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Performance of Multinational Firms' Subsidiaries: Influences of Cumulative Experience

Abstract and Key Results

- In this study, we examine the impact of cumulative experiences that arise from a series of sequential entries on the performance of foreign subsidiaries of multinational firms. Drawing upon the literature on organizational learning, we propose that multinational firms acquire different types of experiences at the firm level, including general entry experience, entry specific experience, and exporting experience, which exert different influences on their performance. We also investigate the effect of experience on performance at the subsidiary level.
- Using a dataset of 245 subsidiaries of 81 large U.S. firms in China, we find that firms' entry specific experience, exporting experience, and subsidiary level experience exhibit significant effects on the return on sales of foreign subsidiaries.
- Further, the effect of exporting experience gets weaker as firms accumulate more entry specific experience. Firms' general entry experience, however, is not related to subsidiary performance.

Key Words

Organizational Learning • Sequential Entries • Experience • Performance

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Introduction

How to achieve better performance in foreign markets has long been a core question in the field of international business and strategy. Researchers have sought to understand the ways to reduce the liability of foreignness and sustain competitive advantages in foreign markets (Hymer 1976, Peng 2004, Zaheer 1995). Despite decades of effort, significant challenges still remain, as indicated by the divergence of answers offered. Multinational firms usually have multiple entries into a single host country following a sequential entry process (Kogut 1983, Kogut/Kulatilaka 1994). According to the organizational learning perspective, foreign firms learn from their previous entry experience and they make foreign investments not only to exploit existing specific advantages but also to develop new competitive advantages (Chang 1995, Shan /Song 1997, Makino/Lau/Yeh 2002). Therefore, experience accumulation in foreign markets can help firms develop new capabilities and enhance their performance. A large volume of research has focused on the performance implications of entry mode choices and timing of entry by foreign firms. However, the performance implication of organizational experience is under-researched and existing studies have not closely examined the effects of different types of experience on performance in foreign markets.

In this study, we investigate whether multinational firms' experience accumulation contributes to high performance in foreign markets. Among the few studies on the effect of foreign firms' learning on performance, most of them exclusively examined the performance measure of survival rate or subjective measures (e.g., Barkema/Bell/Pennings 1996, Luo/Peng 1999, Makino/Delios 1996, Shaver/Mitchell/Yeung 1997). However, dissolution of a foreign subsidiary is not a perfect proxy of performance and survival may not always signal success (Barkema/Bell/Pennings 1996). Moreover, perceptual measures of performance may be biased and reflect desired, rather than actual performance (Brouthers/Brouthers/Werner 2003). Objective measure of performance is rarely adopted because of the difficulty of collecting performance data at the subsidiary level. We aim to contribute to the literature through adopting an objective performance measure. Specifically, we investigate the effects of cumulative experience in foreign markets on subsidiary performance using the measure of return on sales.

In the existing literature on the effect of learning on foreign firms' performance, firm experience was measured either by the cumulative number of previous entries (e.g., Chang 1995, Kogut/Chang 1996) or by the number of years of operation in a foreign market (e.g., Luo/Peng

1999, Hennart/Reddy 1997). However, firms usually have different experience profiles that lead to different levels of learning about foreign markets (Delios/Henisz 2003). Therefore, it is important to move beyond an aggregated measure of experience. Through observing the whole foreign market entry sequence of multinational firms from the start, we can develop measures of experience including general entry experience, entry specific experience, and exporting experience. Thus, we are able to differentiate and investigate the effects of different types of experience on subsidiary performance accurately. We also examine two levels of experience effects, including parent firm and subsidiary levels. Previous studies either examine the experience effect at the firm level or at the subsidiary level (Barkema/Bell/Pennings 1996, Li 1995, Luo/Peng 1999, Shaver/Mitchell/Yeung 1997). Both firm level experience and subsidiary level experience are crucial parts of multinational firms' learning process in foreign markets (Luo/Peng 1999). We trace the experience accumulation process at both parent firm and subsidiary level. Particularly, we are interested in whether the effect of experience at the parent firm level can be transferred to individual foreign subsidiaries.

We test our hypotheses using a sample of 245 foreign subsidiaries of 81 large U.S firms in China. As the world's fastest growing consumer market, China has been attracting enormous foreign direct investment (FDI) over the past two decades. The FDI volume to China continues to grow, reaching \$72 billion in 2005, only behind the United Kingdom and United States (*World Investment Report* 2006). China began allowing foreign firms to enter the country in 1979, which provided a starting point for observing the entry sequence of foreign firms. Therefore, the Chinese market provides an appropriate research context to investigate the effects of cumulative experience on subsidiary performance of multinational firms. We trace the entry sequence of these multinational firms, from 1979 to 2002, to develop different measures of experience and investigate whether firm experience at parent firm and subsidiary levels exhibits significant effects on subsidiary performance. The empirical results show that entry specific experience has a strong impact on subsidiary performance while general entry experience exhibits no significant effect. Moreover, exporting experience and subsidiary experience also have significant effects on subsidiary performance.

