

# Spatial Pattern of Control and Dependency in Japanese Corporations

山本, 健兒 / YAMAMOTO, Kenji

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## **SPATIAL PATTERN OF CONTROL AND DEPENDENCY IN JAPANESE CORPORATIONS**

**Kenji YAMAMOTO**

*Professor, Faculty of Economics, Hosei University*

This paper deals with the spatial pattern of intra-corporate organization in Japan. Large corporations usually consist of business establishments, such as headquarters, branch plants, branch offices, R&D institutes, subsidiaries and so on, which are located in different regions. The relation of control and dependency between headquarters and the others is one of the important factors providing for the spatial division of labor in Japan. Tokyo controls the rest of the country, and the second most influential metropolis, Osaka, has its own territory only in a limited area.

### **1. Introduction**

The purpose of this paper is to describe the regional economic structure of Japan in the light of the spatial organization of industrial corporations. There are a lot of studies dealing with the spatial structure of the Japanese economy. But only a few have investigated it from the viewpoint of the spatial pattern of corporate organization<sup>1)</sup>.

As Galbraith (1967) discusses in the case of the United States, large corporations play a key role in the present economy of Japan. They very often consist of business establishments located in different places, so much so that they can be named "multilocal" corporations. Each establishment exercises its own function within the framework of the overall corporate purpose, such as management, sales, mass production, pilot production, R&D and so on. All large corporations adopt such a spatial division of labor within their respective corporate organizations. Their spatial organization might be compared to that of a national economy or a regional system of economy<sup>2)</sup>.

But the concept of a multilocal corporation is ambiguous in some senses. First, what does the word "multilocal" really mean? Is a corporation with several plants in a metropolitan area to be called multilocal? Does a corporation deserve to be termed multilocal only if it locates its own establishments in different regions<sup>3)</sup>? The solution of this problem should depend on the spatial scale of the particular research. In this paper, the present author adopts the prefecture as a unit of area. This is both because of the limitation of the available data sources, as well as because an economic region in Japan is usually larger than the territory of a prefecture and can be defined by using more than one prefecture. Thus, in this paper, a corporation should be called multilocal, if it allocates its own establishments to different prefectures. However, a corporation

locating its own establishments in different sites within a prefecture is classified as a multilocal in the *Establishment Census of Japan*. Such a multilocal will also be included in the following analysis.

As a second issue, can we regard a corporation with a subsidiary company located in a different prefecture as multilocal? If the subsidiary is under perfect control of its parent corporation, it may well be called multilocal, because there may be no essential differences between such a subsidiary and a branch. A parent corporation can control its subsidiaries, if it possesses more than 50% of the subsidiaries' capital. But under some circumstances, a subsidiary can be controlled by another corporation perfectly, even if less than 50% of the former's capital is in the hands of the latter. Of course, one essential difference between a subsidiary and a branch is that a subsidiary is legally independent, while a branch is, on the other hand, dependent legally on its parent. Considering this fact, a corporation with subsidiaries is not called in this paper multilocal, but a "corporation group".

The principal aim of this paper is to depict the spatial structure of the Japanese economy in terms of the corporate organization, namely in the light of the spatial relationship between business establishments. Thus the multilocals in the narrow sense are investigated first, and then corporation groups will be discussed.

## 2. Outline of Multilocal Corporations

Table 1 shows the composition of the three different business establishments of almost all the economic sectors in Japan, with the exception of private enterprises in agriculture, forestry and fishery, at four different points of time. The types of establishments are single-location corporations, headquarters of multilocals, and their branches. We can identify several characteristics of Japanese industrial organization from this table.

First, multilocal corporations give work to more than 50% of the total employees, while single-location corporations are more important than multilocals with regard to the number of establishments.

Secondly, multilocals have gradually become more important in both employment and the number of establishments.

Thirdly, the share of multilocals did not increase in the latter half of the 1970s so much as in the period before 1975.

Fourthly, there are more establishments and more employees in branches than in headquarters establishments.

Fifthly, the proportion of headquarters establishments has become larger throughout the period between 1963 and 1981 in terms of the number of establishments, but the number of employees, proportionately, has not changed markedly since 1969.

Sixthly, the relative number of branches has become larger in terms of both employment and establishments, but the growth rate of the number of employees at branches has been very low since 1975.

Finally, we can also identify the difference of scale between three types of

**Table 1 . Distribution of Three Types of Business Establishments in Japan, 1963—1981**

## a. Number of establishments

Type of establishment	Single-location	Multilocal corporations		Total
		Headquarters	Branches	
Year	Number (share)	Number (share)	Number (share)	Number
1963	449,251 (69.5%)	46,214 (7.2%)	150,542 (23.3%)	646,007
1969	542,841 (59.6%)	98,957 (10.9%)	269,704 (29.6%)	911,502
1975	729,796 (56.2%)	150,882 (11.6%)	417,098 (32.1%)	1,297,776
1981	944,585 (51.3%)	242,314 (13.2%)	654,756 (35.6%)	1,841,655

## b. Number of employees

Type of establishment	Single-location	Multilocal corporation		Total
		Headquarters	Branches	
Year	Number (share)	Number (share)	Number (share)	Number
1963	7,752,760 (47.6%)	3,124,014 (19.2%)	5,422,191 (33.3%)	16,298,965
1969	7,928,913 (36.8%)	5,599,337 (26.0%)	8,008,907 (37.2%)	21,537,157
1975	8,681,866 (34.6%)	6,485,986 (25.9%)	9,900,604 (39.5%)	25,068,456
1981	10,437,858 (34.2%)	7,936,019 (26.0%)	12,103,387 (39.7%)	30,477,264

Sources: Statistics Bureau, Prime Minister's Office, *Establishment Census of Japan*, each year.

**Table 2 . Average Number of Employees at Each Type of Establishment**

	Single-location	Multilocal corporation		Total
		Headquarters	Branches	
1963	17.3	67.6	36.0	25.2
1969	14.6	56.6	29.7	23.6
1975	11.9	43.0	23.7	19.3
1981	11.1	32.8	18.5	16.5

Sources: See Table 1.

establishments from Table 2. The number of employees per establishment is largest at headquarters locations, followed by branches. And all types of establishments have experienced a decrease in number of employees since 1963.

These characteristics reflect partly a change in the industrial organization in Japan, and partly a change in the behavior of corporations, which make an effort to adapt themselves to the continuously changing economic circumstances. We can interpret the decrease of employees at each type of establishment, for example, as a result of corporate behaviour that attempts to reduce labor costs as much as possible.

The second characteristic listed above, in addition to the fourth and the sixth, suggests that multilocalization has gone forward with a general proliferation of branches. There are a number of reasons for this. On one hand, a corporation is likely to invest at a different place than where its headquarters is located, if external diseconomies are serious at the latter place. On the other hand, in a positive sense, it can seek to take advantage of spatial differences of such production costs as labor, taxes, land, transportation and so forth, by means of becoming multilocal. Thus a large corporation seeks to maximize profits by taking advantage of multilocality.

The third characteristic listed above indicates that there is some relationship between business cycles and the founding of business establishments. The fifth characteristic suggests that not only large corporations but also medium-sized ones can become multilocal.

