# Fragmentation and agglomeration matter:

# Japanese multinationals in Latin America and East Asia

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**Abstract**

This paper analyzes micro data of Japanese multinational enterprises to investigate differences between Latin America and East Asia from various viewpoints of their corporate activities. One of the crucial factors to make a sharp contrast is the development of international production/distribution networks utilizing the benefit of fragmentation and agglomeration. Japanese firms have played an important role in developing international production/distribution networks in East Asia while they have not yet either constructed a critical mass of industrial clusters or formulated efficient vertical chains of production in Latin America, where proper international commercial policies are the key for success.

## 1. Introduction

Since the 1980s, Latin American countries have carried out substantial policy reform and have successfully constructed cleaner and more transparent policy environments often more so than in East Asia. However, the growth performance of East Asia has still dominated Latin America; average annual growth rates of gross domestic product (GDP) in 1990-2000 were 7.2% in East Asia and 3.3% in Latin America and Caribbean (World Bank (2002, Table 3)).

The UNIDO's competitive industrial performance (CIP) indices also present a sharp contrast between Latin America and East Asia (Table 1). The CIP index, which measures the ability of countries to competitively produce and export manufactured goods, is constructed from four indicators: manufacturing value added per capita, manufactured exports per capita, and the shares of medium- and high-tech products in manufacturing value added and in manufactured exports. The rankings of the East Asian countries except Japan and Hong Kong went up in the period of 1985-1998, while those of the most Latin American countries stagnated. During this period, Malaysia moved to a higher position than Mexico, and the Philippines and Thailand surpassed Brazil.

Table 1

One of the key elements for East Asia's performance is the effective development and utilization of international production/distribution networks. As Fig. 1 clearly presents, intra-regional trade of machinery parts and components among the East Asian countries increased explosively throughout the 1990s. New theories in international trade, particularly the literature on fragmentation and agglomeration, provide new insights to understand what is going on in East Asia.[1]

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[1] As for the literature of fragmentation theory, see Jones and Kierzkowski (1990), Arndt and

Fig, 1

In the globalization era, firms try to build up efficient intra-firm structure and inter-firm relationship. Instead of their conducting too many activities by themselves, they attempt to let other firms do through various types of contracts in order to make decisions of optimal internalization. In addition, advantages of fragmentation and agglomeration are exploited. When parts and components are considerably standardized and the delivery timing is not too delicate, they try to find suppliers of the cheapest products in the world. On the other hand, when parts and components are highly customized and closer communication with suppliers is important, they would like to form industrial clusters.

Fragmentation and agglomeration may seem to work in the polar opposite directions but are not necessarily in fact. The key for fragmentation is the reduction of service link costs such as transport cost, telecommunication cost, and more abstract coordination cost that connect remote production blocks with each other. We must here recognize that service link costs often have very strong economies of scale. Hence, fragmented production blocks are not evenly distributed across countries or regions but rather concentrate on focal points where service link costs are particularly low. Such accumulation of fragmented production blocks results in helping the formation of industrial clusters.

As a background, it should be noted that the East Asian countries have accomplished crucial changes in foreign direct investment (FDI)-related policies since the latter half of the 1980s. That is, they have reduced the weight of selective FDI acceptance policies such as restrictions on the capital share of foreigners or entry restrictions for foreigners and have instead

Kierzkowski (2001), Deardorff (2001), and Cheng and Kierzkowski (2001). For the literature of agglomeration theory, see Krugman (1991, 1995) and Fujita, Krugman, and Venables (1999).

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applied aggressive FDI hosting policies, which allow foreign firms to form industrial agglomeration and international production/distribution networks.[2]   Moreover, various types of trade and FDI facilitation measures are implemented, which help reduce service link costs. Some directed policies such as providing infrastructure and human capital additionally work in formulating agglomeration.

Japanese firms have played a crucial role in developing international production/ distribution networks in East Asia.   Their strength resides not only in production technologies per se but also in their proficiency in organizing effective intra-firm and inter-firm relationships. That is why Japanese firms have their international competitiveness in machinery industries where production management taking care of a massive number of parts and components is crucially important.   Japanese firms indeed possess substantial significance in East Asia. Table 2 presents the activities of affiliates of Japanese and U.S. firms in East Asian economies in terms of value added, employment, export, and imports. These are rough estimates based on Japanese and U.S. statistics.

Table 2

In contrast with the East Asian economies, Latin American countries have not yet experienced the development of international production/distribution networks. Although they embarked upon industrialization much earlier, they have for many reasons been slow to fully utilize the advantages of globalization.   This is due in part to the import-substitution regimes that dominated Latin American trade policies for so long.   Although international policy arrangements such as free trade agreements (FTAs) are more developed than in East Asia, most

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[2] See Kimura (2002, Table 4) for major changes in FDI-related policies in the ASEAN countries in the period of the later half of the 1990s.

of the FDI coming into Latin America is still of the import-substitution-type and does not take advantage of global production sharing.

This paper focuses on the behavior of Japanese firms and compares FDI in Latin America and East Asia. In East Asia, Japanese firms play an important role in developing international production/distribution networks. Latin America is, of course, far from Japan in both geography and psychology, but even taking these elements into account, Japanese FDI in Latin America remains minimal. High service link costs as well as lack of agglomeration are important explanations. Latin America has not yet utilized positive spillovers that Japanese or other multinational enterprises (MNEs) would provide.[3] Aggressive FDI hosting policy seems to be crucial in forming a critical mass of agglomeration. At the same time, fragmented production blocks must be invited by reducing service link costs. The role of government clearly exists though the approach is quite different from the traditional MITI-type industrial policy.

The paper plan is as follows: the next section provides an overview of Japanese trade and outward FDI with Latin America and East Asia. Section 3 analyzes the micro data of Japanese MNEs to investigate FDI patterns in Latin America and East Asia from various points of view. Section 4 presents how Japanese MNEs feel about Latin America and tries to extract some policy implications. Section 5 provides concluding remarks.

## 2. Japanese firms in Latin America and East Asia: Overview

According to the World Bank (2002, Table 3), Latin America and East Asia (except Japan) are of roughly equal economic size: U.S. $1,995 billion for Latin America & Caribbean

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[3] See Moran (2001) for the survey of many case studies on the affiliates of Japanese and other

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and U.S. $2,059 billion for East Asia & Pacific in 2000.   The upper half of Table 3 presents

shares of Japanese trade by region.[4]   Export and import shares of East Asia increased over time

and reached around 40% in 1999-2000.   A large portion of trade with East Asia is back-and-

forth transactions of parts and components of manufactured products as would be suggested by

Fig.1.   On the other hand, the shares of Latin America are minimal; only 4 to 5% for exports

and around 3% for imports.

Table 3

The lower half of Table 3 shows destination shares of Japanese outward FDI on the

reporting basis in terms of the values and cases.   FDI figures are on a flow basis and thus

fluctuate over time.   However, we can confirm that East Asia steadily attracts a certain

percentage of Japanese FDI.   Most of the FDI going to East Asia is in the manufacturing sector,

and many of the cases suggest that small and medium enterprises (SMEs) are actively involved.

FDI to Latin America, on the other hand, has a peculiar pattern.   A large but declining portion

of the FDI in this region is observed in the Cayman Islands and Panama and is dominated by

non-manufacturing affiliates.   FDI in the manufacturing sector is obviously very small.

The distance between Latin America and Japan in terms of geography, culture, and

historical background could partially explain such a low level of Japanese firms' commitment to

Latin America.   Although Latin America is the region that has the largest population of

Japanese emigrants, Japanese regard the Latin American economy as a sort of backyard of the

United States.   In contrast, East Asia has been close to Japan through various channels such as

trade, FDI, and economic cooperation.   In addition, the rapid economic growth of the East

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MNEs.

[4] Strictly speaking, "East Asia" in Table 3 includes all Asian countries east of Pakistan.
However, trade with and FDI to South Asia are small.

Asian countries itself encourages Japan to make deeper commitment to East Asia.

At present, Japanese firms do not treat most of the Latin American countries as an important link in international production/distribution networks. The reason is the high costs of service links and the lack of proper development of industrial clusters in Latin America. Japanese affiliates located in Latin America do not form sophisticated inter-firm relationship and typically sell their products in local markets. Of course, East Asia did not originally have any industrial clusters and supporting industries, either. However, in the case of East Asia, Japanese firms tried to form agglomeration by themselves. The active FDI by SMEs was an indication of constructing a critical mass of industrial clusters. We have not yet observed such an active commitment to Latin America by Japanese firms.

### 3. Observations from micro data

This section investigates micro data of Japanese investment abroad from various points of view. Our paper uses two sets of micro data conducted by Ministry of International Trade and Industry (MITI), Government of Japan (GOJ): 1) *the F/Y 1996 Basic Survey of Business Structure and Activity* and 2) *the F/Y 1999 Survey (the 27th Basic Survey) of Overseas Business Activities of Japanese Companies*. The first firm-level database provides detailed information on parent firms located in Japan and also the number, industry, and regional location of their foreign affiliates. Tables 4 to 11 and Table A1 are constructed from this database, where foreign affiliates are defined as those with no less than 20% Japanese ownership, except Table 5 covering only those with no less than 50% Japanese ownership. The second database presents information on the performance of foreign affiliates. Tables 12 to 14 are obtained from this database, where foreign affiliates include both "affiliates abroad" with no less than 10% ownership by Japanese parent firms and "affiliates of affiliates abroad"

with no less than 50% ownership by such "affiliates abroad" (call both of them "Japanese affiliates abroad" hereinafter).[5]    A more detailed explanation of these databases is given in the Appendix.

Now, let us check the number of Japanese firms with affiliates in Latin America and East Asia[6] and the sectoral composition of Japanese parent firms and their affiliates.    Tables 4 and 5 present (a) the number of parent firms with foreign affiliates and the number of foreign affiliates; (b) the number of parent firms with affiliates in Latin America and the number of affiliates in Latin America; (c) the number of parent firms with affiliates in East Asia and the number of affiliates in East Asia, by the industry of parent firms and by the industry of affiliates; and (d) the number of parent firms with affiliates in both Latin America and East Asia by the industry of parent firms.[7]

The data clearly show the small number of Japanese firms with FDI in Latin America, compared with firms investing in East Asia.    In 1995, 3,486 out of 26,353 firms located in Japan have 18,113 foreign affiliates with no less than 20% ownership (2,770 firms and 12,367 affiliates with no less than 50% ownership).    Among them, 288 firms have 1,110 affiliates in Latin America, and 2,753 firms have 9,132 affiliates in East Asia.    In other words, the number of parent firms investing in Latin America is only one-tenth of the number of parent firms investing in East Asia.    Moreover, 237 firms have affiliate(s) in both Latin America and East Asia.    Thus, over 80% of the firms with FDI in Latin America invest in East Asia as well.

Table4

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[5] "Affiliates abroad" of parent firms in finance, insurance, or real estates are not included.
[6] Strictly speaking, "East Asia" in section 3 includes all Asian countries east of Pakistan. However, FDI to South Asia is pretty small.
[7] For industry classification, see Table A-2.

Table5

Tables 4 and 5 also reveal that almost all of the Japanese parent firms in the data set are manufacturing (Industries 120 to 340) or wholesale/retail trade (480 and 540). Approximately 70% of the parent firms are in the manufacturing sector and half of them are in the machinery sector (290 to 320), when parent firms have foreign affiliates, affiliates in Latin America, or affiliates in East Asia.

However, the two regions differ when we look at the sectoral composition of parent firms in terms of the number of affiliates or the sectoral composition of affiliates. In East Asia, about 60% of the affiliates in the region are owned by manufacturing firms. Also, about 60% of the affiliates in the region are in manufacturing, regardless of the industries of their parent firms, which is a higher ratio than that for all foreign affiliates (47%). Thus, manufacturing is dominant in East Asia for both Japanese parent firms and their affiliates.[8]

In Latin America, in contrast, the share of affiliates with manufacturing parent firms is much lower, and the share of affiliates with wholesale/retail parent firms is higher; 35% and 64%, respectively. In addition, the share of manufacturing affiliates is only a quarter, while the share of affiliates in the "other" sector is extremely high. As many as 485 out of 1110 affiliates, i.e., 43.7% of the affiliates in the region are in the "other" sector.[9,10] These indicate

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[8] 958 out of 9,131 affiliates in East Asia (10.5%) are in the "other" sector; they include other services (253 affiliates), real estates (99), construction (89), finance and insurance (75), other transportation business (69), engineering services (69), machinery and furniture repairing services (43), software business (36), and goods rental services (29).

[9] In Latin America, sectors with more than 10% of the affiliates in the "other" sector are other transportation business (174 affiliates), finance and insurance (110), goods rental services (53), and other services (48).

[10] Although many affiliates in Latin America are in the "other" sector, there are few parent firms that belong to the "other" sector. The share of parent firms in the "other" sector is merely 3.1% and the share of affiliates with parent firms in the "other" sector is 0.9%.

that manufacturing activities in Latin America by Japanese firms are small relative to East Asia.

As suggested by Tables 4 and 5, Japanese parent firms do not necessarily establish affiliates in their own industries. Tables 6 and 7 provide the detailed information on sector switching between parent firms and their affiliates in Latin America and East Asia. Rows denote the industry of parent firms, columns the industry of affiliates. Thus, diagonal cells of the tables indicate the number of non-sector-switching affiliates, while non-diagonal cells denote the number of sector-switching affiliates.

Table 6

Table 7

In East Asia, 77% of the affiliates owned by manufacturing parent firms are in manufacturing. Among them, we find many sector-switching manufacturing affiliates with manufacturing parent firms (in non-diagonal cells for industries 120 to 340 in both rows and columns), in particular sector-switching machinery affiliates with manufacturing parent firms (in non-diagonal cells for industries 120 to 340 in rows and industries 290 to 320 in columns). Such behavior is typical of manufacturing activities aimed at supplying intermediate goods for other firms or for firms' own affiliates. In the process, Japanese firms have played an important role in developing vertical production networks in the region.

