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POST-WAR JAPANESE
RESOURCE POLICIES AND STRATEGIES:
THE CASE OF SOUTHEAST ASIA

Shoko Tanaka

POST-WAR JAPANESE RESOURCE POLICIES AND STRATEGIES: THE CASE OF SOUTHEAST ASIA

by Shoko Tanaka

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Preface

This study is an examination of the historical development of Japanese resource policy during the post-war period; from the early 1950s to the early 1970s. As a resource-poor country, Japan has been dependent on imports through foreign companies for nearly all fuel and mineral resources. That is, Japan has been vulnerable to potential resource shortages, supply suspensions or price increases, any of which would hinder economic activities. Thus, in the 1960s, a resource policy for the purpose of ensuring supplies from Japanese-controlled sources became an integral part of Japanese foreign economic policy. Japanese resource policy development was the result of a conscious and deliberate effort on the part of the Japanese government and private corporations.

This paper focuses on the Japanese political and economic structure within which resource policy was devised and implemented. The integrated policies of both the Japanese government and private Japanese corporations were formulated through close relations between both the government and extractive industry firms. The government role was especially significant in determining the orientation and implementation of policy. Government supportive measures included financial and technical assistance to the extractive corporations and economic aid to producing countries.

To provide context, policy development was also examined in light of industrialization, the changing international resource situation, and the growing strength of the Japanese economy. The increased economic capability of the Japanese participants, in terms of capital and technology, enabled them to embark on more active resource policies. A power shift between the international oil and mineral industries and producing countries also provided favorable conditions for Japanese resource policy. These international and domestic factors

contributed to the evolution of Japanese resource policy, from a passive and domestic orientation to a more active and "autonomous" one.

Finally, the paper examines the policy strategies of the government and the extractive corporations in Japanese resource ventures in the Southeast Asian countries (Indonesia, the Philippines, Malaysia, Thailand and Burma), encompassing both energy sources (petroleum and LNG) and non-ferrous minerals (copper, nickel and bauxite). The case studies support the argument that the development of Japanese resource policy is exemplified by conscious policies devised through close government and private industry cooperation.

* * * * *

This volume has its origins in my M.A. thesis submitted to Cornell University in 1982. Preparing a manuscript requires the personal support and assistance of many. Professor T. J. Pempel, as the chairman of my graduate committee, has always offered valuable guidance and advice, from which I have learned a great deal. Professor Benedict G. Anderson, the other member of the committee, read the manuscript and gave me helpful comments. I owe a debt to Professor Peter Katzenstein for his insightful remarks which helped me formulate the project.

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Shoko Tanaka

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INTRODUCTION

In the period since World War II Japan has achieved spectacular economic progress and become a world economic power. Many international and domestic factors contributed to this economic growth. High private investment, a well-educated and skilled work force, far-sighted government economic policies and favorable international political and economic conditions are but a few of the factors which combined to contribute to Japan's growing economic strength. To accomplish this amazing expansion, resource-deficient Japan has had to import nearly all the fuel and mineral resources it has used for industrial production.

The White Paper of the Ministry of International Trade and Industry (MITI) states:

The unavailability of energy and natural resources would result in costly economic disturbances including a rise in unemployment, low economic growth, and an austere life style. . t . Guaranteeing economic security by securing stable energy and resource supplies has been indispensable for economic welfare as well as for a long-term effective economy in Japan (MITI, 1980 p. 246).

As a resource-poor country, Japan has been vulnerable to potential resource shortages, supply suspensions or price increases, any of which would hinder economic activities. Thus, for the Japanese government and industry securing stable, low-cost resource supplies has been a major concern. A resource policy designed to ensure such supplies has been an integral part of Japanese foreign economic policy.

A number of authors have examined Japanese resource policy, especially with regard to energy sources (Morse, 1981a, 1981b; Okita, 1978; Wu, 1977). The most common argument is that an active Japanese resource policy is a recent phenomenon begun in the 1970s in response to

the 1973 Arab Oil Embargo, the so-called "oil crisis" and the subsequent oil price increases. This interpretation places the emphasis for Japan's active resource policy on independent "resource diplomacy" between Japan and the oil producing countries in the Middle East. Such an independent energy policy is said to be causing discord between Japan and the Western nations, especially the U.S. (Caldwell, 1981).

This paper seeks to investigate the historical development of Japanese resource policy period since World War II, arguing against those who perceive that policy as a recent phenomenon. Resource diplomacy with the Middle Eastern countries did become particularly active after the oil crises; however, it was not the first product of the Japanese government's resource policy in response to instability in oil supplies. Japanese resource policy began well before the oil crisis, and was not the result of reactions to abrupt events. Instead they represented a series of conscious efforts by the Japanese government and private corporations to achieve greater independence in regard to overseas resource extraction. Furthermore, Japanese resource policy has not been confined to oil; it also encompasses other minerals. To look only at Japanese energy policy, especially toward the Middle East after the oil crisis, ignores the integrated evolution of Japanese resource policy as it has been conducted by the government and private companies. Even before the oil crisis Japanese resource policy had been implemented not only in the Middle East but also in other parts of the world. This study delineates policy developments in the period from the end of the Second World War until the mid 1970s, when the oil crisis began to affect the policy.

This paper examines policy evolution in terms of the Japanese political and economic structures within which it has been devised and implemented. The close relations between the Japanese government and extractive industries have a genealogy and history determined by government policies and the industrial structure of the oil and mineral companies. Moreover, while early developments may have occurred in a

relatively isolated, national context, later events must be seen in light of the internationalization of the Japanese economy, due to the economy's growing strength and the changing international resource situation. This explanation of Japanese resource policy is supported by a more detailed examination of Japanese actions in Southeast Asia.

The first section describes the general importance of resource policy and its connection to the foreign economic policies of industrialized nations. The emergence of multinational oil and mineral companies in the Western industrial countries and government policies to protect them suggests the inseparability of government resource and foreign economic policies. For Japan, which lacks a domestic resource supply and has no mining industries comparable to the international resource companies, the resource question has been a particularly important concern of foreign economic policy. Understanding Japanese resource policy also requires an examination of the politico-economic structure of Japanese society, more specifically the government's intimate interaction with private extractive industries. Furthermore, attention is also given to those features of the domestic and international economy which enabled the Japanese government and private corporations to pursue increasingly nationalistic policies so as to secure access to foreign supplies.

The second section discusses the importance of resources for the Japanese economy. The significance of resources is highlighted by the changing structure of Japanese industry and the composition of its national trade. Several special characteristics of Japan's resource situation induced the Japanese government and Japanese corporations to shift from passive resource policies to more active and independent ones. The structure of supply and the consumption of resources were particularly important in this regard.

Section three analyzes the evolution of Japanese resource policy in the post-war period. The major participants in overseas resource policy are the Japanese government and private corporations, including

refiners, smelters, trading companies and resource-consuming companies. The Japanese government, particularly MITI, played a major role in the formulation and direction of resource policy. Administrative and financial assistance to the extractive companies and economic aid to the producing countries have been important government policy measures. In conjunction with such governmental efforts, private corporations have participated in overseas extraction, sometimes alone and at other times in organized consortia. Organized consortia became more common after the mid 1960s. This section will elucidate goals, strategy and tactics of the government and corporations, though this objective is hampered by the secrecy with which most companies operate.

Japanese resource procurement can be divided into three patterns: simple market purchases, loan-tied purchases and "autonomous" development. The changing mix of these procurement strategies subdivides the post-war period into three different segments: 1) the early 1950s, 2) the mid 1950s to the mid 1960s, 3) the late 1960s to the early 1970s. The overall trend was a gradual movement by the companies and the government toward a more active overseas resource policy. Simple market purchases gave way to direct participation in resource development projects through loan-tied deals or equity investment. This change reflected not only the policy changes of the actors in the domestic arena but also factors in the international resource economy, such as government policies in producer countries and the weakened position of the international resource companies.

Section four examines how the aforementioned policy strategies developed in Japan's resource ventures in Southeast Asia (SEA). Due to their importance in trade, foreign direct investment and governmental aid, the Japanese government and private companies have been very economically influential in the countries of this region. Japanese involvement in SEA (especially Indonesia and Philippines) is not confined simply to petroleum and LNG but encompasses other minerals, such as copper, nickel and bauxite. Resource projects in SEA exemplify

the conscious policies that were devised through both governmental and private efforts and the close cooperation between them.

The sources of data and information for this study are varied. The most important are various Japanese government documents, especially those of MITI. Government documents are useful in aggregating statistics and presenting general information on Japanese economic transactions in regard to overseas resource policy. The greatest difficulty was in the collection of information on specific overseas projects. Very little concrete data is available in either government documents or other publications. Information was gathered from articles in various periodicals, many of which are included in the bibliography. The most important sources were periodicals concerning Japanese business activities and general studies of the oil and mineral industries.

This study has been pieced together from disconnected and, sometimes, contradictory sources. Even the dates when resource projects started and the capital shares of each participant were often missing or inconsistent. Limitations in the source materials increased the difficulty of deriving a smooth history of the actual policy development.

Finally, the "resources" studied: petroleum, liquified natural gas, copper, nickel and bauxite, are examined because they have been regarded as especially critical for Japan (see, MITI, 1971). Other raw materials, such as rubber and timber were excluded as they are different from oil and mineral resources in their renewability and their relative insignificance for the Japanese economy as a whole.

I

Resources and Foreign Economic Policy

1. THE RACE FOR RESOURCES

Resources: A Key Factor in Economic and Politico-Military Power

For many years resources, especially fuels and non-fuel basic metals, have been a key factor in industrialization and international political-economic relations. Resource questions tend to be dealt with in the academic field of economics because of their importance as factors in economic production or as trade commodities. It is appropriate that they also be considered in the broader contexts of both the domestic and the international political economy. The private and state sectors of developed and developing countries have been deeply involved in the world-wide extraction of resources. Resources have been and remain a major concern in the formulation of foreign economic policy.

Since the 19th Century European Industrial Revolution, technological innovations have created demand for new and different resources such as coal and iron ore for steel-making (Kurosawa, 1977, pp. 88-101). The industrial countries needed to secure minerals and fuels for both industrialization and politico-military power (Sampson, 1975, pp. 63-69). Initially, the developed countries extracted raw materials from domestic sources, explored and developed through indigenous capital. However, as these sources were exhausted and countries became more developed economically, abundant low-cost supplies could be found only overseas. Extractive technology, capital and military power, which had grown with industrial development, made it possible to secure access to resources worldwide.¹

1. This is a general pattern of resource policy development, yet, it is not always applicable to all industrial countries.

To ensure military, industrial and popular consumption, national governments found it necessary to support private exploration and extractive activities through the political and military power of the State. In addition, the profits of these activities were an important factor in ensuring government support since profits earned abroad improved the home country's balance of payments.² Thus the corporate aim of securing supplies was aided and abetted by the governments of the various developed countries.

England took the lead in mineral development in the nineteenth century, but in the twentieth century, the United States, then an emerging industrial power, also invested in extractive ventures overseas. Throughout the first half of the twentieth century many countries became involved in international political rivalries based on competitive access to raw materials (Eckes, 1979, pp. 1-173). Wars between "haves" and "have nots" were an important characteristic of the race for resources (Anderson, 1975).

The International Oil and Mineral Industry

Historically, the fuel and mineral industries have been dominated by giant international oil and mineral companies. The innate characteristics of certain extractive industries in the 20th century: high risk, large capital requirements, sophisticated technology, and the uneven distribution of resources worldwide combined to promote the growth of large multi-national companies (Bosson and Varon, 1977, pp. 25-26).

If fuels and minerals are a key factor to production and, therefore, to a country's economic and military power, the mineral industry, with its capital and technology, will occupy an important

2. The U.S.-based oil companies developed overseas sources, not for domestic use, but for sale throughout the world. See, Sampson (1975) Ch. 1-5.

position in the world. After World War II (WWII) the U.S. emerged as the dominant country, with Britain and France in a secondary position, with Germany and Japan clearly subordinate. This hierarchical power structure was similarly reflected in the international oil and mineral industries. Most of the major international oil and mineral corporations are owned by American, British, and French capital.

For example, in 1970, in the oil industry eight large international corporations (Exxon, Gulf, Mobil, Standard of California, Texas, BP, Shell, CFP) held 56.2% of the world's crude oil production and 54.4% of its product sales. The copper industry was concentrated among the "Big Seven" international corporations (Kennecott, Anaconda, Phelps Dodge, Union Miniere, Anglo-American Group, Amax, INCO), accounting for about 70% of world production (excluding centrally-planned economies) until the nationalization of mines in many of the producing countries in the late 1960s and early 1970s reduced that share to around 35%. Further, in 1970 about 70% of aluminum production was controlled by 6 major companies (ALCOA, Kaiser, ALCAN, Pechiney, Alusuisse, Reynolds). Similarly, only 3 companies (INCO, Falcon Bridge, Le Nickel) produced over 80% of the world's nickel. These international mineral corporations have historically controlled a large share of the marketing as well as mine production.

The Mineral Industry and The State

As stated earlier, a symbiotic relationship between the government and the oil and mineral industries is common to all of the industrialized countries. Whether the aim of exploration and development of resources is to earn profits or to ensure supplies for the economy, governments protect and support these industries through different means at various levels, employing various economic, military and diplomatic measures, both domestically and internationally and have repeatedly demonstrated their concern for the health of their oil and mineral industries through concrete assistance. The disputes between Great Britain and the U.S. over Iraqi oil fields after World War I

(WWI), the overthrow of the Mossadeq government in 1954 in Iran, and the military coup in Chile in 1973, illustrate the involvement of various governments in furthering their national resource industries (Eckes, 1979, Ch. 5-8; Stivers, 1981; Moran, 1974; Sampson, 1975, Ch. 6-7).

Resource policies came to form an integral part of foreign economic policies particularly in the post-WWII period, (Tanzer, 1980, pp. 17-18; Bosson and Varon, 1977, pp. 3-23; Mikdashi, 1976). There are a number of factors which make resource policies important to both developed and developing countries. First, more countries are participating in the international mineral business through their respective companies. The structure of the mineral industry has been complicated by economic expansion causing increased resource needs for some industrialized countries (Mikdashi, 1976, pp. 24-33). Secondly, power relationships among the forces participating in mineral and fuel development have changed with the emergence of the newly independent nations. Securing access to resources by the major international companies of the United States and Europe has become complicated as producer countries have attempted to gain more control over their resources while the large corporations have tried to retain their control (Girvan, 1976a). A third factor in the increased interest in resources was the increase in both the aggregate value and quantities of minerals and fuels which were being extracted and consumed during the post-war period. Soon after WWII, for example, the total value of the minerals produced in the world was about \$20 billion (1947), while by 1978 this had increased to \$700 billion (Tanzer, 1980, p. 16). All three of these factors help explain the greater governmental involvement in the world's mineral industries.

In the race for resources the winners can secure low-cost, high-grade resources, while losers are forced to purchase from foreign suppliers at unfavorable rates. Given the importance of the resources for industrial development, it has been the aim of foreign economic policy to secure the most favorable position possible. For Japan, which is deficient in domestic resources and does not have indigenous mineral

deposits or integrated international mineral corporations, securing access to stable low-cost overseas supplies has been a central concern.

2. JAPANESE RESOURCE POLICY AND FOREIGN ECONOMIC POLICY

While resource policy has been important for all industrialized countries, for Japanese industries and government it has been and continues to be critical. This paper will examine the development of Japanese resource policy as a part of Japanese foreign economic policy, and will, using case studies, generate insights into the different phases of the policy itself as well as policy motives and instruments.

To analyze the resource policy as foreign economic policy two levels of approaches can be considered: the international and the domestic (Katzenstein, 1978a).³ One hinges on the argument that foreign economic policy is defined by the international politico-economic options of the actors. This model argues that "interdependence" or "U.S. hegemony" in the international system, a result of "modernization" or "America's invulnerability," establishes the international constraint under which foreign economic policy has been pursued. That is, the international system has defined foreign policies, *a priori*.⁴ This explanation, which places the origin of foreign economic policy at the international level, is effective in that it indicates the sets of international political and economic features, which condition the strategies of foreign economic policy. However, this approach is weakened by its analytical inability to discriminate among variations in policy objectives, instruments, and the actual conduct of actors in each country (Katzenstein, 1978a, p. 13); it does not adequately explain why country A has a different foreign policy from that of country B in the

3. The distinction between the two levels of approach was presented by Singer (1961). On the theoretical discussion of foreign economic policy, see Katzenstein (1978a).

4. This is certainly an oversimplification of various writings, however works which lean in this direction are: Morse (1976), Keohane and Nye (1977); Waltz (1979).

same international system, whether it is "interdependent" or "U.S. dominated." The weakness of this argument is its failure to recognize those domestic factors which predetermine "modernization" or "U.S. invulnerability," and upon which "interdependence" or "U.S. dominance" has been predicated.

In contrast to the international structure approach, there are domestic-oriented approaches to foreign economic policy. One of these is the "statist" approach, which focuses on the state as an autonomous actor with an independent ideology and goal-setting mechanism. The state makes decisions relating to foreign economic policy according to national interests, defined as, the "general interest of society" (Krasner, 1978, pp. 5-34, 329-352). Although this argument has a certain validity since the state does have an independent societal role with institutions to pursue policies, it obscures the motivation of policy objectives by reducing them simply to "national interest."

Another approach, also focusing on the domestic origin of foreign economic policy, examines the domestic structure. Domestic structure, an aggregate which is historically organized by industrialization and state control, determines the formation and implementation of foreign economic policy. The relationships between the state (government, bureaucracy and political parties), and the society (private industry and labor) define the "policy and institutional organization which conditions policy instruments" (Katzenstein, 1978a, pp. 5-7, 19). The statist approach focuses on the state's autonomous policy formation from the top, viewing domestic forces as constraints. The domestic structure approach emphasizes policy as an aggregation of interests emanating from society itself. The latter approach, therefore, is a more powerful analytic framework when it is assumed that actors in the private sector play a major role in policy formation and implementation. This approach, which emphasizes the governing coalitions and policy networks expressed by social forces, seems to be more pertinent to the analysis of foreign policy, it clarifies the diversity of foreign policy in each country, that is neglected by the international approach.

It should be emphasized that the domestic approach should consider international forces. The domestic politico-economic structure defines policy. At the same time, however, the position of the national economy in international capitalism affects domestic politico-economic structure as well as policy processes. The domestic origin of foreign economic policy should be considered inseparable from the international origins of domestic politics and economy; it is a reciprocal relationship.

Our central concern is the evolution of Japanese resource policy and an analysis of the actors and their policy strategies in both the public and private sector. The domestic framework is therefore most useful for my analysis. It is assumed that prevailing coalitions of domestic forces and their institutional expression in networks will illuminate the development and operation of Japanese resource policy. The changing policies of the Japanese state and industries can be better understood by also considering Japan's position in the international economy. The international economic environment reflects the power distribution of the industrial nations, mineral industries and resource-producing countries. Japanese economic growth has changed policy instruments and has been characterized by different phases of policy evolution.

The Politico-Economic Structure and Resource Policy

The close alliance of the state and business, characterized as a "conservative coalition" by Pempel, is the core of the domestic politico-economic structure, which has facilitated the conduct of Japanese resource policy (Pempel, 1978, pp. 145-148, 183).⁵ Compared with other industrial nations Japan has a "high degree of centralization of both state and society, as well as a lack of differentiation between them" (Katzenstein, 1978b, p. 314). This tight coalition consists of the political institutions of the state bureaucracy, big business and

5. The theoretical orientation of this paper is taken from Pempel (1978, 1982).

the ruling Liberal Democratic Party (LDP), but excludes labor and the other political parties (Pempel, 1982, pp. 3-45). The close relationship between state and business circles can be traced back to Japanese political and economic development since the Meiji era. Elements of the post-war coalition include the long LDP reign in domestic politics, an autonomous, meritocratic bureaucracy, and the overall recognition in business circles of the government's involvement in economic activity; most importantly, it includes the shared interests of the various groups (Patrick and Rosovsky, 1976, p. 52). Policy interconnections between the groups are both formal and informal; a policy apparatus for government institutions within the business community, financial support for the LDP by business and covert contacts between the business and state sectors, bureaucrats and LDP leaders (Yanaga, 1968, pp. 1-151).

The structure of this coalition is characterized by the intervention of the state in business activities necessitated by the economy and the relative lateness of Japan's appearance in the international economy. For Japan to develop its technological and productive capabilities an industry-state partnership was needed.

While Japanese state involvement in the economy has been small in comparison to Western industrial states in such areas as public spending, it has not been insignificant. Indeed, the national bureaucracy has been intimately involved in the direction of business policy, supporting, guiding and organizing the private sector; for example, the Ministry of International Trade and Industry (MITI) has played a major role in regard to industrial policy. State intervention in industrial sectors was facilitated through finance, foreign exchange control, license approval and "administrative guidance" (Johnson, 1977, pp. 246-260).

In examining resource policy, the nature of the "conservative coalition" between the state and business, and the state's involvement in the policy process, helps to explain the policy choices of both the

Japanese government and the private extractive industry. It is clear that in the field of resource policy the government, especially MITI, has played a significant role through close contact with the mineral industry. There is a consensus, or at least a common concern, in both government and industry relating to the significance of imported resources to Japanese industrial production. The heavy dependence on foreign sources of raw materials has been and continues to be regarded by both government and business as the "unifying national challenge to the Japanese" (Krause, 1976, p. 386). Secondly, this "challenge" and the relatively weak position of Japanese extractive industries has prompted governmental efforts to organize industry through administrative guidance and the creation of financial and technical support agencies. A third factor is based on the changing structure of the international oil and mineral industry. As governments of producing countries, especially developing countries, assert more control over their resources through actions such as nationalization, the Japanese are forced to deal with governmental producers or state-owned corporations. Thus, there is an increasing need and ability for the Japanese government to involve itself in "resource diplomacy" through economic and technical aid to supplement private activities and ensure resource supplies. What makes Japanese policy unique is the nature of the government's cooperative and supportive efforts on the behalf of the mineral industry.

The Growth of the Japanese Economy and Changes in Resource Policy

While understanding the government-business relationship is essential to understanding Japanese resource policy, it is not sufficient to explain the evolution and development of the policies and procurement strategies. The analysis must be supplemented by factors such as Japanese economic growth and changes in the international economy, which enabled the Japanese government and industry to undertake different approaches to securing raw materials.

After World War II Japan was integrated into an international economic system in which the U.S. was dominant. In this system, the relationship with the U.S. during the late 1940s and early 1950s was critical to Japan's development; U.S. capital and technological assistance undergirded Japanese economic development, and the Japan-U.S. Security Treaty lightened the economic burden of military spending (Shibagaki, 1980). Japan undertook economic development in this international setting with a domestic economic structure embodied in the post-war reorganization of industry and labor.

The economic framework set conditions for the development of the resource industry as well as for government resource policy. Most Japanese petroleum supply passed through hands of the major international petroleum companies which dominated the marketing and production structure of the international petroleum industry. A lack of capital and technology as well as the weak industrial structure of the Japanese extractive industries constrained a more independent Japanese resource policy. Although the Japanese government was conscious of these constraints, dependence on U.S. or Western European-based international mineral corporations was overwhelming, prompting the Japanese government and industry to develop their own policy (Tsurumi, 1976a).

Japanese industry developed and gained strength in the late 1960s by taking advantage of domestic and international economic development. This growing economic power permitted government and industry to exercise a more independent policy.⁶ The capital accumulated through industrial production and exports allowed the industry and government to be more active in resource exploration and development throughout the world. In addition, "resource nationalism" in producing countries, particularly in the Third World, shifted the relative positions of power in the international oil and mineral industry. This change favored

6. On increasing Japanese economic strength in the international economy, see Block (1977).

Japan because it created increased possibilities to participate in the resource development in the producing countries. Japan's resource policy, thus, changed in correlation with its increasing economic power and the structural transformation of the international economy.

Traditionally Japanese resource policy has been regarded as the result of either foreign investment and the multinationalization of Japanese firms or the macro-economic behavior of the economy as a wholea Yoshino, emphasizing the organizational and strategic aspects of Japanese multinational companies, explains resource policy development as one pattern of the growth process of Japanese multinational companies (Yoshino, 1976). He does not recognize the special character of the mineral industry nor does he examine the development of resource policy. Tsururmi and Ozawa argue that Japan's unique corporate culture and idiosyncratic industrial structure gave rise to the expansion of overseas Japanese resource extraction activities (Tsurumi, 1976b, Ch. 2; Ozawa, 1979, Ch. 5). Their argument essentially concurs with Young in stressing the unique role of trading companies in Japan (Young, 1979). These are partial explanations of overseas mineral extraction activities. They explain neither the reasons why the Japanese government and industries pursued certain resource policies nor the changing pattern of these policies. Focusing on domestic structure in addition to the understanding of international economic structure will yield betteræxplanations.

