Taiwanese Foreign Direct Investment in Southeast Asia: An Empirical Investigation of the OLI Framework

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Foreign direct investment (FDI) is critical in the economies of both developing and developed countries. FDI is a new trend in emerging markets. The purpose of this study is to investigate entry mode choice through Dunning’s eclectic paradigm within an ownership, location and internalization (OLI) framework, which is useful for explaining foreign investment activities. The data in this study were extracted from the Taiwanese electronics industry’s FDI in Southeast Asia (Indonesia, Malaysia, the Philippines, Singapore, and Thailand) from 1997 to 2009. The results of the logistic regression analysis show that OLI factors influenced the choice of FDI entry modes. The ownership factors of international experience and firm size led to wholly-owned investments. The location factor of the complete infrastructure of communication in the host countries led to joint ventures. Finally, the internalization factor of cultural distance between the home and host countries led to wholly-owned investments. The results also confirm the contribution of the eclectic paradigm and the OLI factors to successful international business investment.

Keywords: foreign direct investment (FDI), ownership, location and internalization (OLI) framework, Southeast Asia, Taiwan

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1 Introduction

The eclectic paradigm is possibly the most comprehensive framework for understanding foreign direct investment (FDI). Dunning (1993) acknowledged that the eclectic paradigm is “a general framework for determining the extent and pattern of both foreign owned production undertaken by a country’s own firms and also that of domestic production owned by foreign firms.” Therefore, the eclectic paradigm can provide a framework to examine the factors on the choice of FDI (Tahir & Larimo, 2004) that influence and determine the FDI firms’ entry mode decisions (Dunning, 1981). The ownership, location and internalization (OLI) framework has also been used as one of the main models to examine and explain the FDI decisions of multinational enterprises over the past two decades (Zhao & Decker, 2004). Empirical work has indicated the role played by FDI in traditional theory. This study further focuses on the individual characteristics of multinational enterprises regarding ownership advantages (O), country factors related to locational advantages (L), and industrial factors concerned with internalization advantages (I), which have been viewed as being critical to the choice of entry mode for multinational enterprises’ foreign subsidiaries.

One critical aspect of FDI is the investing firm’s choice of entry mode. In terms of FDI entry strategy, the literature tends to focus on a binary choice between wholly-owned and joint ventures (Hennart & Larimo, 1998; Markino & Neupert, 2000). Hill et al. (1990) classified FDI into wholly-owned ventures as a relatively high control FDI entry mode, and joint ventures as a medium control FDI entry mode. Wholly-owned and joint ventures are therefore the two most popular FDI entry modes.

The purpose of this study is to analyze the influence of the eclectic paradigm in explaining the choice of entry mode for Taiwanese electronics firms in Southeast Asian markets (in Indonesia, Malaysia, the Philippines, Singapore, and Thailand) from 1997 to 2009. Due to the rapid economic growth in Taiwan after 1980, Taiwanese firms gradually developed plants outside Taiwan because they were faced with rising investment costs stemming from rising wages, a lack of labor, increasing
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land prices, and a greater focus on environmental protection. Meanwhile, countries in Southeast Asia also opened their markets and attracted foreign investors. Taiwanese firms then became a major source of FDI in developing countries (Lall, 2001). Through the Taiwanese government’s investment policy that relaxed foreign exchange controls, the amount of FDI from Taiwan began to increase rapidly. Taiwan’s industrial structure, which includes multinational corporations that are distributed in various host countries, shows that outward FDI from Taiwan has recently been focused on the electronics and electronic machinery industries (Hu & Lin, 2004).

This study looks into how entry mode choices between wholly-owned and joint ventures were influenced by the OLI advantages of Taiwanese electronics firms and identifies the factors that had substantial effects on the firms’ choice of entry mode. Following this introduction, this paper provides a literature review and research hypotheses, as well as the research design, methods, and empirical findings. The final section of this paper presents the concluding remarks.

2 Literature Review

Dunning (1998) integrated the traditional theory of international trade, transaction cost theory, and resource-based theory to build an eclectic paradigm to explain foreign direct investment within an OLI framework.

