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JAPANESE BUSINESS ACTIVITIES IN BRAZIL

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Introduction 1/

The relationship between Japan and Brazil is quite interwoven since Japanese immigrant society of 800 000 resides in Brazil. Trade between two countries reached US\$2 945 million (exports to Brazil, US\$1 367 million and imports from Brazil, US\$1 578 million) in 1981, an increase of 10% over 1980. Japanese official economic assistance to Brazil amounted to 44 875 million yen, approximately US\$163 million, (grants: 36 million yen, and yen-denominated loans: 44 839 million yen) up to 1982. Private financial assistance to Brazil totalled US\$7 052 million up to 1981, in which direct overseas investment accounted for 46% (US\$ 3 224 million) and deferred payment exports for 54% (US\$3 828 million). In addition, the Export-Import Bank of Japan, a Government financial institution, financed exports to Brazil as buyer's credits, totalling 233 billion yen, approximately US\$585 million on the commitment base up to the end of 1982 2/.

In this paper, Japan's direct overseas investment in Brazil will be analyzed. The post-war Japan's overseas investment began in 1951. Its accumulated amount to Brazil (US\$3 545 million) during the 1951-1952 period occupied the third place following the United States and Indonesia. Japanese investments in Brazil have concentrated in such sectors as iron and steel, textiles, general machinery and commerce.

The first section provides an overall view of Japan's direct overseas investment. In the next section, the investment in Brazil will be examined according to the Brazilian economic development stages. In the third section, the present situation of Japan's investment in Brazil will be summarized. Then, some cases of Japanese business failures and successes will be analyzed in the fourth section, and finally, comments will be made on the business interaction between Japan and the United States with respect to foreign investments in Brazil.

1. An overall view of Japan's direct overseas investment

Japan's Foreign Exchange and Foreign Trade Control Law (the Foreign Exchange Law, hereafter) defines the direct overseas investment as (1) purchasing stocks and debenture bonds of foreign companies, (2) acquisition of obligative rights and extension of long-term loans to the companies whose capital is possessed by the action of (1), and (3) payments for establishment of branches, factories and representative offices in foreign countries. The law was modified in December 1980 and Japanese capital shares for direct investment was changed from over 25% to over 10% stocks of a foreign corporation. Before the modification, the following were applied: the possession of more-than-25% and in the case of more-than-10% but less than 25% with conditions that (1) dispatching managerial staff, (2) transferring manufacturing technologies, (3) supplying raw materials, (4) purchasing final products, (5) assisting

financially, (6) having agent contracts and (7) establishing lasting economic relationships with the invested company. The Foreign Exchange Law was first established in 1951, six years after the cease-fire of World War II and Japan's direct overseas investment restarted. But it was quite limited due to the scarcity of foreign exchange and the authorized basis by the Ministry of Finance. Since 1969 the law has gradually been liberalized in accordance with the rapid expansion of Japan's participation to world economies. The pace of liberalization accelerated during the 1970's and after five modifications, direct investment abroad became, in principle, totally liberalized in December 1980.

The law now only requires a prior notification to the Central Bank by the investor. However, there are several exceptions. For example, some sectors are prohibited to invest or need to have an approval of the Finance Minister. Those sectors are: banking and investment, fishery (in particular, areas based on the International Fishing Treaty), leather industry, textiles, oyster farming to produce pearls, arms and narcotics production. Such regions as South Africa and Namibia are also closed to invest. Investment less than 3 million yen (approximately US\$13 000) and a purchasing of real estate do not require a notification to the Central Bank.

Japan's early direct overseas investment were directed to the United States to set up commercial links to sell Japanese products and import US commodities. Trading companies opened their branches or established local entities in the United States. In Asia, the investment in mining development had been emphasized up to the mid 1950's. For example, investments were made in the Goa iron ore mine in India. Up to 1965 investment in manufacturing industries gradually became active in Asia and Latin America. Three big projects were launched by the strong support from the Japanese Government to demonstrate Japanese technology and to prove a rebirth of the industrial success of the post-war period. Those were: the Alaskan pulp project (1953); the Brazilian steel project (USIMINAS, 1957); and the Arabian oil project (1958). Import substitution policies adopted by Latin American countries during the 1950's induced Japanese investments in this region, for the purpose of defending market shares.

From the mid 1960's to the first oil shock in 1973, the Japanese economy achieved a very high growth. It increased at an average annual rate of 10% in real terms between 1964 and 1973. The current balance of payments showed a surplus every year from 1964 to 1972 with an exception of 1967, and the Japanese foreign exchange reserve 3/ rose rapidly. This led the Government to liberalize Japan's direct overseas investment. The first measure to decontrol part of the Foreign Exchange Law was adopted in October 1969 and successive liberalizations followed: the second

in September 1970; the third in July 1971; and the fourth in June 1972. These measures, combined with the yen appreciation following the Nixon shock in August 1971, which was responsible for the yen floatation, induced Japan's direct overseas investment to spurt.

In addition, the system of foreign currency loans was instituted in 1972 and the law of the Export-Import Bank of Japan was modified in the same year to strengthen its overseas investment credit operation. Moreover, corporations were permitted to make provisions for losses on overseas investments as one of the special tax measures. These measures accelerated Japanese overseas investment, especially during the 1972-1973 period. Annual overseas investment amounted to US\$2 338 million in 1972 as compared with US\$858 million in 1971, and reached US\$3 494 million in 1973 on the notification basis.

Due to the oil crisis, overseas investment decreased in 1974 but it soon recovered in 1975 to reach a level over US\$3 billion. The fifth liberalization measure was instituted in April 1978 and during the 1978-1980 period the annual average exceeded US\$4.5 billion. After 1980, investment to industrialized countries such as the United States of America and the United Kingdom increased in order to avoid trade frictions.

From the restart of overseas investment to 1982, the total cumulative amount on the notification basis reached US\$53 131 million with 29 063 investment cases (see Table 1). The cumulative investment between 1971 and 1982 was fourteen times larger than that of between 1951 and 1970. This indicates that Japan's direct overseas investment is quite a recent phenomenon and, as compared with Western countries, Japan is a late-comer in the international investment scene. Japan has not yet come to the point to enjoy investment benefits and, therefore, has not achieved high reinvestment ratio. It is also worth mentioning that the average investment per case has been increasing, suggesting that new investments cost more than before even after taking into account of inflation.

Out of the total value invested between 1951 and 1982, as a major host country, the United States of America accounted for 26.3% while Indonesia followed with a 13.7% share. Brazil was the third largest recipient with a 6.7% contribution, amounting to US\$3 545 million (Latin America in the aggregate accounted for 17%). Australia (5.4%) came next and the United Kingdom (4.3%) took the fifth place (see Table 2).

In the context of industrial sectors invested during the same period, manufacturing accounted for 32% of the total cumulative amount, in which iron and nonferrous metals were the biggest single industry, contributing 6.8% of the total. Chemicals were the second biggest among the manufacturing

industries with a 6.0% share. Predominance of these sectors reflected the fact that Japan searched for resource-based industries abroad. Electric and electronic machinery (4.4%) followed and transportation machinery (3.4%) came next. In these cases, the Japanese industrialists wanted to expand or defend market shares. The mining sector accounted for 19.4% reflecting Japan's scarcity of natural resources. Investments in commerce contributed 16.0% to the total due to the high dependency of the Japanese economy on foreign trade.

Reasons for the rapid expansion of Japan's direct overseas investment are summarized as follows:

(i) Japan's economic activities depend substantially on foreign countries. Japan has to import raw materials and after processing raw materials into manufacturing goods, those final goods are to be exported to foreign markets. Thus, to secure raw materials by imports through resource development investments is vital to Japan. The Japanese economy has become more raw material dependent.

(ii) Manufacturing investments are principally intended to maintain or expand the market share in the invested region but cost elements such as cheap labor and low material costs in the region are also important considerations. As industrialization proceeds, production costs increase so that it is more advantageous to construct factories in a country where those inputs are cheaper. Commerce and banking investments followed hand in hand with manufacturing investments to serve the latter and functioned to expand trade and financial flows between Japan and the invested regions.

(iii) Some Governments of developing countries provided incentives for foreign investment like tax heaven and export subsidies. In particular, the establishment of free trade zones induced not only the Japanese but also other industrial countries' investments (for example, Kaohsiung in Taiwan was assigned as one in 1965, Manaus in Brazil in 1967, Mariveles in the Philippines in 1970, Masan in Korea in 1970 and Bayan Lepas in Malaysia in 1971).

(iv) Recently, Japan has invested in advanced countries such as the United States and the United Kingdom to avoid trade frictions. The new phenomenon contradicts the product-cycle hypothesis but in order not to invite global protectionism Japan is willing to invest in such countries.

(v) The yen appreciation vis-a-vis the major currencies, in particular, the US dollar after the collapse of the Bretton Woods regime, helped Japan to invest overseas since investment costs became relatively low in terms of yen.

(vi) Needless to say that the step-by-step liberalization of overseas investment laws and other related incentives provided by the Japanese Government favoured Japan's investment abroad.

2. Japan's direct investment to Brazil

Japan's direct investment to Brazil can be divided into four stages: (a) before 1950; (b) 1951-1963; (c) 1964-1973; and (d) after 1974. This classification corresponds to the stages of the Brazilian economic development. As has already been mentioned, Japan's post-war direct overseas investment was initiated in 1951. Japanese economic activities in Brazil before that time were related to those of Japanese immigrants. In the 1950's Brazil began to undertake its industrialization. In 1952 CDI (Conselho do Desenvolvimento Industrial) was formed to promote industrialization and in the same year BNDE (Banco Nacional do Desenvolvimento Economico) was set up to finance long-term development projects. One of the most ambitious industrialization plans was executed by President J. Kubitschek (1956-1960). The plan, called Programa de Metas (1957-1961), aimed at establishing basic industries and infrastructures. The plan was mainly based on import substitution policies. Steel, automotive, shipbuilding and machinery industries as well as construction of roads and electric power were emphasized as major areas for development.

