REVERSE KNOWLEDGE TRANSFER IN CHINESE MULTINATIONALS: EVIDENCE FROM THE US

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ABSTRACT

This paper extends the research on knowledge transfer by emerging economy multinationals (EEMs) by exploring the determinants of successful reverse knowledge transfer in Chinese enterprises operating in the United States. Building upon organizational evolution and learning literature, we propose a model linking strategic asset-seeking motivations, headquarters control, and subsidiary age to reverse knowledge transfer. The model is tested in the context of Chinese enterprises in the US, the world’s largest advanced economy. Our exploratory study provides initial evidence that strategic asset-seeking motivations and headquarters control are significantly and positively related to reverse knowledge transfer. Furthermore, our empirical evidence indicates a negative relationship between subsidiary age and reverse knowledge transfer. We discuss the implications for theory development and practice for managing and organizing EEMs and their subsidiaries, and suggest avenues for future research on this emerging phenomenon.

Keywords: Emerging economy multinationals, EEMs, Chinese enterprises, managing subsidiaries, reverse knowledge transfer, subsidiary age, headquarters control, MNC motivation

INTRODUCTION

The internationalization and competitive catch-up processes of emerging economy multinationals generally, and Chinese multinationals in particular, have been attracting an increasing amount of attention from the research communities in the fields of international business and strategy. This increasing interest can be mainly attributed to the following reasons. First, China has recently become of growing importance in international business, not only as the largest recipient of inward FDI, but, more importantly, as the world’s fifth largest source of outward FDI (OFDI) across multiple regions (Hanemann & Rosen, 2012; Luo, Xue & Han, 2010; OECD, 2008). Second, Chinese firms, as the latecomers among internationalizing firms from the emerging economies, tend to differ from MNC early-movers, especially at the early stage of their internationalization. These differences have implications for a nuanced understanding of theory development of emerging economy multinationals (EEMs) (Guillén & García-Canal, 2009; Li, 2007).

Traditional MNC theories (e.g., the ownership-location-internalization [OLI] model), based upon the observation of large MNCs from developed countries, indicate that MNCs expand internationally to exploit their existing firm-specific advantages in the host countries they are entering (Dunning, 1977; Vernon, 1966). However, the continuing debate over the uniqueness of MNCs from emerging economies, such as China, suggests a diverse set of motivations (Li, 2007). The linkage-leverage-learning (LLL) model (Mathews, 2006), for example, proposed that MNC latecomers engage in FDI to achieve new competitive advantages via external linkage, leverage and learning rather than exploiting existing internal advantages. It specifically emphasizes a dynamic process of MNCs in terms of discovering new knowledge via a global presence rather than exploiting existing advantages.

As Chinese companies have tended not to have firm-specific competitive advantages, acquiring ex post new technology or know-how to become globally competitive has become the most important strategic motive for them to achieve in advanced economies (Young, Huang & McDermott, 1996). Transferring knowledge from foreign subsidiaries in developed
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Reversing the flow of knowledge transfer (e.g., reverse knowledge transfer [RKT]) is becoming increasingly important as Chinese companies engage in global operations (Young et al., 1996). However, our understanding of the factors involved in RKT is still limited (Michailova & Mustaffa, 2012; Najafi-Tavani, Giroud & Sinkovics, 2012; Rabbiosi, 2011). Questions remain, such as: What are the determinants of successful reverse knowledge transfer in China’s EEMs?

Extant research on the challenges involved in successful knowledge transfer in developed economy MNCs has identified a whole set of factors in MNC knowledge transfer activities and organizational learning, for instance, organizational structure and headquarters control mechanisms (Foss & Pedersen, 2002; Huang, Rode & Schroeder, 2011; Simonin, 1999). However, little research has been done in the context of EEMs. We do know that Chinese firms have different motivations and internal structures for their global operations. Still, more research is required to explore the factors in reverse knowledge transfer within Chinese firms.

This paper, based on an exploratory study, aims to increase our understanding of the phenomenon of RKT by EEMs by proposing a conceptual model (see Figure 1). We test the model in the empirical setting of Chinese enterprises in the U.S. We found that the reverse knowledge transfer within Chinese companies can be explained by the MNCs strategic asset seeking behavior, headquarters control and subsidiary age.

Our study contributes to the literature on knowledge-based MNC evolutionary theory and Chinese companies’ strategic management in three ways. First, the core of our contribution rests on an examination of the effect of subsidiary age in reverse knowledge transfer happening within Chinese firms. This is an issue that has not previously been studied. Second, this study demonstrates the importance of headquarters control in facilitating reverse knowledge transfer. In particular, we find that the degree of headquarters’ involvement in decision making and operating in the host countries increases the level of reverse knowledge transfer. Last, but not the least, we found a link between motivations in expanding in advanced markets and RKT. Finally, the findings of this study have practical implications for managers from Chinese multinationals as well as other EEMs in facilitating knowledge transfer. We also offer a broader theoretical view of these factors that impact RKT – specifically the motivation to learn (e.g. strategic asset seeking), the management of learning (e.g. headquarters’ control), and the capacity to learn (e.g. subsidiary age).

