 percent.

Table 2

Capital Expenditures in Mining and Smelting by Majority-Owned Foreign Affiliates of U.S. Companies 1966-1979 (note a)

<u>Year</u>		Developing <u>countries</u> of 1972 dollars) s b and c)	Developing countries as _percent of total
1966	\$ 558	\$251	31
1967	569	326	36
1968	606	314	34
1969	675	363	35
1970	831	430	34
1971	1,319	271	17
1972	808	253	24
1973	851	210	20
1974	669	267	29
1975	612	277	31
1976	485	189	28
1977	343	86	20
1978	269	102	27
1979	344	136	28

- <u>a</u>/In the last 10 to 15 years, foreign majority ownership has become an increasingly unworkable investment position in developing countries, so these statistics probably understate the extent of U.S. mining investment.
- <u>b</u>/Capital expenditure data are not adjusted for price changes in host countries or for changes in the value of foreign currencies against the dollar, because the data needed for such adjustments is unavailable.
- <u>c</u>/We deflated nominal capital expenditures for mining and smelting investment in both developed and developing countries by the U.S. price index for private, nonresidential investment to obtain the real concepts that appear in the table.

Source: Department of Commerce, <u>Survey of Current Business</u>, various issues, 1970-80.

Additionally, we regressed real capital expenditures for mining and smelting investment in developing countries against time and found that between 1966-79 these expenditures declined at an average annual rate of \$17.7 million. 1/

^{1/}The Ordinary Least Squares estimate of -17.7 is statistically significant with a t-statistic of -4.04.

An unpublished 1977 analysis of mining exploration expenditures by European mining companies suggests that the U.S. experience has not been unique. In 1966, roughly 35 percent of the investment made by 14 companies in new development and mine expansion went to developing country ventures. In 1971, the share rose to 42 percent, but it fell to just 30 percent in 1975. Moreover, only 15 percent of the exploration expenditures made by 15 firms in 1975 occurred in developing countries, a drop from 57 per cent in 1961 and 40 percent in 1966. A 1977 survey of 18 U.S. and Canadian mining companies produced a similarly low exploration investment rate. 1/

To some extent, this declining pattern can be explained by economic conditions that have inhibited mining investment in both developed and developing countries during the last decade. The most important of these have been poor minerals markets, steeply rising capital costs, high interest rates, and the weak cash positions of many U.S. mining firms. The steady decline in the developing country share of total overseas mining investment indicates, however, that other factors have influenced investment decisions in these countries as well.

Political risks have seriously impaired the attractiveness of developing countries as sites for mining investment. developing countries have histories of political and economic instability. Such instability has led to work stoppages caused by labor disputes between unions and the government, higher taxes or greater difficulties repatriating profits, and, in the worst cases, the overthrow of existing governments. In addition, host governments have taken politically motivated actions directed specifically at foreign mining ventures -- actions that have diminished the ventures' values, sometimes quite seriously. In the 1960s and early 1970s, these actions frequently took the form of outright expropriations. Although expropriation is still a threat today, foreign investors are more likely to find their operating agreements with host governments abrogated or seriously eroded by the sudden imposition of new taxes or restrictions on dividend transfers.

^{1/}An outstanding exception to the general reluctance of industrialized mining investors to consider developing countries
appears to be Japan. According to Amos A. Jordan and Robert A.
Kilmarx in Strategic Mineral Dependence: The Stockpile Dilemma,
Japan has channeled nearly one-half of its total foreign mining
and smelting investment into developing countries. Japan generally has favored investing in developing countries more
than has the United States. For example, between 1972-77,
developing countries represented 58 percent of Japan's total
direct foreign investment compared with 25 percent for the
United States.

Mining investment also has been slowed by the growing desire of most developing countries to exercise firmer control over their extractive industries. Developing countries have come to regard exploitation of their natural resources as a sovereign right, and some have sharply limited the circumstances under which foreign investors can develop them. India and Indonesia, for example, have designated several key minerals as "strategic" and have limited responsibility for their development to the state. In the Philippines, foreign investors must operate through agreements with local claim owners because they are not permitted to hold mining claims. Developing countries also have attempted to exercise control by limiting foreign investor ownership to less than 50 percent or by requiring that a mining venture become solely or principally owned by local investors within a specified timeframe. Thailand, Mozambique, the Philippines, and Madagascar, for example, have imposed such restrictions. And some developing countries have required separate agreements for the exploration and development phases without guaranteeing that successful exploration will result in development rights (e.g., Thailand) or have required agreements involving both the central and provincial governments (e.g., Argentina). 1/

Although the ability of the United States to significantly alter developing country investment climates is limited, it has initiated or supported a variety of multilateral and bilateral efforts to promote mining investment in these countries since the mid-1970s. The primary multilateral efforts have been to encourage more multilateral development bank financing and technical assistance for mining projects and to support the activities of the U.N. Revolving Fund for Natural Resources Exploration. Bilaterally, the strongest U.S. initiative has been an attempt to increase the Overseas Private Investment Corporation's responsiveness to the needs of mining investors in developing countries. The United States initially supported these efforts out of a concern that

^{1/}Political risks and host government efforts to better control natural resources development are by no means uniquely characteristic of developing countries. In the early 1970s, the Labor Government of Australia employed several restrictions to reduce foreign investment in its minerals industries; these restrictions were later lifted when a new party took power. Canada's Foreign Investment Review Agency as well as some of its provincial governments have sought to more carefully regulate mining exploration and investment. Concern about South Africa's political future has slowed foreign investment there. Nevertheless, developed countries tend to discriminate against foreign investment less often than developing countries and, historically, have been less prone to expropriate foreign properties.

declining investor interest could both impede the development of developing countries' economies and limit the availability of strategic and critical minerals need by developed countries generally. More recently, U.S. policymakers have stressed "promoting the continued availability of foreign raw materials at reasonable prices for domestic industry and defense" as an important foreign policy objective. In this context, policymakers have pointed to the recent multilateral and bilateral efforts as a principal means of assuring adequate investment today to provide the additional strategic and critical minerals supplies the United States needs in the long term.

OBJECTIVES, SCOPE, AND METHODOLOGY

We made this study to assess the U.S. Government's efforts to encourage mining investment in developing countries as one method of assuring long-term strategic and critical minerals supplies. Our intent was to assist the Congress and the appropriate executive agencies in formulating and implementing strategic minerals policy. However, our study does not answer the question: should the United States increase or alter its support for mining investment in developing countries? Determining the costs and benefits of overseas strategies to secure greater access to strategic and critical minerals would require an extensive and complex analysis of minerals markets, demand and production data, and state of the art information on recent and anticipated technological developments and national security requirements, among other things. Such an analysis has been outside the scope of this study.

This study concentrates on multilateral and bilateral incentives to promote mining investment in developing countries. These include activities of the Overseas Private Investment Corporation, Export-Import Bank, World Bank Group, 1/ Inter-American Development Bank, Asian Development Bank, and the United Nations. We excluded from detailed consideration the (1) Bureau for Private Enterprise, established by the Agency for International Development in July 1981, because it had not operated long enough for us to formulate any conclusions about its effectiveness in this area and (2) Trade and Development Program, established in 1980 as part of the International Development Corporation Agency, because its activities in this area have been very modest. To maintain a manageable study scope and avoid duplicating already

^{1/}The term "World Bank Group" refers in this report to the International Bank for Reconstruction and Development, the International Development Association, and the International Finance Corporation.

completed GAO work, we did not consider whether or to what extent U.S. antitrust and tax laws act as disincentives to mining investment overseas. \underline{l} / We also did not review any of the more informal ways in which the Government might promote mining investment, such as during the course of general bilateral negotiations.

In an attempt to evaluate U.S. efforts from an international perspective, we reviewed comparable German and Japanese activities and visited or cabled 19 developing countries to obtain information on their plans to develop their minerals sectors and the role foreign investment could play. We met with U.S. Embassy staff, government officials, representatives of local and foreign mining companies, and U.N. representatives whenever possible. The developing countries were selected because of geographical location, evidence of U.S., German, or Japanese investment, and the existence of or potential for reserves/resources of the eight minerals considered in this study.

After identifying several minerals which the United States imported in quantities equaling or exceeding 80 percent of apparent consumption, 2/ we reviewed U.S. Bureau of Mines and Geological Survey data and interviewed experts on substitution, scrap usage, etc., and then selected bauxite, chromium, columbium, fluorspar, manganese, platinum-group metals, tantalum, and tin on which to focus our discussions with public and private sector officials. Our intent was to identify a group of minerals which would require overseas investment as an important component of any long-term supply acquisition strategy. The principal criterion for selecting these minerals, then, was a high U.S. import reliance which probably could not be substantially reduced in the foreseeable future. We considered substitution, scrap usage, higher prices, and new technologies for mining lower grade ores to be dependency-reducing.

We reviewed pertinent legislation and agency documents and met with cognizant officials at the Departments of State and the Interior to identify and analyze U.S. policies on strategic minerals acquisition and overseas investment in developing countries. To determine how effectively bilateral and multila-

^{1/}We issued a report on February 27, 1981, on the Foreign Earned Income Act of 1978, entitled "American Employment Abroad Discouraged by U.S. Income Tax Laws" (ID-81-29). U.S. mining company executives we spoke with about U.S. tax on foreign earned income agreed that this law has had a significant adverse impact on overseas investment.

^{2/}Apparent consumption = U.S. primary + secondary production + net import reliance.

teral efforts have met U.S. needs, we interviewed cognizant officials, evaluated objectives and procedures, and analyzed performance statistics. We also interviewed executives at six major U.S. mining companies and four banks; consulted with numerous mining industry experts in New York, Washington and London; and reviewed several studies prepared by specialists affiliated with multilateral institutions and private consulting firms.

We performed our review in accordance with our "Standards For Audit Of Governmental Organizations, Programs, Activities, And Functions."

CHAPTER 2

MULTILATERAL APPROACHES PROVIDE LIMITED OPPORTUNITIES TO MEET U.S. STRATEGIC NEEDS

In the mid-1970s, the United States authored or supported a variety of multilateral initiatives to encourage mining investment in developing countries. Principal among these initiatives were formulating an international investment guarantee plan, encouraging a greater emphasis by multilateral development banks on fostering minerals sector growth, and creating the U.N. Revolving Fund for Natural Resources Exploration. The United States initially supported these efforts as a means of aiding Third World economic development and assuring adequate worldwide minerals supplies. Today, policymakers also point to these efforts, particularly the bank programs, as an important part of the Government's attempt to assure needed strategic and critical minerals supplies. However, some of these initiatives have never enjoyed the widespread support needed for implementation while those that have been implemented have not contributed significantly to meeting U.S. needs.