Moreover, manufacturing parent firms also have non-manufacturing affiliates, in particular wholesale trade affiliates. Sector-switching non-manufacturing affiliates with manufacturing parent firms (in cells for industries 120 to 340 in rows and industries 050, 480, and others in columns) make up 23% of the affiliates owned by manufacturing parent firms. This suggests that another strategy in East Asia is to establish global production/distribution networks by internalizing wholesale trade activities.

The picture in Latin America is quite different. First, as discussed above, the share of affiliates with manufacturing parent firms is a low 35%, while the share of affiliates with wholesale trade parent firms is 63%. Second, the percentage of manufacturing affiliates is a low 26%. More than 70% of affiliates in Latin America are in either the wholesale trade sector or the "other" sector.[11] Third, it is difficult to find sector-switching manufacturing affiliates with manufacturing parent firms (in non-diagonal cells for industries 120 to 340 in both rows and columns). In other words, sector switching within manufacturing is rare. Instead, almost all of the sector-switching affiliates owned by manufacturing parent firms are found in the wholesale trade sector and in the "other" sector. This suggests that Japanese manufacturing parents have affiliates in Latin America not as much to build dense production networks as to sell products in local markets, sometimes with simple local processing.

Next, let us focus on the characteristics of Japanese parent firms. Because the number of firms investing in Latin America is small and most of them also invest in other region(s) such as East Asia, parent firms with affiliates in Latin America are expected to be large in size. Tables 8 and 9 present the number of Japanese parent firms with affiliates in Latin America and East Asia, respectively, by the size of parent firms (the number of regular workers) and by the number of affiliates of each firm. This is done for all industries, as well as parent firms in manufacturing and in the machinery sector. Most of the Japanese firms investing in Latin America are large in size. Firms with at least 1,000 workers represent 63.5% overall, 72.1% in manufacturing, and 78.5% in the machinery sector. In contrast, Japanese firms investing in East Asia vary in size: 12.3% of firms have 50 to 99 workers, 18.6% have 100 to 199 workers, 10.8% 200 to 299 workers, 15.2% 300 to 499 workers, 16.7% 500 to 999 workers,

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[11] See footnote 9 for the major sectors among those categorized into the "other" sector.

and 26.5% at least 1,000 workers. Foreign direct investment by Japanese small and medium-sized enterprises (SMEs) in East Asia contributes to a critical mass of industrial clusters.

Table 8

Table 9

In addition to the size of parent firms, the number of affiliates per parent firm also differs between the two regions. Most of the firms investing in Latin America have only one or two affiliates in the region. Virtually all parent firms with more than three affiliates in this region have more than 1,000 workers at home. On the other hand, a considerable number of firms, including SMEs, have more than three affiliates in East Asia.

To formally analyze the characteristics of Japanese parent firms in Latin America and East Asia, we conduct logit regression analysis. Table 10 reports the results for Japanese parent firms in all sectors, and Table 11 presents the results for Japanese manufacturing parent firms. The dependent variable for the first regression (No.1) in both tables is whether a firm has foreign affiliate(s) or not. The dependent variable for the second regression (No.2) is whether a firm has affiliate(s) in Latin America, and the dependent variable for the third regression (No.3) is whether a firm has affiliate(s) in East Asia. The independent variables are the number of regular workers (in logs), tangible assets per regular worker, foreign sales, R&D expenditure, and advertisement expenditure. Foreign sales, R&D expenditure, and advertisement expenditure are measured as ratios to total sales.[12]

Table 10

Table 11

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[12] The basic statistics of the data for Japanese parent firms, including those not included in our regression, is summarized in Table A-1. Estimations with dummy variables for foreign sales and R&D expenditure instead of the ratios were also conducted. They provide similar results.

The results show that firms with foreign affiliates are likely to have large employment size, capital-intensive technology, large foreign sales, and large R&D expenditures. The coefficient for R&D expenditures is not statistically significant in the case of affiliates in Latin America. Taking into account that the coefficient for firm size is much larger in Latin America than for foreign affiliates as a whole, suggests that firms going to Latin America are not necessarily technology-intensive, but simply large in size. For manufacturing parent firms investing in East Asia, the coefficient for tangible assets per regular worker is not statistically significant, suggesting that the Japanese SMEs conducting FDI in East Asia have low capital intensity.

Considering the fact that a large portion of the affiliates in Latin America belong to the "other" sector, we ran regressions 1a, 2a, and 3a, in which parent firms with affiliates only in the "other" sector are classified as without affiliates, to see if the results are sensitive to the existence of affiliates in the "other" sector.[13] They indicate that the results above still hold, except that the coefficient for tangible assets per regular worker is positive but not statistically significant in the case of manufacturing parent firms as a whole.

The following focuses on the performance of Japanese affiliates abroad. Table 12 provides some basic statistics for the performance of Japanese affiliates (a) as a whole, (b) in Latin America, and (c) in East Asia, respectively.[14] Compared with all Japanese affiliates abroad, Japanese affiliates in Latin America have larger tangible assets and smaller numbers of

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[13] The number of parent firms with affiliates only in the "other" sector is 201 (5.8% of parent firms) for foreign affiliates as a whole, 42 (14.6%) for affiliates in Latin America, and 105 (3.8%) for affiliates in East Asia.

[14] Note that Tables 12 to 14 are constructed from the 1999 F/Y Survey, where the definition of "Japanese affiliates abroad" is different and where the ratio of effective questionnaire returns is as low as 56% (see the detailed explanation in the Appendix).

regular workers. Small production values per affiliate in Latin America suggest that many Japanese affiliates in Latin America are involved in non-production activities such as local sales of goods and services. On the other hand, Japanese affiliates in East Asia have smaller tangible assets and large numbers of regular workers. This suggests labor-intensive manufacturing affiliates in East Asia.

Table 12

Tables 13 and 14 present the destination of sales and origin of purchases by Japanese affiliates in Latin America and East Asia, respectively. Most of the goods and services produced by Japanese affiliates in East Asia go to the local market, to Japan, or to other East Asian countries (expressed as "E. Asia" in the table): 49.6% local, 21.9% for Japan, and 21.3% for countries within the region. Contrary to popular opinion, sales to North America by Japanese affiliates in East Asia (expressed as "North A." in the table) are small (3.5%), except in the leather and leather products sector (Industry 240), where the share is 44%. Japanese affiliates in East Asia purchase most goods and services in the local market (41.0%), or import them from Japan (33.5%) or other East Asian countries (20.8%). Japan's share is slightly higher than in sales, probably due to the supply of complicated machinery parts and components produced in Japan. The share of purchases from North America is quite small. This underscores the presence of a strong intra-regional production network in East Asia.

Table 13

Table 14

By contrast, sales and purchases by Japanese affiliates in Latin America show that the share of countries within the region is small. The share of sales to Latin American countries other than the local market (expressed as "Latin A." in the table) is 11.2%, and the share of

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purchases from them is only 3.1%. In particular, shares for manufacturing (Industries 120-340) are close to zero in both sales and purchases involving Latin American countries other than the local market. The main destination of sales is the local market, where more than 60% of the goods and services produced by Japanese affiliates in Latin America is sold. The main origins for purchases are the local market and Japan, with 38.8% and 40.3%, respectively. North America is also a relatively important origin for purchases compared to East Asia, though the percentage of North America is still not very large (11.9%). This evidence suggests that Japanese firms have not yet succeeded in constructing effective international production/distribution networks in Latin America, particularly in the manufacturing sector in which Japanese firms have international competitiveness.

The main findings of this section may be summarized as follows. First, Japanese investment in Latin America involves only a small portion of firms located in Japan; participation is one-tenth of the number of firms with FDI in East Asia. The sunk cost of getting into Latin America seems to be large. Second, the manufacturing sector, and particularly the machinery sector, where Japanese firms have international competitiveness, is not a dominant force in Latin American investment. Most of the affiliates in Latin America are in the non-manufacturing sector, compared with manufacturing activities in East Asia by Japanese firms. Third, firms going to Latin America are large in size, while firms going to East Asia vary from small to large in size. Japanese SMEs are active investors in East Asia and contribute to creation of a critical mass of industrial clusters, while FDI by Japanese SMEs is minimal in Latin America. Fourth, Japanese firms with foreign affiliates, in general, have large employment size, capital-intensive technology, large foreign sales, and large R&D expenditures. However, once firm size is controlled for, Japanese firms in Latin America are

not necessarily technology-intensive, but are simply large in size. Fifth, patterns of sector switching and destination and origin of sales and purchases involving Japanese affiliates confirm that Japanese firms play an important role in developing vertical production networks in East Asia. On the other hand, Japanese firms have not yet succeeded in constructing effective international production/distribution networks in Latin America.

## 4. Latin America from the viewpoint of Japanese firms

This section focuses on the voices of Japanese firms on how they assess Latin America as a potential destination of their FDI in order to extract some policy implications for this region. The Japan Bank for International Cooperation (JBIC) annually conducts a questionnaire survey for Japanese MNEs. One of the key questions of the survey is to list countries which they think are prospective destinations of their FDI in the short run and the long run. The short-run choices reflect their immediate strategies for globalizing corporate activities. China is by far the most important possible destination for their FDI. The United States and other East Asian countries follow with quite a distance. Brazil and Mexico are only at the 13th place; merely 4% of the firms that returned effective answers list these countries. Other Latin American countries do not even appear in the top-20. As for the long-run choices, Brazil climbs up to the 7th place due to its market potentials. Mexico stagnates at the 15th place. Japanese firms seem to suffer from a pretty high psychological barrier to investing in Latin America.

Table 15

A business association in Japan called the Business Council on Facilitation of Trade and Investment (BCFTI) annually compiles Japanese firms' complaints and requests on trade and FDI-related policies abroad. BCFTI (2002) lists a number of claims as shown in Table 16.

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A number of claims and complaints for the Latin American countries are those related to regional trade agreements and their implementation, which are not observed for the East Asian countries. Some claims are not obviously headed for host countries but should be for the Japanese Government; for example, the lack of FTAs, tax treaties, or investment treaties is largely the responsibility on the Japanese side. However, at the same time, it is serious that some policies accompanied with FTAs seem to unduly hurt activities of affiliates of Japanese firms. In addition, various uncertainty and instability in implementing commercial policies irritate Japanese firms to a large extent.

Table 16

Tariff reduction per se does not automatically bring benefits of globalization. The experience in East Asia convinces us that proper FDI hosting policies are indispensable to invite a critical mass of foreign companies in order to formulate stable industrial clusters. Such policy package may include tax incentives and other preferential treatments for foreign investors, but more importantly, it must go with various types of trade/FDI facilitating arrangements to reduce service link costs. In addition, we have to realize that segregated treatment between FTA member countries and non-member countries do not bring much benefit if we think much of quick formulation of competitive agglomeration.

In the case of Mexico, the transition from the Maquiladora scheme to a new system with NAFTA has forced Japanese firms to have a hard time. Moreover, the Mexican Government raised tariffs for about 85% commodity items in January 1999, which expanded tariff gaps between countries with FTAs and those without and aggravated negative effects of trade diversion. While the Mexican Government explained this move as a policy for taking care of fiscal deficit, Japanese investors took it as a threat to force the Japanese Government to

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seriously consider the conclusion of Mexico-Japan FTA. The conclusion of Mexico-EU FTA strengthened the belief of Japanese investors. In fact, the tariff elevation worked quite effectively, and now the Japanese Government is seriously negotiating over a FTA with Mexico. However, it was unfortunate that Japanese remember the Mexican policy change as an unfriendly move.

## 5. Concluding remarks

This paper has investigated differences between Latin America and East Asia from the viewpoint of corporate activities of Japanese firms, using micro data on Japanese MNEs. We find that one of the key factors to make a sharp contrast between the two regions is the development of international production/distribution networks utilizing the benefit of fragmentation and agglomeration. Latin America has not yet formulated efficient vertical chains of production to take advantage of globalization.

Emergence of international production/distribution networks is not automatic. ASEAN countries and China implemented drastic reforms of their international commercial policies in the latter half of the 1980s and the early 1990s. Although they retained some import-substituting industries, they adopted aggressive FDI-promotion packages which enabled MNEs to organize international production/distribution networks and to establish industrial clusters. Tariff arrangements, in particular the tariff pay-back system for imported parts and components used in exported products, played an important role. Trade and investment facilitation was important, as well as policies facilitating agglomeration. Reduction of service link costs and formation of agglomeration were the key for their success.

Regional trade arrangements can help upgrade industrial structure in member countries. However, if such arrangements are limited to tariff removal, the results tend to be

limited. Simple tariff reduction provides a competitive environment and encourages restructuring in import-substituting industries, but it is not sufficient for the promotion of international production/distribution networks. Fragmentation and agglomeration must be seriously taken into account when setting the basic structure of international commercial policies and the scope of regional trade arrangements.

**Appendix: Data sources**

*The Basic Survey of Business Structure and Activity* (*Kigyou Katsudou Kihon Chousa* in Japanese) is the MITI survey, first conducted in F/Y 1991, then in F/Y 1994, and annually since then. The prime purpose of the survey is to capture the overall structure of Japanese corporate firms in light of their diversification, internationalization, inter-firm linkages, and strategies on R&D and information technology.

*The Basic Survey* has several attractive features. First, the samples in the survey are comprehensive, covering firms with more than 50 workers, capital of more than 30 million yen, and establishments in mining, manufacturing, wholesale/retail trade, and restaurants. Foreign affiliates covered in the survey are those with no less than 20% Japanese ownership. Whether the affiliate is wholly-owned, majority-owned, or 20-50%-owned can be identified if necessary. Second, the ratios of questionnaire returns are high; the actual ratios are not disclosed, but are about 90% to 95%.[15] Statistics collected by the Government of Japan are legally classified into two categories: designated statistics (shitei toukei) and approved statistics (shounin toukei). *The Basic Survey* is the first type, and thus firms in the survey must return the questionnaires under the Statistics Law. Third, it provides firm-level data rather than on an establishment

[15] More importantly, the firm list is precise and frequently updated.

basis.[16]   Although establishment-level data are useful in analyzing production activities, firm-level data are much more appropriate to examine corporate activities as a whole.