THEORY AND HYPOTHESES

Evolutionary Theory of the MNC and MNC Knowledge Transfer

Scholars have developed several theories to explain why MNCs exist and various approaches to define an MNC. Combining previous streams of research in MNC theory, Dunning (1977) proposed an eclectic paradigm, also known as the OLI model, which has been widely accepted in international business research (Cantwell, Dunning & Lundan, 2010; Li, 2003, 2007). The eclectic paradigm contends that MNCs possess ownership advantages, which come from the ownership of unique intangible assets (i.e., firm-specific technology and knowledge), the collective ownership of complementary assets (i.e., competences and capabilities), and the firm’s multinationality (i.e., a platform that the assets can be further exploited internationally). An MNC is a coordinated system or network of cross-border value-creating activities (Cantwell et al., 2010; Dunning & Lundan, 2008); these activities involve across border knowledge transfer within the boundary of the firm. More recently, the evolutionary theory developed by Kogut and Zander (1993) explicitly transformed the MNC theory to a knowledge-based theory of the firm. From their perspective, MNCs exist because
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Intra-firm transfers of knowledge are more efficient than obtaining knowledge through markets. Although taking different approaches, both the OLI model and Kogut and Zander’s approach are closely associated with transaction cost economics and elaborate the advantages of across border intra-firm knowledge sharing vis-à-vis inter-firm knowledge transfer.

MNCs, therefore, have been conceptualized as networks of knowledge creation, transformation and exploitation (Gupta & Givandarajin, 2000). This perspective is not only supported by the MNC theories discussed above, but also rests on the resource-based view (RBV). The key competitive advantage of MNCs lies in their abilities to exploit locally created knowledge worldwide and to transfer knowledge within organizational networks, characterized by separation through time, space, culture and language (Kogut & Zander, 1993; Schlegelmilch & Chini, 2003). These two streams of theory, combined, can explain why intra-firm knowledge creation, transfer, and application provide firm-specific advantages over markets; and this is the reason why MNCs exist (Ghoshal & Moran, 1996; Grant, 1996).

RKT and Chinese Companies as EEMs

Scholars have agreed that globally distributed networks of subsidiaries constitute a potentially important source of competitive advantage for MNCs (Bjorkman, Barner-Rasmussen & Li, 2004; Birkinshaw & Hood, 1998; Ghoshal & Bartlett, 1990). Specifically, by learning in host countries, MNCs are accumulating knowledge, which can be transferred back to the home countries and applied in their operations worldwide (Ambos, Ambos & Schegelmich, 2006; Rabbiosi, 2011; Wang & Suh, 2009). Subsidiary capabilities in knowledge acquisition and sharing play a critical role in MNC cooperation, integration, and more importantly, global innovation (Frost & Zhou, 2005; Qin, Ramburuth & Wang, 2008 & 2011; Rabbiosi, 2011).

This knowledge-based role of subsidiaries tends to be even more important for MNCs from emerging economies, especially when they enter industrialized economies due to two reasons. First, there is a large gap between the home and host countries in terms of both macro and micro institutional environments (Kim, Lu & Rhee, 2012). This gap makes it extremely difficult for the parent company to manage overseas operations in an unfamiliar country. Reverse knowledge transfer can help the headquarters to better understand the global environment, and hence effectively manage the subsidiary. Second, and more importantly, MNC latecomers do not start from a position of exploiting ex ante strengths (Mathew, 2006). It is argued that outward FDI from emerging countries is designed to acquire technology from abroad and serves as a mechanism to facilitate the technological accumulation process (Lecraw, 1993; Young et al., 1996). It is the absence rather than the ownership of advanced technology and competitive advantages that motivates firms from emerging countries to venture into industrialized economies (Yang, Lim, Sakurai & Seo, 2009). As a consequence, EEMs start from an acute need for acquiring ex post new advantages by global expansion (Li, 2007), rather than exploiting existing firm-specific assets (Child & Rodrigues 2005; Luo & Tung, 2007).

The existing literature on traditional MNCs contains potential predictors of RKT within EEMs operating in developed economies (e.g., Borini, de Miranda Oliveira & Silveira, 2012; Rabbiosi & Santangelo, 2013). First, the intensity of RKT is closely associated with subsidiary role (Gupta & Givandarajin, 2000), which is the result of the combination of headquarters assignment and subsidiary initiative (Birkinshaw & Morrison, 1995). If subsidiary roles are assigned by the headquarters, we expect that the MNC’s motivation in the host country may have significant effects on knowledge transfer. The distinct motivations
of EEMs, especially their strategic asset-seeking goals, as discussed previously, may influence the extent of RKT.

