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CONTENTS

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原　著

Entry Mode Choice of the Japanese MNEs in Europe: Impact of Firm and Industrial Factors

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In order to compete successfully in a foreign market, a firm must possess ownership advantages that can take the form of managerial and technological know-how, human skills, marketing capabilities, etc. This paper studies the impact of these advantages on foreign investor's preference for a wholly owned subsidiary versus a joint venture. The empirical results are based on a sample of 324 Japanese manufacturing companies established in Europe over the period 1994-1998. The main hypothesis is that large firms with greater experience and industrial advantages are more likely to choose a full ownership structure for its foreign affiliates. The study finds that international experience, and resource-based industries of the investing companies have a positive influence on the choice of shared ownership structure for the foreign subsidiaries. Furthermore, firm size and intangible assets measured by the R&D and advertising intensities are shown to have a non-significant relationship with entry mode.

Introduction

The recent decade was characterized by a change in the nature of competition due to the increase in the technological advancements and the globalisation of business (Luo 1999). In order to respond to the global economic dynamics, international expansion have acquired a prominent interest in the strategy of a large array of companies. Firms are expanding internationally for a variety of reasons, for example, searching for opportunities to gain economies of scale, extension of product life cycle, and/or spreading the risks over a number of countries (Abraham 1990). Thus, to expand across national boundaries requires the possession of resources and firm-specific advantages and to choose the best mode of entry for the foreign market. In this context, ownership structure is one of the most important strategic decisions faced by a company deciding to undertake a foreign activity. Root (1994) defines international market entry as an institutional arrangement that makes possible the entry of a company's products, technology, human skills, management, or other resources into a foreign country. So, once a MNE decides to enter a foreign market, it has to determine the appropriate mode for organizing its foreign business activities. It has many options in determining the affiliate's ownership structure: non-equity contractual mode (e.g. licensing), shared ownership (equity joint venture) and full ownership (greenfield).

This study focuses on the choice between equity joint venture and wholly owned subsidiaries, which can be considered as the modes involving higher resource commitment and higher control (Hill et al. 1990). A joint venture is the participation of two or more companies in an enterprise in which each party contributes assets, owns the entity to some degree, and shares risk (Harrigan 1984). A greenfield investment is a start-up investment in new facilities. Usually companies establish a new company by sending expatriates who carefully select and hire employees from the local population and gradually build up the business. Hennart and Park (1993) argued that firms use start-ups to exploit firm-specific advantages that are difficult to separate from the organization and that are embedded in their labour forces. Joint

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ventures have become a prevalent mode of entry into global markets. Firms, which need marketing know-how, vertical integration, or large amounts of resources, have been forced to develop joint ventures (Stopford and Wells 1972). Previous studies have identified a number of factors influencing the entry mode choice of a foreign market. Two theoretical approaches have been widely used in explaining the choice of ownership arrangement: the eclectic paradigm and the transaction cost approach. In the eclectic paradigm, also known as OLI framework, Dunning (1977; 1980; 1988) proposed a comprehensive framework, which stipulated that the choice of an entry mode is influenced by three types of determinant factors: ownership advantages of a firm (O), location advantages of a market (L), and internalisation advantages of integrating transactions within the firm (I). The transaction cost theory examines which ownership structure is preferred by a firm and suggests that the choice which involves lowest cost (or highest risk-adjusted rate of return) will be selected (see Teece 1986; Hennart 1988; Gomes-Casseres 1989).

We conduct a logistic regression analysis to assess the ownership strategies of Japanese manufacturing companies in Europe, an area that has received little attention in the literature despite the importance of this single market as one of the leading recipients of foreign direct investments (FDI) in the world. Table 1 shows that from 1994, at least two European countries are among the top five recipients of FDI. Table 2 shows the Japanese FDI outflow by region from 1994 to 1998.

The outline of this paper is as follows. In this section, we briefly present a review of the entry mode research. Section II develops hypotheses related to the ownership strategy. The third section describes the methodology and the definition of variables. The last two sections discuss the findings, summarize the conclusions and give suggestions for empirical research.

Theoretical Development and Hypotheses

A firm seeking to penetrate foreign markets may

Table 1 : Top Five Recipients of FDI

(Unit: US $ billion)

	1994		1995		1996		1997		1998	
1st	U.S.	47.1	U.S.	59.6	U.S.	89.0	U.S.	109.3	U.S.	193.4
2nd	China	33.8	China	35.8	China	40.2	China	44.2	U.K.	67.5
3rd	France	15.8	France	23.7	U.K.	25.8	U.K.	37.0	China	43.8
4th	Mexico	11.0	U.K.	20.3	France	22.0	France	23.0	Netherlands	33.3
5th	Spain	9.4	Sweden	14.9	Netherlands	14.6	Brazil	19.7	Brazil	31.9

Source: JETRO White Paper on Foreign Direct Investment 2000 (http://www.jetro.go.jp)

Table 2 : Trends in Japan's FDI Outflow

Value (Unit: US $ million)

	1994	1995	1996	1997	1998
World	**41,051**	**50,694**	**48,019**	**53,972**	**40,747**
North America	17,823	22,761	23,021	21,389	10,943
United States	17,331	22,193	22,005	20,769	10316
Europe	***6,230***	***8,470***	***7,372***	***11,204***	***14,010***
Asia	9,699	12,264	11,614	12,181	6,528
Latin America	5,231	3,877	4,446	6,336	6,463
Middle East	290	148	238	471	146
Africa	346	379	431	332	444
Oceania	1,432	2,795	897	2,058	2,213

Source: JETRO White Paper on Foreign Direct Investment 2000 (http://www.jetro.go.jp)

choose between various entry modes. Typical modes of entry include exporting, licensing, joint ventures, acquisitions, and greenfield investments. Each mode involves different resource deployment patterns, level of control and risk (Agarwal and Ramaswamy 1992; Kim and Hwang 1992).

The choice of an entry mode is a complex and difficult decision that every MNE seeking to enter a foreign market must make. This choice is a critical determinant of the likely success of the foreign operation (Wind and Perlmutter 1977; Anderson and Gatignon 1986; Hill et al. 1990) and its probability of survival (Li 1995). Generally, the choice of ownership structure for an affiliate depends on the MNE's strategy and on the costs of alternative ways of implementing the strategy (Gomes-Casseres 1989).

