

## **Market entry of foreign banks under uncertainty:**

### **A real option theory approach**

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#### **Abstract**

*This paper empirically examines the market entry of foreign banks under uncertainty with a unique data set collected through interviews with senior managers of multinational banks. The findings cast light on the strategic orientations pursued by foreign banks and expose presence of strong option effects. Banks set up small-scale offices to get a foothold and large-scale offices to seek new customers and compete in foreign markets. Banks made irreversible commitments to the foreign market by setting up large-scale offices and the ones that committed entry mistakes set up large-scale offices. In general the paper reveals that banks can use scale to rationally manage risk in their market entry decisions under uncertainty.*

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#### **1. Introduction**

Traditional theories of market entry of foreign banks explain the optimal timing of switch from correspondent banking to setting up an office in the foreign market under perfect certainty of information (Williams, 1997). However, when entering a foreign market under uncertainty the issue for banks is not only when to time the switch from correspondent banking to setting up an office, but also to choose a scale that offers little prospects for making mistakes.

Given the inaptitude of traditional theories to answer this question, a number of recent papers have turned attention to real option effects (Dixit and Pindyck, 1994) for an empirical explanation. This is also the focus of the new research agenda set out by Peter Buckley and Mark Casson in the special edition of the journal of International Business studies in 1998. This paper analyzes market entry of foreign banks under uncertainty. The analyses stems from the observation that if banks follow the cautious-incremental approach to setting up offices in foreign markets then they should exhibit fewer entry mistakes in relation to banks that do not follow this approach. However, if banks do not follow the cautious-incremental approach to setting up offices in the foreign markets then they should exhibit more entry mistakes in relation to banks that follow this approach.

Empirical research in the past examined entry of foreign bank offices in the US (Khoury, 1979; Goldberg and Saunders, 1981a,b; Hultman and McGee, 1989; and Heinkel and Levi, 1989); the set up of US offices abroad (Goldberg and Saunders, 1980; Goldberg and Johnson, 1990; and Sabi, 1988); the entry of Japanese banks

abroad (Yamori, 1998) or the entry of foreign banks in the UK (Goldberg and Saunders, 1980–US) using aggregate data. Four studies examined market entry of foreign banks using micro analytic data: Ball and Tschoegl (1982) examined entry of US (Japanese) banks in Japan (US); Ursacki and Vertinsky (1992) examined entry of foreign banks in Japan and Korea; whereas Cho, Tschoegl and Yu (1986) and Brealey and Kaplanis (1996) examined entry of banks (originating in several markets) in several foreign markets. The results of these studies reveal that banks set up offices in foreign markets to seek new customers or pre-empt rival banks to offer services to their domestic and foreign customers.

The degree of caution exercised by manufacturing firms was early on analyzed from a real option theory approach by Kogut (1991) in the context of joint ventures, by Quigg (1993) in the context of property development and by Campa (1994) in the context of market entry decisions of firms under exchange rate uncertainty. Virtually no study has examined the degree of caution exercised by banks in the set up of their offices in foreign markets.

This study, besides updating previous empirical studies, brings fresh insights from the theory of real options. The objective is accomplished by examining the market entry decision of foreign banks under uncertainty through a unique set of interviews with senior managers of multinational banks. The process, though demanding and time consuming, enabled the collection of a unique data set to empirically test the factors affecting the market entry decision of foreign banks under uncertainty.

The paper is organized as follows: in section 2 synthesizes the theoretical background. Section 3 presents the hypotheses and the model. Section 4 describe the data collection procedure, the descriptive results of the data set and the method employed to empirically test the model presented in section 2. Section 5 presents the

main empirical findings and section 6 presents a summary and conclusions of the study.

## **2. Theoretical background**

The market entry decision of foreign banks entails a choice between the correspondent banking and setting up an office in the foreign market. The set up of an office enables banks to exploit the economies of scale by drawing on resources developed in the domestic market at a low (to zero) marginal cost. Transaction costs inhibit licensing or franchising.

When demand in the foreign market is first expressed, banks procure to export through correspondent bank arrangements and may continue doing so as long as the sum of marginal production costs and marginal transport costs are less than the average cost of production in the foreign market. When the size of the market grows to a certain point banks may find profitable to initially set up a customer seeking office or a cost-based office if it requires pre-empting a rival.