Second, the effect of coordination mechanisms, such as decentralization of decision making, on knowledge transfer has been widely discussed in the literature (Gupta & Govindarajan, 2000). Particularly, the impact of central control over subsidiary operations on the extent of RKT has received significant attention. Evidence can be found in the existing research for both positive effects and negative effects (Noorderhaven & Harzing, 2009; Rabbiosi, 2011). However, very few studies have been conducted on the impact of headquarters control on RKT in Chinese companies.

Third, the literature implies that the extent of RKT may change along with MNC or subsidiary evolution. Conventional theory of Western MNCs surmises that the extent of RKT may be low when a subsidiary is relatively young, and later increases as the subsidiary ages. According to Kogut and Zander (1993), the MNCs’ initial entry in a foreign market serves as a platform from which the firm’s knowledge acquired in its home market is transferred to the subsidiaries and applied in the host countries. Only in a final stage of this process, the learning from the foreign market is transferred internationally and adds value to the whole MNCs (Kogut & Zander, 1993). However, this may not be the case for EEMs such as Chinese firms. Existing research on EEMs (e.g., Li 2003, 2007; Redding & Witt, 2009; Young et al., 1996) shows that MNC latecomers from the emerging economies set up their international value creating activity networks early on as mechanisms to facilitate the competitive catch-up process.

EEMs typically do not have an ownership advantage before they start their international expansion. Rather, they go global for a linkage-leverage-learning purpose (Mathews, 2006). As seeking strategic assets is one of the main motives for them to enter advanced economies, we expect that a higher level of RKT occurs at an early stage of EEMs’ expansion into advanced markets than that at a final stage to facilitate the competitive catch-up (Li, 2007). Moreover, we surmise that as Chinese companies build up ownership advantages through knowledge accumulation, that RKT levels off, although little evidence of this, either theoretical or empirical, can be found in the literature to date.

Based upon the preceding literature review and discussion, we propose a preliminary conceptual model of knowledge transfer within emerging MNCs (see Figure 1). This model depicts overseas investment motivations (e.g. strategic asset seeking), headquarters control, and subsidiary age as the key factors influencing RKT within EEMs. The next section develops a set of hypotheses on the effects of these three factors on the level of RKT within EEMs.
Figure 1. A preliminary conceptual model of reverse knowledge transfer within EEMs in advanced economies

EEMs’ Strategic Assets Seeking FDI (Motivations to Learn)

The extant literature argues that motivations or goals for international expansion directly affect cross-border knowledge transfer. Evidence from international joint ventures (Lyles & Salk, 1996) suggests that articulated goals or motivations can facilitate knowledge transfer between the joint venture parties for two reasons. First, articulated goals facilitate knowledge transfer by aligning different units into the same vision or mission. Second, articulated goals can provide a common measure against which to assess and adjust individual and sub units.

Existing literature also argues that different types of articulated motivations might have different implications for the amount and type of knowledge transfer into the IJV. Several studies on MNCs (e.g., Gupta & Govindarajan, 2000; Szulanski, 1996) support this argument by identifying motivational disposition of the source and recipient units in the knowledge transfer process as one of the determinants.

Scholars have categorized motivations for internationalization in terms of market seeking, resource seeking, efficiency seeking and strategic asset seeking (Dunning, 1977). For market seeking motives, traditional streams of research in IB hold firms expand internationally to seek markets where they are able to exploit their capabilities and maintain a competitive advantage (Buckley & Casson, 1976). More recently, the strategic resource seeking motives have received increased attention. Firms shift focus from simply accessing local markets and natural resources to accessing knowledge intensive assets (Dunning, 1977). For emerging economy multinationals (EEMs), it has been argued that technology transfer and learning managerial skills constitute a major set of strategic motivations for EEMs to expand internationally (Dong & Glaoster, 2006; Yang at el., 2009). Studies focusing on Chinese firms, for example, indicate that these firms are going global to upgrade technology (Beamish,
China Goes Global 2013- September 25-27, Bremen, Germany
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1993; Davidson, 1987; Hendryx, 1986), and to learn managerial skills (Pearson, 1991; Yan & Gray, 1994).

The motivation to learn or acquire strategic assets directly affects EEMs’ choices of FDI destinations, which are different from other types of FDIs. Young et al. (1996), using Chinese overseas investments as empirical evidence, argue that market-seeking investments by MNC latecomers may have followed the cultural distance model: start in neighbor countries, and/or ethnically related countries, and expand to other developed countries; whereas, asset-seeking investments, motivated by reverse knowledge transfer, were directed to developed countries, especially North America and Europe where they tend to be aggressively venturing overseas seeking knowledge-based strategic assets (Deng, 2011; Rui & Yip, 2008; Young et al., 1996).