After the 1964 coup d'etat, the military Government took pragmatic economic policies and an economic boom arrived. The Brazilian economy grew at an average annual rate of 11.5% in real terms during the 1968-1973 period. The Government welcomed foreign investments and manufacturing industries grew very rapidly. In 1967 Manaus was assigned as a free trade zone and SUFRAMA (Superintendencia da Zona Franca de Manaus) was founded to administer the zone.

Brazil suffered heavily from the oil price increase in 1973 since the country had to import approximately 80% of petroleum requirements. The balance of payments, in particular the trade balance deteriorated significantly since then. Export promotion was, thus, urgently needed. Under the Geisel administration several large-scale investment projects came to the front in order to export Brazilian goods. Foreign investments were geared to export promotion. The second oil shock in 1979 and the following world recession urged further Brazil to earn foreign exchange.

(a) Before 1950

In 1908, the first emigrant boat from Japan, "Kasato-maru", arrived at the Port of Santos. From that time to 1941, Japanese emigration to Brazil amounted to 188 986 persons ⁴/_. They were almost agricultural laborers. They worked first as a contract

laborer, called colono, in coffee plantations and after their contract terminated, later became engaged in agriculture, especially vegetable and fruit production. They contributed greatly to the Brazilian agricultural development and became the largest suppliers of perishables, in particular, to the Sao Paulo metropolis 5/.

One Japanese emigrant introduced an agricultural cooperative society to Brazil in 1927. This was the embryo of COTIA (Cooperativa Agricola de Cotia), which is now the biggest cooperative society in Latin America. COTIA has 8 806 members and its gross sale amounted to Cr\$34 523 million (about US\$272 million) in 1981. Balanco Anual of 1981, edited by Gazeta Mercantil 6/ ranked COTIA at 104th in the 300 major local industrial groups in Brazil in terms of net assets. To finance business of Japanese-Brazilian farmers, Casa Bancaria Bratac was founded in 1937 by two Japanese-Brazilians. This was reorganized to be Banco America do Sul S.A. in 1947. it grew to a banking conglomerate and was placed at 97th in the same ranking by Gazeta mercantil.

Japanese companies in Brazil before 1950, therefore, were basically engaged in the activities related to Japanese-Brazilians. In those days, their economic population is now estimated around 800 000 , the largest collection of ethnic Japanese outside Japan.

(b) The period from 1951 to 1963

During the 1950's Brazil put emphasis on industrialization based on import substitution policies. The Government invited foreign capital to develop heavy industries. In the Metas Plan they aimed particularly at establishing several heavy industries like automotive, shipbuilding and steel production. GEIA (Grupo Executivo da Industria Automobilistica) was set up in 1956 to boost car manufacturing. Such automobile makers as Ford, General Motors and Volkswagen applied for the project. From Japan TOYOTA took part but only for production of the land cruiser.

In the case of shipbuilding, GEICON (Grupo Executivo da Industria de Construcao Naval) a Government promoting body, planned to establish the shipbuilding industry in Brazil in 1958. Holland (Verolme) and Japan (ISHIKAWAJIMA-HARIMA Heavy Industries Co.) participated in the project. Ishikawajima do Brazil-Estaleiros S.A. (Ishibreas) was founded in 1959 and started to construct a shipbuilding yard in Rio de Janeiro. This was the first shipbuilding site constructed outside Japan (Ishibreas can now build tankers of more than 275 000 DWT, the largest dry-dock capacity in Latin America).

Steel production was planned to increase its output from 1.2 million tons in 1955 to 2.3 million tons in 1966. The two state-

owned steel mills, Cosipa and Usiminas, were to be constructed. Japan took part in the latter as a joint partner with a 40% capital share in 1957. Usiminas steel plant was an epoch-making project for the growing Japanese economy. Japan wanted to demonstrate its industrial power to the world after recovering from devastation of World War II. Both the Government and the private business circles supported the project as a prototype of Japan's plant exports. First, a mill with the production capacity of 500 000 tons per year of crude steel was founded in 1963 at Ipatinga in the State of Minas Gerais (the capacity has expanded after the three-phase expansion program to 3.5 million tons up to 1982).

ABDIB (Associacao Brasileira para o Desenvolvimento das Industrias de Base) in its 1979 Annual Report cites 104 member companies among which 6 were founded in the 1930's, 18 in the 1940's, 31 in the 1950's, 17 in the 1960's, 17 in the 1970's and 15 before 1930. This implies that basic industries received high priority during the 1950's.

In this period two other types of investment from Japan were also important: one was loans from Japanese emigrant farmers and the other investment for textiles. The former was lending operations to Japanese farmers in Brazil to support their agricultural activities.

Japanese textile industry began to invest in Latin America during the last half of the 1950's. Up to 1960 the Central Bank of Japan had a foreign exchange quota for the importation of raw cotton. This caused tight supply of cotton in Japan. Therefore, spinners, fearing limited supply of raw cotton, wanted to invest directly in cotton producing regions. Cotton yarn producers established affiliated companies or formed joint-venture companies in Brazil in succession: TOYOBO (1965), KANEBO (1956), UNITIKA (1958) and TSUZUKI (1960). Combining with OMIKENSHI (1973), Japanese cotton yarn producers in Brazil grew to have a shipment share of 45% from the Santos Port up to the late 1970's.

Direct investments in machinery were also made and such activities included Cbc (Japanese parent company being MITSUBISHI Heavy Industries) for heavy machines in 1955, Howa (HOWA Machinery) for spinning and weaving machines in 1956 and Yanmar (YANMAR Diesel) for Diesel engines and agricultural machines in 1957. At the same time, major trading companies opened their offices in Brazil as follows: MARUBENI (1955); MITSUBISHI (1955); C. ITOH (1957); and MITSUI (1960). To sum up, this period constituted the first boom of Japanese investment to Brazil. From 1951 through 1961, the accumulated investment amounted to US\$199 million.

(c) The period from 1964 to 1973

The military regime introduced the monetary correction system (indexation) and reformed fiscal and monetary structures. Finance was geared to longer-term development projects. These pragmatic reorganization brought about an economic boom, called "Brazilian miracle", and manufacturing sectors expanded quickly. The share of industrial sectors (including mining) to the total national income increased from 30% in 1960 to 35% in 1970 while during the same period, that of agriculture declined from 20% to 11%. Liberal policies of the Government towards foreign capital accelerated investment from abroad. Japan's investment to Brazil increased continuously, particularly in the manufacturing sector. The Manaus free trade zone, which was assigned in 1967, attracted Japanese investments. In the zone, companies could obtain several benefits like tax exemption on import duties and industrial product tax (IPI), etc. The exemption from import duties for imported parts was a substantial factor which Japanese companies exploited. Such products, which are standardized but require high quality, as high fidelity radios, color T.V.'s and motorcycles fitted to the free-zone operation. Japanese electric and electronic makers established joint-venture companies with Brazilian partners and constructed factories in the zone. For example, SANYO set up a color T.V. factory with Pereira Lopez; TOSHIBA with Semp; SHARP with Sharp S.A.; MITSUBISHI with Evadin and MATSUSHITA with Springer. HONDA Motor Co. established an affiliated company in Sao Paulo in 1971 which then set up a factory (Motor Honda Amazonia) in the zone. Not only Japanese but investors from other Western countries also invested in the area and up to 1973, 219 manufacturing companies were set up.

The growth of the manufacturing sectors stimulated investments in financial sectors as well. Three Japanese banks were authorized to run banking business in Brazil. Those were: Banco Mitsubishi Brasileiro S.A., Banco Sumitomo Brasileiro S.A. and Banco de Tokyo S.A. The MITSUBISHI Bank entered Brazil in 1934 while the Bank of TOKYO in 1956 and the SUMITOMO Bank in 1958. Other Japanese banks followed to establish representative offices or to make a capital participation in Brazilian investment banks. The DAI-ICHI KANGYO Bank participated in Unibanco with a 10% share in 1972, the INDUSTRIAL Bank of Japan in Banco Finansa de Investimento with a 10.3% share in 1973 and the MITSUI Bank in Banco Investimento de Bozano Simonsen in 1973. The FUJI Bank established a representative office in Sao Paulo in 1974 and participated in Banco America do Sul with a 14% share and in other affiliated companies of the Banco America do Sul group. Since 1974 some other Japanese banks and insurance companies have rushed to enter the Brazilian financial market.

From Japan's point of view, the Tax Agreement between Brazil and Japan played an important for Japanese investment 7/. The Agreement was signed in January 1967 (effective from January 1,

1968) and intended to prevent double taxation on Japanese companies. The Agreement was modified in March 1976 (effective from January 1, 1978). Under the new Agreement, rates of the withholding tax on the remittance of Japanese companies were fixed as follows:

Dividend payments	12.5% (prior to the Agreement: 25%)
Interest payments	12.5% (prior to the Agreement: 25%)
Fees on trademarks	25.0% (prior to the Agreement: 25%)
Fees on copyright of movies & T.V. films	15.0% (prior to the Agreement: 40%)
Royalties	12.5% (prior to the Agreement: 25%)

High economic growth and bright expectation for the strong domestic demand in Brazil, combined with the successive liberalization of overseas investment laws in Japan, led to the second investment boom of 1973. The number of investment applications increased from 93 cases in 1972 to 197 in 1973 and the amount totalled US\$435 million in 1973 as compared with US\$169 million in the previous year (see figure 1). The flow of investment to Brazil in 1973 accounted for 12% of the total Japanese overseas direct investment flows. The accumulated investment to Brazil from 1951 through 1973 amounted to US\$1 014 million, of 9.9% of the total Japanese investments overseas.