The seventh characteristic listed above means that a multilocal corporation is larger than a single-location one in Japan. This is also true of other developed countries<sup>4</sup>). It is, however, noteworthy that the number of single-location corporations has increased in terms of both employees and establishments, while its proportion to the total has decreased. These facts suggest that single-location corporations, namely small and medium-sized corporations, have their own *raison d'être* in the industrial organization. In other words, it is true that a developed economy tends to be dominated by larger multilocal corporations, but small and medium-sized ones may well hold their own due to their own specific advantages.

One tentative hypothesis that might sum up this discussion is that capital concentration is under way in Japan, taking the form of multilocal corporations<sup>5</sup>). But there must be a limit to the concentration, so that there must be an upper limit to the proportion of multilocals to the whole business establishment.

### **3. Spatial Pattern of Multilocal Corporations**

#### **3.1. Typology of Prefectures**

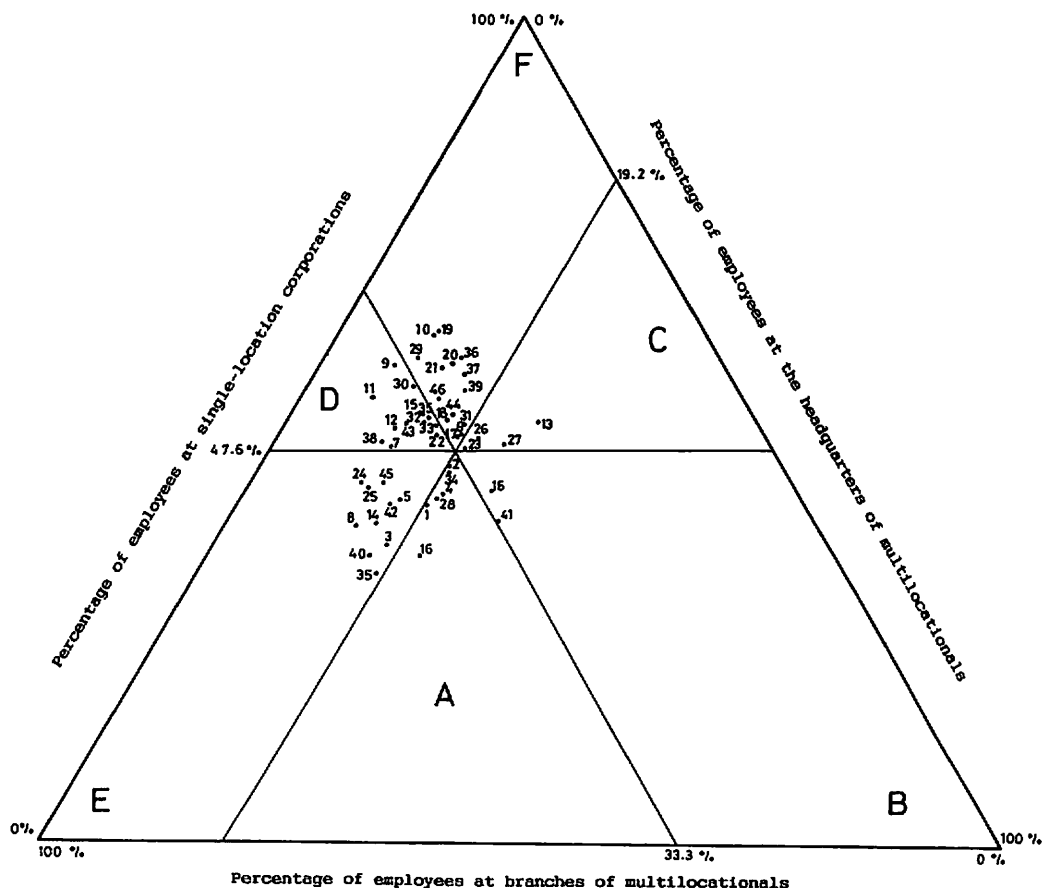
We can classify prefectures under the six types of regions that are indicated in Figure 1. The left side of the triangular diagram is a measure of the percentage of employees at single-location corporations, the right side is a yardstick for measuring the proportion of employees at the headquarters of multilocals. The base represents the proportion of employees at different branches. The three inner lines in the triangle indicate the average values for each of the proportional measures for the three types of establishments in Japan.

The triangle is thus split into six blocks. If a prefecture lies in block F, it is to be regarded as an "independent" region, in a sense that many establishments which can make a decision by themselves are located in the prefecture. If a wider district consists of prefectures of this type, it is to be regarded as a less developed region, because such prefectures as well as the wider district have a rather weak connection

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Prefectures in Japan

- |              |               |              |               |               |
|--------------|---------------|--------------|---------------|---------------|
| 1. Hokkaido  | 11. Saitama   | 21. Gifu     | 31. Tottori   | 41. Saga      |
| 2. Aomori    | 12. Chiba     | 22. Shizuoka | 32. Shimane   | 42. Nagasaki  |
| 3. Iwate     | 13. Tokyo     | 23. Aichi    | 33. Okayama   | 43. Kumamoto  |
| 4. Miyagi    | 14. Kanagawa  | 24. Mie      | 34. Hiroshima | 44. Oita      |
| 5. Akita     | 15. Niigata   | 25. Shiga    | 35. Yamaguchi | 45. Miyazaki  |
| 6. Yamagata  | 16. Toyama    | 26. Kyoto    | 36. Tokushima | 46. Kagoshima |
| 7. Fukushima | 17. Ishikawa  | 27. Osaka    | 37. Kagawa    | 47. Okinawa   |
| 8. Ibaraki   | 18. Fukui     | 28. Hyogo    | 38. Ehime     |               |
| 9. Tochigi   | 19. Yamanashi | 29. Nara     | 39. Kochi     |               |
| 10. Gumma    | 20. Nagano    | 30. Wakayama | 40. Fukuoka   |               |



**Fig.1. Classification of prefectures into six types of regions, 1963. The numbers relate to the prefectures below. 47.6%, 19.2% and 33.3% are national averages of the shares of the three types of establishments respectively. Source: see Table 1.**

with other regions, which can mean a closed economy from the viewpoint of corporate organization.

On the other hand, if a prefecture lies in block B, it may be considered a "controlling" region. Prefectures of this type or a wider district including such prefectures should be an open economy in the sense above and could potentially grow faster than an independent region. This depends, however, partly on the industrial structure of the region concerned. A region with controlling status cannot always grow economically if it specializes in a declining industry.

A prefecture lying in block E is regarded as a “dependent” region. Such a region usually has an ambivalent position. If its industrial orientation is good, it can enjoy more rapid economic growth than an independent region and even a controlling one with declining or stagnant industries, even if some fruits of production gained in the dependent region are exploited by another controlling region<sup>6)</sup>. But once the business climate becomes adverse against the main industries in the dependent region, it must decline faster than the regions of the other types.

A prefecture in block C is regarded as an intermediate type between the independent and the controlling, and a prefecture in block D as an intermediate one between the independent and the dependent. The former is to be called a quasi-controlling region and the latter a quasi-dependent one.