Clearly, compared with other types of FDI, strategic asset seeking FDI is most directly driven by the learning motive. To successfully learn and acquire strategic assets such advanced technologies and managerial skills, EEMs will have to work hard to sense and learn the advanced knowledge and capabilities in host countries and effectively transfer the knowledge and capabilities back to the parent company. Among strategic asset seeking FDI subsidiaries, learning by the HQ is the direct goal, and it influences the decisions and behavior of foreign subsidiaries. Because of this, we expect EEMs with explicit strategic asset seeking goals will report more reverse knowledge transfer from foreign subsidiaries back to the headquarters. Therefore, we propose:

*Hypothesis 1: Strategic asset seeking motivations are positively related to the level of reverse knowledge transfer within EEMs.*

**EEMs’ HQ Control (Management of Learning)**

RKT by EEMs is also affected directly affected by the interaction and relationships and interactions between HQ and its foreign subsidiaries. Many companies fail to share and transfer knowledge internally among different parts of the company due to lack of an organization structure or mechanism to control the knowledge and sharing. Among the determinants of knowledge transfer, the organizational factors are probably the most commonly discussed in MNC studies. For example, Lane & Lubatkin (1998) and Bjorkman et al. (2004) indicated that the complex and idiosyncratic interaction process between the subsidiary and headquarters influences RKT.

Because of this, effective organizational set up between HQ and foreign subsidiaries is crucial to help EEM HQs to manage the RKT from the foreign subsidiaries. Among the different organizational set up, HQ control is an important element affecting how effective HQs can manage the RKT. For example, Simonin (1999) identifies headquarters control mechanisms as one of the most important variables in managing MNC knowledge transfer.

Although extant studies agree that HQ control is an important management mechanism affecting RKT, scholars are split on the exact impact of HQ control, that is, the relationship between HQ control and the RKT. For example, Foss and Federsen’s (2002) suggest that giving a subsidiary more autonomy can allow it to transfer knowledge back to the
headquarters more successfully. According to their observation, the less control from the headquarters, the more knowledge can be transferred from subsidiaries to the headquarters or vice versa.

However, other studies argue for an opposite direction - a positive relationship between MNC HQ control and knowledge transfer between subsidiaries and the headquarters. Bartlett and Ghoshal (1989) indicated that MNCs rely on coordination and control to increase learning efficiencies among dispersed organizational units. Such control over its overseas units, through hiring and training and performance management, can enforce knowledge acquisition, distribution and utilization (Fee, McGrath-Champ, & Yang, 2011; Takeda & Helmes, 2010). Noorderhaven & Harzing (2009) suggest that RK may be increased by giving a subsidiary less autonomy. Lyles and Salk’s (1996) empirical study in the Hungarian context showed that active involvement of the foreign parents in international joint ventures (IJV) positively influences the degree of knowledge acquisition by subsidiaries.

Consistent with the later arguments, we also propose a positive correlation between HQ control and RKT due to the following reasons. First, the involvement of the headquarters in decision making and operations in the host countries can advance RKT by making the knowledge-based strategic goals more explicit to both the headquarters and subsidiaries. Second, a high degree of headquarters involvement in decision making and operations in the host countries can help subsidiaries establish a strong learning alliance with the headquarters based on a clear learning objectives. Third, the headquarters control over the subsidiaries decision-making and operations provide richer information transmission channels, communication mechanisms and social networks for the two parties (Bjorkman et al., 2004; Gupta & Govindarajan, 2000). And the richness of transmission channels and strong social networks across organizational units have been found to be significant forces in effective knowledge transfer (Gupta & Govindarajan, 2000; Hansen, 1999).

Finally, a close tie between the headquarters and subsidiaries can enhance a trust relationship between the two parties, which is found to be significantly and positively related to the level of knowledge transfer (Pardo del Val & Martinez Fuentes, 2003; Ramasamy, Goh & Yeung, 2006). Trust promotes a greater degree of mutual interdependence and ensures that parties engage in information sharing and learning to prevent opportunistic behavior (Dersey, 2002). This trust relationship has numerous benefits in knowledge transfer: 1) it promotes a greater degree of mutual interdependence; 2) it facilitates open communication in exchanging ideas and information; 3) it allows participants to adjust to unforeseen circumstances with less conflict; and hence, 4) it encourages them to be more open in knowledge sharing with each other (Dersey, 2002; Lucas, 2005). Hence, we suggest:

Hypothesis 2: Headquarters control is positively related to the level of reverse knowledge transfer in EEMs.

Subsidiary Age (Capacity to Learn)
Subsidiary age has been widely considered as a control variable in the existing literature (e.g., Foss & Pedersen, 2002; Simonin, 1999; Lee & MacMillan, 2008); very few studies have been viewing it as a main factor in international knowledge transfer. Kim et al.’s (2012) study on Japanese MNCs is one of a limited number of attempts to explore the impact of subsidiary age on learning experience of MNCs. They noted that different entry cohorts of sister subsidiaries, based on the timing of entry into foreign markets, are beneficial to a focal subsidiary, as they provide non-redundant, complementary knowledge from their different
operational stages, and ignite the motivation to learn. According to them, an MNC’s international experience can be decomposed into the time-varying experience of its subsidiaries. Even though their study is mainly focused on the horizontal knowledge transfer between peer subsidiaries, it has implications in the vertical knowledge flow between subsidiaries and the headquarters. The time-varying experience of subsidiaries can be expected to influence knowledge transfer pattern within MNCs, notably RKT.