An immense body of literature has emerged on international entry mode choice. They have identified a number of factors that influence the MNE's choice of ownership structure of their foreign subsidiaries. In this section, we shed light on the impact of the following firm and industry related factors on the decision between a wholly owned subsidiary and a joint venture: size of the firm, international experience of the investing firm, R&D and advertising intensities of the industry, and the resource-based industries.

1. Firm Characteristics

A number of studies have shown that the entry mode decision is governed by firm-specific factors, mainly the firm's size and its international experience.

Firm's size

Larger investing firm is more likely to possess financial and managerial resources for full ownership of its foreign operations than a smaller firm. Analogously, small companies with constraints and lack of resources are more likely to be structured as joint ventures. Many studies gave support to the assumption that the probability of choosing joint venture is greater among small firms than among big firms. Mutinelli and Piscitello (1998) found that size of the parent company has a positive impact on the full ownership of foreign subsidiary. Asiedu and Esfahani (2000) found that the size of the firm is highly significant with full ownership structure. Franko (1987), Kogut and Singh (1988) and Gomes-Casseres (1990) found that the size of foreign affiliate was positively and significantly related to shared ownership of foreign subsidiary. We can conclude that due to management and financial constraints, small firms are favouring the choice of a joint venture for their foreign affiliate.

Drawing on these findings of the earlier studies, we investigate the following hypothesis:

Hypothesis 1: The larger the parent company, the more likely it will choose a full ownership structure for its foreign affiliate.

Firm's international experience

Penrose (1980) stated that experience is a prime source of learning in organizations. Gatignon and Anderson (1988) point that firms with experience become more comfortable with local differences, develop working relationships with local people, and become confident that they can use local expertise to their advantage. Investors are learning how to manage their foreign affiliates through experience. The longer they have been operating outside the national boundaries, the more knowledgeable they should be. Firm which lacks experience in managing its foreign activity, will choose to enter the foreign market through joint venture ownership structure because it allows the investor to exploit the positive externalities deriving from having a local partner (Mutinelli and Piscitello 1998). Various empirical studies confirm that firms, which are experienced in operating in a particular host country, will expand more likely by means of wholly owned subsidiaries than via joint ventures (Agarwal and Ramaswamy 1992; Gomes-Casseres 1990; Klein et al. 1990). During early stages, firms require a local partner. As they get experience in operating in the foreign market, they reduce their dependence on the local partner. In many cases, the knowledge gained in joint venturing will lead the investor to buy the share of his partner and operate through wholly owned mode. Hennart (1991) found that experience of Japanese parent company in the U.S. is positively correlated with the full ownership of the foreign affiliate. Brouthers and Brouthers (2000) found that the Japanese investor's multinational experience, measured by the export

ratio, is positively correlated with the choice of full ownership for the European subsidiary.

The following is therefore expected:

Hypothesis 2: Greater the experience of the investing company, greater the likelihood that it will seek a full ownership structure for its foreign affiliate.

2. Industrial Characteristics

The industry-specific advantages of the MNEs may also affect their choice between full or shared ownership. Two variables were used to measure the extent of the MNE's industrial characteristics: intangible assets and resource-based industries.

Intangible assets

In much international business literatures, the ratios R&D and advertising expenditures to sales are often used as measures of intangible assets.

A firm possessing high R&D capabilities may prefer to enter foreign market through full ownership in order to preserve and best exploit its technological know-how, given the imperfections existing in the external market for technology (Caves 1982). Stopford and Wells (1972), Padmanabhan and Cho (1996) and Delios and Beamish (1999) found that R&D intensity is related to full ownership structure of foreign subsidiary.

As a result, we hypothesize that firms with large R&D intensity will prefer full ownership structure for their foreign affiliates:

Hypothesis 3 (a): Full ownership structure will be preferred to joint venture when the investing firm has larger R&D intensity.

Likewise, marketing intensity is found to be an important motive for full ownership of the foreign affiliate. Marketing-oriented firms prefer full control over the joint venture alternative for their subsidiaries because such MNEs possess the necessary marketing skills, and they are less tolerant to the dilution of control (Stopford and Wells 1972). So, firms possessing marketing skills and know-how are more likely to choose full ownership structure in order to utilize these advantages. Delios and Beamish (1999) found that advertising intensity of parent company is positively significant to the full equity ownership of the foreign affiliate.

As a result, we hypothesize that firms with large advertising intensity will prefer full ownership structure for their foreign affiliates:

Hypothesis 3 (b): Full ownership structure will be preferred to shared ownership structure in the case the investing company presents larger advertising capabilities.

Resource based industries

In order to gain access to raw material sources in resource-based industries, firms tend to choose a shared ownership structure for their foreign affiliates. A number of studies have argued that, in natural resource industries, local firms are benefiting from differential rents, while the policy of government tends to prohibit the full ownership by foreign companies. Gomes-Casseres (1989, 1990), Hennart (1991) and Hennart and Larimo (1998) found that foreign firms have higher propensity to joint venture in resource-intensive industries. While, Asiedu and Esfahani (1998) found that resource-based manufacturing sector is positively significant to the probability of whole ownership.

We expect to find a similar relationship between resource-based industry and shared ownership. The resulting hypothesis is:

Hypothesis 4 : An investing company is more likely to choose a shared ownership structure for its foreign affiliate in order to obtain access to natural resources.

In summary, in this study we sought to examine the correlation between firm and industry advantages and its choice to enter a foreign market through partially versus a wholly owned subsidiary. We expected that the more the firm's capabilities, the more likely the subsidiary would be fully owned. Since we focus in this study on Europe as a host to the Japanese investments, it is worth mentioning that we do not take into account the different socio-background of the European countries. The impact of culture on the ownership of MNEs has been discussed in many studies and has produced conflicting results. Some scholars (Agarwal 1994; Sutcliffe and Zaheer1998) found cultural distance associated with choosing wholly owned modes; others (Anderson and Coughlan 1987; Kogut and Singh 1988; Gatignon and Anderson 1988; Erramilli and Rao 1993) found

that cultural distance is linked to a preference for joint ventures. So, in an effort to reconcile these contradictory results, we suppose that the mentioned hypotheses to hold for all the European countries.