When a prefecture lies in block A, it is to be regarded as an “interdependent” region, which seems to be the most developed type, provided that the country concerned has a decentralized spatial system<sup>7)</sup>. Multilocal corporations, whose headquarters are located in different regions and which have also matured in their own terms, may well come to locate their branches in each others’ home base regions, in order to capitalize on each others’ metropolitan economies. The economy of such an interdependent region is thus most stable irrespective both of business cycles and of a nation-wide or a world-wide restructuring of industry. It can grow even more rapidly than the regions of the other types through the mechanism of interurban growth transmission which Pred (1977, pp.116-120) explains.

If a country is a centralized nation state, the most developed region may well be not an interdependent one, but a controlling one. Even in this case, the controlling region may well become an interdependent one, as the national economy proceeds to become “internationalized”, because many foreign multilocals or multinationals locate their branches in the primate city in the centralized country. This is the case in recent years with Tokyo as the center of Japan.

### **3.2. The Situation of the Japan in 1963**

In 1963<sup>8)</sup>, the prefectures in Japan belonged to each one of the regional types identified above. Now, we can divide the independent prefectures further into two subtypes. One is a prefecture which lies in the periphery in a geographical sense as well as in an economic sense. And examples of this subtype would include Oita, Kagoshima, Tokushima, Kagawa, Kochi, Tottori and Yamagata. The other subtype is a prefecture, which does not lie in the periphery in a geographical sense and has been already industrialized to some degree. This is the case with Gumma, Ishikawa, Fukui, Nagano and Gifu. The textile industry flourished in these prefectures before World War II and a number of small and medium-sized corporations are still now engaged in this activity in some of these prefectures.

We can also identify further two subtypes of dependent prefectures. One was the suburbs of the Tokyo, Osaka or Nagoya metropolitan areas: Kanagawa, Ibaraki, Mie, and Shiga. The other subtype was a prefecture where heavy or chemical industries had been located before World War II: Iwate, Yamaguchi, Fukuoka, Nagasaki, and Miyazaki. Most of the business units of the heavy or chemical industries in these prefectures were originally the main plants of the firms with

additional headquarters functions. This is the case with the Yawata Steel Works, a government enterprise in operation since 1901. This was established as the first factory utilizing a continuous production process for making pig iron and steel in Japan and was located in Yahata (Kitakyushu), Fukuoka. The company has been subsequently privatized. Other examples are the Mitsubishi Shipbuilding plant in Nagasaki and the Asahi Chemical Industry in Nobeoka, Miyazaki.

The most important factor determining the location of these factories was the endowment of natural resources, such as coal, hydraulic power and so on, found generally in the periphery of Japan. As the enterprises became larger, their headquarters were relocated to Tokyo or Osaka, and thus multilocal corporations were born. Such a process of multilocalization is typical in Japan (Fujita, 1984).

Most of the quasi-dependent prefectures show characteristics similar to those of the dependent prefectures. Of the former we can mention Saitama which is one of the neighboring prefectures for Tokyo, and Tochigi and Shizuoka which are prefectures near the Tokyo metropolitan area. For the latter we can mention Okayama and Ehime where heavy and chemical industries have been located. On the other hand, Wakayama and Chiba have characteristics of both of these similar types.

One difference between the dependent prefectures and the quasi-dependent ones stems from the historical circumstances surrounding the period in which the location of heavy or chemical industries was determined. The former type had already experienced industrialization before World War II, the latter only in the 1950s and 1960s. In addition we should note that the factories of the heavy and chemical industries in these prefectures were often established from the beginning as branches of large corporations located in Tokyo or Osaka.

The three large metropolitan prefectures in Japan, namely Tokyo, Osaka and Aichi, belonged to the quasi-controlling region (type C) in 1963. Kyoto also belonged to this type. Prefectures in which local controlling functions were found for a wider district, such as Tohoku or Chugoku district, or which possessed strong economic power, often belonged to the interdependent category (type A). Examples of the former were Hiroshima, Miyagi and Hokkaido. The latter cases included Hyogo and Toyama.

Although most of prefectures were located at easily identifiable and easily explicable positions in the triangular diagram in 1963, there were some prefectures whose position in the diagram were difficult to explain. Saga belonged, for example, to the controlling region, and Aomori to the interdependent region, although neither had controlling functions for a wider district, and neither possessed a large local corporation exercising nation-wide or world-wide power.

### 3.3. Changes of the Positions of Prefectures

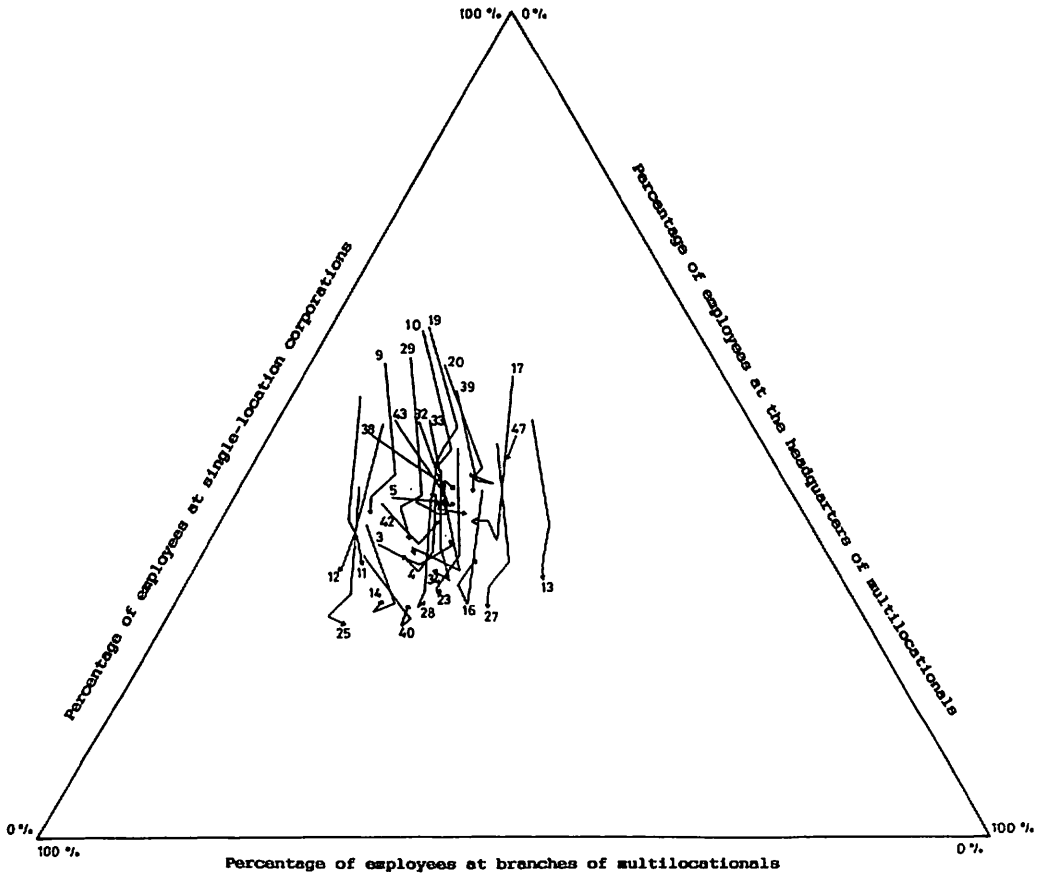
As a regional economy develops, the composition of the three different business establishments changes accordingly. It is thus possible to depict the development processes of regional economies with the triangular diagram. In this manner, we



would say that before multilocal corporations were created, every enterprise had been single-locational, which is an economic subject compatible with analysis using neo-classical economic theories. In those days every region must have lain at the top vertex of the triangle.

