An Analysis of the Determinants of the Performance of Japanese Manufacturing Investments in NAFTA, Europe and NIEs

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Performance, Entry Mode, Wholly Owned Subsidiary, Joint Venture, Cultural Distance

1. Introduction

The surge of the Foreign Direct Investment (FDI) by Japanese Multinational Enterprises (MNEs) in recent years has received a special attention from scholars of international business. These studies have focused on different aspects including the entry mode of the Japanese MNEs (Hennart, 1991; Nitsch et al., 1996; Mansour and Hoshino, 2002), their behaviour (Kojima, 1978; Kimura and Pugel, 1995), and their performance (Siripaisalpipat and Hoshino, 1999; Mansour and Hoshino, 2001; Yoshikawa, 2002). The determinants of the Multinational Enterprise (MNE) performance have been an interesting topic of research in the business strategy field (Douglas and Craig, 1983; Christmann et al., 1999; Pan and Chi, 1999). In this study, we investigate the impact of entry mode, firm-, country-, and industry-specific factors and cultural distance on the performance of Japanese manufacturing affiliates in three different regions or three economic blocs: North American Free Trade Agreement (NAFTA), Western Europe and the East Asia's Newly Industrialized Economies (NIEs). Figure 1 shows the total Japanese FDI in the three locations from 1994 to 1998.

The organization of the paper is as follows. Section 2 illustrates the theoretical framework and advances some hypotheses on key variables influencing the performance of the firm. In section 3, we illustrate the characteristics of the sample and the variables used in the analysis. The findings are presented in section 4, while the last section summarizes and concludes the study.

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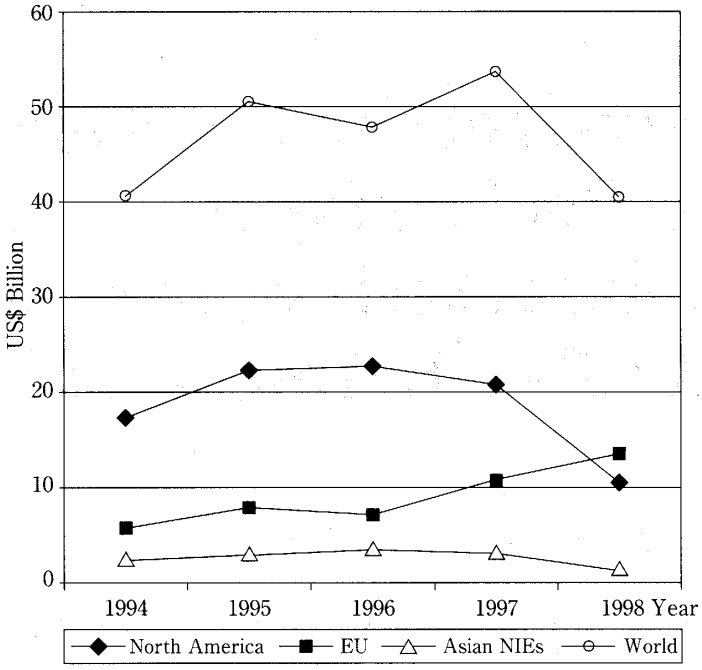
Figure 1 Japanese FDI Flows by Region, 1994-1998



2. Literature Review and Hypotheses

Some studies (Hitt and Ireland, 1985; Rumelt, 1991; Hill and Deeds, 1996) have debated the importance of internal versus external sources of competitive advantage and their links to firm performance. Other scholars (Hansen and Wernerfelt, 1989; Porter, 1991; Mauri and Michaels, 1998) have suggested that both factors are crucial to competitive success. In the same way, to succeed in international markets, firms need to select the appropriate entry mode, which is considered as a critical and indispensable decision when investing overseas (Anderson and Gatignon, 1986; Root, 1994). The performance can also be influenced by the cultural distance between the host and home countries (Killing, 1983). Many researchers have identified variables associated with performance despite their disagreement about the appropriate definition and measure of the concept of performance (Geringer and Hebert, 1991). We develop the firm's performance in foreign market explained by the following factors.

2-1. Entry Mode

Entry mode is one of the most important decisions faced by a MNE going abroad through FDI. They have the choice between a shared ownership (equity joint venture: JV) and full ownership (wholly owned subsidiary: WOS), the two modes involving variations in resource commitment and control (Hill et al., 1990). If a joint venture arrangement is chosen, then the firm has to decide whether to choose a minority-, 50%-, or majority-owned unit, it means the level of control will be different according to the percentage of equity. However, in this study, we focus on the decision between a wholly owned unit and a joint venture, which is different from the degree of control(1).

Li (1995) argued that the choice of entry mode -whether JV or WOS - is related to the survival of foreign subsidiaries because these strategies differ both in expected risk and in the importance of various coordination costs. Woodcock et al. (1994) examined the relationship between entry modes and performance. They developed a theoretical relationship for international entry modes that is based on the contingency characteristics of resource requirements and organizational control factors. Drawing from a sample of 321 Japanese firms entering the North American market, they found that new venture mode outperforms the international joint venture mode. Nitsch et al. (1996) examined the links between entry mode and performance of Japanese FDI in Europe for the years 1992 and 1994. They found that full ownership mode tends to have the highest proportion of gains

comparing to joint ventures. Drawing on these findings of the earlier studies, we investigate the following hypothesis :

Hypothesis 1 : Foreign firms entering through full ownership investments are more likely to perform better than those entering through shared ownership investments.

2-2. Firm-specific Advantages

In order to compensate for the natural disadvantage of competing with established firms in a foreign land, firms engaging in overseas production must have some form of proprietary advantage (Hymer, 1976). Firm-specific advantages can be subdivided into two distinct types of advantage : asset advantages and transaction advantages (Dunning, 1988). There is general agreement that some form of firm-specific advantage is necessary (Rugman, 1981 ; Dunning, 1988). Technological resources, in particular, have been the focus of many studies of firm-specific advantage, as well as manufacturing, marketing, organizational and human resources.

2-2-1. Dimensional Aspects

Size can be considered as an important source of strategic advantage since it can allow the firm to realize economies of size and scope and access to resources denied to smaller firms. Small companies have fewer financial resources than larger firms, thus, they have less planning and less alternative development. The financial ability of the firm tends to give rise to superior rates of profitability. Li (1995) found that foreign subsidiaries are less likely to exit when the parent firms are large. Freeman et al. (1983) have shown that the size of a firm has an important effect on business failure. Smaller firms have higher rates of failure than large firms. Isobe (1998) found that size of parent tend to have positive influence on subsidiary's performance. As a result, we hypothesize that larger firms will have higher performance than small firms :

Hypothesis 2 (a) : The larger the foreign firm is, the more likely the subsidiary performs better.

2-2-2. Technological and Advertising Capabilities

Several studies have used R&D and advertising capabilities as measures for intangible resources.

