# AN EMPIRICAL STUDY OF WHOLLY-OWNED SUBSIDIARIES AND JOINT VENTURES FOR ENTRY INTO CHINA MARKETS

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**ABSTRACT**

*The aim of this study is to empirically investigate the effectiveness of The Eclectic Theory in explaining the entry mode choices of Taiwanese Electronic Components firms in China markets during the time period from 2003 to 2005. The annual data includes as many as 267, 324, and 283 firms respectively. This study explores how the ownership, location, and internalization advantages( OLI advantages) influence the entry mode choices between wholly-owned subsidiaries (WOS) and joint ventures (JV) of Taiwanese Electronic Components firms. It also identifies those factors that have an important impact on the choices of entry mode and provides meaningful suggestions for the new firms that wish to invest in the China market.*

**JEL:** M16

**KEYWORDS**: Eclectic Theory, joint ventures, wholly-owned subsidiaries, china markets

## INTRODUCTION

The Eclectic Theory, also called OLI theory, is one of the main frameworks used to explain and examine foreign direct investment (FDI) decisions of multinational firms over the past two decades (Xuemin Zhao and Reinhold Decker, 2004, pp 7-8). Dunning (1977) first introduced the OLI theory. Later the theory was developed by Dunning himself (1980, 1988, 1995, 1998, 2000) and other scholars such as Goodnow (1985), Hill, Hwang, Kim (1990), Macharzina & Engelhard (1991), Agawal & Ramasvisami, (1992), Woodcock, Beamish & Makino, (1994), Brouthers, Brouthers & Werner (1999), Brouthers, K.& L. Brouthers (2000) and Cantwell & Narula (2003).

The Eclectic Theory is an attempt to integrate various FDI theories into a general framework to examine the choice of entry mode. This theory proposed that the choice of market entry mode is determined by three sets of advantages: ownership advantage, location advantage, and internalization advantage. (Dunning, 1980, pp 9-31) Dunning (1988) stated that firms will choose the most appropriate entry modes to enter the foreign markets based on how much OLI advantages a firm possesses. (Ikechi Ekeledo, K Sivakumar, 2004, pp 71-72). He concluded that the more OLI advantages a firm possesses, the greater the probability it will adopt an entry mode with a high control level such as wholly owned venture (Zhao, X.; R. Decker, 2004, pp 8). Tables 1 and 2 summarize some of the more important works in the OLI arena.

The OLI approach is utilized as the framework of this study to empirically identify if the ownership, location, and internalization advantages influence ownership. We empirically test the model using by examining Taiwanese Electronic Components firms operating in China in year 2003, 2004 and 2005. We also provide helpful for firms that wish to invest in the China market.

The remainder of this paper is organized as the following sections. First, we briefly reviewed the relevant literature on the entry mode determinants of the OLI Theory. Next we described the data used in this empirical study, the methodology applied, the proposed model and hypothesis. Third, we summarize the results of the hypotheses testing of our model. Finally, we closed with some concluding comments and a discussion of the limitations of this research.

Table 1: Important Entry Mode Determinant Factors from Previous Studies

| Scholar | Factor | Entry Mode |
|---|---|---|
| Agarwal, Sanjeev, Ramaswami, Sridhar N..(1992) | 1 .firm size<br>2. multinational experience<br>3. the ability to develop differentiated products<br>4. Market potential<br>5. investment risk<br>6. contractual risk | exporting, licensing, joint venture, and sole venture |
| Lance Eliot Brouthers, Keith D Brouthers, Steve Werner.(1999) | 1. firm size<br>2. multinational experience<br>3. contract risk,<br>4. investment risk,<br>5. market potential, and<br>6. product differentiation | Wholly owned, joint venture, licensing or franchising, exporting. |
| Dunning(2000) | 1.ownership advantage<br>2,location advantage<br>3.internalization advantage | |
| Hill,Huang and Kim(1990) | 1. country Risk<br>2.location Familiarity<br>3.demand Conditions<br>4.volatility of Competition<br>5.value of firm-specific know-how<br>6.tacit Nature of know-how<br>7.extent of national differences<br>8.extent of scale economics<br>9.global concentration | high control entry mode, low control entry mode |