Research Design

1. Methodology and Dependent Variable

The data used for this study were obtained from *Japanese Overseas Investment: A Complete Listing by Firms and Countries* (Toyo Keizai Inc.) from 1995 to 1999. The data used here include only manufacturing subsidiaries in which the Japanese parent's stake was at least ten percent. The Nikkei Kaisha Nenkan database was used to retrieve data about firm and industrial advantages when unavailable from the former source. In this study, we conduct our analysis on Japanese investments in 19 European countries. The final sample includes 324 companies. Table 3 gives us an idea of the sample distribution by country, mode of entry and industry.

The dependent variable in our analysis is the degree of ownership of the Japanese parent company in the foreign investment. It is captured by a "dummy" variable, which takes the value of 1 when the Japanese parent has a stake of 95 percent or more in the European operation and 0 otherwise. Many

Table 3 : Distribution of Entry by Country and Industry

Country	Full Sample	Joint Venture	Greenfield	Reduced Sample	Joint Venture	Greenfield
UK	99	29	70	99	29	70
Germany	58	19	39	58	19	39
France	46	18	28	46	18	28
Netherlands	21	9	12			
Belgium	25	12	13			
Spain	21	7	14			
Italy	21	11	10			
Ireland	12	9	3			
Austria	3	2	1			
Turkey	3	3	0			
Portugal	2	2	0			
Hungary	2	2	0			
Luxembourg	2	1	1			
Switzerland	2	2	0			
Finland	2	0	2			
Sweden	2	2	0			
Denmark	1	0	1			
Iceland	1	0	1			
Greece	1	1	0			
Total	324	129 (40%)	195 (60%)	203	66 (33%)	137 (67%)

Industry	JV	GF	Total
1. Foods	5	5	10
2. Textiles	4	3	7
3. Pulp, Wood and Paper	6	1	7
4. Chemical products, Rubbers and Plastics	47	41	88
5. Electrical and Electronics	35	109	144
6. Transportation	24	20	44
7. Precision instruments and others	8	16	24
Total	129	195	324

studies have used the 95 percent cutoff point to capture the ownership structure (see for example, Gatignon and Anderson 1988; Gomes-Casseres 1989, 1990; Hennart 1991; Padmanabhan and Cho 1996, 1999; Mansour and Hoshino 2001). In the case more than two Japanese firms possess equity in the foreign investment, we identify whether the firms share a *Keiretsu* affiliation. When firms were part of the same *Keiretsu*, the dependent variable was the sum of the equity holdings of the *Keiretsu*-affiliated firms; otherwise the dependent variable was the percentage ownership of the main Japanese parent company. Besides the analysis of the full sample, we proceed to analyze a reduced sample consisting on the three most advanced economies (UK, Germany and France) (This reduced sample represents more than 60 % of the full sample).

2. Independent Variables

Concerning the explanatory effects, we consider the following set of independent variables.

3.2.1. Dimensional aspects: The size of the investing company (ASIZE) is measured by the total assets of the parent firm (used by Kogut and Singh 1988; Yu and Ito 1988), introduced in logarithmic form.

3.2.2. Intangible assets variables: Following previous studies (e.g., Gatignon and Anderson 1988; Gomes-Casseres 1989; Delios and Beamish 1999), two variables, RND and ADV, respectively measure the firm's technological and marketing assets. R&D intensity (RND) is measured by the ratio of R&D expenditure to sales at the time of entry. Advertising intensity (ADV) is measured by the ratio of advertising expenditure to sales at the time of entry.

3.2.3. Resource-based industries: Following past studies (e.g., Hennart 1991; Gomes-Casseres 1989; Delios and Beamish 1999), the variable RESOURCE is captured by a dummy variable equal to 1 if the subsidiary's main product was in one of the following 2-digit resource-intensive industry, i.e. food and beverages (SIC 20), tobacco (SIC 21), textiles (SIC 22), wood except furniture (SIC 24), pulp and paper (SIC 26), petroleum (SIC 29), rubber (SIC 30), leather (SIC 31), stone and glass (SIC 32), and primary metals (SIC 33); and zero otherwise.

3.2.4. International experience: The international experience of the parent company is measured by two variables: i) International experience (INTEXP) is determined by the count of the total number of foreign subsidiaries of the parent company; and ii) Export ratio (EXPORT) is computed as the ratio of foreign sales (exports) to total sales of the parent company.

3.2.5. Other variables: Two more variables are added to the analysis: AGE is the affiliate age and PROD is the parent company's production ratio, measured as the ratio of overseas production to the overall production.

Results

Means, standard deviations and correlations for all the variables used in the study for the full sample all years combined are given in Table 4. The results of the binomial logistic regression for the full sample are presented in Table 5. Because the binary dependent variable is equal to one when the subsidiary is a wholly owned, a negative coefficient in the tables implies that the variable decreases the probability for full ownership structure and, thus, increases the probability for joint venture. The results do not generally support our hypotheses. ASIZE, the parent company's total assets, has a positive influence on the mode of entry but it is not significant. An intriguing results, is the non-significance of RND and ADV, the two contributed assets variables and EXPORT, the export ratio of the parent company. As predicted, the coefficient of RESOURCE, the Japanese parent resource intensive industries, is negatively significant for all the years, except in 1994. The coefficient of INTEXP (the international experience of the parent company) is negatively significant in 1995, 1996 and 1997 ($p<0.1$). The coefficient of the parent production ratio (PROD) has a positive sign and it is significant only in 1997 ($\beta=0.046$, $p<0.1$). As expected, the older the subsidiary, the more likely that it will be wholly owned. AGE is positively significant from 1994 until 1997, and it is negative and not significant for 1998.

The results of the binomial logistic regression for the reduced sample are presented in Table 6. The parent company size variable, ASIZE, is significant only in1998 ($\beta=1.907$, $p<0.1$) with a positive sign.