R&D has been viewed as a key determinant of the technological know-how of firms. It is perceived as an important stimulation for good results and it has been found in numerous empirical studies. Kotabe (1990) states that companies can improve their performance by focusing on product design/development and by improving their manufacturing processes. Siripaisalpipat and Hoshino (1999) found that R&D intensity of the investor has a positive influence on the profitability of the subsidiary. Decarolis and Deeds (1999), in analyzing 225 companies in the biotechnology industry, found that R&D intensity is a highly significant predictor of firm performance. Makino and Delios (1996), studying Japanese joint ventures in Southeast and East Asia, found that the parent's R&D rate is positively associated with performance. We expect to find a similar relationship between R&D intensity and firm performance. The resulting hypothesis is :

Hypothesis 2 (b) : Technological capabilities of the investor firm are positively associated with the subsidiary performance.

As with technology, firms often spend large sums of money in advertising to differentiate their products and services from those of their competitors and build successful brands. Advertising provides useful information about the availability of products and their attributes, enabling consumers to make informed purchase decisions. Kessides (1986) found that entrants into foreign markets perceive a greater likelihood of success in markets where advertising plays an important role. Therefore :

Hypothesis 2 (c) : Advertising capabilities of the investor firm are positively associated with the subsidiary performance.

2-2-3. International Experience

Experience is a strong factor that permits firms to gradually increase their commitment to geographical expansion (Johanson and Vahlne, 1977). Firms, which lack experience in the international setting, are not capable of managing subjectively, monitoring appropriately, and assessing inputs in lieu of outputs (Gatignon and Anderson, 1988). The more multinational is the firm, the greater it can leverage strategic resources and diversify market risks, thus it can perform better (Kim et al., 1993). According to Kogut and Chang (1996), exporting can be regarded as a platform for firms to enter international markets. This strategy serves the com-

panies to enter foreign markets with low startup costs, few risks, and profit on current sales (Root, 1994). Thus, exporting enables a firm to gain knowledge about foreign markets and its ability to compete in them. Some studies have used age as a proxy for the experience the firm has acquired in its business (Geroski, 1995). Mitchell (1994), Mata and Portugal (1994) and Dunne et al. (1989) found that the probability of exit declines with the age of firms. Similarly, Audretsch and Mahmood (1994) and Audretsch (1995) found that post-entry performance is positively related to the age of the firm once the firm has survived for a sufficient period of time. Siripaisalpipat and Hoshino (2000) found that international experience, measured by the total number of overall manufacturing subsidiaries of the parent firm, has a positive relationship with performance. Ramaswamy (1993) found a positive relationship between the number of overseas plants and performance. The following is therefore expected :

Hypothesis 2 (d) : The greater the international experience of the investor firm is, the more likely the subsidiary will perform better.

2-2-4. Expatriate Effect

Employees constitute an important source of competitive advantage for firms (Barney, 1991). Expatriates play an important role in representing the corporate offices of a particular MNE (Peterson et al., 1996). Multinationals companies send expatriates abroad to transfer managerial expertise and technology as well as maintaining control over host country subsidiaries (Edstrom and Galbraith, 1977 ; Torbiorn, 1982 ; Boyacigiller, 1990). So, the firm that uses effectively expatriate managers will show higher performance. The study of Fey and Bjorkman (2001) provides relatively strong support for the existence of a positive relationship between human resource management practices and the performance of Russian subsidiaries of Western corporations. Kobrin (1988) states that, by reducing the number of expatriates overseas, multinational corporations are making a significant strategic error. We expect to find a similar relationship between expatriate number and firm performance. Therefore :

Hypothesis 2 (e) : The larger the number of expatriates of a firm is, the more likely the subsidiary performs better.

2-3. Location-specific Advantages

The country conditions are important determinants of the performance of multinational companies' subsidiaries. Much international business literature (Douglas and Craig, 1983, Root, 1994, Caves, 1996) has recognized the influence of country conditions such as demographic, economic, and political factors on performance. The selection of the country for entry and investment is a very important challenge facing these firms (Christman et al., 1999). The results of their study show that country characteristics are by far the most important determinants of subsidiary performance.

Hypothesis 3 : Country characteristics have significant effects on performance

2-4. The Industry-specific Advantages

Performance can vary from one industry to another. Some industries need more R&D efforts ; this could be an entry barrier and reduces competition and the possibility of better performance. The results by Bane et al. (1984) indicated that there was a significantly high failure rate in FDI made in fabricated metals and low failure rate in FDI made in the petroleum industry and in the textile industry. Christman et al. (1999) found that industry characteristics are significant determinants of subsidiary performance. They also found that this importance of industry characteristics as a determinant of subsidiary performance differs significantly between developed and developing countries. So, we can assume that :

Hypothesis 4 : Industry characteristics have significant effects on performance.

2-5. The Cultural Distance

Hofstede (1994) defines culture as "the collective programming of the mind which distinguishes the members of one group or category of people from those of another." The performance is affected by the cultural distance between the host and home countries (Killing, 1983). The greater the cultural distance between home and host countries, the greater the differences in management practice, and the harder the integra-

tion of the unit with the parent. So, it is often that problems in communication between the subsidiary and the parent can take place. The similarity reduces these problems and leads to better performance. Thus, a negative relationship between cultural distance and the firm performance may be expected :

Hypothesis 5 : Cultural distance is inversely related to firm performance.

In summary, in this research we sought to examine the correlation between firm's advantages and its subsidiary's performance. We expect that the more the firm's capabilities, the more likely the subsidiary would perform better.

3. Data and Variables

This study examines the impact of entry mode, firm-, country-, and industry-specific factors, and cultural distance on the corporate performance of the Japanese manufacturing subsidiaries located in NAFTA (Canada, Mexico and U. S. A.), Western Europe (European Union 15) and the East Asia's NIEs (Hong Kong, Singapore, South Korea and Taiwan) in 1998.

◆ Data Collection

The source of Data is compiled from *Japanese Overseas Investment Year 1999 : A Complete Listing by Firms and Countries* (Toyo Keizai Inc.) which contains information on the Japanese firms listed on the Japanese stock exchanges as well as major unlisted Japanese firms. The data used here include only manufacturing subsidiaries in which the Japanese parent's stake was at least 10%. The Nikkei Kaisha Nenkan was used to retrieve data about firm-specific advantages when unavailable from the former source. The company's performance is measured by asking the top Japanese manager in every subsidiary to evaluate the overall financial profitability according to three-point scale, representing "Loss", "Breakeven" and "Gain". Following the study of Woodcock et al. (1994) who found that performance of subsidiaries tended to stabilize two years after entry, we have eliminated the subsidiaries which the age of establishment was less than two years.