Literature Review

Organizational Learning and Performance

Organizational learning is defined as “organizations’ encoding inferences from history into routines that guide behavior” (Levitt/March 1988, p. 319-320). There exist four basic constructs related to organizational learning: knowledge acquisition, information distribution, information interpretation, and organizational memory (Huber 1991, Sinkula 1994). Generally, organizational learning involves the acquisition of knowledge that is potentially useful to the organization (Huber 1991). Consequently, the learning ability can be a major source of a firm’s competitive advantage. Firms can learn from different sources, including from their direct experience, from previous decision outcomes, and from observing the experience of other firms. Learning by doing is one of the most important mechanisms of organizational learning. Organizational learning incorporates better understandings of making decisions, and as a result, organizational behaviors or the range of potential behaviors can be changed. An extensive literature has provided supporting evidence for the positive effect of experience on performance and non-linear experience-based learning curves (e.g., Argote/Beckman/Epple 1990). Researchers have applied the organizational learning perspective to study FDI and confirmed that firms make investments in foreign markets not only to exploit their existing specific advantages but also to develop new competitive advantages (e.g., Chang 1995, Shan/Song 1997, Makino/Lau/Yeh 2002). In terms of organizational learning in foreign markets, foreign firms generate and accumulate knowledge from their own entry experience incrementally (Johanson/Vahlne 1977, 1990). Consequently, firms can reduce the level of liability of foreignness and overcome operation uncertainties. Therefore, organizational learning can help firms to develop their capabilities in foreign markets and enhance subsidiary performance.

International expansion is an efficient means to acquire strategic assets such as technology, marketing, and management expertise from the host market (Makino/Lau/Yeh 2002). Moreover, setting up foreign subsidiaries may lead to innovations in products, marketing, and organizational practices (Barkema/Vermeulen 1998). Therefore, beyond the exploitation of firm-specific advantages, international operations also imply considerable benefits from the exploration of new knowledge and acquisition of valuable strategic assets (March 1991). There exist a few studies empirically addressing the effect of organizational learning on firm performance in foreign markets. Li (1995) studied foreign subsidiaries in the U.S. computer and pharmaceutical industries and found that entrants with previous experience are more likely to survive than first-time entrants. Barkema, Bell, and Pennings (1996) examined the longevity of

foreign entries and found that firms' prior foreign expansion experience positively influences the longevity of foreign ventures. Shaver, Mitchell, and Yeung (1997) also found that firms with prior experience in a host country, have a higher survival rate than firms with no prior experience. Luo and Peng (1999) showed that the intensity and diversity of host country experience have positive effects on subunit performance of foreign firms.

This study attempts to extend the literature through a thorough consideration of the effects of experience of multinational firms in foreign markets. We develop measures of experience including general entry experience, entry specific experience, and exporting experience through observing the complete entry sequences of multinational firms. We also examine each subsidiary's experience in a host market. We further investigate possible non-linear effects of firm experience and the interaction effects between different types of experience on subsidiary performance. Thus, we provide a more complete picture of the process of multinational firms' experience accumulation. Moreover, we examine the effect of learning using an accounting based performance measure: return on sales. We aim to conquer the methodological barriers in previous studies and substantiate our understanding of the performance implication of organizational learning in foreign markets.

Hypotheses

General Entry Experience

General entry experience refers to the experience that firms accumulate from previous entry activities of using other types of entry modes different from the focal subsidiary in a foreign market. Theories of organizational learning suggest that firms develop knowledge from their past experience. Firms collect experience and encode inferences from history into routines that guide their future behaviors (Levitt/March 1988). Given that foreign markets differ substantially from a firm's home market, it is important for firms to acquire and develop knowledge about foreign markets. Firms' previous business activities act as the prime source of the knowledge (Barkema/Vermeulen 1998, Johanson/Vahlne 1977, Shaver/Mitchell/Yeung 1997). The knowledge is usually country-specific and can not be acquired easily from other sources. Through their entry activities, firms can gradually understand the foreign country market, its culture, institutional forces, and market characteristics. With increased experience, firms enlarge their base of knowledge and develop new capabilities. As a result of the

knowledge accumulation, it becomes easier for firms to deal with operations that have occurred before and the level of the liability of foreignness can be largely reduced. Firms will perceive less uncertainty and face less operational difficulties when dealing with new foreign operations (Delios/Beamish 2001). Consequently, firms will be more able to manage business operations effectively in foreign markets.

The theory of evolution economics also suggests that firms' previous entry experience will lead to better subsidiary performance. Firms accumulate knowledge about the execution of organizational tasks from their previous experience. When firms engage in an activity repeatedly, they can draw inferences from previous experience and further encode these inferences into organizational routines (Nelson/Winter 1982). Acting according to routines can minimize the potential mistakes, risks, as well as costs of doing business. Therefore, these organizational routines can be the source of performance improvement for a firm's future operations (Barney 1991).

We expect that firms' general entry experience is beneficial for their subsequent operations. There is some emerging empirical evidence for the positive relationship between the accumulation of experience and subsidiary performance (Barkema/Bell/Pennings 1996, Li 1995, Luo/Peng 1999, Shaver/Mitchell/Yeung 1997). Therefore, we propose that the general entry experience of firms positively contributes to their subsidiary performance. Formally, we hypothesize:

Hypothesis 1a. The general entry experience of firms has a positive effect on subsequent subsidiary performance.