II

Resources and the Japanese Economy

1. RESOURCES IN THE JAPANESE ECONOMY

Mineral resources have been indispensable as commodities of trade, energy sources for industrialization, and production materials for the development of the Japanese economy. In this section a brief historical summary of Japan's economic development and the importance of mineral resources in the economy will suggest that an increasing need for oil and minerals has accompanied the Japanese change in industrial structuree

The Pre-war Economy

At the end of the Tokugawa era in the 19th century, economic activities were largely concentrated on agriculture and household manufactures, such as the textile weaving industrye The economy did not consume large amounts of mineral resources and needs could be satisfied through domestic production of minerals such as coal and copper¹. Although external trade was kept to a minimum during the era, large quantities of copper and silver were exported through the harbors of Nagasaki, Tsushima and Ryūkyū, in exchange for silk and other luxuries (Yasuba, 1978, p. 230).e

The opening of the country to foreign trade (1858) and the Meiji Restoration (1868) facilitated capitalist developmente In the Meiji era Japan developed a labor-intensive, manufacturing industry which did not require large amounts of minerals. The products of these industries-- raw silk, tea, seaweed, and sardines--were exportede The only mineral

1. Copper production began in the 8th century, and Japan, as second largest producer, was exceeded only by the U.S. in the early 1920s.

products imported were petroleum and iron, smaller in value than other import items such as cotton yarn, cotton and woolen clothes. Further, mineral imports were offset by the export of manufactured goods and domestic minerals (Yasuba, 1978, pp. 231-232). Until the late 1890s, therefore, the Japanese economy put little pressure on domestic mineral resources. Until approximately 1880 the mining industry was government-controlled due to its importance as an earner of foreign exchange and as a source of coin material. After being transferred to the private sector, the mining industry formed the core of the oligopolistic business combines (Zaibatsu) (Ishii, 1980, pp. 70-81).

The period between the late 1890s and 1945 was characterized by rapid structural changes, caused not only by domestic economic development, but also by changes in the international politico-economic arena. Between the 1890s and the 1920s most Western industrialized countries developed heavy industry, while Japan concentrated on light manufacturing, such as textiles. The textile industry led economic development throughout the pre-war period, and its products were a major component of the export trade (Shibagaki, 1980, pp. 3-14). The development of heavy industries, such as steel, lagged despite the efforts of government and, in later periods, private entrepreneurs (Lockwood, 1954). Nevertheless, even the slow expansion of heavy industry increased the demand for more minerals than were domestically produced, and production fell behind the growing demand. As Table II-1 indicates, the transition from mineral surplus to deficit occurred at the beginning of this century, although copper and coal continued to be exported to Germany, England, and China.

Chemical and heavy industries, which became more important after the Russo-Japanese War (1904-1905) and World War I, were encouraged further by the political and military developments in the international and domestic arenas after the 1920s. The conflicts among industrial powers for the control of territory for markets and direct investment gave rise to protectionist economic blocks. In response to threats to its economic interests, Japan grew more militaristic (Miwa, 1980, pp.a)

TABLE II-1

EXPORTS AND IMPORTS OF SELECTED NATURAL RESOURCES
& COMMODITIES, ANNUAL AVERAGE BY GROUP, 1877-1936

(1,000 yen)

	(1) Metals		(2) Minerals		(3) Agricultural food commodities	
	Exports	Imports	Exports	Imports	Exports	Imports
1877-1886	1,460	2,350	1,320	1,940	8,730	260
1887-1896	5,360	8,420	5,359	4,560	13,390	6,500
1897-1906	15,840	32,860	16,540	16,860	18,900	44,670
1907-1916	48,400	74,690	23,340	27,580	31,160	62,530
1917-1926	96,460	282,930	42,720	103,580	61,280	360,740
1927-1936	142,300	240,450	41,650	260,650	55,580	461,100

Source: Yasuba (1978).

119-123). Increased militarism resulted in the production of military equipment, such as transports and machinery leading to rapid growth in heavy industry, reinforcing increased resource needs.²

Trade composition changed from that of the early Meiji era, reflecting this industrial development. Exports were increasingly light industrial products, especially textiles, while imports included raw materials, such as petroleum, lumber, coal, and iron ore, as well as food. The strategic metals, such as nickel and bauxite, were imported

2. Coal production rose from 28 million tons in 1931 to 50 million tons in 1939; the import of crude oil and petroleum products increased from 2.3 million kiloliters to 4.5 million kiloliters in the same period (Nakamura, T., 1980, pp. 173-174).

because of the absence of domestic production (Harada, 1971, p. 252). The drastic increase of imported minerals and metals in the 1920s is indicated in Table II-1. The supply of raw materials was supplemented by extractive activities outside Japan, especially in Manchuria and Southeast Asia (Hara, 1980a, p. 192).³ The search for resources was an important factor leading Japan to military conflicts with other industrial powers.

In sum, the rise of heavy industry in the pre-World War II period, especially after the 1920s, and the military needs of the war increased demand for mineral resources, which could not be satisfied by domestic production; trade and the overseas extraction of fuels and minerals were necessary to compensate for the lack of domestic resources.

The Post-World War II Economy

After defeat in World War II, Japan's rapid economic reconstruction led to its becoming the second largest economy in the capitalist world. The post-World War II economy has passed through different stages, but overall growth has been led by rapid industrialization with the resulting industrial structure resting upon chemicals and heavy industry.

The first phase of development was devoted mainly to reconstruction of the war-devastated economy. During the American Occupation, administrative measures such as land reform, the dissolution of the Zaibatsu, and the implementation of a new labor law created new economic arrangements. However, production remained focused primarily on consumer goods to meet daily needs (Shibagaki, 1980). The new industrial structure initially resembled that of pre-war; centered on

3. Manchuria received 70 per cent of Japan's foreign direct investment in 1930s, especially in the mining sector during the late 1930s (Hara, 1980, p. 192). On pre-WWII extractive activities in Southeast Asia, see Section IV of this paper.

light industry. Due to a halt in imports, the coal mining industry was encouraged to expand by government policy, "keisha seisan hoshiki" (1946).⁴ This policy was formulated to increase coal production for industrial use, especially in the steel industry. Later, the increased importation of crude oil, coking coal, and coal was approved by the Occupation authorities (Miyashita, 1980, p. 56). Though resources had to be supplemented by imports, consumption growth was rather small until the 1950s and the rapid economic growth after the Korean War.

During the period from the mid 1950s to the early 1970s, the Japanese economy achieved what Western industrial countries accomplished over more than half a century. Industrial growth included steel, automobiles, petro-chemicals and electronics. The loss of markets for light industrial products in East Asia, through the development of indigenous light industries and the closure of traditional markets such as China, limited the opportunities to reconstruct Japanese light industry. This encouraged the evolution of an industrial system based on heavy industry (Shibagaki, 1980, p. 93). In addition, a number of elements set the groundwork for the construction of a new heavy industrial base. This included the demand created by the Korean War and the end of the U.S. Occupation; domestic factors included a series of governmental policies to foster industry, technology introduced mainly from the U.S., a well-educated labor force from rural sector, and high rates of reinvestment (Patrick and Rosovsky, 1976, p. 19).

This shift in industrial structure also changed the resource demand structure, especially in energy. A stable supply of low cost energy resources and minerals became indispensable for the heavy industries. The reorganization of the electric utility companies in the 1950s promoted thermal power generation requiring increased amounts of imported oil over hydroelectric power. Further, liberalization of oil

4. Only 40 per cent of total coal production was available for industrial consumption due to shortages; during the pre-war period over 60 per cent was used in industrial sector (Miyashita, 1980, p. 56).

sales in 1952 encouraged the replacement of coal with low cost imported oil which then became the primary energy source. The so-called "Energy Revolution" or "Liquid Revolution" was completed by the early 1960s supplanting the domestic coal industry in the process despite government efforts to continue coal production (Nakamura, S., 1980). Heavy industrialization was maintained by the flow of cheap oil, mainly from the Middle East, and, at the same time, accelerated the demand for fuels and resources. Demand for other metals, such as aluminum, nickel, and copper, also increased rapidly due to their importance in production (Fujii, 1971, pp. 192-193).

The change in industrial structure was reflected in trade composition, i.e., increased exports of manufactured products, both as consumer goods and capital goods, and the increased importation of primary commodities, including food and lumber as well as minerals. Oil and minerals, which were either not produced or produced in insufficient quantities, were increasingly imported throughout the 1950s and 1960s. Concomitant with increased imports was an increased dependence on foreign resources. Even copper, which had been an export item, increasingly came from foreign sources, 60% of the supply by 1963; demand for bauxite, uranium, and nickel was met totally by imports. Japan achieved the second largest GNP and became the second largest mineral consuming and the largest mineral importing country in the world (Suzuki, 1977).

2. CHARACTERISTICS OF JAPANESE RESOURCE PROBLEMS

The Structure of Consumption and Supply

The rapid post-war economic expansion was due to the development of heavy industry and an expansion of exports. This entailed a massive growth in resource consumption leading to a greater dependence on foreign supplies. The historical relationship between industrial structure and resource use as discussed in the previous section indicates that the rapid post-war economic expansion further exacerbated Japanese resource problems. This dependence has been, to some extent,

more serious than that of other industrial countries. We will examine this dependence in light of the structure of the resource industries as well as that of consumption and supply.

There are three distinct features of Japanese consumption: rapid increase, enormous volume, and large share of industrial use. First, consumption increased at an extremely rapid rate, the average rate of increase accelerating greatly in the 1960s in comparison. In the 1950s the rate of increase for most minerals was below 10%, with the exception of crude oil (21.5%) and aluminum (13.9%). However, as Table II-2 demonstrates, the average annual increase of consumption of fuels and minerals during the period from 1963 to 1973 was between 10 and 20% by volume. To better appreciate the rapidity of this growth a comparison with other countries is in order. In the U.S. and Western European countries, average increases in mineral consumption for the same period were between 3 to 5%, with the exception of aluminum (5-10%). More remarkably, minerals not produced in Japan experienced even higher rates of consumption growth than other minerals: aluminum (20.8%), nickel (17.3%), and crude oil (16.1%). (MITI, 1971, p.2.)

Secondly, not only have the Japanese expanded consumption at a much higher rate than other countries, but this consumption grew along

TABLE II-2
INCREASE OF ANNUAL RESOURCE CONSUMPTION RATE,
1963-1973 (%)

	Japan	U.S.	West Germany	France	England
Energy	10.0	4.6	4.1	5.9	1.3
Crude Oil	16.1	5.1	11.0	13.5	6.8
Copper Ore	13.4	3.9	4.0	5.2	2.2
Copper (excluding ore)	12.8	2.9	5.2	5.4	0.4
Lead	6.8	4.5	1.8	2.3	0.0
Zinc	9.8	3.2	4.6	4.8	1.4
Aluminum	20.8	8.1	10.5	6.4	4.4
Tin	9.2	0.5	3.1	0.3	1.6
Nickel	17.3	5.0	10.4	6.5	1.3

Source: Jūkagaku-Kōgyō Tsushin-sha (1976).

with the Japanese share of world consumption. In 1973, Japan's share of world consumption was 13.7% for copper, 11.6% for aluminum, 16.8% for nickel, and 7.8% for crude oil: in 1963 it was only 6.4%, 4.4%, 6.7% and 3.7% respectively (Jūkagaku-Kōgyō. 1976, p. 35). Throughout this period the U.S. remained the world's largest consumer, but Japan exceeded the European consumption in the latter half of the 1960s to become the second largest consumer.

Third, Japanese resource consumption, especially energy, has been mostly for industrial use rather than for transportation or domestic consumption. By the early 1970s 48% of energy consumption was in the industrial sector; 12% in transportation and 17% in domestic use. The industrial share of energy consumption has been much larger than in other industrialized countries. In the U.S., for example, 28% of energy consumed was used in industry, 23% for transportation and 25% for domestic use. Even in Germany, which has similar consumption patterns to Japan, industrial use as about 37%, transportation 12% and domestic use 25% (Nihon Enerugi Keizai Kenkyu-jo, 1977, pp. 40-42). These three features, rapid increase in consumption, increased volume, and large share of industrial consumption were directly linked to the heavy industrialization, which was based on production using large quantities of resources.⁵

There are salient features which characterize Japanese supply-demand structure. One is the relative scarcity of domestic supplies due to meager domestic endowments. Japan produces a variety of minerals and has been termed a "museum of resources." However, not only has the quantity of production been very small, but some basic minerals, such as nickel and bauxite, are totally absent. Further, domestic crude oil production supplies only a few percent of the total demand.

5. Chemical and heavy industries accounted for 70% of total manufacturing production in the early 1970s (MITI, 1972, p. 45).

Second, as a result of the shortage of domestic sources, Japan must depend on foreign sources of supply in order to meet the rising demand. The degree of dependence increased as domestic production failed to keep up with increases in demand. Domestic supplies of copper, lead, and zinc, which Japan traditionally produced could, by the early 1970s, only meet 30-50% of demand; the remainder was imported. Dependence upon foreign sources of crude oil, aluminum, nickel and uranium has been total or near total (see Table II-3).

Third, as Japan increased its dependence on resources produced abroad, their share of total imports increased. As Table II-4 indicates, the importance of crude oil and mineral imports has steadily increased. For example, the mineral and fuel imports' share of total imports was 19.2% in 1955. By 1970 this had increased to 35%, in comparison to only 22% for the U.S., 25.6% for Germany, and 28% for Great Britain (MITI, 1971, p. 12). Natural resources' share of total Japanese imports is larger than for any other industrialized economy. Not only did resources expand as a share of imports, but Japan also enlarged its share in the international oil and mineral markets. In addition, Japan has been the largest OECD importer of iron ore, copper, coal and crude oil (see Table II-5). Japan's dependence on the international mineral market became such that any change in the market would affect the Japanese economy very directly.

Other points can be made with reference to the import structure of resources: First, Japan imports minerals and fuels largely unprocessed rather than as finished products. This reflects the post-war Japanese industrial structure which was based on the import of raw materials for processing and reexportation. This is also related to the post-war resource industry strategy of refining products in consumer rather than producer countries. This strategy was especially prevalent among the oil companies. Also, Japan's foreign sources of raw materials concentrated in a small number of producing countries and regions. As Figure II-1 indicates, 80% of crude oil imports originate in the Middle East, about 70% of copper imports in the Philippines and Canada, and

TABLE II-3
OVERSEAS RESOURCE DEPENDENCE (1960, 1965, 1970)

<u>Commodity</u>	<u>Unit</u>	<u>Demand</u>	1960		1965		1970		<u>Domestic Supply</u>	<u>Overseas Dependence</u>
			<u>Domestic Supply</u>	<u>Overseas Dependence</u>	<u>Demand</u>	<u>Domestic Supply</u>	<u>Overseas Dependence</u>	<u>Demand</u>		
Copper	1,000t	324	160	50.6%	436	185	57.6%	880	215	75.6%
Lead	"	108	49	54.6	147	71	51.7	216	98	54.6
Zinc	"	205	151	26.3	394	244	38.1	681	310	54.5
Aluminum	"	155	0	100	330	0	100	885	0	100
Nickel	"	19	0	100	28	0	100	91	0	100
Iron Ore	million t	21.1	6.8	68.0	46.2	8.9	60.7	111.0	13.2	87.9
Coal	"	17.5	112	35.8	27.8	12.6	54.9	59.2	12.8	78.5
Petroleum	mill.kl	135.2	0.5	98.6	91.5	0.6	99.5	204.1	0.7	99.7
Natural Gas	mill.m ³	773	773	0	1,736	1,736	0	3,662	2,387	34.8
Uranium	1,000t	-	-	-	-	-	-	0.7	-	100
Total		72	21	7.1%	145	27	81.4%	323	31	90%

Notes:

1. Demand includes domestic demand and export.

Source: MITI (1971) Shigen Mondai no Tenbo.

TABLE II-4
IMPORT COMPOSITION

	1950	1955	1960	1965	1970	1974
Total (\$ million)	967	2,471	4,491	8,169	18,881	62,110
Composition (%)						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Food	32.2	25.3	12.2	18.0	13.6	13.1
Textile materials	38.3	23.7	17.0	10.4	5.1	3.0
Minerals and Metal	1.9	7.5	15.0	12.5	14.3	8.6
Mineral Fuels	5.5	11.7	16.5	19.9	20.7	40.0
Chemicals	4.1	4.5	5.9	5.0	5.3	4.3
Machinery	0.7	5.3	9.7	9.3	12.2	7.6

Source: MITI, *Tsūshō Hakusho* (White Paper) (various years)

TABLE II-5
THE SHARE OF WORLD RESOURCE IMPORTS

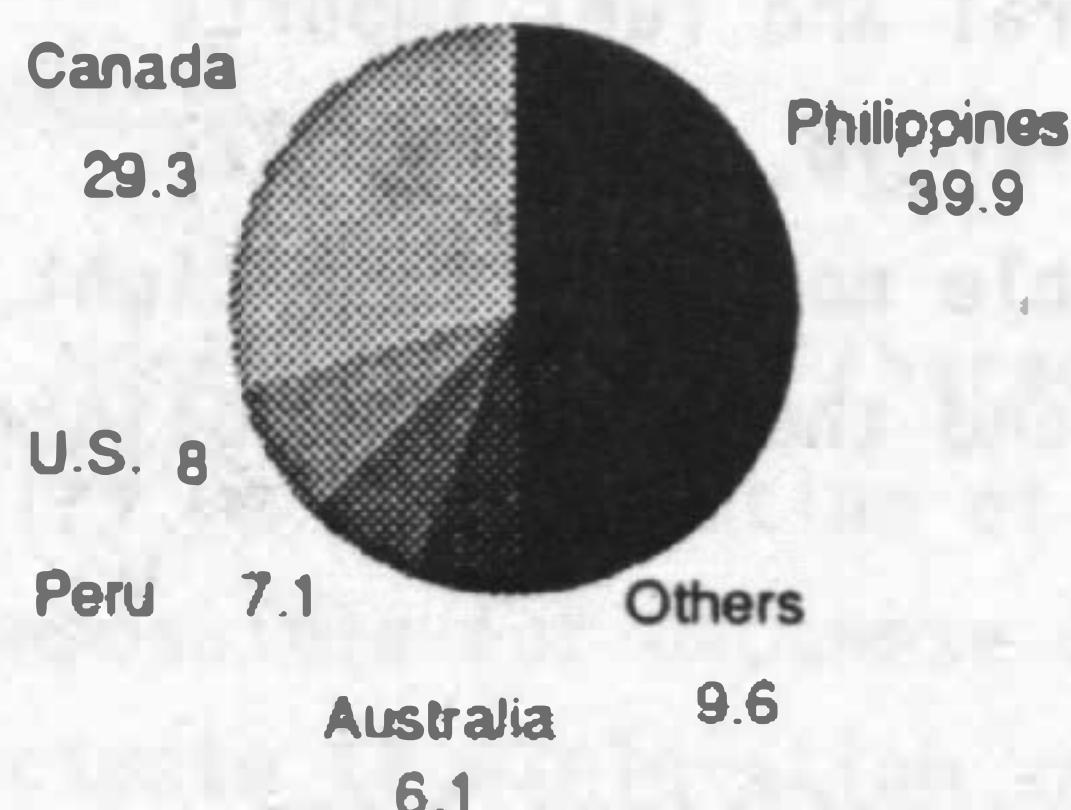
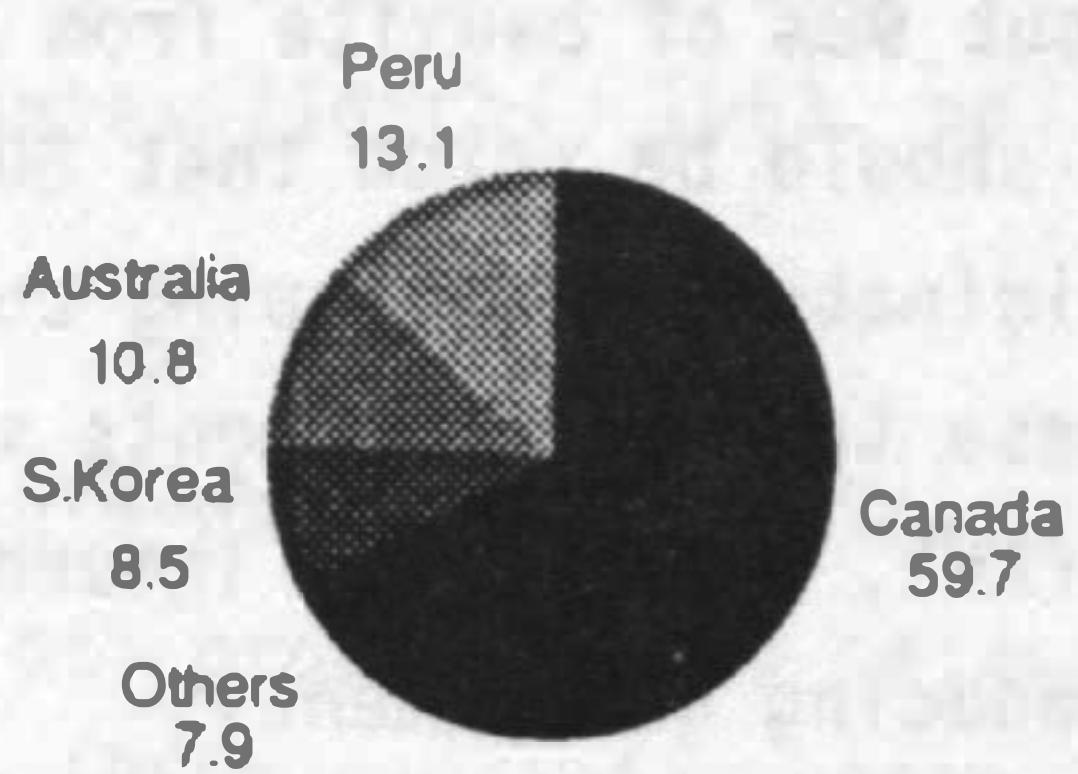
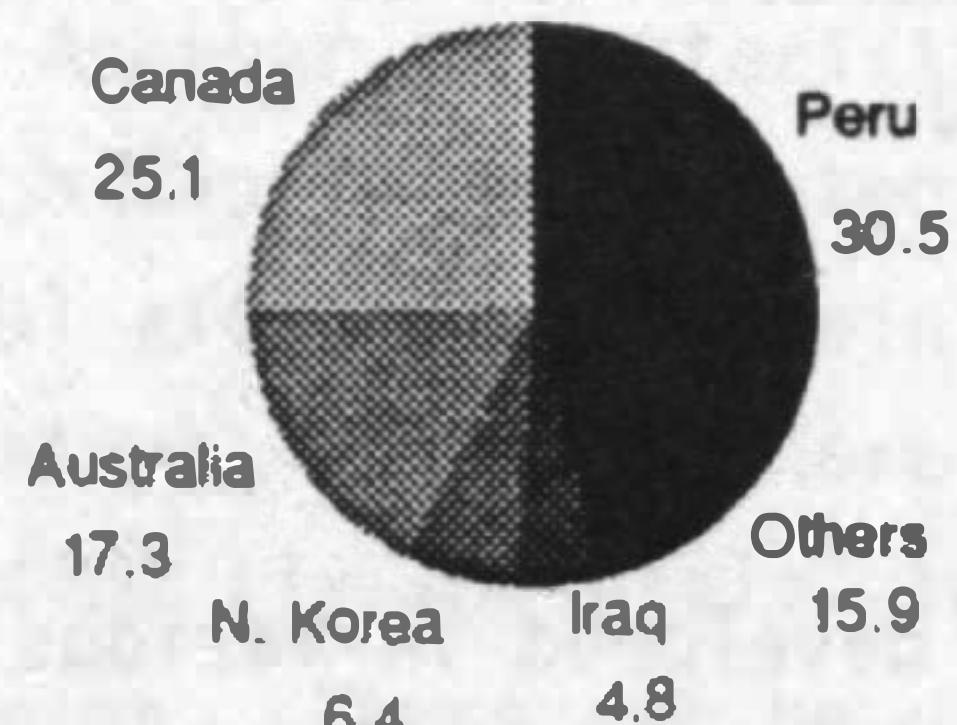
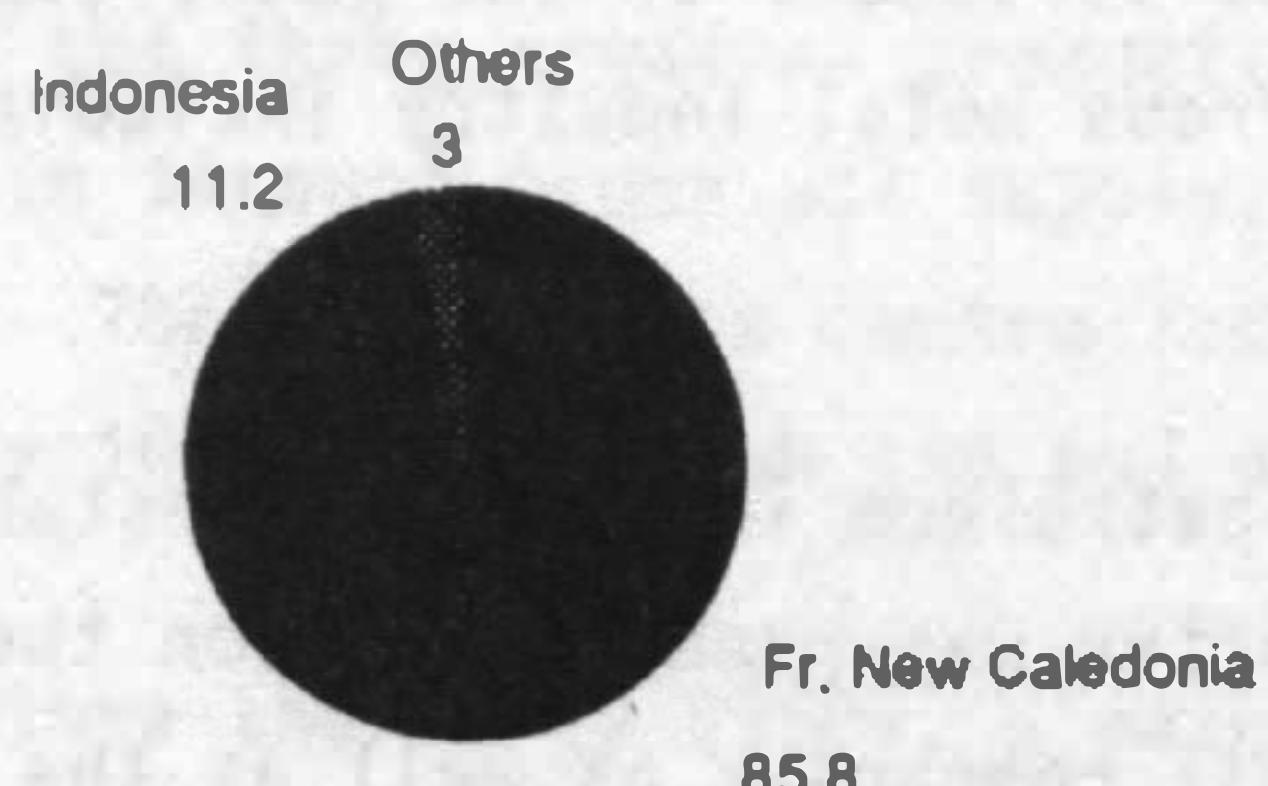
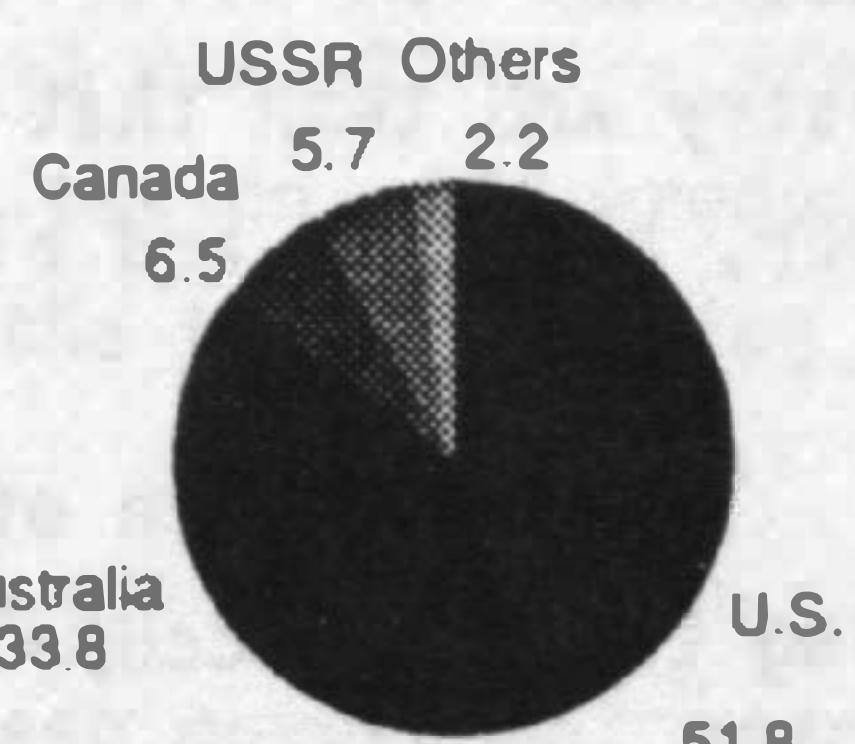
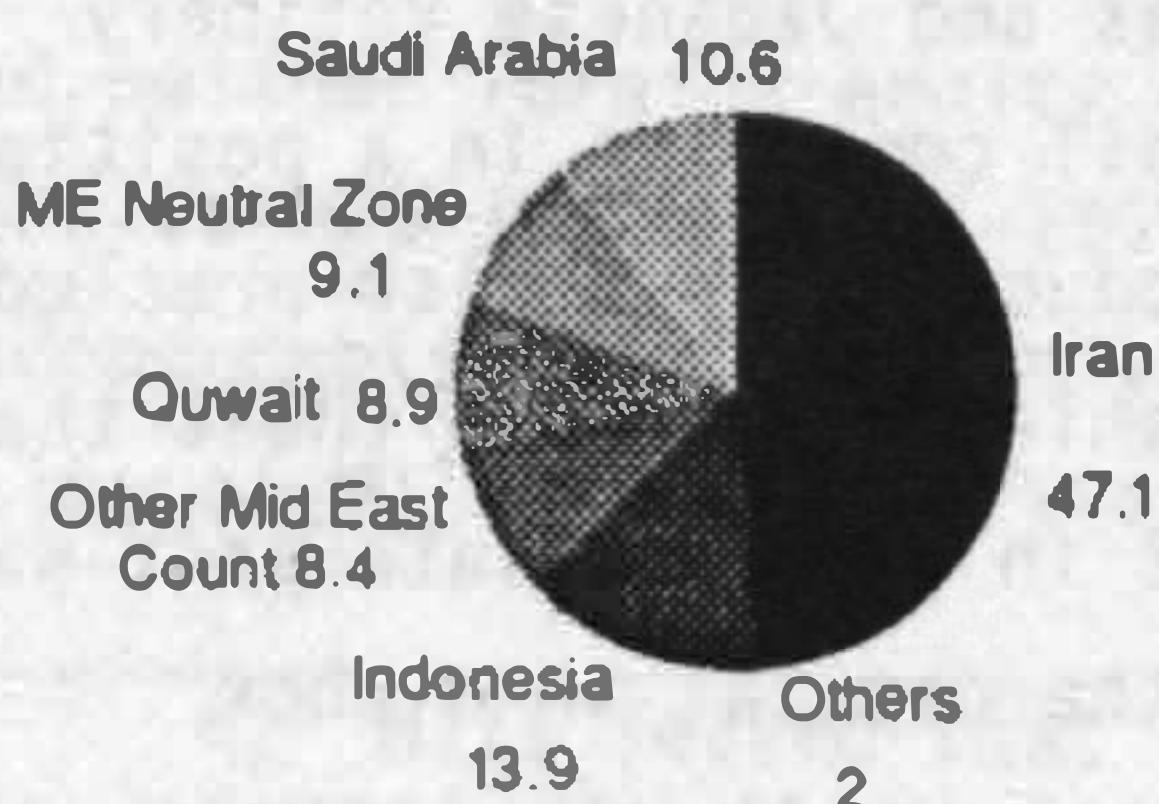
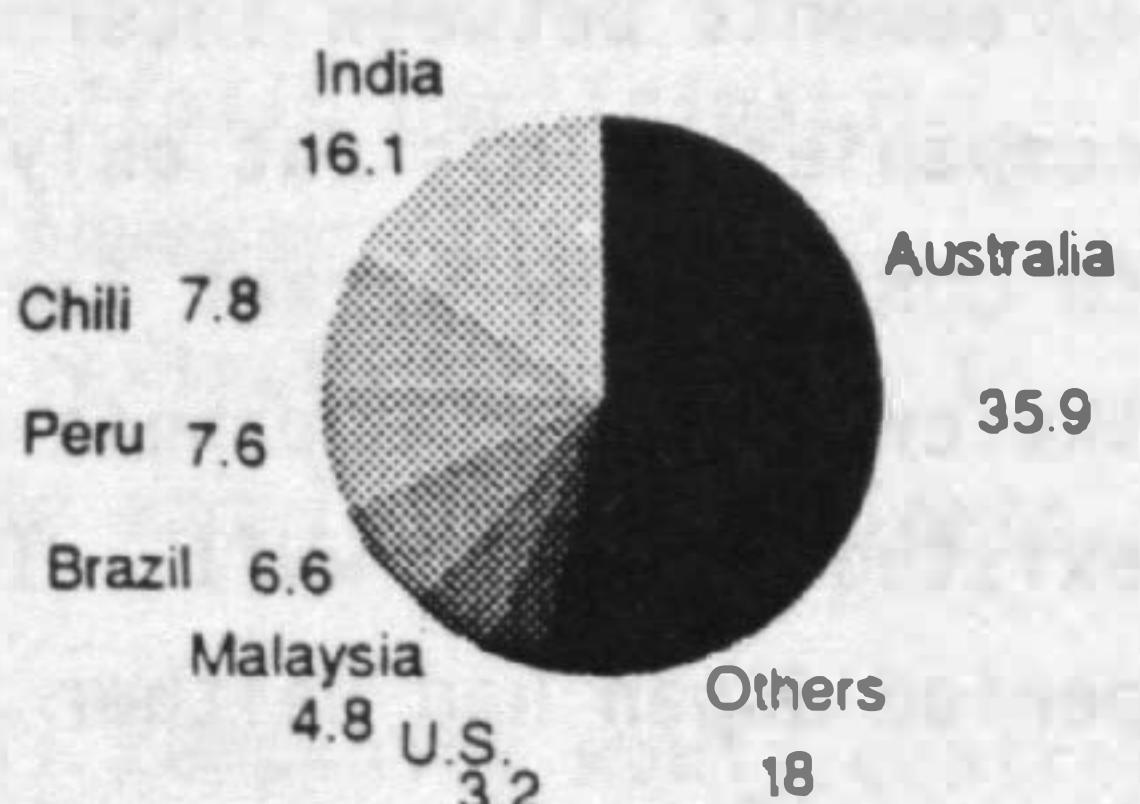
(%)

