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Modal FDI Strategies in Asia-Pacific Region

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Abstract

This paper utilized a Binomial Logistic model to study the world's 60 largest food and beverage multinational firms' (MNE) decisions on the forms of ownership for their foreign subsidiaries in the Asia-Pacific Rim region during the early- to mid-1990s. Both firm- and country-specific factors are used to explain the MNEs' investment strategy. The model found that the firm's past investment patterns, product type, the operations risk index in the host nation, and the geographic distance between investing firm's home nation and the host nation all had significant impact on the bi-modal investment choice by the MNEs.

Keywords: FDI, MNE, Ownership, Asia-Pacific Region

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Introduction

Multinational enterprises (MNE) look to foreign direct investment (FDI) as a potential way to secure success in the world market for a variety of reasons. They may use FDI to accrue rents associated with a first-mover advantage, i.e., economies of scale, technologies, marketing, transportation, distribution, reputation, and brand development. They may use FDI to avoid excessive import tariffs or to receive preferential tax treatment or investment incentives by producing and marketing goods in a host nation. They may also use FDI to have influence in the political arena of a host nation or to seek stable access and internal pricing of hard-to-attain raw inputs (Stiegert and Schultz 2002).

During the early- and mid-1990s, FDI in all industries was increasing rapidly in the Asia-Pacific region. From 1990 to 1996, the total FDI inflow in the Asia-Pacific Rim nearly tripled, and the region became the world's second largest FDI inflow area (after the EU) (UNCTAD 1999). The rapid growth of FDI in the Asia-Pacific region was partly due to the high GDP growth rate, dynamic demographic trends and low labor cost in many of the developing countries (Tozanli 2005). Specifically in the food and agribusiness industry, from 1987 to 1996, Asia-Pacific Rim region appeared to have become a newly emerging region for hosting the world's largest agribusiness MNEs. The number of subsidiaries of the world's 100 largest food and beverage MNEs in this region almost doubled (Agrodata 1998).

This study seeks to develop a greater understanding of the investment strategies made by these companies. We use a unique dataset of modal FDI activity in the Asia-Pacific region by the world's largest 100 food and beverage firms from 1987 to 1996. The underlying model was structured to address the following questions: How do political and economic stability, and socio-cultural factors influence firms' modal investment decisions? Do the past investments of these firms into and within the Asia-Pacific region influence their decision about the FDI mode? How do firms' revenue growth rate and product type influence their FDI patterns? We model the firm's choice of a partial-control versus full-control mode of investment, and estimate the influence of firm- and country-specific factors that influence the choice. Results from the Binomial Logistic regression show that firm's past investment pattern, product type, the operations risk index in the host nation, and the geographic distance between investing firm's home nation and host nation all had significant impact on the probability of choosing either full ownership or partial ownership.

The rest of the paper is organized as follows. After a brief overview of related literature, the data are described. The next section contains the empirical model specification, followed by a section with results and discussions. The last section concludes.

Related Literature

Plenty of previous studies have looked at food and beverage MNEs' FDI versus their trade strategies. Reed and Ning (1996) investigated decisions regarding the type of FDI by U.S. food firms and characterized the basis for their strategies using case studies. They discovered MNE firms favor a high control mode, thus they tend to engage more in FDI rather than export or license activities. Gopinath, Pick and Vasavada (1999) analyzed the economics of FDI applied to the

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U.S. food processing industry. Their results indicated that foreign sales and exports are substitutes in U.S. processed food industry and owners of capital gain more from FDI relative to owners of labor. Henderson, Voros, and Hirschberg (1996) tested the hypothesis that relates a firm's dominance in its home market, product characteristics and investments in intangible assets to export characteristics and FDI intensity. Carter and Yilmaz (1999) studied the relationship between FDI and trade in the processed food industry using the firm-level data from Turkey in the 1980s and 1990s, and found that the two choices are complementary. Goldsmith and Sporleder (1998) evaluated the firms' two-level decision making, i.e., first, remain domestic or engage in trade; and then export or make FDI. They found that smaller and LDC firms are less likely to go international, and firms that are engaged in heavy R&D and producing differentiated products are more likely to make FDI.