This notion of sequential entry modes was initially introduced in the context of the manufacturing multinational enterprise by Vernon (1966, 1979). In 1981, Buckley and Casson formally addressed the issue of optimal timing of a foreign direct investment and showed that under perfect certainty of information it is better to wait for the size of the market to grow to a point where the net present value becomes positive. The main exception to this is where a cost-based investment is required to pre-empt a rival.

The set up of a bank office in a foreign market under uncertainty, however, introduces another motive for waiting. In economic theory uncertainty is often dealt with by postulating a set of collective and mutually exhaustive states of nature to

which the decision maker attaches a subjective probability. Deferring the set up of an office allows information on the size of the foreign market, which is missing at the outset, to be revealed before the resources are committed to the foreign market. This means that the decision to set up an office in the foreign market is made after arrival of information. Deferral avoids entry mistakes (Cabral, 1993) because the office in the foreign market will be set up only if it is known that the size of the market will be profitable. This deferral strategy is often construed as an option to wait. The value of this option depends crucially on the sunk cost, i.e., the cost that is involved in reversing a mistaken entry, when reversal is the right thing to do. It implies a lower risk of mistake in relation to setting up an office in the foreign market at the outset. However, deferring the set up of an office in the foreign market may lead a competitor to pre-empt the market. Thus, there is a trade-off between waiting for the arrival of information and setting up an office at the outset.

The business of banks is location-specific in nature. This location-specificity can be observed in the form agglomeration factors such as proximity to sources of information, availability of a large pool of skilled labour, good communication infrastructure, size and structure of the foreign market, level of trade and presence of domestic customers. This suggests that certain items of information will become available to banks not through waiting but through a presence in the foreign market. In this case information may be acquired through the set up of an office. If banks initially set up a small-scale office then they can exercise the options implicit in the small-scale office to expand the scale if the information revealed on the state of the foreign market is favorable or withdraw from the foreign market if the information revealed on the state of the foreign market is unfavorable.

The incremental nature of the export and foreign investment process is emphasised in the Scandinavian model of the internationalisation of firms (Johanson and Vahlne, 1977) where firms first acquire experience in one foreign market before committing resources to another closely similar foreign market. The principle of caution applied to the timing of switch from correspondent banking to setting up an office in the foreign market can be applied to the scale of office. The emphasis here is on the need to expand the scale in stages in a manner very much similar, but not identical, to the earlier switch from correspondent banking to setting up an office. Whilst earlier information arrived through the passage of time, in this case, information is acquired by getting a foothold in the foreign market. In this case banks can maximize option value of sequential entry by initially setting up a small-scale office and later up-scale or de-scale the office conditional on the information revealed on the foreign market.

The set up of small-scale offices, however, requires a qualification. If banks set up large-scale offices then this can turn out to be risky because if the information on the state of the foreign market turns out to be of an unfavorable nature the outcome may be too poor leading banks to make entry mistakes because in relation to large-scale offices small-scale offices incur lower adjustment costs. In a game-theoretic setting it is said that putting oneself into an inflexible position can improve one's bargaining power (Schelling, 1960). In this context, large-scale offices costs represent commitment, and commitment gives credibility to aggressive strategies. A bank that sets up a large-scale office is more likely to stay and fight a new entrant than is a bank that can easily close its office. Thus, large-scale offices may prove useful in defending market power by limiting entry of rival banks.

### **3. Hypotheses and the model**

The literature on international banking stresses the importance of strategic orientations in the market entry decision of foreign banks. Previous research has dealt with orientations relating to customer seeking or competition. However, these orientations have not yet been integrated with the real option theory.

Banks set up offices in foreign markets to seek new customers as they can draw on their human, technological and capital resources developed in the domestic market at a low (to zero) marginal cost. The real options approach suggests entry in a foreign market should not proceed until the expected net present value is positive (exception is where an office is required to pre-empt a rival). This may be achieved by deferring entry until more information on the foreign market becomes available. Entry deferral is an example in which the real options approach favours caution. After information on the foreign market is revealed the bank can set up an office according to the size of the foreign market.

Hypothesis 1. The relationship between customer seeking and the scale of office will be positive.