As a national economy develops, multilocal corporations are established and go on increasing. A region which acquires headquarters operations moves along the right side of the triangle because the proportion of their employees to the total in the region increases. On the other hand, a region where the proportion of branch employees to the total increases moves along the left side of the triangle. There may be a region, which first moves along the right side but later toward the left vertex, either because the headquarters of multilocals were relocated to another region as the corporations grew, or because the local enterprises were taken over by another located in a different region. Of course there may be also a region, which moves toward the base of the triangle.

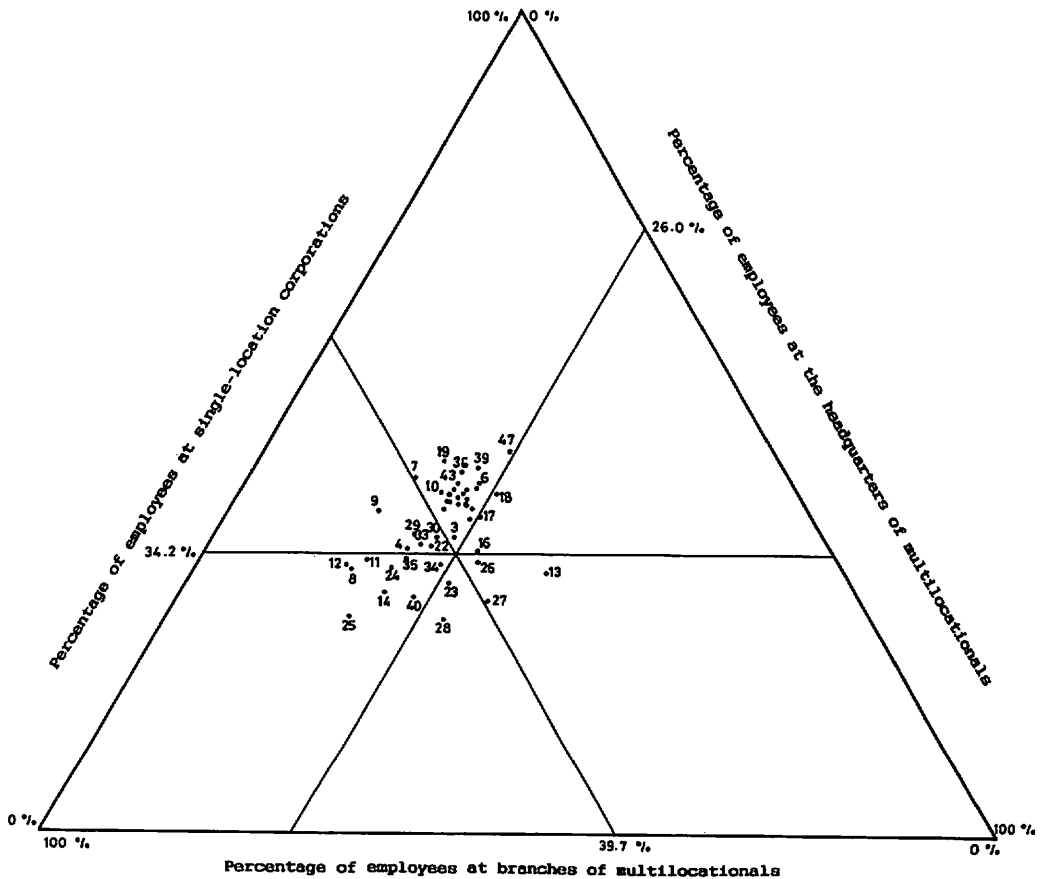
Figure 2 shows the changes in the prefectures' positions from 1963 through the years 1969, 1975 and 1981. There are several important characteristics of the



**Fig.2. Changes of the prefectures' position from 1963 through 1969 and 1975 to 1981. In order to make identification easy, 27 of all prefectures are indicated here. The numbers relate to the prefectures listed in the note of Fig. 1. Source: see Table 1.**

Japanese development apparent from this figure. First, almost all the prefectures moved away from the vertex of the triangle, closer to the base. Exceptions to this were Hokkaido, Iwate, Akita and Yamaguchi. There are some characteristics common to these four prefectures that might explain their particular movement. First, they were dependent upon mining and basic material industries. Secondly, they lie in the periphery of Japan in the geographical sense.

This general movement in the direction of the base for the overwhelming majority of prefectures reflects the changes in the Japanese industrial structure. For example, the importance of endowment of mineral resources has declined in the national economy. Firms manufacturing high value-added goods, such as automobiles, and the electronics industries have become the key industries since 1970s, replacing the basic material industries of the 1950s and 1960s (Sakamoto, 1988). Branch plants or subsidiaries of these newer industries have been dispersed across the country since the beginning of the 1960s. But those four exceptional prefectures mentioned above could not attract as many factories as the other prefectures, at least until the beginning of the 1980s.



**Fig.3. Positions of prefectures in the triangular diagram, 1981. The numbers relate to the prefectures listed in the note of Fig.1. 34.2%, 26.0% and 39.7% are national averages of the shares of the three types of establishments respectively.**

Source: see Table 1.

In opposition to the general movement, some prefectures went back in the direction of the triangle's vertex from 1975 to 1981, when Japan experienced lower economic growth relative to the earlier high growth era. On the other hand, prefectures positioned nearer to the vertex in 1963 have continued to move toward the triangle's base. As a result, there was a tendency towards convergence at some point in the triangle (Figure 3).

We can find this convergence especially in the peripheral prefectures which lie in the Kyushu, Shikoku, San'in, Tohoku and Hokkaido districts. The prefectures in the Hokuriku district showed some tendency for convergence as well, but they belonged in a relative sense to the quasi-controlling region, while the prefectures in the peripheries were relatively independent.

We should notice here that the criterion for the classification of prefectures in 1981 is different than the one used for the 1963 data. Indeed it may be more important to understand the essence of the change than to label or categorize the prefectures as some regional type. In short, the spatial disparity of the industrial organization has declined in Japan as a result of corporate behaviour which appears in the form of multilocational.

An additional characteristic of the overall changes illustrated in the figure is that the three metropolitan prefectures and the surrounding ones continued to move further toward the triangle's base. This tendency exemplifies the author's earlier assertion: the nearer to the triangle's base a prefecture is positioned, the stronger and the more stable its economic power is and becomes.

It is worth noting to which type of region the prefectures with a so-called "local pivotal city", namely Fukuoka, Hiroshima and Miyagi, belonged in 1981. The former two are classified as the dependent regions, and Miyagi, whose prefectural government is seated at Sendai, belongs to the quasi-dependent category. The position of these prefectures is similar to the one of the prefectures surrounding the three largest metropolises. When we compare Tokyo and Osaka with the "metropolis" in the model of Hymer (1972), we can call Fukuoka, Hiroshima and Sendai "capital cities in the satellites".