Similarly, Rabbiosi and Santangelo (2013) propose that older subsidiaries have more time to accumulate a knowledge stock, develop their capabilities, and hence tend to have more knowledge to share with parent companies and be more effective in the knowledge transfer process. Their arguments are based upon organizational ecology theory, namely the liability of newness (Freeman, Carroll & Hannan, 1983; Stinchcombe, 1965), which suggests that young organizations lack the routines and capabilities necessary to undertake knowledge transfer. As firms grow older, they accumulate knowledge and develop competencies to innovate. The expanded knowledge base and improved innovation capabilities in turn facilitate more knowledge accumulation (Cohen & Levinthal, 1990). However, still leaning upon organizational ecology theory, the liability of age (or liability of senescence) may lead us to a different direction. The mechanism behind the liability of senescence underpins the erosion of capabilities due to the ossifying effect of growing bureaucratization (Ranger-Moore, 1997).

Compared to younger companies, older organizations tend to be less sensitive to both internal and external issues and to have a higher degree of inertia, thus more resistant to change (Hannan & Freeman, 1989). Learning is a dynamic process that manifests itself in the continually changing nature of organizations, as exemplified by innovation, collaboration, culture shifts and high morale. A firm that is reluctant to change will be expected to have limited motivation in organizational learning or knowledge sharing. Extending it to an intra-firm context, one can expect that as time goes by, both subsidiaries and parent companies will be less motivated in knowledge sharing activities. Accordingly, less RKT can be expected as subsidiaries get older.

The liability of senescence and its implication on the negative relationship between subsidiary age and knowledge transfer can be echoed in evolutionary learning theory. It states that as an organization ages, it tends to develop and refine their competencies within a particular set of domain activities (or routines), resulting in escalation of commitment to those routines. While the commitment can increase the efficiency in existing activities, the organization may lose flexibility in searching for new practices or knowledge instead (Levitt & March, 1988) and hence have less knowledge to share. On the other hand, as subsidiaries grow older, the communication between the parent company and the subsidiaries is likely to become increasingly rigid, which may have a negative impact on both extent and effectiveness of reverse knowledge transfer. Furthermore, shortening product life cycles imply that newer subsidiaries have fewer ties to older technologies (legacy switching costs) and therefore are more apt to identify new technology systems, adapt to them, and transfer the knowledge of this adaptation back to HQ.

Of greater interest, in terms of this study, is the existing research on EEMs evolution and strategy. While research into the traditional MNCs creates a good understanding of strategy and subsidiary roles in term of knowledge transfer, researchers began to explore new conceptualization of the EEMs that challenge many of the assumptions underlying traditional MNC theory. According to traditional view, e.g. the OLI model, an MNC is a worldwide network for exploitation strategy, where the firm-specific advantages can be exploited abroad.
Research into the EEMs, contrarily, proposes that EEMs are pursuing a more proactive and aggressive exploration strategy (Deng, 2011; Li, 2003, 2007; March, 1991; Young, 1996) as part of catch-up strategy to develop global sustainable competitive advantages (Mathews, 2009; Young et al, 1996).

Enterprises from the developing countries have, in general, embarked on international production and became MNCs at an earlier stage of their development than industrialized country firms (Tolentino, 1993). They normally have ownership disadvantage in their early stage, although the derived ownership advantage through knowledge accumulation is necessary for the later stage (Li, 2007). Consequently, they have strong catch-up intent through accelerated internationalization (Li, 2007; Mathews, 2006). Put in other words, they intend to become major global players in a shortest time possible, which makes organizational learning and knowledge acquisition a key to such ambition. The high level of learning intent thus can bring about a high intensity of knowledge transfer (Minbaeva & Michailova, 2004). Meanwhile, cognitive conflict or puzzlement is the stimulus for learning, and it determines the organization and nature of what is being learned (Dewey, 1938). When firms first enter a new foreign market, they are facing a whole new set of challenges and opportunities that they are unfamiliar with. Using subsidiaries as the vehicle, they are likely to acquire as much information and knowledge from the host country as possible, probably even before they can interpret, filter, and exploit them. During this stage, a significant amount of knowledge is likely to be transferred from the foreign subsidiary back to the parent company.

Nevertheless, the intensity and extent of RKT due to headquarters assignment may change along with EEM subsidiary evolution. On the one hand, the experiences accumulated through previous knowledge sharing activities can improve the EEMs’ capabilities in identifying and determining what knowledge should be transferred selectively to the headquarters. The headquarters knowledge accumulation can also reduce the number of stimuli from the market, leading to decreased headquarters learning intent. On the other hand, it has been argued that headquarters assignment works more effectively in the early stages of subsidiary evolution, where subsidiaries capabilities are not too advanced (Birkinshaw & Hood, 1998). As subsidiaries accumulate their knowledge and capabilities, they tend to take more initiatives and explicitly change their charters. Headquarters assignment in terms of subsidiary knowledge sharing roles, hence, may not be the main driver of RKT anymore. Contrarily, building specialized resources and distinctive capabilities in host countries become the goals for EEM subsidiaries at the later stages of evolution. As a consequence, less reverse knowledge transfer is expected as EEM subsidiaries age. Taking these arguments together, we offer:

Hypothesis 3: Subsidiary age is negatively related to the level of reverse knowledge transfer in EEMs.