(d) The period from 1974 to the present

The first oil crisis was detrimental to the Brazilian economy since the country had to import about 80% of the petroleum consumption. The trade balance recorded a significant deficit consecutively from 1974 to 1980 except 1977. The Geisel administration put emphasis on export promotion and import controls in order to reduce the trade deficit and to repay for the accumulated external debts. Import control measures included: promotion of local contents; the regulation of national similar goods (1966); advance deposits of imports (1975); and an import ban of unnecessary products (1976). Exports were encouraged through already existing measures. Starting from 1964, the military Government has gradually shifted their import substitution policies to export promotion. Benefits for export industries during the 1960's are summarized as follows: draw-back system (1964); exemption of IPI (1964) and commodity transaction tax (ICM, 1967); tax credit system of IPI (1964) and ICM (1971); corporation tax exemption (1965); financial tax exemption (1966); the system of export credit insurance (1965) and export credit fund (FINEX, 1966). The Government adopted the crawling-peg system in 1968. For the manufacturing exports, BEFIEX (Benefícios Fiscais a Programas Especiais de Exportacao) played an important role. The program was established in 1972 and it permitted export industries to import machines and parts with the application of reduced tariff rates, provided that the export schedule of their products for coming ten years to be

authorized and the concession import value would not exceed one third of the annual export value. Exports under the program reached 8.2% of the total Brazilian exports in 1978.

President Geisel propelled large-scale projects such as Itaipu and Tucuruí hydroelectric projects, Camacari petrochemical complex, Rio de Janeiro subway construction, nuclear power development, oil exploration and alcohol projects. For example, the Camacari project was to construct the second petrochemical complex in Brazil following the Cubatao petrochemical center in Sao Paulo. Its construction started in 1970 to produce ethylene and the related chemical products, with the ethylene capacity of 388 000 tons per year. In 1978 the complex came into operation. One of the affiliated companies of Petrobras, called Petroquisa, set up Copene (Petroquímica do Nordeste S.A.) to run the operation and about 40 companies organized joint-ventures with Petroquisa. Several Japanese chemical corporations and trading companies took part in these joint-ventures. Examples include:

Ciquine

(Cia. Petroquímica S.A.)

-MITSUBISHI Chemical Industries and NISSHO-IWAI (Total Japanese capital share: 33.76% in 1981) (Established in 1969)

Copenor

(Cia. Petroquímica do Nordeste)

-MITSUBISHI GAS Chemical Co. and MARUBENI (Total Japanese capital share: 25% in 1981) (Established in 1971)

Polialden Petroquímica S.A.

-MITSUBISHI Chemical Industrial and NISSHO-IWAI (Total Japanese capital share: 33.32% in 1981) (Established in 1974)

Politeno Ind. e Com. S.A.

-SUMITOMO Chemical Co. and C. ITOH (Total Japanese capital share: 30% in 1981) (Established in 1974)

Cpc (Cia. Petroquímica Camacari)

-MITSUBISHI Chemical Industries and NISSHO-IWAI (Total Japanese capital share: 33.3% in 1981) (Established in 1975)

In September 1976, President Geisel visited Tokyo and the joint-communique between Japan and Brazil was issued. The communique included the following projects to be carried out jointly by both parties: (a) cellulose project at Ipatinga; (b)

Amazon aluminum project; (c) Cerrado agricultural project; and (d) Tubarao steel project. These projects were satisfactory to the two Governments since Brazil wanted to export these products to earn foreign exchange as well as to substitute its imports, while Japan wanted to have stable supply of semi-finished goods such as bleached short-fiber pulp, aluminum, and slab. The Japanese business circles participated in the projects together with the Japanese Government.

In the cellulose project, eighteen Japanese paper and pulp companies, one trading company (C. ITOH) and Overseas Economic Cooperation Fund (OECF) 8/ established in September 1973 a Japanese investment company (JPB) and the JPB contributed 49.4% of capital to the joint-venture company between Japan and Brazil, called Cenibra (Celulose Nipo-Brasileira S.A.). The factory started its operation in 1977 with a capacity of 255 000 tons per year of bleached eucalyptus pulp (kraft pulp). The agreement stipulated that Japan had an obligation to import half of its production (see Table III in the Annex).

Cia. Siderurgica de Tubarao (Cst) was set up in June 1976 as a joint-venture of three countries, Brazil, Italy and Japan. Japanese companies accounted for 24.5% of its capital, provided by KAWASAKI Steel Co., ISHIKAWAJIMA-HARIMA Heavy Industry and twelve trading companies. Moreover, the Japanese Government agreed in 1981 to extend a yen-loan amounting to US\$100 million to the harbor construction adjacent to the Tubarao steel plant. The plant will start operation in 1983 with a capacity of slab production, 3 million tons per year and Japan will import 10% of the production for the first three years after the operation and 20% thereafter. This project has BEFIEX benefits and plans to export 50% of its production (see Table IV in the Annex).

In the case of the Amazon aluminum project, Japan set Naac (Nippon Amazon Aluminum Co.). The capital of Naac was shared by thirty two private companies (aluminum related companies and trading companies) and Overseas Economic Cooperation Fund. The Naac and Cvrđ established two joint-venture companies in 1978: Albras (Aluminio Brasileiro S.A.) with the Japanese share of 49% and Alunorte (Alumina do Norte do Brasil S.A.) with the Japanese share of 39.2%. Alunorte was originally planned to start operation in 1984 with a capacity of alumina production, 800 000 tons per year (at full-capacity operation from 1986) and Albras to operate from the same year as Alunorte with a production capacity of aluminum, 320 000 tons per year (at full-capacity operation from 1990). The agreement stipulated that Japan import half production of aluminum (see Table V in the Annex).

In connection with the Cerrado development project, Japan set up an investment company, JADECO, whose capital was shared by private companies (agricultural firms, trading companies and banks) and Japan International Cooperation Agency (JICA) 9/.

JADECO and the Brazilian counterpart, Brasagro, established Cpa (Cia. de Promocao Agricola) in November 1978 with the Japanese share of 49%. When it is in full operation, such agricultural crops as soybeans, wheat, corn and coffee totalling 86 000 tons per year will be produced. Japan has no obligation to import those products in this case (see Table VI in the Annex).

Japanese capital inflow to Brazil hit another peak in 1979 reflecting these large-scale cooperation projects, reaching US\$409 million in spite of a decline in the number of cases (see again figure 1). Between 1974 and 1980 Japan's investment amounted to US\$1 895 million, or 65% of the total investment accumulated in Brazil during the entire 1951-1980 period. This implies that Japan's investments were concentrated in the 1970's and reconfirms here again that Japan is a relatively new-comer in the Brazilian market.

According to the Annual of Japanese-Brazilian Enterprises in 1980 10/, 331 companies out of the total (763) were founded during the 1970's while 168 companies had been founded during the 1960's and 125 during the 1950's. This fact also supports that Japanese economic activities were quite new to Brazil (see Table 4). Out of the total, commerce and trading companies accounted for 18.5%, the largest share among various sectors. Retail, wholesale and trade-related business were prosperous since they catered to the Japanese population in Brazil and the commercial trade between the two countries.

Looking into the other side of the Japanese investment, education for children of Japanese families has a specific characteristic. Since competition of entrance examinations of Japanese universities is quite tough, parents want their children to learn Japanese even in foreign countries. This tendency resulted in the fact that almost all Japanese children in invested regions enrolled in Japanese schools. In Sao Paulo there is a Japanese school where teachers dispatched from Japan, teach the Japanese curriculum and the Japanese Government financially supports the school. The evolution of number of pupils and teachers in the Japanese school, in a sense, indicates rise and fall of the Japanese society in the invested region (see Table 5). The number of students in the Sao Paulo Japanese School, which was established in 1967, increased up to 1981 except 1970, reaching 905 pupils. In particular, a sharp increase was recorded during the 1972-1974 period which corresponded to the second Japanese investment boom in Brazil. Since 1982 the number has declined reflecting the world recession and the wane of investment fever.

After the second round of the oil crisis, Brazil registered a minus growth in 1981 for the first time in the last 40 years. The debt-led economy has been agonized by the world recession and high interest rates. It was necessary for Brazil to put more

stress on exports. Under the Figueiredo presidency, agriculture has been emphasized in such a large-scale project as the Carajas project was to start. Japan took part in these projects, too. The Cerrado development by Japan began to produce its first crop in 1982, and Japan agreed in 1982 to provide credit totalling US\$500 million to the Carajas project. The Export-Import Bank of Japan will contribute US\$300 million to the project while commercial banks US\$200 million. It is certain that Japan's tie with Brazil will be further strengthened.

3. Present situation of Japan's direct investment in Brazil

During 1951-1982 Japan's direct investment to Brazil totalled US\$3 545 million with 1 215 cases on the notification basis. With respect to the sectoral distribution of the Japanese investment, manufacturing investment accounted for 65% of the total while agriculture, forestry and fishery for 3.6%, mining for 5.2% and services and others for 26.2% up to the end of 1980 (see table 6). Japanese investment concentrated in iron and nonferrous metals (20.4%), followed by textiles (10%), commerce (8%), general machinery (7.6%) and finance and insurance (7.1%).

Compared with the overall Japan's investment abroad, the shares of iron and nonferrous metals, and commerce in Brazil were high in both cases while the share of the chemical industries was low. Those of textiles and lumber and pulp in Brazil were relatively high. Therefore, the investment in Brazil can be said to be a resource-based type reflecting Brazil's rich resource endowments. Manufacturing investments were intended to penetrate into the Brazilian domestic markets. Those of commerce were prosperous partly because of firm trade relationships between the two countries and partly because of the Japanese population in Brazil. Banking investments were also thriving due to high interest rates generally prevailing in the Brazilian financial market.