*This table summarizes previous research regarding OLI.*

Table 2: Entry Mode Determinants in Previous Studies and Predicted Effects

| IV | Reference | Previous Studies |
|---|---|---|
| Firm size (number of employees) | Leung et al. (2003); Nakos and Brouthers (2002); Evans( 2002) | Positive |
| International experience | Reuber and Fisher (2003); Evans( 2002); King and Tucci (2002); Nakos and Brouthers (2002) | Positive |
| Firm –specific assets | Hill et al. (1990); Hennart (1991); Erramilli and Rao, (1993); Madhok, (1998) | Positive |
| Market potential | Nakos and Brouthers 2002; Eicher and Kang 2002; Chung and Enderwick (2001) | Positive |
| Cultural distance | Leung et al. (2003); Evans (2002); Cristina and Esteban (2002) | Negative |
| Production Cost | Jiang and Fuming (2002); Cui, Jiang,and Stening (2007) | Positive |
| Host Government regulations | Brouthers ( 2002 ); Mutinelli and Piscitello (1998); Cui, Jiang and Stening (2007) | Positive |
| Country Risk and environmental uncertainty | Cristina and Esteban (2002); Brouthers and Brouthers ( 2000); Tahir and Larimo (2006) | Negative |
| R & D intensity | Larimo ( 2000); Tahir and Larimo (2006); Brouthers and Brouthers ( 2000) | Positive |
| Scale economies | Hwang & Kim (1992); Phatak et al. (1996); Tahir and Larimo (2006) | Positive |

*Positive means increasing in choosing WOS mode of entry; negative means decrease in choosing WOS mode of entry*

## LITERATURE REVIEW

The OLI theory proposes three sets of advantages (ownership advantage, location advantage, and internalization advantage) as its key components to influence and determine the FDI firms' entry mode decisions. (Dunning, John H., 1980, pp 9-31). The literature review is organized around these three advantages. Ownership advantages are discussed first, followed by location advantages, and finally internalization advantages are discussed.

Ownership Advantages (Firm Specific Advantages)

Dunning (1991, pp 123) defined ownership advantages as "any kind of income generating assets which make it possible for firms to engage in foreign production". He also pointed out that ownership advantages are concerned with the extent to which the firm has tangible and intangible assets unavailable to other firms (Dunning, 1980; Dunning, 1988). Ikechi Ekeledo, K Sivakumar (2004, pp 72) defined ownership advantages as the competitive or monopolistic advantages of the firm that helps the foreign firm to overcome the disadvantages of competing with local firms. Salih Kusluvan (1998, pp 175) stated that the ownership advantages are the unique internal factors that create the firms' competitive advantages in the marketplace abroad and offered through the ownership of specific technological, managerial, financial or marketing assets or possess better organizational capabilities to successfully integrate their activities in foreign markets.

Based on the above definitions, in order to compete with the other rivals in the host market, and to be able to survive and stay in business, FDI firms must possess firm specific assets and technology that are valuable enough, and can earn enough, to offset the higher set-up and operating costs associated with doing business in these markets. A number of ownership specific variables are expected to have an influence on the choice of entry mode. The advantage gives either higher revenues or lower costs which lead to more profits from business operations than their local competitors. Three main FDI determinant factors within the ownership advantages have been found more frequently in the previous studies as listed at Table 2: the investing firm's size, their international experience, and firm-specific assets (the company's ability to develop differentiated products).

Location Advantages (Country Specific Advantages)

According to Dunning (1980,1988), location advantages referred to the extent which the firm will profit by locating its ownership advantages in a foreign market. Ikechi Ekeledo, K Sivakumar (2004, pp 72) argue that location advantages refers to the market potential and country risks that make conducting business in the foreign market profitable. They state that different locations feature different resources, institutions and regulations which influence the firms' operating revenue and cost of production. The target host market must offer some attractive factors (e.g. land, capital, cost/quality of labor, raw materials, economies of scale, etc) that motivate the firms to invest.