METHODOLOGY

Sample and Data Collection
In order to test our hypotheses, we investigated the subsidiaries of Chinese firms in the US. Data for this study were collected through a survey, conducted in partnership with Chinese General Chamber of Commerce (CGCC), USA. The list of Chinese firms in the US was
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derived from a directory provided by CGCC. The directory includes each member company’s contact detail, location, and industry sectors.

A detailed questionnaire was designed in both English and Chinese. We contacted each CGCC member via phone to verify the CEOs/managing director, mailing addresses and to ask for their permission to be included in the survey. Once verified and permission granted, we either mailed the survey instrument by priority mail the following day or emailed the electronic version of the instrument if requested. A total of 218 member companies were included in the mailing list. Follow-up phone calls and some phone interviews were used to increase the respondent rate. For incomplete responses, a 2nd and 3rd rounds of phone calls were made to seek the missing data. A total of 38 companies responded to surveys, giving us a respond rate of 19 percent. We had to drop 8 respondents from the list because of missing data.

The Chinese enterprises in our survey (mainly West Coast region) are concentrated in California (16), Texas (5), and Washington (4) and the remainder are located on the East Coast. California leads the nation in the number of subsidiaries it has attracted from Chinese firms, but ranks only fifth in total investment value from China. California, with its large economy, diversified industries, and gateway position to the U.S., appears to be the preferred destination for Chinese investors, especially, small and medium-sized Chinese private enterprises. In addition, California’s large Asian/Chinese population could also serve as a catalyst for attracting Chinese investors to the region. Chinese enterprises seem to have ventured into other states to seek better investment environments in terms of local tax rates and lower property prices.

**Measures**

**Reverse Knowledge Transfer**
This study follows Lyles and Salk’s (1996) approach by defining ‘knowledge transfer’ as the extent to which knowledge is transferred. We adopt measures from Gupta and Govindarajan (2000) and adjust the types of knowledge into seven: technological expertise, marketing/sales expertise, managerial skills, organizational culture and values, innovation, knowledge of legal and political environment in China, and knowledge of national culture in China. To capture the knowledge flows, we asked respondents to rate the extent that the parent companies have learned from them. The measures ranged from ‘1=low’ to ‘5=high’ on a five point Likert scale.

**Strategic Asset Seeking Motivations**
The strategic asset seeking motivations were measured by asking respondents to indicate the level of importance of each of the following objectives on a five point scale (1= low; 5=high): 1) to obtain high quality personnel; 2) to access advanced technology and R&D capacity; and 3) to acquire advanced management skills.

**Headquarters Control**
In order to assess the degree of headquarters control on the subsidiaries, we asked respondents to rate the level at which a whole set of decisions are influenced by their parent companies, including 1) hire top subsidiary management, 2) entering into new markets within the US; 3) changes to subsidiary organization; 4) introduction of new products/services; and 5) approval of quarterly plan/schedules. To triangulate the results, we also asked the respondents: “overall how would you rate the influence of your parents company on your US company’s overall operations?” (1= Minimum; 5=Maximum).
**Subsidiary Age**
Following previous studies (e.g., Rabbiosi, Santangelo, 2013: Yang, Mudambi & Meyer, 2008), the variable, subsidiary age, in this study is operationalized as the difference between 2011 (when the data was collected) and the year when the subsidiary was established in the US.

**Control Variables**
Measures of control variables included firm size, which was obtained through survey and was later verified against company records.

**RESULTS**
Table 1 shows the means, standard deviations and correlations for all of the variables analyzed in this study. We first examined knowledge inflows and outflows at the subsidiaries (merely to and from the headquarters, not including knowledge flows to and from peer subsidiaries) with T-test. The result shows that there was a statistically significant difference between inward knowledge transfer (M=2.24, s=1.07) and outward knowledge flows (M=2.75, s=1.43), t (29)=3.12, p=.004, α=.000. This indicates that more outward knowledge transfer to the headquarters happens than inward knowledge transfer from the headquarters in Chinese MNCs subsidiaries in the US.

### Table 1. Descriptive statistics and correlations

<table>
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<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>1. Strategic asset seeking motivation</td>
<td>3.62</td>
<td>1.09</td>
<td>.153</td>
<td></td>
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<td>2. Headquarters control</td>
<td>2.86</td>
<td>0.93</td>
<td>.153</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Age</td>
<td>9.06</td>
<td>6.46</td>
<td>-.174</td>
<td>-.112</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Size</td>
<td>49.2</td>
<td>107.4</td>
<td>.264</td>
<td>.359</td>
<td>.03</td>
<td></td>
<td></td>
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<tr>
<td>5. Reverse knowledge transfer</td>
<td>2.75</td>
<td>1.43</td>
<td>.610*</td>
<td>.38*</td>
<td>-.24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01

Hypotheses 1, 2 and 3 were tested with hierarchical regression analysis. Table 2 presents the results of these tests. In step 1, we entered the control variable, and in step 2, strategic assets seeking motivation, headquarters control, and subsidiary age. The results are illustrated in models 1 to 3 respectively in Table 2.