	Japan		U.S.		West Germany	
	1962	1972	1962	1972	1962	1972
Iron Ore	26.1	41.1	26.6	13.4	24.3	15.8
Copper	7.0	22.0	15.1	9.9	17.9	17.4
Lead	4.4	8.0	32.4	18.4	15.8	15.8
Zinc	3.7	14.7	30.6	25.8	14.1	13.0
Bauxite	3.3	12.9	37.2	28.7	11.2	13.3
Tin	9.0	18.1	33.6	32.3	9.4	9.5
Nickel	4.2	12.4	42.1	29.9	8.0	8.5
Coal	8.4	25.8	0.2	0.1	7.9	4.9
Crude Oil	7.3	13.7	15.2	13.4	6.7	7.8
Natural Gas	0.0	1.9	91.8	37.9	0.0	13.8

Note:

1. Shares of iron ore, copper, lead, zinc, bauxite, tin and nickel are based on value.
2. All other items based on quantity.
3. Copper, lead, zinc, bauxite, tin and nickel include ingots.

Figure II-1: Major Resource Suppliers and Geographical Distribution (1970)

Copper Ore**Lead Ore****Zinc Ore****Bauxite****Nickel Ore****Coking Coal****Crude Oil****Iron Ore**Source: MITI (1971). Shigen Mondai no Tenbō

about 98% of bauxite from Australia, Indonesia and Malaysia. Further, it should be noted that 80% of Japan's mineral and fuel imports originate in developing countries (Jūkagaku-Kōgyō, 1976, p. 37). These trade arrangements make Japan vulnerable not only to a tight market, but also to international politics and the resource policies of producing governments.

Although resource scarcity has always constrained Japan, dependence became increasingly acute during the 1960s. In addition to describing the supply and consumption problems resulting from Japanese economic development, an examination of the characteristics of the Japanese fuel and mineral industries is needed.

Resource Industries

While Japanese resource industries have developed in various ways, this section will examine their common characteristics, highlighting those that make them different from other international oil and mineral industries. We will first discuss the structure of the petroleum industry and then that of the non-ferrous metal industry including copper, aluminum and nickel.

The foundation of the post-war petroleum industry was established during the U.S. Occupation. The industry was predicated upon the strategy of the major international oil companies as well as the policy of Occupation authorities. Occupation policy allowed Japanese refineries to begin production conditioned upon equity-sharing agreements between international oil companies and Japanese refinery companies. This not only put international oil companies in a position to control the market for their crude oil production, but also precluded the creation of Japanese oil extraction companies similar to those that existed prior to WWII. It must be added that in the immediate post-war period Japan had neither the technology nor the capital to either explore for oil or even build a refinery. As a result, Japanese

petroleum companies had to concentrate on refining and/or sales of crude oil purchased from the international oil companies (Iguchi, 1963, pp. 370-402) o

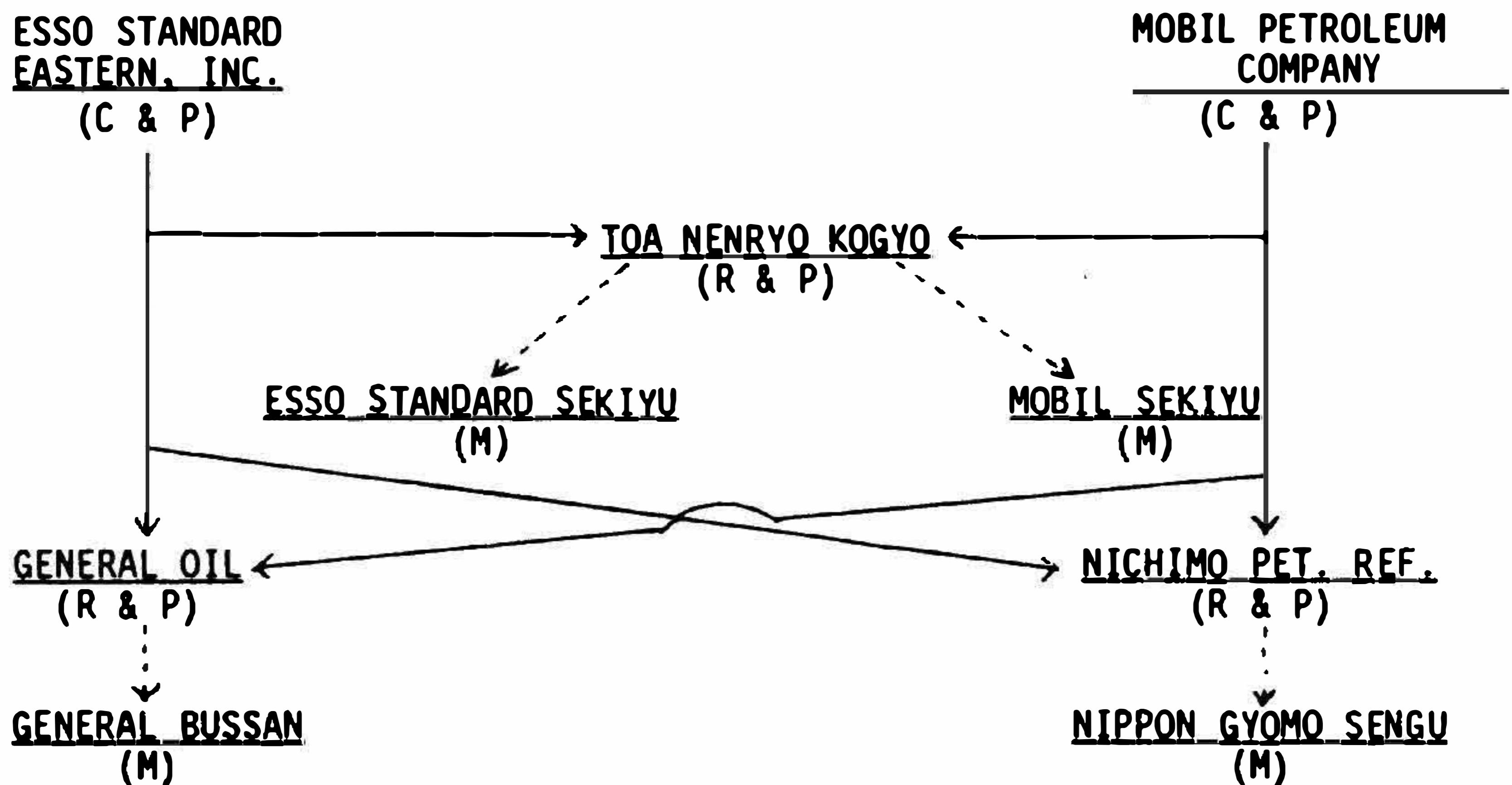
Hence, the major characteristic of the international petroleum industry, the integration of the company from oil production to sales, was impossible for Japanese companies. In the 1960s companies began to participate in exploration and development (Okamoto, 1980, pp. 180-184)o Nonetheless, lack of integration remains a major characteristic of Japanese oil companies.

Another characteristic is that Japanese companies are composed of foreign capitaloaffiliated and non-affiliated corporations. The foreign capitaloaffiliated or jointly-owned companies were created under the Occupation. By 1950 there were fourteen foreign-affiliated companies, including six wholesale, two refining, and eight refining and marketing companies. These can be divided into four main groups: the ESSO-Mobil group, the Caltex group, the Shell group and other joint operations such as Getty Oil and Mitsubishi Oil. As Figure II-2 shows the companies in each of the three areas -- production, refining and marketing -- are linked in through crude oil supply, equity participation, and product supply. These companies controlled about 80% of the total refining capacity in Japan through the end of the 1950s.

Since the early 1950s, a main goal of Japanese government energy policy has been to foster indigenous refiners and marketers such as Idemitsu, Nippon Kōgyō, Maruzen, in order to gain some control over the Japanese energy market.⁶ Such new, independent corporations, which had neither foreign equity participation nor portfolio participation, were formed in the post-1955 period. By 1962, however, the seven independents still had only about 20% of total refinery capacity. In spite of MITI's (Ministry of International Trade and Industry) efforts,

6. MITI feared that the international oil companies would control the Japanese market completely as they did in the 1890s through such tactics as dumping (Okamoto, 1980, p. 181).

Figure II-2: An Example of Foreign-affiliated Oil Company



NOTEST C Crude Seller
 P Products Seller
 R Refiner
 M Marketer

— Crude flows
 - - - - Product flows

COMPANY	PAID-UP CAPITAL	CAPITAL SHARE	AFFILIATED WITH	AFFILIATED IN
TOA NENRYO	25.6	25%	ESSO STANDARD SEKIYU	1962*
		25%	MOBIL SEKIYU	1962*
GENERAL OIL	8.35	50%	ESSO STANDARD SEKIYU	1961
		50%	GENERAL BUSSAN	
NICHIMO PETt REF.	2.78	60%	TOA NENRYO KOGYO	1961
		30%	NIPON GYOMO	

(Unit for paid-up capital: million U.S. dollars)

Source: Adopted from Chen (1967) p. 170.
 Originally from MITI, *Sekiyu Sangyō no Genjō*.

the companies' weak positions in capital and technology obliged them to acquire foreign capital in the form of loans in exchange for long-term crude purchases.⁷ Therefore, despite differences, both foreign-affiliated corporations and Japanese-owned corporations remain linked to foreign capital.

The un-integrated structure of the Japanese petroleum industry dictated complete dependence upon foreign supplies of crude oil sold by the eight major companies. "Tied oil," in exchange for equity participation or loans, prevented the discretionary purchases of crude from other potential sources and prevented the refining corporations from embarking on exploration and development overseas (MITI, 1971, p. 52).

Unlike the petroleum and other mineral industries, the Japanese copper companies have had no affiliation with foreign capital. These companies had formed the core of the Zaibatsu and in the post-World War II period retained their position as copper producers. However, while U.S.-based copper companies operated on an international scale, integrated from mining to processing, the Japanese companies remained confined to domestic mining and smelting (Horikoshi, 1971, pp. 155-156). The major international companies developed huge economies-of-scale, the Japanese "Big Six" (Nippon Mining, Mitsubishi Metal Mining, Mitsui Mining and Smelting, Sumitomo Metal Mining, Dōwa Mining and Furukawa Mining) were not only smaller in scale, but were also oriented almost exclusively to the domestic market.

Japan was self-sufficient in copper ore before World War II. Copper shortages began to occur by the mid 1950s as the growing demands of the economy outstripped supply. Japanese copper companies were both integrated and indigenously financed, but were increasingly forced to depend on foreign supplies, mainly from Canada and the Philippines, to

7. On MITI's policies, see Section III.

meet the growing demand (Takahashi, 1968, p. 127). As a result, the function of the copper industry increasingly became that of smelting and processing imported ores, what is termed "custom smelting" (Nishio, 1968, pp. 350-352). Thus, the character of the copper industry changed from an integrated industry to one of custom smelting, and, by 1960, imported ore began to replace domestic ore production.

The demand for nickel, an indispensable element in steel-making, increased at a high rate due to the growth of heavy industry. Japan is the second largest consumer of nickel in the world. In 1965, 99% of Japan's nickel supplies originated in French New Caledonia, Indonesia, and Canada. The structure of the nickel industry is similar to that of the copper industry, except there are no domestic sources. The industry is confined to refining and processing.

Soon after the outbreak of the Korean War production of nickel ingots and ferro-nickel was begun in Japanese nickel smelters using imported ore. There are nine companies in the industry, divided into three groups on the basis of their products: two domestic companies manufacture nickel ingots (Sumitomo Metal Mining and Shimura Kakō), five domestic companies manufacture ferro-nickel (Sumitomo Metal Mining, Shimura Kakō, Nippon Mining, Nippon Yakin, and Taiheiyō Nickel), and two subsidiaries of the international nickel companies, Tokyo Nickel (INCO) and Nippon Nickel (Le Nickel), manufacture nickel oxides. Excepting the foreign subsidiaries, however, only two companies specialize in nickel refining; for the others nickel is only a part of their non-ferrous smelting operations. The reliance on INCO and Le Nickel for crude ore supplies ensured that the Japanese nickel companies had no chance to integrate from mine to smelter. The domestic nickel industry has a relatively short history in comparison to other non-ferrous industries and has remained relatively undeveloped in Japan (Harada, 1971, p. 251).⁸

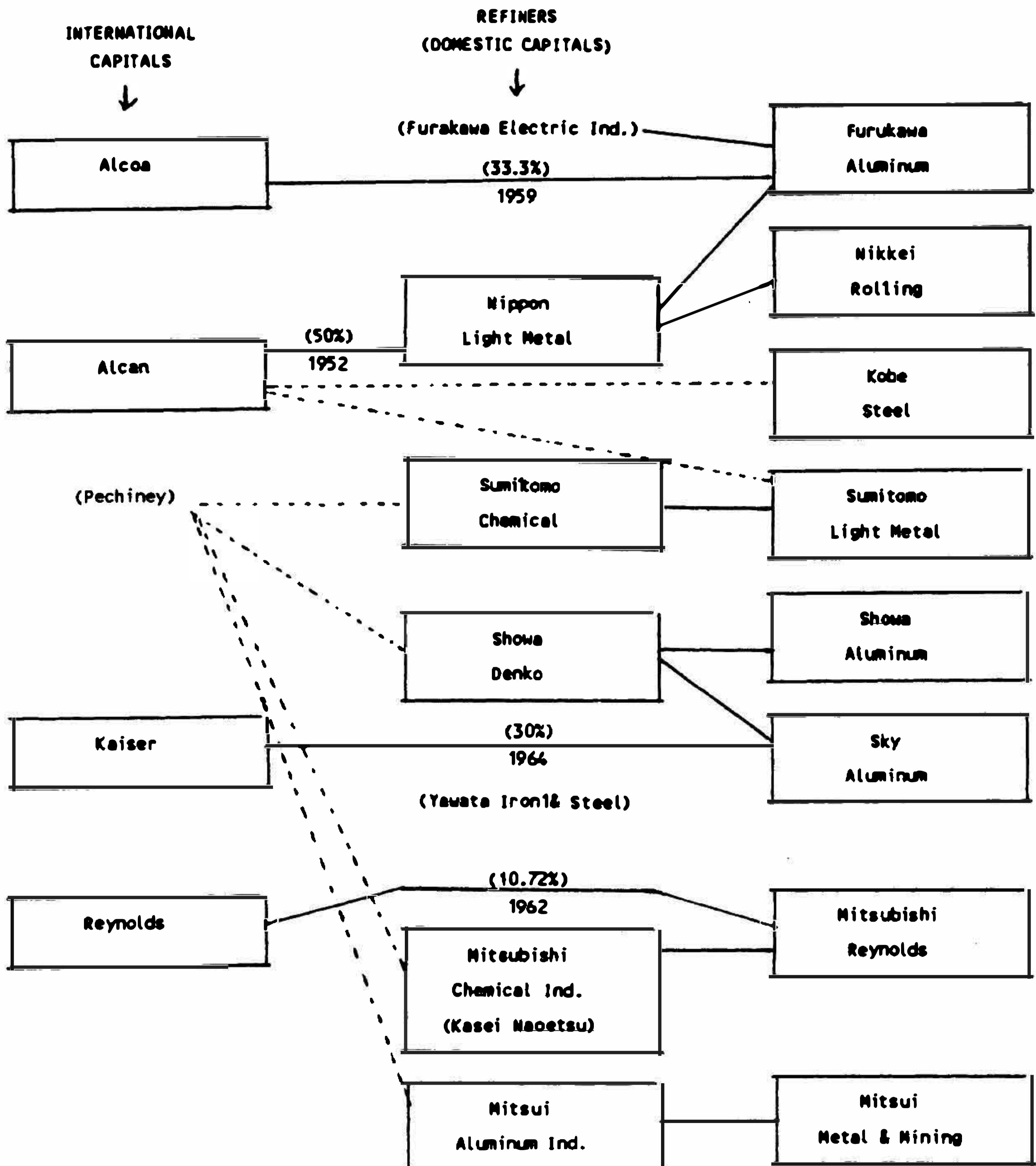
8. Ferro-nickel production began in 1939; nickel ingots in 1938.

The aluminum industry in Japan started as a processing industry at the beginning of this century. These beginnings determined the present structure of industry, which is confined to refining, rolling and tertiary processing; all of which have developed independently. The industry has no mining sector because of the lack of domestic resources. Further refiners and processors are separate companies. This dispersed, unintegrated structure has many disadvantages in securing sources and in achieving production economies that lower costs. The refining corporations are also much smaller than the international aluminum companies. For example, compared to the six major foreign companies, each of the five Japanese refiners (Nippon Light Metals, Shōwa Denkō, Sumitomo Chemical, Mitsubishi Chemical Ind. and Mitsui Aluminum Ind.) were from one-third to one eighth the size in assets, and had only one-tenth the total sales (during the 1960s).

Another characteristic of the industry is that the domestic and foreign capital are delicately intertwined (see Figure II-3). The lack of domestic sources and an unintegrated structure forced Japanese companies to enter capital and technological arrangements with foreign companies to overcome their disadvantages. These arrangements assured the supply of alumina or bauxite and provided technological know-how. These arrangements intensified competition among Japanese companies and lead to the excessive competition that has undermined the entire industry, especially the processing sector (Fujii, 1971). Thus, the aluminum industry like other natural resources industries has had to suffer from a weak competitive position due to an inefficient industrial structure.