2.1 Ownership Factors

Dunning (1988) defined ownership advantages as “all forms of income producing assets that allow the firms to engage in foreign production.” Ownership advantages are specific to firms and are related to the accumulation of intangible assets, technological capacity, or product innovation. In this study, research and development (R&D) intensity, firm size, and international experience were used to express the ownership advantages of foreign firms. Firms engaging in cross-border activities must hold some form of ownership advantage. These ownership advantages allow foreign firms to compete with domestic firms. If a firm has an ownership advantage, it is more likely to choose an entry mode.
Hypothesis 1: Ownership factors affect the choice of FDI entry mode.

Firms with high R&D intensity are more likely to engage in FDI. Serapio and Dalton (1999) showed that foreign firms invest in R&D activities, which are important and often very large investments, and in order to secure core assets, firms need to protect their asset investments with a high degree of ownership. If the R&D intensity in the parent company is high, the firm seeking long-term benefits fears opportunistic behavior on the part of the joint venture partners and is therefore likely to choose the wholly-owned entry mode. High R&D intensity increases the likelihood that multinational enterprises will engage in wholly-owned FDI.

Hypothesis 1a: If a parent company has high R&D intensity, a firm is more likely to enter a host market through a wholly-owned subsidiary.

International experience is practical knowledge gained by doing business in a host country (Tan & Meyer, 2011) and is regarded as a crucial determinant of the choice of entry mode (Johanson & Vahlne, 1977). Shenkar (2004) indicated that the length of time-based experience in a host country is a critical resource. Multinational enterprises that have greater international experience are able to bear the risks associated with investing substantial resources in foreign markets (Lu et al., 2014) and have a more sophisticated system to manage their international operations efficiently (Gatignon & Anderson, 1988). Therefore, multinational enterprises tend to make a high degree of commitment to FDI in the form of wholly-owned subsidiaries.

Hypothesis 1b: If a parent company has more international experience, a firm is more likely to enter a host market through a wholly-owned subsidiary.

Previous research has revealed that if a parent company is larger in size, a firm is more likely to enter a foreign market through a wholly-owned subsidiary (Gatignon & Anderson, 1988; Kogut & Singh, 1988). Hence, we have added the variable for parent company size. Large firms often have a large resource base and are therefore better equipped for FDI (Mutinelli & Piscitello, 1997). If a small parent firm provides fewer resources to a subsidiary, the parent firm will be more likely to share ownership with a local firm. Previous studies have shown that large firms with more resources are more likely to transfer resources to subsidiaries and to set up wholly-owned subsidiaries in a host country (Gomes-Casseres, 1989; Meyer, 2001).

Hypothesis 1c: If the parent company is larger in size, a firm is more likely to enter a foreign market through a wholly-owned subsidiary.
2.2 Location Factors

According to Dunning (1988), a locational advantage refers to the extent to which a firm benefits from foreign markets through its locational advantage. Locations that offer superior economic and institutional facilities tend to be preferred, particularly compared with traditional considerations such as access to raw materials and labor costs. Through these factors, governments can attract investors to their countries by formulating policies that benefit investors. Among developing countries, improving the basic infrastructure and increasing the attractiveness of FDI is critical. The locational advantage of a country also influences a firm’s choice of entry mode. In this study, locational advantages incorporate an agglomeration effect regarding an industry cluster and traditional considerations regarding infrastructure and labor costs.

Hypothesis 2: Location factors affect the choice of FDI entry mode.

The availability of infrastructure is often considered to be relevant to a firm’s choice of location because a well-developed infrastructure leads to higher productivity. Satoko (1997) found that the completeness of the infrastructure in local countries attracted FDI. The condition of the infrastructure also influences a firm’s decision to engage in FDI. Areas with less-developed infrastructures have low levels of productivity and low returns, which inhibit private investment from both domestic and foreign investors. Infrastructures that are more developed in host countries attract FDI because firms investing in these countries have greater local support and partnership options, which increases the probability of co-investments with local partners and the selection of joint ventures as entry modes.

Hypothesis 2a: If the infrastructure of a host country is more complete, a parent firm is more likely to enter a host market through a joint venture subsidiary.