Table 4 : Pearson Correlation Coefficients and Descriptive Statistics (Full Sample All Years Combined)

Variables	Mean	S.D.
1. Total Assets (log)	6.401	1.453
2. R&D Intensity (ratio)	0.047	0.050
3. Advertising Intensity (ratio)	0.017	0.038
4. Export Intensity	0.263	0.305
5. Resource Industry	0.340	0.470
6. Production Ratio	21.155	17.990
7. International Experience	46.510	75.350
8. Subsidiary Age	10.680	6.760

	1	2	3	4	5	6	7	8
1								
2	0.342							
3	−0.075	0.035						
4	0.120	0.339	0.163					
5	−0.084	0.014	0.088	−0.277				
6	−0.034	−0.116	−0.007	0.290	−0.231			
7	0.457	0.312	−0.114	0.047	0.001	0.112		
8	0.192	0.023	−0.030	0.041	−0.042	−0.023	0.113	

Table 5 : Logistic Regression Results Containing the Effects of Firm-specific Advantages on Entry Mode (Full Sample)*

	1994	1995	1996	1997	1998
Intercept	0.043	−0.195	−0.811	−2.726	0.110
	(0.000)	(0.007)	(0.126)	(1.051)	(0.002)
ASIZE	0.132	0.320	0.251	0.675	0.648
	(0.111)	(0.552)	(0.381)	(1.728)	(1.788)
RND	1.901	−1.540	6.495	−9.611	−20.178
	(0.045)	(0.030)	(0.786)	(0.527)	(2.257)
ADV	−0.680	3.815	−4.037	9.209	−1.295
	(0.001)	(0.093)	(0.057)	(0.432)	(0.016)
EXPORT	−0.799	−1.281	−0.421	−2.159	−1.092
	(0.260)	(1.191)	(0.079)	(1.399)	(0.503)
RESOURCE	−1.288	−2.158**	−1.896**	−1.821*	−1.901**
	(2.546)	(5.787)	(5.472)	(3.416)	(4.111)
PROD	0.028	0.053	0.040	0.046*	0.008
	(0.991)	(2.543)	(2.422)	(2.759)	(0.157)
INTEXP	−0.031	−0.061*	−0.050*	−0.052*	−0.027
	(1.195)	(2.836)	(3.710)	(3.702)	(1.164)
AGE	0.123*	0.125*	0.131**	0.149**	−0.049
	(3.618)	(2.787)	(4.276)	(4.190)	(1.212)
χ^2	12.537	18.997**	17.886***	18.490**	12.217
N=324					

* Notes: Numbers in parentheses are *Wald Statistics.*
* *significant at the 10 percent level;* ** *significant at the 5 percent level;*
*** *significant at the 1 percent level.*

The technological intensity variable, RND, has a negative sign and significant only in 1998 ($p<0.1$). The coefficient of RESOURCE, the resource intensive industries of the Japanese parent company, is negative and significant for all the years. The coefficient of INTEXP (the international experience of the parent company) is negatively significant in 1996 ($\beta = -0.093$, $p<0.1$). The coefficient of AGE, the subsidiary age, is positively significant (at $p<0.1$) in 1994 and 1997. The rest of the variables are not significant.

Since these two samples comprise different countries in Europe (19 countries), we include a country dummy variable in our analysis to investigate if these countries have any effect on the ownership choice. For the full sample, the results are shown in Table 7. We have included eight categories for UK, Germany, France, Netherlands, Belgium, Spain, Italy and the rest of the countries. ASIZE, the total assets of the parent company, is positively significant in 1997 ($\beta = 1.746$, $p<0.1$) and in 1998 ($\beta = 2.037$, $p<0.05$). RND, the total R&D expenditures of the parent company, is negatively significant in 1994 and 1988. No major change for the rest of the variables. All the country coefficients are positive but not significant. So, including these country variables improve slightly the results and increase the power of χ^2. For the reduced sample, the results are shown in Table 8. We have included three categories for UK, Germany and France. The coefficient of the variable RESOURCE is negative and significant only in 1996. INTEXP, the international experience of the parent company, is negatively significant for the years 1996 and 1997. For the country dummy, only the variable GERMANY is negatively significant in 1994, 1995 and 1997. So, when we reduce the sample, the country variable has a slightly effect on entry mode.

Finally, we proceed to test the binomial logistic regression for the full sample for all the years combined to focus specifically on the trend of the relationship between firm-specific advantages and entry mode for all the period. The results are presented in

Table 6 : Logistic Regression Results Containing the Effects of Firm-specific Advantages on Entry Mode (Reduced Sample)*

	1994	1995	1996	1997	1998
Intercept	2.319	2.178	0.421	1.137	−6.286
	(0.491)	(0.316)	(2.405)	(0.060)	(1.668)
ASIZE	−0.018	−0.025	0.304	0.118	1.907*
	(0.001)	(0.002)	(0.224)	(0.020)	(3.592)
RND	−17.874	−11.947	0.851	−4.465	−55.117*
	(1.436)	(0.654)	(0.006)	(0.035)	(3.139)
ADV	5.936	0.645	−11.839	14.358	−13.196
	(0.058)	(0.001)	(0.181)	(0.632)	(0.927)
EXPORT	−0.576	−2.376	1.970	−5.316	0.036
	(0.046)	(0.486)	(0.790)	(2.041)	(0.000)
RESOURCE	−2.188*	−2.852*	−3.403**	−4.424**	−2.585*
	(2.746)	(3.483)	(5.319)	(5.062)	(3.255)
PROD	−0.013	0.058	0.031	0.052	0.022
	(0.117)	(1.281)	(0.829)	(1.468)	(0.412)
INTEXP	−0.024	−0.051	−0.093*	−0.065	−0.067
	(0.371)	(1.122)	(3.586)	(2.205)	(2.184)
AGE	0.308*	0.293	0.260	0.380*	0.128
	(3.183)	(1.712)	(2.405)	(2.839)	(0.559)
χ^2	14.358*	21.311**	21.240**	22.095**	20.748**
N=224					