According to the questionnaire distributed by the Sao Paulo office of the Japan Overseas Enterprises Association in 1982, among the Japanese companies operating in Brazil with more-than-51% capital shares, 226 companies employed 49 884 persons. Japanese-Brazilians accounted for 17% of the total employed. The number of directors dispatched from Japan was 641 persons in 298 companies. Japanese-Brazilian directors contributed 21% to the total number of directors (869).

Average net profits of 122 companies were US\$700 000 per company. Eighty-three companies exported US\$1.1 billion, or about 4.7% of the total Brazilian exports in 1981. In regard to taxes paid, 168 companies paid US\$324 million, or 1.3% of the current revenue of the Federal Government in 1981. Wages paid per company were US\$1 661 000 on the average. Since the average

number of employee per company was 221 persons, average monthly wage per person was calculated to approximately US\$630 (see Table 7).

As Japanese companies seem to contribute much to the export sector, we look further into this subject. The Japan Chamber of Commerce in Sao Paulo surveyed trade performance of Japanese enterprises in Brazil in 1982 11/. Sixty companies were interviewed and the results relating to the 1980 figures are summarized as follows: Exports (US\$2 215.33 million, in which primary products, US\$1 527.90 million and manufacturing products, US\$687.43 million); and imports (US\$1 382.71 million). The exports of the Japanese companies accounted for 11% of the total Brazilian exports in 1980, while imports accounted for 6% of the total imports. Exports of primary products accounted for 18% of the total primary exports of Brazil and those of manufacturing accounted for 6% of the total exports of industrial products. Out of the total exported by Japanese enterprises, 59% (US\$1 317 million) were shipped to Japan, whereas out of the total imported by them 62% (US\$856 million) were imported from Japan.

Direct transactions by makers accounted for only 11% of the total trade (exports plus imports) examined. The rest was handled by the Japanese trading companies in Brazil principally through indent transactions. The main trading companies in this survey included: Mitsui, Mitsubishi, Sumitomo, C. Itoh, Marubeni, Nissho-Iwai, Kanematsukosho, Nichimen and Tomen. The Japanese trading companies contribute not only to trade between Japan and Brazil but also to trade between Brazil and other countries. These results suggest that the Japanese companies in Brazil pay an important role in the Brazilian trade, particularly in its exports.

4. Japanese failures and successes in Brazil

As explained, Japanese investment has concentrated into iron and steel and textile sectors. Usiminas is a good example that Japanese steel making technology was successfully transferred. The Tubarao steel project will contribute greatly to Brazilian exports. In the textile sector, only cotton yarn is prosperous, particularly contributing to the country's export sector. Synthetic fiber production was an example of failure which will be explained later. In the transportation machinery, shipbuilding (Ishibras) has been successful and motorcycle production by Honda and Yamaha was another case of success. However, car assembly has faced a great difficulty. Within electrical machinery, heavy electric machinery was not particularly favored and the tide turned to electronic machines such as color T.V.'s and stereo sets. Furukawa Industrial S.A., a cable producer, is regarded as one of the best profit makers among Japanese enterprises. The chemical industry is at a disadvantage since Japan is not competitive in this sector in the

world market. However, Fertilizantes Mitsui (fused phosphate), Cpc (vinyl chloride) and Cenibra (cellulose) show some signs of success. As failure cases synthetic fiber and automobile will be examined and steel, cotton yarn and color T.V. sets will be explained as success stories.

(a) Failures

Synthetic fiber: TEIJIN, a Japanese textile manufacturer, established a joint-venture company in 1972 with the Safra group to produce polyester. TEIJIN had a 30% share and MARUBENI had a 10% share initially. A factory was built in the Aratu industrial estate near Salvador with the polyester capacity of 1 000 tons per month taking advantage of the Nordeste incentives. As of September 1979, the five major synthetic fiber manufacturers possessed the following production capacity 12/:

Rhodia	7 060 (tons/month)
in which: polyester	4 150
(filament & staple)	
nylon (filament)	860
acryl (staple)	1 000
acetate (filament)	250
rayon (staple)	800
Fiacao Brasileira de Raion - Fibra	2 795
in which: polyester (filament)	350
nylon (filament)	1 075
rayon (filament & staple)	1 370
Celanese do Brasil	2 215
in which: polyester	
(filament & staple)	1 670
nylon (filament)	545
Cia. Brasileira de Sinteticos - Cbs	1 000
in which: polyester (filament)	860
nylon (filament)	140
Safron-Teijin	1 050
in which: polyester	
(filament & staple)	1 050

Synthetic fiber production needs high technology and the economy of scale is important. Both factors made foreign capital participation indispensable in Brazil. Rhodia is a 100% affiliated company of Rhone-Poulenc of France. Fibra's capital is shared by Snia Viscosa of Italy with 94.35% and Celanese do Brasil is 100% affiliated company of Celanese Corporation of the United States of America. Hoechst A.G. of Germany shares 60% of Cbs. These parent companies are considered as major world synthetic fiber producers. Their business know-how and capital

endowment are enormous and they tend to formulate oligopolistic markets. In Brazil consumers have traditionally a strong taste for cotton textiles and artificial fiber has not yet been accepted widely. Therefore, the market itself is small and world big companies made major efforts to obtain as large shares as possible.

In October 1979 Celanese do Brasil bought shares of the Safra group (31.2% and MARUBENI (5.2%) to become the largest share-holder (36.4%) of the Safron-Teijin while TEIJIN, with a small share of 15.6% finally withdrew from management and technical assistance of the company. Causes of the withdrawal are known to be as follows:

- (i) Undue competition took place in a limited market;
- (ii) the production scale of the Safron-Teijin factory was not big enough to enjoy scale merits;
- (iii) the local partner (the Safra group) adhered to short-term profits while the Japanese one sought generally to long-term profits;
- (iv) TEIJIN and MARUBENI participated in minority share holding (40%) to obtain Nordeste incentives but they should have done majority participation.

Automobiles: In the case of automobile production, only TOYOTA invested in Brazil in 1958 to produce land cruiser. Its capital amounted to Cr\$81 875 million and the Sao Bernardo do Campo factory had the area of 192 363 square meter. In 1977 they manufactured 2 695 units of the four-wheel drive vehicle with 400 employees (28 Japanese and 46 Japanese-Brazilians). The vehicle was equipped with the Diesel engines made by M. Benz do Brazil 13/. Toyota could not have an opportunity to assemble passenger cars. Reasons they could not enter the passenger car market can be summarized as follows:

(i) Japan started motorization during the last half of the 1960's and Japanese car production and car exports increased significantly only after the 1970's. This suggests that Japanese cars were not well known during the 1950's and when Toyota wanted to produce passenger cars in Brazil, German (Volkswagen) and American (Ford, GM and Chrysler) car makers had already captured the market.

(ii) Japanese car assembly companies use many contractors and subcontractors for parts production. Each car maker has its own contractor system. But in Brazil it was difficult to organize parts manufacturers in a Japanese fashion. Japanese car maker was not accustomed to handling independent parts producers. Only a few Japanese parts makers were available in Brazil such as Cia. NHK-Cimebra for leaf springs and NGK do Brasil for sparks plugs. (In this context, this contrasts well to the case of such electronic machines as radios, T.V.'s and

stereo sets. Japanese producers could find wide range of Japanese parts and component makers in Brazil).

(iii) It was also difficult, at the beginning, to organize a sales network in Brazil since the Japanese belong to the ethnic minority group.

(iv) After the first oil crisis, there was a chance for Japanese car manufacturers to enter the Brazilian market with economy cars. In fact, TOYOTA sent a mission to the State of Minas Gerais to survey a construction plan of a factory and NISSAN to Rio de Janeiro, but those plans were not finalized. Instead, Fiat of Italy constructed a factory in Bello Horizonte in 1976 to produce small passenger cars and they succeeded in obtaining a 9-10% share in the market. The management of both TOYOTA and NISSAN lacked quick and daring decision at that time or maybe they were risk-abators.

It is now quite difficult for Japanese makers to enter the Brazilian market with production of passenger cars. Next chance will be when the Brazilian Government introduces stricter anti-pollution laws, especially, the installation of smog control device since Japanese cars have a high reputation for such device.

According to the Jitsugyo no Burajiru (April, 1982), 108 Japanese enterprises withdrew or stopped operation out of the total of 410 during the 1975-1981 period. In the case of joint-ventures between Japanese and Brazilian companies, 33 out of 101 withdrew or ceased operation while in the case of those between Japanese and Japanese-Brazilian companies, 17 out of 54 withdrew. Out of the total of 190 enterprises with a 100% Japanese capital owned by one parent company, 45 withdrew or stopped their operation during the same period (see Table 8). This suggests that Japanese wholly-owned companies and joint-ventures among Japanese companies have a higher probability to achieve success than those entities created between the Japanese and Brazilian.

In the failure cases of joint-ventures between Japanese and Brazilian companies, synthetic fiber production (polyester and acrylonitrile) and textile-related activities such as dyeing, knitting and apparel making were most affected sectors. Out of the 33 enterprises, twelve fell into this category. Ataka related activities (seven joint-ventures in Brazil) ceased operation since the parent company, ATAKA, the ninth biggest trading company in Japan at that time, went bankrupt in 1977.

Out of the 45 failure cases in the wholly-owned companies by Japan, construction and real state enterprises especially recorded large losses. Eleven withdrew from Brazil during the 1975-1981 period. The main reason of this failure was attributable to insufficient market research before entering the

Brazilian market. Brazil has a good reputation in road and building construction and, thus, Brazilian construction companies are quite competitive, Brazil does not need earthquake-proof buildings which use shape steels like in Japan. The Japanese construction technique costs more than that of Brazil. Moreover, Federal and state governments give preference to local construction companies with respect to tenders of public investments.