In addition, a number of studies have focused on the agribusiness MNEs' geographic investment decision. Ning and Reed (1995) found a positive correlation between a foreign country's GDP and U.S. food companies' FDI. Skripnitchenko and Koo (2005) studied U.S. MNEs' FDI in the processed food industry in Latin America and found that the FDI outflows are determined by numerous factors such as the wage rate, the interest rate, tax rate, real GDP, exchange rates and the demand conditions in host country. Rama (1998) showed the food MNEs' ability to innovate is a crucial factor in determining their international expansion and performance in the host nation. Filippaios and Rama (2008) studied the geographic strategies of 81 food and beverage companies and found only a few companies were adopting the global strategy. Pritchard (2000) did a case study of Nestle operations in Thailand in late 1990s and concluded that agro-food firms' dynamic geographic strategy can help them gain a financially driven competitive advantage. Multinational Agribusinesses (2005), edited by Rama, contains an excellent set of articles that focus on different perspectives of multinational agribusiness development, including the dynamic structure of the world's food industry (Tozanli 2005), FDI in U.S. food products (Pick and Worth 2005), globalization of food MNEs from Australia and New Zealand (Pritchard 2005), and the globalization of agro-food MNEs from Southeast Asia (Burch and Goss 2005).

Very little research has been done to evaluate what factors would impact the MNEs' modal FDI strategies. After the MNEs decide to invest in a foreign nation, they then face the decision of what ownership structure to select, a fully-owned subsidiary, or a partially-owned subsidiary such as partial acquisitions of stocks, joint ventures, and co-operations (Agrodata 1998). Full ownership and partial ownership each has its inherent advantages and disadvantages. Full ownership can minimize transaction cost (Buckley and Casson 1976), reduce technology spillover due to the domestic partner's moral hazard (Nakamura and Yeung 1994), and keep intangible assets such as scientific knowledge, production skills, know-how and brand names competitive (Nakamura and Xie 1998). Full ownership may not be allowed by the host government or it may be infeasible if the investing firm knows little about the host country's market, culture, customs and laws. In this case, firms may develop local partners to limit the political, societal and legal risks.

Partial ownership is often sought by firms that are unfamiliar with the host country and need resources possessed by the foreign local partners such as specific technology or capital, knowledge of local markets, or good relations with the host government. With partial ownership, firms can spread the risk and the financial burden, and minimize the risks of being cut off from a single supplier (Caves 1996). However, partial ownership has significant disadvantages such as possi-

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ble technology spillovers (Nakamura and Xie 1998), high transaction costs associated with coordination and cultural differences.

Selecting an optimal modal arrangement can be challenging because firms have a variety of options available that appear to suit their strategic development needs. In the literature, one study has specifically addressed the question of why certain modes of FDI were or were not selected. Stiegert, Ardalan and Marsh (2006) examined agribusiness MNEs' modes of FDI into and within the European Union, and they found that the firms' previous investment modes, language barriers and exchange rate fluctuations were the main factors that determined the firms' investment patterns. Stiegert et al. (2006) estimated a binary modal FDI model (full ownership versus partial ownership), which this study follows.

Data

The Agrodata dataset (1998) contains the modal investment strategies of the 100 largest food and beverage firms in the world for the FDIs from 1987 to 1996. For example, suppose Cargill engaged in a joint venture in Australia in 1995, one activity is recorded as a joint venture for Cargill in 1995. All these companies engaged in a total of 287 FDI activities over the 10-year period. Joint ventures and mergers were the most frequent modes of investment, with 32.4 and 23.7 percent of investment activities. The top 100 food and beverage firms are based primarily in North America (32 firms) and Western Europe (53 firms).

Figure 1 shows the distribution of the world's 100 largest food and beverage MNEs' foreign subsidiaries across host-country regions for 1987 and 1996. Their subsidiaries present in Western Europe stayed the same at 46%. However, there is a rapidly increasing investment trend towards economies in the Asia-Pacific region. Over the 10 years, the percentage of the 100 MNEs' subsidiaries present in the Asia-Pacific region nearly doubled from 10% to18%. Although Western Europe was still the number one market in terms of attracting foreign investment, food MNEs began to move their FDI activities towards emerging economies due to the increasing consumer disposable income, positive demographic trends (Tozanli 2005) and relatively low cost of production in the developing countries in Asia (Burch and Goss 2005).

