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THE U.S. AND JAPAN AND LATIN AMERICA'S MINERAL RESOURCES

Case Study by WENDELL W. WOODBURY

DEPARTMENT OF STATE A/CDC/ME

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SIXTEENTH SESSION

SEMINAR IN FOREIGN POLICY

DEPARTMENT OF STATE



1973 - 74

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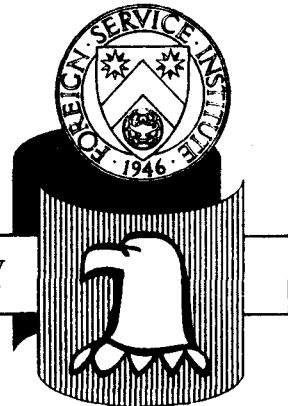
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INTRODUCTION

The United States has long had a special relationship with Japan and Latin America. For different reasons, these special relationships have been keystones of our foreign policy. Relations with both have been subjected to severe strains in recent years by a number of economic conflicts. The international economic system has also been fundamentally changing at such a rapid rate that the familiar benchmarks of the post-World War II period are no longer reliable guides for the future.

In short order we have been buffeted by monetary instability, the energy crisis, sharp increases in raw material prices compounded by the threat of more OPEC-like cartels for other raw materials to drive world prices even higher, and a world-wide inflation of unprecedented severity in peacetime. These developments have buttressed the Limits of Growth thesis that the long predicted era of permanent shortages of raw materials is already upon us.

Japan has become an economic super-power with its Gross National Product (GNP) doubling and redoubling at a rate unprecedented in historical experience for a major industrial power. Japan's requirements for imported raw materials are already huge and they are almost certain to increase substantially even if Japan's growth rate slows. Japan must seek markets and raw materials on a world-wide basis more and more rather than regionally. In the Japanese fiscal year ending March 31, 1973, Japan's overseas investments increased at a rate three times greater than in the previous year. This was accompanied by a dramatic shift from loans to equity investment, much of it in the extractive industries.

The United States has been predominant in the economies of Latin America so long we have tended to take it for granted. The increasing nationalism there, accompanied by a feeling that the United States has ignored their vital interests in following a policy of benign neglect, has subjected our special relationship to tension and strain. Specific irritants include investment policy and expropriation, special preferences, economic assistance, law of the sea, and commodity stabilization agreements among others. At the same time, the United States is becoming more dependent on foreign sources of key raw materials as its GNP grows, reserves are depleted and costs increase. Increased costs and technological difficulties due to pollution controls are new factors accelerating the long term trend.

There is good reason to believe that an increasing share of Japan's raw material imports will come from Latin America. Japan has sought assured access to raw materials through long term contracts, often tied to loans, technical assistance or direct investment. Japan is thus moving into an area long regarded as our backyard while the United States becomes more dependent on its traditional Latin American sources of raw materials and its relations with the area are bedevilled by nationalism and economic conflicts of interest.

In this context, there would seem to exist a serious possibility of conflict with Japan over access to raw materials which might significantly affect the overall United States - Japan security/political/economic relationship. On the other hand, there may be a congruence of basic interests where cooperation and healthy competition on a broad front could prove of benefit to the countries of the region, Japan and the United States. The answer to this conundrum depends on a complex interplay of factors: the availability of resources, the political forces at work, the investment climate, the capacity and attitudes of the host governments, the modus operandi of United States and Japanese firms, and perhaps the most important considerations, the maturity, imagination, flexibility, tolerance, and restraint shown by the people concerned.



This case study was undertaken to make a preliminary assessment of the prospects for conflict or cooperation in the relationship between Japan and the United States in the future development of the non-fuel mineral resources of Latin America.

THE IMPACT OF JAPAN'S ECONOMIC GROWTH

An assessment of the impact of Japan's burgeoning economic growth on the development of the non-fuel mineral resources of Latin America depends on the assumptions made regarding that future growth. Western attitudes toward Japan's relative position have tended to fluctuate almost as much as the stock market in the past 25 years. The notion that Japan was a small and remote force of at most regional significance was replaced by the image of a permanently ultra-competitive world trader. In its extreme form, Japan was viewed as the new merchantilist Sparta, a country so intent on ever larger trade surpluses and reserve holdings that it endangered the world trade and monetary system. The adjustment of exchange parities closely followed by the energy crisis brought in turn exaggerated concerns about whether Japan could even maintain the gains it had made.

