THE INTERNATIONALIZATION OF EMERGING MARKET FIRMS: A FOCUS ON INWARD-OUTWARD LINKAGES AND BUSINESS GROUP EXPERIENCE

XUFEI MA
Assistant Professor
Department of Management
The Chinese University of Hong Kong
Shatin, N.T., Hong Kong
Tel: (852) 2609 7799
Fax: (852) 2603 6840
E-mail: xufei@cuhk.edu.hk

JANE W. LU
Associate Professor
NUS Business School
National University of Singapore
1 Business Link
Singapore 178899
Tel: (65) 6828 0758
Fax: (65) 6828 0777
E-mail: janelu@smu.edu.sg

Daphne Yiu
Assistant Professor
Department of Management
The Chinese University of Hong Kong
Shatin, N.T., Hong Kong
Tel: (852) 2609 7789
Fax: (852) 2603 6840
E-mail: dyiu@cuhk.edu.hk

Acknowledgement:
The work described in this article was partially supported by a research grant from the Asia-Pacific Institute of Business at the Chinese University of Hong Kong (Project No. 5155030) and the Research Grants Council of the Hong Kong Special Administrative Region (Project No. 2170123).
ABSTRACT

Drawing on organizational learning theory, we highlight how emerging market firms develop capabilities and acquire international knowledge from inward foreign direct investments (FDI) made at the firm, industry, and regional levels in their home markets, which subsequently facilitates outward FDI by such firms. We further examine how the experience of business groups generates greater learning motivation and capacity, which in turn strengthens the inward-outward FDI linkage. We find good support for our predictions in a sample of 156 Chinese firms in the electronics industry during the period from 2000 to 2006.

Keywords:
Inward FDI; outward FDI; business groups; emerging markets
INTRODUCTION

As a traditional domain in strategy and international business research, internationalization, defined as the expansion of geographic scope of a firm beyond its domestic market (Hitt, Hoskisson, and Kim, 1997; Tallman and Li, 1996), has received considerable attention among scholars. While developed countries are still the major source of foreign direct investment (FDI), the rate of FDI growth by emerging market firms (EMFs) has outpaced that growth by developed country firms (Luo and Tung, 2007). Consequently, there has been an increasing need of studies to enhance our understanding of some aspects of EMF internationalization.

In this study, we develop an inward-outward internationalization linkage model to explain how inward FDI in an EMF’s home country affects the firm’s engagement in outward FDI activities. Building on the organizational learning perspective, we argue that EMFs’ increased interactions with foreign multinational firms at three different levels of inward FDI – firm, regional, and industry – can induce EMFs to become more involved in outward FDI activities. This is so because EMFs can learn from their interactions with foreign partners, neighbors and competitors in their home countries and accumulate technological, managerial and international knowledge, which is essential to their pursuit of outward FDI activities in foreign markets (Dunning, 1993; Johanson and Vahlne, 1977).

In addition, the organizational learning literature has long emphasized that learning outcomes depend on the characteristics of the receiving organizations, which may lead to varying levels of learning incentives and absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002). As such, we further argue that the strength of the inward-outward FDI linkage is contingent on the organizational characteristics of EMFs. Among the various organizational traits of EMFs, business group experience is an important and relevant factor given the ubiquitousness of business groups in the competitive landscape of many emerging markets (Khanna and Palepu, 1997; Khanna and Rivkin, 2001). Specifically, we propose that operating experience as a business group positively moderates the inward-outward internationalization linkage, because such experience affects both EMFs’ learning incentives and absorptive capacity.
We implement our study by investigating a sample of 156 Chinese firms in the electronics industry during the period 2000 to 2006. China has been a major destination for inward FDI projects over the past two decades and is a home country that has aggressively pursued outward FDI activities in recent years (Buckley et al., 2007a). Furthermore, as one of the most marketized industries in China, the electronics industry is among the earliest to have opened up to foreign investment, and Chinese firms in this industry such as Haier, TCL and Hisense have actively pursued an internationalization strategy (BCG, 2006). The electronics industry therefore represents an ideal empirical setting for our study. The theoretical model and empirical findings of this study provide a more complete picture of the antecedents of internationalization strategy and have strategic implications for emerging market firms and policy makers.