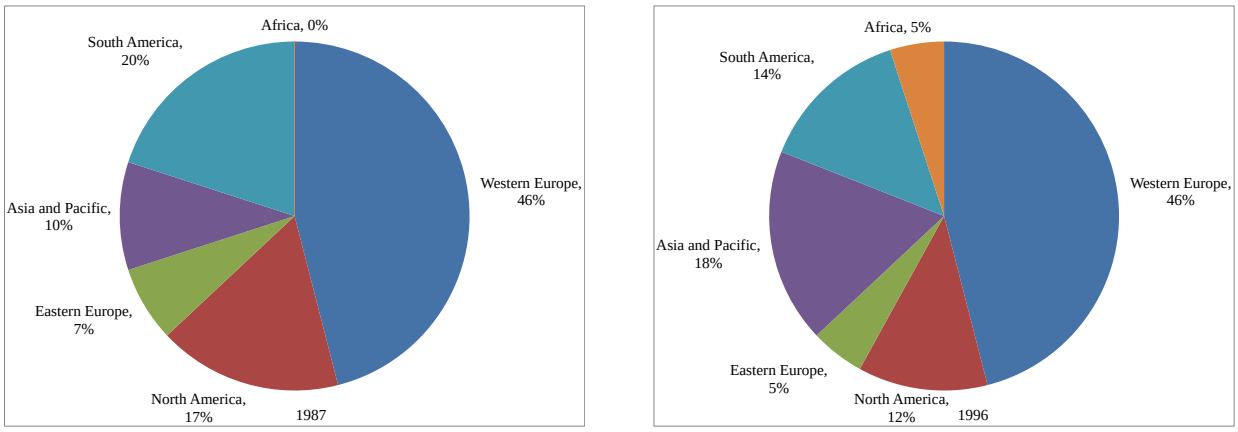

Figure 1. Distribution of Foreign Subsidiaries of 100 Largest Multinational Food and Beverage Firms
Source. Agrodata 1998

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Among the 100 food and beverage MNEs in Agrodata (1998), 60 companies made a total of 287 direct investments into and within the Asia-Pacific region during 1987 and 1996. The 60 agribusiness MNEs are from 13 countries, and made investments in 18 countries, as shown in Table 1. Investments into the Asia-Pacific region were dominated by U.S. and Canadian firms (88 investments, or 31 percent, shown in the last two rows of Table 1), while U.K. and French firms made 19 and 14 percent of investments, respectively. Japanese firms accounted for 15%. Table 1 also shows the distribution of investments among host countries. Australia had the most (58 investments, or 20 percent, shown in last two columns of Table 1), with China, Japan, and New Zealand each accounting for more than 10 percent of the FDIs that occurred. The numbers in the main part of Table 1 indicate the percent of the host country's FDIs originating in different home countries (for instance, 29 percent of FDI into China were made by Japanese firms). Rather than all investments coming from a single home country, most countries host investments from several home countries.

Table 1. Home and Host Countries of FDI Occurring in Asia-Pacific Region (1987-1996)

	Home Country									Host % of Total	Host Total
Host Country	Australia	Canada	France	G. Britain	Japan	Netherlands	Switzerland	USA	Other		
	percent of host country's total									%	#
Australia		5%	9%	22%	19%	3%	7%	33%	2%	20%	58
China		2%	24%	12%	29%	2%	2%	17%	10%	14%	41
Hong Kong		15%	15%	23%	8%	8%	8%	23%		5%	13
India			19%	24%		19%		38%		7%	21
Indonesia			17%	8%	17%		8%	42%	8%	4%	12
Japan		3%	18%	38%	3%	6%	9%	24%		12%	34
Kazakhstan						100%				1%	2
Malaysia			33%	17%		17%	17%	17%		2%	6
New Zealand	16%	3%	16%	16%	13%	10%		26%		11%	31
Pakistan					33%	67%				1%	3
Philippines		17%		17%		17%	17%	17%	17%	2%	6
Russia			20%	13%	7%			60%		5%	15
Singapore	40%			20%	20%	10%		10%		3%	10
South Korea				8%	8%		17%	58%	8%	4%	12
Taiwan			13%		38%	38%	13%			3%	8
Thailand			9%	18%	45%			18%	9%	4%	11
Vietnam						100%				1%	4
% of Total	3%	3%	14%	19%	15%	9%	5%	28%	3%	100%	287
Total Home	9	9	41	54	44	27	15	79	9		287

Key for shading: percent of FDI activities that are Partial Control (PC)

0-39%	60-79%	80-99%	40-59%	100%

Source. Agrodata 1998

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The 60 MNEs are active in a variety of food and agribusiness industries. Table 2 shows the distribution of these MNEs' types of businesses. About 40.42% of the investments were made by companies specialized in multiple products (e.g., Nestle, Unilever, Proctor & Gamble), 18.12% by wine and spirit companies (e.g., Guiness, Pernod Ricard), 12.20% by soft drink companies (e.g., Coco Cola, Pepsico), 10.80% by beer companies (e.g., Asahi, Heineken), and 4.88% by dairy companies (e.g., Friesland, Sodiaal).