The Japanese resource industries have some common general characteristics which make them different from their international competitors. These are historically determined by resource endowments, both international and domestic. First, the Japanese oil and mineral industry lacks mining and is concentrated in the refining, smelting and processing sector, while the large international firms have a vertically

Figure II-3: Inter-relations among Aluminum Enterprises



Notes: 1 ——— Capital alignment Technological tie-ups

2 Foreign capital participation in parenthesis

Source: Adopted from "Aluminum Rolling: In For Reorganization?"
Oriental Economist (July 1968) 36-693: 4144.

integrated structure encompassing production to refining. This is because Japan lacked domestic resource deposits and therefore had to depend on foreign sources. Furthermore, lack of capital and technology limited the ability of Japanese companies to expand overseas production. The only alternative was to rely on foreign firms to provide for Japanese needs.

Secondly, the unintegrated structure contributed to a relative weakness which created uncertainty regarding reliability and stability of supply. Unintegrated Japanese firms tended to be less profitable than the international mineral companies, because integration allows all profits to accrue within the company (Girvan, 1976b, p. 109). These low profit rates caused the low growth rates which prevented the capturing of economies-of-scale. These weaknesses forced the Japanese to depend increasingly on foreign sources and to remain vulnerable to the international resource companies in supply, volume, and price. Any fluctuation in the international resource economy would be transmitted to the domestic mineral companies and, eventually, the Japanese economy.

Finally, the industrial structure prevented Japanese firms from undertaking independent overseas resource exploration and development. In addition to the lack of capital resulting from low profitability, the long-standing relationships with foreign capital made the resource companies reluctant to take independent steps as long as cheap, stable supplies were available.

This section has shown that Japanese resource problems which the government and the business had to face during the post-war era, were caused not only by a physical scarcity of resources in Japan but also by economic growth based on heavy industry. Resource problems have affected most industrialized countries, in varying degrees. However, it has had an especially serious effect on Japan.

Usually it is theorized that technological innovation accompanied by industrial development will decrease the rate of resource demand

growth relative to GNP growth (Hayashi, 1971, p. 2-6). In Japan's case the opposite occurred because of the emphasis on heavy industry. Concern among both governmental leaders and businessmen throughout the 1950s and 1960s increased, due to Japan's increased resource dependence. Japan's weakness, the lack of domestic resources, worsened in direct relation to its economic growth based on heavy industry.

III

The Development of Japanese Resource Policies after World War II

The favorable post-war international economic environment made it possible for Japan to buy needed raw materials and sell finished products throughout the world (Yamamoto, 1975, p. 321). Japanese industries developed on the basis of these international conditions and those of a growing domestic economy. As the previous section suggested, heavy industries expanded rapidly due to a relatively inexpensive supply of resources; this expansion and abundant inexpensive supplies combined to increase resource consumption. The underlying effect of this growth during the 1960s was to increase dependence on foreign resources controlled by the international petroleum and mineral industry.

The Japanese government and extractive industries were forced to adopt a more independent resource policy because of increasing concern about growing dependence on foreign supplies and other developments in the international resource economy. MITI devised policy instruments to supplement, and sometimes, to lead private industries' extractive activities. The government effort was essential in shifting from passive to more active procurement patterns commensurate with Japan's increasing economic strength.

1. THE PARTICIPANTS AND THEIR STRATEGIES

Japanese post-war extractive resource policy has not been devised and conducted by either the resource industry or the government alone.¹

1. During the war, resource extraction was conducted by state corporations, such as Teikoku Kōgyō Kaihatsu (Imperial Mineral Development) and Teikoku Sekiyu (Imperial Petroleum) which were set up in 1939.

It has been the outcome of the intermeshed policies of the public and private sector. However, the government, through MITI, played a significant role in shaping the character of government-industry relations in regards to resource policy. The government, especially MITI, is in charge of resource policy, and the extractive industries, mineral and petroleum companies, trading companies and consumer industries, have been the major participants in the policy process.² These two groups have taken part in the overseas resource policy with their respective policy instruments and strategies.

Government: MITI

Prior to discussion of the government policy toward overseas procurement, general resource policy will be described as a background for the development of the overseas-oriented policy.

MITI has been involved in resource policy since 1952 when Japan regained its independence. Initially, the main emphasis was put on domestic resource production and the organization of the domestic petroleum and mineral industry. Due to the shortage of raw materials domestic production was strongly encouraged by the government (MITI, 1972, p. 57). A typical example was the promotion of coal production through supports in the form of subsidies for the exploration and development of domestic mines (Miyashita, 1980, p. 58). The government's rationalization of the coal mines, however, failed in increasing production sufficiently as coal was unable to compete with cheap imported oil.

In 1955 MITI encouraged private firms to establish the Petroleum Resource Development Corporation (*Sekiyu Shigen Kaihatsu*) with 50% government and 50% private capital to undertake the exploration and

2. Mikdashi (1976) and Tanzer (1980) suggest examining governments in both consuming and producing countries and the extractive industry as participants in resource policies.

development of domestic petroleum (Jūkagaku-Kōgyō, 1976, p. 73). In addition to concern over insufficient resource supplies, MITI was worried that foreign subsidiaries or foreign-affiliated resource industries might gain control of the Japanese market (Okamoto, 1980, p. 181; Tsurumi, 1976b, p. 15). It was regarded as essential for the Japanese economy to have its own basic industries in such areas as smelting and petroleum refining (MITI, 1972, p. 52). To limit foreign entry and to foster domestic companies, MITI introduced various measures, including regulations on foreign exchange and foreign investment, assistance in acquiring capital and overseas technology and tax subsidies for the domestic mineral industry.³

Laws passed in the 1950s, such as "Draft Law of Metal and Mining Industry Stabilization (*Kinzoku-Kōgyō Antei Rinji Sochi Hō*)" and "Draft Law of Nickel Smelter Promotion (*Nikkeru Seiren Jigyō Josei Rinji Sochi Hō*) (1951)" provided the non-ferrous mineral smelters with benefits such as tax exemption for ore imports and credits for the construction of new smelters (MITI, 1971, pp. 70-71). Foreign technology as well as raw material was channeled by MITI to the mineral and oil industries while foreign participation was kept to a minimum by the Foreign Investment Law (Tsurumi, 1976b, p. 39, p. 58). In the face of trade liberalization, tariffs on mineral ingots were imposed in 1961 to protect domestic smelters that processed imported ores (MFA, 1972, pp. 333-336). MITI attempted to foster and protect the limited number of mineral corporations which were expected to become competitive refiners. For this purpose MITI adopted various legislative measures to control the inflow and outflow of capital, goods and technology (Pempel, 1978, p. 161).

Because of its importance as energy source as well as raw material for heavy industry, a more direct policy was introduced in the case of petroleum. In the 1950s, as petroleum replaced coal as the chief energy

3. On MITI's instruments in Japanese foreign economic policy, see Johnson (1977) pp. 246-260.

source, MITI's policy was aimed at the procurement of stable supplies as cheaply as possible for users that MITI targeted as key industries such as steel and petro-chemicals.⁴ Given the structure of petroleum industry, there remained uncertainty about supply, because foreign-affiliated oil refiners and marketers were dominant in the industry. Therefore, MITI, through control over foreign exchange allotments, favored domestic refineries and wholesalers by preferentially allocating the crude oil supplies (Nishida, 1979, p. 20). The main purpose of the policy was to nurture fully Japanese-owned refinery and marketing firms to lessen the dependence on foreign companies and ensure an inexpensive and sufficient supply of oil (Tsurumi, 1976a, p. 115).

Though foreign-affiliated refiners were dominant in the industry, only on exception did foreign ownership exceed 50% of paid-in capital. This is very different from Western Europe where many such subsidiaries are 100% foreign owned (Nihon Sekiyu, 1977, p. 87). This was the outcome of a compromise between the Japanese government and foreign oil companies. This compromise met the MITI objective of lessening foreign management and control of the industry and market (Chen, 1967, pp. 182-184), but ensured that foreign oil companies could continue operations in Japan.

In 1961, prior to the liberalization of import restrictions which diminished MITI's resource import controls, the Energy Committee (*Enerugi Kondankai*) was organized by MITI to propose future policy guidelines in energy policy. The proposal suggested in December 1961 that:

Since petroleum is the basic energy source in Japan, it is necessary to secure low-cost and stable supply of oil. . . . Government is required to devise an oil

4. In 1955 MITI launched policies to promote the petrochemical industry with the policy guideline "The Promotion Policy of Petrochemical Industry." (Nakamura, S. 1980, pp. 45-54).

policy so that a certain share of domestic market could be controlled by Japanese (quoted in Nihon Sekiyu, 1977, p. 96).

The 1962 Petroleum Industry Law, which was implemented in reply to this proposal, provided MITI with a new regulatory device. The legislation authorized MITI to permit the building of new refineries and the expansion of existing refinery facilities according to MITI's "petroleum supply plan." MITI's position was that the policy was multipurpose; to insure a stable and cheap supply of oil to foster competition with foreign-affiliated firms and to prevent over-competition caused by capital liberalization. Under the Petroleum Industry Law, MITI was to maintain order in the petroleum industry through the permit system and administrative guidance (Watanabe, 1975).

Yet, whatever the intentions were, the law's effect was to keep the petroleum industry overcrowded with increasing numbers of domestic refineries and marketers. As the world petroleum market became glutted during the early 1960s and MITI's concern about a stable supply of oil decreased, MITI's oil policy objective became the maintenance of low prices for petroleum consumers. MITI's Japanese oil industry policies under the Petroleum Industry Law allowed many new refiners and wholesalers to enter the market. This led to intense sales competition contributing to low profit rates for Japanese oil companies. Therefore, in spite of MITI's claim that it was fostering the industry, the structure of the industry remained fragmented and weak. The tariff policy against the import of petroleum products and the competition among oil refineries ensured low oil prices to the consumers; the heavy industries and utility companies (Tsurumi, 1976a, p. 116). Thus, one of MITI's goals, low prices for refined products was achieved at the cost of a weak industrial structure. In this way, the Petroleum Industry Law facilitated MITI's conduct of its petroleum industry policy throughout the 1960s.

Resource policy throughout the 1950s was domestic oriented and directed toward the domestic mineral industries with the purpose of nourishing and protecting them from foreign competition. It was also a policy of cartelization which reduced the number of firms in each field and ensured competition (Watanabe, 1975, p. 263). Measures were introduced so that low priced resources were available for consumers while protecting the domestic mineral industry. At times these two goals were contradictory. For example, in the case of the petroleum industry, the glut of oil in the world market in 1950s and early 1960s promised cheap supplies, dissipating governmental concern about supplies. The policy was to remain focused upon organizing domestic industries and maintaining low prices. The relatively weak mineral and fuel industry had little chance to develop their own ore and crude supplies, except in iron ore and coal. These factors induced MITI and the industries to adopt rather passive, inward-looking policies towards overseas extraction.

In contrast to the protective resource policy in the 1950s, by the mid 1960s MITI had gradually initiated more comprehensive resource policies, including a policy of encouraging overseas extractive activities. When the Petroleum Industry Law was implemented in 1962 MITI set up the Overall Energy Section (*Sōgō Enerugī Bukai*) in the Industrial Structure Council, MITI's Advisory Council. Its objective was to develop a more systematic energy policy with policies not only for coal but also for nuclear power and petroleum (Yanaga, 1968, pp. 180-185). The first report in 1963 reemphasized the indispensability of a low-cost and stable supply of petroleum for the Japanese economy, along with the importance of control of a certain share of the oil market. The measure to be used to achieve this was MITI's support of the domestic petroleum industry under the Petroleum Industry Law. The committee also suggested that it was necessary to promote overseas exploration and development of crude oil, although this overseas effort received less emphasis (Nihon Sekiyu, 1977, p. 97).

The necessity of a concrete energy policy was realized not only in MITI but also in the Diet, which passed a resolution in 1964 calling for a more complete energy policy. In accordance with the popular concern MITI created the Overall Energy Research Council (*Sōgō Enerugī Chōsa Kai*) in 1965 as an independent council composed of scholars, journalists and businessmen charged with the responsibility of devising a comprehensive and systematic energy policy (Watanabe, 1975, p. 267). The council was assigned the task of setting the goal of future energy policy and of proposing the policies to achieve that goal. Their report in 1967 cautioned against too great a dependence on foreign sources of crude oil. It emphasized the need for a more independent overseas resource policy, proposing not only geographical diversification of supply sources but also the promotion of overseas exploration and development. Further, the creation of a governmental agency to support overseas development efforts was suggested. The final council goal was that by 1985 30% of Japanese oil consumption be satisfied with crude oil developed by Japanese companies (Nihon Sekiyu, 1977, p. 98).

Meanwhile, the Resource Research Committee (*Shigen Kenkyū Iinkai*) in the Japan Economic Council (*Keizai Shingi Kai*) was organized in May 1969 including officials from MITI, Economic Planning Agency, Ministry of Agriculture, and Science and Technology Agency. Their report issued in December, 1969 clearly suggested the need for Japan to participate in overseas extraction activities and used the term "autonomous development" of resources by Japanese (Keizai Shingikai, 1969, pp. 131-145). Furthermore, it recommended "resource diplomacy" "to smooth the ground between the governments of Japan and producer country so that private companies can launch resource development promptly" (Keizai Shingikai, 1969, p. 149). This report re-emphasized the strategic importance of overseas resource development for Japanese economy.

In 1970 a research mission was sent by MITI to investigate the overseas energy situation. The objective of the mission was to discover

a more independent way of importing oil than the "tied-crude" method. A report by the Overall Energy Research Council in 1971 stated that Japan should search for "autonomous" sources of resources by promoting exploration and development projects as well as developing alternative methods of insuring supply. The report is noteworthy because it pointed out the changing structure in the international mineral industry, which presented the Japanese with the opportunity to develop a more independent resource policy. In the same year MITI published its first complete report describing the Japanese resource situation, the "Natural Resource White Paper", which advocated increased efforts in overseas resource exploration and development. Although it avoided the phrase "autonomous development" and used phrases such as "development participation," "resource development would be at the center of Japanese foreign investment" (MITI, 1971, Ch. 2). These reports by MITI's advisory organs suggest the increasing concern regarding resource problems and actual resource policies, especially with regard to petroleum. MITI's concern for resource procurement in the 1960s and the early 1970s shows a definite shift in attitude from protectionism to one of actual policy management.

This shift was reflected in the creation of MITI's special committees on energy as well as in the content of proposals made throughout the 1960s. The increasing dependence on foreign sources of petroleum and minerals created increasing concern among MITI's officials, not only in regard to price but stable supply as well. This was true because in MITI's opinion, low-cost resources were the key factor for Japanese production. This was due to Japan's insufficient capital and lagging technology in comparison to the U.S. and Europe. Combined with high land and labour cost, this had the possibility of constraining production (Hayashi, 1971, p. 3). Furthermore, in order to operate large factories without any interruption, resources had to be supplied constantly, at as low a price as possible (Girvan, 1976a, p. 14). In addition to the price concern which MITI had had since the 1950s, the stability of supply became an important concern in the mid 1960s.

In fact, dependence on foreign sources was not serious as long as the supply was guaranteed at relatively low prices. However, a variety of factors in the international arena developed in the 1960s increasing uncertainty regarding the stability of low-cost supplies. One was the behavior of international mineral industries, which consumer countries could not control. The supply system was rigid not only because of the nature of resource endowments, but also because the international mineral and oil companies were integrated from production to marketing (Keizai Shingikai, 1969, pp. 108-109). This was unimportant while Japan's consumption was small and increases could be met from existing production. However, as Japan's demand increased enormously and as the market tightened, the mineral companies responded by curtailing shipments or raising prices. The international supply system controlled by the international corporations created an unpredictability of supply and price (Hayashi, 1971, pp. 4-5).

Second, in the 1960s the producer countries demanded more control over mineral and oil produced in their respective countries and increased royalties or the posted price of products. The creation of producer unions, such as OPEC (1960) and CIPEC (1967) and the series of nationalizations in producer countries, such as copper industry in Chile (1964 and 1969) and in Zambia (1969) also destabilized the international resource markets, affecting price and supply.

Third, any fluctuations in the international resource market affected Japan's supply. For example, the INCO strike in 1966 caused a supply shortage for Japan. Other events, such as the Vietnam War, a conflict in Zambia, strikes in copper mines in U.S. and Chile, all caused or contributed to the increased copper prices for Japanese companies in the post-1965 period. These unpredictable factors in the international arena heightened MITI's concern regarding the increasing dependence on foreign resources (MITI, 1971, pp. 188-191).

MITI, being concerned about the resource problem, became more actively committed to a more independent resource policy of securing

resources from sources being developed with some Japanese capital. For Japan, which had no mineral and petroleum companies comparable to the giant international corporations, it was difficult to decide how and where to invest in extractive activity. MITI played a very important role in ameliorating the weakness of Japanese industries. It supported and encouraged companies, through policy instruments, to embark on resource exploration and development. These instruments included the establishment of governmental agencies for the provision of financial and technical support to private industries. In addition, MITI rendered "diplomatic" assistance to extractive activities by providing economic and technical aid to producing countries.

In 1967, MITI established the Petroleum Development Public Corporation (PDPC) (*Sekiyu Kaihatsu Kōdan*) by reorganizing the existing Japan Petroleum Resource Development Corporation (established in 1955). This was a response to the recommendations of MITI's advisory body, the Overall Energy Research Council. In the meantime, petroleum's place among primary energy sources rose from 20% in 1955 to almost 60% in the mid 1960s, and was expected to increase further. This increase indicated the importance of developing overseas sources even during a world oil glut. The search for oil had been started by Japanese companies after the mid 1950s, but was rather sporadic and was technologically and financially handicapped. By the mid 1960s more systematic encouragement of the government was considered necessary to overcome these problems (MITI, 1971, pp. 301-307).

The PDPC offered both equity and loan capital to private corporations to undertake exploration and development of energy sources such as petroleum and LNG. It also assisted companies by underwriting the financial risk of projects to ensure financing from other institutions. Moreover, it offered rental of exploration machinery, technical consultants and provided geological studies for exploration and development. Loans to unsuccessful exploration ventures are partially forgiven. All assistance is offered under the condition that the Japanese company either gains control over the project in terms of

equity participation, or has voting and product rights in accordance with its participation (*Jūkagaku-Kōgyō*, 1976, p. 54).

The function of PDPC was to provide technical as well as financial assistance in support of private companies' overseas efforts which otherwise would have operating difficulty. Total financing by 1975 was 242.4 billion yen for 45 projects of which 56.4% was in the form of investment and 43.6% in loan. The geographic distribution of financing was the Middle East 65.43%, Southeast Asia 12.28% and Latin America 10.37%, respectively (see Table III-10). Furthermore, the PDPC not only supported exploration activities, but also encouraged private corporations to organize new oil exploration and development companies among themselves. The trading companies and oil refineries, which had not been involved in oil exploration before, were encouraged, through PDPC's assistance, to embark on new projects. In this sense, the policies established by PDPC indicated the direct of public policy to private companies (Yoshino, 1975, p. 258).

MITI's effort to organize the mineral industries for overseas extraction also had started in the early 1960s. MITI encouraged cooperation among mineral corporations in overseas development activities. For example, MITI coordinated the formation of the Overseas Mineral Resource Development Corporation (*Kaigai Kōbutsu Shigen Kaihatsu*) by non-ferrous metal firms in 1962 with capital participation of the Overseas Economic Cooperation Fund (OECF), a governmental foreign aid agency. MITI maintained that cooperative mineral development was preferable because it could overcome the weakness that a single Japanese company would have in overseas activities (Keizai Shingikai, 1969, p. 144).

In order to further these efforts, in 1968 a new overseas resource development section was set up by MITI as a government corporation called the Metal Minerals Development Promotion Corporation (MMDPC) (*Kinzoku Kōbutsu Tankō Sokushin Jigyō-dan*), also known as the Metal Mining Corporation (MMC) (*Kinzoku Kōgyō Jigyō-dan*), to

TABLE III-1

LOANS AND INVESTMENT BY PDPC (by geographical region and by year)

(1 million yen)

<u>Region</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>Total</u>	<u>Projects</u>
Southeast Asia	800	2,827	3,564	4,298	1,038	1,075	2,352	5,899	7,916	29,769	12
Oceania	..	52	60	..	164	293	..	1,130	1,806	3,505	5
Middle East	..	1,200	2,770	5,520	7,590	16,915	19,503	47,460	57,675	158,633	9
Africa	..	..	..	620	1,930	2,170	3,410	2,961	3,923	15,014	6
South America	..	..	..	200	560	26	1,230	14,101	9,023	25,140	5
North America	..	1,046	260	91	..	30	..	..	1,247	2,674	4
Overseas Total	800	5,125	6,654	10,729	11,282	20,509	26,495	71,551	81,590	234,735	41
Domestic					2,187	2,449	1,544	1,286	215	7,681	4
Total	800	5,125	6,654	10,729	13,469	22,958	28,039	72,837	81,805	242,416	45
Investments	800	4,147	5,074	8,658	12,939	19,113	20,285	27,949	37,647	136,612	(56.4)
Loans	..	978	1,580	2,071	530	3,845	7,754	44,888	44,158	105,804	(43.6)

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organize an overseas mineral development system as well as become a central promotional instrument. The function of MMDPC was similar to that of PDPC in providing financing and technical aid. Information gathering about prospective ore bodies and geological studies was conducted by MMDPC⁹ especially in developing countries where complete studies on promising mining areas were unavailable. These studies were pursued by MMDPC with a MITI-commissioned budget in cooperation with the Japan International Cooperation Agency (JICA)⁹ another governmental organ. The Japanese government also used the MMDPC to extend project financial assistance in developed countries; in developing countries the OECF fulfilled the same financing function. (See Figure IIb-1.) As was the case with petroleum development, MITI's aim was to establish a base for private overseas projects by increasing opportunities for participation while lessening exploration and development risks through government guarantees (Jukagaku-Kogyo, 1976, p. 60).

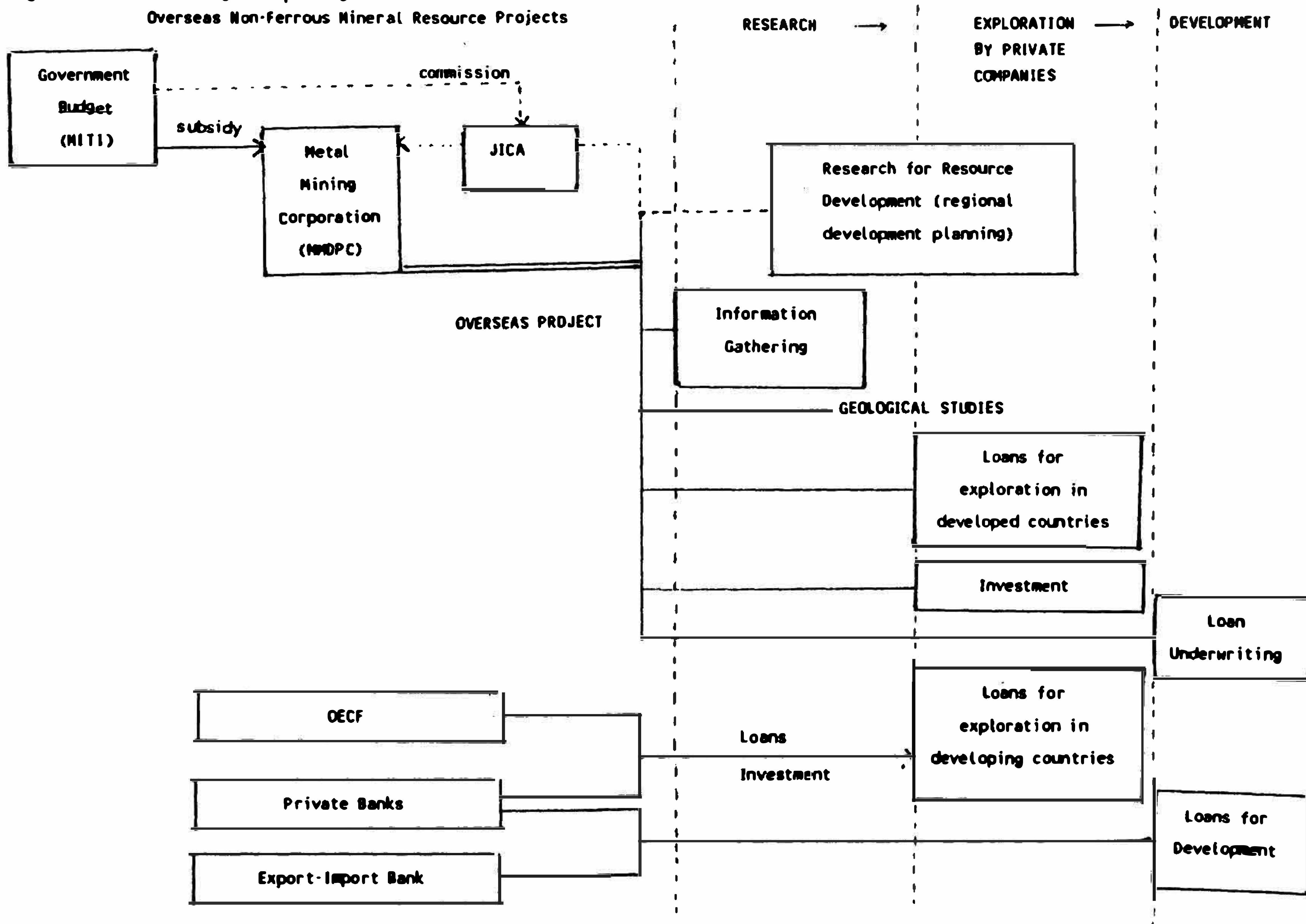
In addition to direct governmental assistance to private companies, another strategy was to extend assistance to a specific project in that project's host country. As mentioned in the previous section, in the 1960s, the sources of Japanese raw materials were concentrated in developing countries. Unlike the 1940s and 1950s, resources in the 1960s became increasingly controlled or supervised by the governments of the developing countries. Therefore⁹ there were more opportunities for the Japanese to deal directly with the governments or state controlled resource corporations in producing countries.