* Notes: Numbers in parentheses are *Wald Statistics.*
* *significant at the 10 percent level;* ** *significant at the 5 percent level;*
*** *significant at the 1 percent level.*

Table 7 : Logistic Regression Results Containing the Effects of Firm-specific Advantages and Country on Entry Mode (Full Sample)*

	1994	1995	1996	1997	1998
Intercept	−16.135	−13.846	−13.005	−18.848	−16.547
	(0.124)	(0.019)	(0.053)	(0.116)	(0.103)
ASIZE	0.882	0.815	0.409	1.746*	2.037**
	(1.533)	(1.751)	(0.489)	(3.120)	(4.091)
RND	−29,109*	−7.504	−20.102	−32.016	−50.241**
	(2.941)	(0.423)	(0.047)	(1.868)	(4.012)
ADV	26.182	5.178	15.885	19.371	−19.088
	(0.957)	(0.055)	(0.352)	(0.822)	(0.789)
EXPORT	3.397	−2.239	2.274	0.277	0.471
	(1.023)	(0.344)	(1.111)	(0.008)	(0.042)
RESOURCE	−1.216	−3.030*	−2.809**	−2.334	−3.160**
	(0.947)	(3.141)	(4.880)	(2.529)	(4.115)
PROD	−0.061	0.077	0.019	0.036	0.001
	(2.077)	(2.477)	(0.482)	(1.295)	(0.003)
INTEXP	−0.075	−0.140**	−0.091**	−0.115**	−0.074
	(2.522)	(4.816)	(5.263)	(5.580)	(2.445)
AGE	0.284**	0.164*	0.186**	0.238**	−0.078
	(6.219)	(3.228)	(5.364)	(6.133)	(1.506)
UK	15.675	14.113	13.863	13.011	14.000
	(0.119)	(0.020)	(0.060)	(0.056)	(0.074)
GERMANY	12.006	11.039	11.362	9.704	9.998
	(0.070)	(0.012)	(0.040)	(0.031)	(0.038)
FRANCE	15.005	15.037	12.796	11.830	12.424
	(0.109)	(0.023)	(0.051)	(0.046)	(0.058)
NETHERLANDS	10.864	11.081	11.037	9.327	13.055
	(0.057)	(0.012)	(0.038)	(0.029)	(0.064)
BELGIUM	11.452	11.908	10.116	9.365	10.005
	(0.064)	(0.014)	(0.032)	(0.029)	(0.038)
SPAIN	21.793	20.902	21.009	20.280	22.362
	(0.114)	(0.036)	(0.082)	(0.080)	(0.066)
ITALY	14.492	21.000	13.290	11.390	7.217
	(0.101)	(0.034)	(0.055)	(0.043)	(0.020)
χ^2	40.449***	37.878***	43.962***	43.113***	40.874***
N=324					

* Notes: Numbers in parentheses are *Wald Statistics.*
* *significant at the 10 percent level;* ** *significant at the 5 percent level;*
*** *significant at the 1 percent level.*

Table 9. The overall result shows that the model has a high value and highly significant chi-square.

In the first model, ASIZE, the parent's total assets, is not significant. This is consistent with the studies of Hennart (1991) and Padmanabhan and Cho (1996) who found that the size of the parent company is not significantly related to full ownership structure of foreign subsidiary. For the variables of technology and marketing intensities, we have a non-significant result. This result confirms the findings of Hennart (1991) who found that neither the Japanese parent's R&D nor its advertising intensities had a significant impact on their ownership policies and comes in contradiction to the results of Smarzynska (2000) who found that foreign investors that are technological or marketing leaders in

Table 8 : Logistic Regression Results Containing the Effects of Firm-specific Advantages and Country on Entry Mode (Reduced Sample)[a]

	1994	1995	1996	1997	1998
Intercept	−2.773	9.849	−4.327	−4.470	−18.958
	(0.168)	(1.406)	(0.496)	(0.270)	(2.781)
ASIZE	1.376	0.338	1.085	1.287	5.069**
	(1.340)	(0.127)	(1.272)	(0.813)	(3.883)
RND	−51.756*	−26.513	−10.023	−27.122	−87.194
	(3.320)	(1.742)	(0.488)	(0.654)	(2.647)
ADV	31.013	27.666	18.305	21.816	−49.395
	(0.783)	(0.266)	(0.270)	(0.808)	(1.788)
EXPORT	5.152	−10.570	5.070	−2.259	0.324
	(1.044)	(1.728)	(2.187)	(0.167)	(0.007)
RESOURCE	−2.386	−6.527	−3.715*	−4.070	−4.649
	(1.366)	(2.242)	(3.573)	(2.386)	(2.105)
PROD	−0.093	0.145	0.023	0.054	0.028
	(2.454)	(1.814)	(0.551)	(1.604)	(0.399)
INTEXP	−0.124	−0.170	−0.145**	−0.116*	−0.131
	(2.506)	(2.122)	(4.372)	(3.146)	(1.552)
AGE	0.666**	0.381	0.338*	0.429**	−0.046
	(5.191)	(1.706)	(3.132)	(4.009)	(0.029)
UK	1.393	−3.675	2.073	0.603	4.614
	(0.420)	(1.504)	(3.132)	(0.101)	(2.297)
GERMANY	−4.588**	−7.434*	−1.672	−2.792*	−3.269
	(4.471)	(3.584)	(1.121)	(3.042)	(2.601)
χ^2	26.989***	30.707***	26.778***	28.010***	32.962***
N=224					

[a] Notes: Numbers in parentheses are *Wald Statistics.*
* *significant at the 10 percent level;* ** *significant at the 5 percent level;*
*** *significant at the 1 percent level.*

their industries are more likely to engage in wholly owned projects than to share ownership. The coefficient of EXPORT, the export ratio of the parent firm, is found to be statistically significant with a negative sign. This result does not support Brouthers and Brouthers's (2000) argument that the Japanese investor's multinational experience, measured by the export ratio, is positively correlated with the choice of full ownership for the European subsidiary. As predicted, the coefficient of RESOURCE, the resource intensive industries of the parent firm, is negative and strongly significant. This confirms the result of Hennart (1991) who found that Japanese parents in the U.S. which invest in resource-intensive industries find it necessary to joint venture to access to resources. The coefficient of PROD, the parent company's production ratio, is positive and strongly significant. The international experience (INTEXP) is negatively significant. As expected AGE, the subsidiary's age, is positively significant (at $p<0.01$). Hennart (1991) explained that the parent companies are accumulating more knowledge of the host country's environment as time passes.