For foreign investors, agglomeration factors are positive externalities arising from the geographical clustering of similar firms or industries in a region (Wheeler & Mody, 1992). Because of the positive externalities generated by proximity, firms tend to participate in industry clustering and invest in one location. This study focuses on the agglomeration of economic urbanization, which is a crucial type of agglomeration. Following customers or suppliers to engage in foreign investment in the host country is also a major internationalization trend and allows for the
rebuilding of center-satellite relationships in the host countries. In addition, in attempting to maintain the closeness of relationships within a cluster, firms can engage in joint ventures with other firms within the cluster.

**Hypothesis 2b:** If a host country has more agglomeration, a firm is more likely to enter a host market by means of a joint venture subsidiary.

Wages, labor management, and labor availability are crucial characteristics of the labor market and major determinants of FDI. Low wages attract more FDI. In addition, labor cost influences firms’ decisions to invest in developing countries. Many firms attempt to find cheap labor to minimize production costs. Higher wages make a location less attractive to foreign investors and inhibit FDI (Bartik, 1985; Coughlin et al., 1991). However, higher wages may indicate that the quality of labor is higher, which points to higher productivity. This may attract firms that require high-quality labor. For internationalization, firms investing in high-wage host countries require more capital for FDI and therefore require a joint-venture partner to share the high investment cost.

**Hypothesis 2c:** If a host country has a higher labor cost, a firm is more likely to enter a host market by means of a joint-venture subsidiary.

### 2.3 Internalization Factors

Internalization advantages are advantages that are beneficial to foreign firms to transfer within their respective organizations across national boundaries. Transferring these advantages within organizations is more beneficial than selling them (Dunning, 1988). The concept of internalization advantages explains why firms choose to engage in FDI.

**Hypothesis 3:** Internalization factors affect the FDI entry mode choice.

#### 2.3.1 Cultural Distance

Although social and cultural factors are invisible, firms must pay attention to factors such as language, religion, and the national differences between the home and host countries when engaging in FDI. Hofstede (1980) assigned numerical values to national cultural distance, as specified in Hofstede’s website for foreign investment
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firms from various countries. The updated value can measure the latest national cultural distance. The level of understanding cultural differences in a country deeply influences an investor’s choice of entry mode. Kogut and Singh (1988) argued that the choice of entry mode varies depending on the cultural distance between countries. Cultural distance induces difficulty in the interaction between a parent company and a joint venture partner in a host country. Therefore, market entry through a wholly-owned subsidiary is preferred to minimize the communication cost raised by the cultural distance.

**Hypothesis 3a:** If a host and home country have a large cultural distance, a firm is more likely to enter a host market by means of a wholly-owned subsidiary.

Risk in foreign markets is often referred to as a barrier to FDI entry (Dunning, 1998). Hill and Munday (1991) showed that most firms typically prefer to invest in areas with relatively low risk levels. Agarwal and Ramaswami (1992) also stated that most companies prefer to invest in areas with relatively low risk levels. A low level of risk in a region increases the likelihood of FDI inflows. Companies engaging in FDI tend to pursue the reduction of corporate risk associated with change and move from national and local governments in the host country. Beyond investment risk, the international trade perspective initially focused on foreign exchange risk as a source of uncertainty for firms engaging in FDI (Cushman, 1985). Previous empirical studies have shown that companies tend to choose a low entry mode in a high risk host country (Root & Ahmed, 1978; Gatignon & Anderson, 1988; Mutinelli & Piscitello, 1997). In summary, if a host country has a high investment risk, parent companies will tend to choose a joint venture entry mode.

**Hypothesis 3b:** If a host country has a smaller investment risk, a firm is more likely to enter a host market by means of a wholly-owned subsidiary.

### 3 Research Method

#### 3.1 Data and Sample

FDI is a new trend in emerging markets (Cui & Jiang, 2012; Lu et al., 2014; Tan & Meyer, 2011). Parent companies from the emerging market of Taiwan and FDI in Southeast Asia made up the target sample in this study. Firm and state data covering
the period from 1997 to 2009 were obtained from databases including the TEJ (Taiwan Economic Journal), World Bank, and MOPS (Market Observation Post System). According to Taiwan’s financial data, 178 firms from the electronics industry that had invested in a foreign country were used as the effective sample. The sample comprised four companies from Indonesia, 57 from Malaysia, 10 from the Philippines, 81 from Singapore, and 26 from Thailand.