The latest available survey is the *F/Y 2001 Basic Survey*.   In using the *Basic Survey*, however, we should note that some of the detailed contents of the questionnaire have changed. A critical change for our research is that the questionnaires from the *F/Y 1995 Basic Survey* do not include information on the performance of foreign affiliates, except the number, industry, and regional location of foreign affiliates.   Moreover, the questionnaires from the *F/Y 1997 Basic Survey* include only East Asia (Asia), Europe, and North America as regional categories. Therefore, this paper uses the *F/Y 1996 Basic Survey*, which is the latest one with enough information to identify the number and industry of affiliates in Latin America and East Asia.

With regards to industry classification, this paper categorizes all sectors other than manufacturing, mining, wholesale trade, and retail trade as "other" sector, because most Japanese firms investing abroad are in the manufacturing and wholesale/retail trade sectors (see Table A2 for industry classification).

*The Survey of Overseas Business Activities of Japanese Companies* is also conducted by MITI.   The survey has been conducted annually since F/Y 1970 to capture overseas business activities of Japanese companies.   In particular, the extensive surveys conducted every three years since F/Y 1980 include more detailed information on overseas business activities.[17]   To investigate intra-regional production networks in Latin America and East Asia, two regions have to be identified as individual regional destinations of sales and purchases of

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[16] The establishment-level micro data in Japan are available on the basis of *Kougyou Toukei Hyou (Census of Manufactures)* and other censuses specializing in production activities.

[17] The detailed survey is called the *Basic Survey of Overseas Business Activities* and the standard survey is the *Trend Survey of Overseas Business Activities*.

Japanese affiliates. Thus, we use the *F/Y 1999 Survey*, which is the latest detailed survey that includes both regions as destinations.

Firms targeted by the survey are those with Japanese affiliates abroad, except firms in finance, insurance, or real estates. While the *Basic Survey* is a designated type with strong legal enforcement as discussed above, the *Survey of Overseas Business Activities* is of the approved type, so that the effective return ratios tend to be as low as 60%. In the case of the *F/Y 1999 Survey*, only 2,151 out of 3,841 parent firms returned the questionnaires (the returned ratio is 56.0%), and the number of Japanese affiliates abroad covered is 13,017. As explained in section 3, Japanese affiliates abroad include both "affiliates abroad" with more than 10% ownership by Japanese parent firms and "affiliates of affiliates abroad" with more than 50% ownership by such "affiliates abroad", but the survey can distinguish the former and the latter if necessary.

The industry classification of the *Survey of Overseas Business Activities* is different from that of the *Basic Survey*. To make them comparable, this paper matches the former with the latter. Note that information on parent firms in finance, insurance, or real estate and their Japanese affiliates abroad is not included.

provided by two anonymous referees are helpful in revising the paper,

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Table 1  The Competitive Industrial Performance Index, 1985 and 1998

Latin America

|  | Rank | | | Index | |
| --- | --- | --- | --- | --- | --- |
|  | 1985 | 1998 | Change | 1985 | 1998 |
| Mexico | 28 | 23 | 5 | 0.125 | 0.246 |
| Brazil | 27 | 33 | -6 | 0.140 | 0.149 |
| Argentina | 29 | 35 | -6 | 0.122 | 0.140 |
| Costa Rica | 44 | 36 | 8 | 0.053 | 0.129 |
| Uruguay | 42 | 43 | -1 | 0.062 | 0.087 |
| Venezuela | 35 | 46 | -11 | 0.085 | 0.060 |
| Chile | 53 | 47 | 6 | 0.030 | 0.056 |
| Guatemala | 56 | 48 | 8 | 0.028 | 0.056 |
| El Salvador | 57 | 52 | 5 | 0.027 | 0.050 |
| Colombia | 49 | 55 | -6 | 0.035 | 0.041 |
| Peru | 48 | 58 | -10 | 0.037 | 0.035 |
| Ecuador | 58 | 61 | -3 | 0.025 | 0.025 |
| Honduras | 66 | 64 | 2 | 0.012 | 0.023 |
| Jamaica | 52 | 65 | -13 | 0.032 | 0.025 |
| Panama | 51 | 66 | -15 | 0.032 | 0.022 |
| Bolivia | 69 | 67 | 2 | 0.009 | 0.021 |
| Nicaragua | 62 | 70 | -8 | 0.020 | 0.017 |
| Paraguay | 63 | 71 | -8 | 0.013 | 0.015 |

East Asia

|  | Rank | | | Index | |
| --- | --- | --- | --- | --- | --- |
|  | 1985 | 1998 | Change | 1985 | 1998 |
| Singapore | 6 | 1 | 5 | 0.587 | 0.883 |
| Japan | 2 | 4 | -2 | 0.725 | 0.696 |
| Taiwan | 19 | 15 | 4 | 0.292 | 0.412 |
| Korea | 22 | 18 | 4 | 0.247 | 0.370 |
| Malaysia | 30 | 22 | 8 | 0.116 | 0.278 |
| Philippines | 45 | 25 | 20 | 0.044 | 0.241 |
| Hong Kong | 18 | 30 | -12 | 0.320 | 0.204 |
| Thailand | 43 | 32 | 11 | 0.058 | 0.172 |
| China | 61 | 37 | 24 | 0.021 | 0.126 |
| Indonesia | 65 | 49 | 16 | 0.012 | 0.054 |

Data source: UNIDO (2002, Table 2).

Note: Countries listed in this table are those with the ranking of more than 87th in 1998.

Figure 1  Expansion of Intra-Regional Trade of Intermediate Goods among the East Asian Countries in the 1990s: Machinery Parts and Components

(a) Export Value of Machinery Parts and Components (Unit: US$100 million)
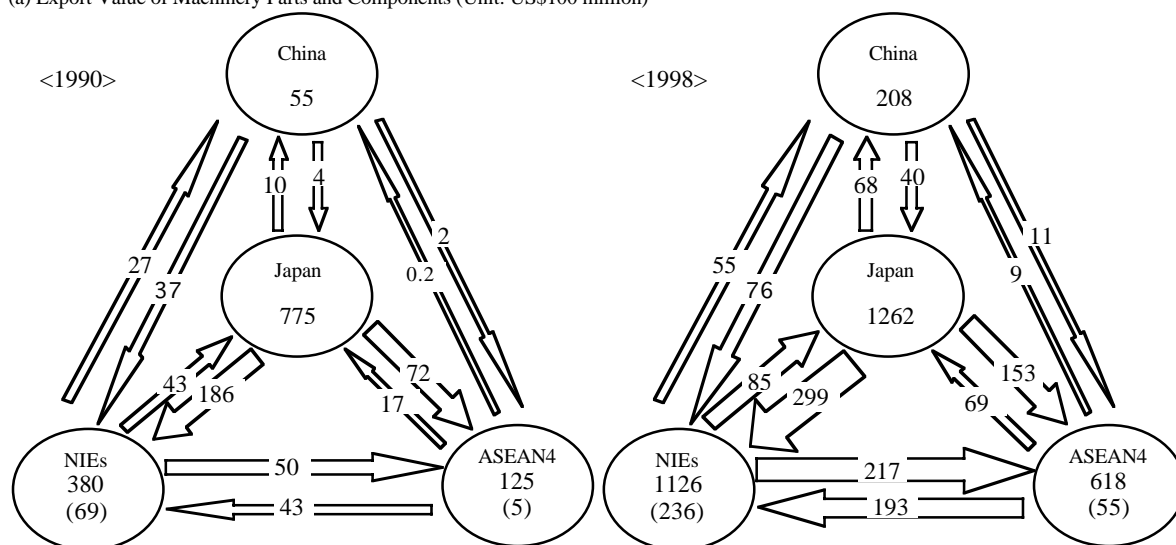


(b) Share of Machinery Parts and Components Exports in Total Machinery Exports
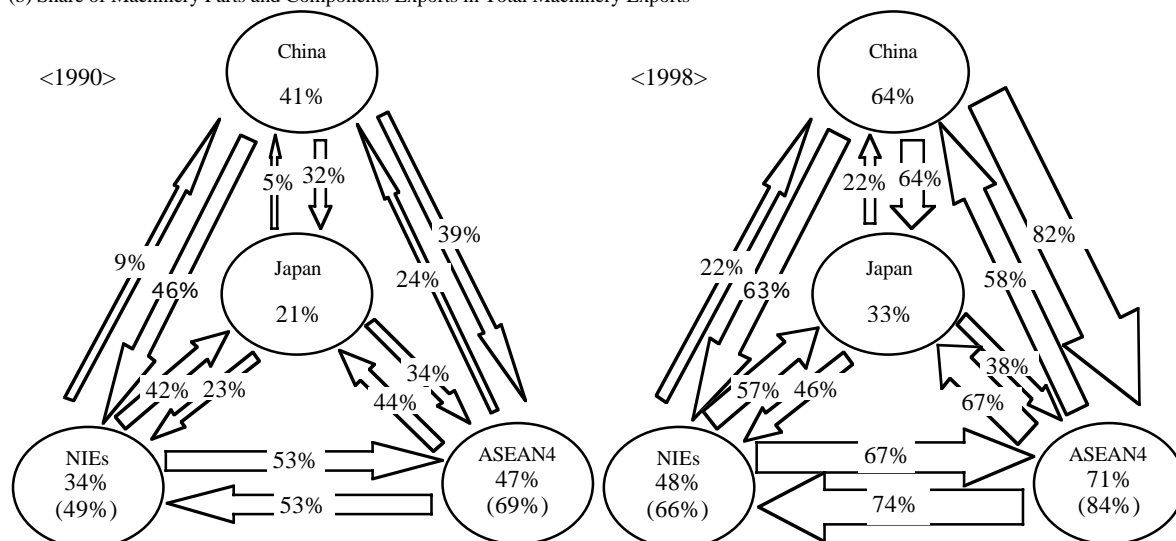


Data source: METI (2001).

Notes:

For figures in 1990, 1991 data are used for Philippines and 1992 data for China and Hong Kong. For figures in 1998, 1996 data are used for Taiwan and 1997 data for Thailand.

Numbers below the names of country/region are values of exports to the world (figures (a)) and shares for exports to the East Asian countries (figures (b)).

Numbers in parentheses for NIEs and ASEAN4 indicate values of inter-regional exports (figure (a)) and shares for inter-regional exports (figure(b)).

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Table 2 The Presence of Affiliates of Japanese and U.S. Firms in the East Asian Economies, 1996
(%)

| | Value Added | | Employment | | Exports | | Imports | |
|---|---|---|---|---|---|---|---|---|
| | Affiliates of Japanese firms | Affiliates of U.S. Firms | Affiliates of Japanese firms | Affiliates of U.S. Firms | Affiliates of Japanese firms | Affiliates of U.S. Firms | Affiliates of Japanese firms | Affiliates of U.S. Firms |
| Korea | 0.46 | 0.49 | 0.33 | 0.17 | 6.95 | n.a. | 6.34 | n.a. |
| Hong Kong | 5.24 | 1.91 | 2.66 | 3.18 | 17.02 | 17.17 | 16.38 | n.a. |
| Singapore | 11.90 | 7.69 | 4.73 | 5.68 | 33.17 | 55.13 | 33.38 | n.a. |
| Malaysia | 4.61 | 4.68 | 2.67 | 1.62 | 13.11 | 18.47 | 15.19 | n.a. |
| Thailand | 4.54 | 1.89 | 0.89 | 0.26 | 33.28 | n.a. | 29.76 | n.a. |
| Philippines | 1.56 | 2.60 | 0.34 | 0.24 | 13.98 | 31.02 | 9.70 | n.a. |
| Indonesia | 1.12 | 2.61 | 0.26 | 0.06 | 11.33 | 18.93 | 15.26 | n.a. |
| China | 0.42 | 0.26 | 0.05 | 0.02 | 3.82 | 5.32 | 4.51 | n.a. |

Data source: Kimura (2002). (Original data sources: MITI (1998), U.S. Department of Commerce (1998), and IMF (2000).)
Notes:

Affiliates of Japanese firms: Affiliates abroad with no less than 10% Japanese ownership (except those whose parent firms are in finance, insurance, or real estates). Data for 1996 F/Y.

The ratio of effective questionnaire returns for the survery of Japanese firms is 59.1%.

Affiliates of U.S. firms: Affiliates abroad with more than 50% U.S. ownership (neither parents nor affiliates are banks). Data for 1996.

The definition of "value added": "sales minus purchases" for affiliates of Japanese firms, and "gross product" for affiliates of U.S. firms.

Value added and exports/imports for affiliates of Japanese firms are estimated by using the data for total NIEs and total ASEAN4.


Table 3  Trade and Outward FDI Patterns of Japan, 1999 and 2000

Trade (Share, %)

| | Exports | | Imports | |
|---|---|---|---|---|
| | 1999 | 2000 | 1999 | 2000 |
| North America | 32.4 | 31.3 | 24.2 | 21.3 |
| Latin America | 4.7 | 4.4 | 3.1 | 2.9 |
| Asia | 37.2 | 41.1 | 39.6 | 41.7 |
| Middle East | 2.6 | 2.3 | 9.8 | 13.0 |
| Europe | 19.3 | 17.7 | 16.9 | 15.1 |
| Africa | 1.3 | 1.1 | 1.3 | 1.3 |
| Pacific | 2.5 | 2.1 | 5.0 | 4.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Outward FDI (Share, %)

| | Cases | | Value | |
|---|---|---|---|---|
| | 1999 | 2000 | 1999 | 2000 |
| North America | 20.7 | 16.6 | 37.1 | 25.3 |
| Latin America | 14.0 | 11.9 | 11.2 | 10.8 |
|    Panama | 6.5 | 2.1 | 6.4 | 2.7 |
|    Cayman Islands | 3.0 | 3.4 | 3.2 | 5.6 |
| Asia | 30.8 | 26.6 | 10.7 | 12.2 |
| Middle East | 0.1 | 0.4 | 0.2 | 0.0 |
| Europe | 29.7 | 42.5 | 38.7 | 50.2 |
|    Netherlands | 13.2 | 15.5 | 18.1 | 5.7 |
|    U.K. | 10.0 | 17.6 | 16.7 | 39.4 |
| Africa | 1.4 | 0.4 | 0.8 | 0.1 |
| Pacific | 3.3 | 1.6 | 1.3 | 1.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Data sources: METI (2001) for trade data and MOF (2002) for FDI data.
Note: Fiscal year for FDI.