Serious projections of Japan's growth future rate have ranged from ten percent made by the Japan Economic Research Council, through 7.6 percent by the Economic Planning Agency of the Japanese Government to 6-6.5 percent by Professors Ohkawa and Rossovsky. Even a pessimistic recent projection assuming a substantial dampening effect on Japan's economy because of potential energy shortages estimated a 5 percent growth in per capita income over the next 15-20 years. This is still substantially higher than the most optimistic long range projection for the United States. Depending on your choice of assumptions as to growth rates and the yen/dollar ratios which might prevail, Japan is likely to approach United States per capita income and consumption levels from as early as 1981 to shortly after the turn of the century. There is little if any question, therefore, that Japan will need much greater raw material imports: it is only a question of the degree of magnitude.

A quarter to a third of a number of minerals moving in world trade at present are destined for Japan. The World Bank estimates that by 1980, Japan's import dependency for the nine major minerals will be at or near 100 percent except for 75 percent for zinc and 83 percent for lead. The cost of pollution controls may raise these latter estimates as well. Because of Japan's acute shortages of space for industrial sites, energy, labor, water and breathable air, it will import more and more processed minerals rather than concentrates. With its import requirements doubling every 8-12 years, Japan's impact on world mineral markets is not in doubt. The question is where the impact will fall the heaviest.

JAPAN'S DEPENDENCE ON LATIN AMERICAN MINERAL RESOURCES

Japan's activity in Latin America has increased markedly in recent years but its stake remains small compared to that of the United States. It has been viewed as a promising source of raw materials, however, and Japan buys about 20 percent of its iron ore and 15 percent of its non-ferrous ores there. An assumption of this study is that Japan's dependence on the mineral resources of Latin America will grow at a significantly more rapid rate than its overall requirements. Japan must look beyond the East Asia region or even the Pacific basin if it is to meet its huge requirements and the energy crisis can only act to reinforce Japan's long standing policy of diversifying its sources of strategic materials where possible in order to spread political and economic risks.

China and the Soviet Union offer interesting possibilities to Japan as sources of raw materials but capital investment and access to key materials will continue to be a hostage to political and ideological considerations in both countries. Nor is either likely to depart far enough from autarchy to allow counter-vailing leverage to enter into play. Thus, Japan cannot afford to become dependent on them for more than a small fraction of its requirements.

In Southeast Asia Japan may already be overextended. Its high profile there and memories of World War II create political difficulties. Political stability in the area also varies widely among countries.

Japan is Australia's best customer for its mineral exports and both countries have benefitted from their complementary relationship. The nationalism of the present Labor Government with its talk of selling out Australia's patrimony for a mess of pottage has probably stimulated second thoughts in Japan about too great economic dependence on even the most stable of countries.

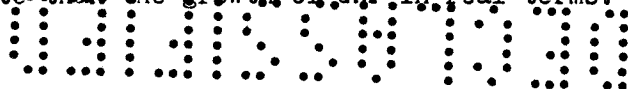
The difficulties in dealing with India's socialist bureaucracy and the political problems of the sub-continent in general make South Asia rather unattractive to Japan's planners. That leaves Africa and Latin America. For a variety of reasons, political, economic and technological, Latin America would seem to be the most promising area in terms of relatively secure access to the vast additional quantities of raw materials that Japan will need during the balance of this century.

The sharp increase in the rate of Japanese overseas investment in the 1971-73 period was undoubtedly related in great part to the inordinately large trade surpluses of those years and the rapid growth in reserves in an effort to lessen pressure for revaluing the yen upwards. Those problems have been resolved for the time being by the Arab oil cartel but it is not believed that investment in the extractive industries will be much affected. While Germany is said to consider investment to secure access to raw materials second in priority only to national defense, it is doubtful if Japan perceives any difference in the two categories. Japanese investment in the mineral industry is thus likely to go forward even if investment in banking, real estate or manufacturing facilities slows or dries up.

It is difficult to generalize about Latin America because it is anything but homogeneous. Brazil, Mexico and Peru were selected as countries to study because of their importance to Japan and the United States and the wide variety of problems and political attitudes they characterized. Brazil is half of South America in terms of area and population and it is probably more so in terms of potential. Mexico is also large and with a diversified economy. It is known that Japan gives these two countries the highest priority in terms of political stability and potential both as markets and as sources of raw materials. Peru ranks third as a source of Japanese imports and provides a classic example of the problems of reconciling the interests of large United States integrated mining companies with Latin American concepts of national sovereignty.

THE DEPENDENCE OF THE UNITED STATES ON THE MINERAL RESOURCES OF LATIN AMERICA

The predominant position of the United States in the economy of Latin America is well known but it cannot be taken for granted in this study. That relationship is going through a period of rapid and intense change. The United States is already substantially dependent on overseas sources of strategic minerals. That dependence is likely to grow at a considerably faster rate than the growth of GNP in real terms.