Based on these definitions, the location advantage is considered to be an important determinant for firms to make their entry mode decision in the foreign market. (Table 2 listed important entry mode determinant factors from previous studies). The location specific advantages include economic variables including production factors, transport and telecommunications costs and scope and size of the market. The political variables include common and specific government policies towards Foreign Direct Investment and trade issues, and social- cultural variables such as psychic distance between the home and host country, language and cultural diversities, general attitude towards foreigners.

Internalization Advantages

Dunning defined internalization advantages to be those which the firm is most capable of transferring across national boundaries within their own organization, rather than selling them ,or the right to use them, to foreign firms (Dunning, 1988). These costs must be compared with the costs of finding and maintaining an external relationship to perform the same activities in the international market (Tahir & Larimo, 2002 , pp 13).

Dunning (1988) argues that internalization advantages arise from transferring ownership advantages across national boundaries within their own organization, and it is much more profitable for the firm to utilize the advantage than to sell or lease it through product licensing, capital lending or technical assistance. Based on Dunning's viewpoint, the hierarchical structure of governance has many advantages, including reduced transaction costs, protection of product quality, control of supplies and

condition of sale, and the ability to engage in practices, which can lead to a competitive advantage (Byung Il Park, 2007, pp 8).

Dunning, (1988, 1993) suggested that internalization variables are concerned with the cost of choosing a hierarchical mode of operation over an external mode (Tahir & Larimo, 2002, pp 13). Ikechi Ekeledo and Sivakumar (2004, pp 72) state that internalization advantage refers to the contractual risks that make controlling a foreign subsidiary, through FDI, more beneficial than licensing a local firm to offer the product in the foreign market. According to Salih Kusluvan (1998, pp 175), internalization advantages refer to the advantages of controlling, coordinating ownership and location specific advantages within the firms rather than selling the right to use those advantages to domestic firms in the host country. The benefits to the firm of better planning, coordination, and opportunities to increase profits must be weighed against communication and control difficulties.

From the above definition, we suggest that firms should choose an entry mode that can minimize the transaction costs caused by the transfer of firm-specific assets and can avoid the risk of free-riding the firm's reputation to balance the trade-off between uncertainty of country risk and achieving economies of scales of economies in their host market expansion. Table 2 lists important entry mode determinant factors from previous studies. It is suggests that some of the internalization variables are expected to have an impact on a firm's choice of entry mode.

## METHODS AND HYPOTHESIS

### Data and Methodology

Data are gathered on Taiwanese Electronic Components firms operating in China between the years 2003 and 2005 for use in the empirical analysis. The data were obtained from the "Survey of Foreign Direct Investment by manufacturing Firms "in year 2003, 2004, and 2005. This survey is conducted annually by the Statistics Department of the Ministry of Economic Affairs, R.O.C. Thus, the quality of the data is better than other sources of information due to the rigorous administrative procedures of the survey, representativeness of the respondents and the high response rate. The total number of observations in year 2003, year 2004, year 2005 is 267, 324, and 283 firms respectively.

Binary logistic regression is the recommended analysis technique when the dependent variable is binary (Ball & Tschoegl, 1982; Kachigan, 1986). Consistent with many previous studies of foreign market entry mode choices (e.g. Agarwal & Ramaswami, 1992; Erramilli & Rao, 1993; Gatignon & Anderson, 1988; or Kim & Hwang, 1992) and because of the nature of the dependent variables and independent variables in this study, we use a binary logistic regression procedure. SPSS 12.0 version is used to test the relationship between the dependent variable (WOS vs. JV) and the independent variables. The probability of a Taiwanese firm choosing a WOS entry mode in preference to a JV entry mode is modeled as follows:

$$P(Yi = 1) = 1 / (1 + \exp(-\alpha - X\,iBi) = \alpha + \beta 1\, X1 + \beta 2X2 + ... + bnXn$$