The final sample includes 890 companies in the year 1998 : NAFTA (358 firms), Europe (180 firms) and the NIEs (352 firms) representing 399 Japanese parent companies. The complete list of these parent companies is included in the

Table 1 Sample Distribution by Country and Performance

Country	Gain	Breakeven	Loss
NAFTA	**209 (58%)**	**75 (21%)**	**74 (21%)**
U. S. A.	188	60	65
Canada	9	6	6
Mexico	12	9	3
Europe	**109 (60%)**	**38 (21%)**	**33 (19%)**
U. K.	39	14	14
Germany	18	10	3
France	13	4	5
Netherlands	11	4	1
Belgium	6	0	2
Spain	9	1	3
Sweden	1	0	2
Ireland	1	1	1
Portugal	2	0	0
Italy	6	4	0
Greece	1	0	0
Finland	1	0	1
Austria	1	0	1
NIEs	**273 (77%)**	**42 (12%)**	**37 (11%)**
Hong Kong	32	3	3
Korea	66	9	14
Singapore	51	12	11
Taiwan	124	18	9
Total	**591 (66%)**	**155 (18%)**	**144 (16%)**

Sourse : Japanese Overseas Investments Listed by Countries, Tokyo Keizai, Inc. (1999)

Appendix. Table 1 gives us an idea of the sample distribution by country and performance. Around 66% of the companies have a good performance. The companies in the Asian countries are performing better (77%) than those in Europe (60%) and NAFTA (58%).

◆ Dependent Variable

International business researchers generally measure performance based on the financial statements or referring to the opinion of the top managers. In our analysis, two dependent variables or measures of performance were examined. The dependent variable, Performance is a dichotomous variable :

1. Equal to 1 if it is "Gain" and 0 if it is "Breakeven" or "Loss".

2. Equal to 1 if the growth of the subsidiary sales is positive and 0 if it is negative.

◆ Independent Variables

The variables used in the analysis were operationalized as follows :

Entry Mode : Entry mode is measured by a dummy variable equal to 1 if the parent MNE owned at least 95% of the subsidiary's equity (full control) and 0 if less than 95% (partial control). This definition is the same as that used by previous studies on the topic (Stopford and Wells, 1972 ; Anderson and Gatignon, 1986 ; Gomes-Casseres, 1989).

Dimensional Aspects : The size of the Japanese parent company is measured by its total assets introduced in logarithmic form.

Technological and Advertising Capabilities : The R&D intensity and advertising intensity of the investing company, which are measured respectively by the ratio of R&D expenditures to sales and the ratio of advertising expenditures to sales, measure the amount of intangible assets held by a Japanese firm.

International Experience : Multinationality has been operationalized in a number of ways by different researchers. We measured international experience by four indicators reflecting the level of experience that may affect the firm's competitive success :

i) International experience is determined by the total number of foreign subsidiaries of the parent company ; ii) Export ratio is computed as the ratio of foreign sales (exports) to total sales of the parent company ; iii) The parent company's production ratio, measured as the ratio of overseas production to the overall production ; and iv) The affiliate age.

Expatriate Measure : The number of Japanese employees in the foreign subsidiary is used as an indicator for expatriate size.

Country Measures : The host country government's policy can have a significant impact on the performance of the FDI in that country. Following the research of Christmann et al. (1999), we included the following country variables :

i) The country population in 1998 is introduced in logarithmic form ; ii) The country inflation rate ; and iii) The country level of development is a dummy variable which is equal to 1 if per capita GNP in 1998 prices is larger than $9,361 and 0 otherwise[(2)].

Field of Industry : Manufacturing industries can be divided into resource-based and non resource-based industries. In our sample, the industries are classified into seven groups. The Industry variable is measured by a dummy variable equal to 1 if the firm is included in one of the four following groups or what are classified as resource-based industries i.e. : Food and Beverages ; Textiles ; Pulp, Wood and Paper ; and Chemical products, Rubber and Plastics (Hennart and Park, 1994) and 0 otherwise.

Cultural Distance : It is difficult to quantify cultural distance between home and host countries. Many studies have defined cultural distance between countries based on their relative similarity according to relevant organizational variables. Kogut and Singh (1988) suggested that cultural distance between home and host cultures would affect subsidiary performance. We measured the cultural distance in two ways :

1. A cluster approach to the concept of cultural distance is taken based on the work of Ronen and Shenkar (1985). They reviewed eight studies and have described differences in work attitudes and practices across a large number of countries. They have shown that the work cultures of some countries are closer together while others are farther apart. They therefore propose distinctive clusters of countries. We use five dummy variables ($CLUSTER_i$: $i=1\cdots5$) to represent six cultural clusters namely : Anglo, Germanic, Nordic, Latin European, Latin American, and Far Eastern, as shown in Table 2. This is adapted from the works of Gatignon and Anderson (1988) and Gomez-Mejia and Palich (1997) following the work of Ronen and Shenkar (1985) with a modification concerning

Table 2 Cultural Clusters

1. Anglo Canada Ireland U. S. A. U. K.	**2. Germanic** Austria Germany	**3. Nordic** Finland Netherlands Sweden
4. Latin European Belgium France Italy Spain Greece	**5. Latin American** Portugal Mexico	**6. Far Eastern** Hong Kong Korea Singapore Taiwan

Sourse: Adapted from Gatignon and Anderson (1988) and Gomez-Mejia and Palich (1997)

Table 3 Pearson Correlation Coefficients (Full Sample)

Variables	1	2	3	4	5	6	7	8	9	10
1. Share (0.52, 0.50)										
2. Log assets (5.71, 1.23)	0.008									
3. Industry (0.42, 0.49)	−0.092	0.078								
4. R&D Intensity (0.07, 0.07)	−0.184	0.145	0.102							
5. Advertising Intensity (0.03, 0.05)	−0.121	0.086	0.182	0.234						
6. Export ratio (1.85, 2.75)	−0.181	−0.183	0.037	0.467	0.393					
7. Subsidiary Age (13.7, 8.08)	−0.082	0.018	0.038	0.232	0.067	0.231				
8. Population (17.84, 1.42)	0.207	0.116	−0.039	−0.427	−0.246	−0.522	−0.248			
9. Rate of Inflation (0.89, 0.44)	0.160	0.094	−0.055	−0.373	−0.251	−0.447	−0.296	0.612		
10. Level of development (0.87, 0.33)	0.058	0.022	0.016	−0.121	−0.145	−0.261	−0.103	0.011	−0.197	
11. Expatriate (5.55, 7.12)	0.160	0.215	−0.178	−0.010	0.020	−0.035	0.095	0.144	0.113	−0.032

Note : Means and Standard deviations are shown in parentheses below variable names

Greece included with Latin European cluster.