MITI's 1971 Natural Resource White Paper States:

Now that the resource question is more a major concern of the state than of private firms in developing countries, it is essential to deploy an active resource diplomacy in order to keep good relationship with these countries (MITI, 1971, p. 305).

For the Japanese government "resource diplomacy" was one policy tool to achieve the goal of establishing an independent resource supply structure. This "resource diplomacy" was embodied by Japan's bilateral

Figure III-1: Flow Diagram Depicting Assistance for Overseas Non-Ferrous Mineral Resource Projects



"economic cooperation" and "aid" to producer countries (Yamamoto, 1978, pp. 31-39). However, the idea of economic diplomacy with aid was not new. Historically, Japanese aid, or at least a major part of it, contributed to private business operations in recipient countries. Reparation payments to Southeast Asian countries were a key to Japanese economic expansion in the region in the shape of expanded markets for Japanese product, factories and export capital (Yamamoto, 1978, pp. 18-30).

"Non-commercial aid" to developing countries, referred to as Official Development Assistance (ODA), is nearly 30% of "economic aid," and includes yen-credits and technical assistance as well as reparations to Southeast Asia. The yen-credits offered through the Export and Import Bank and OECF comprised about 50-60% of ODA in the late 1960s and early 1970s (MITI, 1975a, p. 135). The yen-credits for investment in specific project are called "project aid" and occupy 59.6% of the cumulative value of the yen credits between 1957 and 1975 (MITI, 1975a, pp. 196-197). Further, some of these credits have been directly tied to resource development projects. In such cases the yen credits are conditioned upon Japanese access to the resource project or to the project's products. Since Japan's first governmental aid in 1951, tied to an Indian iron-ore development project which assured iron-ore supplies for the period of repayment, project aid has been utilized as an effective way of acquiring resources and exporting Japanese products (Uemura, 1967). This type of yen credit was granted to Indonesia in the 1960s and early 1970s, for example, in exchange for access to LNG and oil projects and their supply.

Aid has also been used for the construction of such infrastructure as transportation facilities, housing, and communication systems, which complement the extractive ventures (Ohashi, 1980). Infrastructural investment has increasingly become part of contracts signed for resource development projects, and Japanese government aid is being channeled into infrastructure for mineral development projects in which Japanese companies participate (Saito, 1977, p. 270).

Technical assistance is utilized as another policy tool to further resource exploitation by Japanese companies in developing countries. Although the share of technical assistance in ODA is small (5.6% in 1973) when compared with West Germany (26.5%) and France (44.7%), it facilitates research for specific development projects in various fields (MITI, 1974a, p. 230). The studies conducted include those on resource development and related infrastructure projects. MITI not only commissioned geological studies of prospective regions, but also conducted regional development planning in cooperation with JICA, formerly the Overseas Technical Cooperation Agency, and MMDPC. Actually, the technical assistance policies on mining are prepared by the Technical Cooperation Division of MITI and reviewed by JICA (Rix, 1980, p. 165). MITI claims these are informational studies of potential mines and are done by Japanese "in place of governments in developing countries" (MITI, 1975a, p. 234). However, these are, in addition, feasibility studies of resource development projects which can be offered loans or investments by the Japanese government. In 1974 studies were being undertaken in Kalimantan (Indonesia), Luzon (the Philippines), and Michikijai (Peru), places where Japanese extractive industries had strong interest (MITI, 1975a, p. 242).

The other type of government aid, Other Official Flows (OOF), represents about 50% (1970) of total government aid. OOF is comprised of official export credits, equity investment credits and capital subscriptions and purchases of bonds issued by multinational aid agencies (Sakurai, 1972, pp. 54-55). Among these, equity investment credits and capital subscription comprise approximately 20% of OOF (1970) and assist private overseas investment with capital from the Japanese government (Hasegawa, 1975, p. 31). The value of overseas equity credits and capital subscription have increased rapidly, from \$28.6 million in 1966 to \$55.9 million in 1969, \$143.1 million in 1970, \$264 million in 1972 and \$569.8 million in 1973.

For resource projects, the flow of "aid" includes not only credits for exploration from the Export-Import Bank, but also finance capital

for exploration and development of projects through OECF. Governmental financing, combined with the private investment capital and loans are the basis for the overseas resource projects (Sakurai, 1972, p. 113). By the late 1960s this type of aid was channeled to large-scale resource projects, such as the Arabian Oil Corporation (1958), Sulawesi Nickel Development Corporation (1961), the North Sumatra Oil Corporation (1965), and the Congo Mining Development Corporation (1967).

"Governmental aid" is closely tied to private resource development efforts in developing countries producing primary goods. This governmental support for resource projects has been received not only by private companies in the form of credits or investment but also by producer governments and/or state-owned resource industries in the form of yen-credits, technical assistance, and infrastructure construction. The link between the government aid and private resource development indicates the coordination of government and the extractive industry in securing independent sources.

Private Corporations

Resource Industry

The participants in oil and mineral extraction can be divided into two groups, although in many cases they overlap. One group consists of the mineral and oil industries, whose principal operations are resource production, refining and processing. The other is a group of trading companies and consumer industries which had not been involved in resource operations in earlier periods. Because of their unintegrated structure, the resource industry had been reluctant to participate in an active search for the new sources until the mid 1960s. Technological and capital constraints also prohibited independent activities. To secure ore or crude oil the companies relied largely on the open-market or long-term supply contracts.

By the end of the 1960s, mineral refiners faced problems in securing sufficient supplies and were compelled to search more actively for sources. By then, the industries had established processing plants which they could not afford to keep idle due to input shortages (Tsurumi, 1976b, p. 40). Therefore, it was of vital interest to maintain the flow of raw materials, and consequently, they sought a method of acquiring secure sources through employment of their increasing capital and technological capabilities. The main objective of their ventures was to ensure supply from captive sources.

Another factor motivating the resource industry to embark upon overseas ventures was the search for smelting and processing sites outside of Japan. By the early 1970s increasing public concern over pollution led to the required installation of anti-pollution devices in smelting facilities. This increased the costs of mineral smelting and companies responded by building smelting and processing plants overseas. Further, the high cost of electricity in Japan made it advantageous for the aluminum industry to smelt in the countries where the bauxite was mined if they also had low cost electricity (Fujii, 1971, p. 201).

The non-foreign affiliated oil refiners, though of limited power, attempted to strengthen their competitive position vis-a-vis the foreign affiliates. The most important method was to secure independent sources of supply to gain some bargaining power. Furthermore, some Japanese refiners, the so-called "kombinat" refiners, were attached to big oil users such as the petrochemical and utility companies and had the same interest in cheap oil as other consumers (Okamoto, 1980, p. 182).

Trading Companies and Consumer Industries

Trading firms (*Sōgō Shōsha*) traditionally have engaged in the mineral trade (Young, 1979, p. 7).⁵ There are a variety of factors

5. By 1975 about 50% of resource imports were handled by the top ten trading companies.

which prompted increased trading company involvement in the resource industry in the 1960s, not only as traders, but also as producers. First was the trading companies' interest in obtaining low prices and a stable supply of resources for their customer industries (Kamakura, 1976, p. 312). They could link extractive projects to other commercial interests, such as machinery and plant exports related to the projects. Thus, as resource shortages appeared, they were motivated to participate more actively in overseas ventures. The biggest stimulus was the government's encouragement through the establishment of the PDPC and reinforcement of the MMDPC, indicating to the trading companies the direction of future resource policy.

Trading firms played two different, but often overlapping, roles in overseas extractive projects. The first role was that of project organizer; the other was as an investor. By the mid 1960s each trading company shared individual projects with mineral and oil industries, sometimes as an organizer and other times as an investor, through loans and equity participation. For example, in the case of petroleum, a development company was organized for each project by a trading company and other participants. After the mid 1960s trading companies extended their organizing function to the coordination of larger scale projects for both mineral and consumer industries. They also joined the ventures as investors, sometimes with other trading companies. In the late 1960s their role as investor became increasingly important.

Their role as "organizers of large projects" occurred late chronologically. This was especially true in regard to oil extraction projects. In this new pattern trading companies formed the core of a group of firms which were related financially (*Keiretsu*). The group usually comprised of the trading company, a core bank and other non-petroleum industries. A consortium formed by the group usually participated in more than one exploration and development project. In the 1960s many of these development projects were launched in response

to MITI policy initiatives.⁶ After the mid 1960s the trading companies increasingly played a leading role in overseas resource enterprises, not only as organizers, but also as investors because of their growing financial capabilities and access to information.

Consumer industries also participated in these trading company organized ventures. Concern about future resource supply also prompted them to secure "capture sources."⁷ For example, the electric and gas utility companies joined in petroleum and LNG development and the steel industry entered into iron ore and nickel development. Inter-industry cooperation in resource development became even more marked notable after the mid 1960s.

2. PATTERNS OF PROCUREMENT

The patterns of resource procurement are divided into three categories: market purchases or "simple purchases," loan-tied purchases, and "autonomous development."⁸ Changes in resource policy can be characterized by shifts in these resource procurement patterns, the main characteristics of which will be discussed in this section.

Pure commercial transactions at market prices, whether long- or short-term, are commonly termed market purchases or "simple purchases" (Aihara, 1980, pp. 258-259). This pattern has predominated and continues to predominate procurement by the Japanese. For example, in

6. These development companies were established in the late 1960s and early 1970s: Mitsui Petroleum Development (July 1969), Mitsubishi Petroleum Development (February 1972), Sumitomo Petroleum Development (January 1973), Fuyo Petroleum Development (February 1973), World Energy Development (February 1973), Toyo Petroleum Development (February 1973), Central Energy (February 1973).

7. In various articles and government documents "autonomous development" is confused with another term, "Development-Import" pattern. According to one MITI official "Development-Import" is a category of procurement which consists of loan-tied and "autonomous development" as used in this paper. The term "autonomous development" is used as it is in MITI's White Paper to avoid confusion (Uraki, 1969).

1977 about 38% of copper ore and 90% of bauxite imports were simple purchases. Simple purchases allow the buyer great flexibility in selecting sources as long as the resource market is stable. The lack of any involvements such as loans or investments makes it relatively riskless (Tamaki, 1971, p. 361). However, supply volume is not necessarily guaranteed, even with a long-term contract, because of production fluctuations and changing market situations.⁸ Furthermore, prices are uncontrollable as they depend on the resource market and the behavior of the international mineral industry. Thus, this type of resource procurement is relatively "unreliable" with regard to price and volume (MITI, 1971, p. 97).

The second type of purchase is the "loan-tied purchase," which assures preferential access to natural resources in exchange for exploration and development loans for specific projects. Unlike the "simple purchase," in which the buyer has no control over sellers, the loan-tied purchase guarantees supply for certain stipulated periods at a favorable price as repayment for the loan (Tsurumi, 1976b, pp. 41-42). This pattern also has long-term drawbacks similar to market purchases, uncertainty regarding volume and price. The creditor has little voice in the production and management of development projects, i.e., no possibility of securing profits nor of management participation (Tamaki, 1971, p. 361).

To avoid the disadvantages of the above, "autonomous development" scheme has been preferred. "Autonomous development" (*Jishū Kaihatsu*) means that Japanese participate in both development and production through equity or portfolio investment, and then purchase the products. Though investors bear the risk and the burden of huge capital requirements, they secure "autonomy" in production; that is, they control volume and price, and also reap the profits of integration from

8. In 1966 when the copper ore market was tight, about 10% of Japan's contracted supply was cut by international copper companies (MITI, 1971, p. 87).

the mine to industrial use (Saito, 1969, pp. 32-34). This type of procurement ensures the integration of the mineral company from production to refining; this also ensures competitiveness internationally as well as among the domestic companies (Horikoshi, 1971, p. 160). Furthermore, this type of procurement and loan-related investment serve to increase exports of Japanese products such as project machinery and building materials.

Of seventy-one on-going Japanese affiliated projects in non-ferrous minerals in 1977, fourteen were of the loan-tied purchase type and fourteen were "autonomous development" projects. The others were only in the exploration stage (Aihara, 1980, p. 259). Autonomously developed projects accounted for 9.8% of total crude oil imports in 1970, and in 1974, 5.9% of total copper ore and ingot imports, 7.3% of zinc ore and ingot imports, and 3.9% of bauxite and aluminum imports (MITI, 1980, p. 247).

3. THE DEVELOPMENT OF JAPANESE OVERSEAS RESOURCE POLICY

The period from the early 1950s to the early 1970s can be divided into three periods on the basis of changing policies towards overseas resource extraction by both government and private industry.

Early 1950s to the Mid 1950s.

By the mid 1950s Japan emerged as a processor of raw materials, most of which were imported from abroad. The share of imports in the total consumption of key resources in 1951 was: copper (18%), zinc (0%), iron ores (47%), and oil (90.0%). Japanese government policy was largely aimed at encouraging domestic mining. Overseas procurement was through simple market purchases from foreign companies, except for a portion of iron ore and copper.

Efforts in overseas resource development, mostly of iron ore and copper, had been begun by Japanese mining companies. Total Japanese

overseas direct investment in the period from 1950 to 1957 included 134 ventures, of which twenty-five were mining and oil projects; total investments were \$17 million (Tsurumi, 1976b, p. 38; Daimon, 1963, p. 9). The iron ore development projects began in 1951, mainly in India, and copper extraction was begun in the Philippines in 1953 by the copper companies. In the case of the Philippines a loan for plant imports from Japan was extended in exchange for purchases of copper ores (Takebayashi, 1963, pp. 112-113). The project pattern, however, was not of equity participation but of loan-tied purchases from developed mines.

The projects during this period were small in scale, concentrated in Southeast Asia where the companies took advantage of pre-war connections and geographical proximity. Except in the few cases of iron ore development in India, the government was not directly involved in overseas extractive activities. Thus the resource policy was rather passive and opportunistic in character (Jūkagaku-Kōgyō, 1976, p. 160).

Mid 1950s to the Mid 1960s

During this period, Japanese companies began to participate in overseas extractive activities. Between 1958 and 1966, seventy-two projects were begun with a total investment of approximately \$366 million (See Table III-2). These projects included not only iron ore development, but also copper and other non-ferrous metal extraction. The copper companies actively took part in exploration and development. After securing access to Southeast Asian sources through project loans in the late 1950s and early 1960s, especially in the Philippines, they commenced mining projects in Latin America. In 1957, for example, Nippon Mining purchased the Portecello Copper mine in Chile, initiating their first full-fledged post-World War II development project. By 1965, a few other copper mines were developed by Japanese copper companies in Bolivia (1960) and Peru (1963, 1965). These were small in scale (2000-5000 tons/year), but they set the pattern for "autonomous development" schemes, which would become more frequent in the late

TABLE III-2
RESOURCE-ORIENTED OVERSEAS INVESTMENTS OF JAPAN, 1951-1974

<u>Year</u>	Number of Projects			Equity Invested (\$000s)		
	<u>Timber and Pulp</u>	<u>Mining and Oil</u>	<u>Total</u>	<u>Timber and Pulp</u>	<u>Mining and Oil</u>	<u>Total</u>
1951-1957	3	25	28	15,556	17,176	32,732
1958-1959	1	9	10	33,291	24,658	57,949
1960-1961	10	15	25	1,697	148,716	150,413
1962-1963	2	15	17	9,337	59,900	69,237
1964-1965	3	16	19	14,284	56,580	68,864
1966	5	17	22	36,419	72,147	108,566
1967	4	14	18	2,360	58,625	60,985
1968	5	15	20	17,280	158,681	175,961
1969	6	31	37	3,315	297,301	300,616
1970	14	38	53	73,815	234,955	317,770
1971	14	33	47	49,270	228,592	277,862
1972	29	26	55	34,474	917,386	951,860
1973	79	61	140	66,396	511,218	575,614
1974	52	67	119	61,000	466,000	527,000
Total	227	382	610	418,496	3,256,945	3,675,429

Source: Adopted from Tsurumi (1976b).

Originally from MITI, Nihon Kigyō no Kokusaiiseki Tenkai, Tokyo, 1974.

1960s. In 1959 Sumitomo Metal Co. participated in the Bethlehem copper mine in Canada, producing 10,000-25,000 tons/year, with a 30% equity position and bearing 52% of development cost.

After 1960 the mining companies introduced internally financed large-scale loan-related projects. For instance, in 1965 loan-related purchases from the Rio Blanco Copper Mine in Chile were contracted by Sumitomo Metal Mining, Nippon Mining Co., and Mitsubishi Metal Mining. These three companies advanced 11.5 billion yen as part of a 56.5 billion yen development project in exchange for 44,000 tons/year of copper ore (*OE*, Dec. 1970, p. 40). This was the first large cooperative project that included three mineral companies. Its success prompted a succession of similarly organized projects in later years. Simultaneously, this cooperative pattern was encouraged by MITI to promote overseas mineral extraction. The instrument for this promotion was the Overseas Mineral Resource Development Company, which was established in 1962 (*E/MJ*, Nov. 1971, p. 87). In this manner Japanese companies increasingly became involved in copper extraction. Imports from captive sources increased to 6% of total imports. The addition of loan-tied purchases brought this to 25% of total imports in 1965 (*Keizai Shingikai*, 1969, p. 87).

Other minerals such as lead, zinc, bauxite and nickel were mostly purchased on the open market. Very few projects had Japanese corporate participation. For example, only 778 million yen was invested in the exploration and development of zinc and lead projects in Thailand, Mexico, and Peru from 1958 to 1965 (*Jūkagaku-Kōgyō*, 1976, p. 170). The Japanese participated in nickel projects only in Indonesia with an investment of 486 million yen between 1963 and 1965 (*Jūkagaku-Kōgyō*, 1976, p. 210).

In the late 1950s a few ventures in oil development were conducted by the Japanese. The Arabian Oil Company was formed in 1958 by forty companies representing the "Zaikaidō" group, including electric utilities, steel, trading companies, and banks, and they acquired exploration

rights in the neutral zone of Saudi Arabia and Kuwait.⁹ Oil imports from fields discovered and developed by this project began in 1961 and supplied about 9% of total crude oil imports by early 1970. This was the first case of post-WWII autonomously developed crude oil production (Yoshino, 1976, pp. 58-61).¹⁰ MITI helped the company develop a market in Japan through administrative measures under the Petroleum Industry Law as most refiners were tied to foreign companies (Watanabe, 1975, p. 267). In 1960 the North Sumatra Oil Development Cooperation Company (NOSODECO) was formed as an operating company by the Japanese government with OECF funds after an agreement with the Indonesian government was reached. Repayment for an 18 billion yen credit would be in crude oil supplied by the Indonesian state oil company, Permina.¹¹

These two projects stimulated other oil refiners and development companies to seek similar opportunities. In 1964 Teikoku Sekiyu Co. started exploration in Sabah (Malaysia) by creating the Sabah Teiseki Oil Company. In 1966 Petroleum Resource Development Corporation obtained exploration concessions in Canada, Australia and Indonesia, and created an operating company for each project.¹² The number of oil projects started in this period was small but they occupied an important position later as suppliers of "self-developed" crude oil.

The procurement pattern from the mid 1950s to the mid 1960s was, with the exception of the oil projects, still small scale and sporadic.

9. The project was begun at the initiation of one Japanese entrepreneur, Taro Yamashita (Yoshino, 1976, pp. 58-62).

10. The concession agreement with Saudi Arabia and Kuwait offered, to each government, better terms (56% and 57% profit, respectively) than those of major international oil companies and resulted in significant changes in the prevailing pattern of concession terms in the international oil industry (Penrose, 1968, pp. 136-137).

11. See, the Indonesian case in Section IV.

12. The Petroleum Resource Development Corporation was a half government-owned exploration company, which was initially established in 1955 for domestic exploration.

Large international companies continued to control the mining and marketing system throughout the world. Japanese mineral companies, lacking in information and technology, had few opportunities to secure access to large, promising deposits. For example, copper projects were motivated by domestic competition and based on capital raised by individual companies and, therefore, tended to be rather small. Oil projects were not systematically developed, but rather pursued opportunities developed by individual entrepreneurs which the government and industries exhibited. Each of these oil projects was usually funded by a group of consumer industries or "Zaikai" groups, sometimes with governmental funds. Separate companies were set up for each of the projects. This "one company-one project" style of operation was prevalent among ventures of this period (Okamoto, 1980, pp. 175-180). In this period neither the government nor industry were prepared to undertake large-scale overseas mineral resource development projects.

There were, also, external factors that constrained procurement strategies. Throughout the late 1950s and early 1960s the flow of resources through the production and marketing mechanisms of major international mineral and oil companies was relatively smooth. The price of oil and minerals was stable and low until 1965 and increased efficiencies in transport such as super-tankers lowered overall cost (Keizai Shingikai, 1969, p. 8). This enabled importers to acquire supplies without major constraints and made Japanese mineral companies less interested in risky overseas ventures.

Late 1960s to the Early 1970s

Resource procurement policies changed rapidly during this period. Increased demand and the accompanying increased dependence on foreign sources compelled MITI and private companies to recognize the necessity of developing independent procurement policies. The strategy adopted was to enormously increase foreign investment (loan as well as equity participation), not only in oil development, but in mining projects as well. In 1967 to 1973, \$2.4 billion was invested in 218 mineral and oil

development projects (see Table III-2). This enormous increase in investment transformed resource procurement patterns.

First, the scale of Japanese participation grew larger. Between 1951 and 1965 the average investment per year, including loans to all mineral-related projects with the exception of oil, was 1.5 billion yen; between 1965-1970 it rose to 22.3 billion yen and to 80 billion yen between 1970-1975 (Jūkagaku-Kōgyō, 1970, pp. 45-46). This reflected not only an increase in number, but also the growth in the scale of projects in which Japan took part. For example, in 1958 Mitsubishi Metal and Mining Co. advanced a 1.5 billion yen loan to the Sipalay Copper Mine (Philippines). By the late 1960s Japanese copper companies extended 5.9 billion yen and 19.5 billion yen loans to the Fox and Lonex Mines in Canada, respectively. Furthermore, the distribution of projects spread from Southeast Asia and Latin America to Africa, the Middle East, Australia, the U.S. and Canada.

Second, in conjunction with the expansion of scale, the number of participants in each project increased. Unlike the previous period when a single company usually was responsible for each project, cooperation among metal companies became more common. For instance, copper projects which began in the late 1960s, such as the Brenda Mine (Canada), the Ertsberg Mine (Indonesia), and the Lonex Mine (Canada), included participation by groups of two to twelve companies (OE, July 1969, p. 40). A pattern of both horizontal cooperation (between smelters) and vertical cooperation (between smelter and consumer companies) emerged. Nickel development projects in the Philippines and Indonesia and a chrome exploration project in Kenya (Nippon Kōkan Co., Kōkan Mining Co. and C. Itoh & Co.) are examples of the participation of Japanese steel companies under the coordination of the mineral companies. This cooperation was necessary as the mineral projects were generally too costly and large-scale to be undertaken by an individual company.

Trading companies also joined as investors and creditors. As mentioned earlier, the trading companies acted as both project-organizer

and go-betweens in mineral sales. In addition to these services they increasingly invested in or extended loans to these projects. The involvement of the trading companies was already prevalent in the ferrous metals, but now extended to the non-ferrous metals, also. The trading company Nisshō Iwai, for example, is a 5 percent partner with Japanese copper smelters in copper development in Zaire (formerly the Congo). Mitsui & Co. and Mitsubishi Corp. lent the Anglo-American Corp. about \$70 million for development of Zambian copper deposits in exchange for 100,000 tons of copper a year for 10 years (*E/MJ*, November 1971, pp. 90-93). Trading firms increasingly played a central role in overseas mineral ventures.

Finally, government support through the MMDPC, the Export-Import Bank, and OECF succeeded in realizing large-scale mining operations. An example of this is the Musoshi Copper Mine development in the Congo, contracted in 1968. Five major Japanese metal mining companies (Nippon Mining, Sumitomo Metal Mining, Mitsui Mining, Furukawa Mining and Tōhō Zinc) and one trading firm (Nisshō Iwai) created SODEMICO (Congo Mining and Industry Development Co.) which held 85% of equity participation in a joint venture with the Congo Government. The OECF had supplied exploration funds to the project. The MMDPC underwrote the credits to allow the Japanese firms to secure financing from commercial banks in addition to the Export-Import Bank (Sakurai, 1972). The mine commenced production in 1972 and has been exporting 54,000 tons of ore to Japan yearly.

A similar trend was observable in oil exploration and development. Unlike the sporadic project participation in the previous period, more ambitious projects were attempted by Japanese companies in the late 1960s. First, the number of Japanese firms engaged in oil exploration and/or production increased from 8 in 1967 to 43 in 1974. Trading companies and affiliated financial groups, such as Mitsubishi, Mitsui and Sumitomo, which had not participated in oil development earlier, became involved in overseas oil projects through the formation of oil development companies (Okamoto, 1980, p. 178). These oil companies

financed oil ventures and operated as both holding companies and actual producers. Japanese non-foreign affiliated refineries, which had not been involved in overseas oil ventures, also initiated overseas oil development projects. For example, Nippon Kōgyō, Maruzen Sekiyu and Daikyo Sekiyu cooperated to set up Abu Dhabi Oil Co. in 1968 which became the 4th Japanese "independent" oil source (Wu, 1977, pp. 62-72). During the period between 1968 and 1971, sometimes referred to as "the First Oil Development Boom," new projects were undertaken, not only in the Middle East and Asia, but also in Africa and Latin America (Okamoto, 1980, pp. 169-178).