One of the features of setting up an office in the foreign market is that it often generates information on the foreign market as a by-product of presence. In this context a small-scale office may be used to accelerate the process of gathering information on the foreign market. The real options approach suggests that the degree of caution (generally construed in the context of deferral) can also be applied to the set up of small-scale offices. A small-scale office, in this context, not only avoids the irreversibility (equated in terms of adjustment costs) associated with the set up of a large-scale office, but also turns out to be a cheap way of acquiring information.

Hypothesis 2. The relationship between getting a foothold and the scale of office will be negative.

Competition is a feature of most modern global markets where banks operate. It encourages pre-emption of a market. Credible entry deterrence requires the set up of a large-scale office. The set up of a large-scale office involves higher subsequent adjustment costs in relation to a small-scale office (whose costs can be recouped later). Sunk costs represent commitment, and commitment gives credibility to aggressive strategies in a game. A bank that sets up a large-scale office is more likely to stay and fight a new entrant than is a bank that can close its office easily and transfer resources to another market. Indeed, closure of large-scale offices of banks often couples negative reputation effects for banks.

Hypothesis 3. The relationship between competition and the scale of office will be positive.

The set up of an office in the foreign market hinges critically on the subjective belief that the bank holds about the true state of uncertainty. When the subjective belief about the true state of uncertainty is not appropriate the initial set up will turn out to be inappropriate. A bank on the basis of the subjective belief, will decide not to incur unnecessary adjustment costs and risk making a mistake. Confident banks will appear both impulsive and pragmatic, whereas less confident banks will appear both cautious and systematic instead. In this context, banks with confident beliefs about the true state of uncertainty will set up large-scale offices and banks with more conservative beliefs about the true state of uncertainty will set up small-scale offices.

Hypothesis 4. The relationship between uncertainty and the scale of office will be negative.



A bank that sets up a small-scale office acquires an option to either expand or contract the scale of the office at some time in the future. The option exists because of the intrinsic nature of the office and not because of a contract with any other party. Although the office could be sold to another bank, the option is not designed for sale independently. A particular feature of small-scale offices is that these reduce the cost of withdrawal from the foreign market later on. Thus, when bank set up small-scale offices, they avoid sunk costs that are involved with the set up of large-scale offices. Banks that follow this cautious-incremental approach will set up more reversible small-scale offices whereas banks that do not follow this cautious-incremental approach will set up more irreversible large-scale offices.

Hypothesis 5. The relationship between irreversibility and the scale of office will be positive.

The set up of a small-scale office in the foreign market gives banks flexibility to respond to new market conditions. Small-scale offices are often more flexible than large-scales offices. One reason is that large-scale offices involve sunk costs in building reputation, which banks cannot recoup on withdrawal from the foreign market. Thus banks may set up small-scale offices under conditions of high uncertainty and adjustment costs. They can then exercise the options implicit in small-scale offices – to increase the scale of the office if markets conditions turn out to be favorable, and to decrease the scale (or withdraw) if market conditions turns out to be unfavorable.

Hypothesis 6. The relationship between increase or decrease in scale (after the initial set up of the office) will be positive or negative.

Banks can set up offices in the foreign market through the cautious-incremental approach. However, where market opportunities exist pre-emption of markets through

the set up of large-scale offices may be required to build and defend market power. If market conditions turn out to be of an unfavourable nature, however, the set up of large-scale offices may prove to be a mistake.

Hypothesis 7. The relationship between entry mistakes and the scale of office will be positive.

The model can be stated in the form tested and with the sign of each coefficient representing the direction of the effect of each factor.

$$\text{Scale} = a + b_1 (\text{customer seeking}) - b_2 (\text{getting a foothold}) + b_3 (\text{Competition}) - b_4 (\text{Uncertainty}) + b_5 (\text{Irreversibility}) \pm b_6 (\text{Increase/decrease scale}) + b_7 (\text{Entry mistakes})$$