2. Kogut and Singh (1988) Used Hofstede (1980)'s indices to formulate a composite index of cultural distance. This index was formed based on the deviation along each of the four cultural dimensions (i. e., power distance, individualism/collectivism, masculinity/femininity, and uncertainty avoidance) of each country from the country of origin ranking. This index is used quite often in many studies (Agarwal and Ramaswami, 1992; Benito and Gripsrud, 1992; Gomes-Mejia and Palich, 1997). The cultural distance is defined as :

$$CD_{jk} = \sum_{i=1}^{4} \{ (D_{ij} - D_{ik})^2 / V_i \} / 4,$$

where CD_{jk} is the cultural distance between countries j and k, D_{ij} is the score for subsidiary country j on cultural dimension i, D_{ik} is the score for subsidiary k on cultural dimension i, and V_i is the variance of the index for cultural dimension i.

◆ Statistical Methods

To explore the influence of the variables described above on the performance of the foreign firm, we conducted a binomial logistic regression analysis. We used logistic regression

Table 4 Logistic Regression Results of the Determinants of Performance of Japanese Investments by Region (using performance evaluation)

	NAFTA		Europe		NIEs	
Intercept	−11.438	(1.072)	−37.750	(3.391)	−18.450	(0.048)
MODE	−1.389*	(2.906)	0.324	(0.180)	0.226	(0.800)
ASIZE	0.482	(1.579)	−0.258	(0.304)	−1.902**	(4.601)
RND	—	—	—	—	−1.077	(0.035)
ADV	−39.166**	(5.954)	−4.021	(0.080)	64.194***	(6.554)
EXPRAT	3.338	(2.587)	−0.226	(0.019)	−1.335***	(7.089)
INTEXP	−0.020	(0.457)	0.047	(1.587)	0.185*	(3.368)
PRODRAT	0.038*	(3.564)	—	—	0.085**	(5.204)
AGE	0.064	(1.692)	0.057	(0.972)	—	—
EXPATR	−0.002	(0.001)	0.395**	(4.990)	−0.028	(0.050)
POPUL	0.441	(0.620)	1.658*	(2.795)	1.849*	(6.087)
INFLAT	0.146	(0.007)	7.508**	(5.745)	−1.265	(0.712)
INDUSTRY	1.300*	(3.389)	2.249*	(3.663)	−0.038	(0.002)
χ^2		23.989**		15.060*		28.786***
N		358		180		352
DF		11		10		11
Log Likelihood		−38.0		−31.5		−25.2

Note: Figures within parentheses are *Wald*-Statistics (*p<0.10;** p<0.05;*** p<0.01).

because it is a very robust technique that is appropriate for dichotomous dependent variables (Hair et al., 1995). The model can be expressed as:

$$P(Y) = 1/(1+\exp(-Z))$$

where Y is the dependent variable, Z is a linear combination of the independent variables

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n,$$

where β_0 is the intercept, $\beta_1 \cdots \beta_n$ are the regression coefficients and $X_1 \cdots X_n$ are the independent variables.

4. Results

The correlation matrix of the independent variables, presented in Table 3, suggests little collinearity. We tested all the hypotheses for every location then for the whole sample using the two different measures of the dependent variable.

In the first stage, we regressed the firm performance on the entry mode and the different firm-, country-, and industry-specific factors in each region. In the second stage, we entered the cultural distance measures to examine its effect with the other factors on the performance for the full sample. Following a method used by some other authors and because of the number of missing values for some variables, we develop different models for each region.

For the first test, presented in Table 4, we used the performance evaluation of the company's top manager as a measure for the dependent variable.

Contrary to expectation (hypothesis 1), the coefficient of MODE, the Japanese parent's entry mode structure, is negative and significant for NAFTA, i. e., that firms entering this region through joint ventures are performing better. This result is contradictory to several past studies (Woodcock et al., 1994; Nitsch et al., 1996), who found that entry mode is positively related to performance. This means that the results differ from location to another. It is not significant for Europe and Asian countries; supporting the findings of Vega-Cespedes and Hoshino (2001) that performance is not directly associated with the entry mode. They used a sample of 205 Japanese subsidiaries in Latin America and 225 Japanese subsidiaries in two states in the United States.

Unexpectedly, the size of the investing company (hypothesis 2(a)) is negatively significant for the NIEs, showing that small Japanese firms are doing better in Asian region than the large ones. This result is consistent to the findings of Chang and Choi (1988) who found that total assets are negatively associated with the performance of Korean business groups. Siripaisalpipat and Hoshino (1999), in studying the factors influencing the performance of Japanese FDI in Thailand, also found that firm size is

Table 5 Logistic Regression Results of the Determinants of Performance of Japanese Investments by Region (using sales growth)

	NAFTA		Europe		NIEs	
Intercept	−5.050	(0.015)	70.813	(1.677)	−0.823	(0.050)
MODE	1.365	(1.598)	0.474	(0.137)	0.833*	(3.544)
ASIZE	0.008	(0.000)	−1.189*	(2.854)	0.115	(0.190)
ADV	−9.863	(0.115)	−27.684	(1.497)	—	—
EXPRAT	−3.010	(0.820)	4.381	(1.547)	−0.082	(2.235)
INTEXP	0.018	(0.120)	−0.003	(0.018)	−0.021	(0.949)
PRODRAT	−0.165**	(5.313)	—	—	0.013	(1.056)
AGE	0.038	(0.266)	−0.271	(1.479)	—	—
EXPATR	−0.112	(1.267)	0.977**	(4.698)	−0.013	(0.103)
POPUL	−0.025	(0.000)	−3.681	(1.603)	0.035	(0.026)
INFLAT	2.451	(0.005)	−0.475	(0.014)	1.566**	(4.388)
INDUSTRY	1.990*	(3.556)	4.745*	(3.198)	−0.708*	(3.120)
χ^2		17.885*		21.76**		15.894*
N		244		106		233
DF		11		10		9
Log Likelihood		−22.6		−14.12		−79.0

Note: Figures within parentheses are *Wald*-Statistics (*p<0.10;**p<0.05;***p<0.01).

negatively associated with profitability. For NAFTA and Europe, this variable is not significant, confirming the results of Rugman (1986) who found that size and profitability are not directly related.

Hypothesis 2(b), which states that technological capabilities of the investor increases the likelihood of better performance of the subsidiary, is not confirmed. The coefficient of RND, the Japanese parent R&D ratio, is negative and not significant for the Asian region. In previous studies (Decarolis and Deeds, 1999; Makino and Delios, 1996; Lu and Beamish, 2001), this coefficient is shown to be a strong determinant for a good performance.

The coefficient of ADV, the advertising ratio of the mother company, is negatively significant for NAFTA and has a positive sign and is significant for the Asian countries. Apparently, the advertising-focused firms are performing better in the NIEs than those in North America. This means that, by spending considerable amounts on advertising to promote their products and build successful brands, these companies could get customers switch to their brands and consequently reach the planned level of sales in the Asian region better than in North America. Also, they may find more competition from the local firms in North America than in the Asian region.