**THEORY AND HYPOTHESES**

**From inward FDI to outward FDI**

Inward internationalization can be an important stage of internationalization. This inward-outward connection is especially important in the context of emerging markets, given that ‘market-for-technology’ is the main rationale behind the aggressive efforts of emerging market governments to attract FDI from MNEs (Buckley et al., 2002, 2007b; Hu and Jefferson, 2002). As EMFs suffer from the liability of lateness in the global competitive landscape, inward internationalization can help strengthen their global competitiveness by offering them a close, continuing operational and organizational relationship with foreign MNEs that allows for the transfer of competencies and knowledge relevant to eventual outward internationalization (Child and Rodrigues, 2005).

For EMFs, inward FDI by foreign MNEs brings in not only capital, but also technological, marketing and management knowledge (Buckley et al., 2002, 2007b). Such knowledge can be of particular importance to EMFs, which in general are disadvantaged in these important areas (Hoskisson et al., 2000). Moreover, inward FDI presents local EMFs with an opportunity to access general knowledge about foreign economic, cultural, social and political factors. As such, emerging markets, as the host countries for inward FDI by foreign MNEs and the home countries of EMFs, can serve as the primary
learning laboratories for EMFs (Hoskisson et al., 2000).

Organizational learning has long been a key building block in the behavioral theory of the firm (Cyert and March, 1963). Of particular significance to us is that this learning perspective suggests the importance of EMFs acquiring potentially useful knowledge, such as technological, marketing, management and foreign knowledge, from foreign MNEs to enable them to pursue outward FDI activities. In the context of an emerging market, local firms can learn from three different types of foreign entrants – partners, neighbors and competitors – which respectively correspond to interactions with foreign MNEs at three different levels of inward FDI – firm, regional, and industry. We explore the linkage between these three levels of inward FDI and outward FDI by identifying different learning mechanisms, targets and contents, as described below.

**Firm-level inward FDI: Learning from partners.** Firm-level inward FDI activities mainly take the form of international joint ventures (IJVs) established between EMFs and foreign multinationals in the EMF’s home country (Luo and Tung, 2007). Research on IJVs has long suggested that one of the primary reasons for firms to forge joint ventures is to acquire their partners’ organizational know-how (e.g., Hamel, 1991; Kogut, 1988; Inkpen and Beamish, 1997). This is especially true for EMFs. In the process of working with foreign MNEs, local partners in emerging markets gain access to the knowledge bases of their foreign partners (Hitt et al., 2000) and build their capabilities by learning from their IJV partners (Luo et al., 2001; Yan and Gray, 1994). As suggested by Hitt et al. (2000), the interactive learning opportunities gained from the experience of partnering with a foreign MNE in an IJV help local firms to strengthen their capabilities, even for tacit components such as technological, marketing and managerial know-how, and to further build their resource endowments (Lane and Lubatkin, 1998).

A higher level of firm-level inward FDI activities can both improve an EMF’s technological and organizational skills and accelerate its access to and acquisition of knowledge about various foreign countries. Regardless of whether a firm’s motive is to exploit existing ownership advantages, seek strategic assets, or explore new opportunities in foreign markets (Makino et al., 2002), the acquisition and development of such skills and knowledge can play a catalyzing role in increasing the firm’s level of
outward FDI activities (Luo and Tung, 2007). Therefore,

_Hypothesis 1: There is a positive relationship between the levels of an emerging market firm’s inward and outward FDI activities._

**Region-level inward FDI: Learning from neighbors.** Region-level inward FDI is defined as foreign direct investment activities undertaken by foreign multinationals in the region in which a local firm operates within its home country. Indirect learning by EMFs is more effective within proximate geographic boundaries. This is so because knowledge transfer involves social interactions, which are intensified when EMFs and foreign MNEs engage in business in the same region, because it is easier for EMFs to gather information on foreign MNEs and they are more likely to conduct business transactions with foreign MNEs. For example, local firms can act as distributors for and suppliers of foreign firms within the same region. Some studies have demonstrated that foreign MNEs are willing to support their local distributors through training in technology and management and are willing to help local suppliers to improve their quality controls (Blalock and Gertler, 2008; Javorcik, 2004). Therefore,

_Hypothesis 2: There is a positive relationship between the level of inward FDI activities in an emerging market firm’s region in its home country and the level of outward FDI activities of the firm._

**Industry-level inward FDI: Learning from competitors.** Industry-level inward FDI is defined as foreign direct investment activities undertaken by foreign multinationals in the industry in which a local firm competes within its home country. Although interactions with foreign multinationals resulting from industry-level inward FDI may not provide local firms with the same kind of direct learning experience that firm-level inward FDI offers, they present an important channel for learning because ‘the best strategy for any organization is often to emphasize the exploitation of successful explorations of others’ (Levinthal and March, 1993: 104).