#### **4. Data and method**

The data set was constructed on the basis of a questionnaire. The sample is part of a population of investment banks and securities houses that are affiliated to the International Securities Market Association (ISMA), the self-regulatory organisation and trade association for the international securities markets based in Switzerland. ISMA's centre for research is based at the University of Reading. ISMA has about 800 members in 51 countries. In the United Kingdom, ISMA has 129 members. These member banks operate essentially in areas related to investment banking. Of the 129 banks initially approached, 64 banks agreed to participate in the study and nominated either the Chief Executive for Europe or a Managing Director and in some cases both to be interviewed. Semi-structured interviews were conducted with the managers nominated by the bank. The managers were invited to discuss the list of questions previously mailed or faxed. The interviews were followed up by telephone interviews

to clarify issues relating to the questionnaire with the manager or other colleagues of the manager or the head of the corporate communications department. Of the 64 banks 49 banks that set up an office plugged to the London hub agreed to respond to the questionnaire. Due to missing information the sample consists of 43 banks representing 33.33% of the total population approached to participate in the study. This sample size is fairly equivalent to the sample size of earlier micro analytic empirical studies of Ball and Tschoegl (1982), whose sample consisted of 95 US banks that set up a representative office or a branch in Japan and 48 Japanese banks (6 exogenous variables) that set up an office in the US (California); Ursacki and Vertinsky (1992), whose sample consisted of 66 banks that set up offices in Japan and 37 banks (5 exogenous variables) that set up offices in Korean for the regressions for the scale of investment; Yamori (1998), whose sample consisted of 44 observations (8 exogenous variables) of Japanese banks that set up offices in foreign markets.

In order to maintain confidentiality of certain data, and because it was deemed inappropriate to publish evaluations and comparisons of specific institutions, the transcripts of interviews and identities of the banks that participated in the study are not being made available. A closely similar approach was recently employed by Rhoades (1998) to analyse the efficiency of bank mergers.

The survey included 17 questions. This paper analyzes 11 questions. There is 1 endogenous variable – scale of office ( $Y1$ ), and 9 exogenous variables ( $X1$ -  $X9$ ) of which 3 ( $X1$ -  $X3$ ) relate to strategic orientations; 4 ( $X4$ -  $X6$ ) relate to option effects and 1 ( $X7$ ) relates to entry mistake. The remaining 2 ( $X8$ -  $X9$ ) variables relate to unobserved domestic and host market advantages. The data is synthesized in Table I.

INSERT TABLE I ABOUT HERE
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The scale of office (*Y1*) was measured as the logarithm of the number of employees hired at the time of set up of the office. The responses show that banks initially set up offices with varying scales - maximum 305 employees and minimum 2 employees. The scale of office was also measured for each of the organizational forms, namely representative offices (*Y11*), branches (*Y12*) and subsidiaries (*Y13*). Managers observed that representative offices were used to gather money and capital market information relevant for domestic banking operations. They also said that these offices did not handle retail business, such as local deposit taking and consumer lending. From the head office's perspective, these offices were considered to be a low cost flexible form of overseas presence. Managers considered branches as legal extensions of the head office and their set up implied commitment to the foreign market. These involved higher set up costs and would generate negative reputation effects in case of closure. Managers considered subsidiaries as separate legal entities whilst belonging to the parent-bank. These involved higher set up costs and placed banks in direct competition with local banks. Managers also mentioned that the choice between a subsidiary and branches involved a trade-off between local regulatory control, and parent and home central bank support.

The interviews revealed that banks pursued three strategic orientations: customer seeking (*X1*); get a foothold (*X2*), and competition (*X3*). These strategic orientations (*X1*- *X3*) were measured on a trichotomous scale: not important (0)-important (1)-very important (2). Uncertainty (*X4*) was also measured on a similar scale and the responses of the managers show that 26% of banks perceived low uncertainty (had confident beliefs), 35% of banks perceived medium uncertainty and 40% of banks perceived high uncertainty (had conservative beliefs). The irreversibility (*X5*) of the initial set up was also measured on a similar scale and the responses show that 53% of

offices set up in foreign markets were totally reversible; 37% were more or less reversible; and 9% were totally irreversible. If the bank increased or decreased the scale (*X6*) after the initial set up of the office was measured on a polychotomous scale. The responses show that 23% of the banks closed offices, 14% divested partially, 37% of the banks neither increased nor decreased the initial scale and 23% of the banks increased the scale. The variable that measured whether in light of what banks had learnt they would precede in a different way was coded as entry mistake (*X7*). The simple arithmetic average of this variable suggests that 56% of banks would proceed in a different way; 14% of banks found too soon to say whether they would proceed in a different way; and 30% said they would certainly proceed in a different way. Unobserved domestic and host market advantages were captured through dummies classifying emerging (1) or industrialised (0) markets. The table shows that 98% of offices were set up by banks originating in industrialised countries and 40% of offices were set up in emerging markets.