Second, the increased number of firms contributed to a rapid increase in exploration and development expenditures. In 1958 and 1959, the annual investment in oil development was 3.9 and 3.1 billion yen respectively. In 1968 it rose to 21.3 billion yen and by 1972 it had risen to 113.6 billion yen (Wu, 1977, p. 66).

Third, cooperation between PDPC and Japanese firms was cemented by governmental financial assistance to the various projects. PDPC usually financed approximately 50% of the total individual project expenditure; the remainder was supplied by private firms. In 1967, the first year of operation, PDPC's investments and loans totaled 800 million yen. By 1972 it had risen to 23 billion yen, of which, 19.1 billion yen was investment and the remainder in the form of loans (see Table III-1). From 1967 to 1974, forty of sixty-two projects were financed by PDPC (see Table III-3). These "national" projects, coordinating both the government and private oil development firms, became the prevalent pattern in oil development projects (Jūkagaku-Kōgyō, 1976, p. 75).

TABLE III-3
CUMULATIVE NUMBER OF PROJECTS OF JAPANESE OIL
COMPANIES BY REGION

Region	Financed by PDPC			Not Financed by PDPC		
	Ongoing	Discontinued	Total	Ongoing	Discontinued	Total
Southeast Asia	12	1	13	8	1	9
Middle East	5	3	8	1	-	1
Africa	3	2	5	3	-	3
Oceania	1	4	5	2	-	2
North America	1	2	3	2	-	2
South America	4	2	6	4	1	5
Total	26	14	40	20	2	22

Source: Outline of Japanese Petroleum Development Corp
(January 1975), p. 12.

In summary, before the mid 1960s Japanese resource policy was confined to simple purchases. Other types of arrangements were relatively unimportant in this period. After the mid-1960s the Japanese government and mineral companies participated more actively in the international production and supply system through loans and investment. The objective was to secure a low-cost, stable supply of resources for the growing Japanese economy. This much more active resource policy reflected the government's, MITI's new policies for encouraging overseas resource ventures. The establishment of PDPC and reinforcement of MMDPC in 1967 embodied MITI's policy concern. Governmental aid to producer countries or, through OECF, to the enterprises, complemented the policy

efforts of private companies. Private companies, which were concerned about resource supplies, but operated under technological and capital constraints, were encouraged and stimulated by MITI's policy measures. In this sense, 1967, the year in which the governmental institutions were created, may be considered as a benchmark in the historical development of Japanese resource policy (Wu, 1977, p. 63).

Also, the changing international environment affected domestically developed resource policies. The rise of nationalism in developing countries and the relative decline in the power of international mineral and oil industries in the world resource system created uncertainty regarding resource production and supply. The changing resource situation gave the producing countries a better bargaining position with the international resource corporations. This created concern in Japan, but also opened new opportunities for Japanese companies. This was because the producing countries had insufficient indigenous capital to develop their resources autonomously and sought foreign capital. The producing countries were able to play the international oil and mineral industries against the Japanese to get better terms (Bosson and Varon, 1977, p. 94). This was true in the case of the Arabian Oil project in which the Japanese offered very favorable financing terms, significantly better than those offered by the large oil companies (Ozawa, 1978; Tanzer, 1980, p. 78).

There was a similar decline in power among the international metal companies. A copper project, such as Musoshi in the Congo, became possible because the mines, formerly owned by Union Miniere by Belgium, were seized by the Congo government in 1967 and offered to Japanese companies. This type of environment was favorable for the operation of Japanese "resource diplomacy."

Finally, the rise of the Japanese economy after 1965 gave Japanese companies the requisite capital and technology to become more active in overseas enterprises. Especially important were the trading companies which were able to raise capital and had access to information (E/MJ,

November 1971, p. 92). A favorable balance of payments and a massive inflow of foreign exchange when Nixon devalued the dollar in 1971 further increased Japanese abilities to invest in foreign countries (Miyazaki, 1974).¹³

13. Massive increases of investment in oil and mineral projects are noticeable after 1971. See, Table III-2.

IV

Resource Policy Toward Southeast Asian Countries

1. AN OVERVIEW OF RELATIONS WITH SOUTHEAST ASIAN COUNTRIES

The relationship between Japan and Southeast Asia has a long history of cultural as well as politico-economic contacts (Yano, 1975).¹ Relations between Japan and Southeast Asia countries in the post-war international politics and economics in the region as well as the world. The central issue relates to the reasons why Japan had an opportunity to return to the region so soon after its withdrawal after defeat in WWII.

An important factor was the development of the "Cold War" in Asia between the United States and the then unified "Communist Bloc". The rise of the People's Republic of China, the Korean War and the conflicts in Indochina fostered concern among U.S. policy-makers regarding the spread of "communism" in Asia. U.S. policy toward Japan changed from management to the more active one of fostering Japan as an economically stable power in the region and rebuilding Japan as a "linch-pin" against "communism" (Lach and Wehrle, 1975, Ch. 4). For Japan, which lost the Chinese market, it was considered necessary to regain access to Southeast Asia (SEA) not only as market but also as a source of raw materials for Japanese industries (Gay, 1952).² As a result, before the reparation negotiation began in 1951, Japanese government and private industries had already considered SEA as an area for Japanese economic activities (Hara, 1980b, p. 154) and the U.S. gave tacit consent to Japanese involvement in the region. The reparation payments to SEA countries promoted these interests and boosted the Japanese economy by

1. The term "Southeast Asia" includes all of the ASEAN countries: Indonesia, the Philippines, Thailand, Malaysia, Singapore as well as Burma (technically not a member of ASEAN).

2. In 1935 China's share of Japanese exports was 18%, Korea 17% and Taiwan 7% (Yamamoto, 1978, p. 93).

encouraging the trade and activities of private companies (Yanaga, 1968, Ch. 8; Hasegawa, 1975, pp. 46-52).

In the 1960s, in cooperation with the U.S. Asia policy, Japan became more deeply involved in Southeast Asia. As the U.S. fought the Vietnam War, Japan extended economic aid to politically and ideologically friendly governments. This aid simultaneously prompted the growth of Japanese foreign direct investment and exports to the region (Halliday, 1973, pp. 25-31). Especially after the mid 1960s, Japan increased its capital investment and economic aid enormously, at the same time that the U.S. was unable, due to economic constraints, to maintain its traditional economic relationship with SEAt Japan undertook part of this role and thereby expended its economic influence throughout the area (Kawata, 1972). This historical development created an asymmetrical relationship between Japan and Southeast Asian countries. This relationship was developed in three fields of economic interaction: trade, foreign direct investment and governmental aid.

In trade relations SEA, as a region, has been an important market for Japanese products as well as a supplier of natural resources to Japan, although its importance as both a market and supplier is decreasing.³ For example, in 1972 Southeast Asian countries purchased nearly 12% of total Japanese exports and supplied 16% of total imports (MITI 1975b, p. 130). However, each country's share has been a small percentage (about 2%) of total Japanese trade, with the exception of Indonesia from which Japan imports crude oil. On the other hand, Japan held an increasing share of their trade. As Table IV-1 indicates, in 1974 Japan was the most important export market for Indonesia, Thailand, and Malaysia, and also the most significant source of imports for the SEA countries. Japan has a far greater role in Southeast Asia's trade than Southeast Asia has in Japan's.

3. Southeast Asia's market share decreased from 44.4% in 1950 of total Japanese exports to 22.9% in 1974. The imports from Southeast Asia also declined from 25.9% of Japanese total imports in 1950 to 20% in 1974 (MITI, 1974b).

TABLE IV-1
ECONOMIC RELATIONS WITH ASEAN COUNTRIES (1974)

	<u>Importer (1974)</u>		<u>Exporter (1974)</u>		<u>Official Develop. Assistance</u>			<u>Investment (cases, value*)</u>			
	<u>Japan</u>	<u>U.S.</u>	<u>Japan</u>	<u>U.S.</u>	<u>Japan</u>	<u>U.S.</u>	<u>W. Ger.</u>	<u>Japan</u>	<u>U.S.</u>	<u>W.Ger.</u>	<u>Total</u>
Philippines	932 (34.9%)	1,133 (42.4%)	924 (26.8%)	829 (24.1%)	37,320 (28.3%)	46,000 (34.8%)		325	169	82.3	683
Thailand	631 (25.6)	196 (7.9)	987 (31.9)	424 (13.7)	17,370 (28.0)	18,000 (29.0)		175	67	18	643
Malaysia	714 (16.9)	595 (14.0)	916 (22.0)	397 (9.6)	36,260 (59.1)	4,000 (6.5)	3,780 (6.2)	118	81	38	604
Singapore	638 (11.6)	776 (14.1)	1,529 (17.8)	1,133 (13.2)	3,540 (15.2)	..	1,110 (4.8)	299	1,028	113	2,869
Indonesia	3,969 (53.4)	1,580 (21.3)	1,135 (29.5)	611 (15.9)	221,090 (41.2)	82,000 (15.3)	57,650 (10.8)	181	124	29	778
								1,083	974	166	3,878

*Value in national currency except in the cases of Philippines and Indonesia which are in US \$, all figures are in millions.

Source: Adopted from Komakura (1976). p. 326.

Originally from MITI, Tōshō Hakusho.

MITI, Keizaikyōryoku no Genjō to Mondaizen.

JETRO, Keigai Shijō Hakusho.

The trade between Japan and SEA has been composed of Japan's export of finished goods and basic industrial products and Japan's import of primary products, such as food stuffs and raw materials. In accordance with the traditional evolution of development from input substitution to export-oriented industrialization followed by SEA countries, Japan exported capital goods and basic industrial products as well as consumer goods. In return, primary goods were exported by those countries to earn foreign exchange (Kokusai Kaihatsu Sentā, 1978, pp. 46-79). For instance in 1971 88.8 percent (91.0 percent in 1976) of Japan's exports to SEA were comprised of manufactured goods, while 86.7 percent (80.1 percent in 1976) of imports from SEA were primary goods (MITI, 1978, pp. 291-292).

The imbalance of importance as trading partners and the specialized trade composition illustrates the dependence of SEA countries on Japan as a market for primary products and as a supplier of manufactured goods. The relative importance of Japan as a market for SEA primary commodities weakens these countries' bargaining position with regard to both volume and price (See Weinstein, 1976, pp. 379-382). Furthermore, fluctuations of the purchaser's (Japan) economy affects the producer's economy; for example, the recession in Japan after the oil crisis (1974-1975) caused a fall in commodity exports from SEA and hurt the producers.⁴

Imports of Japanese finished products such as machinery and consumer goods have poured into the SEA market. This is partly because the industrial policies of these countries require the import of capital goods and industrial raw materials from Japan. Other factors include Japanese capital investment and governmental aid which accompanied and facilitated the import of Japanese products (Kamakura, 1976, p. 129).

4. In 1975 Indonesia decreased its oil production for the first time since 1967 because of a slump in the Japanese market (Nihon Enerugi Keizai Kenkyū-jo, 1978, p. 39).

Thus, in the field of trade SEA countries are more dependent upon Japan than vice versa (Yoshihara, 1974, p. 99).

Japan has also dominated private investment in SEA (See Table IV-1)t By the end of 1973 Japan became chief investor, exceeding the U.S. in Thailand (34.4% of total cumulative foreign investment), in the Philippines (47.5% of total investment in investment priority sector) and in Indonesia (18.8% of total cumulative foreign direct investment; MITI, 1975b, p.430)t In the period between 1951 and 1979 SEA absorbed \$6 billion of Japanese investment or 19.1% of total approved foreign direct investment, of which, Indonesia's share alone was \$3.9 billion, or 12.2% (MITI, 1981, p. 10)t Especially in the early 1970s, the annual rate of increase of Japanese investment in SEA was over 45%, while the U.S. and West Germany increased their investment by about 19% and 29.8%, respectively (MITI, 1975b, pp. 422-423)t

Japanese foreign investment in the region has largely been concentrated in manufacturing, mining and oil-related ventures. By the end of 1979 investment in manufacturing and oil and mineral extraction amounted to 44.5% and 32.5% of the total cumulative investment in Asia respectively. 35.4% of total Japanese world-wide investment in manufacturing and 43.3% of mining investment were in SEA (MITI, 1981, p. 14)t These percentages indicate that not only has SEA been the major geographical region of Japanese investment, but also that the extent of Japanese capital involvement in SEA has been massive, especially since the late 1960s.

The various parties to these large investments have obviously been motivated by different factors; both the host countries and the companies are pursuing different objectives. The Japanese motives include the high labour and land cost in Japan, the changing industrial structure in Japan, and tariff barriers on Japanese products in the foreign markets which encourage Japanese manufacturing companies to seek investment opportunities inside the tariff barriers (Yoshihara, 1978; Ozawa, 1979)t As will be examined later, investment in the oil and

mining sector has been chiefly motivated by the desire to secure stable low-cost resources.

The investment incentive of Japanese companies has been further increased by the economic development policies of Southeast Asian governments. These governments have actively sought foreign capital for their import substitution and export-oriented industrialization policies in the 1960s and the 1970s (Tambunlertchai, 1977, pp. 65-75). As investment by the U.S. slowed down, Japan became the main source of capital (Pringle, 1980, p. 123; Weinstein, 1976, pp. 383-384). This has resulted in Japanese capital becoming predominant in these countries.

Consequently, Japanese capital has acquired influence over the local economies. Through equity or loan participation Japanese companies obtained leverage in the operation of joint ventures as well as loan-related companies (Tsuda, 1978). Furthermore, the expansion of Japanese capital in some sectors such as the Indonesian textile industry, inhibited the growth of indigenous capital (Palmer, 1978, Ch. 4).⁵ Although, on one hand, Japanese investment has been an obstacle to the development of native capital, on the other, SEA policy-makers were yet obliged to invite in foreign capital. Their development plans are based on the use of foreign capital to supplement capital and technology deficiencies (Palmer, 1978, p. 181). Japanese foreign investment helped create a situation in which SEA governments had little choice but to rely on Japanese capital.

The Japanese economic penetration of SEA, in the form of trade and investment, was encouraged through bilateral aid to these countries and the simultaneously increased government involvement in private activities in the recipient countries. In 1976 Japan provided approximately 47% of total ODA to SEA countries (MITI, 1977). Those countries received such a large share of Japanese ODA due to private

5. Palmer emphasizes the uneven sectoral development caused by foreign investment.

Japanese commercial interests in the area. More than other countries, Japan's aid is concentrated in project aid, which provides the infrastructure for the operation of Japanese companies. As reparation payments were effective in promoting the development of exports, Japanese government "aid," in the form of tied loans or project aid, has similarly increased not only the trade with Japan but also the economic "leverage" of Japanese investors in the recipient countries by supplementing their activities (Mortimer, 1973, p. 56).

In 1973-74 Japan became the chief donor to Indonesia and Malaysia, exceeding the U.S., and one of the primary donors to the Philippines, Thailand and Singapore (See Table IV-1). SEA government officials, whose intention was to supplement domestic capital shortages with foreign capital, require bilateral aid in order to continue their development policies. Dependence on foreign aid also prevents domestic capital formation. The interest burden puts pressure on the recipients, reinforcing aid dependence and increasing the drain on the economy caused by the service and repayment of debts (Palmer, 1978, Ch. 3). Thus, Japanese aid has intensified the asymmetrical relations that already existed due to trade and foreign investment.

The asymmetrical relationship between Japan and Southeast Asian countries existed in trade, foreign investment and governmental aid. Weinstein has termed this asymmetrical relationship as the "dependence" of the SEA countries on Japan. Japanese can exert great leverage to further economic goals through the use of this dependence (Weinstein, 1976, p. 378). This dependent relationship presents the background against which Japanese resource policies have been deployed in the post-war period.

2. SOUTHEAST ASIAN COUNTRIES AS RESOURCE SUPPLIERS: CASE STUDIES

The extraction of SEA resources by the Japanese is not only a post-war phenomenon. In the 1930s the growing Japanese military economy increased Japanese interest in overseas resource extraction. As the war

in China intensified and Chinese resource production (especially iron ore) became unstable, Japan came to view SEA as a promising alternative source. In the 1930s approximately 30% of Japanese investment in SEA was in the mining sector, another 50% went into plantations producing crops such as rubber and jute (Sakiyama, 1963, p. 18).

On the Malay Peninsula, iron-ore mining, which began in the early 1920s, was expanded rapidly in the 1930s by the mining companies. Tin, manganese, and bauxite were also produced in Malaya. Gold, copper and manganese were mined in the Philippines and in the Dutch East Indies copper was mined. These activities were conducted by Japanese mining companies such as Ishihara Sangyō and Nippon Mining. Furthermore, oil production was carried out by a joint venture of Nihon Sekiyu and Mitsui Trade Co. in the Dutch East Indies (Takebayashi, 1963, pp. 85-91).

After WWII the proximity of SEA ensured that it would be viewed as an important source of minerals for the resumption of Japanese resource extraction activities. The success of the Chinese Revolution meant that Japan lost its sources in China. This prompted Japan to turn its attention to SEA. The previously discussed development of relations with the countries of Southeast Asia, as well as geographical proximity were very important factors in encouraging the Japanese to resume resource extraction activities in the region.

This section examines the development of the Japanese resource policies discussed in the previous section, in the specific Southeast Asian countries. The various participants and their particular policies towards mineral (copper, nickel, and bauxite) and oil exploration and development will be examined. SEA is examined as a case study because by 1972 24% of resource-related Japanese foreign investment had gone into SEA. Only the Middle East was a more important region, receiving 40.1%, almost entirely for oil; in SEA investment was for oil and other minerals. In addition, Japanese extractive companies started participating in Southeast Asian resource development relatively early

in the postwar period, making it possible to trace policy developments for the entire period from 1950 through the mid 1970s.⁶

Indonesia

Indonesia is endowed with many commercially exploitable mineral and petroleum deposits due to its geological historye Although a complete geological survey has not yet been done, Indonesia has the greatest resource endowment in SEA (Hunter, 1968, pp:73-89). Minerals, especially oil, are Indonesia's major export commodity. Oil alone has earned enormous amounts of foreign exchange, especially after the 1973 oil crisis. The share of petroleum in total Indonesian exports rose from 25 percent in 1973 to 64 percent in 1978 (Indonesiae 1980)e If other minerals and LNG (Liquified Natural Gas) are included, the share of mineral exports amounts to approximately 72% of total exports. In addition to being a source of foreign exchange, minerals, especially oil, are an important a source of tax revenue and as collateral for borrowing from foreign banks. The importance of the mineral sector has

6. Malaysia, Thailand and Indonesia have been important tin producers. In 1979, these three countries produced 25%, 14% and 10% of world tin ore production and 28%, 13% and 11% of world smelted tin, respectively. In their economies the tin industry has been significante For example, in Malaysia tin was one of the major export commodities, overshadowed only by rubber and palm oil e accounting for 13% of total export value in 1975. In Thailande tin accounted for 5% of exports in 1975 (valued at \$110 million) and the primary mineral export commodity except for crude oil (Wang, 1978). These three countries are Japan's major suppliers of tin, providing 97.1% of total Japanese tin imports in 1975e

This study of Japanese resource policy toward SEA excludes tin in spite of its relative importance to their economies for the following reasonse First, the Japanese regard tin as less significant than the other non-ferrous minerals: copper, bauxite and nickel. None of the MITI documents ever mentioned the necessity of a policy to guarantee tin supplies. This lack of interest is due to tin's lack of importance in industrial production. Second, the Japanese have not engaged in tin development, except for a few small-scale smelting enterprises in Malaysia, due to tin's industrial insignificance. (PIN, 1972, 309: 248-254; PIN, 1973, 4-5: 90-100; PIN, 1973, 4-7: 152-159; Wang, 1978)e

prompted the government to maintain close control through the mechanism of state corporations (Hunter, 1968, pp. 80-83).⁷

Japan has generally been a major market for mineral commodities produced in Indonesia, importing in 1972 68% of its LNG, 72.8% of its crude oil, 99.5% of nickel ore and 94.3% of bauxite (Jūkagaku-Kōgyo, 1976, p. 38). Indonesia has, historically, been the second largest supplier of tin, bauxite and nickel to Japan; in 1979 the Indonesian share in total Japanese imports of each of these commodities was 20.9%, 18.5% and 27.5% respectively. As for crude oil, in 1979 Indonesia was the second major exporter to Japan, supplying 14.6% of total Japanese crude oil imports. It has also been the chief supplier of LNG to Japan, supplying 29.4% of total LNG imports (MITI, 1980, p. 240). These figures suggest that the Japanese government and extractive industries are more interested in Indonesia than any other Southeast Asian countries.

Petroleum. The Indonesian oil sector has been of interest to the Japanese government and private companies since the late 1950s. The first Japanese participation in an oil development project was initiated by industrialists who became interested in Sumatran oil during the reparations negotiations period of 1951-1957 (See, Nishihara, 1976, pp. 117-121). This first project was to assist the Indonesian state oil corporation, Permina, to rehabilitate former Shell fields in North Sumatra in return for crude oil supplies for Japan (Hunter, 1971, p. 267; Gibson, 1966, pp. 62-63). The Japanese partner in the project, the North Sumatra Oil Development Cooperation Company (NOSODECO) was founded in June 1960, with paid-in capital of 2,000 million yen, of which 750 million yen (37.5%) was subscribed by the Japanese government's OECF, 14% by Japanese oil refiners, 5% by Petroleum Resource Development

7. Hunter's article gives an overview of the Indonesian mineral industry in 1968, excluding oil and natural gas. The state corporations which control the mining sector are P.N. Petramina (Oil and Natural Gas), P.N. Tambang Timah (tin), P.N. Tambang Batubara (coal), P.N. Aneka Tambang (other minerals) (Hunter, 1968, p. 82).

Corporation (PRDC) (*Sekiyu Shigen Kaihatsu Kōdan* replaced by PDPC in 1967) and the remainder by Teikoku Sekiyu (Teikoku Oil Co.), Ishihara Sangyō and others (Clark, 1980, p. 68)a

The agreement was based on what was called a production-sharing project, not on the joint venture basis which the Japanese preferred (Bartlett et al., 1972, p. 290). Among the terms of the project agreement was included the provision for 18,845 million yen credit from the Japanese government over a period of ten years for the purchase of equipment, facilities and services from Japan. The credit was to be repaid by Permina's delivery from NOSODECO of 5.6 million kiloliters (40% of an annual output in excess of 800,000 kiloliters) over ten years. For importing and marketing purposes, Permina (50%), NOSODECO and a number of other Japanese oil companies established in 1965 the Far Eastern Oil Trading Company in Tokyo. The oil supply came on-line in 1961 and terminated in 1973 as agreed. However, NOSODECO was continued in 1974 under a new name, Daiichi Oil Development, and continued exploration activities.

The North Sumatra project is noteworthy for the following reasons. First, it set an example for oil projects in which the Japanese government participated through PDPC and OECF in coordination with private corporations. The project was not initiated by the Japanese government or Japanese oil refiners but by individual entrepreneurs, who had informal contacts in Indonesia dating from the pre-war period. However, government funding was indispensable for realization of the project (Bartlett, 1972, pp. 154-158)⁸ Second, Japanese yen credits were utilized as a policy tool to ensure oil supplies; similar tactics had been used earlier to secure iron ore. Third, for the Indonesians the project was one of the first "production-sharing" arrangements,

8. Nishijima Shigetada, who was assigned to the Naval Liaison Office in Djakarta during the War, and Kobayashi Ataru, who played a major role in reparations negotiations, arranged the first agreements between Japanese companies and the Indonesia oil industry (Nishihara, 1976, Ch. 2; Yanaga, 1968, pp. 222-228).

which furthered an increased independence from the major oil companies.⁹ This agreement between Japan and Indonesia occurred concomitantly with an intensification of Indonesia's nationalistic economic policies.¹⁰ Newcomers in the oil game, such as the Japanese, had greater opportunities to conclude oil contracts with the Indonesians during this period (Thomas and Panglaykim, 1967, p. 71). Thus, this project can be considered an important Japanese avenue into oil development ventures in Indonesia.

By 1974 seven other exploration and development companies had been established for oil development projects based on the North Sumatran production-sharing formula (See Table IV-2).¹¹ The two companies, the Indonesian Petroleum Development Co. and the Sumatra Petroleum Co., which were founded on the basis of PDPC and PRDC financing, were joined by oil development companies formed by Keiretsu companies (Clark, 1968, p. 74)t The companies established in the early 1970s were largely composed of these oil development companies and oil refiners (Okamoto, 1980, pp. 163-178). All of these projects were undertaken in cooperation with foreign oil companies. Some companies which had started independently, sub-contracted part of their exploration rights and transferred operating rights to the foreign companies in the process. Others participated in on-going projects contracted between foreign oil companies and Pertamina through portfolio investment. This association with foreign capital was a normal procedure to spread the great risks associated with exploring and developing an oil field.

9. Production-sharing is usually an arrangement in which a foreign creditor provides credits for a specific project and the credits are repaid in a stipulated period with an agreed upon percentage of the projects' product (Gibson, 1966 p. 53)t

10. The Sukarno government took a nationalistic position on the nationalization of oil in 1964 and 1965 (Thomas and Panglaykim, 1967, p. 71).

11. For example, funds for exploration and development were provided by Japanese as credits. If the project was successful, 40% of annual production was allocated to repayment of credits, and the remaining 60% was divided: 65% to Indonesia and 35% to Japan.