Table 4  Japanese Parent Firms and Foreign Affiliates by Industry, 1995 F/Y : Affiliates with no less than 20% Japanese ownership

(a) Parent Firms with Foreign Affiliates

| | By Industry of Parent Firm | | | | By Industry of Affiliate | |
| Industry | Number of Parent Firms | % | Number of Foreign Affiliates | % | Number of Foreign Affiliates | % |
|---|---|---|---|---|---|---|
| 050 | 6 | 0.2 | 12 | 0.1 | 136 | 0.8 |
| 120 | 106 | 3.0 | 365 | 2.0 | 469 | 2.6 |
| 130 | 25 | 0.7 | 194 | 1.1 | 71 | 0.4 |
| 140 | 60 | 1.7 | 137 | 0.8 | 298 | 1.6 |
| 150 | 64 | 1.8 | 151 | 0.8 | 320 | 1.8 |
| 160 | 12 | 0.3 | 21 | 0.1 | 93 | 0.5 |
| 170 | 29 | 0.8 | 51 | 0.3 | 40 | 0.2 |
| 180 | 35 | 1.0 | 92 | 0.5 | 87 | 0.5 |
| 190 | 42 | 1.2 | 133 | 0.7 | 115 | 0.6 |
| 200 | 243 | 7.0 | 1266 | 7.0 | 890 | 4.9 |
| 210 | 16 | 0.5 | 97 | 0.5 | 23 | 0.1 |
| 220 | 128 | 3.7 | 321 | 1.8 | 406 | 2.2 |
| 230 | 41 | 1.2 | 193 | 1.1 | 151 | 0.8 |
| 240 | 2 | 0.1 | 3 | 0.0 | 29 | 0.2 |
| 250 | 71 | 2.0 | 250 | 1.4 | 251 | 1.4 |
| 260 | 55 | 1.6 | 259 | 1.4 | 217 | 1.2 |
| 270 | 86 | 2.5 | 366 | 2.0 | 265 | 1.5 |
| 280 | 131 | 3.8 | 385 | 2.1 | 414 | 2.3 |
| 290 | 351 | 10.1 | 1453 | 8.0 | 918 | 5.1 |
| 300 | 470 | 13.5 | 2672 | 14.8 | 1983 | 10.9 |
| 310 | 259 | 7.4 | 1304 | 7.2 | 971 | 5.4 |
| 320 | 83 | 2.4 | 330 | 1.8 | 276 | 1.5 |
| 340 | 84 | 2.4 | 282 | 1.6 | 286 | 1.6 |
| 480 | 849 | 24.4 | 6938 | 38.3 | 5667 | 31.3 |
| 540 | 136 | 3.9 | 426 | 2.4 | 540 | 3.0 |
| Other | 102 | 2.9 | 412 | 2.3 | 3197 | 17.7 |
| Total | 3486 | 100.0 | 18113 | 100.0 | 18113 | 100.0 |

(b) Parent Firms with Affiliates in Latin America

| | By Industry of Parent Firm | | | | By Industry of Affiliate | |
| Industry | Number of Parent Firms | % | Number of Affiliates in Latin A. | % | Number of Affiliates in Latin A. | % |
|---|---|---|---|---|---|---|
| 050 | 2 | 0.7 | 3 | 0.3 | 13 | 1.2 |
| 120 | 9 | 3.1 | 21 | 1.9 | 22 | 2.0 |
| 130 | 5 | 1.7 | 13 | 1.2 | 4 | 0.4 |
| 140 | 8 | 2.8 | 11 | 1.0 | 24 | 2.2 |
| 150 | 2 | 0.7 | 5 | 0.5 | 3 | 0.3 |
| 160 | 1 | 0.3 | 2 | 0.2 | 10 | 0.9 |
| 170 | 1 | 0.3 | 1 | 0.1 | 2 | 0.2 |
| 180 | 3 | 1.0 | 3 | 0.3 | 3 | 0.3 |
| 190 | 2 | 0.7 | 2 | 0.2 | 2 | 0.2 |
| 200 | 28 | 9.7 | 43 | 3.9 | 26 | 2.3 |
| 210 | 6 | 2.1 | 10 | 0.9 | 1 | 0.1 |
| 220 | 1 | 0.3 | 1 | 0.1 | 3 | 0.3 |
| 230 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| 240 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 250 | 3 | 1.0 | 3 | 0.3 | 1 | 0.1 |
| 260 | 4 | 1.4 | 13 | 1.2 | 9 | 0.8 |
| 270 | 4 | 1.4 | 6 | 0.5 | 7 | 0.6 |
| 280 | 8 | 2.8 | 18 | 1.6 | 15 | 1.4 |
| 290 | 32 | 11.1 | 58 | 5.2 | 36 | 3.2 |
| 300 | 35 | 12.2 | 94 | 8.5 | 68 | 6.1 |
| 310 | 31 | 10.8 | 65 | 5.9 | 40 | 3.6 |
| 320 | 9 | 3.1 | 11 | 1.0 | 6 | 0.5 |
| 340 | 5 | 1.7 | 5 | 0.5 | 3 | 0.3 |
| 480 | 73 | 25.3 | 700 | 63.1 | 308 | 27.7 |
| 540 | 7 | 2.4 | 12 | 1.1 | 18 | 1.6 |
| Other | 9 | 3.1 | 10 | 0.9 | 485 | 43.7 |
| Total | 288 | 100.0 | 1110 | 100.0 | 1110 | 100.0 |

(c) Parent Firms with Affiliates in East Asia

| | By Industry of Parent Firm | | | | By Industry of Affiliate | |
| Industry | Number of Parent Firms | % | Number of Affiliates in East Asia | % | Number of Affiliates in East Asia | % |
|---|---|---|---|---|---|---|
| 050 | 2 | 0.1 | 4 | 0.0 | 22 | 0.2 |
| 120 | 74 | 2.7 | 187 | 2.0 | 289 | 3.2 |
| 130 | 13 | 0.5 | 63 | 0.7 | 30 | 0.3 |
| 140 | 50 | 1.8 | 98 | 1.1 | 227 | 2.5 |
| 150 | 63 | 2.3 | 114 | 1.2 | 295 | 3.2 |
| 160 | 8 | 0.3 | 10 | 0.1 | 42 | 0.5 |
| 170 | 25 | 0.9 | 36 | 0.4 | 32 | 0.4 |
| 180 | 21 | 0.8 | 41 | 0.4 | 60 | 0.7 |
| 190 | 27 | 1.0 | 82 | 0.9 | 82 | 0.9 |
| 200 | 194 | 7.0 | 707 | 7.7 | 560 | 6.1 |
| 210 | 10 | 0.4 | 36 | 0.4 | 15 | 0.2 |
| 220 | 120 | 4.4 | 243 | 2.7 | 307 | 3.4 |
| 230 | 38 | 1.4 | 103 | 1.1 | 98 | 1.1 |
| 240 | 2 | 0.1 | 3 | 0.0 | 26 | 0.3 |
| 250 | 61 | 2.2 | 164 | 1.8 | 170 | 1.9 |
| 260 | 45 | 1.6 | 123 | 1.3 | 131 | 1.4 |
| 270 | 74 | 2.7 | 235 | 2.6 | 171 | 1.9 |
| 280 | 110 | 4.0 | 243 | 2.7 | 314 | 3.4 |
| 290 | 251 | 9.1 | 649 | 7.1 | 516 | 5.7 |
| 300 | 408 | 14.8 | 1513 | 16.6 | 1350 | 14.8 |
| 310 | 196 | 7.1 | 605 | 6.6 | 555 | 6.1 |
| 320 | 66 | 2.4 | 159 | 1.7 | 176 | 1.9 |
| 340 | 67 | 2.4 | 138 | 1.5 | 169 | 1.9 |
| 480 | 668 | 24.3 | 3183 | 34.9 | 2283 | 25.0 |
| 540 | 91 | 3.3 | 234 | 2.6 | 254 | 2.8 |
| Other | 69 | 2.5 | 159 | 1.7 | 958 | 10.5 |
| Total | 2753 | 100.0 | 9132 | 100.0 | 9132 | 100.0 |

(d) Parent Firms with Affiliates in Both Latin America and East Asia

| | By Industry of Parent Firm | |
| Industry | Number of Parent Firms | % |
|---|---|---|
| 050 | 0 | 0.0 |
| 120 | 5 | 2.1 |
| 130 | 4 | 1.7 |
| 140 | 4 | 1.7 |
| 150 | 2 | 0.8 |
| 160 | 0 | 0.0 |
| 170 | 1 | 0.4 |
| 180 | 1 | 0.4 |
| 190 | 1 | 0.4 |
| 200 | 25 | 10.5 |
| 210 | 2 | 0.8 |
| 220 | 1 | 0.4 |
| 230 | 0 | 0.0 |
| 240 | 0 | 0.0 |
| 250 | 2 | 0.8 |
| 260 | 4 | 1.7 |
| 270 | 4 | 1.7 |
| 280 | 7 | 3.0 |
| 290 | 30 | 12.7 |
| 300 | 34 | 14.3 |
| 310 | 28 | 11.8 |
| 320 | 8 | 3.4 |
| 340 | 4 | 1.7 |
| 480 | 59 | 24.9 |
| 540 | 5 | 2.1 |
| Other | 6 | 2.5 |
| Total | 237 | 100.0 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.

Note: "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Table 5  Japanese Parent Firms and Foreign Affiliates by Industry, 1995 F/Y : Affiliates with no less than 50% Japanese ownership

(a) Parent Firms with Foreign Affiliates

| | By Industry of Parent Firm | | | | By Industry of Affiliate | |
|---|---|---|---|---|---|---|
| Industry | Number of Parent Firms | % | Number of Foreign Affiliates | % | Number of Foreign Affiliates | % |
| 050 | 5 | 0.2 | 7 | 0.1 | 95 | 0.8 |
| 120 | 79 | 2.9 | 235 | 1.9 | 247 | 2.0 |
| 130 | 23 | 0.8 | 161 | 1.3 | 53 | 0.4 |
| 140 | 43 | 1.6 | 82 | 0.7 | 142 | 1.1 |
| 150 | 40 | 1.4 | 89 | 0.7 | 138 | 1.1 |
| 160 | 7 | 0.3 | 14 | 0.1 | 48 | 0.4 |
| 170 | 19 | 0.7 | 33 | 0.3 | 19 | 0.2 |
| 180 | 26 | 0.9 | 52 | 0.4 | 45 | 0.4 |
| 190 | 37 | 1.3 | 106 | 0.9 | 82 | 0.7 |
| 200 | 181 | 6.5 | 858 | 6.9 | 493 | 4.0 |
| 210 | 14 | 0.5 | 84 | 0.7 | 14 | 0.1 |
| 220 | 97 | 3.5 | 194 | 1.6 | 232 | 1.9 |
| 230 | 32 | 1.2 | 123 | 1.0 | 90 | 0.7 |
| 240 | 1 | 0.0 | 1 | 0.0 | 9 | 0.1 |
| 250 | 47 | 1.7 | 132 | 1.1 | 120 | 1.0 |
| 260 | 39 | 1.4 | 164 | 1.3 | 104 | 0.8 |
| 270 | 68 | 2.5 | 216 | 1.7 | 139 | 1.1 |
| 280 | 102 | 3.7 | 252 | 2.0 | 235 | 1.9 |
| 290 | 277 | 10.0 | 1057 | 8.5 | 604 | 4.9 |
| 300 | 395 | 14.3 | 2101 | 17.0 | 1409 | 11.4 |
| 310 | 215 | 7.8 | 796 | 6.4 | 486 | 3.9 |
| 320 | 69 | 2.5 | 265 | 2.1 | 212 | 1.7 |
| 340 | 71 | 2.6 | 217 | 1.8 | 203 | 1.6 |
| 480 | 691 | 24.9 | 4507 | 36.4 | 4340 | 35.1 |
| 540 | 116 | 4.2 | 319 | 2.6 | 392 | 3.2 |
| Other | 76 | 2.7 | 302 | 2.4 | 2416 | 19.5 |
| Total | 2770 | 100.0 | 12367 | 100.0 | 12367 | 100.0 |

(b) Parent Firms with Affiliates in Latin America

| | By Industry of Parent Firm | | | | By Industry of Affiliate | |
|---|---|---|---|---|---|---|
| Industry | Number of Parent Firms | % | Number of Affiliates in Latin A. | % | Number of Affiliates in Latin A. | % |
| 050 | 2 | 0.9 | 2 | 0.2 | 6 | 0.7 |
| 120 | 8 | 3.4 | 19 | 2.2 | 15 | 1.7 |
| 130 | 4 | 1.7 | 12 | 1.4 | 4 | 0.5 |
| 140 | 8 | 3.4 | 11 | 1.3 | 19 | 2.2 |
| 150 | 2 | 0.9 | 5 | 0.6 | 3 | 0.3 |
| 160 | 1 | 0.4 | 1 | 0.1 | 5 | 0.6 |
| 170 | 1 | 0.4 | 1 | 0.1 | 2 | 0.2 |
| 180 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| 190 | 1 | 0.4 | 1 | 0.1 | 1 | 0.1 |
| 200 | 21 | 8.9 | 29 | 3.4 | 16 | 1.9 |
| 210 | 5 | 2.1 | 9 | 1.0 | 0 | 0.0 |
| 220 | 1 | 0.4 | 1 | 0.1 | 1 | 0.1 |
| 230 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 240 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 250 | 2 | 0.9 | 2 | 0.2 | 1 | 0.1 |
| 260 | 4 | 1.7 | 7 | 0.8 | 2 | 0.2 |
| 270 | 3 | 1.3 | 4 | 0.5 | 5 | 0.6 |
| 280 | 5 | 2.1 | 10 | 1.2 | 9 | 1.0 |
| 290 | 27 | 11.5 | 49 | 5.7 | 30 | 3.5 |
| 300 | 31 | 13.2 | 73 | 8.5 | 48 | 5.6 |
| 310 | 25 | 10.6 | 44 | 5.1 | 24 | 2.8 |
| 320 | 6 | 2.6 | 8 | 0.9 | 5 | 0.6 |
| 340 | 2 | 0.9 | 2 | 0.2 | 2 | 0.2 |
| 480 | 63 | 26.8 | 553 | 64.2 | 264 | 30.6 |
| 540 | 6 | 2.6 | 11 | 1.3 | 14 | 1.6 |
| Other | 7 | 3.0 | 8 | 0.9 | 385 | 44.7 |
| Total | 235 | 100.0 | 862 | 100.0 | 862 | 100.0 |