Finally, common causes of failure are summarized as follows:

(i) There exists a different entrepreneurial philosophy between Japanese and Brazilian partners. Brazilian owners tend to seek short-run profits and if a company does not make a profit, they want to liquidate the company. Japanese representatives think that a company is something like a boat where both employer and employee get on board and cooperate together to sail. They want to share the same destiny. This thought stems from the fact that presidents of Japanese companies are generally hired management executives, while Brazilian counterparts are owners of companies and have sometimes strong personal interests in the operation of the company. Separation between management and ownership is not sufficiently done in Brazil.

(ii) Japanese enterprises have usually a characteristic of a low equity-debt ratio. They depend heavily on loan capital. However, interest rates are extremely high in Brazil so that high financial costs sometimes lead to a shutdown of enterprises.

(iii) Japanese businessmen are not accustomed to management under high inflation prevailing in such countries as Brazil. It brings about several revisions of investment and re-calculations of production cost. Cost-current attitude of the Japanese managers will always be betrayed by high price increases in materials and inflation-indexed wage adjustments.

(iv) Since the Brazilian currency follows successive devaluations, Japanese parent companies sometimes can not accept the decrease in assets denominated in terms of yen.

(v) The Brazilian Government imposes tough regulations on business activities such as local contents, import controls, prior import deposits and visa controls. In addition, those regulations change quite often. It hinders stable long-term production plans.

(vi) There exists an information gap between Japan and Brazil because of the long distance between the two countries. Undue market research sometimes causes fate of Japanese companies in Brazil. Precise information on "country risk", regulations on

foreign investments, tax systems, labor habits, etc. is vital to successful business in Brazil.

(b) Successes

Steel: Usiminas is a success story not only from the technological point of view but also from the economic assistance point of view. The Usiminas factory is an integrated ironworks with a capacity of 3.5 million tons per year of crude steel and its quality is recognized as the highest in Latin America. The Japanese Government backed up the project financially and the project became a monumental case in the history of the Japanese investment abroad in terms of the cooperation between the Government and private enterprises.

After receiving a request from the Brazilian Government to assist a steel mill construction in the State of Minas Gerais in April 1956, the Japanese Cabinet approved the project in April 1957. The intention of the Government was to promote Japanese plant export and to deepen further economic ties between the two countries. Japan set up Japan Usiminas Co. in December 1957 which acted as a partner with the Brazilian counterpart, Usinas Siderurgicas de Minas Gerais S.A. The initial capacity of crude steel of the planned mill was set at 500 000 tons per year and five directors were divided into three Brazilians (including president) and two Japanese. Capital amounting to Cr\$3.2 billion was shared by Japan (40%) and Brazil (60%). On the Brazilian side, capital was shared by the State of Minas Gerais (20%), BNDE (18%) and others (22%) while the Japanese share was divided among the private consortium (33%) and the Government financial institution, OECF (7%). The total cost of investment was estimated around US\$270 million. The first blast furnace came into operation in 1962 and the integrated facilities were completed in 1965. Ipatinga, once a village of five hundred inhabitants, was transformed into an iron town of 50 000 inhabitants.

NIPPON STEEL CO. played a fundamental role in terms of funds and technology for the mill. However, several times Usiminas ran short of fund due to chronical inflation, especially, hyperinflation during the 1963-1964 period and due to high infrastructure costs of the town. In addition, the capacity of Usiminas was expanded three times because of the increasing demand based on the rapid growth of the Brazilian economy. For each occasion, Japan responded to assist the project financially and technically, (see Table 9).

Up to the present, capital payments totalled 34.2 billion yen (approximately US\$112 million) in which OECF shared 11.6 billion yen, or 34% of the total paid-up capital by Japan. The Export-Import Bank of Japan provided export credits totalling 122.3 billion yen (approximately US\$455 million). Thus, the

total financial support by Japan amounted to around US\$567 million, or 21% of the total investment costs. Moreover, the Japanese Government decided to offer yen loans to Usiminas twice. Firstly, in 1962, the Export-Import Bank of Japan gave loans amounting to 6 317 million yen to BNDE in order to cover the Brazilian share of the capital increase of Usiminas. Secondly, in 1965 when Brazil faced a rescheduling of its external debts, Japan refinanced time-expired repayments of the Usiminas debt, amounting to 13 746 million yen.

The success of Usiminas can be summarized as follows:

(i) The Japanese Government and private companies assisted the project hand in hand and the Government financial support, in particular, was vital to the project.

(ii) NIPPON STEEL CO. introduced the most modern technology available in Japan to Brazil and Brazilian workers were trained both in Japan and Brazil. NIPPON STEEL assisted the mill from the stage of its plan to maintenance of the plant after the turn-key operation. For three years after the initial operations, about 100 Japanese technicians had posted at key positions of the production line. In addition, between 1957 and 1975 the same Brazilian president managed the company so that consistent manpower capacitation programs were able to be performed.

(iii) The Brazilian economy had expanded rapidly so that domestic demand for steel was quite sound during the period.

Japan Usiminas Co. had only a 11.2% share of the capital in January 1983 14/, but Japanese technology and equipment, demonstrated in the Usiminas project, helped Japanese economic activities substantially in Brazil thereafter. To sum up, the trinity of economic cooperation, i.e. combination funds, manpower development and technology worked well in this case.

Cotton yarn: Spinning mills are concentrated in the State of Sao Paulo. The total production capacity of the state was estimated to 1 776 000 spindles, in which Japanese yarn mills accounted for 20% (361 000 spindles) in 1978. Japanese spinning companies entered the Brazilian market with two waves: first, during the 1955-1960 period (TOYOBO, KANEBO, UNITIKA and TSUZUKI) and second, during the 1972-1973 period (NISSHINBO, KURASHIKIBO, DAIWABO and OMIKENSHI) (see Table 10). They all brought new spinning machines into Brazil so that the quality of their products was high. Soon they caught up with Brazilian makers and their products were favored by foreign buyers. Exports of cotton yarn increased, particularly so after Kanebo obtained BEFIEX incentives. It was in June 1965 that Kanebo received the honor of the first Brazilian cotton yarn exporter to the United States of America. In 1978, cotton yarn exports from the Santos Port

amounted to 39 387 tons in which eight Japanese spinning firms accounted for 45% (see Table 11).

Japanese success in this field is attributable to the following factors:

(i) They brought modern spinning machines so that they could compete with Brazilian firms whose machines were generally obsolete.

(ii) At the same time, maintenance of the machines and cleaning of the inside of the mill were thoroughly done in the Japanese factories. This helped to increase efficiency of production (Kanebo pointed out that because of a lack of maintenance works and bad production process controls, productivity of a spinning machine was one fifth of that of Japan when the company took over Fiacao Extra Fina de Algodao S.A. in 1963).

(iii) The Brazilian market was large, particularly, for cotton textiles. The Sao Paulo state produced 210 000 tons of yarn in 1978, in which cotton yarn accounted for 85% and mixed yarn of cotton and polyester occupied only 8%.

(iv) In Japan cotton spinning has long been considered as a non-competitive sector since the 1950's partly due to oversupply and competition from synthetic fiber and partly due to the catch-up of Asian countries. They needed a frontier to survive in foreign countries by the use of accumulated know-how. Therefore, if raw cotton were cheaply supplied, combined with low labor costs, Japanese firms could compete well.

Their problem now is diversification i.e., development of upstream and downstream activities. Toyobo has a knitting factory and Kanebo has a gingery in Brazil but weaving and apparel industries are left untouched by the Japanese companies.

Color T.V. sets: Japan has a strong competitive position in consumer electronic goods such as radio receivers, T.V.'s, tape recorders, component stereo sets and video tape recorders. However, Japan entered the Brazilian market which had already received large investments from European and North American producers. The Manaus Free Trade Zone, assigned in 1967, became a springboard for Japanese makers to produce these goods in Brazil. Japanese electronic makers established joint-ventures with Brazilian partners and constructed factories in the zone in order to exploit incentives given by the zone authority (SUFRAMA).

SANYO set up a color T.V. factory with Pereira Lopes-Ibesa, TOSHIBA with Semp, SHARP with Sharp S.A., MITSUBISHI with Evadin and MATSUSHITA with Springer. The Japanese late-comers had high

quality goods but lacked business know-how in Brazil. Local partners, who had been suffering from European and North American producers' competition, taught the Japanese ones managerial skills. This happy marriage brought about a bonanza in consumer electronics, in particular, color T.V.'s and music center sets against the already-existed producers.

Commercial color T.V. programs were first transmitted in Brazil in 1972. Since then, the production of color T.V. sets has rapidly increased. The number of color T.V. production rose from 68 000 in 1972 to 1 074 000 sets in 1979. It reached 111 500 sets per month in May, 1980. Out of the total production, Japanese joint-ventures accounted for 50% in that month (see Table 12). In the case of the music center, Japanese joint-ventures accounted for 58% of the total monthly production 15/.

Reasons of the success in this field include:

(i) High quality of the Japanese products was the key to this advance.

(ii) The Manaus Free Trade Zone played an important role. The Japanese joint-ventures could import high quality parts and machines from Japan with tax exemption, although the consumer market was quite far from the producing area and SUFRAMA levied severe local content requirements.

(iii) Japanese parts and component makers entered Brazil in concert with Japanese set makers. Such makers as Toko, R-ohm, National Components and Alps supplied reliable parts to Japanese set makers and, as a result, the quality of final products were maintained.

(iv) There has been a strong demand for consumer durables since per capita income has been increasing during the 1970's. In addition, the Soccer World Cup held in Buenos Aires in 1978, created a big leap in demand for color T.V. sets.

(v) Consumer finance is relatively well developed in Brazil.