It has long been recognized in the organizational learning literature that organizations can learn vicariously from others in the same industry (Huber, 1991; Ingram and Baum, 1997). Similarly, the phenomenon of local firms learning from their foreign competitors in their home countries has been
widely captured in the FDI spillover literature. In particular, foreign firms that enter emerging markets usually possess strong ownership advantages and often bring in advanced technology, well-established brands and new management systems (Luo and Tung, 2007). Although empirical studies have so far produced mixed results (Aitken and Harrison, 1999), the majority of prior studies have shown evidence of the positive spillover effects of FDI on the productivity of local firms (Caves, 1974; Globerman, 1979; Görg and Strobl, 2001). In the context of emerging markets, positive spillover effects have been found in Mexico (Blomstrom, 1986), Uruguay (Kokko et al., 1996), Indonesia (Sjoholm, 1999), Taiwan (Chuang and Lin, 1999), Russia (Yudayeva et al., 2000), Estonia (Sinani and Meyer, 2002), and China (Buckley et al., 2002). Therefore,

\[ \text{Hypothesis 3: There is a positive relationship between the level of inward FDI activities in an emerging market firm's industry in its home country and the level of outward FDI activities of the firm.} \]

The moderating effect of business group experience

A ubiquitous organizational form in emerging markets is the business group (Guillén, 2000; Khanna and Palepu, 1997). Business groups are defined as a collection of legally independent firms that are linked by multiple ties, including ownership, economic means (such as inter-firm transactions) and/or social relations (family, kinship, friendship) through which they coordinate to achieve mutual objectives (Granovetter, 1995; Khanna and Rivkin, 2001). We contend that experienced business groups have stronger motivation and greater capacity for learning from inward FDIs in emerging markets.

Motivation for learning from inward FDIs is critical for learning to take place (Dahlman and Nelson, 1995) and the learning intent of an EMF is an important factor that affects its learning behavior (Lane, Salk and Lyles, 2001). For many EMFs, given the underdeveloped capital markets and financial intermediaries in their home countries (Khanna and Palepu, 1997), the provision of financial resources by IJV foreign partners is a primary driver for them to participate in firm-level FDIs (Hitt et al., 2000). In contrast, the incentive to learn and acquire foreign technologies and skills (Luo et al., 2001) is more prominent among business groups, especially those that are well-established and experienced, because
they usually have deep pockets and fewer concerns about financial issues (Keister, 2000; Khanna and Palepu, 1997). Therefore, while many EMFs are more eager to get access to financial resources from IJV foreign partners, those affiliated with experienced business groups are more interested in learning from their IJV partners.

The capacity to learn from inward FDI activities is similar to Cohen and Levinthal’s notion of absorptive capacity, which is defined as ‘the ability to recognize the value of information, assimilate it and apply it to commercial ends…’ (1990: 128). Prior studies have suggested that a firm’s absorptive capacity ultimately builds on the absorptive capacity of its individual members (Cohen and Levinthal, 1990), who should have the necessary skills to observe, interpret, apply and improve upon external knowledge (Hamel, 1991), and the primary capacity to refine, extend and leverage knowledge into its operations (Zahra and George, 2002). We posit that organizational diversity and cohesive social bonding among the group affiliates of an experienced business group can strengthen an EMF’s capacity to acquire, assimilate and leverage the knowledge gained from inward FDI activities.

Taken together, experienced business groups, when compared with independent firms or younger groups, have greater motivation and capacity for learning from inward FDI activities. With an improvement in knowledge acquisition, assimilation and leverage, the inward-outward FDI connection should be further enhanced. Therefore,

*Hypothesis 4a:* An emerging market firm’s group experience positively moderates the relationship between its firm-level inward FDI and firm-level outward FDI.