The relationship between a firm's general entry experience and subsidiary performance is more complex than a simple linear effect. First, the value of organizational learning may decay over time. Argote, Beckman, and Epple (1990) proved that knowledge acquired in production is not persistent and can depreciate rapidly. Learning from past experience may be particularly useful in the early stages of entries for foreign firms. However, as firms become more familiar with the host country market, the benefit from additional experience is likely to diminish because of the redundant information (Johanson/Vahlne 1977, Zaheer 1995). Second, experience accumulation often leads to adoption of specific routines that are effective for subsequent operations. Learning from one's own experience carries risks of overattention to short term

conditions and organizations may be constrained by their experiences (Ingram/Baum 1997). Moreover, firms need to deal with the trade-offs between exploration and exploitation. Short-term returns from exploitation drives firms to continue applying their current routines. However, the frequent use of these routines precludes the possibility of experimentation with new and better routines. In other words, exploitation of existing practices inhibits the potential benefits from exploration (March 1991). Therefore, firms' routines may create rigidities and inertia, which hinder firms from adapting to the changes in the external environment (Hannan/Freeman 1989). Consequently, firms may lock into current routines and additional learning from experience becomes limited. Firms will suffer from a competency trap and reduce their exploratory research and learning activities (Baum/Ingram 1998, Levitt/March 1988). Experience exploitation can become harmful for firms' long term performance by hindering the exploration of new routines and experience (Atuahene-gima 2005). We hypothesize that the relationship between firms' general entry experience and subsidiary performance is characterized by a diminishing marginal effect. That is,

Hypothesis 1b. As a firm's general entry experience increases, the effect on subsequent subsidiary performance decreases.

Entry Specific Experience

The second type of experience that we take into consideration is firms' entry specific experience. Firms' entry specific experience comes from adopting one kind of specific entry mode repeatedly. In expanding into foreign markets, firms can choose among a variety of entry modes. In this study, we focus on three major types of entry modes: contractual agreements, equity joint ventures, and wholly owned subsidiaries. Contractual agreements include licensing, technology transfer, cooperation agreement, R&D contracts, franchises, and so forth (Kumar/Subramanian 1997, Pan/Tse 2000). Foreign firms face different challenges when adopting different kinds of entry modes (Root 1987). For example, foreign firms make partnerships with local firms in contractual agreements and equity joint ventures. Consequently, they must learn to cooperate with local partners and integrate both national and corporate cultures. Wholly owned subsidiaries offer a higher degree of control. But they also entail great resource commitment, including actual investments and high overhead (Anderson/Gatignon 1986). When using wholly own subsidiaries, foreign firms can fully employ their proprietary

assets. Meanwhile, they have to learn the host country culture by themselves and lack potential benefits from operating with local partners. Due to the different characteristics of different kinds of entry modes, what foreign firms learn from experience of previous entries of different modes can be varied.

From their entry specific experience, firms can learn the specific knowledge of how to manage subsidiaries of one kind of entry mode. Compared with general entry experience, entry specific experience represents deeper knowledge within a given entry mode. Different from the general effect of experience accumulation, firms' experience of a specific entry mode should be more relevant and useful when firms adopt that kind of entry mode subsequently. Hence, we expect that firms' entry specific experience is beneficial for the performance of subsequent subsidiaries. We hypothesize that:

Hypothesis 2a. The entry specific experience of firms has a positive effect on subsequent subsidiary performance.

Similar to the effect of general entry experience, we expect that the contribution of entry specific experience on subsidiary performance will increase, but at a decreasing rate overtime. The value of entry specific experience may decay over time (Baum/Ingram 1998, Ingram/Baum 1997). The exploitation of existing practices from previous entry specific experience inhibits potential benefits from the exploration of new knowledge (March 1991). Moreover, rigidities and inertia can occur from firms' frequent use of routines or processes developed in previous entry specific experience (Baum/Ingram 1998, Levitt/March 1988). Hence, we expect that experience accumulation from adopting a specific entry mode may provide redundant information as firms accumulate more entry specific experience. Consequently, the marginal return from firms' entry specific experience will decrease. Therefore, we propose that:

Hypothesis 2b. As a firm's entry specific experience increases, the effect on subsequent subsidiary performance decreases.

Exporting Experience

Firms' knowledge of a foreign market can be firstly acquired through exporting activities, because exporting provides fast access to foreign markets with little capital investment required. The Uppsala stage model of internationalization suggests that the stage of international sales is

usually the first step for multinational firms in getting to know foreign markets, in order to reduce substantial risks and uncertainties (Johanson/Vahlne 1977, 1990). Exporting activities actually provide a platform for multinational firms to gain a deeper understanding of foreign markets (Kogut/Chang 1996). In other words, besides entry activities, exporting activities also act as one of the sources for acquiring knowledge of foreign markets for many multinational firms.