INTERNATIONAL INSURANCE PLANS HAVE LACKED SUFFICIENT SUPPORT

During the last 15 years, the United States proposed or supported three international investment insurance plans designed to increase foreign investment in developing countries by mitigating political risks. One major reason for U.S. interest in these plans was their potential to improve the prospects for foreign mining investment in developing countries to the benefit of both producers and consumers. Two of the three plans were specifically directed toward this end. None have been implemented, however, because of disputes between developed and developing countries and among developed countries about control of the plans and the assignment of costs and benefits.

The first of these plans was introduced by the World Bank in 1966. Several multilateral insurance proposals involving World Bank participation were made in the 1950s, but the Bank did not support them until the nationalizations in Cuba, the Congo, and Indonesia. These events sharply underscored the "political" risks confronting investors in developing countries. Shortly thereafter, the Bank decided to reconsider these proposals and by November 1966 had prepared the first draft articles of agreement for an International Investment Insurance Agency. The Bank believed an international agency could play an important role in safeguarding foreign investment by covering countries or risks not covered by national plans, providing reinsurance for risks covered by national plans, and insuring investments made by international consortia.

In 1975, the United States proposed the creation of an International Resources Bank to provide guaranties against political risk for raw materials investment in developing countries. It was the centerpiece of a comprehensive U.S. approach to addressing developing country commodities problems. The proposal was based on the premise that the flow of private foreign mining investment into developing countries was less than physical or commercial factors warranted because of the greater non-commercial or "political" risk of investing in these countries. Its ultimate purpose, then, was to assure a regional distribution of mining investment based more strictly on commercial factors.

The third plan was proposed by the Inter-American Development Bank for its member countries in 1979. Like the International Resources Bank, the Inter-American Fund for Energy and Minerals also was intended to facilitate the flow of foreign investment into the energy and minerals sectors of developing countries. About \$750 million was to be available for insurance and \$350 million for loan guaranties. Some legal experts believe that the Fund could be especially beneficial for the United States because it could provide an acceptable means of overcoming Latin American objections to the international arbitration of disputes. Such opposition has prevented full application of U.S. investment insurance in Latin America. 1/

These plans have not been implemented to date, largely because solutions have not been found to some very basic operational problems which prevented adoption of the International Investment Insurance Agency. This first investment insurance plan failed in large measure because developing and developed countries could not agree on how to arbitrate disputes, negotiate claims, finance the plans, or distribute voting rights. The World Bank Group, asked by the United States to evaluate its International Resources Bank proposal, concluded that it too would fail for similar reasons. In the case of the Inter-American Development Bank, international arbitration and subrogation of rights have been major stumbling blocks.

Additionally, the developing countries did not favor the World Bank affiliation proposed in both the International Investment Insurance Agency and International Resources Bank plans because they feared the loss of their credit standing with the World Bank if any disputes arose. Moreover, according to

^{1/} U.S. investment insurance is provided by the Overseas Private Investment Corporation. See pp. 22 to 30 for a fuller discussion of the Corporation and its programs.

some U.S. officials and observers, the interested parties suspected each other of benefiting more from the plans. Developing countries thought that the plans would continue support for what they viewed as the exploitative activities of multinationals; and some developed countries thought that the United States would benefit disproportionately because they considered the U.S. national insurance plan weaker than theirs and therefore less competitive.

Since the Reagan administration took office, there has been some renewed interest in formulating an international investment insurance plan as part of an overall effort to assist developing countries through private rather than public sector means. Discussions, which have been described as serious, have taken place at the World Bank; and the Inter-American Fund for Energy and Minerals is still being considered. However, there is no evidence that these discussions have resolved the problems which have handicapped previous proposals.

MULTILATERAL DEVELOPMENT BANK EFFORTS HAVE HAD LIMITED RESULTS

The United States first supported an expanded role for multi-lateral development banks in helping developing countries to exploit their minerals resources as part of its 1975 commodities proposal. Under the proposal, the World Bank Group was to further efforts to increase mining venture investment by providing more credits for minerals projects, directly supplying limited amounts of capital, and, more importantly, by using its technical, managerial, and financial expertise to bring private and public sector funds together. 1/ Today, the United States regards these multilateral development bank efforts as a means of both increasing global supplies and addressing its strategic needs. We have found, however, that the banks have not increased their support for minerals projects significantly and that U.S. needs have not been and probably cannot be successfully addressed through their efforts.

Banks direct special attention to minerals development

U.S. interest in increasing multilateral development bank support for mining projects prompted the banks to reexamine their minerals sector lending policies in the late 1970s. Historically,

^{1/} At the same time, it is important to note that the charters of the World Bank Group and regional development banks call for them to finance projects only when alternative private financing is unavailable.

the banks had not devoted a large share of their resources to this sector. In July 1977, the World Bank Group decided to expand its role in promoting minerals development and suggested that the Asian Development Bank and Inter-American Development Bank also increase their minerals funding. The Group proposed doubling the number of World Bank-supported minerals projects, to a maximum of six per year, by fiscal year 1980. In 1980 prices, this meant a commitment of \$350 million to 400 million. The World Bank Group also estimated that the International Finance Corporation could provide \$50 million to \$75 million annually and the regional banks \$400 million to 500 million. 1/ The activities deemed appropriate for the banks were strikingly similar to those the United States envisaged in its 1975 proposal. They included (1) bridging the differences between host governments and foreign mining concerns to generate fairer, longer lasting agreements, (2) attracting foreign investment by their "presence" in agreements, and (3) providing developing countries with technical assistance for formulating and implementing comprehensive plans to develop their minerals sectors.

In 1978, the Asian Development Bank (ADB) followed the World Bank Group's lead by laying out a similar program for promoting minerals development in its developing member countries. Like the Group, the ADB saw an important role as a catalyst, providing "seed capital" that would attract funds from other sources. The early emphasis was to be on technical assistance for the geological surveying phase followed by project financing once some some well-formulated projects could be developed. The ADB anticipated increasing commitments by 1981 or 1982 to about \$45 million annually.

The Inter-American Development Bank (IDB) did not set funding goals for minerals development but did apparently support a funding increase at a meeting of the regional development bank presidents in September 1977. And in 1978, the IDB's board of executive directors approved its current operating policy for the mining sector, which defines objectives, identifies the activities to be supported, outlines how to determine whether projects are suitable for financing, and details the IDB's role, given certain project characteristics. Like the World Bank Group and the ADB, the IDB has set out to play a catalytic role for large projects by contributing to the extent of its ability and then attempting to raise external financing for the balance.

Bank support for minerals projects continues to be limited

Despite plans to increase support for mining, bank funding in this area generally has remained limited. Between 1971-80,

^{1/} The regional bank estimates applied to minerals and energy projects combined.

World Bank, ADB, and IDB commitments for mining projects averaged just 1.3, 0.2, and 1.3 percent of total commitments, respectively. Moreover, mining's share of total project commitments has not increased significantly since the 1977 and 1978 policy initiatives. 1/

Mining Project Commitments as a Percent of Total Bank Commitments (note a)

	1971-1977/1978 (note b)	1978	<u>1979</u>	1980
World Bank (note c)	1.5	0	1.5	1.6
IDB (note d)	1.4	4944	1.6	.8
ADB (note d)	.3		0	. 5

- <u>a</u>/ Commitments include both project lending and technical assistance.
- b/ The World Bank executive directors approved the new initiatives in July 1977, so progress has been measured starting in FY 1978. The ADB and IDB, however, did not undertake new initiatives until 1978; consequently, their progress is measured for 1979 and 1980 only.
- <u>c</u>/ World Bank figures are calculated on a fiscal year basis to conform to bank practice.
- <u>d</u>/ ADB and IDB figures are calculated on a calendar year basis to conform to their practices. CY 1978 figures are included in the first column.

The single outstanding exception has been the International Finance Corporation (IFC), whose ultimate aim, like that of the banks, is to improve the well-being of people in its developing

^{1/} These statistics do not consider bank lending for roads, ports, etc., that could complement minerals development. Data on the purposes of this type of lending were not available, but some lending probably has supported mining projects.

member countries. Unlike the banks, however, the IFC was established to achieve this aim specifically by promoting the growth of productive private investment in these countries and by assisting enterprises that would contribute to their overall economic development. Consistent with this mission, the IFC devoted a substantially greater share of its total commitments (an average of 12.6 percent) for 1971-80 to mining. It also increased its commitments for mining projects during the last 3 years. If 1971-80 is divided as it is for the World Bank in table 3, an increase in mining's share of total commitments is clearly shown—an average of 8.1 percent between fiscal years 1971-77 and 16.3 percent for 1978-80.

Two factors cited as adversely affecting bank support for mining projects include weak markets and the preference of some Third World countries for private sector development of their minerals resources. In the World Bank's view, for example, market conditions have not been promising enough to ensure the financial and economic viability of many projects. Demand has been weak and prices low, and there have not appeared to be any shortages of The ADB and IDB believe that the preference of most minerals. many of their developing member countries for private development of the minerals sector has constrained their ability to increase mining assistance. Several countries in Asia and South America historically have depended on private investment to develop their mining sectors, preferring to use their bank funding on projects for which private resources are unavailable. We did not attempt to determine the precise extent to which these factors limited bank efforts to increase lending and technical assistance in this area. It is important to note, however, that the IFC increased its project financing during the same timeframe and that the ADB, consistent with its 1978 plan, significantly increased the number of mining projects for which it provided technical assistance.

Shifting bank priorities also have limited multilateral development bank emphasis on mining and, in the long run, will probably influence bank activities in this sector more than the other factors already cited. During the last 3 years, the World Bank, IDB, and ADB have focused heavily on projects directly addressing the basic needs of the people--rural development, water and sewage, health, education, urban development, population, and nutrition. From 1978 to 1980, the World Bank directed an average of 48 percent of its total funding to these projects. The ADB increased its project lending from 42 percent in 1978 to 48 percent in 1980. And the IDB, which set a goal of lending percent of its funds to projects oriented toward benefiting the lower income groups of its developing member countries for 1979-82, reached a level of roughly 45 percent in 1979 and 1980.

Energy resources development has become the second most pressing priority for the banks. The rise in the price of oil and other fuels and the serious balance-of-payments implica-

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tions for many developing countries have highlighted the need to accelerate the development of indigenous energy resources and to conserve energy. The Latin American and Caribbean experiences illustrate this need. Most countries in the region have been affected seriously by the high cost of oil imports. Brazil, Chile, and the smaller Caribbean and Central American countries were most hurt, with between a fourth and a half of the value of their exports absorbed by oil import costs. The World Bank plans to increase its share of funding for oil, gas, and coal projects from 1 to 6 percent through fiscal year 1983. In 1978, the ADB targeted about 5 percent; and the IDB, while not specifying a lending goal, is studying the problem and has adopted an energy sector policy.

Although the banks' top priorities lie elsewhere, they remain interested in supporting minerals sector development, providing that economically and/or financially viable projects can be developed. They believe, for example, that mining can significantly increase foreign exchange earnings and improve the balance-of-payments postures in many developing countries. However, it appears that minerals sector support will take place only within budgetary constraints that do not permit significant increases without major shifts in priorities. Our review indicates no such shifts and therefore no significant growth in the banks' commitments to mining.