*Hypothesis 4b:* An emerging market firm’s group experience positively moderates the relationship between its region-level inward FDI and firm-level outward FDI.

*Hypothesis 4c:* An emerging market firm’s group experience positively moderates the relationship between its industry-level inward FDI and firm-level outward FDI.

**METHOD**

We collected data on the top 100 Chinese firms in the electronic industry from various editions of the *China Electronics Industry Yearbook.*
We develop two count measures to gauge firm-level outward FDI: the number of foreign subsidiaries and the number of foreign countries in which a firm has subsidiaries. Likewise, we develop two count measures to capture the level of a firm’s inward FDI activities. The first count number is the number of IJVs a firm had established in China, and the second count measure is the number of foreign countries from which a firm’s foreign IJV partners came. As suggested by Zhao et al. (2005), we use the ratio of a province’s inward FDI flows to the province’s GDP in a given year as the measure of region-level inward FDI. We classified firms into 11 industry groups on the basis of the NBS-published Industrial Classification and Codes for National Economic Activities and used the ratio of the number of foreign-invested firms to the total number of firms in a particular industry in a given year as the measure of industry-level inward FDI. We define business group experience, the moderating variable, as the number of years since the formation of a business group. We identify whether a Chinese firm is a business group or an independent company based on information taken from various editions of Large Corporations of China, a directory annually published by the NBS. We include controls for firm size (total sales), firm age, firm performance (ROS), ownership type (SOE), R&D intensity and export intensity. We also include year dummies to control for the effect of institutional transitions during the observation period.

We employ a random-effects model of ZINB and report the robust standard errors that are derived from the robust variance estimator (White, 1980).

RESULTS

Table 1 presents the descriptive statistics and a correlation matrix for the variables used in this study.

**********************
Insert Tables 1 and 2 Here
**********************

Table 2 shows the results of eight ZINB regression models. Hypothesis 1 predicts that the level of firm-level inward FDI is positively related to a firm’s outward FDI level. Consistent with this prediction, the coefficient estimations of firm-level inward FDI are positive and significant in the models that include only the main effects of this variable (p<.001 in Model 2; p<.01 in Models 5, 7, and 8). Therefore, hypothesis 1 is supported. Hypothesis 2 predicts the positive effect of region-level inward FDI
on the level of a firm’s outward FDI activities. The coefficient estimations are positive and significant (p<.001) in all the relevant models. Therefore, Hypothesis 2 receives strong support. Hypothesis 3 predicts that industry-level inward FDI is positively related to a firm’s outward FDI level. Although the coefficient of industrial inward FDI is positive and reaches statistical significance (p<.10) in Model 4, it is not significant in the other models. Therefore, Hypothesis 3 is only partially supported. Hypothesis 4a predicts that the relationship between firm-level inward FDI and firm-level outward FDI is positively moderated by a firm’s business group experience. As predicted, the coefficient estimations for the interaction terms are positive and significant (p<.05) in Models 6 and 9. Meanwhile, the incremental Wald chi-square in Model 6 achieves statistical significance (p<.05), suggesting that the inclusion of the interaction term adds significant statistical power to Model 5. Hence, Hypothesis 4a is supported. We plot the results in Figure 1 using different years of business group experience, based on Model 6. Figure 1 suggests that there is a positive relationship between a firm’s inward and outward levels of FDI, and that this positive relationship is stronger when the firm has more business group experience.

***************
Insert Figure 1 Here
***************

Hypotheses 4b predicts that a firm’s business group experience has a positive moderating effect on the relationship between region-level inward FDI and the firm’s outward FDI. However, as shown in Models 7 and 9, the coefficient estimations for the interaction terms are not significant. Therefore, Hypothesis 4b is not supported. Hypothesis 4c predicts that a firm’s business group experience has a positive moderating effect on the relationship between industry-level inward FDI and the firm’s outward FDI. The coefficient estimations for the interaction terms are positive and significant (p<.01) in Models 8 and 9. Moreover, the incremental Wald chi-square in Model 9 (p<.01) shows that the inclusion of the interaction term adds significant statistical power to Model 8. Thus, Hypothesis 4c is strongly supported. We depict the results in Figure 2, based on Model 8. Support for H4c is shown by the differences in the levels of outward FDI activities between firms with high and low levels of business group experience. The two lines (smooth and dotted) clearly show that a firm’s level of business group experience increases
the positive association between industry-level inward FDI and firm-level outward FDI.