Previous empirical studies have provided supporting evidence for the effect of prior international exporting experience. For instance, firms with more international exporting experience are more likely to invest in foreign countries and are more willing to assume resource commitments (Gaba/Pan/Ungson 2002, Terpstra/Yu 1988). We expect that firms with prior exporting experience have gathered more knowledge about the foreign market. Consequently, they are more able to identify market opportunities, analyze situations, and deal with uncertainties. Firms' exporting experience has a stepping-stone effect on their future foreign operations. Thus, we predict that multinational firms' exporting experience contributes to subsequent subsidiary performance. Formally, we hypothesize that,

Hypothesis 3a. The exporting experience of firms has a positive effect on subsequent subsidiary performance.

While exporting experience acts as the initial platform and provides useful information for firms to enhance subsidiary performance, it is possible that exporting experience will lose its importance as firms gradually accumulate entry experience. Learning from exporting activities to a foreign market is limited, because firms do not have a close contact with consumers, local partners, or competitors through the exporting activities. Compared to exporting experience, entry experience is more direct and relevant. What firms can learn from entry experience is know-how for doing business in foreign markets. The knowledge is specific and can not be acquired unless firms commence operations in the host market. Therefore, we expect exporting experience will be gradually supplanted by firms' entry experiences and the effect of exporting experience on subsidiary performance will become weaker over time. We consider the moderating effects of both general entry experience and entry specific experience.

Hypothesis 3b. As a firm's general entry experience increases, the effect of exporting experience on subsequent subsidiary performance decreases.

Hypothesis 3c. As a firm's entry specific experience increases, the effect of exporting experience on subsequent subsidiary performance decreases.

Subsidiary Experience

In the above, we develop hypotheses of the organizational learning at the parent firm level. Next, we also investigate firms' learning process at the subsidiary level. Subsidiary experience is often measured as the time that a foreign subunit has spent in a foreign market (Bulter 1995, Luo/Peng 1999, Makino/Delios 1996). The longer the time that a foreign subsidiary has operated in a foreign market, the more likely that it has accumulated more knowledge about the market, including culture, institutional characteristics, and other country specific knowledge. Consequently, it can be in a better position to implement marketing strategies, access distribution channels, and establish good relationships with local governments.

Makino and Delios (1996) focused on local knowledge transfer and performance implication of joint ventures. Their empirical findings showed that joint ventures' own experience, measured by the length of time spent in a host country, act as a primary factor influencing performance. Luo and Peng (1999) studied multinational firms' organizational learning in China and they found that the intensity of experience measured by the time spent in host markets is an important predictor of subunit performance. Therefore, it is expected that foreign subsidiaries that have operated in a foreign market longer are more likely to achieve high performance. The hypothesis to be tested is:

Hypothesis 4. Foreign subsidiaries' experience is positively related to their performance in foreign markets.

Methodology

Data

In this study, we focused on subsidiaries of large U.S. firms operating in China. China has been attracting enormous foreign investments over the past two decades. In 1979, China began allowing foreign firms to make investments in the country. Thus, this particular year provides us with an accurate starting point to observe the entry sequences of foreign entries into China. The data we used in this study came from two sources. We compiled a longitudinal

dataset consisting of large U.S. firms' sequential entries into China from 1979 to 2002. We selected U.S. firms that either appeared on the Fortune Global 500 list of 1990 (the first time that Fortune offered the list of the Global 500) or the Fortune Global 500 of 2002. We gathered entry activities from information in a trade magazine titled the China Business Review. It is published bimonthly by the U.S.-China Business Council, which is an independent business association headquartered in Washington. In each issue of the magazine, concurrent major business activities of foreign firms in China are provided. It is regarded as a reliable data source and research using samples from this source has appeared in a number of academic publications (e.g., Gaba/Pan/Ungson 2002, Pan/Tse 2000).

We then combined the entry data with the database of Annual National Registration for Foreign Invested Enterprises in China. As with other forms of enterprises in China, foreign invested enterprises are requested to renew their registrations in business administration bureaus every year. For the registration, they are asked to provide information on their operation scope, capital structure, and performance, among others. Hence, we can get accurate performance measures of foreign firms from the database. The dataset covers every registered foreign invested enterprise in China. Those who do not attend annual registration can be assumed to be not operating normally, as the renewed registration is a precondition for their operation. We matched the entry database with the database of foreign invested enterprises in the year of 2000. Finally, we obtained a cross-industry sample of 326 subsidiaries from 81 parent firms. Among all these subsidiaries, there are 43 contractual agreements, 156 equity joint ventures, and 127 wholly owned subsidiaries.

Dependent Variable

Subsidiary Performance

Following previous literature, we measured subsidiary performance using return on sales (ROS) (Hitt/Hoskisson/Kim 1997, Lu/Beamish 2001, Tallman/Li 1996). We used ROS as the dependent variable because sales-based measures can avoid the effects of differential asset valuations and capital structures used by foreign invested firms of different entry modes (Tallman/Li 1996). However, we admit that the performance measure of ROS may be subjected to the practice of internal transfer pricing of multinational firms. In order to account for the effect

of industry differences, we further standardized the performance measure by subtracting industry (differentiated by four-digit China Industry Classification code) average ROS for each subsidiary.