Where P (Yi = 1) the probability of choosing a WOS entry; X1, X2, X3…Xn are the 10 independent variables in this study (Firm size, International experience, Firm-specific assets ,Market potential, Production cost, Cultural distance, Government regulation and policies , investment risk ,scale economies and R &D). β1, β2, β3……βn are coefficients of independent variables and *a* is the intercept parameter. Yi is the dependent variable, we assign a WOS mode as a value of 1 and a JV mode is assigned as the value of 0. Xi is the vector of the independent variable for the ith observation. Bi is the coefficients of independent variables $\alpha$ is an intercept parameter (Amemiya, 1981). The above equation is used to estimate the probability that one event occurs, WOS entry mode in this study, rather than another, JV entry mode in this study. The estimated coefficient represents the probability of choosing WOS as the entry mode. A positive sign for the coefficient means that the variable increases the probability of WOS are chosen and the negative coefficient signifies the opposite.

The result of the logistic regression, presented in Table 3, show that our model has significant explanatory power with the p-value at 0.000. In addition, the Cox and Snell $R^2$ and Negelkerke $R^2$ measures also indicate the goodness-of- fit with a high level of explanatory power. More importantly, the classification accuracy rate is much greater at 90.8 % (2003), 78.9 % ( 2004), 92.5 % ( 2005) respectively. The model provides meaningful information for identifying important entry mode determinants.

Table 3: The Result of Logistic Regression of Entry Mode of Taiwanese Firms in 2003-2005

| | IV | 2005 | 2004 | 2003 |
|---|---|---|---|---|
| H1 (O) | 1.Firm Size ( number of employees) | 1.727* | .794** | 1.647*** |
| | | (.908) | (.350) | (.546) |
| | 2.International Experience | 4.413*** | 1.487** | 1.359*** |
| | ( year of FDI) | (1.407) | (.678) | (.470) |
| | 3.Firm-specific Assets | 3.051*** | .441 | 3.971*** |
| | ( Technology) | (1.015) | (.310) | (.709) |
| | Firm-specific Assets | 1.680*** | .791*** | 1.340*** |
| | ( management skills) | (.581) | (.238) | (.449) |
| | Firm-specific Assets | 3.724*** | 1.737*** | 2.462*** |
| | ( ability to differentiate products) | (1.196) | (.372) | (1.436) |
| H2 (L) | 4.Market Potential | .349 | .437* | .318 |
| | | (.575) | (.237) | (.383) |
| | 5.Cultural Distance | -6.250*** | -.889 | -1.495 |
| | | (1.771) | (.801) | (1.314) |
| | 6.Production Cost (Land cost ) | 2.665*** | 1.511*** | -.574 |
| | | (.926) | (.336) | (.519) |
| | 7.Production Cost (raw material cost ) | 1.507*** | .472 | 1.959*** |
| | | (.564) | (.452) | (.517) |
| | Production Cost (labor cost ) | .157 | .410* | 3.005*** |
| | | (.884) | (.247) | (.607) |
| | 8.Host Government Regulations | 8.433*** | 1.336*** | 1.758 |
| | | (4.109) | (.321) | (.995) |
| H3 (I) | 9. Country risk and uncertainty | -.334 | -.174 | -.907** |
| | | (.508) | (.281) | (.418) |
| | 10. Probability Scales of economies | 1.891* | .614** | ---------- |
| | | (.993) | (.272) | |
| | 11.R & D intensity | -2.113*** | -1.038*** | .167 |
| | | (.718) | (.350) | (.399) |
| Goodness-of-fit | $\chi^2$ | 193.620 *** | 150.551*** | 136.290*** |
| | -2 Log Likelihood | 270.800 | 684.434 | 172.541 |
| | Cox & Snell $R^2$ | .305 | .186 | .289 |
| | Nagelkerke $R^2$ | .524 | .273 | .537 |
| | Percent correctly classified | 90.8% | 78.9% | 92.5% |
| | Number of sample | 267 | 324 | 283 |
| | Entry mode Choice of Taiwanese firms in this study | JV: (n=37): WOS: (n=230) | V: (n=82) ; WOS: (n=242) | JV: (n=50) ; WOS: (n=233) |