The correlations between the exogenous variables are shown in Table II. This table is a 9x9 matrix in which each cell represents the correlation of the variable in the column with the variable in the row. As an example take the correlation of variable (*X6*) – increased/decreased scale – and (*X7*) – entry mistakes. The cell entry shows a significant correlation coefficient (-0.78) between these two variables suggesting that banks that decreased the initial scale were also ones who considered that in light of what they had learnt they would proceed in a different way.

INSERT TABLE II ABOUT HERE
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A simple multivariate regression analysis was used to empirically test the model. The relationship between the initial scale of the office and the exogenous variables was estimated through an ordinary least squares procedure and the relationship

between the initial scale of the office conditional on the choice of the organizational form was estimated through a three-stage least squares procedure. The results are reported in the next section.

## 5. Empirical findings

The findings for the scale of office are reported in Table III. The regression is significant at 1% level and the coefficients explain 61.9% of the variation in the scale of offices set up by banks in foreign markets. Customer seeking (*X1*) shows the expected positive sign (statistically significant at the 10% level). Getting a foothold (*X2*) shows the expected negative sign with the scale of office. Competition (*X3*) shows the expected positive sign (statistically significant at the 5% level) with the scale of office. Irreversibility (*X5*) shows the expected positive sign (significant at the 1% level). The relationship between increased/decreased the scale (*X6*) is negative (statistically significant at the 10% level). Banks that initially set up large-scale offices later de-scaled their offices. Entry Mistakes (*X7*) shows the expected positive sign suggesting that in light of what the banks learnt from the initial set up they would proceed in different way. Banks originating in emerging markets set up small-scale offices and banks set up small-scale offices in emerging markets.

INSERT TABLE III ABOUT HERE
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The zero-order, part and partial coefficients; the variance inflation factors; the studentized residuals and the standardized Dfbetas for the regression are displayed in Appendix I, and II.

The results for the scale of office conditional on the choice of the organizational form are reported in Table IV. The Table shows three sets of regression results each relating to the type of organizational. The first regression, which relates to

representative offices, explains 9.6% of the variation in the scale of these offices. The second regression, which relates to branches, explains 2.7% of the variation in the scale of these offices. The third regression, which relates to subsidiaries, explains 53.5% of the variation in the scale of these offices. Overall, it is also significant at the 1% level. Customer seeking ( $X1$ ) is positively related to the scale of subsidiaries (significant at the 5% level). Locally integrated offices are important in pursuing new customer in foreign markets. Competition ( $X3$ ) is negatively related to related to the scale of subsidiaries (significant at the 10% level). Timing is crucial where pre-emption is concerned and branches are quicker to set up, at least when compared with the set up of *de novo* subsidiaries. Irreversibility ( $X5$ ) is positively related to the scale of subsidiaries (statistically significant at the 10% level). The more integrated nature of business undertaken by these offices makes these offices more difficult to shut down. Entry Mistakes ( $X7$ ) is positively related to the scale of subsidiaries (statistically significant at the 1% level). Banks considered the set up of large-scale subsidiaries a mistake. Banks originating in emerging markets set up small-scale subsidiaries (significant at the 5% level).

<p>INSERT TABLE IV ABOUT HERE</p>
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## 6. Summary and conclusions

This paper presents empirical findings on the market entry of foreign banks under uncertainty through newly gathered data from interviews with senior managers of multinational banks. This paper provides fresh insights on strategic orientations pursued by foreign banks under uncertainty. It also exposes presence of strong option effects. In particular, the paper suggests that banks can use scale to rationally manage risk in their foreign market entry decisions. Small-scale offices can generate options to expand or contract the scale of office and avoid entry mistakes associated with the

set up of large-scale offices. The theoretical link developed in this paper generates insights useful in integrating real option theory, which has a strong theoretical base in financial economics with the literature on entry mistakes, which has a strong base in industrial economics.