U.S. strategic needs probably cannot be addressed through bank programs

Multilateral development bank efforts to increase lending for mining projects have been noted as one important means by which the United States has attempted to assure an economic, stable supply of strategic and critical minerals. However, bank statistics on lending and technical assistance for mining projects between 1971-80 show that scant support has been directed toward developing these resources. During the period, the banks supported a total of 69 projects, 24 of which were devoted to such activities as institution building and general resource surveying, without focusing on a particular mineral. Of the remaining 45, over 70 percent were major minerals projects, specifically for copper, lead, zinc, and iron ore, 1/ while only four involved one or more of the eight minerals on which we focused.

The banks most often have become involved with projects for such minerals as iron ore, copper, zinc, and lead because they

Although many U.S. allies, particularly the European Community and Japan, rely heavily on imports of these major minerals, the United States is relatively self-sufficient.

require such large amounts of capital (thus their designation as major). Project sponsors believe that a bank presence will help insure the longevity of their agreements with host governments; and host governments seek lending as well as technical assistance because of the size and complexity of these projects. In contrast, the banks have rarely become involved in projects for minerals like tantalum, columbium, and fluorspar primarily because they require comparatively small amounts of capital. Additionally, some investors will not ask for IFC participation in these so-called minor minerals projects because the IFC requires full investor disclosure of minerals discoveries. Investments in minor minerals often produce very high returns, so investors are unwilling to comply with the requirement. Of the eight minerals selected for this study, only bauxite and tin have been the focus of projects receiving bank support in the last 10 years. 1/ Interestingly, they are also the only two major minerals in the group.

As multilateral institutions, the banks are not intended to be vehicles for the pursuit of specific national objectives. is true that the United States has influenced general bank policy significantly in the past. The move by the banks in 1977 and 1978 to increase support for mining projects is just one example. According to Department of Treasury officials, the United States also was highly instrumental in the shifts toward greater bank lending for basic human needs and energy resources development. However, the United States has subscribed to the multilateral focus of the banks since their inception, recognizing that bank programs are for the most part an inappropriate means of fulfilling specific national objectives. Like all other members, then, the United States does not have the authority or the ability to direct the award of specific loans or grants. Even the opportunity to influence project decisions, however indirectly, is limited by the procedures for project development. The recipient countries, not the banks, determine which projects will be submitted for bank consideration, provided they meet standards for economic and financial viability. Any bank-generated benefits to the United States in terms of strategic and critical minerals acquisition, then, are likely to be coincidental, materializing only when specific proposals meet other criteria and priorities established by the banks.

^{1/} Tin slags, produced when smelting tin, are an important source of tantalum. Malaysia and Thailand provide most of the tantalum so obtained. The tin projects supported by the banks probably produced no tantalum because the projects were for mining not smelting and were not located in either Malaysia or Thailand.

U.N. REVOLVING FUND--A MULTILATERAL OPPORTUNITY FOR THE UNITED STATES

The U.N. Revolving Fund for Natural Resources Exploration was established in December 1973 by resolution of the U.N. General Assembly to help increase natural resources exploration in developing countries and expand the world's known resources base. It is the only multilateral organization that finances all phases of exploration. When the Fund became operational in 1975, the United States saw it as an important means of increasing much needed mining investment capital in developing countries and pledged a total of \$3.5 million in 1977 and 1978. According to State Department position papers on the Fund, however, U.S. support has since declined because of the Fund's poor early performance and, more recently, because of domestic budgetary considerations.

Fund's mission is unique and important

The Fund's focus on all phases of exploration is unique among multilateral programs designed to foster mining investment in developing countries. The multilateral development banks, for example, rarely provide financing for prospecting because of its high risk. 1/ And as of November 1979 the U.N. Development Program, the largest supporter of minerals exploration and development projects in the United Nations, 2/ had devoted only about 20 percent of its minerals project to exploration activities in general.

The Fund's focus also is important to the worldwide development of reasonably priced minerals resources in the long term. Experts agree that some of the largest and richest deposits in the world are located in developing countries, which generally do not have the money or the technical expertise to explore for and prove them. Moreover, perceived political risk and instability have discouraged foreign investors so that exploration declined sharply in the last decade. Many of the countries we visited, including some with long mining histories and strong domestic mining industries such as Brazil and the Philippines,

^{1/} During this phase, drilling is done to first verify the existence and then determine the size and quality of a deposit. Exploration costs generally are not great compared with mine development costs, for example, but they are increasing.

^{2/} By the end of 1979, it and its predecessor, the Special Fund, had expended a total of about \$170 million in over 75 countries. Other mining activities include geological surveying, institution building, and training.

did not know the extent or value of their minerals. By providing exploration assistance then, the Fund can help developing countries define their holdings and at the same time compile a more accurate catalog of the world's richest and, in many instances, most economical deposits.

Operating procedures have slowed Fund's progress

The Fund's basic concept, organization, and operating procedures are unique among the forms of U.N. development assistance. Traditional U.N. assistance for minerals projects consists of consultative services, equipment and supplies, or experienced personnel and a counterpart recipient government contribution of 30 to 60 percent of total costs. The Fund requires no such contribution; rather, it explores for hard minerals 1/ using funds generated by pledges and successful projects. Payments, or replenishment contributions, are required of governments only if a discovery is made and are calculated as 2 percent of the annual value of any minerals produced for 15 years after production begins. 2/ This replenishment scheme was devised to make the Fund self-sustaining and to promote a spirit of mutual assistance among developing countries.

The Fund's structure and operating procedures were a liability during its early years. Because they were so unique, the Fund had to first establish a tangible identity and then thoroughly acquaint potential recipient governments with its services and the unusual arrangements under which they would be provided. Developing countries were slow to understand and accept the Fund's procedures and requirements. Between June 1975 and December 1978, contacts with more than 80 countries generated only 14 approved projects, 5 of which became operational. As of December 31, 1978, the Fund had accumulated roughly \$26 million in pledged contributions but had committed only \$7.2 million.

^{1/} The Governing Council of the U.N. Development Program has administrative responsibility for the Fund. Although the Fund was established to explore for natural resources generally, the Governing Council recommended restricting its activities to hard minerals exploration until it received or earned substantially larger resources.

^{2/} Recommendations have been made to the Governing Council to consider a half of 1 percent or 1 percent replenishment rate for least developed countries as defined by the United Nations and a ceiling of 10 times project costs at constant prices for all replenishments.

A decisive turning point occurred in 1979 with the Fund's first exploration success, which generated a more widespread, formal acceptance of its operating procedures and increased, confirmed interest in its services. The Administrator's report for that year attributed the Fund's public relations success to the efforts of its newly recruited technical staff. From this point on, the Fund's performance improved considerably. In 1980 more projects were approved than in any prior year and more projects began field operations than in all previous years combined. As of December 31, 1980, the Fund had approved 14 projects, 9 of which were operational, and was considering 11 other proposals. According to the Administrator's report for 1980, a project pipeline had been developed that would assure the possibility of approving 6 new projects annually, funds permitting.

Despite the Fund's recent success, its future still appears uncertain. Contributions have tapered off just as requests for services have increased sharply, creating a financial condition that threatens to paralyze the Fund's activities. According to the Administrator's report for 1980, the Fund had reached a cumulative program commitment level that would limit its total 1981 funding capability to just six additional projects.

Donor interest in the Fund declined because its poor initial performance left it with large cash assets that seemed to belie a need for additional funding. The United States, for example, did not honor its 1977 and 1978 pledges until June 1980 because of the Fund's excess liquidity. Although the Fund's activity level increased dramatically in 1979 and 1980, it still retained large cash holdings. These were the result of a full-funding rule that requires the Fund to obligate total needed funds for approved projects at the start, although years might pass before the funds are expended, if at all.

In 1979, the Administrator attempted to increase the Fund's financing capability by amending the full-funding rule so that only one-third of total project costs would be set aside. This action was not enough, however, and 1980 pledges for the Fund totaled just \$1.25 million, so more drastic measures are being considered. In his 1980 Annual Report, the Administrator called for contributions of \$10 million annually and multiyear pledges to sustain the Fund's activities. However, the U.S. Government already has indicated that its appropriations process prevents it from making multiyear pledges and that, in any case, it is not likely to contribute at this time because of budgetary constraints.

CONCLUSIONS

The multilateral initiatives the United States has supported to encourage mining investment in developing countries during the

last 5 years have not been implemented or, if implemented, have been inappropriate or inefficient as methods of addressing U.S. strategic and critical minerals needs. The international investment insurance plans designed to mitigate political risk and thereby increase foreign private investment in developing countries have not been implemented, because the problems of how to arbitrate disputes, negotiate claims, arrange financing, and distribute voting rights have not been solved. Talk continues about constructing yet another proposal, but the issues that thwarted past proposals have not been resolved.

The United States encouraged greater emphasis by multilateral development banks on loans and technical assistance for the minerals sector in 1975 and has supported banks' efforts to effect this emphasis. These efforts, furthermore, have been cited as one means of assuring a stable and economic supply of strategic and critical minerals for the United States. However, despite the announcement of new policy initiatives in 1977 and 1978, the banks have not significantly changed their historically limited spending patterns in this area. Furthermore, only 27 percent of the mining projects receiving assistance in the last 10 years involved minerals of strategic and critical importance to the United States. 1/ Unless a major shift in top priorities occurs, it is unlikely that the share of bank resources devoted to mining will increase greatly in the foreseeable future. Even then, the multilateral perspective of the banks prevents them from being appropriate vehicles for achieving this or any other national objective.

The U.N. Revolving Fund for Natural Resources Exploration has not yet demonstrated its capabilities convincingly. However, its mission is to address what experts perceive to be the greatest mining-related problem for developing countries—insufficient exploration. Moreover, it is the only multilateral program to focus exclusively on conducting all phases of exploration. If the program weathers its current financial crisis, it offers an opportunity for developing potentially valuable information on new, exploitable minerals resources.

AGENCY COMMENTS AND OUR EVALUATION

The Department of Treasury commented orally on the report sections describing the multilateral development banks' efforts to increase their support for minerals projects, the issue of declining investment in developing countries, and U.S. dependence on imports of strategic and critical minerals. The comments were technical or historical in nature and were incorporated in the final report.

^{1/} This figure has been derived by considering nickel in addition to the eight minerals on which we focused.

CHAPTER 3

BILATERAL APPROACHES HAVE BEEN FEW IN NUMBER AND GENERALLY UNPRODUCTIVE

Since the mid-1970s, the United States has relied more on multilateral than bilateral approaches to promote mining investment in developing countries. Only the Overseas Private Investment Corporation's (OPIC) minerals and energy program was specifically designed to accomplish this objective. Another activity which policymakers have cited as indirectly aiding the Government's effort to address the problem of declining mining investment in developing countries is the Export-Import Bank's (Eximbank) financing of capital expenditures to promote sales of U.S. mining equipment and expertise. However, the number of mining projects that OPIC and the Eximbank have supported during the past decade has varied only slightly, indicating that mining's share of support has not changed. Additionally, the majority of projects supported by Eximbank have not involved minerals unavailable in and strategically important to the United States.