### Table 2. Multiple regression analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model3</th>
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<tbody>
<tr>
<td>Age</td>
<td>-.721**</td>
<td>-.652**</td>
<td>-.600**</td>
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<tr>
<td>Strategic asset seeking motivation</td>
<td>1.007*</td>
<td>.97*</td>
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<td>Headquarters control</td>
<td>.558**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>.018</td>
<td>.010</td>
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</tr>
<tr>
<td>R</td>
<td>.557</td>
<td>.642</td>
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<tr>
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<td>.310</td>
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<td>.259</td>
<td>.345</td>
<td>.497</td>
</tr>
<tr>
<td>F</td>
<td>7.39**</td>
<td>6.95**</td>
<td>6.08***</td>
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</table>
There was a strong support for Hypothesis 1 (p<.05) predicting a positive relationship between strategic asset seeking motivation of MNC latecomers and reverse knowledge transfer happening in developed countries. The results of this study also show a significantly positive relationship between headquarters control and reverse knowledge transfer (p<.001). Therefore, Hypothesis 2 was supported. In all models, subsidiary age is significantly negatively related to reverse knowledge transfer from the subsidiaries, providing support for Hypothesis 3 (p<.05).

**DISCUSSIONS AND IMPLICATIONS**

**Contributions**

This exploratory study analyzes the determinants of RKT among emerging economy multinationals, specifically, Chinese EEMs operating in the U.S.. We find that FDI strategic asset seeking motivations, headquarters control and subsidiary age all significantly affect reverse knowledge transfer. These findings have important implications.

First, our findings reinforce the importance of stated goals in affecting MNCs’ learning from subsidiaries (Lyles & Salk, 1996). Seeking strategic assets is a common and important goal of many emerging MNCs from emerging markets. Our findings show the importance of clarifying and explicitly articulating the goal of seeking strategic assets (e.g. advanced technologies and managerial skills) from their foreign subsidiaries; this will help the MNCs more effectively achieve their goals.

Second, our study sheds lights on the debate regarding headquarters control and knowledge transfer. Some studies (e.g., Foss & Federsen, 2002; Young et al., 1996) argue a negative relationship between headquarters control and knowledge transfer from its subsidiary. Our findings suggest the contrary. Headquarters must learn how to work closely with their subsidiaries, understand why and how the subsidiaries operate the way they operate, in order to facilitate reverse knowledge transfer. Our study suggests that a high degree of control from the headquarters facilitates such learning. Furthermore, as headquarters control enables effective communication between the headquarters and the subsidiary, a high level of headquarters control enables the headquarters to learn from the subsidiary more smoothly and efficiently, thus, leading to a higher level of RKT. Although high level of headquarters control may have some drawbacks on knowledge transfer, as indicated in the literature, our findings suggest that the benefits outweigh the drawbacks, leading to a positive relationship between headquarters control and RKT.

Last but not least, our study proposes and supports an argument that has not been adequately analyzed in extant literature: the negative age effect on subsidiary knowledge transfer. Contrary to the predictions of previous studies (e.g. Kim et al., 2012; Rabbiosi & Santangelo, 2013), our results indicate that a subsidiary will transfer less knowledge to headquarters as it gets older. Upon reflections, this relationship appears reasonable on a couple of counts. First, it is reasonable to expect that a maximum amount of new learning will occur when the subsidiary is newly established in a new international location with so many managerial and technological differences to observe and digest. Secondly, it is also reasonable to assume that a newly established international subsidiary will be very dependent on its headquarters for
financial support and other resources and, thus, communication is likely to be more frequent and intense, further facilitating reverse knowledge transfer. This newness or wonderment factor as well as HQ dependency is likely to wane over time.

Our findings on the negative relationship between subsidiary age and reverse knowledge transfer to the parent companies also extend previous work on MNC subsidiary evolution. Birkinshaw and Hood (1998) considered subsidiary evolution as the enhancement of capabilities in the subsidiary, coupled with an explicit change in the subsidiary’s charter. Their propositions, however, were based upon empirical evidence of advanced MNCs in their host countries. As discussed earlier in this paper, EEMs’ internationalization may take a very different evolutionary route.

Based on our findings, we suggest that in the evolutionary course of emerging market MNCs, namely Chinese MNCs, the original strategic assets seeking based goals in developed countries may be weakened gradually along with the fast catch up of firm-specific advantages through international learning. Meanwhile, the subsidiaries capability enhancement may lead to a fast adjustment to the subsidiaries charter. The parent-driven and subsidiary-driven charter combined can have an impact on knowledge transfer patterns (notably reverse knowledge transfer from the subsidiaries to the parent companies). The pattern of internal knowledge transfer, hence in turn, may change overtime to reflect the dynamic strategic goal setting or subsidiary charter.