The World Bank estimates that by 1980, of the nine major minerals, the net import requirements of the United States will be as low as 13 percent only for copper and lead but 95 percent for phosphorous, 97 percent for bauxite and alumina, 98 percent for manganese, and 100 percent for tin. These estimates are, if anything, too optimistic because of the pollution/cost factor. A taconite mine supplying 15 percent of the iron ore for the United States steel industry was shut down temporarily by court order in April 1974 and United States zinc smelters are closing because of the high cost of complying with pollution regulations.

The minor minerals are minor only in terms of quantity and value. Several on which we are virtually completely dependent on imports are essential to high technology industries. The processing of others is so poisonous to air and water and the cost of making plants acceptable in areas of high population density so prohibitive that Brazil is actively planning to take over the industries. Latin America is a likely source for additional requirements of several of these minerals for the United States as well as Japan.

With the growing pressure on food supplies, and the energy crisis, skyrocketing raw material prices, and world-wide inflation, there is a widespread feeling that the long predicted Neo-Malthusian nightmare has arrived: an exponentially growing population scrambling for a finite and declining stock of nonrenewable resources. The success of the Organization of Petroleum Exporting Countries (OPEC) in increasing the 1970 Persian Gulf price of crude oil five times over is being taken by some as the wave of the future. There is a lively intermural debate in the Brookings Institution on this topic between Messrs. Bergsten and Trezise. Mr. Bergsten expects a host of commodity cartels, for copper, bauxite and tin among the minerals, to be organized by the developing countries along the lines of OPEC. Mr. Trezise stresses the differences rather than the similarities in the situations which leads him to conclude that on the basis of past experience that the odds are heavily weighted against the success of additional commodity cartels.

Cutthroat competition between the United States and Japan for resources in Latin America or elsewhere would immeasurably increase the bargaining power of such cartels it goes without saying as well as exacerbating our overall relations. The assumptions on which this case study is based were examined on the ground during three weeks of travel in Brazil, Peru and Mexico in interviews with government officials, diplomats, mining officials, scholars, bankers, economists and others as well as consultations and research in Washington.

BRAZIL

A mining consultant said that he does not consider Brazil to be a major mining country at present although it has the potential to become one of the world's greatest. Although 40 to 50 foreign mining companies are active in Brazil, only a few are engaged in mining while the others are still at the exploration stage. The seventies will be mostly a period of exploration while the eighties and nineties will be periods of development and exploitation. Most of Brazil has not been adequately surveyed geologically. This is a result of the concentration until recently on the accessible coastal areas and of the neglect of infrastructure. Eighty percent of Brazil's freight moves by truck and railroads and coastal shipping have been neglected until recently. President Geisel has named as his three top priorities agriculture, railroads and mining. Huge deposits of high grade iron ore now being developed in the northeast near the Amazon, as much as 17 billion tons, and bauxite deposits, which may be at least as large, have been discovered only in the past seven years. Only nine percent of Brazil's enormous hydroelectric potential is now being used. Cheap and abundant electricity and huge bauxite reserves hold out the prospect of Brazil becoming a major aluminum producer. Electricity will also be important to the development of its nickel deposits.

Brazilian attitudes toward the development of its mineral resources and foreign investment are very pragmatic. Foreign corporations may obtain exploration and mining rights, but the Government of Brazil continues to advocate that corporations have a majority Brazilian interest. Government controlled corporations take the majority interest where the project is too large for the private sector although the Government often sells off a part of its share to the public when the project becomes a going concern as long as 51 percent remains under Brazilian control. The size at which Brazilian control of a project becomes advisable is flexible but it seems to be trending downward according to foreign mining consultants. Pressure was applied to ALCAN in 1972 to sell to Brazilian interests a majority of its bauxite mining subsidiary.

The largest iron ore producer in Brazil is the Cia. Vale do Rio Doce which is 86 percent controlled by the Brazilian Government. It is involved in a joint venture 51/49 percent with United States Steel in a tremendous project to develop the Amazon iron mines.

Just how flexible the concept of Brazilian control can be is seen in the merger of a Hanna Mining Company subsidiary with a Brazilian holding company controlled by the Antunes interests. Although Antunes, a self-made mining magnate, is one of the wealthiest men in Brazil, it was difficult for him to find the domestic capital for this \$200 million iron ore enterprise. Of the 51 percent owned by his holding company, he controls 61 percent while his American partner in several other of his enterprises, Daniel K. Ludwig, owns 19 percent through his bulk carrier shipping company, Universe Tankships, and five major Japanese steel companies have a 20 percent share. Nevertheless, Antunes controls the new corporation, Mineracao Brasileira Reunidas, through the control of the holding company. Japanese participation was conditioned on long term supply contracts for iron ore which appear to be their principal concern rather than management.