Independent Variables

We adopt a multi-faceted conceptualization of firm experience. We measure experience at both parent firm level and subsidiary level. Using counting variables, we measure firms' general entry experience, entry specific experience, and exporting experience. We also measure the time in the host market for parent firms and subsidiaries. Moreover, we use international sales experience to capture experiences in the overall international market.

General Entry Experience in China

Following previous literature, we measured firms' general entry experience in China by the number of cumulative entries using other types of modes different from the focal subsidiary that a firm has had up to the point of the focal subsidiary was established (Chang 1995, Hoang/Rothaermel 2005, Zollo/Reuer/Singh 2002).

Entry Specific Experience in China

Entry specific experience in China was measured by the number of cumulative entries of one specific entry mode that a firm has made before the focal subsidiary of that kind of entry mode was established. The operationalization of these two variables helps reduce the interdependency of these two variables (Hoang/Rothaermel, 2005).

Exporting Experience in China

Similarly, we developed a count variable for exporting experience in China. We measured the variable as the number of export contracts that a firm had made before making real investments. It indicates the sales experience of multinational firms in China. The information also came from the China Business Review. Because the distribution of these three variables showed significant positive skewness, logarithm transformation was used for these count variables.

Subsidiary Experience

Following previous studies, subsidiary experience was measured by the number of years that a subsidiary of a multinational firm has been operating in China (Erramilli 1991, Luo/Peng 1999, Makino/Delios 1996).

We controlled for the following variables that might have influences on the performance of foreign subsidiaries including *parent firm presence in host country*, *international sales*

experience, entry mode, subsidiary size, subsidiary location, and debt ratio (Hennart/Park 1994, Hitt/Hoskisson/Kim 1997, Pan/Chi 1999, Vermeulen/Barkema 2002). Firm presence in a host country was measured by the number of years that a multinational firm has operated in China. Following previous studies (Chang/Rosenzweig 2001, Gaba/Pan/Ungson 2002, Terpstra/Yu 1988), we measure international sales experience as the ratio of foreign sales to the total sales of a firm, with information from the Compustat database. In the database, foreign subsidiaries were categorized into three different groups: contractual agreements, equity joint ventures, and wholly-owned subsidiaries. Equity joint ventures were used as the baseline in our analysis. Subsidiary size was measured by the total assets of the subsidiaries. The logarithm transformation was used. Subsidiary location was coded as 1 if a foreign subsidiary locates in national municipalities or east coast provinces, and 0 otherwise. Debt ratio was measured by the ratio of total liabilities to total assets.

Table 1 reports the basic statistics and the correlation matrix of variables in this study.

Insert Table 1 about here.

Model

In our sample, a single multinational firm may have established multiple subsidiaries in China over time. When multiple observations are collected from the same units, these repeated observations are correlated with each other. If this correlation is not taken into account then the standard errors of the parameter estimates will not be valid and hypothesis testing results will be non-replicable. Therefore, we employed the method of generalized estimating equations (GEE), which can cope with data with serial correlation to produce efficient and unbiased estimates (Liang/Zeger 1986). The observations may be correlated within a same multinational firm, but would be independent between different firms. The GENMOD procedure in SAS program was employed. An exchangeable correlation structure was specified in the model estimation (Hardin/Hilbe 2002).

We tested our hypotheses based on the results from the GEE analysis reported in Table 2. The directions of hypothesized effects are consistent with predictions, indicating one-tailed tests are appropriate. In order to observe the effects under study clearly, we ran the analysis with different sets of independent variables for different models. Model 1 is the baseline model

including all independent variables in our study. Model 2 and Model 3 test the non-linear effects of general entry experience and entry specific experience. Model 4 and Model 5 focus on the interaction effects between general entry experience, entry specific experience, and exporting experience. We mean-centered each variable constituting an interaction term before creating the interaction terms to eliminate the possible multicollinearity (Aiken/West 1991). Each model includes control variables. There are missing values for some of the observations. Therefore, the total number of observations actually used in the final models was reduced as shown in the analysis results.

Insert Table 2 about here.

Results

In H1a, we hypothesize that the more general entry experience a multinational firm accumulates in a foreign market, the better the performance of its subsequent subsidiaries in the market. We found that the variable of general entry experience exhibits no significant effect on subsidiary performance for all tests, Model 1 through 5. We further tested the quadratic effect of general entry experience in H1b and found that the squared item also has no significant effect on subsidiary performance as shown in model 2. It indicates that multinational firms' general entry experience does not contribute to high performance of their subsequent subsidiaries. Hence, H1a and H1b are not supported.

In H2a, we propose that there is a positive relationship between a multinational firm's entry specific experience and subsequent subsidiary performance. The results show that a firm's entry specific experience in the host market exhibits a significantly positive effect on subsidiary performance in all tests, Model 1 through 5 ($p < .01$). Hence, H2a is supported. We further propose in H2b that the effect of entry specific experience increases at a decreasing rate, as firms accumulate more entry specific experience. The quadratic item of firms' entry specific experience is negative but not significant as shown in Model 3. It suggests that while entry specific experience is beneficial to subsidiary performance, we did not observe the diminishing pattern of the effect of entry specific experience over time.