In Model 9, the full model, the incremental Wald chi-square to Model 5 (p<.01) shows the significant effects of the inclusion of the interaction terms, which offers further support for hypotheses 4a and 4c.

**DISCUSSION AND CONCLUSION**

This study offers a theoretically fresh insight into EMF internationalization in three significant ways. First, we complement conventional internationalization frameworks, such as the OLI paradigm (Dunning, 1993) and the stage model (Johanson and Vahlne, 1977), by highlighting an important alternative path for internationalization – from inward FDI to outward FDI – which represents the major departure of this paper from prior studies. Because most prior studies in the internationalization literature focus on firms from developed countries and are largely outward-oriented, they have been unable to fully capture the trajectory of EMFs’ internationalization (Mathews, 2006). Our focus on inward internationalization helps to fill this notable research gap. As global latecomers, EMFs that engage in outward FDI activities usually bear the liabilities of lateness such as the lack of firm-specific ownership advantages (Dunning, 1993; Makino et al., 2002). Our study suggests that inward internationalization presents an opportunity for EMFs to overcome such competitive disadvantages by capitalizing on home country learning opportunities to develop managerial, technological and international marketing know-how for outward FDI. Thus, inward FDI can be a significant factor in studying the internationalization patterns of EMFs, especially when their home markets have long been popular destinations for FDI.

Second, we classify inward FDI into three different levels: firm, regional and industrial. This classification is highly relevant to large emerging markets and domestic firms in such markets. As economic liberalization begins to gain momentum in emerging markets (Hoskisson et al., 2000), EMFs will sooner or later have abundant opportunities to interact with foreign MNEs in their home countries, regardless of whether such MNEs are foreign partners of EMFs in an IJV setting, foreign neighbors in the
same region, or foreign competitors in the same industry.

Our results show that both firm-level and region-level inward FDI have a positive effect on EMFs’ outward FDI, suggesting that EMFs can learn from their foreign IJV partners and foreign neighbors in the same region as their home countries, thus contributing to EMFs’ increased involvement in outward FDI. Interestingly, there is a weaker linkage between industry-level inward FDI and a firm’s outward FDI, which may be due to the fact that learning effects can be offset by competition effects in the same industry, a finding made in a recent study by Chang and Xu (2008). Because foreign entrants to emerging markets are both sources of knowledge spillover and sources of competition for local firms in the same industry (Chang and Xu, 2008), future studies need to explore how intensified domestic competition outweighs learning effects and further influences EMFs’ outward FDI.

Third, this study links internationalization with business group research, two important streams of research in the strategic management and international business fields, in the context of antecedents to outward FDI by EMFs. Although how business groups conduct product diversifications in emerging markets is well studied in the business group literature, our study is among the first to explicitly theorize and directly test the role of business groups in facilitating the outward FDI activities of firms from emerging markets.

Specifically, we find that business group experience has a moderating effect on the positive relationships between firm-level and industry-level inward FDI and a firm’s outward FDI. Nonetheless, the moderating effect of business group experience on the relationship between region-level inward FDI and a firm’s outward FDI is found to be insignificant. These findings suggest that while an EMF’s experience of operating as a business group does play a critical role in strengthening the motivation to learn, as well as in enlarging the capacity to learn, from IJV partners and foreign competitors in the same industry, it does not have the same role in learning from foreign entrants in the same region of the EMF’s home country.

Our findings have important implications for both managers and policy makers in emerging markets. For managers of local firms in emerging markets who are considering international expansion,
our findings provide practical suggestions on how EMFs can capitalize on the home country learning opportunities for international expansion presented by inward FDI at different levels. We note that managers can use IJVs as a channel for acquiring knowledge about value-adding activities and, at the same time, interact with foreign MNEs in the same region as a way of learning more about foreign markets and foreign cultures. Moreover, our study underlines to managers to the importance of business group experience in enlarging their learning capacities. We show that the organizational attributes of a business group, in terms of its diversity and social cohesiveness, raise group affiliates’ incentives to learn and increase their capacity to absorb and exploit new knowledge. To a certain extent, this explains why EMFs with business group experience have had higher levels of success in international expansion to date.