The findings have important implications for the existing theories of multinational banking. The gist of the conventional theory (Aliber, 1976, 1984; Grubel, 1977; and Gray and Gray, 1983) is that if banks are to maintain up-to-date information on their customers (having) a direct overseas presence is crucial in overcoming problems associated with asymmetric information. The lack of property rights on most banking products means that banks are often constrained from exploiting these abroad through licensing or franchising agreements. Market failure in intermediate product markets makes internalization through the set up of bank offices in the foreign market, a profitable form of exploiting these resources. In this context, the switching from correspondent banking to the set up of foreign bank offices is the most relevant decision. Waiting is generally applied to the timing of this switch under perfect certainty of information. Waiting is also applied to the timing problem under uncertainty. The findings of this study reveal that large-scale offices offer more prospects for making mistakes. When setting up offices in foreign markets under conditions of uncertainty banks may choose a scale that offers little prospects for making mistakes. Small-scale offices may be used to gather information on the prospective size of the foreign market. This cautious-incremental approach resembles an option because instead of reducing the risk of mistakes by deferring entry, it reduces the risk of mistake by setting-up a small-scale office which should inform the bank whether a large-scale office will or will not be required. After information is revealed, banks can exercise options implicit in the small-scale office to either up-



scale or de-scale the office. In general the findings of this study reveal that banks can apply the degree of caution that is often applied to the waiting decision to the scale of offices. This suggests that options of a non-contractual nature relating to the scale and location of offices are particularly relevant to banks. Existing theories explaining the existence of multinational banks may thus have to be supplemented to take into account uncertainty for which real options theory can certainly prove to be useful. The study indeed turns out generating empirical substance for the research agenda set out by Peter Buckley and Mark Casson in 1998.

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Table I Descriptive statistics of variables in the data set

Type	Variable	Average	St Dev	Max	Min	Count 0	Count 1	Count 2	Count 3
<b><i>Dependent</i></b>									
<i>Y1</i>	Scale of office	1.08	0.59	2.48	0.30				
<i>Y11</i>	Scale of representative offices	0.08	0.18	0.78	0.00				
<i>Y12</i>	Scale of branches	0.30	0.54	2.00	0.00				
<i>Y13</i>	Scale of subsidiaries	0.70	0.78	2.48	0.00				
<b><i>Independent</i></b>									
<i>X1</i>	Customer seeking	1.07	1.01	2	0	20	0	23	0
<i>X2</i>	Get a foothold	0.49	0.83	2	0	31	3	9	0
<i>X3</i>	Competition	0.09	0.43	2	0	41	0	2	0
<i>X4</i>	Uncertainty	1.14	0.80	2	0	11	15	17	0
<i>X5</i>	Irreversibility	0.56	0.67	2	0	23	16	4	0
<i>X6</i>	Increase/decrease scale	1.65	1.11	3	0	10	6	16	11
<i>X7</i>	Entry mistakes	0.74	0.90	2	0	24	6	13	0
<i>X8</i>	Emerging domestic market	0.02	0.15	1	0	42	1	0	0
<i>X9</i>	Emerging host-market	0.40	0.49	1	0	26	17	0	0

Table II Bivariate correlations of variables in the data set

	<i>X1</i>	<i>X2</i>	<i>X3</i>	<i>X4</i>	<i>X5</i>	<i>X6</i>	<i>X7</i>	<i>X8</i>	<i>X9</i>
<i>X1</i>	1.00								
<i>X2</i>	-0.64*	1.00							
<i>X3</i>	-0.24	-0.13	1.00						
<i>X4</i>	-0.07	0.47*	-0.18	1.00					
<i>X5</i>	0.15	-0.16	0.32*	-0.24	1.00				
<i>X6</i>	0.17	0.16	-0.03	0.40*	0.14	1.00			
<i>X7</i>	-0.11	-0.24	0.06	-0.47*	-0.23	-0.78*	1.00		
<i>X8</i>	0.14	-0.09	-0.03	-0.03	0.34*	0.05	0.04	1.00	
<i>X9</i>	0.18	0.04	0.05	0.34*	-0.04	0.30*	-0.19	-0.12	1.00

\* 5% significance (1-tailed)

Table III Ordinary least squares regression for the scale of office

<i>Endogenous</i>	<i>YI</i> Scale of office		
	Coef.	se	Sig.
<i>Exogenous</i>			
X0 Intercept	0.791	0.294	0.011 ***
X1 Customer seeking	0.182	0.093	0.060 *
X2 Get a foothold	-0.051	0.117	0.665
X3 Competition	0.389	0.164	0.024 **
X4 Uncertainty	-0.036	0.101	0.722
X5 Irreversibility	0.465	0.113	0.000 ***
X6 Increase/decrease scale	-0.145	0.086	0.102 *
X7 Entry mistakes	0.133	0.117	0.264
X8 Emerging domestic market	-1.114	0.423	0.013 ***
X9 Emerging host-market	0.073	0.131	0.581
F	8.573	***	
R square	0.700		
Adjusted R square	0.619		
N	43		