In H3a, we expect that multinational firms' exporting experience before real investments is positively related to subsequent subsidiary performance. Meanwhile, we propose in H3b that

the effect of exporting experience on subsidiary performance will grow weaker as firms accumulate more entry experience. From the results, we found that firms' exporting experience has a positive effect on subsidiary performance in all the five models ($p < .10$ in Model 1-Model 3; $p < .05$ in Model 4 and Model 5). Therefore, H3a is supported. As shown in Model 4, the interaction item between exporting experience and general entry experience is negative but not significant. However, the interaction item between exporting experience and entry specific experience has a significantly negative effect on subsidiary performance in Model 5 ($p < .10$). The results suggest that as multinational firms accumulate more entry specific experience, the marginal benefit from their previous exporting experience will diminish. Therefore, these results support H3c but not H3b.

In H4, we hypothesize that multinational firms' subsidiary experience is positively related to subsidiary performance. As shown in Model 1 to Model 5, subsidiary age has a consistently positive effect on subsidiary performance ($p < .01$). The longer the time that a foreign subsidiary has operated in China, the higher the performance it can achieve. Hence, H4 receives strong support from the empirical results.

As for the effect of control variables, the results indicate that contractual agreements have better performance than equity joint ventures of these multinational firms while the performance of wholly-owned subsidiaries is not significantly different from that of equity joint ventures. The results also show that foreign subsidiaries with large size can achieve higher performance. Debt ratio is negatively related to subsidiary performance. Firm presence in host country and subsidiary location have no significant effects on subsidiary performance of these multinational firms.

We conducted additional analyses to test the robustness of our findings. In China, the government approves foreign investment projects on the basis of rather complex criteria, such as product industry, location, investment amounts, and the origin of the foreign firm. In this revision we conducted several additional analyses to test the impact of government restriction and the robustness of our results. We collected relevant information from the Direction of Foreign Direct Investment in China, provided by Ministry of Commerce. First, we checked whether foreign subsidiaries were prevented from being either wholly-owned or owning more than 50 percent of an equity joint venture. We gathered the list of industries with such a restriction. We matched the list with our sample and found only one foreign subsidiary in our

sample belonging to the restricted industries. We eliminated this observation and the results remained robust. Second, the government has issued restriction policies on the account of foreign direct investment in some specific industries. From the same data sources, we coded the number of products in which the government imposes restrictions on foreign direct investment in each two-digit industry sector. The higher the number of restricted items, the higher the level of government restriction and protection. We incorporated the variable into our model and it has no significant effect on subsidiary performance. The significant results stay robust. Therefore, it appears that foreign subsidiaries in our sample are not subjective to severe government restrictions in China.

Discussion

In this study, we examine the effects of cumulative experience at parent firm and subsidiary level on the subsidiary performance of multinational firms. Using a database of 245 foreign subsidiaries of 81 large U.S. firms operating in multiple product sectors in China, we get empirical evidence of the positive effect of experience on subsidiary performance of multinational firms. Specifically, the paper contributes to the literature in the following three ways.

Firstly, we examine multiple profiles of firms' experience in foreign markets. Firms' experience is usually measured either by the cumulative number of previous entries or by the number of years of foreign market presence in previous studies (e.g., Chang 1995, Hennart/Reddy 1997, Kogut/Chang 1996, Luo/Peng 1999). However, different profiles experience can lead to different levels of learning about foreign markets (Delios/Henisz 2003). The consequence is that the precise effect of experience on performance is largely unexplored. In this study, we differentiate different types of experience. Thus, we can assess the degree to which different types of experience by parent firms can be translated into improved subsidiary performance more accurately. From the empirical results, we find that firms' general entry experience has no effect on subsequent subsidiary performance. On the contrary, entry specific experience and exporting experience exhibit positive effects on the performance of foreign subsidiaries. Interestingly, when we add up general entry experience and entry specific experience to a measure of overall entry experience, the results showed that overall entry experience has a marginally significant effect on subsequent subsidiary performance. Therefore,

the positive relationship is driven by firms' entry specific experience rather than the general entry experience. The empirical results also provide supporting evidence that the effect of exporting experience will get weaker as firms accumulate more entry specific experience. Without differentiating different types of experience, we cannot capture the influences of firms' experience directly and precisely. Previous studies suggest that different types of experience contribute to different elements of organizational performance. For example, Ingram and Baum (1997) prove that beyond their own experience, firms benefit from industry operation experience and competitive performance. Delios and Henisz (2003) measure firms' experience accumulated from politically hazardous countries, countries from the same cultural bloc, and from manufacturing plants, and find that firms with greater levels of specific types of experiences have higher entry rates than those with only general international experience. Our findings further show that within a host market, firms still develop different types of experience, which in turn exhibit different influences on subsidiary performance. The study further underscores the importance of treating firms' experience accumulation as a multiple process phenomena. We don't find evidence of the diminishing value of firms' entry experience. The results can be attributed to the research context of our study. We only 20 years of sequential entry activities for foreign firms in China and therefore we may not be able to capture the effects of diminishing value of cumulative experience. Moreover, Entry specific experience captures experience from one specific entry mode, which is the same to the focal subsidiary. Although pertaining to the same entry mode, it is possible that those entries represent investments into different product sectors. Firms operating in multiple products sectors can be exposed to a richer set of information of customers, rivals, suppliers and partners; consequently, multiple product sectors operation helps firms explore new experience and knowledge (Barkema/Vermeulen 1998). Therefore, some proportion of entry specific experience may not be diminishing in value over time.