For the international experience effect on performance, different results were registered. The export ratio variable, EXPRAT, is significant only for the Asian region, with a negative sign. Thus, the experience gained in exporting is not a strong factor to get a good performance. Our results also show that the degree of international expansion, as measured by INTEXP, the number of foreign affiliates, has a positive and significant effect on performance only for the NIEs ($\beta=0.185$, $p<0.1$). This follows the findings of Ramaswamy (1993) of a positive relationship between the number of overseas plants and performance. For the coefficient of AGE, the subsidiary's age, it has the correct sign but not significant. The coefficient PRODRAT, the parent company's overseas production ratio, is found to be positively significant for the North American and Asian regions. So, companies with a strong production experience overseas are performing well in these regions.

In line with hypothesis 2(e), the coefficient of EXPATR, the Japanese expatriate measure, is positively significant in Europe showing that the more Japanese managerial staff, the better the performance would be. Apparently, expatriates in Europe found better conditions to serve as control representatives of the home office in insuring that the subsidiary adheres to the corporate goals and objectives. So, by using effectively the expatriate managers, these firms show higher performance.

Supporting hypothesis 3, a positive and significant result for the population coefficient, POPUL, was found for Europe and the NIES. The results also show that the inflation rate

Table 6 Logistic Regression Results of the Determinants of Performance of Japanese Investments for the Full Sample (using performance evaluation)

	Model 1		Model 2		Model 3	
Intercept	−1.110	(0.146)	−2.438	(0.400)	3.859	(0.946)
MODE	−0.698**	(4.943)	−0.579*	(3.151)	−0.531*	(2.867)
ASIZE	0.230*	(2.959)	0.264*	(3.654)	0.213	(0.508)
RND	−0.855	(0.144)	−1.852	(0.613)	−1.189	(0.277)
ADV	0.657	(0.037)	1.661	(0.216)	1.100	(0.105)
EXPRAT	0.230	(2.576)	0.039	(0.047)	0.229	(2.515)
AGE	0.052***	(6.748)	0.050***	(5.762)	0.054***	(7.184)
EXPATR	0.009	(0.107)	0.005	(0.027)	0.017	(0.369)
POPUL	−0.007	(0.002)	0.066	(0.089)	−0.284	(1.735)
INFLAT	0.203	(0.117)	0.926	(0.926)	0.713	(1.119)
DEVELOP	−0.300	(0.213)	0.361	(0.170)	0.281	(0.198)
INDUSTRY	0.192	(0.418)	0.146	(0.227)	0.213	(2.565)
CLUSTER 1			−1.747	(2.189)		
CLUSTER 2			−1.481	(1.968)		
CLUSTER 3			−1.894	(2.354)		
CLUSTER 4			−1.380	(1.574)		
CLUSTER 5			−1.826	(1.016)		
Kogut and Singh Index					−1.410	(3.626)
χ^2		33.944***		36.877***		35.431***
N=890						
DF		11		16		12
Log Likelihood		−158.1		−156.6		−159.9
R^2		0.150		0.166		0.164
Adjusted R^2		0.108		0.120		0.119

Note: Figures within parentheses are *Wald*-Statistics (*p<0.10; **p<0.05; ***p<0.01).

coefficient, INFLAT, is positively significant (β=7.199, p<0.05) in Europe.

Supporting hypothesis 4, the coefficient of INDUSTRY is positively significant (at p<0.1) in both NAFTA and Europe. So, in these two regions, the resource-intensive industries are performing better than the rest of industries, supporting the findings of Bane et al. (1984).

In Table 5, we realised the same analysis with sales growth as a dependent variable. The main results can be summarized as follows.

Entry mode variable is positively significant only in the Asian countries. This means that WOS are performing better than JV in this region. This finding supports the result of previous studies (Woodcock et al., 1994; Nitsch et al., 1996).

The size of the investing firm is found to be negative and significant in Europe. In this region, small firms are performing better than large firms.

Industry is positively significant for NAFTA and Europe and negatively significant for the NIEs. The firms belonging to resource-based industries are performing better than those belonging to non resource-based industries in NAFTA and Europe and vice versa in the NIEs.

For the second test, presented in Table 6, we used the first measure for the dependent variable. The combined effect of entry mode and firm-, country-, and industry-specific factors was first examined. The result of the fitted model and corresponding statistical test is shown as model 1 in Table 6.

We found that the coefficient of entry mode, MODE, is negatively related to performance at the 0.05 level. So, the Japanese joint ventures are performing better than wholly owned subsidiaries.

The coefficient of ASIZE, the parent company total assets, shows the expected positive impact on the dependent variable (p<0.1). This result supports hypothesis 2(a). The firm size is an important source of strategic advantage that allows firms to realize economies of size and scope.

The coefficient of the subsidiary age, AGE, is positive and strongly significant. This is consistent with the work of Lupo et al. (1987) who found that profitability of US multinationals in

Table 7 Logistic Regression Results of the Determinants of Performance of Japanese Investments for the Full Sample (using sales growth)

	Model 1		Model 2		Model 3	
Intercept	8.110	(3.489)	4.997	(1.004)	7.722	(1.252)
MODE	0.309	(0.722)	0.471	(1.522)	0.306	(0.704)
ASIZE	−0.108	(0.261)	−0.198	(0.819)	−0.107	(0.254)
RND	−4.727*	(3.213)	−4.768*	(2.995)	−4.732*	(3.216)
ADV	6.019	(1.328)	7.987	(1.984)	6.025	(1.329)
EXPRAT	0.222	(1.457)	0.126	(0.249)	0.220	(1.422)
INTEXP	0.008	(0.289)	0.010	(0.482)	0.008	(0.286)
EXPATR	−0.017	(0.523)	−0.014	(0.322)	−0.017	(0.522)
POPUL	−0.501*	(3.625)	−0.355	(1.292)	−0.479	(1.463)
INFLAT	2.313**	(5.238)	3.812**	(4.606)	2.253*	(2.996)
DEVELOP	−0.214	(0.073)	0.864	(0.561)	−0.229	(0.079)
INDUSTRY	0.296	(0.572)	0.130	(0.103)	0.294	(0.560)
CLUSTER 1			−2.210	(1.602)		
CLUSTER 2			−0.323	(0.056)		
CLUSTER 3			4.395	(0.058)		
CLUSTER 4			−1.481	(1.095)		
CLUSTER 5			11.900	(0.291)		
Kogut and Singh Index					0.025	(0.005)
χ^2		19.581*		25.034*		19.586*
N=583						
DF		11		16		12
Log Likelihood		−103.5		−100.8		−103.5
R^2		0.146		0.184		0.146
Adjusted R^2		0.106		0.134		0.106

Note: Figures within parentheses are *Wald*-Statistics (*p<0.10; **p<0.05; ***p<0.01).