Table 2. Food and Beverage MNEs' Business Type (1987-1996)

Food Industry	Number of Investments	Percent of Total
Fruits and Vegetables processing	4	1.39%
Dairy Products	14	4.88%
Soft Drinks	35	12.20%
Beer	31	10.80%
Meat Processing	8	2.79%
Fish, Fish Processing	1	0.35%
Multiple Products	116	40.42%
Grain Milling, Baking	11	3.83%
Sugar and Sugar Products	2	0.70%
Highly Processed Food	1	0.35%
Grain Milling	4	1.39%
Wine and Spirits	52	18.12%
Food Trading	1	0.35%
Breakfast Cereals	2	0.70%
Sugar, Sweeteners	1	0.35%
Biscuits, Baking and Pasta Products	1	0.35%
Confectionary	1	0.35%
Animal Feeds	1	0.35%
Baking Products, Biscuits	1	0.35%
Total	287	100%

Source. Agrodata 1998

There are over 90 specific modal investment possibilities in the data set, making it impossible to structure a model that could address so many modal patterns. Therefore, we grouped the investments into two categories depending on the degree of control the parent firm maintained. The first grouping is considered to be full ownership (full-control activities, referred to as FC below). Activities in this grouping consist of acquisitions, plant construction, subsidiaries, mergers, and all investment activities containing purchases over 90% of the invested firm. The second grouping, is considered to be partial control (PC) activities that include co-enterprise agreements, partnerships, joint ventures and minority interest (10% or under), all forms of licensing, contractual arrangements and franchising. The least integrated investment patterns are licensing, contractual agreement and franchising.

The shadings of cells in Table 1 indicate the percent of FDIs in a particular host-home combination that were of the partial control type, with darker shades of gray indicate a higher share of partial control FDI modes. Notably, most home and host countries have a mix of PC and FC modes. Further, a majority of the host-home combinations use a mix of modes, suggesting that firm characteristics as well as country characteristics influence modal investment decisions.

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The Empirical Model of Modal Investment

Many firm- and target country-factors influence the decision of investment mode. Different economic and political policies regarding investment in target countries provide inducements or deterrents for potential investing firms. Other factors such as potential market growth, changing consumer preferences and economic uncertainty all impact the investment style chosen. Our empirical analysis is built upon the theoretical work done by Pan and Tse (2000) who modeled the firms' modal investment decision as a function of firm strength, industry characteristics and country factors, i.e., $M = f(F, I, C)$. Following Pan and Tse (2000) and Stiegert et al. (2006), we include firm-specific characteristics and host country-specific characteristics in the empirical model. Industry characteristics are excluded because all investments are for the same industry.

A Binomial Logistic regression model is chosen because the investment patterns have been classified into 2 categories: full ownership investment (FC) and partial ownership investment (PC). The model derives the choice probability of a partial ownership investment mode, represented by the following equation:

$$(1) \quad \text{Prob}(\text{PC}_\text{i} = 1 | x_i) = \frac{1}{1 + \exp(-x_i \beta)} = F(\alpha + x_i \beta)$$

where PC_i is the ith observation of the firm's investment mode, which takes value 1 if a partial-control investment pattern is chosen and 0 otherwise, and β is a vector of parameters that link the ith observation of x_i to the ith observation of PC_i. The marginal effect of an explanatory variable is computed by taking the partial derivative of equation (1) with respect to x_i:

$$(2) \quad \frac{\partial \Pr(PC_i = 1 | x_i)}{\partial x_{ij}} = \frac{\exp(x_i \beta)}{[1 + \exp(x_i \beta)]^2} \beta_j = \Pr(PC_i = 1 | x_i)[1 - \Pr(PC_i = 1 | x_i)]\beta_j$$