\*\*\* 1% significance; \*\* 5% significance; \*10% significance

Table IV Three-stage least squares regressions for form of office

<i>Endogenous</i>	<i>Y11</i>			<i>Y12</i>			<i>Y13</i>		
	Representative offices			Branches			Subsidiaries		
	Coef.	se	Sig.	Coef.	se	Sig.	Coef.	se	Sig.
<i>Exogenous</i>									
X0 Intercept	-0.107	0.122	0.378	1.024	0.377	0.007	-0.125	0.375	0.738
X1 Customer seeking	0.046	0.039	0.233	-0.112	0.120	0.352	0.248	0.119	0.038 **
X2 Get a foothold	0.052	0.049	0.285	-0.057	0.150	0.704	-0.046	0.194	0.759
X3 Competition	0.064	0.068	0.351	0.397	0.211	0.060 *	-0.073	0.210	0.093 *
X4 Uncertainty	0.068	0.042	0.100 *	-0.013	0.130	0.923	-0.117	0.129	0.367
X5 Irreversibility	-0.089	0.047	0.059 *	-0.135	0.145	0.355	0.689	0.144	0.000 ***
X6 Increase/decrease scale	0.030	0.036	0.409	-0.169	0.111	0.127	-0.005	0.110	0.961
X7 Entry mistakes	0.040	0.049	0.409	-0.308	0.150	0.041 **	0.401	0.149	0.007 ***
X8 Emerging domestic market	0.025	0.175	0.886	0.103	0.544	0.848	-1.242	0.540	0.021 **
X9 Emerging host-market	-0.010	0.055	0.847	-0.122	0.169	0.469	0.206	0.168	0.220
F	1.500			1.130			6.370 ***		
R square	0.290			0.235			0.634		
Adjusted R square	0.096			0.027			0.535		
N	43			43			43		

\*\*\* 1% Significance; \*\* 5% significance; \*10% significance



Appendix I  
Zero-order, part and partial coefficients and VIF

	<i>Zero</i>	<i>Part</i>	<i>Partial</i>	<i>VIF</i>
<i>X1</i>	0.28	0.32	0.19	2.81
<i>X2</i>	-0.48	-0.08	-0.04	2.96
<i>X3</i>	0.42	0.38	0.23	1.55
<i>X4</i>	-0.46	-0.06	-0.03	2.11
<i>X5</i>	0.50	0.58	0.39	1.80
<i>X6</i>	-0.34	-0.28	-0.16	2.91
<i>X7</i>	0.29	0.19	0.11	3.54
<i>X8</i>	-0.08	-0.42	-0.25	1.32
<i>X9</i>	0.01	0.10	0.05	1.34