For policy makers in emerging markets, the strong linkage between inward and outward FDI found in this study provides good evidence of the knowledge spillover effect of inward FDI on outward FDI and highlights the intangible benefits of inward FDI. To facilitate further outward FDI, emerging market governments should provide better incentives for local firms to cooperate with foreign partners by setting up IJVs. At the same time, governments should formulate regional policies that further facilitate indirect interaction between local firms and foreign neighbors in the same region. In addition, the role of business groups in enhancing local firms’ learning opportunities also indicates the success of emerging market government policies aimed at the formation and development of local incumbent business groups.

In conclusion, our study provides a logical extension of general internationalization theories in a specific context by exploring how emerging market firms can take another route to internationalization in response to the most common strategic challenges they face in international expansion (i.e. the liability of lateness and the liability of foreignness). The proposed inward-outward FDI linkage model and the focus on the role of business groups in emerging market firms’ internationalization are critical in enriching our understanding as these firms continue to increase their presence in the global competitive landscape.
REFERENCES


Ingram P, Baum, JAC. 1997. Opportunity and constraint: Organizations’ learning from the operating and 

Inkpen A & Beamish PW (1997) Knowledge, bargaining power, and the instability of international joint 

Javorcik BS (2004) Does foreign direct investment increase the productivity of domestic firms? In search 

Johanson J & Vahlne JE (1977) The internationalization process of the firm – A model of knowledge 
development and increasing foreign market commitments. *Journal of International Business Studies* 


<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>s.d.</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.   Firm-level outward FDI</td>
<td>2.47</td>
<td>10.31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.   Firm size(^c)</td>
<td>12.83</td>
<td>1.08</td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.   Firm age(^c)</td>
<td>2.81</td>
<td>0.65</td>
<td>0.03</td>
<td>0.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.   Firm performance(^d)</td>
<td>4.87</td>
<td>5.36</td>
<td>0.09</td>
<td>-0.21</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.   State ownership status</td>
<td>0.73</td>
<td>0.44</td>
<td>-0.12</td>
<td>0.10</td>
<td>0.18</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.   R&amp;D intensity(^d)</td>
<td>3.47</td>
<td>3.77</td>
<td>0.27</td>
<td>0.05</td>
<td>0.02</td>
<td>0.16</td>
<td>-0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.   Export intensity(^d)</td>
<td>23.94</td>
<td>26.15</td>
<td>0.00</td>
<td>0.04</td>
<td>0.06</td>
<td>-0.03</td>
<td>0.15</td>
<td>-0.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.   Group experience(^c)</td>
<td>2.02</td>
<td>0.80</td>
<td>0.17</td>
<td>0.31</td>
<td>0.28</td>
<td>-0.17</td>
<td>-0.08</td>
<td>0.07</td>
<td>-0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.   Firm-level inward FDI</td>
<td>2.99</td>
<td>4.81</td>
<td>0.29</td>
<td>0.50</td>
<td>0.21</td>
<td>-0.12</td>
<td>0.22</td>
<td>-0.06</td>
<td>0.13</td>
<td>0.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.  Regional inward FDI(^d)</td>
<td>5.84</td>
<td>3.22</td>
<td>0.10</td>
<td>0.03</td>
<td>-0.05</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>0.19</td>
<td>-0.10</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>11.  Industrial inward FDI(^d)</td>
<td>43.24</td>
<td>15.42</td>
<td>-0.02</td>
<td>0.06</td>
<td>-0.24</td>
<td>-0.10</td>
<td>0.20</td>
<td>-0.05</td>
<td>0.19</td>
<td>-0.08</td>
<td>0.07</td>
<td>0.13</td>
</tr>
</tbody>
</table>