3.2 Empirical Model

A logit model was employed to test our hypotheses (McFadden, 1974; Tan & Meyer, 2011). Binary logistic regression analysis is recommended when the dependent variable is binary (Ball & Tschoegl, 1982). Therefore, because of the nature of the dependent variable used in this study, a binary and multinomial logistic regression procedure was adopted as an analytical tool to examine the relationship between the dependent and independent variables. This method was consistent with the methods of previous studies on foreign market entry modes. A positive sign indicated that the coefficient of the variable increased the likelihood of a firm’s selection of a wholly-owned entry mode, and a negative coefficient indicated that the coefficient of the variable reduced the likelihood of a firm’s selection of a wholly-owned entry mode.

3.3 Measurements

Dependent Variable: Y is a dichotomous dependent variable, for which 1 represents the wholly-owned entry mode, and 0 represents the joint venture entry mode (Cui & Jiang, 2012).

Independent Variables: Based on previous studies, the first set of ownership factors included: (a) R&D intensity: R&D expenditures as a percentage of sales (Tahir & Larimo, 2004); (b) International experience: Length of operation or time-based experience in a host country (year of FDI; Reuber & Fisher, 2003); (c) Firm size: Log of total assets (Buckley & Casson, 1976). Second, the location factors include: (a) Infrastructure: The number of telephone lines (per 100 people; Head & Ries, 1996); (b) Agglomeration: Urbanized population (Arauzo-Carod &
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Teruel-Carrizosa, 2005); (c) Labor cost: Average monthly wages (Coughlin et al., 1991). Third, internalization factors include: (a) Cultural distance: In a reference to previous studies (e.g., Barkema et al., 1996), Kogut and Singh’s (1988) model was used to calculate Hofstede’s national cultural distance between the home and host countries for all subsidiaries in each sample firm. A higher score indicated that, on average, a multinational enterprise expanded into more culturally distant host countries (Lo et al., 2011a); (b) Investment risk: Initially, from an international trade perspective, an exchange rate was viewed as a major factor for investment risk. The empirical analysis conducted by Cushman (1985) indicated that an increase in the exchange rate stimulated FDI, whereas foreign currency appreciation reduced FDI by creating FDI uncertainty. In this study, the investment risk was therefore measured by the exchange rate of the host country (Liu & Kang, 2008).

Finally, because established firms tend to possess more resources or operating experience in a given field, these firms tend to have lower levels of risk (Lo et al., 2011b) regarding foreign investment, which affects entry mode choice. Therefore, to avoid this confounding effect, the year in which the parent company was established was controlled in the statistical model.

4 Results and Discussion

The data were collected and analyzed to test each hypothesis in this study. A discrete-choice model was adopted to examine the path coefficient and significance of variables to test all the hypotheses. The results of the binary logistic regression, which are displayed in Model 1 of Table 1, made up the basic model that showed only the control variables. Models 2, 3, and 4 added the ownership, location, and internalization factors, respectively. Model 5, in which the logistic regression analysis accounted for all of these variables, is the full model.

Model 5 of Table 1 is the final result that suggests significant explanatory power, with a model prediction of 74.4%. In addition, the model’s significance (p < 0.1) also reveals its goodness-of-fit. This model therefore provides meaningful information for identifying critical determinants of entry mode choice. As for the ownership factors, more international experience and a large firm size encouraged the firms’ choice of wholly-owned entry modes, which supported H1b and H1c. The
complete-infrastructure location factor discouraged the firms’ choice of wholly-owned entry modes and encouraged firms to choose joint venture investments, which supported H2a. The cultural distance internalization factor encouraged the firms’ choice of wholly-owned entry modes, which supported H3b. However, the ownership factor in relation to the R&D-intensity ownership factor, agglomeration and labor-cost location factors and investment-risk internalization factor did not significantly affect the firms’ entry mode choice. The unsupported results may have arisen because of limitations in the sample and data sources.