5. Business interaction between Japan and the United States in Brazil

As has already been explained, Japan's investment concentrated in such manufacturing sectors as iron and steel, textiles, general machinery, pulp and electronic machinery. But automobiles, chemicals, banking and consulting industries are weak sectors for the Japanese in Brazil. The United States investment is, on the other hand, vigorous in these fields so that the division of labor works well between the two countries reflecting their competitiveness.

In the future, the competition seems to be intense in the electronics sector: semiconductor, computer and telecommunications. Japan has a comparative advantage in electronics, especially color T.V.'s, stereo sets and video tape recorders in Brazil in spite of local content requirements. Semiconductor products are gradually increasing since they are frequently used in telecommunication equipment and computer components as well as in usual electronic machines. Electronics war, which is fought between Japan and the United States over the Silicon valley, may occur in Brazil but this time among four countries: West Germany, the United States, Japan and Brazil itself. Major electronic component producers are: Icotron (Siemens), Stevenson (AFG-Telefunken), Texas (Texas Instruments), Inducon (GE) and Sharp Componentes (Sharp group). Japanese component makers are now small but they can be easily expanded when demand expands.

In this field, the Brazilian Government also wants to establish national interests because of security reasons. Transit Semicondutores S.A. is supported by the Government and CceOs sales are rising. Such sectors as telecommunications, computer and electronic instrumentation require the majority equity holding by local capital. But since this field depends on high technology, foreign influence is inevitable and competition among foreign companies will become severe. For example, in the case of mini-computers, the guidance of the Government through CAPRE (Comissao de Coordenacao das Atividades de Processamento Eletronico) was to have Brazilians own the company's capital and to control its management by them. Foreign companies assisted Brazilian ones to transfer their technology. At first, four mini-computer companies were approved in 1977. Those were:

- (i) Cobra (Computadores e Sistemas S.A.), owned by the Government with the Sycor (U.S.A.) technology;
- (ii) Sid, consortium of Sharp, Inepar and Dataserve with the Logabax (France) Technology;
- (iii) Edisa (Eletronica Digital S.A.), twelve companies with FUJITSU (Japan) technology;
- (iv) Labo Eletronica S.A., Forsa group with the Nixdorf (West Germany) technology.

In 1978, Sisco (Sistemas e Computadores S.A.) was also approved. In regard to medium-size computers, Cobra and Sisco declared the production. In the computer field, attention is especially being paid to the approach of IBM to the Brazilian market.

The United States move to establish a bilateral agreement in scientific and technical cooperation, a result of President Ronald Reagan's visit to Brazil in December 1982, will greatly encourage the United States investment in these C & C (computer and communication) fields.

The United States and European groups have considerable exposure in energy development in Brazil such as nuclear plant, heavy electric machinery and oil exploration and extraction equipment. The United States has recently decided to assist hydroelectric, thermo-power and coal gasification projects while Japan has so far no plan in this field.

Since Japan prohibits investing in the weapon industry, the United States and European countries will take advantage in this sector. Brazil is now ranked as the seventh biggest exporter of weaponry in the world and its demand is expanding due to mounting international insecurities.

In summary, Japan's investment is not represented so far in Brazil. Therefore, there is no major conflict between Japan and the United States in the investment domain. Orderly investments have been made reflecting competitiveness of their commodities and the division of labor between the two countries was maintained.

With respect to future collaboration between Japan and the United States of America, several suggestions can be made. Brazil is now suffering from world recession and an extraordinarily heavy debt burden. The Brazilian economy cannot escape a slow or even negative growth in the coming years. Externally, export sectors will have trouble in finding buyers since industrial countries have not yet recovered from the prolonged recession.

In the short-run, Brazil has to settle the debt payment. Regarding this matter, Japan and the United States of America are able to help Brazil. Commercial banks of the two countries will prepare new loans to Brazil through co-financing. Actually, Brazil asked several industrialized countries in September 1983 to cover the repayment through new credits, totalling US\$10 billion, which will be due up to the end of 1984. Commercial banks were asked to share 60% of the said amount.

In the long-run, Brazil's export sectors will affect the global industrial structure. For example, the main industrial countries now have integrated iron and steel works in their own countries. However, if the middle-income countries like Brazil can export semi-finished steel products, some industrial countries do not necessarily have upstream activities in the iron and steel industry. This sort of boomerang effects of investment will lead to restructuring of industries in advanced countries. In particular, the United States of America tends to put emphasis on the downstream of the steel industry. Therefore, it is advisable that the United States import slabs and other semi-finished steel products from Brazil.

In the case of aluminum, the pattern in which industrial countries produce aluminum using imported alumina will be also affected as a result of the aluminum production by middle-income countries. It is said that the Japanese aluminum project in Brazil is delayed because of the world-wide recession. The production capacity of 80 000 tons per year and it will probably reach a 320 000 ton level in 1989. They will mainly use imported alumina at first because of the excess-supply condition of the world alumina market. On the other hand, the Alunorte project in alumina will not start its operation until 1989. There is a possible Japan-United States cooperation in this occasion. The form of cooperation can be that the Alcoa project in Sao Luis, which will start production in 1984, can supply alumina to the Japanese Albras project for the aluminum production.

The Brazilian agriculture will also influence the world flow of agricultural products when the Cerrado area is completely exploited. The Government of Japan committed to extend yen-denominated loans to the development of irrigation systems in the Cerrado product, amounting 12 021 million yen in March, 1983. Japan not being accustomed to large-scale farming, the United States experience in farming, particularly, machine-intensive agriculture with a large-scale sprinkler system will greatly help the Cerrado development project.

Notas

1/ The views and interpretations in this report are those of the author and should not be attributed to the Economic Commission for Latin America. I would like to thank Professor M. Shinohara, Mr. N. Tabe and Mr. M. Kosaka of the Institute of Developing Economies in Tokyo for their encouragement and my thanks also to Dr. Leon Hollerman and Dr. M. Kuwayama for their valuable comments. I would like to express my thanks to Dr. Paul Kreisberg of the Council on Foreign Relations for giving me this opportunity. Needless to say that possible error in the text will be fully my responsibility.

2/ The Export-Import Bank of Japan was established in 1950 as a Government financial institution to complement and encourage commercial banks in financing exports, imports and overseas investment. The Export-Import Bank of Japan started its overseas investment lending operation in 1953. See Table I and Table II in Annex.

3/ Total reserves (minus gold) rose from US\$1 715 million in 1964 to US\$17 564 million in 1972, though they decreased to US\$11 355 million in 1973 due to the first round of the oil crisis (MMF, International Financial Statistics-Yearbook 1982, July 1982).

4/ After World War II in 1952 the emigration to Brazil restarted and between 1952 and 1977, 52 086 Japanese crossed the Pacific Ocean.

5/ It is said that Japanese-Brazilians account for 70-80% of the perishable sales marketed to the Central Market of Sao Paulo (CEAGESP).

6/ "Grupos - Os 300 maiores", Balanco anual 1981 (Gazeta mercantil, sete., 1981).

7/ The tax sparing credit system is applied in Japan. In the case of interest payments, on the supposition that the fixed rate of 20% is paid in Brazil, the rate of 12.5% is actually applied in Japan so that the difference of 7.5% is rebated as a tax credit. Tax sparing rates for other items are fixed at 25%.

8/ OECF was founded in 1960 to contribute to the economic development and stabilization of developing countries by facilitating the supply of funds. The Export-Import Bank of Japan had also been engaged with official development assistance (ODA) until July 1975 when all ODA activities were delegated to the OECF.

9/ JICA is a Government organization, established in 1974 and is engaged in Japan's international technical cooperation for developing countries. JICA inherited the activities of Overseas

Technical Cooperation Agency (OTCA, established in 1963).

10/ Burajiru nikkei kygyo nenkan 1980 (Annual of Japanese-Brazilian Enterprises in 1980), Jitsugyo no Burajiru-sha, Sao Paulo, 1980.

11/ Burajiru Keizai Joho (Boletim Informativo da Camara de Comercio e Industria Japonesa do Brasil), N°586, May 15, 1982.

12/ M. Kagami, "Burajiru no Seni Sangyo", Hattentojokoku no Seni Sangyo ("The Textile Industry in Brazil" in Textile Industries in Developing Countries), Institute of Developing Economies, 1980.

13/ M. Kagami, "Burajiru no Jidosha Sangyo", Hattentojokoku no Jidosha Sangyo ("The Automotive Industry in Brazil" in Automotive Industries in Developing Countries), Institute of Developing Economies, 1980.

14/ The Japanese capital shared by OECF (38.4%), NIPPON STEEL (14.4%), ISHIKAWAJIMA-HARIMA (7.7%), NIPPON KOKAN (4.5%) and MITSUBISHI Heavy Industries (4.4%). CM. Kosaka et. al., Keizai Kyoryoku Koka Kenkyu Hokokusho-Burajiru (Evaluations of Economic Assistance Projects in Brazil), Institute of Developing Economies, 1983.

15/ M. Kagami, "Burajiru no Denki-denshi Sangyo", Hattentojokoku no Denki-denshi Sangyo ("The Electric and Electronic Industries in Brazil" in Electric and Electronic Industries in Developing Countries), Institute of Developing Economies, 1981.