We can verify the convergence in corporate organizations among prefectures by using the coefficient of variation (Table 3). There was a great gap in the proportion of employees at single-location corporations to the total among prefectures in 1963. For example, the maximum was found in Yamanashi with about 62 per cent, while the minimum in Yamaguchi with about 33 per cent. The difference became much smaller in 1981, when Okinawa indicated the maximum with about 46 per cent, while Shiga reached the minimum with about 27 per cent. The coefficient of variation was reduced from 15.4 in 1961 to 13.8 in 1981.

A similar reduction in gaps was found for the proportions of employees at headquarters of multilocational as well. Tokyo indicated in 1963 nearly 26 per cent of total employees in headquarters of multilocational and 37 per cent in 1981. The minimum proportion was found in 1963 in Saitama with 7 per cent, and in 1981 in Tochigi with 15 per cent. The coefficient of variation was reduced from 28.8 to 17.3.

The maximum of the proportion of employees at branches of multilocational was found in 1963 for Hiroshima with about 49 per cent, but in 1981 for Shiga with about 54 per cent. The minimum was found in 1963 for Tokyo with nearly 23 per

**Table 3. Spatial Disparity of Location of Establishments in Japan**

Type of establishment	Coefficient of variation	
	1963	1981
Single-location corporations	15.4	13.8
Headquarters of multilocationals	28.8	17.3
Branches of multilocationals	18.5	15.3
Branches, whose headquarters are located outside each prefecture	28.3	31.5
Branches, whose headquarters are located within each prefecture	30.9	20.2

Notes: 1. The spatial disparity is measured with respect to the number of employees in each prefecture.

2. The coefficient of variation (V) is calculated as follows;

$$V = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n}} / \bar{x}$$

where  $x_i$  is the proportion of employees at each type of establishment to the total employees in prefecture  $i$ ,  $\bar{x}$  is the mean for  $x$  in Japan, and  $n$  is the number of prefectures.

Sources: Statistics Bureau, Prime Minister's Office, *Establishment Census of Japan*, each year.

cent, but in 1981 for Okinawa with nearly 28 per cent. The coefficient of variation was reduced from 18.5 to 15.3.

The convergence in corporate organization from the spatial perspective adopted here reflects a convergence in the regional disparity measured with per capita income. The disparity of this aggregate measure among prefectures also declined from the beginning of the 1960s to the mid-1970s (Yamamoto, 1987b). These two facts, namely the convergence in corporate organization and the decline of regional disparity among prefectures, suggest that the spatial integration of regional economies<sup>9)</sup> has progressed considerably in Japan since the beginning of the 1960s.

We should, however, take notice of what kind of spatial integration has been seen. Table 3 shows that Japan experienced an increase in the coefficient of variation of the proportion of employees in externally controlled branch operations to the entire number of employees in each prefecture. But other disparities have declined. These facts suggest on one hand that there has been a tendency toward an equalization of the degree of spatial integration within each prefecture, but on the other hand that polarization has developed between the metropolitan prefectures and the other prefectures. We might well term this whole process a "vertical spatial integration". That is, the vertical organization of multilocationals is reflected in the spatial relationship among regions.

### 3.4. Spatial Pattern of External Control

The degree of spatial integration is as high in Japan as it is in West Germany. Japan has not, however, overcome the so-called "dual economy" problem seen at the beginning of the 1960s yet. At that time, there was not a high correlation

**Table 4 . Correlation Coefficients Between Per Capita Income and the Proportion of Employees at Each Type of Establishment in Japan and West Germany**

Type of establishment	Per capita income in		
	prefectures of Japan	counties of West Germany	
	1963	1981	1970
Single-location corporations	-0.024	-0.661***	-0.657***
Headquarters of multilocationals	0.352*	0.425**	0.565***
Branches of multilocationals	-0.216	0.288	0.189***
Branches, whose headquarters are located outside each prefecture	-0.322*	0.088	
Branches, whose headquarters are located within each prefecture	0.302*	0.339*	

Notes: 1. Significance level; 0.1%: \*\*\*  
1.0%: \*\*  
5.0%: \*

2. Cases of Japan are prefectures and their number is 46 in 1963 and 47 in 1981.

The ones of West Germany are *Kreis* and *kreisfreie Städte* and their number is 542.

Sources: Statistics Bureau, Prime Minister's office, Establishment Census of Japan, each year.

Economic Research Institute of the Economic Planning Agency, *Statistics of Income by the Prefecture*, 1979.

Economic Research Institute of the Economic Planning Agency, *Annual Report on Prefectural Accounts*, 1986.

Statistisches Bundesamt, *Unternehmen und Arbeitsstätten. Arbeitsstättenzählung vom 27. Mai 1970, Heft 8, Zusammenhang zwischen den nichtlandwirtschaftlichen Unternehmen (Wirtschaftseinheiten) und ihren Arbeitsstätten (örtlichen Einheiten)*, Verlag W. Kohlhammer, Stuttgart und Mainz, 1971.

*Das Bruttoinlandsprodukt der kreisfreien Städte und Landkreise 1961, 1968 und 1970* (Gemeinschaftsveröffentlichung der Statistischen Landesämter, 1973)

between per capita income and the proportions of each type of the business establishments in a prefecture. But by 1981, Japan showed a pattern similar to the one seen in West Germany in 1970 (Table 4). By 1981, in Japan, this meant, among other things, that the smaller the proportion of single-location corporations was in a prefecture and that the larger the proportion of headquarters, the higher the per capita income was. There was no correlation between per capita income and the proportion of branches found in the prefectures.

In spite of the similarities seen in Table 4, there is a great number of differences between spatial structures in Japan and West Germany. The former possesses a true primate city, while this is lacking in the latter (Schöller et al. 1984). This difference is reflected in the spatial pattern of relations between the headquarters of multilocationals and their branches. In West Germany, Frankfurt am Main controls the widest area, but the degree of its influence is rather weak. The other metropolitan areas, such as Munich, Hamburg, and Cologne also control their own territories (Yamamoto, 1987a).

In Japan, Tokyo and Osaka together control the other prefectures in Japan, when judged from the criterion of the proportion of employees controlled externally<sup>10</sup> in the form of multilocationals to the entire ones in each prefecture, as figures 4 to 7 show. Even the most influential city in West Germany, Frankfurt am main, can be said to control the whole country, only if we use 0.1 per cent as the criterion (Yamamoto, 1987a). In contrast to this, Tokyo's multilocational

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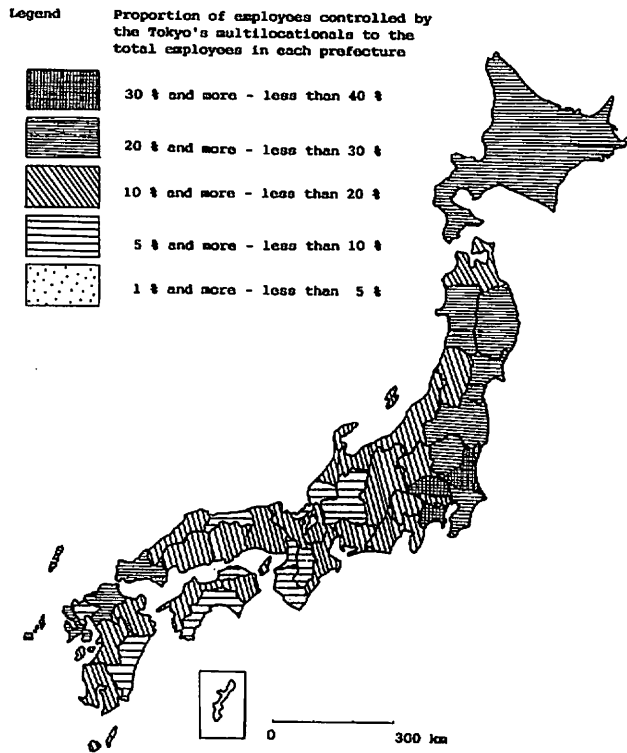


Fig.4. Area controlled by the Tokyo's multilocationals, 1963.  
Source: see Table 1.