\(^a\) N = 156 firms, 633 observations
\(^b\) Significant at the 0.05 level (two-tailed test) when Pearson correlations >0.07 or < -0.07; two-tailed tests.
\(^c\) Logarithmic transformation
\(^d\) As a percentage
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1.05)</td>
<td>(1.22)</td>
<td>(1.01)</td>
<td>(1.03)</td>
<td>(1.21)</td>
<td>(1.31)</td>
<td>(1.20)</td>
<td>(1.19)</td>
<td>(1.26)</td>
</tr>
<tr>
<td>2. Firm size</td>
<td>1.25***</td>
<td>1.06***</td>
<td>1.22***</td>
<td>1.26***</td>
<td>1.07***</td>
<td>1.11***</td>
<td>1.07***</td>
<td>1.09***</td>
<td>1.13***</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.09)</td>
<td>(0.07)</td>
<td>(0.08)</td>
<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.08)</td>
<td>(0.09)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>3. Firm age</td>
<td>-0.21*</td>
<td>-0.27*</td>
<td>-0.12</td>
<td>-0.17</td>
<td>-0.16</td>
<td>-0.13</td>
<td>-0.15</td>
<td>-0.18</td>
<td>-0.13</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.13)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.13)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>4. Firm performance</td>
<td>0.03*</td>
<td>0.04**</td>
<td>0.02</td>
<td>0.03**</td>
<td>0.04**</td>
<td>0.04**</td>
<td>0.03**</td>
<td>0.04**</td>
<td>0.04**</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>5. State ownership status</td>
<td>-1.32***</td>
<td>-1.32***</td>
<td>-1.37***</td>
<td>-1.37***</td>
<td>-1.38***</td>
<td>-1.37***</td>
<td>-1.40***</td>
<td>-1.36***</td>
<td>-1.37***</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.17)</td>
<td>(0.18)</td>
<td>(0.18)</td>
<td>(0.17)</td>
<td>(0.18)</td>
<td>(0.16)</td>
<td>(0.17)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>6. R&amp;D intensity</td>
<td>0.02</td>
<td>0.04</td>
<td>0.01</td>
<td>0.02</td>
<td>0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>7. Export intensity</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.01</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>8. Business group experience</td>
<td>0.32**</td>
<td>0.35**</td>
<td>0.33**</td>
<td>0.31**</td>
<td>0.34**</td>
<td>0.34**</td>
<td>0.30*</td>
<td>0.37**</td>
<td>0.30*</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.10)</td>
<td>(0.12)</td>
<td>(0.11)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.11)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>9. Firm-level inward FDI</td>
<td>0.04***</td>
<td>0.04**</td>
<td>0.00</td>
<td>0.04**</td>
<td>0.03**</td>
<td>0.03</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>10. Region-level inward FDI</td>
<td>0.13***</td>
<td>0.11***</td>
<td>0.11***</td>
<td>0.11***</td>
<td>0.12***</td>
<td>0.11***</td>
<td>0.12***</td>
<td>0.11***</td>
<td>0.11***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>11. Industry-level inward FDI</td>
<td>0.01*</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>12. Firm-level inward FDI ×</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
<td>0.05*</td>
</tr>
<tr>
<td>Business group experience</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>13. Region-level inward FDI ×</td>
<td>0.03</td>
<td>0.04</td>
<td>0.03</td>
<td>0.04</td>
<td>0.03</td>
<td>0.04</td>
<td>0.03</td>
<td>0.04</td>
<td>0.03</td>
</tr>
<tr>
<td>Business group experience</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>14. Industry-level inward FDI ×</td>
<td>0.06**</td>
<td>0.02**</td>
<td>0.06**</td>
<td>0.02**</td>
<td>0.06**</td>
<td>0.02**</td>
<td>0.06**</td>
<td>0.02**</td>
<td>0.06**</td>
</tr>
<tr>
<td>Business group experience</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
</tbody>
</table>

Wald chi-square 491.48*** 698.92*** 700.64*** 532.49*** 930.41*** 1068.95*** 965.09*** 948.37*** 1142.71***
Incremental $\chi^2$ to Model 1 27.00*** 19.75*** 3.41* 67.10*** 107.42*** 66.16*** 79.98*** 122.35***
Incremental $\chi^2$ to Model 5 5.41* 0.60 7.70** 12.60**

N = 633 observations; *** p < .001; ** p < .01; * p < .05; <.10; all two-tailed tests. Cell entries are unstandardized coefficient estimates; numbers in parentheses are robust errors. Year dummies are included in all of the models but are not shown in the table.
Figure 1. The moderating effect of business group experience on the relationship between firm-level inward FDI and firm-level outward FDI

Figure 2. The moderating effect of business group experience on the relationship between industry-level inward FDI and firm-level outward FDI