The United States also is developing or implementing other programs and initiatives which could result in more U.S. mining investment in developing countries. The Agency for International Development, for example, has established a Bureau for Private Enterprise to increase the private sector's participation in Third World development and the International Development Corporation Agency's Trade and Development Program staff is attempting to formulate a strategy for reducing U.S. dependence on a limited number of overseas suppliers. Additionally, the Department of State has been trying to develop a viable bilateral investment treaty to facilitate all types of investment in developing countries. The extent to which these initiatives will increase U.S. minerals access overseas, however, is not clear at this time.

Finally, under the Carter administration the Department of State made a study of the U.S. Geological Survey's international activities, including efforts to assist developing country exploration efforts. The study's results have not been considered since the Reagan administration took office. Although we did not independently verify the study's findings, our work in 11 developing countries confirms the need for more minerals exploration assistance.

OPIC'S EFFORTS TO INCREASE U.S. MINING INVESTMENT HAVE BEEN ONLY MARGINALLY PRODUCTIVE

OPIC is a wholly owned Government corporation created by the Congress in 1969 to facilitate the flow of private U.S.

capital and skills to the Third World. OPIC accomplishes this objective through its insurance, financial guarantee, direct loan, and promotional programs. Since their inception, OPIC's minerals and energy initiatives have been regarded as the primary bilateral means by which the United States has attempted to revive investor interest in developing country mining projects. This program was instituted in 1977 in response to the marked decline of U.S. direct foreign mining investment in developing countries. Since then, policymakers also have viewed OPIC's efforts as an important means of increasing global minerals supplies and acquiring strategic and critical minerals resources for the United States. We found, however, that because of weak minerals markets and a variety of policy and procedural restraints on its activities, OPIC is not supporting a significantly larger number of projects. On the other hand, a sizable proportion of the projects it has supported have involved strategic and critical minerals.

OPIC support for minerals sector remains limited

OPIC encourages U.S. investment in developing countries primarily through its political risk insurance and finance programs. Its insurance program provides protection against

- --losses due to war, revolution, or insurrection; 1/
- --losses due to expropriation, nationalization, or confiscation by a foreign government; and
- --an investor's inability to repatriate profits, earnings, or return on an original investment.

The finance programs provide direct or guaranteed loans to U.S. sponsors or investors in developing countries.

In 1977, an interagency task force recommended that OPIC develop more effective programs to increase minerals exploration and development in Third World countries to spur U.S. mining investment in countries. In fiscal years 1977 and 1978, OPIC responded to the recommendation by making

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OPIC has been given the statutory authority to issue civil strife insurance as well. To do so, however, OPIC must provide a report to the Congress on the subject 60 days before it offers its first coverage. OPIC expected to forward its first report to the Congress by the end of July 1982 and issue the first contract coverage by late September.

several policy and program changes designed to better serve the mining industry's particular insurance needs and to more actively promote U.S. mining investment in developing countries.

OPIC improved its insurance coverage for minerals sector investors by including protection against host governments' breaches of specified contractual provisions during the exploration, development, and production phases; providing protection against business interruptions caused by war, revolution or insurrection in the host or adjacent countries; and offering a steady level of coverage for a 10-year period following completion of construction. OPIC also undertook special promotional efforts to spur U.S. investor interest in minerals exploration and development opportunities in the Third World. In conjunction with the Department of Commerce, OPIC conducted a series of regional seminars on minerals and energy investments in developing countries and on its new program incentives for these sectors. And in fiscal year 1978, OPIC established a Minerals and Energy Office to coordinate its support for these sectors.

Despite these initiatives, OPIC's involvement with the sector has been limited. As table 4 shows, mining projects ranged from just 1.2 to 6.8 percent of total projects insured or financed between fiscal years 1970-80, 1/2.

^{1/} Throughout the following discussion, statistics cover January 1, 1970, to September 30, 1980. Statistics from the first half of fiscal year 1970 have not been included because the insurance and loan programs were being operated by the Agency for International Development. Although OPIC was not organized until January 19, 1971, we were advised that after January 1, 1970, the programs were being administered with OPIC funds according to OPIC policies.

Mining Projects as a Percent
of Total OPIC Projects
(note a)

	Total projects (note b)	Mining projects (note b)	Mining as percent of total projects
1970	100	6	6.0
1971	168	5	3.0
1972	112	2	1.8
1973	79	3	3.8
1974	147	2	1.4
1975	155	5	2.6
1976	129	3	2.3
1977	92	2	2.2
1978	84	1	1.2
1979	80	1	1.4
1980	116	8	6.8

- a/It should be emphasized that this table does not present the number of <u>new</u> projects OPIC supported during this period. In some instances, OPIC insured the same project in two or more years. Consequently, the total number of new projects (including those for mining) is somewhat smaller than this table indicates.
- <u>b</u>/Includes projects supported by direct or guaranteed loans and those which OPIC insured. When OPIC provided both insurance and loans to the same project, the project has been counted only once.

Although the total number of minerals projects OPIC has supported during fiscal years 1970-80 has been small, a considerable portion has involved minerals of strategic and critical importance to the United States. Revising the number of mining projects shown in table 4 to reflect new projects, we found that about one-third involved one of the eight minerals on which we focused; adding cobalt to the list would increase this to about 40 percent. However, OPIC's support, like that of the multilateral development banks, has been concentrated on major minerals projects. For example, seven of the nine projects addressing the minerals in our study involved either tin or bauxite/alumina.

Weak minerals markets and policy restrictions cited as inhibitors

OPIC officials pointed to weak minerals markets as the primary reason for the small number of mining projects it has been able to insure or finance since its minerals initiatives were instituted. They contended that prospects for future demand have not encouraged the development of new sources which, in turn, has resulted in few requests for insurance or loans. We did not attempt to verify this viewpoint; however, Department of Commerce investment data and OPIC project data suggest a relationship. Commerce statistics show that capital expenditures by majorityowned foreign affiliates of U.S. companies for mining and smelting in developing countries between 1977-79 were lower than in any other 3-year period between 1970-79 (see table 2, p. 2). The number of projects OPIC supported between 1977-79 also was lower than in any other 3-year period between 1970-79 (see table 4, The Director of the Minerals and Energy Office additionally attributed the increased support for mining projects in 1980 to improved market prospects. Commerce statistics again seem to provide support, showing U.S. capital expenditures on mining and smelting in developing countries up about 220 percent in 1980 compared with 1979.

Officials also cited the requirement for international arbitration as limiting OPIC's ability to support mining projects. By law the United States must have "suitable arrangements" with each country in which OPIC operates in order to protect OPIC's rights to salvage as an insurer and a creditor. In most developing countries this has taken the form of a bilateral investment guaranty agreement that usually includes a provision for arbitrating disputes between the United States and the host government arising over an insured or guaranteed investment. To date, nearly 100 developing countries have entered agreements permitting OPIC operations. However, several Latin American countries 1/ have refused to accept the arbitration provision and OPIC has not been able to operate in them.

The officials could not estimate the extent to which mining investors were affected by this impediment; however, Commerce statistics indicate that OPIC's inability to operate in some Latin American countries may have limited its attractiveness to mining firms. Statistics show that Latin America received 61 percent

^{1/} Most notably those belonging to the Andean Pact, which adhere to the Calvo Doctrine asserting the sovereignty of the hostcountry's legal system in resolving disputes.

of U.S. capital expenditures for mining and smelting in developing countries in 1978, 65 percent in 1979, 74 percent in 1980, and 76 percent in 1981. $\underline{1}$

The requirement that OPIC consider human rights records in developing countries before providing any project support may also have affected its ability to support mining projects. The requirement first appeared in OPIC's 1978 reauthorization legislation. The only exceptions permitted were projects that benefitted the needy or served the U.S. national security interest. To comply, OPIC passed each project proposal it received to a special State Department interagency group to determine whether a government's human rights posture should prohibit the receipt of U.S. foreign assistance. From May 4, 1978, to January 16, 1981, the State Department recommended denial for only one of the 528 projects OPIC submitted. In deference to human rights considerations, OPIC additionally decided not to try to negotiate agreements for programs in Argentina, Chile, and Uruguay and for a period it refused to offer its program in Uganda.

Based on the number of projects that were refused support, OPIC's human rights policy does not appear to substantially affect its mining activities. However, failure to negotiate agreements in Argentina and Chile certainly curtailed OPIC's opportunities to increase support for minerals investment. Moreover, discussions with mining industry executives and bankers indicate that the policy was widely known in the private sector and that this knowledge is likely to have discouraged some investors from submitting their project proposals. Although the legislative requirement to review human rights records is still in effect, the consequences of its implementation for OPIC's future operations are unclear.

Operation policies, budget, and statutory requirements further limit OPIC's attractiveness

OPIC supports U.S. investors in developing countries through its insurance, loan guarantee, and direct loan programs. However, operational policies, budget ceilings, and statutory requirements have diminished the programs effectiveness for minerals sector investors.

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^{1/} These statistics also suggest that if the geological quality and economics of a project are promising and its political risks appear manageable, firms will invest without OPIC.

OPIC is statutorily limited to a maximum contingency liability of \$7.5 billion, with no more than 10 percent of its insurance portfolio concentrated in any one country. Its authorizing legislation also requires that it be self-sustaining and observe principles of prudent risk management. To comply with these requirements, management generally restricts insurance on any one coverage for any one mining project to \$150 million. However, this limit can be exceeded with approval of the Board of Directors in appropriate cases.

According to OPIC's Treasurer and the Director of the Minerals and Energy Office, OPIC's insurance limit may be too low to significantly benefit some investors. Mine development costs have increased so dramatically during the last 10 years that a large project today could easily cost \$1 billion. For projects such as these, OPIC's insurance limit reduces its attractiveness and usefulness considerably.

Under the loan guarantee program, OPIC guarantees an investor's loan to an approved project for any event that would prevent the borrower from meeting the terms of a repayment schedule. In this instance, budget ceilings have limited the program's appeal to minerals sector investors. Total funds available for the program were only \$120 million in fiscal year 1981 and \$100 million in fiscal year 1982. Additionally, OPIC will not guarantee more than \$50 million per project.

OPIC statistics show that only four loan guarantees for mining projects were made during fiscal years 1970-80, all in 1979 and 1980. 1/ The senior manager for project finance believed, nevertheless, that guarantees are attractive to the industry for modest ventures such as mine expansions. However, the Director of the Minerals and Energy Office doubted that such guarantees could make a significant contribution, considering their limited size and the limited total guarantee authority.