Figure 1

JAPAN'S DIRECT OVERSEAS INVESTMENT TO BRAZIL
(Annual amount from 1970 to 1982)

Year	Number of cases	(cases)
1970	****	22
1971	*****	25
1972	*****	93
1973	*****	197
1974	*****	144
1975	*****	77
1976	*****	77
1977	*****	84
1978	*****	86
1979	*****	55
1980	*****	38
1981	*****	53
1982	*****	31
	Value	(US\$ million)
1970	*****	20
1971	*****	122
1972	*****	169
1973	*****	435
1974	*****	250
1975	*****	271
1976	*****	270
1977	*****	267
1978	*****	258
1979	*****	409
1980	*****	170
1981	*****	316
1982	*****	322
$\frac{\quad}{20} + \frac{\quad}{40} + \frac{\quad}{60} + \frac{\quad}{80} + \frac{\quad}{100} + \frac{\quad}{120} + \frac{\quad}{140} + \frac{\quad}{160} + \frac{\quad}{180} + \frac{\quad}{200} + \frac{\quad}{220} + \frac{\quad}{240} + \frac{\quad}{260} + \frac{\quad}{280} + \frac{\quad}{300} + \frac{\quad}{320} + \frac{\quad}{340} + \frac{\quad}{360} + \frac{\quad}{380} + \frac{\quad}{400} + \frac{\quad}{420}$		

TABLES AND ANNEX

TABLE 1

JAPAN'S DIRECT OVERSEAS INVESTMENT
(Accumulated value, on the notification basis)

Fiscal year (FY)	(1) Number of cases	(2) Value (US\$ million)	(3) Average per case (US\$ million)
1951-1970	3 733	3 577	.958
1971-1982	25 330	49 554	1 956
Total (1951-1982)	29 063	53 131	1 828

Sources: Ministry of Finance, Zaiseikinuy Tokei Geppo (Monthly Statistics of Money and Finance), N°356, December 1981, and Foreign Press Center, "Direct Overseas Investment Registered During Fiscal 1982", June 1983.

TABLE 2

JAPAN'S DIRECT OVERSEAS INVESTMENT BY COUNTRY
 (Accumulated value, on the notification basis)
 (Unit: US\$ million)

Country	FY 1951-1982	Share (%)
1. United States	13 970	26.3
2. Indonesia	7 268	13.7
3. Brazil	3 545	6.7
4. Australia	2 882	5.4
5. United Kingdom	2 296	4.3
6. Panama	2 022	3.8
7. Hong Kong	1 825	3.4
8. Liberia	1 692	3.2
9. Singapore	1 383	2.6
10. Korea	1 312	2.5
Subtotal	38 195	71.9
World Total	53 131	100.0

Source: The same as Table 1.

TABLE 3

JAPAN'S DIRECT OVERSEAS INVESTMENT BY INDUSTRY
 (Accumulated value, on the notification basis)
 (Unit: US\$ million)

Industries	FY 1951-1982	Share (%)
Manufacturing	16 952	31.9
Food	806	1.5
Textiles	1 795	3.4
Lumber and pulp	899	1.7
Chemicals	3 176	6.0
Iron and nonferrous metals	3 608	6.8
General machinery	1 265	2.4
Electric and electronic machinery	2 322	4.4
Transportation machinery	1 822	3.4
Others	1 258	2.4
Agriculture, Forestry and fishery	1 081	2.0
Mining	10 291	19.4
Services	22 644	42.6
Construction	536	1.0
Commerce	8 482	16.0
Finance and insurance	3 802	7.1
Other services	9 824	18.5
Others <u>a/</u>	2 163	4.1
Total	53 131	100.0

Source: The same as Table 1.

a/ Including investment in real estate and establishment of offices and branches.

TABLE 4

FOUNDATION YEARS OF JAPANESE ENTERPRISES IN BRAZIL a/
(Unit: Number of companies)

Industries	Before 1949	1950-59	1960-69	1970-79	No data	Total
Agriculture, Forestry and Fishery b/	7	9	20	25	9	70
Iron and nonferrous	3	4	8	22	2	39
General machinery	6	12	13	27	7	65
Transportation machinery	0	5	2	8	2	17
Electric and electronic machinery	0	6	15	33	4	58
Precision machinery	1	1	1	6	0	9
Chemicals	4	9	16	27	7	63
Textiles	6	8	7	18	4	43
Food and Beverages	3	6	12	12	5	38
Other manufacturing	3	5	9	12	3	32
Construction and real estate	2	10	16	33	6	67
Commerce and trading	16	36	31	41	17	141
Finance and insurance	4	3	10	26	5	48
Other services	4	11	8	41	9	73
Total	59	125	168	331	80	763

Source: Jitsugyo no Burajiru-sha, Burajiru nikkei kigyo nengan 1980 (Annual of Japanese-Brazilian Enterprises in 1980), Sao Paulo, 1981.

a/ Not only companies whose capital is owned by Japanese entities but also those by Japanese-Brazilians are included.

b/ Including cooperative society.

TABLE 5

EVOLUTION OF NUMBER OF PUPILS AND TEACHERS
IN THE SAO PAULO JAPANESE SCHOOL
(From the first to the ninth grades)
(Unit: persons)

Year	Pupils	Teachers
1967	28	3
1968	48	6
1969	74	12
1970	72	12
1971	83	14
1972	145	16
1973	293	19
1974	435	27
1975	582	30
1976	657	35
1977	695	35
1978	830	36
1979	872	41
1980	900	43
1981	905	44
1982	852	44
1983	732	33

Source: The Sao Paulo Japanese School.

TABLE 6

JAPAN'S DIRECT OVERSEAS INVESTMENT IN BRAZIL BY INDUSTRY
 (Accumulated value as of December 31, 1980)

Industries	Number of Cases		Amount	
	Number	Share (%)	US\$ million	Share(%)
Manufacturing	440	38.9	1 891	65.0
Food	48	4.2	103	3.5
Textiles	84	7.4	291	10.0
Lumber and pulp	22	1.9	182	6.3
Chemicals	37	3.3	82	2.8
Iron and nonferrous	48	4.2	593	20.4
General machinery	82	7.3	221	7.6
Electric and electronic machinery	58	5.1	168	5.8
Transportation machinery	10	0.9	184	6.3
Others	51	4.5	68	2.3
Agriculture, forestry and fishery	75	6.6	106	3.6
Mining	45	4.0	151	5.2
Services	522	46.2	746	25.6
Construction	36	3.2	54	1.9
Commerce	179	15.8	234	8.0
Finance and insurance	37	3.3	207	7.1
Other services	270	23.9	251	8.6
Others <u>a/</u>	49	4.3	15	0.5
Total	1 131	100.0	2 908	100.0

Source: Ministry of Finance, Zaiseikinyu Tokei Geppo (Monthly Statistics of Money and Finance), N°356, December 1981.

a/ Including investment in real estate and establishment of representative offices and branches.

TABLE 7

RESULTS OF THE JAPANESE ENTERPRISE SURVEY
IN BRAZIL - 1981 a/

Items	Amount (US\$ million) or persons	Number of firms replied	Average per firms replied
Annual sales	4 841.7	175	27.7
Annual export earnings	1 096.7	83	13.2
Net profits	81.2	122	0.7
Wages paid	294.0	177	1.7
Taxes paid <u>b/</u>	323.8	168	1.9
Total employees	49 000	226	221
in which:			
Japanese-Brazilians	8 712	-	39
Number of managerial (supervisory) members	4 439	190	23
in which:			
From Japan	881	-	5
Japanese-Brazilians	1 324	-	7
Number of directors	869	298	3
in which:			
From Japan	641	-	2
Japanese-Brazilians	186	-	0.6

Source: Japan Overseas Enterprises Association, Sao Paulo office.

a/ Those enterprises whose capital is owned by Japanese parent companies more than 51%.

b/ Including principally IPI, ICM, corporate tax and payments on social securities such as INPS and FGTS.

TABLE 8

FAILURES AND SUCCESSES OF JAPANESE ENTERPRISE IN BRAZIL
DURING THE 1975-1981 PERIOD
(Unit: companies)

	Withdrawal, Cessation and Suspension	(%)	Continuance	(%)	Total
(1) Joint-ventures between:					
Japanese & Brazilian	33	32.7	68	67.3	101
Japanese & Japanese- Brazilian	17	31.5	37	68.5	54
Japanese & Japanese	13	20.0	52	80.0	65
(2) Japanese-wholly owned companies					
	45	23.7	145	76.3	190
Total	108	27.0	302	73.0	410

Source: Jitsugyo no Burajiru-sha, Jitsugyo no Burajiru, April 1982.

TABLE 9

ESTIMATES OF JAPAN'S FINANCIAL ASSISTANCE
TO THE USIMINAS PROJECT

	Total investment costs (US\$ million)	Japan's assistance (Billion Yen)		Total
		Capital a/	Export credits b/	
Initial stage (capacity of crude steel, 500 000 t/year completed in 1965)	270	14.7 (2.7)	36.2	50.9
The first expansion phase (1.4 million t/year completed in 1974)	288	7.3 (2.5)	19.5	26.8
The second expansion phase (2.4 million t/year, completed in 1976)	580	9.4 (5.0)	17.0	26.4
The third expansion phase (3.5 million t/year, completed in 1982)	1 530	2.8 (1.4)	49.6	52.4
Total	2 668	34.2 (11.6)	122.3	156.5

Source: Ministry of International Trade and Industry, Kaizai Kyoroku no Genjo to Mondaiten - 1982 (Economic Assistance-Present Situation and its Problems - 1982), 1983.

a/ Paid-up capital by Japan, figures in parentheses show the quota by OECF.

b/ Supplier's credits except for the second expansion phase which was financed through buyer's credits by the Export-Import Bank of Japan.