Long term contracts are a Japanese innovation which they developed through necessity as a substitute for control of raw material sources. According to United States industry sources, these contracts work well and it has been relatively easy to renegotiate prices in response to changing market conditions. These sources consider long term contracts a workable alternative to the control over the source of raw materials which was formerly considered desirable if not essential by United States vertically integrated metal companies.

Although Japan's direct participation in Brazilian iron mining is rather slight, it is by far the most important customer for Brazil's iron ore. By contrast, the United States is a poor eighth. Both the United States Steel and Hanna projects envisage Japan as their major customer. Railroads are being built to deep water ports designed to take bulk carriers up to 300,000 tons. While United States Steel may consider the Brazilian deposits as a strategic reserve, the structure of the American steel industry is such that bulk carriers, which cut freight costs in half, cannot be used. There are only two major American steel mills on tidewater, Bethlehem's Sparrow Point in Baltimore, and United States Steel's Fairless near Philadelphia and water depths permit ore carriers only up to 50,000 tons.

The Australians are said to be confident that they will retain their Japanese market for iron ore, bauxite and other minerals even if Japanese economic growth tapers off. Their relatively short haul will supposedly give them the competitive edge over more distant sources, especially Brazil, because of the great distance involved and the high cost of bunkers. Even though their bulk carriers cannot navigate the Panama Canal, the Brazilians scoffed at this contention. They pointed out that their iron ore carriers are designed to carry a cargo to Japan around Africa, travel empty to Kuwait and there pick up not only bunkers but a cargo of crude oil for Brazil or possibly Western Europe. Australia, they stressed has no possibility of back haul cargo from Japan.

U.S.S.U.

The Japanese are very interested in the Amazon iron deposits in terms of participating in a major steel mill project at the proposed port. Brazil has no concern about exporting iron ore but it does plan on producing its own steel requirements. With Japanese loans and some equity participation, Brazil's steel capacity will be expanded to 25 billion tons by 1978 - 5 million tons more than projected for domestic needs - leaving a sizeable surplus for export. The Japanese are probably primarily interested in supplying steel making equipment but they may be thinking of importing some pig iron or even fabricated steel.

The Brazilians are also discussing exporting steel to the United States. They calculate that steel from the projected Amazon plant could be landed in New Orleans at a cost less than the labor cost of American made steel. A United States industry source believes that this is well within the realm of possibility. Low priced imports of steel manufactured with Brazilian ore and labor and Japanese capital and technology could create other problems outside the purview of this study.

Brazil has few apparent hang-ups about exporting raw materials. The announcement by Venezuela that in the future it would not export iron ore, only steel, was met with amused pleasure that this development would coincide with the opening up of the Amazon deposits. Nor was there any interest in a bauxite cartel. As an importer of 80 percent of its petroleum, Brazil is a major sufferer from the Arab oil cartel.

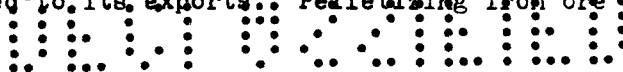
In many ways, Brazil's interests appear to be parallel to the industrialized countries. Brazil is becoming an important investor in foreign raw materials. The Government oil monopoly, PETROBRAS, is actively seeking foreign oil in the Middle East, Venezuela, Bolivia and Peru. This is believed to be the forerunner of many Brazilian firms moving abroad. Phosphatic fertilizers represent another case where recent developments have led Brazilian interests to conclude that they must have more control over their sources of supply. Natural gas from Peru and Bolivia is looked to as a key to the development of Brazil's frontier wilderness region.

Japan has been active in the other mineral sectors of Brazil, particularly in chromium, nickel, and tungsten, primarily to gain assured access to supplies. The approach of the Japanese companies has been very cautious on the whole. They have shown little interest in exploration. Rather, they prefer to buy into an operating property with proved reserves. That is difficult in Brazil because small Brazilian mining companies spend little on exploratory work and often have proved reserves amounting to only a few years production.

Exploration is very risky in Brazil because of the primitive state of the geological surveys for much of its vast expanses, a needle in a haystack sort of thing. The lack of infrastructure in much of the interior makes it extremely expensive. A mining consultant estimates that it costs \$2 million a year to keep one team in the jungles using helicopters. It takes 7-9 years of exploration up to the production stage and an average of 20 years to recover initial investment.

A Brazilian development economist of international reputation is impressed by the natural complementarity between Japan and Brazil. Japan has the capital, technology and markets Brazil needs while Brazil has the raw materials and a large reservoir of underemployed, low cost labor. It has a huge area, much of it virtually unpopulated, while Japan is realizing more and more the heavy human and economic costs of cramming so much heavy and dirty industry into its crowded islands.