The Binomial Logistic structure contains the linear relationship of a group of explanatory variables as follows:

$$(3) \quad Ln\left(\frac{\Pr(PC_i = 1 | x_i)}{\Pr(PC_i = 0 | x_i)}\right) = \beta_0 + \beta_1 FINVEST_i + \beta_2 FGROWTH_i + \beta_3 PRODUCER_i + \beta_4 DISTANCE_i + \beta_5 LANGUAGE_i + \beta_6 ORI_i + \varepsilon_i$$

i.e., the log odds ratio is a linear function of explanatory variables, and ε_i is the error term. The explanatory variables are defined in Table 3, summarized in Table 4, and discussed below.

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Table 3. Description of the Model Variables

Dependent Variable	
PC	Investment type of FDI made in the Asia-Pacific Rim Region. =1 if partial control (PC) =0 if the firm had full ownership
Independent Variables (and anticipated sign of estimated coefficient)	
FINVEST (–)	Firm's number of full investments into the region over the past three years
FGROWTH (+)	Firm's sales growth rate over the past three years
PRODUCER (+)	= 1 if company produces producer products; 0 if produces consumer products
DISTANCE (+)	Distance between the investing firm's home country and the host country
LANGUAGE (+)	= 1 if the language spoken in the investor's home country is the same as the host nation; 0 otherwise
ORI (+)	Host country's operations risk index calculated by BERI Larger number indicates a less risky political, financial, and economic environment

Table 4. Descriptive Statistics of the Model Variables

	Minimum	**Maximum**	**Mean**	**Std. Deviation**
FINVEST	0	13	3.41	3.07
FGROWTH (%)	-0.08	0.25	0.05	0.05
PRODUCER	0	1	0.89	0.31
DISTANCE(1,000km)	1.13	19.2	10.17	4.18
LANGUAGE	0	1	0.21	0.41
ORI	30	84	56.54	12.04

Total observations: n = 185

$FINVEST_i$ is the number of full investments into and within the region over the past three years by the investing firm. It is a proxy for how experienced the firm is in doing full-control FDI in the region. It is anticipated that the more experience the firm has, the more likely it is to engage in more integrated investment modes. Thus, the probability of engaging in a type PC investment is expected to be negatively related to *FINVEST*, and we expect a negative coefficient.

$FGROWTH_i$ is the investing firm's sales growth rate over the previous 3 years.[1] As a firm's growth rate increases, the probability of that firm engaging in partially owned FDI is expected to increase. Complete control activities normally require larger amounts of capital and managerial

[1] For example, *FGROWTH* for year 1996 = $(Sales_{95}/Sales_{93})^{1/3}$-1.

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talent. Increasing growth rate of a firm implies that managerial and financial assets are likely to be thin and spread out, thus the firm is more likely to seek partial-style investment modes. External growth through mergers and acquisitions, and strategic partnership could help MNEs to attract cash from local partners, gain market share quickly, and reduce market risks in the host nation (Tonzanli 2005). Therefore, the probability of making a PC investment is expected to be higher for fast-growing firms and we expect a positive *FGROWTH* coefficient.

$PRODUCER_i$ is a dummy variable that equals 1 if the firm's activity is focused on a producer good (such as food processing machinery) and 0 if the investing firm's activity is focused on consumer good. Usually, corporate buyers require specialized or customized products. The investing firm (e.g., Nippon Meat Packers, Ito Ham Foods) might find a local partner helpful because it may better understand local firms' needs, and may have established marketing and distribution channels in the host country. Thus, PC investments are expected to be more likely for companies whose customers are producers. However, to prevent technology spillovers and maintain the value of their brand names, MNEs focused on consumer products (e.g., Pepsi, Unilever) are more likely to engage in wholly owned FDI. Therefore, we expect *PRODUCER* to be positively related to PC investment activities, and a positive coefficient is anticipated.

Spatial and cultural connections can affect a MNE's choice of investment mode (Stiegert et al. 2006). $DISTANCE_i$ is the distance in 1,000km between the investing firm's home country and its FDI host country. If the investing firm is far from its FDI host nation, the international transportation and communication costs are higher. Firms are more likely to be less involved and the probability of them seeking a PC investment mode is larger; therefore, we expect a positive coefficient for the *DISTANCE* variable.