*This table shows the results of the regression of serious independent variables on FDI entry mode. The estimated equation is specified as follows:* P (*Yi* = 1) = 1 / (1 + exp (*-a – X iBi) = a* +β1 X1 +β2X2 +...+*bnXn* P (Yi = 1) means the probability of choosing a WOS entry; X1, X2, X3…Xn are the 10 independent variables in this study. ***, **, and * indicate significance at the 10, 5 and 1 percent levels respectively. Standard errors are reported in the parentheses.*

Hypothesis

Dunning (1988) suggested that based on the OLI framework (Eclectic Theory), firms will choose the most appropriate entry modes into foreign markets (Ikechi & Sivakumar , 2004 , pp 71-72). Dunning (1980) also pointed out that the more OLI advantages a firm possesses, the greater the probability of adopting an entry mode with a high control level such as wholly owned venture (Zhao, X.; R. Decker, 2004, pp 8). Because of these features we select the OLI approach as the framework in this study. The goal is to empirically identify how the ownership, location, and internalization advantages influence the ownership based entry mode choices of Taiwanese Electronic Components firms in China markets in the time period of 2003- 2005. Hence, based on the literature review from Table 2, the author proposed Hypothesis 1- Hypothesis 3 (H1- H3)as follows:

*H1: There is a positive correlation between Ownership Advantages (Firm Size, International experience, and Firm-specific assets) and Choice of Entry Mode.*

*H2: There is a positive correlation between Location Advantages (market potential, production cost, cultural distance, government regulation and policies) and Choice of Entry Mode.*

*H3: There is a positive correlation between Internalization Advantages and Choice of Entry Mode.*

*H3a: The larger the host country's country risk (severe competition in the industry & uncertainty of economic and political conditions) is, the more likelihood a company will not tend to adopt "wholly owned subsidiary" as the choice of Entry Mode.*

*H3b: The larger a company's Research and Development Capability (R & D) is, the more likelihood a company will tend to adopt "Wholly owned subsidiary" as the choice of Entry Mode.*

*H3c: The larger a company's possibilities to reach scale economies (sold in the foreign countries) is, the more likelihood a company will tend to adopt "Wholly owned subsidiary" as the choice of Entry Mode.*

The following are the detailed DV and IV in our study. Dependant Variable: Entry mode choice (WOS and JVS) Independent Variables: Firm Size, International experience, Firm-specific assets, market potential, production cost, cultural distance, government regulation and policies, investment risk, Research and Development Capability, and scale economies. The statistical model utilized was: Logistic Regression

**RESULTS**

In this section we report the empirical test results. We begin with Hypothesis 1. The finding of the previous studies (e.g. Gomes-Casseres, 1985; Kogut & Singh, 1988; Benito 1995; and Mutinelli & Piscitello, 1997) support the contention that large firms often have a large resource commitments and a better capability to absorb risks. They are therefore more likely to choose the WOS as their choice of entry mode. We argue that large Taiwanese firms are often able to reach the scale and scope of economies effectively and efficiently by choosing WOS when they are investing in the China market.

The result of the logistic regression on Table 3 shows: firm size as proxied by number of employees has a positive sign and is significant at $p < 0.1$ , $p < 0.05$ , and $p < 0.01$ level in year 2003, 2004 and 2005 respectively. This results indicates that firm size has a significant impact on choice of entry mode for Taiwanese firms investing in China. This result is consistent with the previous studies noted in Table 2.

The previous studies (e.g. Gomes-Casers, 1985 & 1987; Agarwal & Ramaswami, 1992; Sanna-Randaccio, 1990; Tang, 1994; Bell, 1996; and Mutinelli & Piscitello, 1997) indicate that internationally experienced

firms prefer to choose WOS for investing in another foreign country. They suggest that the firm's past experiences are an important competitive advantage in FDI's choice of foreign market entry method. The result of the logistic regression in Table 3 support the idea that: "International Experience" has a positive and significant effect. Years if FDI experience is significant at $p < 0.01$ , $p < 0.05$ ,and $p < 0.01$ level in year 2003, 2004 and 2005 respectively. This finding is consistent with earlier studies.