The Overseas Private Investment Corporation Act amendments of 1978 first made loans from OPIC's Direct Investment and Investment Encouragement Funds available to the minerals sector for small projects of special development importance and for project feasi-

^{1/}The most recent examples were working capital guarantees for two Zambian mines which, among other things, produce cobalt. According to the senior manager, the loans OPIC guaranteed were to finance foreign exchange for expatriate salaries and benefits, equipment spare parts, and normal operating expenses. OPIC considered these loans essential for maintaining the Zambian economy's health. In return for the loans, the companies involved agreed to supply 50 percent of their cobalt to U.S. customers for the duration of loans.

bility surveys. At the same time, however, the Congress set certain limits on their use by this sector. The legislation stipulates that loans can be made only for projects sponsored by or significantly involving U.S. small businesses or cooperatives 1/2 and that expenditures for mining projects cannot exceed \$4 million in any fiscal year. Additionally, expenditures for minerals feasibility surveys are limited to \$200,000 per fiscal year.

As a result of these restrictions, OPIC has not used either its direct loan or feasibility survey funds to support mining projects. According to the senior manager for project finance, OPIC has considered direct loans and feasibility survey assistance off limits for mining projects because most mining firms are relatively large and, therefore, do not qualify under the "small business" requirement. Furthermore, even if OPIC altered its position, it is doubtful that either form of assistance would be particularly attractive to the industry, given the limited funding available and the industry's high capital requirements.

OPIC's efforts to promote mining investment have been limited

OPIC's Minerals and Energy Office was created in 1978 to coordinate all minerals and energy-related activities and to promote investment in developing countries. At the start, the office staff consisted of only the senior Director and his secretary. The lack of additional staff severely curtailed the Director's ability to track all minerals projects and to confer with industry representatives about OPIC programs. Additionally, the Director has devoted the greater share of his time to the energy sector because the minerals markets have generally been so poor. Consequently, few efforts have been made to encourage the mining industry's use of OPIC's services and thereby promote mining investment. We did not attempt to evaluate the effectiveness of these efforts, which have included (1) investment conferences held shortly after the Office was established to acquaint the industries with OPIC's new minerals and energy initiatives, (2) speeches given before mining conventions, and (3) periodic informal discussions with mining company officials about individual projects.

Responding to congressional directives and executive branch interest in broadening U.S. private sector participation in international markets, OPIC also created a special Mission Section in 1978. This Section was responsible for organizing

^{1/} The conference report defined small businesses for OPIC's purposes as those not included on the "Fortune 1000" list.

investor missions to different parts of the world in an effort to intensify OPIC's project identification efforts and to encourage joint ventures with host-country partners. Since the Section's inception, OPIC has organized investor missions to a number of countries, including Papua New Guinea, Kenya, Sri Lanka, Morocco, Honduras, and the Dominican Republic.

OPIC believes, however, that it cannot sponsor a mission if the host government is unwilling to provide a climate conducive to American investment. Consequently, before a mission is organized and promoted, OPIC representatives visit the country to determine whether the existing investment conditions are likely to attract U.S. investors and to recommend improvements, if necessary and possible. For example, when preparing for one investment mission, OPIC's advance staff found that many investors thought the local system for handling foreign investment activities cumbersome and unclear. The staff worked with local government officials to suggest ways to cut red tape and recommended that the government institute a one-stop project approval office authorized to make all necessary arrangements and clarify foreign ownership requirements. The government instituted the one-stop office and permitted U.S. firms to have 100-percent ownership of approved projects.

According to the Mission Section director, mining firms have joined several missions, including those to New Guinea, Sri Lanka, Morocco, and Papua New Guinea. He observed that unlike manufacturing firms, for example, mining firms are less interested in the types of investment opportunities available than in the investment climates, since they have significant amounts of data about existing ore deposits. From the mining industry's point of view, then, OPIC's efforts to negotiate attractive investment terms while organizing missions are extremely valuable. Unfortunately, however, the director did not know how successful these missions were in generating new mining projects in developing countries because little evaluative data has been collected about the outcomes of the missions generally.

EXIMBANK HAS NOT PROVIDED SIGNIFICANT SUPPORT FOR MINING PROJECTS

Eximbank was created in 1934 to provide financing support for U.S. export sales. Unlike OPIC and the multilateral agencies we have discussed, it is not limited to operating in developing countries. Its financing programs include direct loans, financial guarantees to private lenders, and commercial and political risk insurance. Eximbank does not receive appropriated funds.

It received \$1 billion in capital from the Treasury and primarily uses Federal Financing Bank borrowings to sustain its lending operations.

In the 1940s and 1950s, Eximbank played an important role in securing strategic and critical minerals supplies for both industrial and defense applications. Today, Eximbank financing of mining equipment exports is frequently referred to as one means by which the U.S. Government indirectly promotes investment in mine development overseas. However, in the last decade lending for this purpose has been limited, especially for projects involving minerals of strategic and critical importance to the United States.

Eximbank instrumental in opening new supply sources

Eximbank was first called on to promote new mine development overseas during World War II. As minerals supplies grew tighter and industrial demand increased, the government initiated programs to expand available domestic and foreign sources. In 1940, the Reconstruction Finance Corporation was empowered to make funds available to Eximbank to support minerals projects. In most cases, the proceeds from the sale of a percentage of the output secured the loans. The usual buyer was the Metals Reserve Company, created by the Reconstruction Finance Corporation in 1940 to acquire minerals stockpiles from abroad. Among the projects thus supported were tungsten mines in Bolivia and Argentina, tin mines in China, and a series of high-grade iron ore mines in Canada which exported roughly 3 million tons of ore annually to the United States.

Eximbank continued to promote new mine development overseas during the Korean War. In May 1951, President Truman asked the Congress to add \$1 billion to the Bank's lending authority and included among the justifications for this increase the "supreme importance" of making loans to develop strategic and critical minerals sources. In October his request was approved. Between July 1, 1950 and June 30, 1953, Eximbank authorized credits of approximately \$215 million to finance the purchase of U.S. equipment and materials and to increase production of cobalt, high-grade iron ore, manganese, nickel, tungsten, uranium, and zinc. In most instances, contracts were entered into to purchase at least part of the output for U.S. national stockpiles.

In addition to using its own funds for minerals sector loans, Eximbank authorized and managed loans made available under section 302 of the Defense Production Act of 1950. This section provided for loans to expand capacity and develop technological processes and to explore, develop, and mine strategic and critical minerals deposits. An Executive order issued in September 1950 directed

the Reconstruction Finance Corporation to make loans under this provision, and a subsequent order authorized Eximbank to manage such loans made in foreign countries.

Like the loans Eximbank provided during World War II and those made with its own funds during the Korean War, the section 302 loans were made with specific U.S. strategic needs in mind. The Executive order which authorized Eximbank's participation in the 302 program stipulated that a loan could only be made once a certificate of necessity was issued by the Defense Production Administration. Among the projects supported by these funds were copper, molybdenite, and bismuth mines in Canada, zinc mines in Mexico, and copper and cobalt mines in Northern Rhodesia.

Recent Eximbank support limited and not focused on strategic minerals

During the last decade, Eximbank support for mining, including feasibility surveys and first-stage processing, has been sparse. Mining's share of all direct loans and financial guarantees 1/ ranged from 8.4 percent in fiscal year 1971 to 0 percent in fiscal year 1978, and less than 1 percent in 1981. 2/

Only a handful of the projects supported during this period involved strategic and critical minerals for which the United States has few if any reserves. Eximbank financed equipment for 94 mining projects in total, 25 of which supported a variety of activities without focusing on a particular mineral. Of the remaining 69 projects, 44, or roughly 64 percent, involved copper or iron ore, demonstrating once again the emphasis on major minerals. Only 5 projects involved minerals on which we have focused—specifically, bauxite and fluorspar. Even when nickel and rutile are added to these, less than 20 of the projects involved the minerals on which we have focused.

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^{1/}We concentrated on Eximbank's Direct Credit and Financial Guarantee programs because they provide long-term financing for major foreign projects and large product exports. Consequently, most minerals sector support has come from these programs.

^{2/}If all projects supported under Eximbank's "Mining and Refining" category are counted, the share increases dramatically. On average, "Mining and Refining" credits have represented 14.4 percent of all direct loans and financial guarantees during the same timeframe. However, included in this category are export credits for steel, cement, and metals manufacturing plant projects as well as a variety of other advanced-state processing projects that are outside the focus of this study.

User perceptions of Eximbank's competitiveness may affect its ability to support mining projects

The extent of Eximbank's activities by sector depends on the mix of its applicants. In a very real sense, then, it cannot promote mining investment to secure supplies, however indirectly, because it does not control that mix. An exception occurred during the 1940s and 1950s when emphasis on increasing access to strategic and critical minerals was strong and resulted in special funds for and a special focus on mining. Today, however, Eximbank has no such mandate and sets no sector priorities.

A weak minerals market has influenced the number of mining projects Eximbank has supported recently, although statistics show that U.S. mining investment overseas has been declining throughout the 1970s. Between fiscal years 1977-80, Eximbank financed equipment for just 6 projects, compared with 94 since fiscal year 1971. In discussions with bankers and mining industry representatives, however, another factor was frequently cited--namely, Eximbank's inability to compete effectively with its foreign counterparts.

Eximbank's competitiveness affects far more than just the U.S. mining industry. Moreover, it is far too large and complex a subject to analyze fully in this report. Bankers and mining industry representatives we questioned about Eximbank's attractiveness, however, supported the general view that it does not compete well against its foreign counterparts. Representatives of one major bank told us that they have encouraged mining project sponsors to use foreign equipment in order to qualify for credits through foreign counterpart institutions where rates were more competitive than Eximbank's. 1/ Mining company representatives stated that they usually did not use Eximbank because better financial arrangements were available through competing institutions.

There is an important consequence of decisions made by U.S. mining firms to seek equipment export credits elsewhere. During World War II and the Korean War, Eximbank was able to secure supplies by linking them to credits. In most cases, the credits it extended were secured by the proceeds from sales of the mine output. Should U.S. policymakers determine that a need exists once again for specific strategic and

<u>l</u>/We assume this position is accurate if the equipment is comparable in capability and price. If quality and price differ, the analysis becomes much more complex.

critical minerals, Eximbank's diminished attractiveness to U.S. mining firms might preclude its use as a means of acquiring them. 1/

IT IS TOO SOON TO GAUGE EFFECT OF NEW ADMINISTRATION INITIATIVES

The Reagan administration is considering, and in some cases implementing, new initiatives which could benefit U.S. mining firms seeking to invest in developing countries. In response to the administration's preference for private rather than public sector assistance for the Third World, the Department of State has been conducting an interagency review of ways to make investment in developing countries more attractive to U.S. businesses. Changes have been made, including increasing the Agency for International Development's (AID) private sector orientation, expanding the International Development Cooperation Agency's Trade and Development program (TDP), and formulating a model bilateral investment treaty to provide a common frame of reference and legal base for such investments. These initiatives, with observations about their comparability to foreign programs and their potential usefulness to the mining industry, are described below.