TABLE 10

JAPANESE COTTON YARN PRODUCERS IN BRAZIL (1978)

Firms	Capital (1 000 Cr\$)	Share a/ %	Production Capacity (1 000 spindles)	Production of cotton yarn (t/month)	Consumption of raw cotton (t/month)
Kanebo do Brasil S.A.	300 000	KANEBO (85%)	106	1 100 (c,t/c) <u>b/</u>	1 200
Toyobo do Brasil S.A.	217 530	TOYOBO (100%)	62.8	500 (c,t/c)	550
Industria Textil Tsuzuki Ltda.	120 000	TSUZUKI (100%)	61	1 300 (c)	1 430
Cotonificio Kurashiki do Brasil Ltda.	93 000	KURASHIKI TOMEN (97.2%) SUMITOMOSHOUJI (1.0%)	31.8	350 (c)	400
Omi-Zillo- Lorenzetti S.A.	75 000	OMIKENSHI (58.65%) NISSHO-IWAI (29.33%) ZILO, LORENZETTI (12.02%)	22.4	450 (c)	500
Nisshinbo do Brasil Ltda.	60 000	NISSHINBO (99.0%)	24	450 (c)	500
Daiwa do Brasil Ltda.	55 966	DAIWABO (89.9%) NISSHO-IWAI (9.9%)	21.6	450 (c)	500
Unitika do Brasil Ltda.	41 500	UNITIKA (70%) MARUBENI (30%)	31	350 (c)	400

Source: M. Kagami, "Burajiru no Seni Sangyo", Hattentojokoku no Seni Sangyo ("The Textile Industry in Brazil" in Textile Industries in Developing Countries), Institute of Developing Economies, 1980.

a/ Capital shares in 1981 according to Burajiru Kigyo nenkan 1982 (Annual of Japanese-Brazilian Enterprises in 1982).

b/ (c): cotton yarn and (t/c): mixed yarn of cotton and polyester.

TABLE 11

BRAZILIAN COTTON YARN EXPORTS
 (Shipped from the Santos Port, 1978)
 (Unit: tons)

Firms	Japan	EEC	U.S.A.	Other Countries	Total	Share(%)
Eight Japanese firms a/	2 986	6 945	420	7 345	17 698	44.9
Filobel	-	1 349	-	981	2 330	5.9
Vanini	-	724	-	1 073	1 797	4.7
Sta. Elizabeth	-	1 193	-	598	1 791	4.5
Ag. Boyes	-	1 157	-	611	1 768	4.5
Matarazzo	1	842	-	887	1 730	4.4
Nova Odessa	-	745	-	808	1 553	3.9
S. Bernardo	-	1 239	-	161	1 400	3.6
Amparo	-	251	-	416	667	1.7
C. B. Fiacao	-	405	-	236	641	1.6
Marcelino	-	120	-	376	496	1.3
Javense	-	295	-	125	420	1.1
Sao Joao	-	264	-	121	385	1.0
Leop. Schmalz	-	155	-	45	200	0.5
I. Chamma	-	153	-	31	184	0.5
Still	-	125	-	55	180	0.4
Cot. Paulista	-	134	-	-	134	0.3
Others	-	461	28	5 527	6 015	15.3
Total	2 987	16 556	448	19 396	39 387	100.0

Source: The same as Table 10.

a/ Eight Japanese firms are: Kanebo, Toyobo, Nisshinbo, Omi-Zillo, Daiwa, Tsuzuki, Unitika and Kurashiki.

TABLE 12

MONTHLY PRODUCTION OF CONSUMER ELECTRONIC GOODS (MAY 1980)
(Unit: sets)

Firm	Black-and white T.V.	Color T.V.	Amplifier	Radio	Car radio	Music center
1.Sanyo		9 000		34 000	1 000	1 500
2.Semp-Toshiba	18 000	12 000		31 000		3 000
3.National		7 000		15 000		4 000
4.Sony			2 000			3 500
5.Sharp		23 000		20 000	3 000	6 000
6.Mitsubishi		5 000		20 000	2 000	1 000
7.Nissei				15 000	17 000	300
8.Motoradio				45 000	30 000	
9.Telefunken	20 000	15 000		15 000		2 000
10.Philco	40 000	22 000		18 000	5 000	
11.Philips	25 000	18 000		38 000	10 000	5 000
12.Colorado	15 000	500				
13.Cce			5 000	37 000	8 000	4 000
14.Polivox			5 000			
15.Gradient			12 500			
16.Bosch					55 000	
17.Cash box					20 000	
18.Sonata				3 000	14 000	
19.Taterka			2 500			
20.Transcoil				2 000		500
21.Pan eletronica						2 500
22.Delta				9 000		
23.W.B.Eletronica			1 000			
24.Giannini			500		2 000	
25.Elet.Marajo				4 000		
26.Elet.Campeao				4 000		
27.Schiavon				3 000		
28.Filotronics				7 500		
29.Cygnus			200			
30.Tarkus			150			
31.Lambda			800			
32.Royal			1 700			
33.Sanoy					500	
34.Di-som					3 000	
35.Xavantes					1 800	
36.I.s.f.					2 000	
37.Admiral	2 000					
Total	120 000	111 500	31 350	320 500	174 300	33 300

Source: M. Kagami, "Burajiru no Denki-denshi Sangyo", Hattentojokoku no Denki-denshi Sangyo ("The Electric and Electronic Industries in Brazil" in Electric and Electronic Industries in Developing Countries), Institute of Developing Economies, Tokyo, 1981.

TABLE I
GRANTS AND GOVERNMENT YEN-LOANS TO BRAZIL

Date	Items	Amount (million yen)
	(Grants)	
Feb. 1979	Audio-visual aids	36
	(Yen-Loans, Commitment base)	
Nov. 1962	Funds for the capital increase of Usiminas	6 317 <u>b/</u>
Dec. 1981	Construction of the Port of Tubarao, construction of the Port of Vila do Conde	11 985 <u>c/</u> 2 975 <u>c/</u>
	Purchase of a dredger	7 040 <u>c/</u>
	(Refinance)	
Feb. 1965	Refinance I	2 776 <u>d/</u>
July 1965	Refinance II <u>a/</u>	8 952 <u>e/</u>
Oct. 1965	Refinance III <u>a/</u>	4 794 <u>e/</u>

Source: Ministry of International Trade and Industry, Keizai Kyoryoku no Genjo to Mondaiten - 1982 (Economic Assistance-Present Situation and its Problems - 1982), 1983.

a/ Refinance for time-expired debt of Usiminas.

b/ The loan condition was a 6% annual interest rate (i) for 10 years (t) with a 5-year grace period (g.p.)

c/ The loan condition: i= 5.75%, t=17 years and g.p.= 5 years

d/ The loan condition: i= 5.75%, t= 7 years and g.p.= 2 years

e/ The loan condition: i= 5.50%, t= 8 years and g.p.= 3 years

TABLE II

BUYER'S CREDIT AND BANK LOANS BY THE
EXPORT-IMPORT BANK OF JAPAN
(Commitment base, as of December 31, 1981) a/
(Unit: Million Yen)

Item	Contracted	Amount	Joint-finance
Hydroelectric development			
Furnas I (Malibondo)	Apr.20, 1971	637	World Bank
Furnas II (Itumbiara)	Nov.12, 1973	12 000	World Bank
Cemig (Sao Simon)	Nov.12, 1973	7 200	World Bank
Chesf (Paulo Afonso)	Dec.11, 1974	19 500	World Bank & IDB
Steel production			
Csn I	Oct. 4, 1972	16 500	World Bank & IDB
Csn II	May 26, 1976	65 000	
Cosipa I	Oct. 4, 1972	20 000	
Cosipa II	May 26, 1976	40 000	
Usiminas	Oct. 4, 1972	20 000	
Iron ore production	Aug.20, 1982	13 000	
Petroleum production			
Petrobras I (eight times)	March 23 Nov. 2, 1981	2 206	
Petrobras II (twelve times)	Feb. 15 Sep. 8, 1982	1 169	
Bank loans			
Bnde I	Nov.12, 1973	5 000	
Bnde II	Apr. 6, 1976	7 500	
Banco do Brasil	Sep. 4, 1978	3 000	

Source: The same as Table I.

a/ Loan conditions vary according to the projects: interest rates from 6.5% to 9.25%, term from 10 to 16 years and the grace period from 3 to 6 years.

TABLE III

COST ESTIMATES AND SOURCE OF FUNDS
ON THE CENIBRA PROJECT a/
(Unit: US\$ million)

	Capital	Credits	Total
Japan	81	78	159
in which: OECF <u>b/</u>	(30)	-	(30)
Brazil	83	81	164
Total	164	159	323

Source: The same as Table I.

a/ The cellulose project has, at the same time, the Espirito Santo project to plant eucalyptus. The total cost was estimated at US\$1 327 million but the project was delayed due to recession.

b/ Overseas Economic Cooperation Fund.

TABLE IV

COST ESTIMATES AND SOURCE OF FUNDS
ON THE TUBARAO STEEL PROJECTS
(Unit: US\$ million)

	Capital	Credit	Export finance	Total
Japan	167	90	504	761
Brazil	347	1 201 a/	-	1 548
Italy	167	-	571	738
Total	681	1 291	1 075	3 047

Source: The same as Table I.

a/ Japanese commercial banks prepared US\$700 million by forming syndicate loans.

TABLE V

COST ESTIMATES AND SOURCE OF FUNDS
ON THE AMAZON ALUMINUM PROJECT
(Unit: Billion Yen)

		Capital	Credits	Total
A L B R A S	Japan	65.5	139.8	205.3
	in which:			
	OECF	(26.2)	-	(26.2)
	Brazil	68.2	172.3	240.5
	Subtotal	133.7	312.1	445.8
A L U N O R T E	Japan	20.2	47.0	67.2
	in which:			
	OECF	(8.1)	-	(8.1)
	Brazil	31.2	73.0	104.2
	Subtotal	51.4	120.0	171.4
Total		185.1	432.1	617.2

Source: The same as Table I.

TABLE VI

COST ESTIMATES AND SOURCE OF FUNDS
ON THE CERRADO PROJECT
(Unit: Million Yen)

	Capital	Credits	Total
Japan	2 000	5 125	7 125
in which:			
JICA <u>a/</u>	(1 000)	(4 100)	(5 100)
Brazil	1 465	5 125	6 590
Total	3 465	10 250	13 715

Source: The same as Table I.

a/ Japan International Cooperation Agency.

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