$LANGUAGE_i$ is used as a proxy for cultural similarity. It is a dummy variable that equals 1 if the language spoken in the investing firm's home country is the same as its host country. If the language spoken in the investing firm's home country is the same as host country, then finding and working with a foreign partner is easier and the probability of adopting a PC investment mode might increase. So we expect a positive *LANGUAGE* coefficient.

Economic, societal and political stability play an important role in MNEs' decision on FDI mode. Any unexpected changes in foreign market and/or government policy in the host nation can harm investing firms' operating businesses. ORI_i is an operations risk index estimated by BERI to indicate the socio-economic and political stability in a given country. [2] The ORI index is calculated for over 140 countries using the BERI model which is based on 15 country criteria.[3] It is an integrated index of political, financial and economic risks that affect the business environment. The ORI indices for all the countries and areas in our analysis were obtained from BERI HRRP package.

[2] BERI stands for Business Environment Risk Intelligence (http://www.beri.com/), it is a private source for providing MNEs and commercial banks risk ratings, analyses and forecasts for a large number of countries.

[3] The 15 factors include: policy continuity, attitude towards foreign investors and profits, degree of privatization, monetary inflation, balance of payments, bureaucracy, economic growth, currency convertibility, enforcement of contracts, labor cost and productivity, professional services and contracts, communications and transportation, local management and partners, short-term credit, long-term loans and venture capital.

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A high ORI indicates a better socio-economic and political environment for foreign MNEs (i.e., less risky for the investing firms), and a higher probability of choosing partial investment activities is expected. There are several reasons. First, healthy and fast economic growth in the host nation could make it a profitable market for a potential investing firm's goods and services. When engaging in a joint-venture, purchasing minority interest or arranging some type of contractual or licensing agreement, the investing firm's risks associated with these activities are shared with the local partners. Second, when the host nation has a professional and effective system of contract development and enforcement, the legal risks are low and so firms looking to invest are expected to opt for PC investment. Third, a high index value signals the availability of local human capital resources. A MNE's external growth through partnership is more likely to occur because finding good partnership can help the firm to reduce market risks, avoid sunk costs on the brand new facility or project in the host nation, and achieve higher profitability (Tozanli 2005).

Empirical Results

The earliest dates of investments available via Agrodata (1998) started in 1987, hence the number of full investments in the region over the past three years didn't commence until 1990. We estimated the model using the data from 1990 to 1996 with a total of 185 observations. Parameter estimates for each variable and the associated standard errors are given in Table 5.

The model's overall significance was tested using the null hypothesis that all explanatory variables have no effect on the FDI mode chosen (i.e., H_o: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$). The test statistic has a chi-squared distribution with a log likelihood ratio of 16.18. Because its p-value is 0.01, we reject the null hypothesis, and conclude that the model variables jointly explain modal investment patterns.

Of the six explanatory variables, four were statistically significant and all but *FINVEST* maintained the anticipated sign. As expected, the probability of choosing a partial-control mode of investment increased as the distance between the home and host countries increased and as the *ORI* index increased. It was also higher for investing firms who provide capital products. The investing firm's sales growth rate and whether the investing firm's home country and host country share the common language were statistically insignificant.

While a higher number of recent FC investments made by the company in the host country (*FINVEST*) was expected to decrease the likelihood of a PC investment mode, the estimated coefficient was actually positive and statistically significant at the 10 level of significance. This result also differs from the study of FDI into and within EU countries (Stiegert et al., 2006). Most host nations in our analysis are in Asia. Comparing to the food and beverage industry in EU, firms in this industry in Asia are more vertically integrated and more tied to the government and political systems (Burch and Goss 2005). Because the industry is less market-driven in Asia, the investing firms may find that switching to the partial investment activities can be more beneficial and less risky.

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Table 5. Model Coefficients and Marginal Effects

Variable	Coefficient	Std. Err.	Marginal Effect on P(PC=1)
INTERCEPT	-4.16***	1.13	-
FINVEST	0.10*	0.05	0.03*
FROWTH	3.64	3.42	0.90
PRODUCER	1.21**	0.56	0.26**
DISTANCE	0.07*	0.04	0.02*
ORI	0.03**	0.01	0.01**
LANGUAGE	0.24	0.42	0.06

*** P < 0.01 ** P < 0.05 * P < 0.1

The marginal effects from changes in the explanatory variables on the probability of selecting certain investment modes are also presented in Table 5. These results are best evaluated based on our earlier discussions about the expected signs of each individual variable. One more FC investment made over the past three years (i.e., an incremental increase in *FINVEST*) will increase the firm's possibility of choosing partial-type investment by 3% point. Every 1,000km increase in the distance between the investing firm's home nation and host nation will increase the probability of shared FDI modes by 2% point. We also find that an incremental increase in the *ORI* index can increase the probability of a PC investment mode by a small but statistically significant 0.7 percent point.