As noted above, Brazil is looking forward to taking over some of our more polluting mineral production. While not concerned about exporting raw materials per se, Brazil's planners are vitally interested in maximizing the value added to its exports. Pelletizing iron ore doubles its f.o.b. value



and saves shipping costs. The value of tungsten powder is greater than tungsten concentrate by a factor of three, tungsten metal by a factor of nine and the difference is even greater for other metals...

Anyone who has seen Sao Paulo and the Valley of Mexico is aware that industrial pollution is already a serious problem in parts of Latin America. Brazil is apparently not as ready as heretofore to import pollution and it is looking closely at some industry proposed by the Japanese, petrochemicals as an example. Brazil also showed a greater willingness to discuss problems of environmental pollution in the March 1974 meeting of the UN Environment Program (UNEP) as compared to Stockholm.

A ranking Mexican official remarked tartly that the Government of Mexico did not consider pollution a problem of importance as compared to bread for the people of Mexico. In contrast, it is noteworthy that in Peru, one of the charges against Cerro de Pasco to justify its expropriation was the polluting of major rivers and the air. The Peruvian coast, though one of the driest and most desolate areas of the world, suffers from a temperature inversion like Los Angeles and an American mining company pays the Peruvian farmers for damage to their potato crops from sulphuric acid originating from its stacks.

The Japanese appear to have a high degree of acceptability in Brazil. An American businessman who had lived there for several decades wryly observed that they fit in better than his fellow Americans. This in part reflects the generally high opinion of the Brazilian Nisei who are well assimilated although they do not intermarry to the extent of other national groups. Ueki, the Minister of Mines and Energy is a Nisei, the second cabinet member of Japanese ancestry. He was the brilliant protege of President Geisel when Geisel was the head of PETROBRAS.

The readiness of the Japanese to take a minority position in Brazilian enterprises is much appreciated by the Brazilians. A Japanese businessman pointed out that the Japanese until recently in any case had a policy on foreign investment discouraging foreign control of Japanese corporations so they could hardly insist on a controlling interest in Brazil. A Japanese management consultant indicated that many Japanese companies feel that through their technological and management skills, they will enjoy effective control in any case. In fact it appears to be the case that the Brazilian majority partners in what had been family firms have been so impressed by the ability of the Japanese that they asked them to take over the management. The same consultant believes that the Japanese are moving toward a new concept of the multi-national corporation where a number of foreign interests, none dominant, would combine with local interests. The firm would have no foreign headquarters and would have no specific identity as United States, Japanese, British, etc.

There are negative factors, of course, most of them relating to the profound cultural and language differences. Large Japanese missions with the ever present cameras and sometimes with only the most tenuous hold on a common language have not escaped disdainful comment. There have been instances of apparent insensitivity to host country sovereignty and amour propre. The slowness of the decision making process in Japan is an irritant as elsewhere. A director of a medium size Japanese firm explained to his Brazilian adviser that the decision on their participation in a relatively small project for a mineral they badly needed had to be submitted to a "parliament" of 50 persons. It was readily conceded on the other hand that once a decision was made, the Japanese proceeded with vigor and dispatch.

Japanese behavior on the golf course seems to be a worldwide irritant and surfaced again in Brazil. It is difficult for a non-golfer to understand the complaints but in Brazil they are accused of playing too slow, supposedly because their strokes lacked distance as compared to Westerners. While this might seem reminiscent of the pre-World War capard that the Japanese would

never make good fighter pilots because their legs were too short to reach the controls, a knowledgeable source very sympathetic to the Japanese concedes that they do play at a slower pace, probably because they play a more measured and cautious game, and they are not good at letting other golfers play through. He pointed out that this tends to irritate the most influential groups of almost any host country. If Japan, Inc. were to exist, it might make a substantial public relations gain by asking its minions to sacrifice golf for Japan or at the minimum allow the gaijin to play through.

PERU

In contrast to the diversified economy of Brazil, copper remains the key to Peru's economic development. It accounts for half of Peru's exports and before nationalization, there was \$1 billion in foreign investment in the industry. The February 1974 agreement settling a number of rancorous United States-Peruvian investment disputes greatly improved the investment climate and set the stage for the further development of the Peruvian mining industry. Peru is now in a very favorable position as shown by the fact that while mineral production increased only slightly in 1973, higher prices increased the value of mineral exports by 50 percent. According to a mining source, the world price of copper has reached \$1.40 per pound whereas the cost of production in his company's mines is only 25 cents.