In the second model, since we have combined all the years together (5 years), we have included a time dichotomized variable (YEAR) in our logistic regression to investigate any significant differences that might exist in the choice of entry mode. We find that this variable is not significant. The rest of the variables have the same sign and same power of significance.

In the third model, besides the time factor, we added the country variable to look for any significant differences that might exist in the ownership mode. We found that the coefficient of the total assets of the parent company is positively significant. The

Table 9 : Logistic Regression Results Containing the Effects of Firm-specific Advantages on Entry Mode All Years Combined (Full sample)*

	Model 1	Model 2	Model 3
Intercept	−0.449	−0.788	−12.412
	(0.202)	(0.524)	(0.231)
ASIZE	0.235	0.244	0.415*
	(1.714)	(1.832)	(3.190)
RND	2.649	2.261	−3.259
	(0.453)	(0.389)	(0.491)
ADV	2.039	2.247	9.242
	(0.124)	(0.148)	(0.832)
EXPORT	−1.086**	−1.057**	−0.344
	(4.236)	(4.207)	(0.390)
RESOURCE	−1.733***	−1.703***	−2.348***
	(23.081)	(22.061)	(21.534)
PROD	0.036***	0.037***	0.027**
	(10.753)	(10.999)	(4.573)
INTEXP	−0.037***	−0.037***	−0.066***
	(10.834)	(10.623)	(17.961)
AGE	0.104***	0.112***	0.164***
	(14.384)	(14.906)	(21.089)
YEAR 1994		0.387	0.656
		(0.728)	(1.300)
YEAR 1995		0.411	0.386
		(0.776)	(0.438)
YEAR 1996		0.154	0.383
		(0.127)	(0.502)
YEAR 1997		0.038	0.020
		(0.008)	(0.001)
UK			12.465
			(0.233)
GERMANY			10.219
			(0.157)
FRANCE			12.450
			(0.233)
NETHERLANDS			10.077
			(0.153)
BELGIUM			9.962
			(0.149)
SPAIN			20.196
			(0.364)
ITALY			11.456
			(0.197)
χ^2	69.183***	70.599***	176.113***
N=1620			

* Notes: Numbers in parentheses are *Wald Statistics.*
* *significant at the 10 percent level;* ** *significant at the 5 percent level;*
*** *significant at the 1 percent level.*

export ratio variable, EXPORT, is negative but insignificant. The two types of dummy variables time and country have no effect on the entry mode choice.

Conclusions

This paper offers an empirical study of the factors which influence the Japanese manufacturing firms to wholly own or to joint venture their European affiliates. The study has relied on a representative sample of 324 firms in the period 1994-1998. There are few empirical studies that examined what affects the entry mode choice of the Japanese MNEs though the Japanese database (Toyo Keizai) which is published yearly and contains all kind of information concerning these firms. We can summarize some of these studies. Brouthers and Brouthers (2000) studied the institutional, cultural and transaction cost variables influencing the choice between acquisitions and greenfield start-ups of a sample of 136 Japanese firms in Europe. They found that R&D intensity and export ratio are positively significant with the full ownership structure. Padmanabhan and Cho (1996) examined the effects of firm-related and host country-related factors of Japanese manufacturing companies' choice of foreign structure in 36 countries. They found that R&D is positively significant to the full ownership. Size and international experience were not statistically significant. Hennart and Larimo (1998) studied the entry mode decision of Japanese firms in the U.S. They found that sales, R&D intensity and resource intensive industry are positively significant to shared ownership.

Taking into account the full sample over the five years period, our study finds that firms: (1) with high level of multinational experience, and (2) investing in resource-intensive industries, prefer joint venture to greenfield investment.

The main findings of this study can be summarised as follows.

First, the probability of undertaking a wholly owned subsidiary increases when firms have a larger size. Thus, we provide empirical support for Mutinelli and Piscitello (1998) that the size of the parent company reinforces the desire for greenfield investment.

Secondly, the results suggest that R&D and advertising intensities are not related to the ownership structure. This result is consistent with the findings of Hennart (1991) in his study of Japanese subsidiaries in the United States.

Thirdly, joint ventures are the favoured internationalisation device for experienced firms. Our result is in contradiction with the previous studies (Hennart 1991; Brouthers and Brouthers 2000) perspective that the investor's experience is positively correlated with the choice of full ownership for their foreign subsidiaries. We found, as did Gomes-Casseres (1989; 1990), Hennart (1991) and Hennart and Larimo (1998), that firms investing in resource-intensive industries are entering through joint ventures to access to resources. We found that the production ratio is positively related to wholly owned mode. The subsidiary age is found to be related to full ownership, a result consistent with Hennart (1991) who found that age of the Japanese subsidiaries in the U.S. is positively significant with full entry mode.

Concerning generalization of the results, Japanese multinationals are found to behave in Europe the same as those based in the U.S. (Hennart 1991) in the matter of R&D and advertising intensities, resource-based industries and the age of the subsidiary. They are behaving the same as those based in East and South-East Asia (Delios and Beamish 1999) in the matter of resource-based industries and international experience. So, we can conclude that according to the three studies, the common results is that the Japanese are entering the three regions through joint venture when they are investing in resource-intensive industries.

In conclusion, our study provides more results concerning the behavior of Japanese investors abroad. Besides the previous studies on the factors affecting the entry mode of the Japanese firms in the U.S. and in the East and South-East Asia, our study focuses on the European market, which is an important location for foreign direct investments.

Yet, the present study could be constrained by some limitations. We need to introduce more variables that affect ownership choice. Future studies, by attempting to verify the factors affecting the entry

mode of Japanese firms in other regions of the world (e.g. South America, Oceanic, Africa and Middle East) could participate to establish a model generalizing these factors for the Japanese case.