Table 6 summarizes predictions of PC and FC investments derived from the estimated model. The model correctly predicted 71 out of 107 (66%) full-control investments. This can be partially attributed to the high level of significance for the *FINVEST, PRODUCER, DISTANCE* and *ORI* variables. The model was also fairly accurate in predicting partial-control investment modes, with 47 out of 78 investment activities were predicted to be of this type (60% correct). Partial-control investment modes such as franchising, licensing, and contracting can involve varying degrees of investment; this variation is more difficult to capture in the independent variables, which accounts for the model's slightly lower ability to predict the PC strategies. Overall, the model correctly predicted 64% of the data points included.

Table 6. Prediction Table

	Predicted			
	Degree of Control			
Observed	Full	Partial	Total	Percentage Correct
Full	71	36	107	66.36
Partial	31	47	78	60.26
Total	102	83	185	63.78

To better understand whether the explanatory variables in the Binomial Logistic model are statistically different between the whole-ownership and shared-ownership investment patterns, we did the t-tests for the variable means in the two groups and reported the results in Table 7. Of the six independent variables, four of them are statistically different between the two types of investment. Most firms that made type 1 investments focus on producer goods. Firms that made type 1 investments appear to have a longer geographic distance to the host nation. Nations that have a higher ORI index are more appealing for partial investment. Firms tend to make type 1

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investments if the language spoken in their home country is the same as host nation. The average numbers of full investments made over the previous three years and the average revenue growth rates are statistically the same between the firms that select different modes of investment.

Table 7. Mean Difference Tests

Variable	Difference	Std. Err.
FINVEST	-0.36	0.46
FROWTH	-0.009	0.007
PRODUCER	-0.06*	0.04
DISTANCE	-1.24**	0.61
ORI	-4.03***	1.74
LANGUAGE	-0.09*	0.06

*** P < 0.01 ** P < 0.05 * P < 0.1

Conclusions

From 1987 to 1996, the world's largest food and beverage MNEs extended their investment activities beyond the traditional triad, i.e., EU, U.S. , and Japan (Tozanli 2005). Their FDI into and within the Asia and Pacific Rim region almost doubled. Based on their world famous brands, they adopted the external growth strategy through multiple investment modes. In this study, a Binomial Logistic regression model was utilized to analyze how firm and country characteristics explain food and beverage MNEs' FDI modes between full ownership and partial ownership. We find that investing MNEs' previous investment pattern, product type, the hosting nation's general economic and political stability, and the distance between the investing firm's home country and host country all have statistically significant effects on MNEs' investment mode choice.

Different from a similar study for EU (Stiegert et al. 2006) where firms were found to follow the same investment pattern, in our analysis, firms that made more full investment activities over the past three years in the Asia-Pacific region are more likely to adopt the partial investment mode. All other results are consistent with current FDI theories. Investing firms tend to choose the partial investment mode if it is focusing on producer products. Increased political, societal and economic stability in the host nation leads to a higher likelihood of partial investment activities. A larger geographical distance between the investing firm's home country and host nation results in more shared ownership investment modes. Different from prior research (Stiegert et al. 2006), whether the language spoken in the investing firm's home nation is the same as its host nation does not impact the investment mode choice in the Asia-Pacific region.

The food and agribusiness MNEs' choice of investment pattern can be very complex. Firms have a variety of options for investing to meet their specific development needs and implement their long-run strategic plans. The important implication for the food and agribusiness firms from this study is that the socio-economic and geographic factors along with the firm-specific characteristics all play a crucial role in selecting the modal investment pattern. Besides the importance of the amounts and allocation of the firm's own managerial and capital assets and its strategic development plans, certain macroeconomic and locational advantages (embedded in the ORI index) are critical as well, such as the cost of transportation and delivery, host nation's

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economic growth, availability and cost of resources (i.e., management, labor and capital), market stability, political risks and government policies.

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