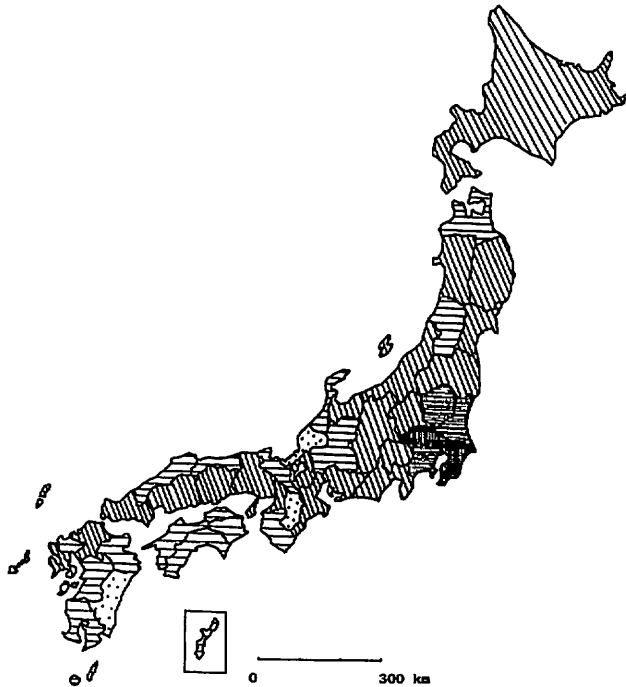
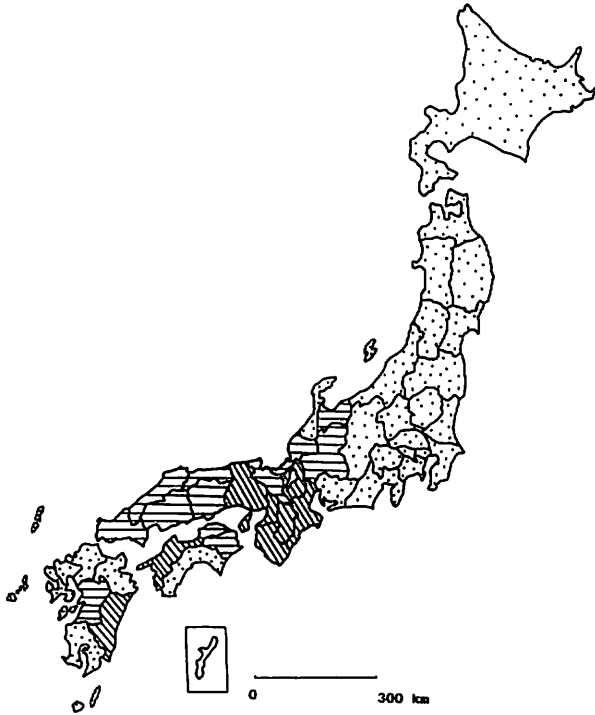
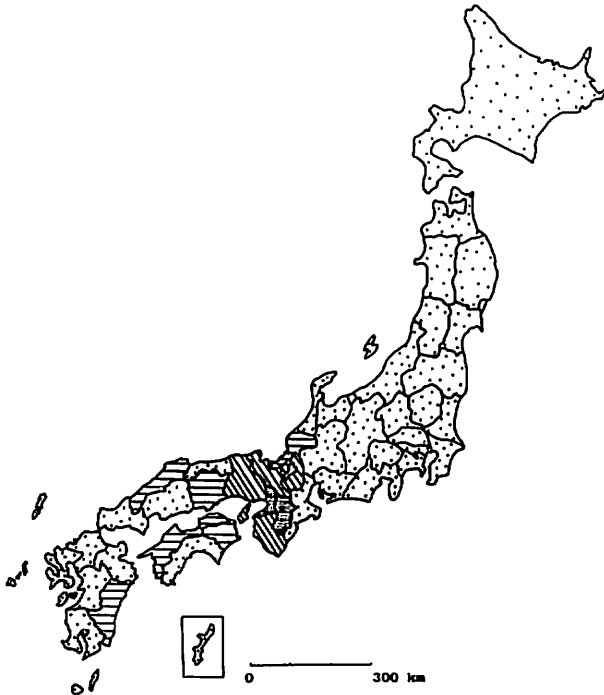


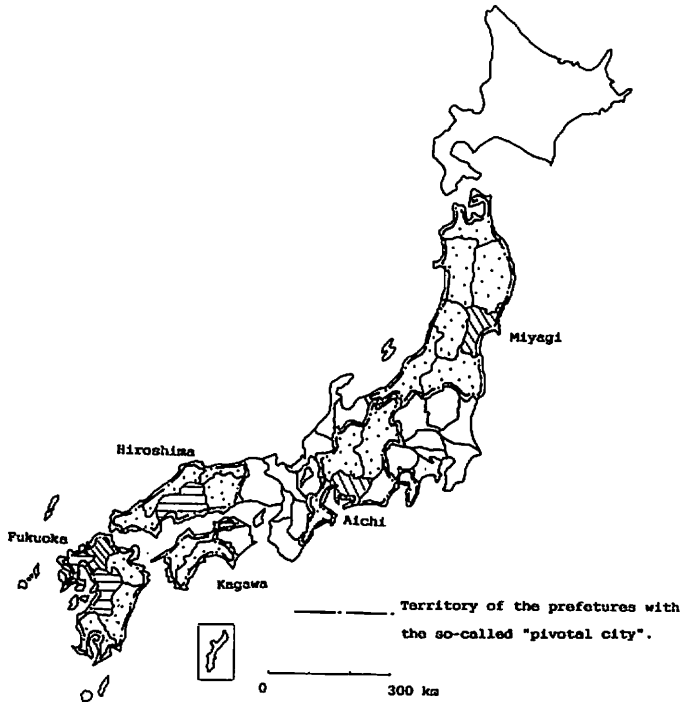
Fig.5. Area controlled by the Tokyo's multilocationals, 1981.  
See the legend in Fig.4.  
Source: see Table 1.