Table 1: Determinants of Entry Mode Choice (Logistic Regression)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta (Wald value)</td>
<td>Beta (Wald value)</td>
<td>Beta (Wald value)</td>
<td>Beta (Wald value)</td>
<td>Beta (Wald value)</td>
</tr>
<tr>
<td>Constant</td>
<td>.918(4.652)**</td>
<td>-.465(2.303)</td>
<td>.175(.029)</td>
<td>-1.421(1.254)</td>
<td>-4.605(3.203)**</td>
</tr>
<tr>
<td>Control variable</td>
<td>Established year</td>
<td>- .001(.007)</td>
<td>-.022(1.532)</td>
<td>-.001(.006)</td>
<td>-.002(.017)</td>
</tr>
<tr>
<td>Independent Variables</td>
<td>Ownership Factors</td>
<td>R&amp;D Intensity</td>
<td>-.336(1.186)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>International experience</td>
<td>.120(5.749)***</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Firm size</td>
<td>.488(2.981)**</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Location Factors</td>
<td>Infrastructure</td>
<td>-.011(.104)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Agglomeration</td>
<td>.006(.410)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Labor cost</td>
<td>.171(.321)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internalization Factors</td>
<td>Cultural distance</td>
<td></td>
<td>1.426(4.133)**</td>
<td>1.899(3.367)***</td>
</tr>
<tr>
<td></td>
<td>Investment risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cox and Snell R²</td>
<td>.000</td>
<td>.050</td>
<td>.007</td>
<td>.025</td>
</tr>
<tr>
<td></td>
<td>Model</td>
<td>.007</td>
<td>9.154</td>
<td>1.279</td>
<td>4.529</td>
</tr>
<tr>
<td></td>
<td>Chi-Square % of model prediction</td>
<td>70.0</td>
<td>71.9</td>
<td>70.8</td>
<td>71.0</td>
</tr>
<tr>
<td></td>
<td>Log-likelihood</td>
<td>215.035</td>
<td>205.889</td>
<td>213.763</td>
<td>209.112</td>
</tr>
<tr>
<td></td>
<td>Significance of model (p)</td>
<td>&gt; 0.1</td>
<td>&gt; 0.1</td>
<td>&gt; 0.1</td>
<td>&gt; 0.1</td>
</tr>
</tbody>
</table>

Notes:
1. Sample size = 178.
2. *p < 0.1; **p < 0.05; ***p < 0.01 (one-tailed tests).
5 Conclusion

5.1 Summary

This study investigates the influence of the eclectic paradigm on entry mode choice. The OLI framework attempts to integrate the various FDI theories into a general model for examining entry mode choice. This framework is a multitheoretical approach and allows for the inclusion of new determinants (OLI dimensions) to predict a firm’s entry mode (Andersen, 1997). Ekeledo and Sivakumar (2004) concluded that firms with more OLI advantages are more likely to adopt a wholly-owned business entry mode, which allows for a high level of control. The present study further examines the individual OLI factors and identifies their effects on entry mode choice. The results show that all OLI factors in Dunning’s eclectic paradigm affect the FDI entry mode choice. We also find that OLI factors have different levels of influence on entry mode choice, which constitutes the theoretical contribution of this research.

Regarding the managerial implications, a foreign market entry mode is a firm’s deployment of products, technology, human skills, management, and other resources to a foreign country (Root, 1994). FDI also benefits domestic firms, particularly in developing or transitional countries, and improves the welfare of society by accelerating economic growth in a host country. On this basis, the distribution of FDI within national boundaries can influence regional economic disparities. Foreign firms can vary substantially from the counterparts in their countries and consequently, a comparison of the locations of foreign and domestic investors should be conducted separately. The success rate of foreign investments among multinational enterprises can be increased through the selection of an appropriate entry mode based on location, ownership, and internalization factors.

5.2 Research Limitations and Future Research Directions

Empirical research on FDI is mainly limited by the lack of reliable data. Data were collected from 1997 to 2009, and five countries in Southeast Asia were used as a
sample. We suggest that further research be conducted that expands the data both in regard to time and also location. A longer time-series and a cross-sectional data set will facilitate testing the hypotheses used in this study. Increasing the ownership factor variable and using limited location factor variables will increase the likelihood of more reliable results. Using data to extend the model for estimating simultaneous equations will also increase the reliability and generalizability of this research.

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