TABLE IV-2
JAPANESE OIL EXPLORATION AND DEVELOPMENT COMPANIES IN INDONESIA (1973)

Company	Year	Capital (billion yen)	Capital Contributors	Area	Affiliation	Development Stage
Indonesia Petroleum Development (JAPEX)	Feb. 1966	19.6	POPC PRDC	East Kalimantan	UNION (50%) (50%)	Attaka field 100,000 b/d
			Mitsubishi group Mitsui Petroleum Development		TOTAL (50%) (50%) SOCAL (25%) TEXACO (25%) (50%)	Bukapai field 55,000 b/d Mandil field 120,000 b/d
Kyushu Oil Development	July 1967	5.0	Shin Nippon Steel Kyushu Sekiyu Kyushu Elec. Power Tokyo Elec.	South Kalimantan	ZAPATA (53%) ASNLAND (15 2/3%) DEMINEX (15 2/3%) (15 2/3%)	231,000 b/d
Japan Low Sulphur Oil	March 1970	3.0	C. Itoh C. I. Energy Development Toa Sekiyu Others (12)	Southeast Sumatra	NATOMAS & Others (3.96%)	100,000 b/d
Tomen National Resource Dev.	November 1971	1.2	Toa Henryo	Northwest Java	ARCO & Others (2.58%)	
General Petroleum Development	November 1971	0.71	Genl. Pet.		Tomen Res. (10%) Genl. Pet. Dev. (5%)	
Far East Petroleum	June 1971	7.0	Mitsui Group Mobil Oil		Far East Pet. (5%)	

TABLE IV-2 (continued)

C. Itoh Energy Development	August 1972	1.8	C. Itoh Japan Ind. Bank World Energy Dev. Others (2)	West Irian	TREND (27%) ---- (10%) Others (6) (63%)	100,000 b/d (60% impo. to Japan)
Sumatra Petroleum	May 1973	2.8	PDPC Mitsubishi Pet. Dev. PROC	Sumatra	TOTAL (71.4%) ---- (28.6%)	Drilling
Toyo Oil Develop.	February 1973	6.0	Nissho Iwai Sanwa Bank Maruzen Pet.	South Sumatra	BOW VALLEY (30%) ---- (25%) Others (4) (28.6%)	410 b/d

Source: Petroleum News, Southeast Asia
Okamoto (1980)
Jūkagaku Kōgyō (1976)

Further, the difficulties in developing oil projects necessitated cooperation with foreign companies. Although the profit from these projects was not large, it could increase more "independent" sources of supply. By 1973 the Indonesian Petroleum Development (JAPEX), Japan Low Sulphur Oil, and C. Itoh Energy Development had reached the production stage and in 1974 supplies 11.6 percent of total Indonesian crude oil exports to Japan (FEER, 1975, 88-22:55). Although their share in total Japanese oil imports has been small (1.5 % in 1974), these three projects were the major "autonomous" sources among the twelve Japanese projects which were on line in 1976. In addition, the Japanese government had direct purchase arrangements with the Indonesian government and Pertamina.

In response to an offer by Indonesian President Suharto in 1971 the Japanese government agreed in 1972 that it would offer the Indonesian government 62 billion yen in credit for an oil exploration project by Pertamina (PDPC, 1978, p. 25). In return, Pertamina would supply 58 million kiloliters of crude oil in total to Japan for ten years. In addition to government yen credit Japan Indonesia Oil Co. Ltd., was established as an import agent for Pertamina by three Japanese electric power companies and four crude oil refiners. The company then extended a \$100 million loan in 1973 to Pertamina as prepayment for crude oil (MITI, 1977, p. 319). LNG development projects were also granted yen credits by the Japanese government. A 56 billion yen credit was extended to the Indonesian government and Pertamina for the construction of two LNG plants. The projects themselves were undertaken under production-sharing arrangements: the North Sumatra project by Nisshō Iwaiē Mobil and Pertamina and the East Kalimantan project by Nisshō Iwaiē Huffington and Pertamina. The contract required Pertamina to deliver 7.5 million tons of LNG annually for twenty years, with delivery scheduled to begin in 1977 (Morrow, 1975, p. 37). The import agent, Japan Indonesia LNG Co. (JILCO), was formed in 1974 by five consumer companies representing steel, electric power and gas companies, sixteen private banks and seven trading companies. JILCO

also extended a \$12 million loan to Pertamina, made available from Japan Export-Import Bank (*PN*, 1976, 7-9:6).

The Japanese government has played an important role in the oil and LNG projects in Indonesia. While most Japanese oil development projects in other areas were begun at the beginning of the 1970s, those in Indonesia started in the mid 1960s through Japanese governmental initiatives (Wu, 1977, pp. 64-65). The low sulphur content of Indonesian crude oil had, in the late 1960s, become more attractive to an increasingly pollution-conscious Japan. The policy of energy supply source diversification away from the Middle East also prompted increased Japanese involvement in Indonesia (*PN*, 1977, 8-2:68). The Japanese government shared in the risk by participating directly in projects through PDPC. Furthermore, government leadership in oil projects encouraged the participation of private companies. The establishment of PDPC to encourage private participation, especially in the early 1970s, led to the formation of a number of development companies which participated in oil exploration and development projects.

In addition to assisting participating Japanese companies financially, the Japanese government offered bilateral aid to the Indonesian government and Pertamina. This aid made further oil and LNG exploration and development projects possible. These types of arrangements increased with Pertamina's requests that the Japanese finance its exploration and development activities. For example, during the period 1973-76 Pertamina invested \$197 million in exploration. Japan's OECF offered loans of approximately \$90 million for Pertamina's exploratory activities during the same period (PDPC, 1968, p. 30). Including loans extended by Japanese private corporations Pertamina's

reliance on Japanese capital was very substantial.¹² The Japanese government took advantage of this leverage to decrease dependence on foreign companies and to secure supplies directly from Indonesia (Ichord, 1976, p. 93).

Nickel. The first independent nickel project was also realized through Indonesia's new product-sharing agreements. The Sulawesi Nickel Development Corporation (SUNIDECO) was formed in 1961 by five leading Japanese smelters. The Japanese were joined in the nickel project in Pomala, Sulawesi, by the Indonesian state mineral corporation, P.T. Nickel (later P.N. Aneka Tambang). The Japanese OECF extended a loan to SUNIDECO, as did the Export-Import Bank and other private banks. The credits, totaling 486 million yen (\$1.85 million) for the purchase of machinery, equipment and service from Japan, were to be repaid by shipping 40% of the production (120,000 tons) to Japan for seven years. In addition to the repayment the remaining production was to be exported to Japan, beginning in 1965 (Gibson, 1966, pp. 64-65).

The repayment of the loan-tied contract mentioned in the last paragraph was very favorable to the Japanese partners. The agreement specified repayment in a quantity of ore equivalent to the credits and interest, but in actual fact the ore's market value was \$3 million and the Indonesians were credited with a repayment of only \$2 million (Clark, 1968, p. 71). That is, Japanese smelters could secure nickel ore at a lower price than could be achieved through simple market purchases. When the seven-year supply agreement lapsed, SUNIDECO joined P.N. Aneka Tambang in prospecting for additional low-grade nickel

12. For example, in 1968 Sumitomo Shōji Kaisha and Far East Oil Trading, FEO (formed by NOSODECO), offered a loan to Pertamina to construct a refinery at Dumai; in 1971 Shinnippon Steel, Tōmen Trading, Kyūshū Oil Development and FEO extended \$20 million for development of the Jatibarang oil field. The loans were to be repaid in crude oil (Arief, 1977, pp. 45-137).

reserves on Sulawesi. Furthermore, these five nickel smelters decided to construct a ferro-nickel smeltery, near Pomala in South Sulawesi, as a joint venture with P.N. Aneka Tambang to reduce ore to nickel at the minehead (OE, Dec. 1970, p. 41). The annual production was expected to be 4,000 tons for export to Japan (Semay, 1972, 8-3:138). The smeltery received a 5,725 million yen credit for construction from the Japanese government as project aid (MITI, 1977, p. 315).

In 1969 a joint venture for an exploration and development project in the Halmahera Islands was contracted between P.N. Aneka Tambang and the Indonesian Nickel Development Co. (INDECO), which consisted of four smelters, one steel company, and three trading companies (See, Table IV-3). A minimum investment of \$74 million and the building of a smelter was required for a projected annual production of a 25,000 tons of ferro-nickel, which was to be exported to Japan (Kitamura, 1980, p. 210). In another project three smelters and three trading companies have taken part in a joint venture including P.T. International Nickel Indonesia with P.N. Aneka Tambang and INCO. The Japanese companies held a 25 percent of capital share and paid approximately 3.5 billion yen of the development cost. This project will supply 12,000 tons of nickel annually to Japan. As a result of these nickel projects, total production in Indonesia increased from 137,000 tons in 1961 to 867,300 tons in 1973 (Palmer, 1978, p. 128).

Copper. The only copper project the Japanese participated in was Ertsberg copper mine in West Irian, which was undertaken by the U.S.-based Freeport Minerals Inc. The Japanese participants, five smelters and five trading companies, extended a loan for 7.2 billion yen, out of the total development costs of 43.2 billion yen. In return, they were

TABLE IV-3
COPPER AND NICKEL PROJECTS IN INDONESIA

Project (Area)	Yr. of Contract	Type of Contract	Japanese Partners	Indonesian Partners	Exports to Japan (ton/ year)	Dev. Costs	Cr. and Invest. by Jap. Partn.
<u>Nickel</u>							
Sulawesi	1962	Loan-related (Production- sharing)	SUNIDECCO (5 smelters)	P.N. Aneka Tambang	40% of ore production (120,000) (for 10 yrs.)	N.A.	486 mill. yen (loan)
Sorowako (Sulawesi)	1967	Loan-related (Smelting)	Shimura Kako Corp. Tokyo Nickel Corp. Sumitomo Corp. Mitsui & Co. Nissho Iwai Co. (25%)	P.T. Intl. Nickel Indonesia P.N. Aneka Tambang INCO (75%)	12,000	41.6 mil. yen	3.5 bill. yen
Halmahera	1969	Dev. Stage (Smelting)	Indonesian Nickel Dev. Co. Nippon Mining Corp. Sumitomo Met. Min. Taiheiyo Metal Co. Nippon Yakin Kogyo Nippon Steel Mitsubishi Corp. Sumitomo Corp. (75%)	P.N. Aneka Tambang	N.A.	\$75 mill.	60 bill.

TABLE IV-3 (continued)

Copper

Ertberg (West India)	1967	Loan-related	Sumitomo Met. Min. Dowa Mining Corp. Furukawa Min. Corp. Mitsubishi Met. Min. Nippon Mining Co. Nittetsu Mitsui & Co. Mitsubishi Corp. Nissho Iwai Co. C. Itoh & Co.	Freeport Indonesia (U.S.)	65.70% of ore prod. (for 15 years)	43.2 bil. yen	7.2 bill. yen
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Source: Clark (1968), Gibson (1966), Hunter (1968), Jukagaku Kogyo (1976). Engineering and Mining Journal, Oriental Economist, Pacific Imperialism Notebook.

guaranteed access to about 65-70 % of the ore produced for fifteen years (FEER, 1971, 71-4:59).¹³

Bauxite. Production under the aegis of P.N. Aneka Tambang has been the major source of Japanese imports, especially from the Bintang Island mine. Long-term purchase agreements have provided supplies to three Japanese smelters throughout the 1960s.

In the mid 1970s the Indonesian government's emphasis on local smelting of bauxite to alumina coincided with the Japanese companies' desire to smelt overseas since conversion of bauxite to alumina is extremely energy-intensive.¹⁴ The enormous Asahan Aluminum project envisions the construction of two hydroelectric powerplants on the Asahan River which drains Lake Toba. The power produced by these plants will be utilized in an aluminum refinery currently under construction (1982). The project is being undertaken by P.T. Indonesia Asahan, as a joint venture between the Indonesian government-owned company, and a Japanese partner, Japan Asahan Alumithium, which is itself jointly owned by twelve Japanese companies, including five aluminum refiners.¹⁵ The

13. It was reported that Japanese companies had attempted to acquire the concession for this mining project but failed, because Freeport Mineral agreed to provide \$75 million of the development costs and \$100 million for infrastructure construction (Saito, 1969, p. 27).

14. Kubota Yutaka (currently the chairman of Nippon Kōei Co., Ltd.), who was first interested in the construction of a power station and aluminum refinery during Japanese occupation in Indonesia, proposed the project including a concrete survey after Suharto came to power in 1967. Until 1974 the project was to be undertaken by a joint Japan-U.S. consortium; however, U.S. firms dropped out because of disagreements regarding the construction of hydroelectric power plants (Nishihara, 1976, pp. 67-68; Rix, 1980, p. 203).

15. These companies and their share holdings are: Sumitomo Chemical (15%), Sumitomo Shōji Kaisha (5%), Mitsubishi Chemical (15%), Mitsubishi Corp. (5%), Shōwa Denkō (15%), Marubeni Corp. (5%), Mitsui Aluminum (15%), Mitsui & co. (5%), Nippon Light Metal (5%), Nisshō-Iwai (5%), C. Itoh & co. (5%), and Nichimen (5%).

financial arrangements for the Asahan complex are unique. The Japanese government has directly invested 34,162.5 million yen through OECF, accounting for one-half of total Japanese investments. The companies were required to match this sum, and the remainder, was covered 70% by an Export-Import Bank loan and 30% from loans from twenty-three private banks. In fact, no capital was invested by the twelve Japanese companies.

Furthermore, in 1978 and 1979 the government, through the OECF, extended 61,550 million yen in credits to the Indonesian government for the Asahan project in the form of development assistance. In summation, the P. T. Indonesia Asahan Aluminum is composed of 75% Japanese capital and 25% of Indonesian Capital (MITI, 1979, p. 184). Furthermore, most of the \$900 million construction cost is financed through loans to Japan Asahan Aluminum from OECF, the Export-Import Bank, and JICA (Kitazawa, 1982, p. 48). This project has become a "national project" because of the massive character of Japanese "economic cooperation" with Indonesia at the national level (MITI, 1979, pp. 184-187).

However, the purpose of this project is primarily to secure aluminum for the Japanese aluminum industry. The most important factor is that the enormous quantities of energy to convert bauxite to alumina will be generated by cheap hydroelectric power.¹⁶ This ensures a less costly supply of aluminum from the Asahan refinery in case of rapid increases in bauxite prices. Further, Japanese industry will be able to influence the international aluminum market by exporting aluminum to other countries (Kitazawa 1982, p. 52). This project, though termed a "national" project, is motivated by corporate interests and governmental

16. P.T. Indonesia Asahan Aluminum was expected to purchase the raw material, alumina, from Alcoa Indonesia, which is developing mines on Kalimantan Island. However, Alcoa has not yet reached a decision concerning bauxite production. The alumina production project in Bintang by three Japanese smelters was also shelved in 1976 because of decreased aluminum demand in Japan. As a result alumina for refining was to be imported from Australia (Kitazawa, 1977, p. 152).

support for the resource industry's overseas investments (Kitazawa, 1977, p. 152).

In summary, Japanese involvement in mineral and oil ventures in Indonesia became more active in the late 1960s as Japanese concern for secure sources mounted. Indonesia was favored, not only due to its rich resources, but also because of its historically close economic relationship with Japan. Moreover, the Foreign Investment Law in 1967 encouraged increased Japanese corporate interest in mineral exploration and development. The Indonesian government actively attracted foreign capital by soliciting tenders and providing information regarding potential deposits (Palmer, 1978, p. 127). The large-scale capital requirements of projects made it imperative for Japanese companies to cooperate among themselves in undertaking projects, sometimes with foreign capital. Consuming industries, such as steel and trading companies also joined with smelters in a development company formed to undertake mineral projects. The Japanese government, using bilateral governmental aid to the Indonesian government and financial support for projects themselves, encouraged private extractive activities in Indonesia.

The Philippines

The Philippines has been Japan's second most important supplier of resources in SEA. By 1979, 28% of Japan's total copper imports originated in the Philippines, making it the single largest supplier. It also supplied 16% of nickel imports as their largest supplier (MITI, 1980, pp. 240-241). In the last ten years especially, the Philippines' importance as a source of these two commodities has grown.¹⁷ This importance has been reflected in intensity of Japanese extractive activities in the Philippines.

17. In 1970, the Philippines was a negligible nickel exporter to Japan; Indonesia and New Caledonia supplied 97% of Japanese nickel imports (See Figure II-1). As a copper ore suppliers, the Philippines and Canada have been the two major sources in the 1970s.

Copper. Japanese involvement in Philippine copper mining has a long history. It was the first country in which the Japanese copper mining industry sought overseas sources during the 1950s. In 1953 Mitsubishi Metal Mining extended a loan to be used for the purchase of a mining plant and machinery and as a discounted prepayment for the ore. In return, copper ore was supplied from the Rap Rap and Toledo mines, which then provided approximately 40% of Japanese ore imports (Nishio, 1968, pp. 174-185). In 1954 Mitsui Metal and Mining Co. initiated the first joint ventures with Philippine capital (See Table IV-4). The contract gave Mitsui prior rights to purchase all products from the mines in exchange for technical and financial assistance to the Philippine mining company. Until 1959 all foreign equity investment, with the exception of U.S. investment, was prohibited by Philippine law. As a result, the arrangements had to be in the form of loans, as prepayment or disguised as an American investment (Takebayashi, 1963, p. 157). These early projects were initiated by individual Japanese mining companies. The primary objective was to secure access to the lower-cost sources to supplement insufficient domestically mined ore and to attain a competitive advantage over other Japanese mining companies (Horikoshi, 1971, p. 156).

The second copper development boom occurred in the mid 1960s. Domestic ore shortages had become severe, creating an urgent need for overseas sources of copper ore. The Japanese both increased product in operating mines and embarked on joint ventures to explore and develop new ore bodies. Leading Japanese copper mining companies increasingly entered into joint projects with local mining companies. The existing joint ventures were strengthened by increased capital investment.

In 1970 Mitsubishi Metal which had had arrangements with the Atlas Mining Corporation since the 1950s, purchased a 5% (4.4 billion yen) share of the company and extended a 7 billion yen loan to the company in exchange for discounts on ore purchases for a twenty year

TABLE IV-4
COPPER AND NICKEL PROJECTS IN THE PHILIPPINES

<u>Project Area</u>	<u>Yr. of Contract</u>	<u>Type of Contract</u>	<u>Japanese Partners</u>	<u>Philippine Partners</u>	<u>Export to Japan ton/yr)</u>	<u>Develop. Costs</u>	<u>Inv. and credit by Japanese Partners</u>
<u>Copper</u>							
Sipatay (Negros)	1954	Loan-related	Mitsui Metal Mining Nanyo Bussan Corp.	Marinduque Mining & Industrial Corp.	25,500	5.6 bill. yen	1.5 bill. yen
Bogacay (Negros)	1954	Loan-related	Mitsui Metal Mining Nanyo Bussan	Marinduque Mining & Industrial Corp.	7,500	N.A.	
Toledo (Cebu)	1953 1969 (2nd deal)	Loan-related	Mitsubishi Metal Mining Corp. (4.65%)	Atlas Consolidated Minings Dev. Corp.	80,000 (10 yrs. from 19710	28.8 bill. yen (1969) equity - 7.2 bill. loan	10.4 bill. yen (1969) 4.4 bill. equity - 7.2 bill. loan
Iza-Pili (Marinduque)	N.A.	Loan-related	Mitsui Metal Mining Nanyo Bussan Rorohani Corp.	Consolidated Mines, Inc.	N.A.	1.1 bill. yen	
Kennon (Negros)	1967	Loan-related	Nippon Mining Corp.	Black Mountain, Inc.	3,000	800 mill. yen	400 mill. yen
Batong Buhay (Manila)	1969	Exploration & Dev. Stage; Loan-related	Nippon Mining Corp. C. Ichii & Co.	Batong Buhay Mining Corp.	20,000- 25,000		\$2 million
(Marinduque)	1968	Exploration- Stage	Nippon Mining Corp.	Marcopper Corp.	4,000 (1970 oper.)		
King King (Mindanao)	1970	Exploration- Stage; Equity participation	Mitsubishi Metal Mining Corp.	Aguinaldo Corp.	All of ore prod.		Funds for prospect. & 40% of share

TABLE IV-4 (continued)

Dizon Zambales (Luzon)	1971	Equity-participation	Nippon Mining Corp. Mitsubishi Corp. (40%)	Dizon Copper Silver Mines, Inc.	N.A.	\$40.2 mill.	
(Negros)	N.A.	Development Stage	Dowa Mining Corp. Marubeni Corp.	CPPC Mining Corp.	All of ore production		
<u>Mickel</u>							
Marinduque (Monoc)	1968	Loan-related	Sumitomo Metal Mining Corp. Marubeni Corp.	Marinduque Mining Industrial Corp.	N.A.	\$240 mill.	
(Palawan)	1970	Exploration (Smelting)	Taiheiyo Metal Corp. Sumitomo Metal Mining Corp.	Samer Mining Corp.	N.A.		
Rio Tuba (Palawan)	1974	Equity- Investment	Taiheiyo Metal Corp. Nippon Steel Corp. Nisshin Steel Corp. Nissho Iwai (40%)	Rio Tuba Nickel Mining (60%)	1 mill. (1976- 1986)	8.2 bill. yen	\$7.2 mill. (loan)
Tront (Palawan)	(1973?)	Exploration Stage; Equity- Investment	Taiheiyo Metal Corp. Marubeni Corp. (15%)	Olympic Minest& Dev. Corp.	N.A.		15% of share

Sources: Ajia Dōkō Nenpō, The Engineering and Mining Journal,
Far Eastern Economic Review,
Oriental Economist, Pacific Imperialism Notebook
Philippine Mining Journal (various years)
Jūkagaku-Kōgyō (1976), Shū-Kan Tōyō Keizai (1980), Izutsu (1978)

period beginning in 1971. Dōwa Mining Corp. and Marubeni Corp. entered into an exploration project with the Philippine company CPPC which was to reach the development stage in 1976. In 1969, Nippon Mining and C. Itoh & Co. contracted with Batong Buhay Mining Corporation for a joint project in the Manila area; in this case the Japanese partners extended a \$2 million loan for financial and technical aid. In 1971 Nippon Mining and Mitsubishi Corp., entered a joint exploration venture with a 40% share-holding in a project in the Manila area with Dizon Copper Silver Mines, Inc., a Philippine company (Ajia Dōkō Nenpō, 1972). Similar exploration and development projects were under way in the first half of the 1970s (See Table IV-4)t

The pattern of contracted projects was that Japanese companies extended loans to local Philippine companies for development costs and/or joint development ventures through equity participation. In many cases, the Japanese partner consisted of a mining company and a trading company which had not participated in copper projects during the 1950s. There was increasing equity participation in the early 1970s, but the bulk of the projects in production were loan-related joint projects. Almost all ore production was shipped to the Japanese partner's smelters as loan repayments.

Nickel Nickel is the second largest metal foreign exchange earner for the Philippines. Japanese companies, although less active than in copper, began to participate in nickel extraction in the late 1960s. Japanese investment by the Sumitomo Metal Mining Co., Ltd. and Marubeni Corp. in Marinduque Mining and Industrial Corp. was one of the earliest cases of Japanese joint nickel projects in the Philippines (Tsuda, 1978, p. 27). MITI supplied \$55 million in supplier's credits for the purchase of machinery and equipment for this joint project in Surigao, Nonoc Island. (PMJ, Jan. 1970, p. 32). Another project in Palawan conducted by the Rio Tuba Nickel Mining Corp. is also a Philippine-Japanese joint venture. The leading Japanese shareholders, who owned a total of 40% of the equity, include a nickel smelter (Taiheiyo Metal Corp.), steel companies (Nippon Steel and Nissin Steel) and a trading

company (Nisshō Iwai). Mine development costs of 8.2 billion yen were largely borne by the Japanese partners (Radke, 1980, p. 49). In exchange, all the ore, one million tons yearly, was to be shipped to Japan for a ten year period commencing in 1976a This project was provided a long-term loan through the Japanese Export-Import Bank and JICAa The two other projects conducted through joint ventures between Japanese groups and Philippine companies were in the predevelopment or in exploration stage in 1976 (Jukagaku Kogyo, 1976, p. 219).

Japanese joint venture investment in Philippine mining by 1976, totaled approximately 1,467.7 million pesos, or 31.4% of cumulative Japanese investment in all Philippine joint ventures. Fourteen joint ventures were engaged in mining, of which ten were large-scale (Tsuda, 1978, pp. 21-28). The relatively large amount of activity in mining enterprises after the mid 1960s is explained primarily by a great demand for minerals and Japan's geographical proximity to the Philippines, which lowers transport costs. Japan has been and is receiving over 80% of Philippine mineral exportsa

Philippine government policy has striven to facilitate foreign investment. The most important expression of this policy was the Investment Incentives Act in 1967 which provided tax exemptions on imported plant and machinery facilities and other equipment necessary for the initial year of a mining projecta This law also exempted projects from all taxes except the income tax. Foreign investment was allowed to total 40% equity participation (Kitamura, 1980, p. 219). As a result, approved foreign investment in mining (equity and non-equity financing) accounted for 1,229 million pesos or 39.25% of total foreign investment between 1968 and 1974. Foreign financing was largely non-equity, that is, in the form of loans and credits for machinery, equipment, and technical assistance, accounting for 99.9% of total financing in the mining sector (Jurado, 1976, pp. 310-313).