Secondly, we investigate multinational firms' investments as a sequential process. By tracing the sequential entries of large U.S. firms in the China market from 1979 to 2002, we are able to measure multinational firms' experience accumulation processes accurately. Previous studies examined the effect of organizational learning on performance in foreign markets using survival rate and perpetual measures of performance (e.g., Barkema/Bell/Pennings 1996, Chang 1995, Li 1995, Luo/Peng 1999). In contrast to previous research, we adopt one accounting

based performance measure -return on sales- and find that experience accumulation has a strong impact on subsidiary performance. The results further prove that foreign firms build up new capabilities from their own entry experience and thereby enhance performance through overcoming disadvantages of the liability of foreignness (Chang 1995, Chang/Rosenzweig 2001, Zaheer 1995).

Thirdly, we investigate foreign firms' experience accumulation processes at cross-levels. Previous studies either examine the experience effect at the parent firm level or at the subsidiary level (Barkema/Bell/Pennings 1996, Li 1995, Luo/Peng 1999, Shaver/Mitchell/Yeung 1997). Both firm level experience and subsidiary level experience are crucial parts of multinational firms' learning in foreign markets (Luo/Peng 1999). We investigate the experience accumulation process at both of these levels. We find that both levels of experience exhibit significant effects on subsidiary performance. It suggests that foreign subsidiaries learn by themselves. Meanwhile, foreign subsidiaries also act as option windows through which multinational firms generate and accumulate knowledge, which can then be applied to their subsequent foreign operations. In other word, there exists the spillover effect of knowledge across multinational firms' subsidiaries.

The findings of this study have managerial implications for firms competing in the global market. First, our findings suggest that firm's international sales experiences and general entry experience do not have direct impacts on the return on sales of subsidiaries in a particular country. Instead, we find that direct impacts on performance come from entry specific experience and exporting experience. In this sense, firms with varying levels of international sales experience have equal chances of winning from the very beginning. What can contribute to performance are country- and entry-specific experiences. Firms' experience should be regarded as a multi-faceted construct and firms need to be careful to choose beneficial knowledge from their previous experience. Second, we do not find support for the diminishing value of entry experience. It suggests that firms are capable of accumulating knowledge through entries of the same mode, and benefiting across different subsidiaries. Moreover, it seems that a firm's additional entry specific experience is positively related to the performance of subsequent subsidiaries because of the risks and uncertainties in foreign markets. Therefore, firms should not underestimate the importance of experience accumulation within a host country. Instead, they should continuously accumulate knowledge through entry activities and apply it in subsequent

entries, which also explains why an increasing number of multinational firms are setting up holding companies in China to coordinate among subsidiaries.

There are several limitations in this study which should be addressed in future research. Firstly, we infer firms' learning from objective entry behaviors in archival data and therefore the investigation of learning process is limited by using historic secondary data as proxies. The organizational learning process cannot be measured directly. The results are not very strong (one-tailed tests used). Our data also prevents us from measuring firms' strategies directly, which may have a strong influence on subsidiary performance. Therefore, it is necessary to combine firsthand and secondary data to investigate firms' learning processes. Moreover, we measure firms' learning from past experience using counting variables. However, what firms can learn from previous entry experience may also depend on the quality rather than quantity of entries. Future studies should further develop more measures of firms' previous entry experience and investigate the effect of learning from outcomes on subsidiary performance. Secondly, our study focuses on the performance implication of large U.S. firms' learning in a single host country, China, which potentially limits the generalizability of our study. Future research should extend the scope to include subsidiaries by multinational firms from different countries into multiple host markets. Thus, we can further examine whether the findings of this study can be generalized to other research contexts. Third, our study suffers from a survivor bias censoring problem. We have no information about firm survival and exit since 1979. Moreover, a panel structure data will help establish casual relationships and add a lot of values. Finally, the experience accumulation of multinational firms in culturally similar markets like Korea may also have beneficial effects for their operations in China. Therefore, future studies can examine the learning process of firms from their operations in similar foreign markets.