Bureau for Private Enterprise and Trade and Development Program

AID administers the U.S. bilateral development assistance program. Under the Reagan administration, AID established the Bureau for Private Enterprise in July 1981 to strengthen private sector participation in providing development assistance to Third World countries. The Bureau has a broad mandate, including developing private sector policy in AID. The Investment Office, one of two offices in the Bureau, will assist in putting investment packages together for U.S. and Third World companies. The Bureau also will advise host governments on streamlining investment laws and regulations and building capital markets.

The extent to which the Bureau will support mining projects is not clear at this time. Projects will be identified during missions to targeted host countries. The only stipulation is that

^{1/} Today, Eximbank does not focus on particular minerals but considers any increase in world supply beneficial for the United States. Evidence suggests that some other consumers do not share the same view. At least one, Japan, ties supplies to export credits. Other countries offer special discounted credits for mining projects which also require supply guarantees.

projects be developmentally oriented. While this stipulation need not exclude mining projects, questions have been raised in the past about their developmental value in terms of creating jobs and providing direct services to the needy that may limit their consideration.

The TDP, formerly the Office of Reimbursable Development Programs, was established in 1980. Unlike the Bureau, it has a statutorily defined role in increasing minerals availability. Section 661 of the Foreign Assistance Act authorizes the President to use funds presently allocated to TDP to facilitate "open and fair access to natural resources of interest to the United States." According to the director, a strategy is being developed for using part of the program's budget to diversify minerals supply sources. At the moment, it is focusing on financing (1) studies on alternative sources of strategic minerals and metals and (2) feasibility studies on projects that, directly or indirectly, involve the extraction and movement of natural resources. As of February 1982, a TDP team had been sent to Morocco to gauge opportunities to mine cobalt and two feasibility studies on moving minerals to key Peruvian ports were being financed.

Because TDP has a very limited funding capability—its fiscal year 1982 budget is only \$6.9 million—its efforts to encourage overseas resource development will have to be limited. Nevertheless, the director believes that TDP can play an important role as a catalyst in bringing the private and public sectors together and as a sponsor of Government—wide expertise.

Bilateral investment treaties

In October 1981 testimony before the Subcommittee on International Economic Policy, Senate Committee on Foreign Relations, the Assistant Secretary of State for Economic and Business Affairs cited the creation of a model bilateral investment treaty as an important step in facilitating private sector involvement in developing countries. Such treaties are expected to enhance the attractiveness of investing in developing countries by establishing a common understanding and legal base for initiating an investment, arbitrating and settling disputes, repatriating capital, and providing compensation in the event of expropriation. Progress on formulating a model U.S. treaty was slow, in part because of the complex issues and terminology and the need to reach interagency agreement on each point covered in the treaty; e.g., national treatment, dispute settlement, compensation for expropriation, and transfers. Difficulties also were encountered in drafting a document that could be widely accepted by developing countries. However, negotiations were concluded with Egypt and a text intialed in June 1982; other negotiations are underway with Panama and Antiqua/Bermuda.

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Bilateral investment treaties will probably succeed as incentives to increase investment with the mining industry to the same degree that they succeed with investors generally. Our work in West Germany, however, suggests that while the agreements contribute to improving a developing country's overall investment climate, they may not necessarily lead to increased investment. West Germany has employed bilateral agreements to promote and protect German direct foreign investment since the early 1960s; agreements with over 40 developing countries were in effect at the end of 1980. Their purpose has been to guarantee German investors that, based on international law and providing for arbitration, their capital investments will be subject to equitable, fair, and nondiscriminatory treatment. Investment, however, has not routinely followed signing of a treaty. An official in the Ministry of Economics pointed out that there are countries with which the Federal Republic of Germany has agreements in force but in which there is very little private investment. On the other hand, German companies are clamoring to invest in Brazil although there is no agreement in force. Brazil's investment climate has been considered excellent, thus making deposits there economically attractive.

ANOTHER POSSIBILITY--REVITALIZING THE U.S. GEOLOGICAL SURVEY'S INTERNATIONAL PROGRAM

In the summer of 1979, the Department of State began a study of the U.S. Geological Survey's international activities, including an assessment of its 40-year old international program. According to this study, a continuous program of technical assistance has been carried out which, at one time or another, involved projects in more than 70 countries. Many of these projects have contributed to U.S. foreign policy interests and some, such as those in Brazil and Indonesia, have been important in maintaining cooperative relationships with other countries. Among the most significant program accomplishments cited in the study are the development of about two dozen geological resource agencies and the discovery of major minerals resources in Brazil (manganese), Pakistan (copper), Thailand (potash), and Bolivia (lithium).

According to the study, Survey assistance for geological surveying and minerals exploration has declined sharply in recent years. For example, in 1969 and 1970 the Survey operated approximately 25 projects in 19 countries involving tens of millions of dollars and more than 100 specialists. Most of the projects were funded by AID. As AID's emphasis shifted increasingly toward directly assisting the neediest populations, however, less funding was available for natural resources identification, exploration, and development. At the end of 1979, AID funded just two small projects. Additionally, a mandate to conduct minerals surveys of U.S. wilderness areas has limited the availability of specialists for overseas projects.

The study concluded that the Survey needed an explicit executive or legislative mandate to carry out minerals assessments abroad. Without one, these efforts appeared to have little chance of competing with authorized, ongoing domestic work for scarce personnel and financial resources. The study recommended that the Survey be authorized, funded, and staffed to plan and undertake programs, in cooperation with host-country agencies, for investigating and assessing minerals resources that are actually or potentially scarce in the United States.

The Reagan administration has not yet considered the study's recommendations. Because we did not evaluate the effectiveness of the Survey's international minerals assessment program or independently verify the study's facts, we cannot comment on the appropriateness of its conclusions or the advisability of its recommendations. The Survey's continued presence overseas is potentially valuable, however, both to developing countries and to the United States. According to many mining experts, minerals identification and exploration assistance is one of the Third World's greatest minerals development needs. (see p. 18.) The catalog of worldwide deposits is by no means complete. Moreover, the participation of consumer government geological teams in Third World geological surveying and prospecting not only can increase the consumer's knowledge about world resources availability, but also frequently can result in investment opportunities for its own mining industry. Developing country officials stressed this last point and noted both the Survey's absence and the growing presence of U.S. competitors' survey agencies in, for example, Argentina, Peru, and Zimbabwe.

CONCLUSIONS

Since the start of OPIC's minerals program in 1977 and 1978, U.S. policymakers have regarded it as the primary bilateral means by which the United States supports investment in the development of strategic and critical minerals resources overseas. We found, however, that since that time, weak minerals markets have limited the demand for OPIC's program. A number of fiscal and policy restraints have also impeded support and will continue to do so even when minerals markets improve. These restraints include (1) the requirement for bilateral agreements which, among other things, provide for international arbitration, (2) the financial and policy requirements of OPIC's loan quarantee and direct loan programs, and, most importantly, (3) the \$150-million ceiling on the amount of insurance OPIC can offer per risk. Given the locations of some of the more promising deposits and investment climates, the mining industry's enormous capital requirements, and these restraints, it is doubtful whether OPIC can be more than moderately successful as an incentive for mining investment in developing countries.

Policymakers also have considered Eximbank financing for U.S. mining equipment and expertise as indirectly aiding the Government's effort to address the problem of declining U.S. mining investment in developing countries. In the 1940s and 1950s, Eximbank played a prominent role in increasing U.S. access to strategic and critical minerals overseas. Between 1977-80, however, its direct loan and loan guarantee support for mine development has dwindled to just 16 percent of all such support. Like OPIC, Eximbank's recent activities have been sharply affected by weak minerals markets. In addition, bankers and mining industry representatives we interviewed stated that a significant cause of limited mining industry interest in Eximbank's services has been its inability to offer terms that are competitive with its foreign counterparts. Eximbank's declining appeal could have significant consequences for U.S. policymakers by limiting their options, should they determine that additional initiatives are needed to acquire strategic and critical minerals supplies.

It is too soon to determine whether and to what extent the initiatives being considered, and in some instances implemented, by the Reagan administration to increase private sector involvement in the Third World will also encourage greater U.S. mining investment. It seems unlikely, however, that their impact in this area will be substantial. The TDP budget, for example, is too limited to permit a significant effort, and the Department of State has just successfully negotiated its first bilateral investment treaty. Moreover, based on our work in West Germany, it is not at all clear whether such treaties will actually result in more investment of any kind.

AGENCY COMMENTS AND OUR EVALUATION

OPIC's comments were largely technical and were incorporated in the final report. A considerable number of comments were made about our discussion of human rights considerations as an impediment to OPIC's support of minerals projects. OPIC stated that it was unaware of any mining project being rejected because of human rights issues and concluded that it was misleading to suggest that human rights legislation has inhibited its minerals programs. We revised this section slightly to more clearly state that OPIC's human rights policy was known among bankers and mining industry representatives and that this knowledge reportedly prevented firms from submitting project proposals. To the extent that this has occurred, OPIC's opportunities to support mining projects have been limited.

Eximbank stressed that its recent low levels of financing for mining projects were principally attributable to market conditions, not to a lack of competitive financing. It stated additionally that, during the last 3-1/2 years, U.S. exporters

have won over three-quarters of the mining projects they brought to Eximbank. We do not dispute the primary importance of market conditions in determining the demand for Eximbank financing. Eximbank's comments miss our point, however, which is that its attractiveness to the mining industry may be impaired by perceptions among users that Eximbank is not competitive with its foreign counterparts.

In addition to some technical points and comments about OPIC which we considered in connection with OPIC's own very similar views, the Department of State provided updated information on U.S. progress toward successfully concluding a bilateral investment treaty with a developing country. We have incorporated most of this information. State took exception to our observation that, based on the West German experience, bilateral investment treaties may not necessarily lead to more investment in developing countries. It noted that "the kind of protections offered by a bilateral investment treaty may be particularly attractive to investors contemplating large, integrated projects which involve considerable capital investment" and that "the U.S. model treaty is more comprehensive and provides a greater degree of protection for foreign investors than the typical investment agreement negotiated by the West Germans or other European governments." We cannot comment on these views because the U.S. model treaty, unlike the West German version, is still untested.

CHAPTER 4

LACK OF DEFINED MINERALS NEEDS AND COHERENT STRATEGY HAS IMPAIRED RECENT INITIATIVES

Investment initiatives cited by U.S. policymakers as important for the Government's effort to assure strategic and critical minerals supplies in the long term have been only marginally productive because of a variety of market-related and operational factors. In addition, two basic conditions have affected all of these initiatives: (1) they have not addressed specifically defined minerals needs, and (2) they have not been part of a well-conceived and orchestrated long-term investment strategy. We believe, moreover, that without such a definition and a clear framework for action, future efforts will fare no better than those of the past 5 years.