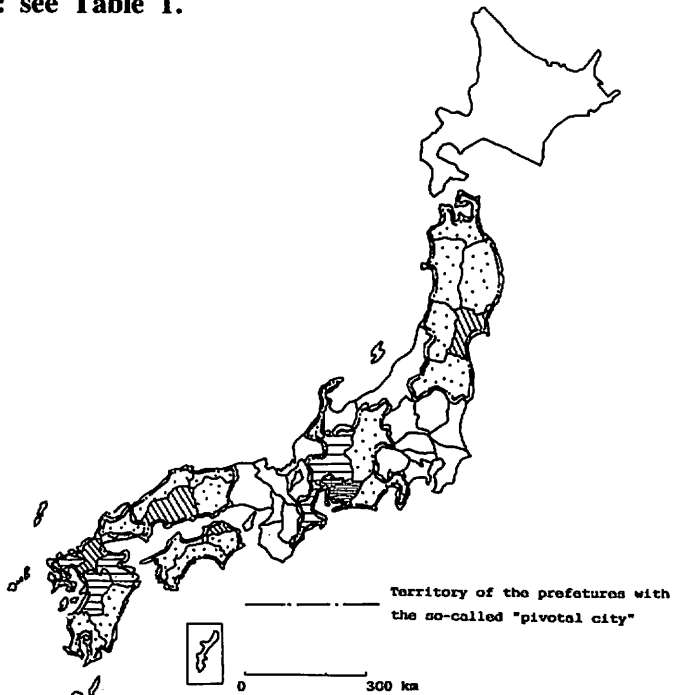
**Fig.6. Area controlled by the Osaka's multinationals, 1963.**  
See the legend in Fig.4.  
Source: see Table 1.



**Fig.7. Area controlled by the Osaka's multinationals, 1981.**  
See the legend in Fig.4  
Source: see Table 1.



**Fig.8.** Area controlled by the multinationals seated in the prefectures with the so-called "local pivotal city", 1963. See the legend in Fig.4.  
 Source: see Table 1.



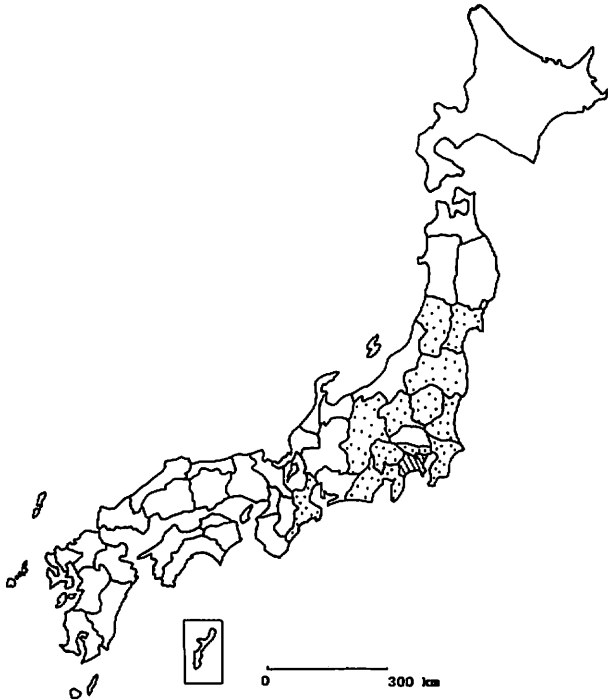
**Fig.9.** Area controlled by the multinationals seated in the prefectures with the so-called "local pivotal city", 1981. Yamaguchi prefecture belongs to the territory of Hiroshima as well as to that of Fukuoka.  
 See the legend in Fig.4.  
 Source: see Table 1.



corporations cover the whole of Japan, even if we use 5 per cent as the criterion.

Also in Japan, however, we can realize a spatial pattern similar to the one in West Germany. That is, a prefecture with the "local pivotal city" controls its surrounding prefectures. It is the case with Aichi, Fukuoka, Hiroshima and so on (Fig.8 and Fig. 9). Tokyo and Osaka exhibit similar patterns. The former controls the eastern part of Japan and the so-called "Pacific Belt Zone" stronger than the other part. Osaka controls, on the other hand, the western part of Japan stronger than the other part.

It is noteworthy that Kanagawa had no controlling area around itself in 1963, but that it has extended its territory to the north Japan by 1981 (Fig.10). Because Kanagawa is a suburban prefecture of Tokyo, it suggests that the Tokyo metropolitan area as a whole has acquired a more influencing power than before, although the degree of control of the Tokyo prefecture has declined by itself.



**Fig.10. Area controlled by the Kanagawa's multilocational corporations, 1981.**

See the legend in Fig.4.

Source: see Table 1.

#### **4. Spatial Pattern of Corporation Groups**

To understand the external control in regional economies of Japan, it is necessary to investigate corporation groups. Large corporations especially in the electronics and automobile industries have established not only their own branches but also a large number of subsidiaries in rural districts<sup>11)</sup>.

Figures 11, 12 and 13 show the spatial pattern of relations between parent corporations and their subsidiaries. Those parent corporations considered are

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Legend

Proportion of employees controlled by the Tokyo's corporation groups to the total employed at subsidiaries in each prefecture

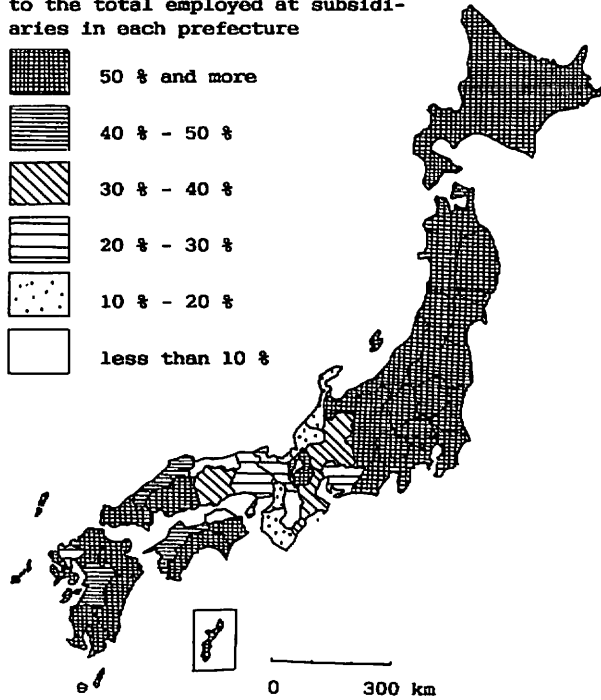
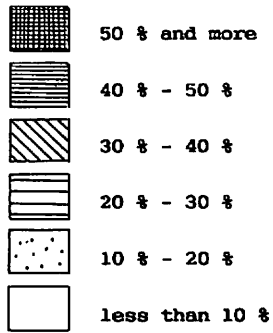


Fig.11. Area of Tokyo's corporation groups, 1986.