(c) Parent Firms with Affiliates in East Asia

| | By Industry of Parent Firm | | | | By Industry of Affiliate | |
|---|---|---|---|---|---|---|
| Industry | Number of Parent Firms | % | Number of Affiliates in East Asia | % | Number of Affiliates in East Asia | % |
| 050 | 1 | 0.0 | 1 | 0.0 | 7 | 0.1 |
| 120 | 51 | 2.5 | 87 | 1.7 | 111 | 2.2 |
| 130 | 11 | 0.5 | 40 | 0.8 | 15 | 0.3 |
| 140 | 33 | 1.6 | 51 | 1.0 | 93 | 1.8 |
| 150 | 37 | 1.8 | 55 | 1.1 | 120 | 2.4 |
| 160 | 4 | 0.2 | 6 | 0.1 | 17 | 0.3 |
| 170 | 15 | 0.7 | 21 | 0.4 | 15 | 0.3 |
| 180 | 15 | 0.7 | 20 | 0.4 | 31 | 0.6 |
| 190 | 24 | 1.2 | 62 | 1.2 | 54 | 1.1 |
| 200 | 129 | 6.4 | 387 | 7.6 | 245 | 4.8 |
| 210 | 9 | 0.4 | 25 | 0.5 | 7 | 0.1 |
| 220 | 82 | 4.1 | 129 | 2.5 | 163 | 3.2 |
| 230 | 27 | 1.3 | 59 | 1.2 | 53 | 1.0 |
| 240 | 1 | 0.0 | 1 | 0.0 | 9 | 0.2 |
| 250 | 36 | 1.8 | 68 | 1.3 | 65 | 1.3 |
| 260 | 29 | 1.4 | 63 | 1.2 | 53 | 1.0 |
| 270 | 58 | 2.9 | 122 | 2.4 | 83 | 1.6 |
| 280 | 82 | 4.1 | 145 | 2.8 | 164 | 3.2 |
| 290 | 181 | 9.0 | 386 | 7.6 | 281 | 5.5 |
| 300 | 333 | 16.6 | 1089 | 21.4 | 912 | 17.9 |
| 310 | 120 | 6.0 | 242 | 4.7 | 191 | 3.7 |
| 320 | 52 | 2.6 | 114 | 2.2 | 129 | 2.5 |
| 340 | 52 | 2.6 | 92 | 1.8 | 107 | 2.1 |
| 480 | 511 | 25.5 | 1593 | 31.3 | 1472 | 28.9 |
| 540 | 68 | 3.4 | 155 | 3.0 | 155 | 3.0 |
| Other | 45 | 2.2 | 83 | 1.6 | 544 | 10.7 |
| Total | 2006 | 100.0 | 5096 | 100.0 | 5096 | 100.0 |

(d) Parent Firms with Affiliates in Both Latin America and East Asia

| | By Industry of Parent Firm | |
|---|---|---|
| Industry | Number of Parent Firms | % |
| 050 | 0 | 0.0 |
| 120 | 4 | 2.2 |
| 130 | 4 | 2.2 |
| 140 | 3 | 1.6 |
| 150 | 1 | 0.5 |
| 160 | 0 | 0.0 |
| 170 | 0 | 0.0 |
| 180 | 0 | 0.0 |
| 190 | 1 | 0.5 |
| 200 | 19 | 10.3 |
| 210 | 2 | 1.1 |
| 220 | 0 | 0.0 |
| 230 | 0 | 0.0 |
| 240 | 0 | 0.0 |
| 250 | 1 | 0.5 |
| 260 | 4 | 2.2 |
| 270 | 2 | 1.1 |
| 280 | 4 | 2.2 |
| 290 | 25 | 13.5 |
| 300 | 30 | 16.2 |
| 310 | 20 | 10.8 |
| 320 | 5 | 2.7 |
| 340 | 2 | 1.1 |
| 480 | 50 | 27.0 |
| 540 | 3 | 1.6 |
| Other | 5 | 2.7 |
| Total | 185 | 100.0 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.

Note: "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Table 6  Industries of Japanese Parent Firms and Affiliates in Latin America, 1995 F/Y (number of affiliates in Latin America)

| Industry of Parent Firm | Industry of Affiliate in Latin America | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 050 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220 | 230 | 240 | 250 | 260 | 270 | 280 | 290 | 300 | 310 | 320 | 340 | 480 | 540 | Other | Total |
| 050 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 120 | | 5 | 1 | | | | | | | | | | | | | | | | | | | | | 5 | 2 | 8 | 21 |
| 130 | | | 2 | | | | | | | 1 | | | | | | | | | | | | | | 1 | | 9 | 13 |
| 140 | | | | 9 | | | | | | | | | | | | | | | | | | | | 1 | | 1 | 11 |
| 150 | | | | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | 5 |
| 160 | | | | | | 1 | | | | | | | | | | | | | | | | | | 1 | | | 2 |
| 170 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | 1 |
| 180 | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 3 |
| 190 | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | 2 |
| 200 | | 4 | | 6 | | | | | | 18 | | 2 | | | | | | | | | | | | 5 | | 8 | 43 |
| 210 | | | | | | | | | | | | | | | | | | | | | | | | 7 | | 3 | 10 |
| 220 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 |
| 230 | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 240 | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 250 | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | | 1 | 3 |
| 260 | | | | | | | | | | | 1 | | | | | 5 | | | | | | | 1 | 1 | | 5 | 13 |
| 270 | 2 | | | | | | | | | | | | | | | | 3 | | | | 1 | | | | | | 6 |
| 280 | 1 | | | | | | | | | | | | | | | | | 11 | | | | | | 1 | | 5 | 18 |
| 290 | | | | | | | | | | | | | | | | | | | 26 | 1 | 2 | | | 17 | | 12 | 58 |
| 300 | | | | | | | | | | | | | | | | | | 1 | 5 | 46 | | 1 | | 33 | | 8 | 94 |
| 310 | | | | | | | | | | | | | | | | | | 1 | | 1 | 33 | | | 11 | 1 | 18 | 65 |
| 320 | | | | | | | | | | | | | | | | | | | | | | 3 | | 5 | 1 | 2 | 11 |
| 340 | | | | | | | | | | | | | | | | | | | | | | | 2 | 3 | | | 5 |
| 480 | 7 | 13 | 1 | 7 | | 6 | 1 | 3 | | 6 | | | 1 | | | 4 | 3 | 2 | 5 | 18 | 4 | 1 | 1 | 217 | 10 | 390 | 700 |
| 540 | | | | | | 3 | | | | | | | | | | | | | | | | 1 | | | 4 | 4 | 12 |
| Other | | | | | | | | | | | | 1 | | | | | | | | 2 | | | | | | 7 | 10 |
| Total | 13 | 22 | 4 | 24 | 3 | 10 | 2 | 3 | 2 | 26 | 1 | 3 | 1 | 0 | 1 | 9 | 7 | 15 | 36 | 68 | 40 | 6 | 3 | 308 | 18 | 485 | 1110 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.
Note: affiliates in Latin America are those with no less than 20% Japanese ownership.

Table 7  Industries of Japanese Parent Firms and Affiliates in East Asia, 1995 F/Y (number of affiliates in East Asia)

| Industry of Parent Firm | Industry of Affiliate in East Asia | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 050 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220 | 230 | 240 | 250 | 260 | 270 | 280 | 290 | 300 | 310 | 320 | 340 | 480 | 540 | Other | Total |
| 050 | 3 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 4 |
| 120 | | 150 | 1 | | | | | | | 1 | | | | | | | | | | | | | | 23 | 2 | 10 | 187 |
| 130 | | 3 | 18 | | | | | | | 7 | | | | | | | | | | | | 1 | | 5 | 1 | 28 | 63 |
| 140 | | | | 68 | 12 | | | | | | | 2 | | | | | | | 1 | | 1 | | 1 | 13 | | | 98 |
| 150 | | | 3 | | 89 | | | | | | | | 3 | | | | | | | | | | 2 | 15 | 1 | 1 | 114 |
| 160 | | | | | 10 | | | | | | | | | | | | | | | | | | | | | | 10 |
| 170 | | | | | 1 | 23 | | | | | | | | | 1 | | | 1 | | | | 1 | 2 | 3 | 2 | 2 | 36 |
| 180 | | | | | | | 36 | 1 | | | | | | | | | | | | | | | 1 | 3 | | | 41 |
| 190 | | | | | | | | | 69 | | | | | | | | | | 2 | | | | 1 | 3 | 1 | 6 | 82 |
| 200 | | 9 | 2 | 30 | 5 | 1 | | 4 | 4 | 410 | 2 | 23 | | | 5 | | 4 | 8 | 5 | 2 | 2 | 2 | 6 | 137 | 12 | 34 | 707 |
| 210 | 1 | | | | | | | | | 2 | 7 | 2 | | | | | | | | | | | | 8 | 7 | 9 | 36 |
| 220 | | | | | | | | | | 7 | | 198 | 2 | | | | 1 | 6 | 5 | 3 | | | 3 | 15 | 2 | 1 | 243 |
| 230 | | | 1 | | | | | | | 1 | | 2 | 72 | | | | | 1 | | | | | 1 | 22 | 2 | 1 | 103 |
| 240 | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | 3 |
| 250 | 4 | 1 | | 6 | | | 1 | | | 4 | | 2 | | | 93 | | | 9 | 2 | 4 | | | 1 | 18 | 10 | 9 | 164 |
| 260 | | | | | | | | | | 4 | | 1 | | | | 47 | 3 | 14 | 4 | 10 | 4 | | 3 | 6 | | 27 | 123 |
| 270 | 5 | | | | | | | | | 1 | | 1 | 1 | | 2 | 126 | 13 | 2 | 26 | 10 | | | 1 | 23 | | 24 | 235 |
| 280 | 1 | 1 | | 1 | | 1 | | 1 | | 1 | 1 | | | | 1 | 1 | 2 | 166 | | 21 | 5 | 1 | 1 | 26 | 3 | 9 | 243 |
| 290 | | 3 | | | | | 1 | 2 | | 2 | | 1 | | | | 6 | 4 | 8 | 325 | 29 | 18 | 8 | 5 | 188 | 7 | 42 | 649 |
| 300 | | | | 2 | | 1 | 1 | | | 4 | | 11 | | | 6 | 1 | 6 | 7 | 61 | 997 | 3 | 26 | 2 | 244 | 7 | 134 | 1513 |
| 310 | | | | 1 | | 1 | | | | | | 1 | | | 2 | 7 | 1 | 6 | 23 | 11 | 471 | 1 | | 43 | 5 | 32 | 605 |
| 320 | | | | | | | | | | 1 | | | | | | | | | 5 | 9 | | 111 | 2 | 22 | 3 | 6 | 159 |
| 340 | | | | 2 | 2 | | | 1 | | | | 2 | | | 1 | 1 | | 3 | 1 | 3 | | | 83 | 23 | 5 | 11 | 138 |
| 480 | 8 | 118 | 8 | 115 | 170 | 25 | 5 | 18 | 4 | 113 | 6 | 58 | 22 | 20 | 53 | 67 | 21 | 70 | 65 | 233 | 34 | 20 | 50 | 1406 | 57 | 417 | 3183 |
| 540 | | 4 | | 4 | 12 | 1 | 1 | | | 1 | | 1 | | | 2 | | 2 | | | | 4 | 4 | 4 | 27 | 125 | 42 | 234 |
| Other | | | | 2 | 1 | | | | | 1 | | 1 | | | 4 | 1 | | 2 | 15 | 2 | 3 | 1 | | 10 | 2 | 113 | 159 |
| Total | 22 | 289 | 30 | 227 | 295 | 42 | 32 | 60 | 82 | 560 | 15 | 307 | 98 | 26 | 170 | 131 | 171 | 314 | 516 | 1350 | 555 | 176 | 169 | 2283 | 254 | 958 | 9132 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.
Notes:
    Affiliates in East Asia are those with no less than 20% Japanese ownership.
    "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Table 8  Foreign Affiliate Ownership Patterns of Japanese Parent Firms, 1995 F/Y (number of parent firms) : Affiliates in Latin America

Parent Firms: All Industries

| Number of Regular workers of Parent Firm | Number of Affiliates in Latin America | | | | | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | More than 10 | | |
| 50 to 99 | 15 | 1 | | | | | | | | 1 | | 17 | 5.9 |
| 100 to 199 | 15 | 2 | | | | | | | | | | 17 | 5.9 |
| 200 to 299 | 6 | 3 | 1 | | 1 | | | | | | | 11 | 3.8 |
| 300 to 499 | 22 | 5 | | 2 | | | | | | | | 29 | 10.1 |
| 500 to 999 | 27 | 2 | | | 2 | | | | | | | 31 | 10.8 |
| 1,000 and more | 89 | 37 | 22 | 5 | 7 | 7 | 2 | 1 | 1 | 2 | 10 | 183 | 63.5 |
| Total | 174 | 50 | 23 | 7 | 10 | 7 | 2 | 1 | 1 | 3 | 10 | 288 | 100.0 |

Parent Firms: Manufacturing sector

| Number of Regular workers of Parent Firm | Number of Affiliates in Latin America | | | | | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | More than 10 | | |
| 50 to 99 | 7 | | | | | | | | | | | 7 | 3.6 |
| 100 to 199 | 8 | 2 | | | | | | | | | | 10 | 5.1 |
| 200 to 299 | 3 | 2 | | | | | | | | | | 5 | 2.5 |
| 300 to 499 | 10 | 4 | | 1 | | | | | | | | 15 | 7.6 |
| 500 to 999 | 16 | 1 | | | 1 | | | | | | | 18 | 9.1 |
| 1,000 and more | 72 | 30 | 19 | 4 | 6 | 6 | 2 | | 1 | 2 | 0 | 142 | 72.1 |
| Total | 116 | 39 | 19 | 5 | 7 | 6 | 2 | 0 | 1 | 2 | 0 | 197 | 100.0 |

Parent Firms: Machinery sector

| Number of Regular workers of Parent Firm | Number of Affiliates in Latin America | | | | | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | More than 10 | | |
| 50 to 99 | 3 | | | | | | | | | | | 3 | 2.8 |
| 100 to 199 | 3 | 2 | | | | | | | | | | 5 | 4.7 |
| 200 to 299 | 2 | 2 | | | | | | | | | | 4 | 3.7 |
| 300 to 499 | 1 | 2 | 1 | | | | | | | | | 4 | 3.7 |
| 500 to 999 | 6 | 1 | | | | | | | | | | 7 | 6.5 |
| 1,000 and more | 46 | 15 | 8 | 3 | 2 | 5 | 2 | | 1 | 2 | | 84 | 78.5 |
| Total | 61 | 22 | 9 | 3 | 2 | 5 | 2 | 0 | 1 | 2 | 0 | 107 | 100.0 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.
Note: affiliates in Latin America are those with no less than 20% Japanese ownership.