INITIATIVES BASED ON DEFINED NEEDS PRODUCE BETTER RESULTS

Recent U.S.-supported multilateral and bilateral initiatives to encourage mining investment in developing countries have not significantly increased U.S. access to strategic and critical minerals, in part because they were not directed toward meeting defined needs. Although U.S. policymakers have recently viewed these initiatives as an important means of acquiring strategic and critical minerals supplies, they were originally viewed much more generally. The initiatives were devised in the context of solving various developing country commodity trade problems. As a result, they were broadly focused on improving the minerals industries in developing countries and increasing global supplies. However, from our study of a sample of strategic and critical minerals and a review of the more successful U.S. acquisition programs of the 1950s, we believe that any U.S. efforts to achieve greater access to these minerals must focus on specific high-priority minerals and attempt to resolve any related acquisition problems.

Mineral-specific problems require mineral-specific solutions

Minerals experts contend that generalizations about minerals access and supply problems are of little use to the public policy-maker because the nature and extent of these problems can vary widely from mineral to mineral. The reason for this diversity is that minerals have unique industry structures and market characteristics that affect access. Moreover, the criticality of their roles in industry and the degree to which new technologies, substitution, and recycling alter these roles also vary.

A close look at two of the minerals in our sample--tantalum and chromium--will demonstrate that the differences among minerals are significant for determining whether adequate supplies

are available to the United States in the long term. Although the discussion will focus on just two minerals, the singularity of their access problems is representative. 1/

Tantalum

Worldwide tantalum reserves are adequate to meet world demand through the end of the century. However, production has lagged behind demand and will probably continue to do so because tantalum mining developments are generally small, high-cost, intermittent operations that often depend on the recovery of byproducts or coproducts (principally tin and columbium, respectively) for their economic viability. Also, tantalum deposits are limited generally.

The United States has no known reserves of tantalum, and demand is projected to grow at about 4.1 percent a year through 2000. Imports come from a variety of sources, including Thailand, Canada, Malaysia, Brazil, and Australia. Tantalum is strategically important to the United States because of its applications in aircraft, missiles, radio communications, machine tools, and nuclear devices. Moreover, substitions cannot be used in most applications without increasing costs or reducing performance.

Chromium

The two major forms of imported chromium supply in the United States are chromite and chromium ferroalloys. World resources of chromite are considered adequate to meet world demand through the year 2000. However, about 99 percent of known reserves are located in the Eastern Hemisphere, primarily in South Africa and Zimbabwe. United States has relied heavily on South Africa for its supplies. During 1977-80, imports from South Africa reached 44 percent for chromite and 71 percent for ferrochromium. This situation is not likely to change unless South Africa's political stability deteriorates drastically because its reserves are enormous, the ore is perfect for industry's purposes, transportation facilities are excellent, and production is efficient.

The United States has no reserves of chromite, and U.S. demand for all types of chromium is

^{1/}The discussions about tantalum and chromium draw heavily on information contained in the 1980 edition of Mineral Facts and Problems, published by the U.S. Bureau of Mines, and in an unpublished study on chromium by the Organization for Economic Cooperation and Development.

expected to grow at about 3.2 percent annually through 2000. Chromium is strategically important for the United States primarily because of its use in the production of stainless steel. There is no known substitute for chromium in this application, and substitution in other metallurgical applications normally is more costly and may lower performance standards.

To the extent that minerals supply problems are unique, they demand specially tailored solutions. Both tantalum and chromium present potential long-term supply problems, for example, but the natures of these problems clearly differ. The intertwining of the tantalum market with a weak tin market has contributed to depressed tantalum production. Considered with the relatively limited number of known deposits, a potential supply problem emerges. Any strategy to assure a long-term steady supply, then, would have to focus on maintaining a stable, high price for tantalum and its coproducts. Moreover, any technological advances that would facilitate the discovery of new sources, permit extraction from submarginal sources, or improve methods for recovering tantalum from tin slag would have long-term supply benefits as well.

On the other hand, there are neither reserve nor production problems for chromium in either of its two most heavily imported forms. Rather, the issue is reliance on a supplier whose political future is perceived to be uncertain but which also exhibits more stability and has higher quality resources than its competitors. To decrease this reliance, the United States might wish to provide incentives for new exploration and development, even at the risk of higher costs or increased excess capacity. In addition, accelerated research efforts to develop ways to decrease chromium's use in certain applications could be undertaken or supported or political initiatives to assure a more stable, long-term relationship in the area could be pursued.

Such significant differences among minerals make it imperative for the policymaker to define mineral-specific needs on which to base initiatives rather than to assert general needs and devise general initiatives to meet them. A general policy to encourage minerals exploration and development overseas, such as the one the United States has pursued for the last 5 years, cannot guarantee that efforts will focus on the most pressing U.S. minerals needs. Furthermore, a general policy is not likely to solve access problems associated with individual minerals 1/

In our June 25, 1981, report, "Minerals Critical to Developing Future Energy Technologies, Their Availability and Project Demand" (EMD-81-104), we concluded similarly that generalizations about the availability of minerals are difficult, if not impossible, to make and that the situation for each strategic and critical mineral may have to be analyzed and evaluated on its own merits.

Best U.S. efforts to obtain minerals addressed specific needs

During the Korean War, the U.S. Government energetically attempted to foster mining investment at home and abroad to inincrease possible sources of certain strategic and critical minerals supplies. The experience of World War II and the additional shortages threatened by the Korean conflict caused policy-makers to focus on strengthening short— and long-term U.S. access to these minerals. The programs that resulted sought to fulfill specific needs.

Two primary means by which the United States supported new mining investments were through Title III of the Defense Production Act of 1950 and, as noted in chapter 3, through Eximbank credits. The Defense Production Act was enacted in 1950 as a preparedness measure to respond to the aggression in Korea. It authorized the President to institute and maintain several programs to improve the readiness of the Nation's industrial base and prepare for national defense mobilization programs. Title III provided financial assistance for the expansion of both domestic and foreign productive capacity and supply. Among other things, the U.S. Government could offer loans and loan guarantees for exploration and development of strategic and critical metals and minerals, purchase or make commitments to purchase mine output for use or resale, and develop substitutes. the Korean war period, Title III programs had a major impact on expanding the supply of several strategic and critical metals and minerals. For example, these programs doubled U.S. aluminum production, increased U.S. copper mine capacity by 25 percent, initiated U.S. nickel mining, and greatly expanded worldwide columbium-tantalum mining and processing. 1/

Eximbank attempted to encourage the development of certain scarce strategic and critical minerals through export credits made with its own funds and as an agent for other Government agencies (See pp. 30 to 32.) In most cases, these credits were accompanied by contracts for the purchase of at least a portion of the output for national stockpiles, thus fulfilling specific U.S. needs. Among the minerals produced were cobalt, manganese, nickel, tungsten, copper, zinc, and molybdenum.

COHERENT INVESTMENT STRATEGY LACKING

The efforts in the mid-1970s to promote mining investment in developing countries have never been part of a coherent,

<u>1</u>/ Serious questions have been raised recently about the high cost of Title III programs and their ability to provide long-term solutions without continuing Federal support. For these reasons, their future use is uncertain.

clearly directed, long-term investment strategy. Their relative importance to one another has never been clarified, and there has been no blueprint for coordinated activity. They are not unique in this regard, however. As the importance of adequate minerals supplies to a peacetime economy has been recognized and the competition for supplies has increased, public and private concern has grown that U.S. minerals policy and efforts to assure adequate strategic and critical minerals supplies generally lack direction.

This concern has been reflected in a minerals debate flour-ishing in the Congress and executive branch and among industry representatives and academics on how to alleviate U.S. import dependency. In April 1982 the Reagan administration submitted a national minerals policy to the Congress proposing a strategy for strengthening the domestic mining industry. However, the policy does not clearly demonstrate mineral-specific needs or describe how initiatives outlined therein would address any access problems and it only briefly considers overseas investment initiatives.

Strong support for greater policy and program direction

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Numerous U.S. Government commissions and study groups, professional materials societies, congressional committees and representatives, researchers, and industry officials have taken up the task of fashioning directives for a national materials policy. One of the first and best known commissions to do so was the Paley Commission, created in 1951 by President Truman to study the broader and longer range aspects of the country's supply problems, identify the issues affecting long-term supply acquisition, and make recommendations for developing a comprehensive materials policy. Another major commission, the National Commission on Supplies and Shortages, was created by the Congress in the aftermath of the 1973-1974 minerals shortages to define the institutional adjustments needed to examine and predict shortages. However, the serious materials shortages which led to convening both commissions eventually disappeared and with them the high-level Government concern about materials supply. In the end, little resulted from their recommendations.

During the current debate on minerals import dependency, concern about a fragmented U.S. approach to strategic minerals acquisition has continued. An example has been the extensive congressional and industry support for legislation to create a mechanism for coherent materials policy formulation and decision-making. In October 1980, the Congress passed the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1601), the first legislation to focus directly and in detail on formulating a national materials policy.

In May 1981, the Chairman of the Subcommittee on Mines and Mining, House Committee on Interior and Insular Affairs, and 50 co-sponsors introduced an omnibus minerals bill to establish a Council on Minerals and Materials for formulating national policies. And in July, the Chairman of the House Committee on Science and Technology and 21 co-sponsors introduced the Critical Materials Act of 1981, which also proposes a permanent council to formulate, coordinate, and implement strategic and critical materials policies. A variety of private sector organizations testified in support of these bills, which are still pending.

New minerals policy does not address recent overseas initiatives

The National Materials and Minerals Policy, Research and Development Act of 1980 called on the President to prepare a plan for conducting policy analysis, making policy decisions, and coordinating the minerals-related activities of responsible departments and agencies. The policy submitted to the Congress in April by the administration focuses primarily on the use of public lands for minerals exploration and development, ways to improve minerals data collection, materials research and development, regulatory reform, and stockpiling. It also designates the Cabinet Council on Natural Resources and Environment as coordinator of national materials policy. 1/

The administration's policy also indicates an intent to formulate future acquisition initiatives with an eye toward correcting access problems arising from U.S. dependence on insecure sources where usable substitutes are not readily available. extent that this intention represents an administration effort to define U.S. minerals needs and direct its initiatives accordingly, the policy improves on the more general initiatives of the 1970s. Unfortunately, the policy refers only in passing to this intention. It is unclear which strategic and critical minerals obtained from potentially insecure sources will be the focus of future initiatives and how the initiatives outlined in the proposal will resolve any mineral-specific availability problems. Determining which minerals are important enough to the U.S. economy and national defense to justify expenditures for their acquisition and weighing the costs and benefits of various initiatives to obtain them require lengthy, extremely detailed analyses of minerals markets, demand and production data, and the status of new substitution technologies, to

<u>1</u>/ The bills introduced in the first session of the 97th Congress were to establish a <u>permanent</u> minerals policymaking body instead of a temporary body, as the Cabinet Council was viewed by supporters of the legislation.

name a few. Nevertheless, we believe that no major changes or additions to current policies or initiatives can be reasonably justified without first demonstrating mineral-specific needs and systematically weighing alternatives for obtaining them. $\underline{1}$ /

Although the administration's policy describes several initiatives to increase access to strategic and critical minerals, it does not address existing or possible overseas investment initiatives. Section 4(9) of the Act requires the President to increase the reliability of overseas supply sources by assessing the opportunities to promote cooperative multilateral and bilateral agreements for materials development in foreign nations. further specifies that the President's plan should include program proposals and organizational structures to implement such provisions as set forth in section 4(9). The administration's policy has complied with the requirement by referring very briefly to two as yet untested overseas initiatives, namely deep seabed mining and the U.S. Trade and Development Program. (See p. 35.)2/ Emphasis on domestic options is significantly greater, although domestic initiatives alone cannot assure a steady, economic supply of the strategic and critical minerals on which the United States is heavily import dependent. Additionally, the policy is silent on the two most prominent overseas investment initiatives undertaken in the last 5 years--the multilateral development bank efforts supported by the United States and OPIC's minerals and energy program. The failure to include these initiatives raises questions about their future relevance and the contribution they will be expected to make.