1966 was strongly related to the ages of the subsidiaries after controlling for the industry and country where the subsidiary was located.

Contrary to our hypotheses, neither the intangible assets nor the country and expatriate variables were found to be statistically significant.

The second part of this analysis consists on adding the cultural distance variables. The Kogut and Singh index was included first. The result of the model containing entry mode, firm-, country-, and industry-specific factors and culture index is shown as model 2 in Table 6.

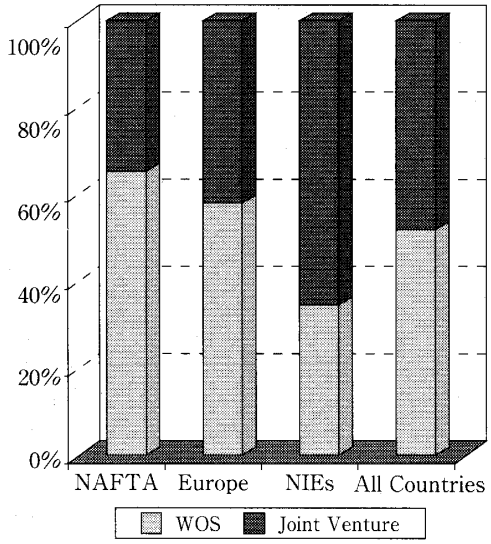
The results show that the coefficient of cultural distance is negative and significant. This is consistent with the findings of Luo and Park (2001) who found that cultural distance is negatively significant with the performance measured by the ROA.

A cultural cluster dummy (CLUSTER*i*) is included to account for possible performance differences attributable to culture differences. The result of the model containing entry mode, firm-, country-, and industry-specific factors and culture distance is shown as model 3 in Table 6.

In these additional analyses, the coefficients of MODE, ASIZE and AGE remain significant but the rest of the variables are not significant. All the culture coefficients are not significant confirming that the culture differences between the host and the investing countries are not a consistent factor of the good performance of the firm. This confirms the findings of Gomez-Mejia and Palich (1997) who found that culture distance does not affect performance. Compared to the base-line model containing the entry mode and the firm-specific factors, the inclusion of (CLUSTER*i*) increased the model's power of significance as indicated by χ^2 increase at $p<0.01$ level.

For the same analysis with the second type of dependent variable, results are shown in Table 7. RND variable is found to be negatively significant (at $p<0.1$ level), and inflation variable is positively significant in the two models. The two cultural distance measures are not significant.

Figure 2 Entry Mode of Japanese Affiliates in the Sample



5. Conclusions

In order to be successful in the foreign market, it is vital to companies to have enough resources and flexibility while deciding which mode of entry to use for penetrating the foreign market. The determinant of performance is an area of interest to researchers in the field of international business. Several studies have explored the impact of various factors on the success of MNE.

This study's objective was to examine the factors influencing the performance of Japanese FDI in NAFTA, Europe and the NIEs. The three regions present different aspects. Figure 2 provides a graphical representation of the entry mode distribution in our sample. Wholly owned subsidiaries tend to have the highest proportion in NAFTA and Europe, while in the NIEs, the joint venture mode is preponderant (around 70%).

Our study shed light on a crucial strategic decision by firms in their way to internationalization : what are the factors affecting their performance, and what is the preferred mode of entry that is more beneficial to them. Our study is based on a sample of 890 companies in 1998. The empirical part is divided between the analysis of every region and the full sample including all the regions. Different interpretations can also be mentioned since we used two measures of the dependent variable. Thus Tables 4 to 7 can be interpreted differently according to the sample and the dependent variable measure. Our key concern, the effect of entry mode on firm performance is found to be negatively significant. We have provided evidence that joint ventures are performing better than wholly owned investments, in contradiction to previous research conclusions (Chowdhury, 1992 ; Woodcock et al., 1994 ; Nitsch et al., 1996). So, this success is maybe due to the fact that when the Japanese firms enter the foreign markets through joint venture, their partners do not let them spend too much as compared to the situation when they have full control of the subsidiary. In this case, they tend not to control their cost well, and this probably causes weak results. As expected, we also found that the size is positively related to performance. This means that big companies are successfully using their financial resources better than the small firms. In addition, this research shows that cultural differences between the home and host countries affect negatively the profitability of the subsidiaries in the foreign markets in the case we measure the cultural distance by the Kogut and Singh index (Table 6). This is contradicting the findings of Gomez-Mejia and Palich (1997) who found no statistical relationship between cultural distance and performance.

Yet, the present study could be constrained by some limitations. Due to the nature and size of the database published by Toyo Keizai Inc., it is hard to construct some firm-specific variables since we do not dispose of the subsidiaries' financial statements, although such variables can

add a better understanding of the performance of these firms. Moreover, if we extend our data to the rest of the world, we can generalize the factors influencing the profitability of the Japanese subsidiaries in the foreign markets. Nevertheless, we can conclude that, despite these limitations, the study has clearly provided a theoretical and practical insight into the factors affecting the success of the Japanese companies in NAFTA, Europe and the NIEs, in other words between developed countries and newly industrializing economies.

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Appendix : List of the 399 Japanese Parent Companies Used in the Empirical Study