Table 9  Foreign Affiliate Ownership Patterns of Japanese Parent Firms, 1995 F/Y (number of parent firms) : Affiliates in East Asia

Parent Firms: All Industries

| Number of Regular workers of Parent Firm | Number of Affiliates in East Aisa | | | | | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | More than 10 | | |
| 50 to 99 | 249 | 59 | 21 | 5 | 1 | | 1 | | | 1 | 2 | 339 | 12.3 |
| 100 to 199 | 363 | 93 | 32 | 11 | 4 | 2 | 3 | 1 | | 1 | 1 | 511 | 18.6 |
| 200 to 299 | 182 | 67 | 20 | 13 | 7 | 5 | 2 | | | | | 296 | 10.8 |
| 300 to 499 | 227 | 102 | 35 | 18 | 16 | 4 | 3 | 2 | 2 | 2 | 7 | 418 | 15.2 |
| 500 to 999 | 215 | 111 | 57 | 33 | 11 | 10 | 7 | 6 | 2 | 3 | 4 | 459 | 16.7 |
| 1,000 and more | 186 | 105 | 80 | 69 | 53 | 43 | 32 | 21 | 22 | 15 | 104 | 730 | 26.5 |
| Total | 1422 | 537 | 245 | 149 | 92 | 64 | 48 | 30 | 26 | 22 | 118 | 2753 | 100.0 |

Parent Firms: Manufacturing sector

| Number of Regular workers of Parent Firm | Number of Affiliates in East Asia | | | | | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | More than 10 | | |
| 50 to 99 | 146 | 29 | 7 | 1 | 1 | | | | | | | 184 | 9.6 |
| 100 to 199 | 256 | 52 | 17 | 4 | 2 | 1 | | 1 | | 1 | 1 | 335 | 17.4 |
| 200 to 299 | 138 | 45 | 12 | 9 | 2 | 3 | | | | | | 209 | 10.9 |
| 300 to 499 | 171 | 77 | 22 | 14 | 11 | 2 | 2 | 2 | | 2 | 3 | 306 | 15.9 |
| 500 to 999 | 174 | 87 | 39 | 23 | 6 | 6 | 5 | 4 | 1 | 1 | | 346 | 18.0 |
| 1,000 and more | 122 | 80 | 61 | 50 | 40 | 38 | 29 | 19 | 19 | 12 | 73 | 543 | 28.2 |
| Total | 1007 | 370 | 158 | 101 | 62 | 50 | 36 | 26 | 20 | 16 | 77 | 1923 | 100.0 |

Parent Firms: Machinery sector

| Number of Regular workers of Parent Firm | Number of Affiliates in East Asia | | | | | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | More than 10 | | |
| 50 to 99 | 55 | 17 | | 4 | 1 | | | | | | | 77 | 8.4 |
| 100 to 199 | 95 | 23 | 11 | 2 | | 1 | | | | | 1 | 133 | 14.4 |
| 200 to 299 | 65 | 19 | 6 | 7 | 2 | | | | | | | 99 | 10.7 |
| 300 to 499 | 82 | 40 | 12 | 6 | 5 | | 2 | 1 | | 1 | 1 | 150 | 16.3 |
| 500 to 999 | 91 | 45 | 21 | 9 | 4 | 2 | 1 | 2 | 1 | 1 | | 177 | 19.2 |
| 1,000 and more | 62 | 35 | 32 | 27 | 28 | 20 | 16 | 8 | 14 | 7 | 36 | 285 | 30.9 |
| Total | 450 | 179 | 82 | 55 | 40 | 23 | 19 | 11 | 15 | 9 | 38 | 921 | 100.0 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.
Notes:
    Affiliates in East Asia are those with no less than 20% Japanese ownership.
    "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Table 10  Logit Estimation: Japanese Parent Firms, 1995 F/Y

| | Dependent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Having Foreign Affiliates = 1; Not Having Foreign Affiliates = 0 | | Having Affiliates in Latin America = 1; Not Having Affiliates in Latin America = 0 | | Having Affiliates in East Asia = 1; Not Having Affiliates in East Asia = 0 | |
| Variable | (1) | (1a) | (2) | (2a) | (3) | (3a) |
| Constant | -5.547 *** | -5.366 *** | -11.107 *** | -11.260 *** | -5.713 *** | -5.609 *** |
| | (-42.82) | (-41.59) | (-30.53) | (-29.20) | (-42.77) | (-41.97) |
| Number of relgular workers (log) | 0.694 *** | 0.654 *** | 1.075 *** | 1.077 *** | 0.693 *** | 0.669 *** |
| | (31.00) | (29.29) | (20.90) | (19.96) | (30.22) | (29.15) |
| Tangible assets per regular workers | 0.010 *** | 0.006 *** | 0.007 *** | 0.004 ** | 0.003 * | 0.001 |
| | (6.55) | (3.94) | (2.81) | (2.40) | (1.66) | (0.67) |
| Foreign sales: ratio to total sales | 7.132 *** | 6.899 *** | 3.942 *** | 3.843 *** | 5.146 *** | 5.108 *** |
| | (25.06) | (25.08) | (12.86) | (11.84) | (22.84) | ( 22.91) |
| R&D expenditure: ratio to total sales | 9.565 *** | 10.323 *** | 1.774 | 2.746 | 6.160 *** | 6.432 *** |
| | (8.50) | (9.15) | (0.93) | (1.44) | (6.02) | ( 6.24) |
| Advertisement expenditure: ratio to total sales | -0.122 | -0.247 | -1.837 | -3.826 | -1.546 | -1.541 |
| | (-0.14) | (-0.27) | (-0.45) | (-0.78) | (-1.19) | (-1.17) |
| | | | | | | |
| Log likelihood | -5948.385 | -5837.231 | -898.884 | -799.482 | -5425.176 | -5342.816 |
| Number of observations | 13623 | 13623 | 13623 | 13623 | 13623 | 13623 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.
Notes:
  Numbers in parentheses are t-statistics.
  Affiliates are those with no less than 20% Japanese ownership.
  Equations (1a), (2a), and (3a): Affiliates in the "other" sector are excluded. Thus, firms that have affiliate(s) only in the "other" sector are regarded as those without having affiliates.
  "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.
  *** Significant at the 1 percent level.
  ** Significant at the 5 percent level.
  * Significant at the 10 percent level.


Table 11  Logit Estimation: Japanese Manufacturing Parent Firms, 1995 F/Y

| | Dependent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Having Foreign Affiliates = 1; Not Having Foreign Affiliates = 0 | | Having Affiliates in Latin America = 1; Not Having Affiliates in Latin America = 0 | | Having Affiliates in East Asia = 1; Not Having Affiliates in East Asia = 0 | |
| Variable | (1) | (1a) | (2) | (2a) | (3) | (3a) |
| Constant | -5.769 *** | -5.714 *** | -11.798 *** | -11.967 *** | -5.924 *** | -5.915 *** |
| | (-35.19) | (-34.94) | (-25.48) | (-24.54) | (-35.63) | (-35.50) |
| Number of relgular workers (log) | 0.775 *** | 0.763 *** | 1.170 *** | 1.178 *** | 0.770 *** | 0.768 *** |
| | (26.97) | (26.61) | (18.13) | (17.45) | (26.74) | (26.60) |
| Tangible assets per regular workers | 0.006 *** | 0.001 | 0.013 *** | 0.010 ** | 0.000 | -0.002 |
| | (2.93) | (0.76) | (3.65) | (2.49) | (0.09) | (-1.01) |
| Foreign sales: ratio to total sales | 6.200 *** | 5.938 *** | 3.187 *** | 2.869 *** | 4.275 *** | 4.284 *** |
| | (20.10) | (19.92) | (8.18) | (6.80) | (17.61) | (17.69) |
| R&D expenditure: ratio to total sales | 6.341 *** | 6.766 *** | 1.629 | 2.684 | 3.469 *** | 3.488 *** |
| | (5.51) | (5.82) | (0.77) | (1.29) | (3.39) | (3.41) |
| Advertisement expenditure: ratio to total sales | 0.846 | 0.586 | 0.308 | 0.951 | -0.030 | -0.116 |
| | (0.79) | (0.58) | (0.10) | (0.39) | (-0.03) | (-0.10) |
| | | | | | | |
| Log likelihood | -3994.629 | -3955.001 | -597.942 | -540.501 | -3715.727 | -3686.371 |
| Number of observations | 8577 | 8577 | 8577 | 8577 | 8577 | 8577 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.
Notes:
  Numbers in parentheses are t-statistics.
  Affiliates are those with no less than 20% Japanese ownership.
  Equations (1a), (2a), and (3a): Affiliates in the "other" sector are excluded. Thus, firms that have affiliate(s) only in the "other" sector are regarded as those without having affiliates.
  "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.
  *** Significant at the 1 percent level.
  ** Significant at the 5 percent level.

Table 12  Performance of Japanese Affiliates Abroad

(a) Japanese Affiliates Abroad

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Total assets (million yen) | 12870 | 6982 | 50398 | 0 | 4137149 |
| Tangible assets (million yen) | 12759 | 1697 | 18500 | 0 | 1787838 |
| Total sales (million yen) | 9385 | 10856 | 69636 | 0 | 2924415 |
| Total purchases (million yen) | 8118 | 8051 | 54291 | 0 | 2535429 |
| Number of regular workers | 11863 | 232 | 910 | 0 | 45639 |
| Production (million yen) | 4788 | 5197 | 73574 | 0 | 4890000 |
| Operating surplus (million yen) | 12407 | 2805 | 37703 | -365245 | 2256418 |
| Value added (million yen) | 12387 | 3049 | 37907 | -365245 | 2256418 |

(b) Japanese Affiliates in Latin America

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Total assets (million yen) | 799 | 6300 | 31361 | 0 | 548366 |
| Tangible assets (million yen) | 787 | 1953 | 14252 | 0 | 231723 |
| Total sales (million yen) | 516 | 7714 | 25604 | 0 | 337905 |
| Total purchases (million yen) | 374 | 5090 | 15284 | 0 | 150975 |
| Number of regular workers | 717 | 180 | 556 | 0 | 8598 |
| Production (million yen) | 202 | 2969 | 7068 | 0 | 47101 |
| Operating surplus (million yen) | 779 | 1958 | 15500 | -16996 | 337905 |
| Value added (million yen) | 779 | 2068 | 15525 | -16996 | 337905 |

(c) Japanese Affiliates in East Asia

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Total assets (million yen) | 6145 | 3370 | 11634 | 0 | 312875 |
| Tangible assets (million yen) | 6083 | 1099 | 6087 | 0 | 329538 |
| Total sales (million yen) | 4824 | 4817 | 20937 | 0 | 547860 |
| Total purchases (million yen) | 4187 | 3636 | 17261 | 0 | 547772 |
| Number of regular workers | 5763 | 268 | 609 | 0 | 10211 |
| Production (million yen) | 2796 | 4467 | 92831 | 0 | 4890000 |
| Operating surplus (million yen) | 5922 | 1203 | 13246 | -164761 | 468672 |
| Value added (million yen) | 5914 | 1291 | 13242 | -164761 | 468672 |

Data source: MITI database, the 1999 F/Y Survey of Overseas Business Activities of Japanese Companies.
Notes:

   Japanese affiliates are both "affiliates abroad" with no less than 10% ownership by Japanese parent firms and "affiliates of affiliates abroad" with no less than 50% ownership by such "affiliates abroad" (except those of parent firms in fiance, insurance, or real estates).

   The ratio of effective questionnaire returns for the 1999 F/Y Survey is only 56%.