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Appendix: List of the 324 Subsidiaries Used in the Empirical Study

UK

Aida Bliss Europe
Aiwa UK Ltd
Amada UK Ltd.
Alps Electric UK Ltd
Alps Electric Scotland Ltd
IBC Vehicles Ltd
Hanix Europe Ltd
Ikeda Hoover Ltd
IK Precision Co. Ltd
European Technological Composites Ltd.
NEC Semiconductors UK Ltd.
NEC Technologies UK Ltd.
Freudenberg Technical Products LP
SMK UK Ltd
SMC Pneumatics UK Ltd
Enplas UK Ltd
Electronic Harnesses UK Ltd
Organo Europe Ltd
Oyo UK Ltd.
Robertson Geologging Ltd.
Calsonic Automotive Products Ltd.
Calsonic International Europe
Marley Kansei Ltd
Kato Precision UK Ltd.
R－Tek Ltd
Kitagawa Manufacturing Europe Co. Ltd.
Kyushu Matsushita Electric UK Co. Ltd.
Clarion Shoji UK Ltd.
Rohm & Haas Ltd.
Konami UK Ltd.
Koyo Bearings Europe Ltd
Gooding Sanken Ltd
Bristol Bending Sanoh Ltd.
Sanyo Electric Manufacturing UK Ltd.
Sanyo Gallenkamp Plc.
Sanyo Industries UK Ltd.
Citizen Manufacturing UK Ltd.
Sharp Electronics UK Ltd.
Sharp Precision Manufacturing UK Ltd.
Kratos Group Plc.
Advanced Healthcare Ltd
SP Tyres UK Ltd.
Deith Leisure Ltd.
T.P. Consumables Ltd.
Takiron UK Ltd
Daiwa Sports Ltd
OPTEC D.D. UK Ltd
TYK Ltd.
Tenma UK Ltd.
Toyota Motor Manufacturing UK Ltd.
Toray Textiles Europe Ltd
Nittan UK Ltd
Nissan Motor Manufacturing UK Ltd.
Nissan Yamato Engineering Ltd.
Thermos Ltd.
UK－NSI Co. Ltd
NSK Bearings Europe Ltd.
NSK－AKS Precision Ball Europe Ltd.
RHP Bearings Ltd.
Zeon Chemicals Europe Ltd
Adwest Bowden TSK Ltd.
Hashimoto Ltd
Hitachi Consumer Products UK Ltd.
Maxell Europe Ltd.
Fuji Copian UK Ltd
Brother Industries UK Ltd.
Fujitsu Microelectronics Ltd.
ICL PLC
Fujitsu Fulcrum Telecommunications Ltd.
Fuji Electric UK Ltd.
Fuji Electric Scotland Ltd.
Hochiki Europe UK Ltd
Hosiden Besson Ltd
Honda of the UK Manufacturing Ltd.
Makita UK Ltd.
Matsushita Communication Industrial Ltd
Matsushita Electric UK Ltd.
KME Information Systems UK Ltd.
Matsushita Industrial Equipment Co. Ltd.
Matsushita Electronic Components UK Ltd.
Matsushita Graphic Communication Systems Ltd
Mitsumi UK Ltd
Rose Bearings Ltd.
Minebea Electronics UK Ltd.
CTS Network Services International Ltd.
Royal Sovereign
Diaplastics UK Ltd
Mitsubishi Electric UK Ltd.
Minova Ltd
Yaskawa Electric UK Ltd.
Yuasa Battery UK Ltd
Tamura Hinchley Ltd.
Dynic UK Ltd
Tabuchi Electric UK Ltd.
Dainippon Screen UK Ltd.
Lucas Yuasa Batteries Ltd.
Yuken UK Ltd.
Ryobi Masterline Ltd.
Ryobi Aluminium Casting UK Ltd.

Belgium

Amano Electronics Europe N.V
Glaverbel S.A.
S.A. Omnichem N.V.
S&I Electric N.V.
Rotary Nozzle International S.A
Kaneka Belgium N.V.
Dukan Belgium S.A. N.V.
Gunze Plastic Engineering of Europe NV.
Zexel Gleason Europe S.A.
Daikin Europe N.V.
Terumo Europe N.V.
JSR Electronics N.V
Honda Belgium N.V.
Nitto Europe N.V
NGK－Europe S.A
CMK Europe N.V
Parker Industries of Europe N.V.
Pioneer Electronics Manufacturing N.V.
Fuji Hunt Photographic Chemicals N.V.
Philips Matsushita Battery Corp. N.V.
Vamo－Fuji Specialities N.V
Kasei Belgium S.A.
Hishi Plastics Europe S.A
Muto Europe N.V
NGK－Baudour S.A.

Luxembourg

Teijin DuPont Films S.A.
Circuit Foil Luxembourg S.A.

Switzerland

Comprex AG
Reichhold Chemie A.G.

Finland

Jujo Thermal Oy
OY Potma Ltd.

Sweden

AB Press & Plat Industri
Motoman Robotics Aktiebol AG

France

Advantest Giga S.A.
Amada Europe S.A.
Alpine Electronics France SARL
Akai Electric
Eurolysine S.A.
S.C.E. Domaine De La Lauzade Kinu－Ito
Generale Biscuit Glico France S.A.
Canon Bretagne S.A.
Kyocera Mfg. France S.A.
Clarion France
Trio－Kenwood Bretagne S.A.
Komori－Chambon
Societe de Mecanique d'irigny
Rajiatex
Sealed Air
Sharp Manufacturing France S.A.
Carita S.A.
Showa France SARL
Stanley－IDESS
Sumitomo Chemical Agro Europe S.A.
Dunlop France
Laboratoires Daiichi Sanofi
Takasago Europe
Laboratoires Takeda
Utowa France S.A
Toshiba Systems France S.A.
European Vacuum Interrupters S.A.
Alcan－Toyo Europe
Societe des Fibres de C.
Ernault－Toyoda Automat.
Nepco S.A.
NGK Spark Plug Industries Europe S.A.
JVC Manufacturing France S.A.
Hitachi Computer Products S.A.
Furukawa Equipment S.A.
Peugeot Motocycles S.A.
Panasonic France S.A.
Minolta Lorraine S.A.
UCAR Carbon France S.A.
Mitsubishi Electric France S.A.
Chateau Reyson
Beghin－Meiji Industries
MBK Industrie
Yamazaki France S.A.
Yokogawa Controle
Ricoh Industrie France S.A.