Advantest Corp.
Ahresty Corp.
Aida Engineering Ltd.
Air Liquide Japan Ltd.
Airtech Japan Ltd.
Aisan Industry Co. Ltd.
Aisin Seiki Co. Ltd.
Aiwa Co. Ltd.
Akebono Brake Industry Co. Ltd.
Alpine Electronics inc.
Amada Co. Ltd.
Amada Metrecs Co. Ltd.
Amada Sonoike Co. Ltd.
Amada Wasino Co. Ltd.
Amano Electric Co. Ltd.
Ando Electric Co. Ltd.
Anritsu Corp.
Apic Yamada Corp.
Ariake Japan Co. Ltd.
Asahi Denka Kogyo K. K.
Asahi Diamond Industrial Co. Ltd.
Bandai Co. Ltd.
Bridgestone Corp.
Brother Industries Ltd.
C. Uyemura & Co. Ltd.
Calsonic Corp.
Canon Inc.
Canon Sales Co. Inc.
Cemedine Co. Ltd.
Central Automotive Products Ltd.
Central Glass Co. Ltd.
Chino Corp.
Chugai Pharmaceutical Co. Ltd.
Chugoku Marine Paints Ltd.
Citizen watch Co. Ltd.
Clarion Co. Ltd.
CMK Corp.
Daido Metal Co. Ltd.
Daido Steel Co. Ltd.
Daifuku Co. Ltd.
Dai-ichi Kogyo Seiyaku Co. Ltd.
Daiichi Pharmaceutical Co. Ltd.
Dainippon Pharmaceutical Co. Ltd.
Dainippon Screen Mfg. Co. Ltd.
Daishinku Corp.
Denki Kagaku Kogyo K. K.
Diamond Electric Mfg. Co. Ltd.
Dijet Industrial Co. Ltd.
Dynic Corp.
Eagle Industry Co. Ltd.
Enplas Corp.
Jidosha Denki Kogyo Co. Ltd.
JMS Co. Ltd.
JSP Corp.
JSR Corp.
JUKI Corp.
Jusco Co. Ltd.
Kagome Co. Ltd.
Kanebo Ltd.
Kanematsu Co. Ltd.
Kansai Paint Co. Ltd.
Kansei Corp.
Kao Corp.
kasai Kogyo Co. Ltd.
Katakichi Co. Ltd.
Kawada Industries Inc.
Kawai Musical Instruments Mfg. Co. Ltd.
Kawasaki Heavy Industries Ltd.
Kawashima Textile Manufacturers Ltd.
Kayaba Industry Co. Ltd.
Kinugawa Rubber Industrial Co. Ltd.
Kioritz Corp.
Kitagawa Iron Works Co. Ltd.
Kitz Corporation
Koa Corp.
Kobe Steel Ltd.
Kodama Chemical Industry Co. Ltd.
Koito Mfg. Co. Ltd.
Kokoku Steel wire Ltd.
Kokusai Electric Co. Ltd.
Kokusai Electric Co. Ltd.
Komori Corp.
Konami Co. Ltd.
Konica Corp.
Kubota Corporation
Kureha Chemical Industry Co. Ltd.
Kurita Water Industries Ltd.
Kurogane Kosakusho Ltd.
Kyocera Corp.
Kyushu Matsushita Electric Co. Ltd.
Lintec Corp.
Mabuchi Motor Co. Ltd.
Makino Milling Machine Co. Ltd.
Makita Corporation
Marubeni Corp.
Marudai Food Co. Ltd.
Maruichi Steel Tube Ltd.
Masuda Flour Milling Co. Ltd.
Matsushita Communication Industrial Co. Ltd.
Matsushita Electric Industrial Co. Ltd.
Matsushita Electric Works Ltd.
Matsushita Seiko Co. Ltd.

Exedy Corp.
First Baking Co. Ltd.
Footwork International Corp.
Foster Electric Co. Ltd.
Fuji Copian Co. Ltd.
Fuji Electric Co. Ltd.
Fuji Heavy Industries Ltd.
Fuji Kiko Co. Ltd.
Fuji Oil Co. Ltd.
Fuji Oozx Inc.
Fuji Photo Film Co. Ltd.
Fujikura Kasei Ltd.
Fujikura Ltd.
Fujirebio Inc.
Fujisawa Pharmaceutical Co. Ltd.
Fujitec Co. Ltd.
Futaba Corp.
Futaba Industrial Co. Ltd.
General Co. Ltd.
Goldwin Inc.
Graphtec Corp.
Hamamatsu Photonics K. K.
Haneda Hume Pipe Co. Ltd.
Hashimoto Forming Industry Co. Ltd.
Hitachi Cable Ltd.
Hitachi Chemical Co. Ltd.
Hitachi Construction Machinery Co. Ltd.
Hitachi Ltd.
Hitachi Metals Ltd.
Hitachi Powdered Metals Co. Ltd.
Hitachi Seiki Co. Ltd.
Hochiki Corp.
Hokuriku Electric Industry Co. Ltd.
Honda Motor Co. Ltd.
Horiba Ltd.
Hosiden Corp.
Hosokawa Micron Co. Ltd.
Ibiden Co. Ltd.
Ichikoh Industries Ltd.
Idec Izumi Corp.
Ikeda Bussan Co. Ltd.
Inabata & Co. Ltd.
Inahata Sangyo Co. Ltd.
Ishihara Sangyo Kaisha Ltd.
Ishikawajima-Harima Heavy Industries Co Ltd.
Isihara Sangyo Kaisha Ltd.
Isolate Insulating Products Co. Ltd.
Isuzu Motors Ltd.
Itochu Corp.
Iwasaki Electric Co. Ltd.
Janome Sewing Machine Co. Ltd.
Japan Aviation Electronics Industry Ltd.
Japan Energy Corp.
Japan Metals & Chemicals Co. Ltd.
Japan Radio Co. Ltd.
Japan Servo Co. Ltd.
Japan Steel Tower Co. Ltd.
Japan Storage Battery Co. Ltd.
Japan Vilene Co. Ltd.
Nippon Sheet Glass Co. Ltd.
Nippon Shokubai Co. Ltd.
Nippon Steel Chemical Co. Ltd.
Nippon Steel Corp.
Nippon Valqua Industries Ltd.
Nippon Zeon Co. Ltd.
Meidensha Corp.
Meiji Seiki Kaisha Ltd.
Melco Inc.
Mikuni Corp.
Mitsuba Corp.
Mitsuba Corp.
Mitsubishi Chemical Corp.
Mitsubishi Corp.
Mitsubishi Heavy Industries Ltd.
Mitsubishi Materials Corp.
Mitsubishi Paper Mills Ltd.
Mitsubishi Pencil Co. Ltd.
Mitsubishi Pencil Co. Ltd.
Mitsubishi Plastics Inc.
Mitsubishi Rayon Co. Ltd.
Mitsubishi Steel Mfg. Co. Ltd.
Mitsuboshi Belting Ltd.
Mitsui & Co. Ltd.
Mitsui Chemicals Inc.
Mitsui Engineering & Shipbuilding Co. Ltd.
Mitsui High-tec Inc.
Mitsumi Electric Co. Ltd.
Miura Co. Ltd.
Miyuki Keori Co. Ltd.
Morinaga & Co. Ltd.
Mother Company
Mutoh Industries Ltd.
Nabco Ltd.
Nagase & Co. Ltd.
New Japan Chemical Co. Ltd.
Nicca Chemical Co. Ltd.
Nichicon Corp.
Nichimen Corp.
Nichirin Co. Ltd.
Nidec Corp.
Nifco Ltd.
Nihon Inter Electronics Corp.
Nihon Matai Co. Ltd.
Nihon Parkerizing Co. Ltd.
Nihon Spindle Mfg. Co. Ltd.
Nikkiso Co. Ltd.
Nippei Toyama Corp.
Nippon Beet Sugar Mfg. Co. Ltd.
Nippon Cable System Inc.
Nippon Carbon Co. Ltd.
Nippon Ceramic Co. Ltd.
Nippon Columbia Co. Ltd.
Nippon Felt Co. Ltd.
Nippon Flour Mills Co. Ltd.
Nippon Gasket Co. Ltd.
Nippon Hume Corp.
Nippon Paint Co. Ltd.
Nippon Paper Industries Co. Ltd.
Nippon Pigment Co. Ltd.
Nippon Pillar Packing Co. Ltd.
Nippon Pipe Mfg. Co. Ltd.
Nippon Piston Ring Co. Ltd.
Nippon Sanso Corp.
Nippon Seiki Co. Ltd.
Sekisui Jushi Co. Ltd.
Sharp Corp.
Shin-Etsu Chemical Co. Ltd.
Shin-Etsu Polymer Co. Ltd.
Shinko Kogyo Co. Ltd.
Shinko Wire Co. Ltd.