VIF – Variance inflation factors

Appendix II  
Residuals and Dfbetas

Case	Studentized Residuals	Standardized Dfbetas									
		$X_0$	$X_1$	$X_2$	$X_3$	$X_4$	$X_5$	$X_6$	$X_7$	$X_8$	$X_9$
1	0.73	0.20	-0.19	-0.14	-0.10	-0.10	-0.08	-0.05	-0.04	0.04	0.03
2	-1.30	-0.40	-0.10	0.00	-0.09	0.32	0.41	0.26	0.43	-0.19	-0.33
3	0.22	0.05	0.04	0.01	0.03	-0.03	-0.06	-0.02	-0.05	0.01	-0.03
4	-0.86	-0.04	0.06	0.17	0.18	-0.31	-0.46	0.32	0.12	0.16	-0.19
5	0.37	-0.03	0.02	0.07	0.03	0.01	-0.04	0.07	0.03	0.00	-0.08
6	0.04	0.00	0.00	0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.01
7	2.05	-0.28	0.31	0.14	0.05	-0.01	-0.13	0.11	0.43	-0.03	0.37
8	1.40	0.46	0.14	0.34	0.06	0.16	0.17	-0.88	-0.59	0.02	-0.11
9	-0.70	0.10	-0.01	-0.14	0.00	-0.01	0.02	-0.07	-0.11	-0.01	-0.11
10	-0.70	0.10	-0.01	-0.14	0.00	-0.01	0.02	-0.07	-0.11	-0.01	-0.11
11	-0.88	0.11	-0.04	0.08	-0.01	-0.17	0.04	-0.07	-0.12	0.02	-0.08
12	-0.55	0.08	0.03	0.09	0.06	-0.12	-0.11	-0.08	-0.06	0.06	-0.05
13	-1.88	0.37	-0.37	-0.60	-0.19	-0.46	-0.10	0.17	-0.45	0.12	0.38
14	1.32	0.37	0.03	-0.11	1.42	0.05	-0.44	-0.19	-0.47	0.16	-0.39
15	0.35	0.06	-0.07	-0.03	-0.05	-0.01	0.04	0.00	-0.04	-0.01	-0.02
16	-1.32	0.37	0.03	-0.11	-1.00	0.05	-0.44	-0.19	-0.47	0.16	-0.39
17	-1.47	0.10	-0.03	-0.25	0.04	-0.20	-0.28	0.01	-0.03	0.15	0.27
18	1.79	-0.11	0.46	0.35	0.01	-0.16	0.25	-0.16	0.21	-0.22	-0.17
19	0.37	-0.02	-0.17	-0.16	-0.12	0.09	0.12	0.11	0.09	-0.06	-0.04
20	0.17	0.00	0.00	-0.02	0.00	0.01	-0.02	0.01	0.00	0.00	0.02
21	-0.05	-0.02	0.00	0.00	0.01	0.02	-0.01	0.02	0.02	0.00	-0.02
22	1.16	-0.11	0.08	-0.03	-0.04	0.03	0.11	0.24	0.09	-0.15	-0.26
23	1.73	-0.05	-0.10	0.43	-0.19	-0.49	0.18	0.26	0.05	-0.02	0.45
24	0.95	-0.14	-0.27	-0.21	-0.19	0.28	0.27	0.28	0.18	-0.16	-0.21
25	0.17	0.02	0.05	0.04	0.02	-0.04	-0.03	-0.02	0.00	0.00	-0.01
26	-0.13	0.03	-0.03	-0.02	0.00	0.01	-0.02	-0.02	-0.04	0.02	0.02
27	1.66	0.45	-0.46	-0.30	-0.16	0.04	-0.23	-0.22	-0.37	0.20	0.44
28	-1.24	0.00	0.00	0.16	-0.02	-0.10	0.17	-0.11	0.03	-0.03	-0.12
29	-0.12	0.00	-0.01	-0.01	0.00	0.03	0.00	-0.02	0.00	0.01	0.02
30	1.57	-0.44	0.16	-0.08	0.01	0.50	0.09	0.13	0.52	-0.13	0.14
31	-0.07	-0.01	-0.01	-0.01	-0.01	0.00	0.01	0.00	0.01	0.00	0.01
32	-0.44	0.04	-0.03	0.01	0.01	-0.01	-0.04	-0.09	-0.03	0.06	0.09
33	0.47	0.07	-0.14	-0.14	-0.07	0.08	0.00	-0.02	0.03	-0.01	-0.02
34	-1.76	-0.51	0.47	0.35	0.25	0.24	0.20	0.13	0.09	-0.10	-0.08
35	.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00
36	0.27	-0.01	0.07	0.03	0.03	0.02	-0.02	-0.03	0.02	-0.01	-0.04
37	-0.42	0.01	0.01	0.02	0.04	0.04	-0.03	-0.05	0.00	0.02	-0.07
38	-0.04	0.00	0.00	0.00	0.00	-0.01	0.01	0.00	0.01	0.00	0.01
39	-1.08	-0.31	0.28	0.21	0.15	0.14	0.12	0.08	0.06	-0.06	-0.05
40	-1.30	-0.09	-0.13	0.01	0.00	-0.01	-0.07	0.06	0.13	0.10	0.21
41	0.40	0.07	0.01	-0.04	0.02	0.03	-0.07	-0.07	-0.08	0.03	0.06
42	-0.18	-0.05	0.04	0.03	0.02	0.02	0.02	0.01	0.01	-0.01	-0.01
43	-0.48	0.05	-0.08	-0.06	0.01	0.08	-0.04	-0.09	-0.06	0.06	0.07

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