Germany

Alps Electric Europea GmbH
Simrax GmbH
Aichi Electric GmbH
BLV. Licht－Und Vakuumtechnik GmbH
NTN Kugellagerfabrik GmbH
SMC Pneumatik GmbH
Exeron Erodiertechnologie GmbH
Canon Giessen GmbH
Kubota Baumachinen GmbH
Goldwell GmbH
Kurita Europe GmbH
Rutgers Kureha Solvents GmbH
Konami Deutschland GmbH
Konica Business Machines Mfg. GmbH
Luitpold Pharma
Sanyo Industries Deutschland GmbH
Citizen Machinery GmbH
Shintom Electric Deutchland GmbH
Kanzan Spezialpapiere GmbH
Heinrich Wagner Sinto Maschinenfabrik
SP Reifenwerke GmbH
Sumitomo Electric Hartmetall GmbH
Cyclo Getriebebau Lorenz Braren GmbH
Sumitomo Electric Schrumpf－Produkte GmbH
Faun GmbH
Takamisawa Electric GmbH
Takeda Pharma GmbH
TEC Electronik Werk GmbH
Rath Advanced Materials GmbH
Toshiba Europa GmbH
Toshiba Consumer Products europe GmbH
Toyocom Europe GmbH
Denon Consumer Electronics GmbH
JVC Video Manufacturing Europe GmbH
Bando Chemical Industries GmbH
Hitach Power Tools Europe GmbH
Hitachi Semiconductor GmbH
Hitachi Consumer Products Europe GmbH
Hitachi Industrial Technology GmbH
Fuji Magnetics GmbH
Furukawa GmbH
Dolmar GmbH
Heidenreich&Harbeck Werkzeugmaschinen
Matsushita Communication Deutschland
MB Video GmbH
Matsushita Video Mfg. GmbH
Matsushita Business Machine GmbH
Loewe Opta GmbH
MS Relais GmbH
Matsushita Electronic Components GmbH
Gebruder Holder GmbH & Co.
Precision Motors Deutsche Minebea GmbH
Mitsubishi Paper GmbH
Lefo－Formenbau GmbH
Murata Electronik GmbH
Murata Europe Management GmbH
Milei GmbH
Motoman Robotec GmbH

Netherlands

Maas Glas B.V.
Calsonic Exhaust Systems B.V.
Krehalon Industrie B.V
Koike Europe B.V.
Shionogi Europe B.V.
Shin－Etsu Silicones of Europe
Shin－Etsu Polymer Europe B.V
Sekisui Jushi B.V
Sun Chemical Group B.V.
Noble Europe B.V.
Nissin Foods B.V.
Sony Chemicals Europe B.V
Delamine B.V
Hitachi Construction Machinery B.V
Image Polymers Europe V.O.F
Euro Mit－Staal B.V.
MHI Equipment Europe B.V
Mitsubishi Caterpillar Forklift Europe B.V.
Metablen Co. B.V
Yamada Europe B.V
Yokogawa Europe B.V

Hungary

Magyar Suzuki Corp.
Salgotarjan Glass Wool Ltd.

Greece

Tosoh Hellas A.I.C.

Turkey

Anadolu Isuzu Otomotiv Sanayi A.S.
TAT Tohumculuk A.S.
TAT Konserve Sanayii A.S.

Iceland

Icelandic Alloys Ltd.

Denmark

DNP Denmark A/S

Italy	Spain	Austria
Prima Electronics S.p.A.	Esteban Ikeda S.A	Amada Austria GmbH
SMC Italia S.p.A.	Kao Corp. S.A	SMC Pneumatik GmbH
Onward Kashiyama Italia S.p.A.	KITZ Iso S.A.	Fischer GmbH
Olivetti-Canon Industriale S.p.A.	Sakata Inx Espana S.A.	**Portugal**
Kyowa Italiana Farmaceutici SRL	Sanyo Espana S.A.	Salvador Caetano Industrias Metalurgicas S.A.
Kurogane Italia S.r.L	Sharp Electronica Espana S.A.	Fisipe Fibras Sinteticas SAR
Vendo Italy S.p.A.	Shionogi Qualicaps S.A.	**Ireland**
Sanyo Argo Clima S.r.L	Showa Europe S.A	Alps Electric Ireland Ltd.
Alfled Thun S.p.A.	Paceco Espana S.A	Asahi Synthetic Fibres Ltd.
P&D S.p.A.	Suzuki Motor Espana S.A.	Asahi Spinning Ltd.
Takeda Italia Farmaceutici S.p.A.	Santana Motor S.A.	NEC Semiconductors Ireland Ltd.
Ballarini S.p.A.	Aceites Esenciales y Derivados S.A.	Sumicem Opto-Electronics Ltd.
Alcantara S.p.A.	Nissan Motor Iberica S.A.	Noritake Arklon Pottery Ltd.
Fiam GS S.p.A.	Toval Japon S.A.	Fujitsu Microelectronics Ltd.
Fiat Hitachi Excavators S.p.A.	Hitachi Air Conditioning Products Europe S.A.	Ireland Kotobuki Electronics Industries Ltd.
Honda Italia Industriale S.p.A.	Nachi Industrial S.A.	Mitsumi Ireland Ltd.
Tessitura Tintoria Stamperia Achille Pinto S.p.A.	Fujitsu Espana S.A.	Mitsui Denman Ltd.
Resindion SRL	Panasonic Espana S.A.	A&M Belting Co. Ltd.
Miteni S.p.A.	UCAR Carbon Navarra S.L.	Yamanouchi Ireland Co. Ltd.
Emblem Europe S.p.A.	Mitsubishi Materials Espana S.A.	
Roland Europe S.p.A.	Yamaha Motor Espana S.A.	