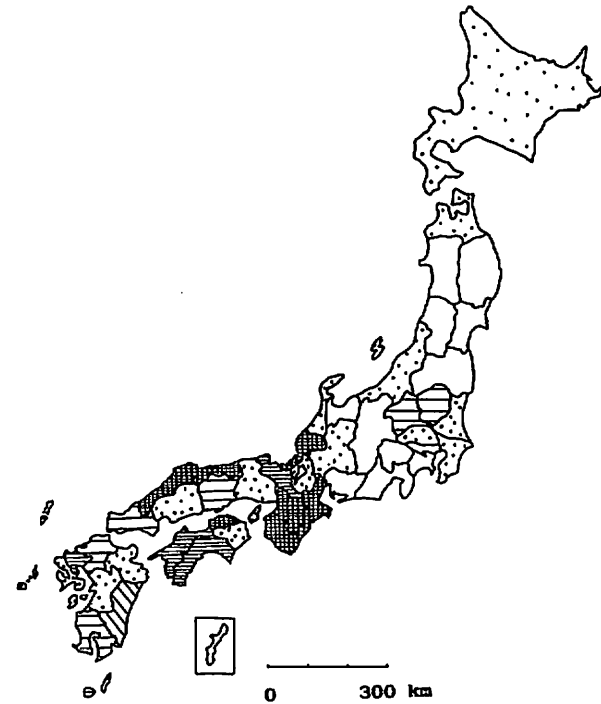
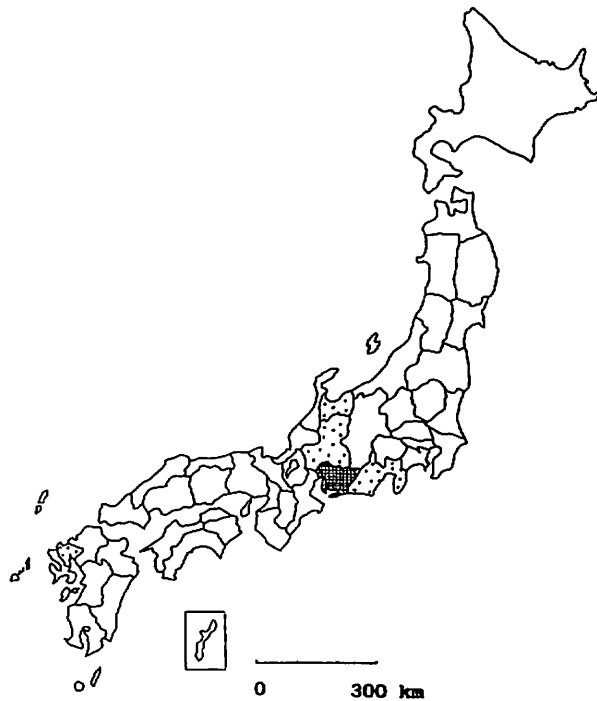


Fig.12. Area of Osaka's corporation groups, 1986.  
See the legend in Fig.11.



**Fig.13. Area of Aichi's corporation groups, 1986.**  
See the legend in Fig.11.

**Source:** *Corporation Groups in Japan, 1987*, Toyo Keizai Shinpo-sha.

classified as manufacturing industry and are located either in Tokyo or in Osaka or in Aichi. The subsidiaries considered include not only manufacturing firms but also those that participate in tertiary activities.

Considering these corporation groups, we see patterns very similar to those of multilocational firms. The parent corporations located in Tokyo control more than seventy per cent of the employees working at subsidiaries located in the eastern part of Japan. Even in the western part, Tokyo's parent corporations often control more than half the employees. Osaka's parents control more than half the employees working at subsidiaries located in the surrounding prefectures with the exception of Hyogo and Shiga, but its controlling power becomes weaker as a function of the distance between Osaka and the other prefectures. Aichi's parent corporations have more limited controlling power within a much more limited area.

The parent corporations located in the prefectures with the "local pivotal city" locate their subsidiaries almost only in their own prefectures and at most additionally in Tokyo or in Osaka. This means that the relations between Tokyo and the local prefectures and the ones between Osaka and them have become a bit more interdependent because of the behavior of the corporation groups whose home bases are in the prefectures with the "local pivotal city".

## 5. Conclusion

We can say that the spatial structure of the Japanese economy is very vertically integrated. It is true that Osaka still has some influential power, but the gap between this prefecture and Tokyo is very wide. This vertical spatial integration

may have further developed since 1981 because of the ongoing internationalization, especially in the sphere of financial activities, so that Tokyo appears to monopolize the spatial economy of Japan<sup>12</sup>).

One might well think that there is no chance for provincial regions to develop under their own economic strength. This is an open question and the hypothesis should be examined taking into account all of the realities of contemporary regional economy. This issue is especially important for the so-called "local pivotal cities" that are most prosperous in Japan next to Tokyo and Osaka. A lot of branches and subsidiaries of Tokyo's corporations are located at these local pivotal cities.

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#### Notes

- 1) Kawashima (1963) discussed the spatial structure of the Japanese economy earlier than most other Japanese economic geographers. Though he pointed out the relation between enterprises producing intermediary goods and enterprises producing final goods and came to the conclusion that Japan had a vertical spatial division of labor, he did not adopt a viewpoint of intra-corporate organization. Kitamura & Yada (1977) focused on the change of the spatial division of labor from that developed between large corporations to that developed between plants of the same corporation during the period of the 1960s and 1970s in Japan. Abe (1984) analyzed the spatial distribution of headquarters and branch offices of large Japanese corporations and the change in this organization during the 20th century.
- 2) The concept of a regional system of economy means that regions interact through spatial flows of labor, materials, capital, information and so on. In other words, it is the relationship among different regions through spatial divisions of labor. In the present economy, the spatial division of labor within a large corporation becomes more and more important. This recognition is shared, for example, by Dicken (1976), Pred (1977), Massey (1979), Rees et al. (1981), Watts (1980, 1981), Gräber et al. (1987) and others.
- 3) Schamp (1981, S.88-89) defines the genuine multilocal corporation as an enterprise locating its factories in different municipalities. On the other hand, English or American authors do not give any clear definition concerning the appropriate scale of the region. Without belaboring the point, the solution of this question should depend on the concrete issues at hand.
- 4) Pred (1977, pp.98-99) describes this tendency in the United States and Great Britain in brief. Information about West Germany comes from Gräber et al. (1987).
- 5) Watts (1980) discusses about the spatial behavior of large industrial enterprises. He pays attention to their character of multilocality.
- 6) The Economic Planning Agency, Research Bureau (1987, pp.180-181) analyzes the transfer of income from provinces to metropolitan areas through the intra-corporate organization.
- 7) Yamamoto (1987a) substantiates this hypothesis in the case of West Germany.

- 8) The choice of years is a matter of census availability.
- 9) Friedmann (1966, pp.35-37) gives a model of the relationship between the spatial integration of a national economy and regional disparity. According to his model, regional disparity declines as spatial integration proceeds.
- 10) The concept of the "external control" depends on the scale of regions. If headquarters or parent companies are located outside the region concerned, branches or subsidiaries are considered to be controlled externally by them.
- 11) In Japan, we can find most of subsidiaries in the service activities. In manufacturing, however, electronics and automobile industries rely heavily on subsidiaries. Sakamoto & Shimotani (1987) analyzed the corporation groups in Japan and provided examples of large corporations in these sectors.
- 12) The key word about the spatial structure of the Japanese economy is now the so-called "unipolarized concentration in Tokyo". There is now no literature that does not use this term in the field of regional economy in Japan. The major enterprises and their headquarters have come to be increasingly concentrated in Tokyo especially in the 1980s.

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