**Managerial Implications**

This study also has managerial implications. First, our study shows the importance of articulating a clear intent to learn during international expansion. MNCs tend to have many objectives when establishing foreign subsidiaries. These different objectives may compete for the headquarters’ attention and resources. Our findings imply that the headquarters need to prioritize and focus on certain key objectives, making the objectives explicit and well understood by managers, which will help the company to achieve the objectives effectively.

Our study also sheds light on the balance between headquarters control and subsidiary autonomy. It is generally understood that there are obvious advantages and benefits in less headquarters control. It gives subsidiaries more freedom to explore new opportunities and to adapt themselves according to local situations. Such freedom may be beneficial for market seeking subsidiaries, where adaptation to local market, helps the subsidiaries capture local opportunities and grow. However, such subsidiary freedom or autonomy makes it harder for the headquarters to achieve its intended objectives if the objectives for subsidiaries are to acquire strategic assets and transfer host country knowledge back to parent companies. Under this circumstance, subsidiaries need to behave according to the headquarters’ knowledge acquisition expectations; the headquarters may encourage the subsidiary to put more efforts in certain areas than others. Furthermore, to effectively help the headquarters learn and acquire knowledge, the subsidiary needs to establish effective and intimate communication patterns with the headquarters. This may also require the headquarters to have more influence over the subsidiary. Thus, when deciding subsidiary autonomy or headquarters control, EEMs need to take a contingency approach. The level of subsidiary autonomy needs to be consistent with and support the subsidiary objectives.

Lastly, our findings on the negative age effect on subsidiary knowledge transfer suggest that when a subsidiary is young, the headquarters’ learning from the subsidiary, or subsidiary knowledge sharing with the headquarters, is intense. This is also the time when both the headquarters and subsidiary experience many uncertainties, changes and even challenges in
learning how to deal with each other, as both the headquarters and the subsidiary are new to
the learning activities. This requires that both the headquarters and the subsidiaries have
adequate preparation both psychologically and in resources, thus to effectively achieving
learning. Otherwise, these initial difficulties will prevent the headquarters and the subsidiary
from effectively achieving their knowledge transfer objectives.

This finding may suggest various strategies for internationalizing EEM firms with older
subsidiaries but with intent to learn. For example, older subsidiaries may focus on market
seeking returns and new subsidiaries may be spun off existing older subsidiaries to focus on
knowledge transfer. Alternative tactics, such as the establishment of venture investing
divisions, or co-investments with venture capital firms may also help increase strategic asset
seeking or learning opportunities.

Given the increasing need for organizations to innovate to remain competitive, managers may
benefit from applying the findings of this research in their international expansion process.
Furthermore, as the reverse knowledge transfer is generated in the international environment,
it may provide an additional dimension of value as the innovation is applied back in the home
market.

**Limitations and Areas of Future Research**

This study has some limitations. The most obvious one is the small sample size. Because of
this, we need future studies to verify our findings based on larger samples and in different
settings. The study also is focused on Chinese firms. While this focus does control for some
extraneous cultural factors, it may also limit the generalizability of the findings. Second, our
study is mainly from the subsidiary perspective. For our topic of subsidiary knowledge
transfer, subsidiary perspective is crucial for our understanding of the matter. However, the
headquarters is the recipient side of subsidiary knowledge transfer, it is important to have the
headquarters’ perspective on this issue to complement subsidiaries’ view. Given data
limitations, we are not able to include both perspectives in our study. Future studies may
address this weakness by collecting data from the headquarters. Finally, our sample is
skewed toward small to medium size subsidiaries with average size of 49 employees per
subsidiary. It is not clear if this bias toward small to medium size affect our results, an
uncertainty future studies need to address.

Future research may also explore the linkage between reverse knowledge transfer among
EEMs and the level of innovation from the parent organization as this may provide a
corroborative measure of the success of the RKT.

A broader derived model of RKT may also be conceived from the operational elements of
strategic asset seeking behavior, headquarters control, and subsidiary age. These measureable
variables could be viewed from the admittedly more conceptual constructs of motivation to
learn, management of learning, and capability to learn. In this broader conceptual model,
EEM behavior and, more broadly, MNC behavior might be recognized more readily. While
other factors beyond the variables we measured in this study are likely at work in this broader
conceptualization, we offer this as a potential next step in better understanding the
internationalizing behavior of EEMs.

Our study contributes to the understanding of an early empirical phenomenon: reverse
knowledge transfer in EEMs. As EEM globalization behavior differs from that of western
MNCs, it is important to explore the theoretical underpinnings as well as practical
implications of such behavior, thus to deepen our understanding of firms’ globalization
process. We hope that this study adds some useful empirical evidence, and more importantly,
raises some good questions to spur more future studies on reverse knowledge transfer in EEMs.

REFERENCES