Nishikawa Rubber Co. Ltd.
Nissan Motor Co. Ltd.
Nissei Build Kogyo Co. Ltd.
Nisshin Steel Co. Ltd.
Nissho Iwai Corp.
Nissin Food Products Co. Ltd.
Nissin Kogyo Co. Ltd.
Nittan Co. Ltd.
Nitto Denko Corp.
Nitto Seiko Co. Ltd.
Nohmi Bosai ltd.
NOK Corp.
NTN Corp.
Oiles Corp.
Oji Paper Co. Ltd.
Okaya Electric Industries Co. Ltd.
Olympus Optical Co. Ltd.
Onamba Co. Ltd.
Organo Corp.
Orient Watch Co. Ltd.
Osaka Diamond Industrial Co. Ltd.
Osaka Sanso Kogyo Ltd.
OSG Corp.
Oval Corp.
Oyo Corp.
Pacific Industrial Co. Ltd.
Pigeon Corp.
Pokka Corp.
Press Kogyo Co. Ltd.
Q. P. Corp.
Rengo Co. Ltd.
Rheon Automatic Machinery Co. Ltd.
Riken Corp.
Riken Electric Wire Co. ltd.
Riken Vinyl Industry Co. Ltd.
Rinnai Corp.
Rohto Pharmaceutical Co. Ltd.
Roland Corp.
S & B Foods Inc.
Sakata Inx Corp.
Sanden Corp.
Sanken Electric Co. Ltd.
Sankyo Co. Ltd.
Sankyo Seiki Mfg. Co. Ltd.
Sankyo Seiko Co. Ltd.
Sanyo Shokai Ltd.
Sato Corp.
Sega Enterprises Ltd.
Sekisui Chemical Co. Ltd.
Tenma Corp.
Teraoka Seisakusho Co. Ltd.
Terumo Corp.
The Kinki Sharyo Co. Ltd.
The Ohtsu Tire & Rubber Co. Ltd.
The Pack Corp.
The Yokohama Rubber Co. Ltd.
Tigers Polymer Corp.
TOA Corp.
Toho Rayon Co. Ltd.
Tohpe Corp.
Tohpe Corp.
Tohto Suisan Co. Ltd.
Tokai Rubber Industries Ltd.
Tokin Corp.
Toko Inc.
Shin-Kobe Electric Machinery Co. Ltd.
Shinto Paint Co. Ltd.
Shionogi & Co. Ltd.
Shiroki Corp.
Shiseido Co. Ltd.
Shizuki Electric Co. Inc.
Shoei Foods Corp.
Shofu Inc.
Showa Corp.
Showa Aluminium Corp.
Showa Denko K. K.
Sintokogio. Ltd.
Siren Co. Ltd.
SMC Corp.
SMK Corp.
Sokkia Co. Ltd.
Sony Chemicals Corp.
Stanley Electric Co. Ltd.
Stanley Electric Co. Ltd.
Sumitomo Bakelite Co. Ltd.
Sumitomo Corp.
Sumitomo Electric Industries Ltd.
Sumitomo Heavy Industries Ltd.
Sumitomo Metal Industries Ltd.
Sumitomo Metal Mining Co. Ltd.
Sumitomo Osaka Cement Co. Ltd.
Sumitomo Rubber Industries Ltd.
Sumitomo Wiring Systems Ltd.
Suncall Corp.
Sunstar Engineering Inc.
Sunstar Inc.
Tabai Espec Corp.
Tabuchi Electric Co. Ltd.
Tachi-S Co. Ltd.
Tadano Ltd.
Taiheiyo Cement Corp.
Taisho Pharmaceutical Co. Ltd.
Taiyo Yuden Co. Ltd.
Takamisawa Electric Co. Ltd.
Takasago International Corp.
Taki Chemical Co. Ltd.
Takiron Co. Ltd.
Takisawa Machine Tool Co. Ltd.
Takuma Co. Ltd.
Tamura Corp.
Tamura Electric works Ltd.
Tanabe Seiyaku Co. Ltd.
Teijin Shoji Co. Ltd.
Teikoku Tsushin Kogyo Co. Ltd.
Toyo Radiator Co. Ltd.
Toyo Suisan Kaisha Ltd.
Toyo Tire & Rubber Co. Ltd.
Toyo Umpanki Co. Ltd.
Toyoda Automatic Loom Works Ltd.
Toyota Tsucho Corp.
Tsubaki Nakashima Co. Ltd.
Tsubakimoto Chain Co.
Tsukamoto Co. Ltd.
Ube Industries Ltd.
Uni Charm Corp.
Unicia Jecs Corp.
Uniden Corp.
Union Tool Co.
Unishia Jecs Corp.
Unitika Ltd.

Tokyo Automatic Machinery Works Ltd.
Tokyo Ohka Kogyo Co. Ltd.
Tokyo Ohka Kogyo Co. Ltd.
Tokyo Rope Mfg. Co. Ltd.
Tokyu Department Store Co. Ltd.
Tomen Corp.
Topcon Corp.
Toppan Forms Co. Ltd.
Topura Co. Ltd.
Topy Industries Ltd.
Toray Industries Inc.
Toshiba Ceramics Co. Ltd.
Toshiba Chemical Corp.
Tosoh Corp.
Totoku Electric Co. Ltd.
TOWA Corp.
Toyo Aluminium K. K.
Toyo Ink Mfg. Co. Ltd.
Toyo Knife Co. Ltd.
Ushio Inc.
Yakult Honsha Co. Ltd.
Yamada Corp.
Yamaha Corp.
Yamaki Co. Ltd.
Yamazaki Baking Co. Ltd.
Yaskawa Electric Corp.
Yasunaga Corp.
Yodogawa Steel Works Ltd.
Yokogawa Electric Corp.
Yokowo Co. Ltd.
Yorozu Corp.
Yoshitomi Pharmaceutical Industries Ltd.
Yuasa Corp.
Yuken Kogyo Co. Ltd.
Yushin Precision Equipment Co. Ltd.
Yushiro Chemical Industry Co. Ltd.
Zexel Corp.

(1) Refer to Encarnation (1999) for more details about the control issues and the transfer of organizational structures from the home company.
(2) The definition of per capita GNP can be found on the site of the World Bank at
http://www.worldbank.org/depweb/English/modules/economic/gnp/

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