Firm-specific assets refer to highly differentiated and hard to imitate production technologies and know-how (Hill et al., 1990). The degree of firm-specific assets can influence firms' entry mode choice because firms with greater asset specificity may incur higher transaction costs in safeguarding their specific assets from dissemination and from potential opportunism problems by their partners (Williamson, 1985; Gatignon and Anderson, 1988; Hennart, 1991; Hill, 1990; Williamson, 1985). Opportunism results when a partner takes advantage of the other firm's assets through shirking, free-riding, or technology dissemination (Gatignon and Anderson, 1988; Williamson, 1985). To safeguard firms' specific assets, firms may utilize higher control entry mode, such as wholly owned modes of entry (Hennart, 1991; Gatignon and Anderson, 1988). Firms with less asset specificity, on the other hand, may be less concerned with opportunism and safeguarding their asset specificity and more concerned with efficiency. Accordingly, the investing firm will prefer to choose a WOS than a JV entry mode to transfer their specific assets internally when their asset specificity and the partner opportunism are high (Erramilli and Rao, 1993; Madhok, 1997). The results of the logistic regression in Table 3, show that firm's asset-specificity has a positive and significant effort at $p < 0.01$ level in year 2003 and 2005 respectively. This finding is also consistent with earlier findings.

Next, we turn to the test of hypothesis two. The market potential has been found to have impact on influencing the ownership structure choice because of its effect on market capacity and opportunity costs (Agarwal & Ramaswami, 1992; Kim & Hwang, 1992; Brouthers & Brouther, 2000). Target countries with huge market potential tend to have a greater probability to absorb additional productive capacity, providing an opportunity to improve firm efficiency and market share. Agarwal and Ramaswami (1992) argue that in large potential markets, firms tend to prefer WOSs, so that they can obtain scale economies, which can reduce per unit costs and they can establish a long-term market presence. On the other hand, in the smaller markets, firms may find that JVs provide better opportunities because JVs can provide a better return on investment by minimizing the resource commitment and reduce the costs of market exit if the product sales are low. This viewpoint was supported by Nakos and Brouthers (2002), Eicher and Kang (2002), Chung and Enderwick (2001). According to the result of the logistic regression on Table 3, "market potential" has a positive sign in this survey in all the three years, but it is not statistically significant for the Taiwanese firms' choice of entry mode.

The results from previous studies (e.g. Kogut & Singh, 1988; Gatignon & Anderson, 1988; Padmanabhan & Cho, 1994; Benito, 1995; Bell, 1996; Mutinelli & Piscitello, 1997; Hennart & Larimo, 1998) shows that "larger cultural distance between the home and host countries" support choice of JV entry. On the other hand, when there exists no cultural distance between the home and host countries like the special situation between Taiwan and China it is expected that Taiwanese firms would prefer WOS type of entry mode in China Market.

According to the result of the logistic regression in Table 3**,** the "Cultural Distance" variable in this survey shows a positive sign in year 2003 and year 2004 but is not statistically significant. This result, which indicates that "Cultural Distance" is not a significant variable for the Taiwanese firms entry choice. But in 2005, it shows a negative sign and it is significant at the 0.001 level for the choice of JV entry mode. It is interesting that the sign change became significant as time progressed. This finding is contrary to expectations.

Production cost factors in China might have a significant impact on firms' entry mode decisions ( Jiang and Fuming , 2002). Production factors include the availability and the cost of plant site, availability and cost of local raw materials, quality and quantity of the labor, quantity and quality of products of host country competitors. The result of the logistic regression in Table 3 indicate that land, production

factors have a significant effect on entry mode decisions. The findings are consistent with the previous viewpoint of transaction cost theory.