CONCLUSIONS

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Recent U.S.-supported initiatives to encourage mining investment in developing countries have been only marginally helpful in general and in particular as a means of securing adequate and economic supplies of strategic and critical minerals for the United

In our June 3, 1982, report, "Actions Needed to Promote a Stable Supply of Strategic and Critical Minerals and Materials" (EMD-82-69), we focus in detail on the administration's minerals policy. We conclude that it does not address the fundamental issues of (1) what constitutes a strategic and critical mineral, (2) what is the potential U.S. vulnerability for a given mineral, and (3) what is the proper Federal role, including the benefits and costs of various alternatives.

According to the policy, the administration also is continuing to consider invoking Title III of the Defense Production Act of 1950 to make loans, loan guarantees, price supports or guaranteed purchase agreements available as investment and production incentives. It appears, however, that these options are being reviewed for domestic use only.

States in the long term. Two basic conditions have impeded their performance from the start.

- 1. The initiatives were not designed to meet specifically defined minerals needs and therefore cannot be counted on to acquire the minerals the United States needs. Individual differences among minerals are significant and affect strategies to assure access. By carefully analyzing these differences, policymakers can define levels of need more precisely and develop strategies tailored to the geological and market characteristics of an individual mineral. The result should be efforts that address the most pressing U.S. minerals needs in ways that are most likely to succeed.
- 2. These initiatives have not been implemented as part of a coherent, clearly directed, long-term investment strategy that has considered and weighed the costs and benefits of a variety of domestic and foreign options. The administration's policy presented in April pays only passing attention to two untested overseas initiatives—deep seabed mining and the U.S. Trade and Development Program—and is silent on those which are already operating and which have been the subject of this report. Consequently, both the administration's level of interest in foreign investment initiatives and the importance and expected contribution of the initiatives undertaken during the last 5 years are unclear.

RECOMMENDATIONS

Significant funding and operational changes would be required to increase the effectiveness of some U.S. efforts to encourage mining investment in developing countries as a means of securing strategic and critical minerals resources. Such changes would be premature, however, without the following actions.

We recommend that the Secretary of the Interior as Chairman pro tem of the Cabinet Council on Natural Resources and Environment:

- --Require that acquisition initiatives be based on a clear demonstration of individual minerals needs.
- --Clarify the roles that OPIC's minerals and energy program, U.S. support for the multilateral development bank programs and the U.N. Revolving Fund for Natural Resources Exploration, and Eximbank are to play in securing strategic and critical minerals supplies.

AGENCY COMMENTS AND OUR EVALUATION

The Department of the Interior agreed with our recommendations and noted that it is consulting with the Department of State and other agencies to establish coordinated international strategic and critical minerals development policies. Interior also made technical comments, which we have incorporated, and described several Bureau of Mines activities concerning information gathering and analysis that were outside the scope of our review. Interior considered the title of our draft report inappropriate, however, stating that it "misleads the reader into believing that all U.S. efforts to encourage mining investment in developing countries have been less than satisfactory" when the report "focuses on strategic and critical minerals." We revised the title to indicate that this was our specific focus. We note, however, that the efforts undertaken in the last 5 years to encourage mining investment in developing countries have indeed been only marginally helpful, both generally speaking and in particular, as a means of acquiring the strategic and critical minerals needed by the United States.

Interior also commented briefly on the U.N. Revolving Fund for National Resources Exploration and on some new bilateral initiatives in the minerals area. It cautioned against judging the U.N. Fund's efficacy too quickly. We have not made any judgments about the Fund, stating only that it has not yet had the opportunity to prove itself. (See p. 21.) We cannot comment on the bilateral initiatives mentioned because they are still too new.



United States Department of the Interior

OFFICE OF THE SECRETARY WASHINGTON, D.C. 20240

JUL 14 1982

Mr. J. Dexter Peach Director, Energy and Minerals Division United States General Accounting Office Washington, D.C. 20548

Dear Mr. Peach:

Thank you for giving us the opportunity to review your draft report, "Recent Federal Efforts to Encourage Mining Investment in Developing Countries Have Been Only Marginally Helpful."

We generally concur with the recommendations in the report and are providing you with specific comments in a separate attachment.

Sincerely,

Daniel N. Miller, Jr. Assistant Secretary for Energy and Minerals

Attachment

Department of the Interior Comments on GAO Draft Report,
"Recent Federal Efforts to Encourage Mining
Investment in Developing Countries Have
Been Only Marginally Helpful"

The title of this report may be inappropriate in that it misleads the reader into believing that all U.S. efforts to encourage mining investment in developing countries have been less than satisfactory. As it turns out, the report focuses on strategic and critical minerals, many of which have unattractive investment potential because of perceived high risk and uncertain payoff. It is perhaps for this reason alone that U.S. firms have not shown any enthusiasm despite loan guarantees and risk insurance. Certainly, institutional and operational changes, both domestically and abroad, are necessary in order to foster mining investment in developing countries as a means of securing stable and reasonably priced strategic and critical minerals in the long term. At the same time, however, we should not overly promote the availability of foreign supplies at the expense of our domestic production base. A first priority in any acquisition strategy should therefore address the development of domestic resources.

It is not totally correct to assert that the United States has negligible or non-existent economic resources of tin, chromium, manganese and other types of strategic and critical minerals (p. 2). More correctly, not much is known about their existence because the United States, as with most other countries, has not been adequately explored or mapped for them. Past restrictions on accessability to Federal lands have precluded the acquiring of full knowledge of their resource potential. Should these restrictions be relaxed in the future it is quite likely that domestic exploration activities will increase with or without Federal funding.

It is perhaps a little too soon to judge the efficacy of the U.N. Revolving Fund for Natural Resources Exploration by virtue of its short history of performance. Mineral discoveries are usually made after extensive and diligent searches in various geologic terrains. In the case of some strategic and critical minerals, their geologic scarcity almost guarantees long lead times between investment and discovery, and adds to the cost of exploration. It may be for this reason that the payoff in the Fund's exploration assistance has not been evident as yet.

Bilaterally, several efforts are already underway or being considered that will expedite resource evaluation in developing countries. For example, the Geological Survey is developing a cooperative program with selected countries for the exploration and assessment of strategic and critical minerals, with current focus on nickel, cobalt and manganese in Morocco, manganese in Mexico, platinum in Colombia, and marine chromite placers in the Philippines and Indonesia. At the same time, AID (through its Trade and Development Program) and the Geological Survey are considering opportunities to provide mutual assistance in some of these endeavors.

At the Bureau of Mines, various ongoing programs are addressing the informational and analytical needs of a coherent and well-directed minerals acquisition strategy. These programs include mineral industry surveys; supply/demand modeling; technological forecasting; substitution, recycling and conservation research; and development of cost-effective mining and processing technology for strategic and critical minerals. Additionally, work is in progress to develop indicators of mineral industry financial health, as well as indices of mineral criticality. Together, these efforts will enable policymakers to better define specific needs for individual strategic and critical minerals, and to formulate appropriate initiatives for their acquisition.

Finally, it will be noted that the Department of the Interior is consulting with the State Department and other agencies to establish coordinated international strategic and critical mineral development policies that consider the unique problems associated with each commodity and the political and economic realities of the developing world. The comprehensive review by GAO of previous attempts to encourage U.S. mining investment in developing countries will be helpful in these deliberations.

We agree with your recommendation that acquisition initiatives be based on a clear demonstration of individual minerals needs. We also concur that the Secretary of the Interior as Chairman pro tem of the Cabinet Council on Natural Resources and Environment should clarify the role of OPIC's minerals and energy program, EXIMBANK, and U.S. support for multilateral development bank programs and the U.N. Revolving Fund for Natural Resources Exploration in securing strategic and critical mineral supplies.

EXPORT-IMPORT BANK OF THE UNITED STATES WASHINGTON, D.C. 20571

July 15, 1982

FIRST VICE PRESIDENT
AND
VICE CHAIRMAN

Mr. Frank C. Conahan
Director, International Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

Thank you for the opportunity to comment on your June 1982 draft report entitled "Recent Federal Effects to Encourage Mining Investment in Developing Countries Have Been Only Marginally Helpful." The historical description of Eximbank on pages 50-53 is generally accurate. However, the discussion on pages 54-55 which relates low levels of Eximbank activity to lack of competitive financing is a generalization based on the comments of a few not-totally-unbiased observers, and Eximbank does not agree with this conclusion.

Eximbank data (see the attached table) indicate that, over the last 3-1/2 years, U.S. exporters have won over three-quarters of the mining project cases that they have brought to Eximbank. This high success ratio has been consistent over time and best in the most recent period. Moreover, the cases lost were all due largely to price or quality considerations, not financing. While the Bank cannot be all things to all industries, the high success ratio and the fact that these successes occurred over a broad range of products (e.g., trucks, excavation, and processing equipment) tend to support Eximbank's contention that the levels of recent Eximbank mining activity are principally attributable to the state of global demand and U.S. exporter price competitiveness.

We will be pleased to discuss this with you in further detail if you desire.

Charles E. Lord

DISPOSITION OF MINING TRANSACTIONS SUPPORTED BY EXIMBANK CREDIT/GUARANTEE ASSISTANCE

(10/78 - 3/82)

	Cas	Cases Won	Cas	Cases Lost	Win	Win Share
Period Authorized*	No.	Ε.V.	No.	E.V.	No.	E.V.
		(mil. \$)		(mil. \$)	(%)	(%)
10/78 - 3/80	-	200	~	33	77.8	85.8
4/80 - 6/81	4	50		09	80.0	45.5
7/81 - 3/82	5	88	!]	11	100.0	100.0
Totals	16	338	ε	93	84.2	78.4

*Dates correspond to Eximbank "policy periods"; each period representing different interest rate relationships to the foreign competition.

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