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Table 1. Basic Descriptive Statistics and Correlations

	1	2	3	4	5	6	7	8	9	10	11	12
1. General Entry Experience in China	1.00											
2. Entry Specific Experience in China	0.46 ^a	1.00										
3. Exporting Experience in China	0.17 ^a	0.14 ^a	1.00									
4. Subsidiary Experience	-0.42 ^a	-0.29 ^a	-0.13 ^b	1.00								
5. Parent Firm Presence	0.24 ^a	0.23 ^a	-0.05	0.18 ^a	1.00							
6. International Sales Experience	-0.10	-0.06	-0.03	-0.05	0.01	1.00						
7. Contractual Agreement	0.36 ^a	0.12 ^b	-0.16 ^a	-0.05	0.03	-0.04	1.00					
8. Wholly Owned Subsidiary	0.15 ^a	-0.30 ^a	0.07	-0.20 ^a	-0.06	0.02	-0.31 ^a	1.00				
9. Subsidiary Size	-0.10	-0.03	0.04	0.09	0.03	-0.03	-0.06	-0.05	1.00			
10. Subsidiary Location	-0.03	-0.15 ^a	0.15 ^a	-0.07	-0.04	0.03	-0.15 ^a	0.27 ^a	-0.01	1.00		
11. Debt Ratio	-0.09	-0.00	-0.01	0.10	-0.11 ^b	-0.06	0.01	-0.08	0.14 ^b	0.04	1.00	
12. Return on Sales	-0.07	-0.02	0.04	0.24 ^a	0.03	0.00	0.07	-0.03	0.14 ^b	0.02	-0.26 ^a	1.00
Maximum	3.04	2.89	2.08	18	21	0.26	1	1	14.85	1	3.54	0.79
Minimum	0	0	0	1	1	0	0	0	2.30	0	0	-1.91
Mean	1.23	0.80	0.27	5.22	13.56	0.00	0.13	0.39	9.30	0.83	0.50	-0.01
Standard Deviation	0.95	0.87	0.56	3.17	4.78	0.03	0.34	0.49	1.81	0.38	0.42	0.32

Note: ^a $p < .01$ ^b $p < .05$; two-tailed test

Table 2. The Effect of Cumulative Experience on Subsidiary Performance (GEE Estimation)

<i>Independent Variables</i>	Subsidiary Performance					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-0.29 [*] (0.16)	-0.30 [*] (0.16)	-0.28 [*] (0.16)	-0.28 [*] (0.16)	-0.27 [*] (0.16)	-0.27 [*] (0.16)
General Entry Experience in China	-0.04 (0.03)	-0.04 (0.03)	-0.04 (0.03)	-0.04 (0.03)	-0.03 (0.03)	-0.03 (0.03)
General Entry Experience in China (squared)	-----	0.01 (0.02)	-----	-----	-----	-----
Entry Specific Experience in China	0.05 ^{**} (0.03)	0.06 ^{**} (0.03)	0.06 ^{**} (0.03)	0.06 ^{**} (0.03)	0.05 ^{**} (0.03)	0.06 ^{**} (0.03)
Entry Specific Experience in China (squared)	-----	-----	-0.01 (0.03)	-----	-----	-----
Exporting Experience in China	0.05 [*] (0.03)	0.05 [*] (0.03)	0.05 [*] (0.03)	0.05 ^{**} (0.03)	0.05 ^{**} (0.03)	0.05 ^{**} (0.03)
Exporting Experience × General Entry Experience	-----	-----	-----	-0.04 (0.03)	-----	-0.00 (0.03)
Exporting Experience × Entry Specific Experience	-----	-----	-----	-----	-0.05 [*] (0.03)	-0.06 (0.05)
Subsidiary Experience	0.03 ^{***} (0.01)	0.03 ^{***} (0.01)	0.03 ^{***} (0.01)	0.03 ^{***} (0.01)	0.03 ^{***} (0.01)	0.03 ^{***} (0.01)
<i>Control Variables</i>						
Parent Firm Presence	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)
International Sales Experience	-0.24 (0.92)	-0.23 (0.92)	-0.25 (0.94)	-0.31 (0.90)	-0.33 (0.91)	0.09 (0.49)
Contractual Agreement	0.13 ^{**} (0.06)	0.12 [*] (0.06)	0.13 ^{**} (0.06)	0.12 [*] (0.06)	0.12 ^{**} (0.06)	0.12 ^{**} (0.06)

Wholly Owned Subsidiary	0.06 (0.05)	0.07 (0.05)	0.06 (0.05)	0.06 (0.05)	0.05 (0.05)	0.04 (0.05)
Subsidiary Size	0.03** (0.01)	0.02** (0.01)	0.03** (0.01)	0.02** (0.01)	0.02** (0.01)	0.03** (0.01)
Subsidiary Location	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.06 (0.05)	0.06 (0.05)	0.06 (0.05)
Debt Ratio	-0.25*** (0.07)	-0.25*** (0.07)	-0.25*** (0.07)	-0.24*** (0.07)	-0.25*** (0.07)	-0.25*** (0.07)
<i>Model Indices</i>						
Number of Observations	245	245	245	245	245	245
Log Likelihood	-38.84 (233 d.f.)	-38.71 (232 d.f.)	-38.84 (232 d.f.)	-38.33 (232 d.f.)	-37.78 (232 d.f.)	-37.85 (231 d.f.)

Note: numbers in parentheses are standard errors; tests of hypothesized effects are one-tailed.

*** p < .01 ** p < .05 * p < .10