The view of the outside world regarding the investment climate in Peru is colored by the nationalization of Cerro de Pasco and other properties but foreign investment there remains surprisingly vigorous. The \$550 million Cuajone copper mining project of the United States owned Southern Peru Copper Company will become the largest copper producer in Peru by 1976. It is completely United States owned except for 2-3 percent owned by the "Mining Community" of workers in the mining industry financed by a profit sharing arrangement whereby six percent of gross profits is set aside to purchase equity for the workers. Ideally, in due course, the workers will own a controlling interest. They now have a member on the board of directors but their share of equity is not increasing because SPCC is reinvesting earnings at a more rapid rate. Either way, the Government of Peru accomplishes major policy objectives.

The SPCC has another hedge against future expropriation. A number of European banks together with United States banks participate with five Japanese banks in a \$200 million financial package, together representing the great majority of the world's copper consumers. The Japanese share of \$35 million is tied to a 15 year copper sales contract. Japanese interests have also helped finance a smaller United States controlled operation tied to a long term contract for zinc. This company swam successfully against the tide in recent years in establishing a new operation with only two expatriates on the staff.

The only iron mining company in Peru is the United States owned Marcona Company which leases an ore body near the coast from the Peruvian Government under a contract which runs until 1982. Conversion to a joint venture with the Government is now under discussion in which Marcona would take a minority position. This would have certain advantages as against a lease arrangement; the GOP would participate in the profits rather than receive a fixed royalty per ton without regard to the price received for the ore; the mining community would share in the profits but would not acquire equity; and less labor trouble could be expected in a Government enterprise than one under foreign control. It is also planned to increase the value of its 10 million ton annual production by erecting a pelletizing plant, a major capital investment.

Eighty percent of the iron ore production is exported to Japan, 15 percent to the United States and only 5 percent to Europe. A Marcona subsidiary operates 150,000 ton bulk carriers to handle the Japan trade. Because iron ore is

worth less than washed gravel per ton, freight costs are an all important consideration. The isolated position of the mine on the northwest coast of South America makes it difficult to compete in the United States and European markets because of the 80,000 ton limit imposed by the Panama Canal. Peru has several other known reserves of iron ore but they are too far from the coast over some of the most formidable terrain in the world to make their development economic at present prices.

A consortium of five Japanese copper smelters is taking a 49 percent position in a joint venture with the Peruvian Government to develop the large but low grade copper deposits at Michiquillay in northern Peru. The low grade of the ore, the distance from the coast and lack of infrastructure in the region had made this deposit economically marginal at prices that prevailed in the past. In addition to the usual construction and equipment costs, mining projects in Peru generally require vast capital outlays for transportation, water, housing, and health and educational facilities. The new venture will need to raise only three-fifths of the estimated \$457 million in capital costs (\$253 in foreign exchange) because "infrastructure costs" in this case will be separated from "mining costs". As part of regional development, they will be financed from the budgets of other departments.

This project may well set the pattern for future projects of this magnitude in Peru. Whereas in Brazil, the private sector is encouraged to take over the Brazilian majority interest where it is able, in Peru as a matter of doctrine as well as sheer necessity, the Peruvian Government becomes the majority partner. Brazil is an alleged exemplar of the "trickle down" theory of economic development while Peru is committed to "redistributive justice" but there is not all that much difference in practice with regard to major projects. A foreign banker pointed out that Peruvian Government ownership could be an advantage in mobilizing foreign loans because the full faith and credit of the Government would secure the loans and Peru's credit rating internationally is excellent.

American mining officials in both Brazil and Peru agreed without exception that the day of wholly owned foreign companies in the exploitation of natural resources was over in Latin America. Most believed that even minority equity holdings were not especially desirable and presented undue political risks. The preferred mode for foreign investment in the mining sector was the service contract, from initial exploration through development to actual operation. Payment would be received under long term contracts in the form of mineral concentrates. Traditional arguments as to the economic and technological advantages of integrated ownership and control from the raw material to the finished product were dismissed as beside the point in light of current political realities.

It was also generally agreed that this point was better understood among Americans in Latin America than it appeared to be in the United States. Several implied strongly that they often had more difficulties with their executive officers and boards of directors back home than they had with their local associates. An American banker bluntly said that the Council of the Americas, which represents 90 percent of United States investment in Latin America, was 10 to 15 years behind the times, that it did not understand the new nationalism, and that it lived in a world that no longer existed.

A Government marketing firm, Minera de Peru, is by law the sole purchaser of minerals for export. This control appears to be almost nominal where the authorities are satisfied with the marketing efforts of the company concerned. A Peruvian mining company negotiated a sales contract with Japan for zinc for example on an ad referendum basis subject to the approval of Minera de Peru which was speedily forthcoming. The advantages of this system to the host country to insure a true arms length relationship with affiliated companies or subsidiaries is readily apparent.

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refrigerant and propellant gases. Mexico appears willing to import pollution from the United States and Japan in the interest of increasing employment for its rapidly increasing labor force.