Some scholars define Institutions as "rules of the game" including laws and host country regulations (Davis, Desai and Francis, 2000; Oliver, 1997). They assume that under the healthy institutional structures of host government, firm actions can be supported and protected (Williamson, 1985; Meyer, 2001). However, not all countries offer secure and healthy institutional structures for foreign firms (Meyer, 2001). For example, the institutional structure may provide barriers to entry such as legal restrictions on ownership (Delios and Beamish, 1999; Gomes-Casseres, 1985; Gatignon and Anderson, 1988). Such laws may limit a firm's ability to utilize its capabilities through some predicted mode choice (Roberts and Greenwood, 1997; Gatignon and Anderson, 1988). Thus, firms entering countries with few legal restrictions on mode of entry tend to use wholly owned modes while firms entering countries with many legal restrictions on mode of entry tend to use joint venture modes (Brouthers, 2002, pp 206). Firms preferred a JV entry mode because restrictive local policies could have less impact on a jointly-owned foreign business than a purely wholly-owned foreign business (Tse, Pan, and Au, 1997; Mutinelli and Piscitello, 1997; Brouthers, 2002). A JV entry mode was assumed to avoid these problems because the JV company is well acquainted with, and has methods in place to manage these restrictions (Cui, Jiang, and Stening, 2007, pp 8). The result of the logistic regression in Table 3 indicate that limitation of the host country's government regulation has significant effect on entry mode decisions in Year 2004 and year 2005.

Finally, we examine the results related to hypothesis three. Based on the results in the previous studies, this study proposed that "Country Risk" has an expected negative sign for the Taiwanese firms' choice of entry mode in the China market. This indicates that when risks in China decrease the probability that the Taiwanese firms will choose WOS type of entry mode increases. However the result of this study, shows a positive sign on the Country Risk variable and it is significant at the 0.05 levels in the 2003, 2004, and 2005 surveys. This suggests that that lower risks in the China market are significant variable for determining the optimal method of entry. The results in the previous studies (e.g. Aharoni, 1966; Goodnow & Hansz, 1972; Agodo, 1978; Root and Ahmed, 1978; Gatignon & Anderson, 1988; Benito, 1995; Bell, 1996; and Mutinelli & Piscitello, 1997) also showed that the firms prefer WOS in countries which have low levels of risks.

The result of the logistic regression in Table 3 indicates that Country Risk has slightly significant effect on entry mode decisions. This finding does not support Hypothesis 3c in Year 2004 and Year 2005. The majority of our sample firms indicated they did not feel a great deal of economic and political uncertainty with regard to China. More than 70% of sample firms don't think there were uncertainty problems in the economic and political conditions in China. It should be noted that most firms consider there to be severe competition in China (50 % to 70%). Yet it had no significant influence on entry mode decision.

The degree of firm-specific technology influences firms' entry decision and the need for ownership control because the firms with greater firm-specific technology may incur higher and more transaction costs in order to safeguard their firm-specific technology from misappropriation (Williamson, 1985; Gatignon & Anderson , 1988; Hennart, 1998; Brouthers & Bouthers, 2000). Furthermore, a high level of firm-specific technology tends to create contractual hazards because of greater chances of opportunism (Willliamson, 1985; Hill, 1990). Opportunism results when a partner firm takes advantage of the other firm's firm-specific technology through shrinking, free-riding or the firm-specificity dissemination (Williamson, 1985; Gatignon & Anderson, 1988; Hill, 1990; Hennart, 1991). This kind of risk is especially concerning in China where the legal infrastructures fail to adequately protect intellectual property. To safeguard firm-specific technology from potential opportunism problems, firms may prefer to adopt WOS type of entry. (Gatignon & Anderson, 1988; Hennart, 1991; Makino & Neuport, 2000).

Previous studies have found support for a positive relationship between firm-specific technology, usually measured as R & D intensity, and WOS (Sanna-Randaccio ,1990, Padmanabhan & Cho, 1999, Buckley &

Casson, 1976, and Larimo, 2000). Firms with low levels of R&D intensity or firm-specific technology may be less concerned about opportunism and safeguarding their firm-specific technology and more concerned about efficiency by seeking utilizing a JV. Williamson (1985) thought that a lower level of control entry provides more efficiency when there is less threat of opportunism. Hence, it is reasonable to assume that the Taiwanese firms will choose WOS in China in order to safeguard their technologies. The result of the logistic regression in Table 3 indicates that R &D Intensity has significant effect on entry mode decisions in year 2004 and 2005, thus supporting Hypothesis 3b at $p < 0.01$.