   "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Table 13   Intra-Regional Production Networks: Sales and Purchases by Japanese Affiliates in Latin America, 1998 F/Y

(a) Sales of Japanese Affiliates in Latin America

| Industry | Number of Japanese Affiliates in Latin A. | % | Total Sales (million yen) | % | Local | Japan | Third Countries (Total) | Latin A. | North A. |
|---|---|---|---|---|---|---|---|---|---|
| 050 | 22 | 2.8 | 210308 | 5.3 | 8.1 | 37.0 | 54.8 | 12.9 | 5.1 |
| 120+130 | 11 | 1.4 | 77160 | 1.9 | 78.6 | 9.1 | 12.3 | 0.9 | 1.6 |
| 140+150 | 30 | 3.8 | 60881 | 1.5 | 86.0 | 6.3 | 7.7 | 2.5 | 4.8 |
| 160 | 6 | 0.8 | 4280 | 0.1 | 27.8 | 22.8 | 49.4 | 4.3 | 31.1 |
| 170 | 0 | 0.0 | | | | | | | |
| 180 | 2 | 0.3 | 36815 | 0.9 | 9.5 | 37.9 | 52.6 | 4.5 | 13.4 |
| 190 | 0 | 0.0 | | | | | | | |
| 200 | 23 | 2.9 | 64816 | 1.6 | 88.1 | 0.4 | 11.5 | 8.1 | 2.8 |
| 210 | 2 | 0.3 | 1602 | 0.0 | 95.8 | 4.2 | 0.0 | 0.0 | 0.0 |
| 220 | 2 | 0.3 | 567 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 230 | 0 | 0.0 | | | | | | | |
| 240 | 0 | 0.0 | | | | | | | |
| 250 | 6 | 0.8 | 8830 | 0.2 | 23.7 | 1.7 | 74.6 | 0.0 | 74.6 |
| 260 | 9 | 1.1 | 23575 | 0.6 | 97.1 | 2.9 | 0.0 | 0.0 | 0.0 |
| 270 | 4 | 0.5 | 101311 | 2.5 | 23.6 | 28.7 | 47.7 | 0.0 | 17.0 |
| 280 | 4 | 0.5 | 8766 | 0.2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 290 | 24 | 3.0 | 58976 | 1.5 | 74.7 | 2.5 | 22.8 | 1.0 | 17.3 |
| 300 | 64 | 8.0 | 406293 | 10.2 | 78.8 | 5.2 | 16.0 | 2.5 | 12.9 |
| 310 | 60 | 7.5 | 789548 | 19.8 | 83.1 | 0.4 | 16.5 | 2.9 | 13.2 |
| 320 | 6 | 0.8 | 12816 | 0.3 | 82.9 | 1.3 | 15.8 | 8.7 | 4.0 |
| 330+340 | 8 | 1.0 | 8945 | 0.2 | 50.5 | 45.0 | 4.6 | 0.0 | 4.6 |
| 480 | 157 | 19.7 | 1861388 | 46.8 | 69.7 | 6.7 | 23.7 | 21.0 | 2.0 |
| 540 | 15 | 1.9 | 49661 | 1.2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | 342 | 42.9 | 193722 | 4.9 | 41.1 | 35.2 | 23.7 | 0.7 | 1.9 |
| Total | 797 | 100.0 | 3980260 | 100.0 | 62.7 | 11.8 | 25.5 | 11.2 | 6.5 |

(b) Purchases of Japanese Affiliates in Latin America

| Industry | Number of Japanese Affiliates in Latin A. | % | Total Purchases (million yen) | % | Local | Japan | Third Countries (Total) | Latin A. | North A. |
|---|---|---|---|---|---|---|---|---|---|
| 050 | 22 | 2.8 | 23556 | 1.2 | 86.0 | 0.0 | 14.0 | 0.0 | 14.0 |
| 120+130 | 11 | 1.4 | 34822 | 1.8 | 99.6 | 0.0 | 0.4 | 0.0 | 0.4 |
| 140+150 | 30 | 3.8 | 22201 | 1.2 | 67.6 | 2.6 | 29.8 | 8.9 | 13.6 |
| 160 | 6 | 0.8 | 1976 | 0.1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170 | 0 | 0.0 | | | | | | | |
| 180 | 2 | 0.3 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 190 | 0 | 0.0 | | | | | | | |
| 200 | 23 | 2.9 | 22683 | 1.2 | 72.0 | 5.9 | 22.1 | 0.9 | 20.7 |
| 210 | 2 | 0.3 | 723 | 0.0 | 86.6 | 1.7 | 11.8 | 0.0 | 11.8 |
| 220 | 2 | 0.3 | 87 | 0.0 | 95.4 | 4.6 | 0.0 | 0.0 | 0.0 |
| 230 | 0 | 0.0 | | | | | | | |
| 240 | 0 | 0.0 | | | | | | | |
| 250 | 6 | 0.8 | 5240 | 0.3 | 15.5 | 13.7 | 70.7 | 0.0 | 58.5 |
| 260 | 9 | 1.1 | 10420 | 0.5 | 37.9 | 42.5 | 19.6 | 0.0 | 17.7 |
| 270 | 4 | 0.5 | 54006 | 2.8 | 85.7 | 0.0 | 14.3 | 0.0 | 14.3 |
| 280 | 4 | 0.5 | 1104 | 0.1 | 52.4 | 26.7 | 20.9 | 0.0 | 20.9 |
| 290 | 24 | 3.0 | 22903 | 1.2 | 58.1 | 28.4 | 13.5 | 0.1 | 7.9 |
| 300 | 64 | 8.0 | 301944 | 15.9 | 46.3 | 33.1 | 20.6 | 0.1 | 2.1 |
| 310 | 60 | 7.5 | 328989 | 17.3 | 39.3 | 48.9 | 11.7 | 0.0 | 9.4 |
| 320 | 6 | 0.8 | 7086 | 0.4 | 44.7 | 38.9 | 16.5 | 0.0 | 0.1 |
| 330+340 | 8 | 1.0 | 3460 | 0.2 | 16.0 | 26.7 | 57.3 | 0.0 | 57.3 |
| 480 | 157 | 19.7 | 972718 | 51.2 | 23.6 | 51.1 | 25.3 | 5.2 | 15.2 |
| 540 | 15 | 1.9 | 15907 | 0.8 | 55.8 | 31.1 | 13.1 | 0.0 | 13.1 |
| Other | 342 | 42.9 | 71649 | 3.8 | 46.7 | 40.0 | 13.2 | 3.9 | 3.3 |
| Total | 797 | 100.0 | 1901474 | 100.0 | 38.8 | 40.3 | 20.9 | 3.1 | 11.9 |

Data source: MITI database, the 1999 F/Y Survey of Overseas Business Activities of Japanese Companies.
Notes:

   Japanese affiliates are both "affiliates abroad" with no less than 10% ownership by Japanese parent firms and "affiliates of affiliates abroad" with no less than 50% ownership by such "affiliates abroad" (except those of parent firms in fiance, insurance, or real estates).

   The ratio of effective questionnaire returns for the 1999 F/Y Survey is only 56%.

Table 14  Intra-Regional Production Networks: Sales and Purchases by Japanese Affiliates in East Asia, 1998 F/Y

(a) Sales of Japanese Affiliates in East Asia

| Industry | Number of Japanese Affiliates in East Asia | % | Total Sales (million yen) | % | Local | Japan | Third Countries (Total) | E.Asia | North A. |
|---|---|---|---|---|---|---|---|---|---|
| 050 | 11 | 0.2 | 22074 | 0.1 | 32.9 | 67.1 | 0.0 | 0.0 | 0.0 |
| 120+130 | 157 | 2.6 | 339508 | 1.5 | 69.1 | 16.0 | 14.8 | 6.5 | 3.3 |
| 140+150 | 396 | 6.5 | 500496 | 2.2 | 43.6 | 30.1 | 26.3 | 12.3 | 5.0 |
| 160 | 23 | 0.4 | 17204 | 0.1 | 15.3 | 56.3 | 28.3 | 24.0 | 0.9 |
| 170 | 14 | 0.2 | 7073 | 0.0 | 52.8 | 34.3 | 12.9 | 8.8 | 4.0 |
| 180 | 36 | 0.6 | 50256 | 0.2 | 74.2 | 12.5 | 13.3 | 9.0 | 3.5 |
| 190 | 27 | 0.4 | 27536 | 0.1 | 77.8 | 0.4 | 21.8 | 11.5 | 0.4 |
| 200 | 527 | 8.6 | 1414684 | 6.1 | 69.8 | 6.7 | 23.5 | 15.7 | 5.0 |
| 210 | 17 | 0.3 | 36418 | 0.2 | 21.2 | 65.7 | 13.1 | 2.9 | 0.0 |
| 220 | 107 | 1.7 | 91908 | 0.4 | 64.7 | 20.1 | 15.2 | 9.7 | 1.7 |
| 230 | 54 | 0.9 | 107614 | 0.5 | 41.4 | 34.3 | 24.3 | 13.2 | 4.9 |
| 240 | 14 | 0.2 | 7196 | 0.0 | 4.5 | 21.2 | 74.3 | 22.5 | 44.0 |
| 250 | 152 | 2.5 | 327616 | 1.4 | 69.7 | 17.3 | 13.0 | 8.5 | 3.6 |
| 260 | 165 | 2.7 | 423016 | 1.8 | 85.3 | 2.9 | 11.7 | 6.5 | 2.6 |
| 270 | 109 | 1.8 | 281041 | 1.2 | 55.9 | 15.6 | 28.6 | 26.3 | 0.9 |
| 280 | 121 | 2.0 | 97240 | 0.4 | 70.9 | 13.4 | 15.7 | 11.9 | 1.9 |
| 290 | 311 | 5.1 | 672044 | 2.9 | 32.8 | 39.5 | 27.7 | 15.2 | 5.6 |
| 300 | 903 | 14.7 | 5189106 | 22.4 | 32.2 | 33.0 | 34.8 | 24.9 | 5.4 |
| 310 | 464 | 7.6 | 2133362 | 9.2 | 81.0 | 11.0 | 7.9 | 2.2 | 3.5 |
| 320 | 97 | 1.6 | 463876 | 2.0 | 27.2 | 45.9 | 26.9 | 23.1 | 1.5 |
| 330+340 | 81 | 1.3 | 95941 | 0.4 | 22.3 | 63.6 | 14.1 | 2.8 | 7.5 |
| 480 | 949 | 15.5 | 8523039 | 36.8 | 41.3 | 19.4 | 39.3 | 33.0 | 2.2 |
| 540 | 169 | 2.8 | 731460 | 3.2 | 88.5 | 5.8 | 5.7 | 5.4 | 0.1 |
| Other | 1227 | 20.0 | 1631594 | 7.0 | 70.1 | 15.0 | 14.9 | 9.8 | 2.6 |
| Total | 6131 | 100.0 | 23191302 | 100.0 | 49.6 | 21.9 | 28.5 | 21.3 | 3.5 |

(b) Purchases of Japanese Affiliates in East Asia

| Industry | Number of Japanese Affiliates in East Asia | % | Total Purchases (million yen) | % | Local | Japan | Third Countries (Total) | E.Asia | North A. |
|---|---|---|---|---|---|---|---|---|---|
| 050 | 11 | 0.2 | 354 | 0.0 | 98.4 | 1.6 | 0.0 | 0.0 | 0.0 |
| 120+130 | 157 | 2.6 | 136232 | 0.9 | 79.2 | 6.7 | 14.2 | 7.5 | 0.4 |
| 140+150 | 396 | 6.5 | 253696 | 1.7 | 53.9 | 26.7 | 19.4 | 13.1 | 2.3 |
| 160 | 23 | 0.4 | 7818 | 0.1 | 94.0 | 2.7 | 3.3 | 0.0 | 0.0 |
| 170 | 14 | 0.2 | 4821 | 0.0 | 75.2 | 13.8 | 11.0 | 7.9 | 0.0 |
| 180 | 36 | 0.6 | 15328 | 0.1 | 62.5 | 20.5 | 17.0 | 14.1 | 1.8 |
| 190 | 27 | 0.4 | 2694 | 0.0 | 73.7 | 16.6 | 9.8 | 0.0 | 1.9 |
| 200 | 527 | 8.6 | 579333 | 3.8 | 53.6 | 19.4 | 27.0 | 13.3 | 6.8 |
| 210 | 17 | 0.3 | 32061 | 0.2 | 21.7 | 18.0 | 60.4 | 45.4 | 10.3 |
| 220 | 107 | 1.7 | 38584 | 0.3 | 68.0 | 25.7 | 6.3 | 5.1 | 0.2 |
| 230 | 54 | 0.9 | 24259 | 0.2 | 57.4 | 23.6 | 19.0 | 17.1 | 0.3 |
| 240 | 14 | 0.2 | 5282 | 0.0 | 10.0 | 6.8 | 83.2 | 41.2 | 9.8 |
| 250 | 152 | 2.5 | 137510 | 0.9 | 40.4 | 31.8 | 27.8 | 23.6 | 3.3 |
| 260 | 165 | 2.7 | 228718 | 1.5 | 19.2 | 69.9 | 10.8 | 10.4 | 0.0 |
| 270 | 109 | 1.8 | 155313 | 1.0 | 44.1 | 31.7 | 24.2 | 19.0 | 0.3 |
| 280 | 121 | 2.0 | 47014 | 0.3 | 67.8 | 29.0 | 3.2 | 1.7 | 0.3 |
| 290 | 311 | 5.1 | 387218 | 2.5 | 56.7 | 32.8 | 10.4 | 9.1 | 0.9 |
| 300 | 903 | 14.7 | 3709173 | 24.4 | 35.8 | 37.0 | 27.2 | 26.3 | 0.4 |
| 310 | 464 | 7.6 | 1373430 | 9.0 | 53.6 | 36.9 | 9.5 | 6.1 | 2.5 |
| 320 | 97 | 1.6 | 271192 | 1.8 | 40.3 | 41.1 | 18.6 | 14.5 | 2.6 |
| 330+340 | 81 | 1.3 | 63645 | 0.4 | 55.1 | 37.7 | 7.1 | 5.9 | 0.4 |
| 480 | 949 | 15.5 | 6333578 | 41.7 | 28.4 | 35.2 | 36.4 | 28.3 | 1.5 |
| 540 | 169 | 2.8 | 597570 | 3.9 | 75.0 | 21.4 | 3.6 | 1.1 | 2.3 |
| Other | 1227 | 20.0 | 789027 | 5.2 | 70.9 | 17.9 | 11.2 | 9.1 | 0.1 |
| Total | 6131 | 100.0 | 15193850 | 100.0 | 41.0 | 33.5 | 25.5 | 20.8 | 1.5 |

Data source: MITI database, the 1999 F/Y Survey of Overseas Business Activities of Japanese Companies.