The future development of the Mexican mining industry appears to lie in the application of modern techniques for the exploitation of large deposits of low mineral content. Such deposits are abundant but their exploitation requires heavy capital investment for large scale operations and the employment of high technology. The application of new technology and equipment has resulted in the production of silver in this century double that produced in the preceding four centuries.

The need for large injections of capital and advanced technology indicates a role for foreign capital but it obviously will have to come in on Mexican terms. These terms would seem to require not only greater participation by Mexican capital but greater involvement of the Mexican Government itself than Brazil or even Peru. The legal basis for foreign participation is the Mining Law of 1961 which requires "Mexicanization" of the industry. This means at least 51 percent ownership by Mexican natural or legal persons and the required percentage of Mexican ownership rises to 66 percent when the resource is incorporated into the national mineral reserves because of its exceptional importance to the country. The 1961 law granted concessions of 25 years to existing enterprises with a majority of foreign capital, then 90 percent of the industry, but Mexicanization was completed in ten years when the Mexican Government purchased 51 percent of the Cia. Minera de Cananea from the Anaconda Copper Company. Anaconda retains 49 percent interest and access to the output of the property, the largest copper producer in Mexico. Despite its name, ASARCO Mexicana is now 51 percent Mexican owned with American Smelting and Refining retaining 49 percent. It remains very important in the Mexican mining industry operating coal, copper and lead mines and copper refineries and lead smelters. Mexico's leading mining company is probably Industrias Penoles formerly controlled by American Metal Climax but now almost completely Mexicanized. It has been the vehicle for much of the Mexicanization program and it is heavily involved in mineral exploration and the re-opening of old mines. In many of its new ventures, it works in partnership with foreign companies.

The Japanese have shown considerable interest in investing in the Mexican mining industry but their presence remains small. The first really large investment was made in April 1973 when Mitsubishi purchased a 75 percent interest in Mexico's largest salt producing firm in lower California from its American sole owner, Sea Tankers, Inc., of the ubiquitous Daniel K. Ludwig. The Mexican Government purchased the remaining 25 percent. The transaction involved some \$50-60 million.

Because the salt industry is not considered mining, Mitsubishi is permitted to hold a controlling interest, even 100 percent, but a Mexican official said that the Japanese were very clever to involve the Government in the project. This project normally exports all of its five million ton annual production. The United States West Coast chemical industry has absorbed about 3 million tons to produce caustic soda and concern has been expressed about plans to begin exporting 3 million tons to Japan and to install a salt using chemical plant. On the other hand, there are other reports that the production of the project will be increased to 6.5 million tons annually.

The Japanese Export-Import Bank, with the participation of twenty Japanese banks, has lent \$78.7 million to the Mexican Development Bank to finance equipment for part of the Las Truchas iron ore and steel mill project. This was reported to include an iron ore pelletizing plant for export to Japan. Mexican officials doubt that Mexico will be in a position to export significant amounts of iron ore, however. First priority will be given to making Mexico self-sufficient in iron ore. Exports of iron ore have been increasing

while imports decreased in 1972, nevertheless, the value of imports was still four times larger than exports that year. Furthermore, large expansion programs are being undertaken by Mexican steel producers to increase steel production from six to ten million tons in the 1976-80 period which are designed to make Mexico self-sufficient after 1976. Japan has offered to rebuild four ports on Mexico's west coast to facilitate trade with Japan but Japanese sources indicate that the main interest here is in cotton exports, much of which now transits the United States. These same sources indicate that currency devaluation and the energy crisis may have priced Japan out of the market for the remaining phases of Las Truchas. They indicated jokingly that they now must emphasize quality as a more important consideration than price.

In August 1972, the Secretary of the National Patrimony, Horacio Flores de la Pena, stated that with the Mexicanization of mining virtually complete in the area of production, the time had come to Mexicanize marketing. Later in the year, a new exporting and importing company was formed with the Mexican Mining Commission, a government agency, holding a 51 percent interest while 49 percent was shared equally by two Japanese trading companies, Mitsui and Marubeni. The company will deal in the interchange of mining products, machinery, equipment and technology. Its purpose will be to cut out the middleman (read the U.S.). Trade will be directed not only to Japan but to all the world through the Japanese commercial network. No information was developed as to how this operation is working out in practice. Negotiations are reportedly under way for similar companies with United States, West German and Canadian participation.