Scale economies refer to a firm's core production factors such as R&D, marketing, or manufacturing. They have a positive impact on firm's profitability (Hwang & Kim, 1992). This is typically realized through enhancing some form of cost reduction. Hill et al. (1990) suggested that cross-subsidization of markets and exploitation of global brand names are examples of sharing tangible and intangible assets of firm product and market portfolios. In order to achieve the scale economies, tight coordination is necessary, as implementation often requires cross-subsidiaries to "sacrifice" subsystem to benefit of the overall organization. Therefore, when the need for global integration is high, firms are likely to prefer WOS for its entry choice into foreign countries (Phatak et al. 1996). Therefore it is expected that Taiwanese firms will choose WOS where the possibilities to reach scale economies are greater in their host market. The logistic regression results in Table 3, indicates that scale economies have a significant effect on entry mode decisions in year 2004 and 2005 at $p < 0.01$ level , thus supporting Hypothesis 3b.

The summary of the statistics result of the hypothesis testing in this study is listed in Table 4.

Table 4: Summary of Hypothesis Tests

| Hypothesis | IV | Expected Sign | Result support | Hypothesis testing result |
|---|---|---|---|---|
| H1 | Firm size ( number of employees) | + | + | H1: ownership advantages Strongly Supported |
| | International experience | + | + | |
| | Firm –specific assets | + | + | |
| H2 | Market potential | + | X | H2 is not supported in these two factors. |
| | Cultural distance | _ | X | |
| | Production Cost | + | + | H2 is partly supported in these two factors. |
| | Host Government regulations | + | + | |
| H3 | Country Risk | - | X | H 3a is not supported. |
| | R & D intensity | + | + | H 3b is supported. |
| | Scale economies | + | + | H 3c is supported. |

*Notes: positive means increasing in choosing WOS mode of entry; negative means decrease in choosing WOS mode of entry*

## CONCLUSIONS

The purpose of this study is to empirically explore how the ownership, location, and internalization advantages of firms influence FDI entry mode choices. The paper examines two entry methods, wholly-owned subsidiaries and joint ventures, of Taiwanese Electronic Components firms which invested in China market from 2003 to 2005. We identify factors that influence their entry mode choices in China market and provide meaningful suggestions for new firms entering the China market.

The results of this study support the eclectic theory. The eclectic theory is found to have good explanatory ability for entry mode choice by the Taiwanese Electronic Components firms in 2003, 2004,

and 2005. Many results from the analysis of this study are consistent with the existing literature.

The result indicated that seven variables are statistically significant. The ownership advantages (large firm size, more international experience, more firm-specific assets ), the location advantages (cheap production cost and less government regulation ) and the internalization advantages (R & D intensity and scale economies) have increase the probability of choosing a WOS mode to enter the China Market.

From an entry mode perspective, a wholly- owned subsidiaries is preferred by Taiwanese Electronic Components firms, 1) if a firm has large size, more international experience, and more ability to develop differentiated products, 2) if the target host governments offer investment incentives and have cheaper production factors and 3) it is necessary to protect firm specific knowledge. This study finds that wholly-owned subsidiary are the preferred method of entry of Taiwanese Electronic Components firms in China markets.

There are two main limitations of this paper. First, this study investigated the related factors of OLI Theory in China market in a limited time period of 2003-2005. The changes, reforms and development of the investment conditions in China are still on the way and unstable. Moreover, in coming years, the China market is likely to become the world's largest market for the electronic components industry. Foreign firms that wish to invest in the China market should consider the findings of this study and the current political and economical environment in the China market before they make their entry mode decision. Second, the population for this study was limited to Taiwanese Electronic Components firms in China markets in the time period of 2003 to 2005. The extent to which the results can be generalized are not clear.

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