Notes:

   Japanese affiliates are both "affiliates abroad" with no less than 10% ownership by Japanese parent firms and "affiliates of affiliates abroad" with no less than 50% ownership by such "affiliates abroad" (except those of parent firms in fiance, insurance, or real estates).

   The ratio of effective questionnaire returns for the 1999 F/Y Survey is only 56%.

   "East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Table 15  Prospective Destination Countries for Japanese FDI

| | Short run (incoming 3 years) | | | | Long run (incoming 10 years) | | |
|---|---|---|---|---|---|---|---|
| | | Number of firms | Percentage | | | Number of firms | Percentage |
| | | 401 | 100% | | | 318 | 100% |
| 1 | China | 327 | 82% | 1 | China | 274 | 86% |
| 2 | United States | 127 | 32% | 2 | India | 88 | 28% |
| 3 | Thailand | 99 | 25% | 3 | United States | 80 | 25% |
| 4 | Indonesia | 56 | 14% | 4 | Thailand | 59 | 19% |
| 5 | India | 52 | 13% | 5 | Vietnam | 46 | 14% |
| 6 | Vietnam | 48 | 12% | 6 | Indonesia | 43 | 14% |
| 7 | Taiwan | 44 | 11% | 7 | Brazil | 25 | 8% |
| 8 | Korea | 33 | 8% | 8 | Taiwan | 22 | 7% |
| 9 | Malaysia | 32 | 8% | 9 | Malaysia | 20 | 6% |
| 10 | Singapore | 24 | 6% | 10 | Korea | 17 | 5% |
| 11 | The Philippines | 22 | 5% | 10 | The Philippines | 17 | 5% |
| 12 | Germany | 19 | 5% | 12 | Russia | 14 | 4% |
| 13 | Brazil | 18 | 4% | 13 | Singapore | 12 | 4% |
| 13 | Mexico | 18 | 4% | 14 | United Kingdom | 11 | 3% |
| 15 | France | 17 | 4% | 15 | Mexico | 10 | 3% |
| 16 | Czech | 15 | 4% | 15 | Germany | 10 | 3% |
| 17 | United Kingdom | 14 | 3% | 17 | Hungary | 9 | 3% |
| 18 | Hungary | 12 | 3% | 18 | Myanmar | 7 | 2% |
| 19 | Poland | 11 | 3% | 18 | France | 7 | 2% |
| 20 | Hong Kong | 8 | 2% | 20 | Australia | 6 | 2% |

Data source: Kaburagi, et al. (2002, p. 72).
Notes:

This JBIC questionnaire survey was conducted for Japanese firms with at least one manufacturing foreign affiliate and three or more foreign affiliates at the end of October 2000, in which 501 firms out of 792 returned effective answers.

"Prospective destination country" means that the firm would consider FDI to the country in the short or long run.

Multiple listings of destination countries are allowed.

Table 16 Trade and FDI-related Problems and Requests Raised by Japanese Firms in the Selected Latin American Countries

### Mexico

1. Restriction on foreign ownership ratios, industries with foreign entry ban.
2. Leftover of local contents requirements, trade balance requirements.
3. Sudden changes and instability in PROSEC-applied products as a substitution of Maquiladora system.
4. Uncertainty of policies on transitions from Maquiladora related to permanent establishments, value added taxes, and others.
5. Continual tariff increases, high tariffs.
6. Expansion of tariff differences between countries with RTAs and those without.
7. Excessive preferential arrangements for labor such as profit sharing and wage/retirement payment system, cost elevation due to wage increases, difficulty in meeting labor demand.
8. Delay and complexity due to peculiar NOMS standard system.
9. Not enough capability of supporting industry, lack of supporting industry promotion policy.
10. Worsening security problem.

### Chile

1. Expansion of tariff differences between countries with RTAs and those without.
2. Lack of tax treaty and investment treaty with Japan.
3. High value added tax and delay in tax rebate.
4. Insufficient infrastructure and high cost in port services.

### MERCOSUR

1. Losing competitiveness of Japanese products due to high common tariffs for nonmember countries.
2. Existence of both intra-regional and individual countries' contents requirements, non-transparency in local contents requirements.
3. Large risk due to intra-regional exchange rate fluctuation.

### Brazil

1. Domestic contents requirements, export requirements.
2. Large tariff differentials between intra-MERCOSUR and other trade.
3. Sudden changes in tariffs, import regulations and customs procedure, inefficiency in customs procedure, complexity, delays, and high cost.
4. Heavy taxes, complicated and frequently changed tax system.
5. Regulations on foreign remittances, restrictions on dividend payments, restrictions on credit amount.
6. Wage determination preferential to labor, employment customs, social security system, difficulty and delay in obtaining visa.
7. Residence requirement for board members.
8. Insufficient infrastructure, lack of human capital, lack of supporting industry.
9. Large fluctuation in currency valuation and the existence of exchange rate risk.
10. Pervasive illegal imports and smuggling.

Data source: BCFTI (2002).

Table A-1  Basic Statistics of the data for Japanese Parent Firms

(a) Firms located in Japan

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Number of regular workers | 16773 | 512.19 | 1941.83 | 50 | 72837 |
| Tangible assets per regular worker (million yen) | 16761 | 9.88 | 17.00 | 0 | 915.89 |
| Total sales (million yen) | 16773 | 33628.44 | 279201.20 | 70 | 14200000 |
| Foreign sales (1:positive, 0:zero) | 16773 | 0.27 | 0.45 | 0 | 1 |
| Foreign sales (ratio to total sales) | 16773 | 0.03 | 0.10 | 0 | 1 |
| Total purchase (million yen) | 16773 | 22674.51 | 252775.00 | 0 | 14000000 |
| Purchase from abroad (1:positive, 0:zero) | 16773 | 0.27 | 0.44 | 0 | 1 |
| Purchase from abroad (ratio to total purchase) | 16561 | 0.05 | 0.15 | 0 | 1 |
| Gross value added (ratio to total sales) | 16773 | 0.41 | 0.27 | -7.07 | 1 |
| Operating surplus (ratio to total sales) | 16773 | 0.02 | 0.30 | -33.09 | 0.74 |
| R&D expenditure (1:positive, 0:zero) | 13632 | 0.45 | 0.50 | 0 | 1 |
| R&D expenditure (ratio to total sales) | 13632 | 0.01 | 0.02 | 0 | 0.73 |
| Advertisement expenditure (ratio to total sales) | 16773 | 0.01 | 0.02 | 0 | 1.60 |
| Commisioning production (1:yes, 0:no) | 13632 | 0.66 | 0.47 | 0 | 1 |
| Number of foreign affiliates | 16773 | 1.08 | 11.53 | 0 | 827 |
| Number of affiliates in Latin America | 16773 | 0.07 | 1.87 | 0 | 161 |
| Number of affiliates in East Asia | 16773 | 0.54 | 4.20 | 0 | 253 |

(b) Japanese Parent Firms with Foreign Affiliates

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Number of regular workers | 3486 | 1271.43 | 3869.17 | 50 | 72837 |
| Tangible assets per regular worker (million yen) | 3486 | 12.89 | 22.84 | 0.00 | 915.89 |
| Total sales (million yen) | 3486 | 104309.90 | 601269.10 | 178 | 14200000 |
| Foreign sales (1:positive, 0:zero) | 3486 | 0.75 | 0.43 | 0 | 1 |
| Foreign sales (ratio to total sales) | 3486 | 0.10 | 0.16 | 0 | 1 |
| Total purchase (million yen) | 3486 | 69449.01 | 548688.40 | 0 | 14000000 |
| Purchase from abroad (1:positive, 0:zero) | 3486 | 0.67 | 0.47 | 0 | 1 |
| Purchase from abroad (ratio to total purchase) | 3478 | 0.10 | 0.19 | 0 | 1 |
| Gross value added (ratio to total sales) | 3486 | 0.44 | 0.30 | -7.07 | 1 |
| Operating surplus (ratio to total sales) | 3486 | 0.02 | 0.60 | -33.09 | 0.41 |
| R&D expenditure (1:positive, 0:zero) | 3192 | 0.70 | 0.46 | 0 | 1 |
| R&D expenditure (ratio to total sales) | 3192 | 0.02 | 0.03 | 0 | 0.63 |
| Advertisement expenditure (ratio to total sales) | 3486 | 0.01 | 0.02 | 0 | 0.33 |
| Commisioning production (1:yes, 0:no) | 3192 | 0.79 | 0.41 | 0 | 1 |
| Number of foreign affiliates | 3486 | 5.20 | 24.86 | 1 | 827 |
| Number of affiliates in Latin America | 3486 | 0.32 | 4.08 | 0 | 161 |
| Number of affiliates in East Asia | 3486 | 2.62 | 8.91 | 0 | 253 |

(c) Japanese Parent Firms with Affiliates in Latin America

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Number of regular workers | 288 | 5161.38 | 10165.79 | 68 | 72837 |
| Tangible assets per regular worker (million yen) | 288 | 19.80 | 26.93 | 0.37 | 219.09 |
| Total sales (million yen) | 288 | 639762.40 | 1819151.00 | 1586 | 14200000 |
| Foreign sales (1:positive, 0:zero) | 288 | 0.88 | 0.32 | 0 | 1 |
| Foreign sales (ratio to total sales) | 288 | 0.19 | 0.21 | 0 | 0.98 |
| Total purchase (million yen) | 288 | 464794.60 | 1694631.00 | 218 | 14000000 |
| Purchase from abroad (1:positive, 0:zero) | 288 | 0.78 | 0.42 | 218 | 1 |
| Purchase from abroad (ratio to total purchase) | 288 | 0.13 | 0.21 | 218 | 1 |
| Gross value added (ratio to total sales) | 288 | 0.42 | 0.25 | 0.02 | 1.00 |
| Operating surplus (ratio to total sales) | 288 | 0.04 | 0.05 | -0.17 | 0.31 |
| R&D expenditure (1:positive, 0:zero) | 267 | 0.84 | 0.37 | 0 | 1 |
| R&D expenditure (ratio to total sales) | 267 | 0.03 | 0.03 | 0 | 0.13 |
| Advertisement expenditure (ratio to total sales) | 288 | 0.01 | 0.01 | 0 | 0.12 |
| Commisioning production (1:yes, 0:no) | 267 | 0.81 | 0.40 | 0 | 1 |
| Number of foreign affiliates | 288 | 28.49 | 77.08 | 1 | 827 |
| Number of affiliates in Latin America | 288 | 3.85 | 13.74 | 1 | 161 |
| Number of affiliates in East Asia | 288 | 11.18 | 26.22 | 0 | 253 |

(d) Japanese Parent Firms with Affiliates in East Asia

| Variable | Number of observations | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Number of regular workers | 2753 | 1417.63 | 4133.67 | 50 | 72837 |
| Tangible assets per regular worker (million yen) | 2753 | 12.08 | 15.81 | 0.01 | 268.84 |
| Total sales (million yen) | 2753 | 120973.20 | 671687.20 | 178 | 14200000 |
| Foreign sales (1:positive, 0:zero) | 2753 | 0.77 | 0.42 | 0 | 1 |
| Foreign sales (ratio to total sales) | 2753 | 0.10 | 0.16 | 0 | 1 |
| Total purchase (million yen) | 2753 | 81840.01 | 615774.80 | 0 | 14000000 |
| Purchase from abroad (1:positive, 0:zero) | 2753 | 0.69 | 0.46 | 0 | 1 |
| Purchase from abroad (ratio to total purchase) | 2747 | 0.10 | 0.18 | 0 | 1 |
| Gross value added (ratio to total sales) | 2753 | 0.43 | 0.31 | -7.07 | 1 |
| Operating surplus (ratio to total sales) | 2753 | 0.02 | 0.68 | -33.09 | 0.32 |
| R&D expenditure (1:positive, 0:zero) | 2535 | 0.70 | 0.46 | 0 | 1 |
| R&D expenditure (ratio to total sales) | 2535 | 0.02 | 0.03 | 0 | 0.60 |
| Advertisement expenditure (ratio to total sales) | 2753 | 0.01 | 0.02 | 0 | 0.25 |
| Commisioning production (1:yes, 0:no) | 2535 | 0.81 | 0.40 | 0 | 1 |
| Number of foreign affiliates | 2753 | 6.18 | 27.89 | 1 | 827 |
| Number of affiliates in Latin America | 2753 | 0.38 | 4.59 | 0 | 161 |
| Number of affiliates in East Asia | 2753 | 3.32 | 9.91 | 1 | 253 |

Data source: MITI database, the 1996 F/Y Basic Survey of Business Structure and Activity.

Notes:

Number of Japanese firms in the 1996 F/Y Basic Survey is 26353.

Foreign affiliates are those with no less than 20% Japanese ownership.

Gross value added is calculated as follows: total sales-total purchase.

"East Asia" include all Asian countries east of Pakistan but Japanese FDI to South Asia is minimal.

Tables A-2  Industry Classification

Manufacturing sector

| | | |
|---|---|---|
| | 120 | Food processing |
| | 130 | Beverages, tobacco, and animal feed |
| | 140 | Textiles |
| | 150 | Apparel |
| | 160 | Wood and wood products |
| | 170 | Furniture and fixtures |
| | 180 | Pulp, paper, and paper products |
| | 190 | Publishing and printing |
| | 200 | Chemicals |
| | 210 | Petroleum and coal products |
| | 220 | Plastic products |
| | 230 | Pubber products |
| | 240 | Leather and leather products |
| | 250 | Ceramics, clay, and stone products |
| | 260 | Iron and steel |
| | 270 | Nonferrous metal |
| | 280 | Metal products |
| | 290 | General machinery |
| | 300 | Electric machinery |
| | 310 | Transport equipment |
| | 320 | Precision machinery |
| | 330 | Arms |
| | 340 | Other manufacturing |

290+300+310+320  Machinery sector

Non-manufacturing sector

| | | |
|---|---|---|
| | 050 | Mining |
| | 480 | Wholesale trade |
| | 540 | Retail trade |
| | Other | Services and other |