Japanese official sources in Mexico rated Mexico even ahead of Brazil in terms of political stability and low investment risks but said that it was difficult to interest Japanese business firms in the opportunities there. Mexican psychology and business practices are foreign to the Japanese and they prefer to deal with the "Anglo-Saxons" and Europeans. A Japanese official observed that the more he learned about Mexico the more he realized how pervasive is the influence of the United States through long and close association, inter-marriage, et cetera. Despite the flurry of recent activity, Japan is still only on the periphery of Mexican life. On very large and important projects, therefore, he would advise Japanese businessmen to look for joint ventures with American interests as well as Mexican.

CONCLUSIONS

1. Over the longer term, a decade or more, a scarcity of mineral resources in Latin America will probably not be a major problem in the United States-Japan-Latin American relationship. The outstanding impression in all three countries visited was that current production and proved reserves have hardly scratched the surface of their potential. Present high prices act as a powerful stimulant and capital and technology to develop additional resources can be imported on terms compatible with current concepts of national sovereignty. Governments in the three countries have given the mining sector high priority in their development plans in terms of both domestic consumption and exports. Given political stability, the mineral sector should contribute importantly to internal development, foreign exchange earnings and to the growing requirements of the industrial countries.
2. It was borne home forcefully that access to mineral resources will be on the terms of the host Governments. Brazil and Mexico are important consumers of raw materials as well as producers, importers as well as exporters. Their mining industries will be oriented to meet the needs of their economies as they perceive them. Their diversified industrial sectors will undoubtedly receive first priority. In important ways, their interests are as much parallel to the industrial countries as they

are opposed and simplistic North-South or LDC-DC categories hardly apply. Both have been hurt by OPEC and hurt as well as helped by the sharp increase in world prices for other minerals... Raw material cartels for minerals could be a mixed blessing for both although Peru of course is very interested in keeping up copper prices.

3. There was no real evidence of a Japanese tendency to strike special deals to secure scarce mineral resources at the expense of other consumers or of unfair competitive tactics. While concern has been expressed by American interests about Japan pre-empting much of Mexico's salt exports, salt is hardly regarded as a critically scarce material except in Japan. Accusations were also made that Japan seeks to divert Peru's potential exports of crude oil to Japan by building the Trans-Andean pipeline to the coast. This remains largely a potential problem and the Government of Peru will make the ultimate decision as to the disposal of its petroleum production according to what it considers its best interests.
4. Japanese participation in the mineral sector is generally welcomed in the three countries. It is undoubtedly related to the wish to dilute United States dominance in Mexico and Peru but this seems less important in Brazil. On the whole, the approach of the Japanese has been innovative, sensitive, flexible and low posture. As a relative newcomer in the region, their tactics are probably a result of historical necessity but they are well suited to the present climate. The overriding consideration for Japanese participation in the mining industry is assured access to raw materials. Profit from investment or marketing in third countries is definitely subordinated to that.
5. The entry of the Japanese into the mineral sector of Latin American countries has undoubtedly quickened competition and increased the relative bargaining power of the producing countries. More remarkable, however, is the close association with United States interests that has developed in Brazil and Peru, especially in iron ore. United States companies are heavily involved in production there but there is no major market in the United States. This is also true to a lesser extent with respect to copper, lead, and zinc in all three countries. Where Japan is making a major direct investment as in copper in Peru, this would act to increase world production which can only have a stabilizing effect on prices. Infusions of Japanese capital and technology are additive and supplementary to those from the public and private sectors of the United States and as such they should hasten the attainment of United States and Latin American mutual development goals.
6. Brazil, Mexico and Peru hope to take over more of the hard and dirty work of heavy industry from the United States and the other industrialized countries to increase the productivity of their workers. As industrial pollution grows, they will probably be less willing to import industry without regard to the cost. This is hardly an either-or proposition for new technologies to reduce pollution from refineries and smelters now exist and can be employed in new installations. It will be a matter of balancing relative costs and a large in between area exists.

OVERALL ASSESSMENT

This cursory case study can hardly do justice to what turned out to be a much more vast and complicated subject than anticipated. It is only a partial approach by necessity and does not treat the other Latin American countries or world supply and demand for mineral resources, nor does it consider political variables. Acknowledging this and taking refuge in the usual caveat of the economist, ceteris paribus, my assessment is that the acceleration of Japanese involvement in the minerals sector of Latin America should make a net contribution to overall United States interests.

Difficult problems will continue to appear and the increased competition and structural changes in the industry may well have painful consequences for individuals and organizations. The overall interests of the United States will be served, however, in terms of contributions to the economic development and political stability of a region of crucial importance to the United States and in reducing the excessively high profile of the United States in Latin America with its attendant political disabilities. Both should contribute to the more mature political relationship we are trying to work out.

The United States retains a strong position in Latin American markets. If we maintain our competitive edge, the economic stimulus to the region from Japanese purchases of minerals and investment in mining should benefit United States exporters at least in proportion to current market shares.

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