Unlike Indonesia, where the state has decisive power over mineral extraction, the Philippine participants in mining are all private

companies. Foreign investors are allowed to control up to 40% of total equity, but the average foreign investment share has remained lower.¹⁸ As a result, Japanese private companies have dealt directly with Philippine investors, who have welcomed Japanese capital participation. Japanese copper companies, with longer project experience in the Philippines than in other countries, have had greater opportunities to continue existing projects and embark on new projects with domestic Philippine capital.¹⁹ An important Japanese advantage is the readiness to prefinance new projects with loans granted for the purchase of machinery and for technical assistance. This was desirable to Philippine partners because of their lack of financial and technical capabilities (Wang, 1978, p. 249). Furthermore, Japanese companies, which were more concerned with ensuring stable supplies than price, offered favorable contractual terms.²⁰ This has encouraged continued interest among Philippine companies in fixed commitments with Japanese companies (Radke, 1980, p. 38).

Under these favorable conditions, Japanese companies have been successful in obtaining access to "captive" sources of supply. The increasing capital requirements have prompted mining, trading and consuming companies to coordinate their efforts in nickel mining

18. On the average, 26% of the equity in the Philippine mining corporations is in foreign hands (in 1980). The bulk of the foreign investment in mining has been in copper mining (Radke, 1980, pp. 58-59).

19. The Philippine-Japanese joint mining ventures have frequently been composed of "groups" of exclusive industrialists, linked by familiar relationships. Many of the mining companies, especially copper, are owned by these groups. For example, Atlas Consolidated, which is owned by the Soriano family is a Mitsubishi Metal Corp. affiliate; Marinduque Mining Industrial Corp. is owned by the Elizalde family and is a Mitsui Metal Mining Corp. affiliate. These family relationships provide opportunities for Japanese companies to gain access to new projects in conjunction with the same family companies (Kitamura, 1980, p. 218; Tsuda, 1978, pp. 101-107).

20. In 1978 prices Japanese companies paid to the Philippine companies were 4.7 cents/pound above the world market price (Radke, 1980, p. 3).

ventures. Extending loans and supplier's credit for the purchase of machinery, facilities, and technical assistance is an important corporate tool in acquiring ore supplies. In comparison to Indonesia, the Japanese government's direct involvement has been limited in the Philippines. This is partially because, historically, the United States has maintained closer economic and political ties with the Philippines. In addition there is lingering anti-Japanese animosity due to Japan's WWII occupation of the Philippines. These two factors had prevented the Japanese government from pursuing active economic policies, with the exception of reparation payments, until the late 1960s. In the Philippines, it was private Japanese companies that initiated resource extractive activities. The Japanese government, however, has extended financial assistance to a few projects. This financial assistance began in the late 1960s, through either the Export-Import Bank or the governmental agencies, JICA and OECF.

Malaysia

Japanese mining and oil activities in Malaysia have been limited, although recently the Japanese have begun to secure access to copper, petroleum, and natural gas deposits. Malaysia has been Japan's major tin supplier (57.9% in 1979). But the relative insignificance of tin as an industrial metal has prompted a lack of interest among Japanese regarding this metal, when compared to other non-ferrous minerals (MITI, 1980, pp. 240-241).²¹ The dominance of British, Australian and Malaysian capital in the Malaysian tin industry has prevented Japanese

21. Malaysia also had been a major iron ore supplier to Japan, as had India and the Philippines. For example, in 1958, 31% of total Japanese iron ore imports was from Malaysia. However, by 1970 Malaysia's share had decreased to about 5% as Australia, India, and Brazil became major iron ore exporters to Japan (Wakiyama, 1967, p. 10).

capital from entering the industry with the exception of some small Japanese-Malaysian joint ventures (*PIN*, 1973, 4-5:90-100).²²

Petroleum. Japanese oil exploration in Sabah began early in the history of Japanese oil development projects. In 1964 with the financial assistance of the PDPC (56.3% of the total capital invested) the Teikoku Oil Co. obtained a concession and formed, with Marubeni Corp. and two other companies, the Sabah Teiseki Oil Co. (Sabah Oil Development Co.). As an independent company it has been engaged in drilling throughout the State of Sabah in North Borneo. The other oil project was the Sabah Marine Area Co., formed in 1969, and comprised of the PDPC (45.6% of Japanese investment), the Teikoku Oil Co. and the Sumitomo Group; the other partner was the French-based SNPA. The Northeastern Sabah oil field that was discovered produced 500 b/d of oil in 1976. However, this field's production was not commercially feasible.

Oil production in Malaysia has increased rapidly over the last ten years. Malaysia exports low sulphur crude and imports less expensive, low quality Iranian and Kuwaiti crude for domestic usee The share of crude oil in total Malaysian exports increased from less than one percent in 1971 to 23.7 percent in 1977. After the mid 1970s it became the second most important export commodity, trailing only timber. In the 1980s, oil is expected to be the country's largest foreign exchange earner (*PN*, 1980, 10-12:20-21)e The Malaysian government formed PETRONAS, the state oil company, in 1974 under the Petroleum Development

22. The Pacific Industrial & Mining Co., a joint venture of a Japanese group with 25% of initial paid-in capital and Malaysian capital began tin dredging in Perak state, with Japanese-supplied equipment in 1969. On the other hand, Oriental Tin Smelters, Ltd. controlled by Ishihara Sangyo Kaisha was forced to close down in 1969. This was because the British controlled tin mines and Chinese-Malay gravel pump mines which had standing arrangements with British and Chinese smelters refused to sell concentrations to the Japanese smelter (*PIN*, 1973, 4-5: 99).

Act, and simultaneously tightened state control over oil development. As a result, existing concession arrangements with Japanese companies were revised to a production-sharing system (Malaysia, 1981, p. 14). Though involvement is uncertain, the Japanese continue to display interest. For example, C. Itoh & Co. has undertaken the Master Plan design for the development of the country's oil and gas resources for PETRONAS. This study was financed by a loan for research projects to PETRONAS from JICA (Japan International Cooperation Agency) (PN, 1976, 7-8:11-12; MITI, 1977, p. 339).

Natural gas. Exploration and development (for liquefaction and export) has also been under the control of PETRONAS. The Mitsubishi Corporation organized the LNG development project set up in 1975 in Sarawak, with a 17.5% equity. This is a joint venture with Royal Dutch Shell (17.5%) and PETRONAS (65%). The LNG production of 6 million tons annually is to be exported to Japan. The Japanese government is providing 21 million yen credit as part of its fifth yen credit package to Malaysia to help finance the construction of a new port at Bintulu where the LNG terminal is being built (PN, 1978, 9-2:a3-15).

Bauxite. Malaysian bauxite exports to Japan are mainly from two sources and supplied approximately 19% of Japanese imports in 1974. The most important source is Ramunia Bauxite Ltd. (local capital) which exports 80% (300,000 tons) of total production at prevailing market prices. The other source is a joint venture of Japan Light Metal Co. (25%) and ALCAN (50%). This project was started in 1957 by ALCAN's subsidiary, Southeast Asia Bauxite (SEABA), and joined by Japan Light Metal in 1960 (Sakata, 1969, pp. 233-273). The project was not begun at the behest of Japanese smelters; rather, the Japanese were drawn in. Japan Light Metal seems to have entered this arrangement earlier than other smelters due to its prior capital affiliation with ALCAN.

Copper. The first of the large-scale Japanese copper mining projects in Malaysia started in 1969 at the Mamut Copper Mine in Sabah. The concession, which was prospected by a United Nations survey team, was acquired in international bidding by Overseas Mineral Resource Development (OMRO) (*Kaigai Kōbutsu Shigen Kaihatsu*), a joint venture of the Japanese government and seven copper companies.²³ On the basis of this concession, five copper mining companies formed Mamut Mine Development Co. This company joined with the local government of the State of Sabah to form OMRP Sabah, a development company, which was financed by the two partners on equal terms (OE, Dec. 1970, p. 41). The development cost has been estimated to be 29.4 billion yen, of which, the Japanese provided 27.6 billion yen. The mine and associated refinery produces 40,000 tons of copper ingots, all of which is exported to Japan, and earned \$50 million of foreign exchange for Sabah in 1978 (Wang, 1978, p. 189).²⁴ This project and the Musoshi mine in Zaire have been two of the largest copper projects in which the Japanese have participated.²⁵

The number of Japanese mineral and oil projects is smaller in Malaysia than in Indonesia or the Philippines. These projects were begun in the mid 1960s, relatively late in the Japanese drive for resource independence (this excludes bauxite mining which began earlier). As a result, the types of projects reflect latter Japanese government policies preferring "autonomous development" through capital investment. This preference is embodied in the Mamut Copper project and the various oil projects. As with other oil projects, PDPC participated through the provision of nearly half of the capital requirements. In

23. The seven mining companies are Mitsubishi Metal, Mitsui Metal Mining, Sumitomo Metal Mining, Dōwa Mining, Nippon Mining, Furukawa Mining, and Nittetsu Mining.

24. This project, however, created an environmental problem. Environmental destruction by the Mamut copper includes river pollution and paddy destruction, and caused disputes between local residents and the company (Matsui, 1979).

25. The copper mining project in Zaire is also operated by OMRO.

the LNG project, the Japanese government extended both ODA and yen credits to the state oil and gas company. The Mamut Copper project was undertaken by a government-organized group of mining companies. Clearly, the Japanese government's role in encouraging and fostering mineral-related activities in Malaysia has been very important.

Thailand

Thailand is the third largest source of tin for Japan and supplies approximately 20% of Japan's total tin imports. Few Japanese companies are involved in this industry, however, as tin is not considered industrially significant. Japanese do participate in joint ventures with Thai capital to mine other minerals, notably fluorite and manganese.²⁶ However, Japanese mineral industries have not launched any large-scale mining projects.

In the early 1970s, three groups began oil exploration and development projects. In 1969, with 13.3% of the financing from PDPC, the Mitsui group formed the Miatsu Oil Development Co., which entered an equal partnership with CONOCO. The Southeast Asian Petroleum Co., established in 1971 by PDPC with 40.9% of Japanese capital and three Japanese refiners, Maruzen Sekiyu, Nippon Kōgyō, and Daikyō Sekiyu,²⁷ contributed 20% to a joint venture with Union Oil. The only other project was an equal partnership between AMOCO (50%), PDPC (37.5%), and Idemitsu Kōsan, an independent Japanese refiner, forming the Idemitsu Thai Oil Development Co. in 1972. Drilling is under way in all of these projects, but only a few wells have produced a small quantity of oil, and these have not yet reached production stage. The

26. In fluorite mining the Thai Resources Development Co. had 69.6% capital participation by Tōhō Sangyō; in manganese mining National Thai Co. Ltd. was 51% in Thai and 49% Japanese. These are two of the on-going joint mining projects (Thailand, BOI, 1976; Shūkan Tōyō Keizai, 1980, p. 128).

27. These three refiners are non-foreign affiliated oil companies.

Mitsui Development group, however, has discovered promising quantities of natural gas in 1980 (Murakami, 1980, p. 183). It is notable that independent Japanese oil refiners took part in exploration projects with PDPC financial assistance, a new development.

Burma

The Peoples Oil Industry is the national Burmese oil company, created by the government after the nationalization of the Burmese oil system in 1963 to undertake on-shore exploration and development without foreign participation.²⁸ The stated aim of the oil company was to achieve national self-sufficiency in oil. By the early 1970s, seven major oil fields had been developed and reached a production level of 40,000 barrels a day in total (FEER, 25 June 1976, p. 84). As a result, output of petroleum products experienced modest gains and since 1970, has been exporting small quantities of naptha, mainly to Japan (PN, 1973, 4-4:17). In this period Japan had no opportunities to become directly involved in oil projects. The Burmese obtained technical and financial assistance for its oil development from socialist countries (Arumugam, 1977, p. 30).

In 1970 the Peoples Oil Industry was reorganized to form the Myama Oil Corporation (MOC). The MOC became interested in the possibility of exploring Burma's offshore potential, but this required Western and Japanese assistance (PN, 1972, 3-4:19). As a result, between 1970 and 1972, surveys were conducted or sponsored by Western and Japanese oil companies. The Japanese Petroleum Resource Development Co. undertook a 3100 square mile geophysical survey of the Gulf of Martaban region, near the mouth of the Irrawaddy River (PIN, 1972, 3-

28. In 1947 the British companies, Burma Oil, Indo-Burma Oil, British Burma resumed import service and restored the oil fields. The Burmese government participated in the oil industry and reorganized the oil companies into one joint company, Burma Oil, in 1954 (Murakami, 1980, pp. 54-58).

2:88)²⁹ The Japanese government, through OECF, extended a 3,600 million yen loan in 1971 and another in 1973 of 3,080 million yen in yen-credits to the Burmese government to fund the survey (MITI, 1977, p. 383).

In 1974, Burmese oil policy changed sharply and the MOC awarded four production-sharing arrangements to foreign oil companies³⁰; one of which was to the Arakan Development Company, comprised of PDPC, the Japan Petroleum Resource Development Corporation, Kyōdō Oil, Mitsubishi Petroleum Development Company, and Mitsui Petroleum Development Company (Jūkagaku-Kōgyō, 1976, p. 95).³¹ The policy shift allowing foreign companies to participate in the exploration for oil was a significant modification of Burmese socialist economic policies.³² However, on-shore oil production and development has continued to be controlled by MOC (Arumugam, 1977, p. 32).

In addition to financial assistance for projects in which Japanese companies took part, in 1977 the Japanese government extended a 29,950 million yen credit through OECF to the Burmese for the construction of the Mann Refinery. Furthermore, in 1973 and 1974, Japan's MMDPC and

29. The other Western companies were Gulf Oil, Amoco, and Prakle, a German firm.

30. The other three groups were an American group comprising Cities Service, Burma Sun Oil and Robina Oil Company; a group composed by CFP, Demiaex and AGP; and the Esso Exploration and Production of Burma group (PN, 1974, 5-10: 52).

31. Under Burma's production-sharing contracts, the state is the only owner of petroleum resources and companies serve as contractors to the MOC for exploration and production. If production occurs, the contractor is allowed to recover its expenditures from sales to a maximum of 40%. Product-sharing of profit after cost recovery is on the ratio of 70:30 in favor of MOC (PN, 1974, 5-10:52).

32. Since 1974 the Burmese government has adopted a more "development-oriented" policy rather than the former "self-reliant" policy, which had been in effect since 1962. As a result, the country was more open to foreign aid, although the government has attempted to remain neutral (Kiryu, 1982).

JICA conducted resource development studies as well as a regional development project in the Moniwa area under the auspices of the governmental technical assistance program (MITI, 1975a, p. 400). Since 1970, when oil imports from Burma began, Japan has displayed more interest in Burma's resource potential. Burma received 3.6% of Japanese ODA, high compared to other developing countries, with the exception of other Southeast Asian countries. Japan contributed 30.4% of the total aid Burma received in 1976 from all industrialized countries, and has been the chief donor of economic aid to Burma. Although importation of oil and minerals from Burma has been limited thus far, bilateral aid has the potential to become an effective policy tool in obtaining access to Burma's resources.

In summary, this chapter has provided a case study of the way in which Japanese resource policy was conducted in SEA. The specific projects illustrate the changing policies which Japanese companies have used to ensure their access to oil and mineral supplies. The use of historical analysis has enabled a differentiation of the types of Japanese involvement.

Japanese industries participated more actively in the projects after the mid 1960s. The extension of loans or equity participation has been an important tactic for Japanese companies desiring to ensure access and establish greater control over mineral sources. The acquisition of oil through production-sharing in Indonesia and loan-tied purchases of copper and nickel in the Philippines and Indonesia are good examples of loan-tied procurement. The risk and large capital requirements that accompanied large-scale projects made it necessary for Japanese companies to participate in groups. These groups included not only mineral and oil industries, but also trading and consumer companies.

In addition to these private activities, the Japanese government encouraged and sometimes even initiated projects. The major policy tool in the case of oil and mineral development was financial and technical

assistance to the projects through the Export-Import Bank, OECF, JICA, and PDPC. SUNIDECO in Indonesia, the nickel project in the Philippines, and many of the oil projects, exemplified this governmental support. The Japanese government's role in organizing and initiating private corporations through PDPC or OMRD was an important factor in spreading costs and risks, thereby inducing companies to embark on new projects. Moreover, bilateral aid to the producer countries, such as the yen credits extended for the LNG projects in Malaysia and Indonesia and the oil development projects in Indonesia, smoothed the way for the private companies.

Finally, increased Japanese participation in SEA reflects changes in the respective producer countries. Whether local partners were state companies or private companies, they were willing to allow Japanese capital to develop resource holdings and production. In each case, the producer country governments have allowed this to satisfy foreign exchange needs. The Japanese have offered favorable contractual terms, including prefinancing for mines and oil fields, and loans for the purchase of goods and services, to be repaid with ore or crude oil. These provisions have been welcomed by producer countries which are short of capital and technology. This dependence on Japanese foreign investment assistance and the Japanese market for exports has furthered Japanese policies of securing access to raw material supplies.

CONCLUSION

Is current Japanese resource policy the result of a completely new government foreign economic policy begun in the 1970s? Or is it a natural outgrowth of past commercial activities? This study of Japanese resource policies suggests that there has been a conscious and serious effort by the Japanese government and private corporations over, at least, the last fifteen years to free themselves from foreign control of vital resources. These policies were neither the products solely of the government nor of private corporations, but a result of the integrated policies of both. While some have argued that Japan had no resource policy until the oil crisis, this paper has demonstrated that resource policies were developed prior to the oil crisis. It has detailed the process of resource policy development by identifying the participants and their strategies.

The study demonstrates that the significant factor in policy evolution was the Japanese government which determined the orientation and implementation of policies. This government involvement reflected the close relations between the government and the private corporations that participated in resource extraction. The argument that Japan is a resource-scarce country dependent on foreign sources and vulnerable to potential fluctuations of resource supply is not sufficient. This vulnerability does not completely explain why and how the Japanese government and companies became more active in independent resource policies during the 1960s. While it is true that Japan has been vulnerable, the nature of the reactions to this fact are unexplained. The most interesting question is when and why this vulnerability or perception of vulnerability prompted government officials and corporate executives to adopt a more conscious, active resource policy.

Economic growth based on heavy industrialization, which Japanese government and industry chose as a path to pursue for economic development, increased dependence on foreign sources in the 1960s. Rapid increases in industrial use of resources increased demand and consequently forced an increase in resource imports. Japan was dependent on a small number of producers, many of which were developing countries. These factors concerning Japanese supply and consumption increased uncertainty regarding the future availability of adequate supplies of raw materials.

Furthermore, unlike the international oil or mineral corporations based in the Western countries, traditional Japanese oil and mineral industries were relatively uninvolved in actual mining activities such as exploration, development and mine production. Most Japanese mineral and oil companies were not integrated from the mine to final product, but engaged only in refining and sales. This unintegrated structure, due partially to a lack of domestic sources and partially to their weak competitive position relative to the international mineral companies, ensured the Japanese industry's weakness and inability to embark on overseas resource development.

In the 1960s concern regarding the predictability of stable and low-cost supplies of natural resources became more pronounced due to increasing dependence and weak industrial structure. In addition to these characteristics specific to Japan, development in the international resource economy heightened these concerns. The overall shift from over-production to resource shortages, market fluctuations due to strikes and international politics, and the creation of producer cartels deepened uncertainty and concern. For both the government, especially MITI, and industry the supply shortages or price hikes would be disastrous. They understood that a stable and inexpensive resource supply was indispensable not only for the continuous operation of Japanese industry, but also to ensure international competitiveness. Resources have been and remain a necessary prerequisite for a healthy economy.

The undeveloped condition of the Japanese resource industries prompted the government, through MITI, to launch an active policy to secure supplies. Heightened concern among officials, as seen in official documents, resulted in the adoption of measures implementing more independent policies in the mid 1960s. The extractive industries were unprepared financially, technically, and managerially for overseas resource-related activities. Therefore, MITI was required to supplement these deficiencies through various measures. One measure was to provide financial and technical assistance to companies engaged in overseas resource projects. To fulfill this function existing government agencies, such as the Export-Import Bank, OECF, and JICA, and newly established or reorganized ones such as the PDPC and MMDPC were utilized to ensure the implementation of MITI's policies. The obstacles to overseas resource projects, such as high risk and large capital requirements, were, in part, borne by the government. In this way the government increased opportunities for extractive companies to participate in overseas projects.

In addition to assistance, MITI organized private companies into consortia through semi-governmental corporations such as the Overseas Mineral Resource Development Corp. and the Overseas Petroleum Resource Development Corp., and MITI took the initiative in encouraging the involvement of a number of extractive companies in resource projects. The consortia method was very effective in overcoming the relative weakness of individual corporations.

Bilateral government aid was used to support mineral and oil exploration and development projects by private companies. As was frequently the case in Southeast Asia, economic aid, in the form of yen credits or technical assistance to the producing governments, was tied to securing access to resource projects and supplies. To compete with large international corporations, which had enormous financial capabilities, not only for mineral exploration and development but also for infrastructure construction, the Japanese government extended

assistance to producing countries to complement private extractive activities.

The geographical distribution of governmental aid in SEA coincides very closely with resource extraction projects. Government policy tools were extremely effective in encouraging and supporting overseas resource development by the late-comer Japanese companies. Government guidance and patronage prompted private extractive industries to become more active in their overseas ventures. Not only traditional mineral companies, but non-foreign-affiliated oil companies, trading companies and consumer industries also became more involved in mineral-related activities. Given MITI's various blandishments and Japan's growing economic strength in capital and technology, these companies initiated more active resource projects after the mid 1960s.

There are three types of resource contracts: simple market purchase, loan-related purchases and "autonomous" development. As a more active resource policy evolved, the relative weight of these three contract patterns changed. Although the simple purchases pattern has been dominant throughout the post-war period, the second and the third types were more actively pursued by the government and extractive companies after the mid 1960s. This shift reflected policy developments on the part of both the government and the corporations.

In the 1950s resource policy was domestic-oriented and very few projects were launched through loan-tied contracts or equity participation, also termed "autonomous" development. In the mid 1960s when policy became more overseas-oriented, the use of loan-tied and "autonomous" types of contracts became more frequent. This trend was noticeable in copper, nickel and oil ventures in Southeast Asia.

Japanese government policy, particularly that of MITI, was the most important factor in post-war Japanese resource policy in coordination with private corporations. This close working relationship between the government and the extractive companies functioned through

institutional arrangements and supportive measures characteristic of industry-government interaction. This paper does not argue that such industry-government cooperation or cooperation between the various government institutions, such as MITI and the Ministry of Foreign Affairs (MFA) was total or that the evolution of these policies was smooth. In the case of the Tyumen oil project in the Soviet Union, for example, the Japanese government refused to participate due to international political considerations (Curtis, 1977). The MFA has warned that the independent initiatives to acquire resources could cause friction with the Western industrial countries (MFA, 1972). Some observers have argued that there has been rivalry among politicians and industrialists over specific resource development projects, such as those in Indonesia (Kitazawa, 1982, pp. 31-32, pp. 43-44). Yet there was little disagreement on the basic thrust of the general resource policy. Even given these reservations, the general evolution of resource policy can still be best explained by an examination of the government's role and its close relationship with the affected industries.

The evolution of resource policies suggests that international factors conditioned policy development. The rapid growth of the Japanese economy and its internationalization transformed relationships with producer countries. The Japanese government and companies developed to where they could mobilize capital for aid and foreign investment in producer countries. Secondly, the relative power of the international mineral and oil companies eroded as producer countries or indigenous producer companies exerted increased sovereignty over resource extraction activities. This offered greater opportunities for Japanese companies to initiate and operate extractive projects. Usually the local partners in producing countries needed the capital and technology which the Japanese partners could provide. The producer country's policies of introducing direct foreign investment in the mining and oil sector also presented favorable conditions for the Japanese.

Although Japan is still dependent for the bulk of its resource imports on simple purchases from foreign sources, this does not mean there has been no Japanese resource policy. In fact, the Japanese government and private corporations attempted to manage this dependence on foreign resources in order to lessen potential vulnerability. For example, by the early 1970s the Japanese government and private companies had launched a variety of oil, LNG and mineral projects in Indonesia, Malaysia and Philippines. In Thailand and Burma, Japanese had initiated a limited number of oil projects. As there has been a time lag between the planning stage and actual contract or operational stage, the exact starting points of each project have often been unclear. However, the resource projects in SEA indicate that, for the most part, Japanese resource policy has been carefully devised and implemented by both the Japanese government (MITI) and private companies during the 1960s. The policies were responding not to the pressure of single events but rather to the pressure of domestic concerns regarding resource dependence and changes in the international resource situation. Unlike the governments and multinational corporations of the Western industrial countries, the aim of the Japanese government and the extractive corporations was primarily to secure resources, not to extract cheap resources. The coalition between the government and the private sector was a decisive factor in the evolution of Japanese resource policy in pursuit of this goal.

This study is not exhaustive of all the questions relating to Japanese resource policy. Areas of further study to elucidate other issues in understanding Japanese resource policy include the following: First, Japanese resource policy must be studied on a world-wide basis, including both developed and developing countries. Second, future research should include the post-1973 Oil Crisis period. The Oil Crisis certainly had an impact on resource policy, with more frequent cooperation with foreign mineral and oil companies in the post-oil crisis period and lessened industry reliance on governmental support. Furthermore, as the scale of projects grew so did the risk. This

increased risk has made agreements between the government and private corporations and between partner companies more difficult.

Thirdly, though this study focused on Japanese resource policy, further research relating to producer country policies and economic development plans is needed. While relations between developed and developing countries are asymmetric, the goals of the producer countries cannot be ignored. Producer countries increasingly prefer smelting minerals to simply exporting ore. This policy of moving downstream in the production process has changed Japanese procurement patterns and forced a change in the Japanese domestic industrial structure. A final topic for future research is to analyze the impact of Japanese resource policy on the producing countries' society as well as economy. The future relationship between Japan and the producer countries which will determine Japanese resource policy is defined by the impact of present policy on the economy of the producer country.

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