The Multinationality-Performance Relationship:

Evidence from Emerging Economy Multinational Enterprises

Abstract

The literature on multinationality-performance relationship has been limited to multinational firms from developed economies, and previous studies generally disregard the effects of location and ownership structure. This paper seeks to explain this relationship in the emerging market context, highlighting the importance of location decisions and ownership structure. We use panel data that include 2258 multinationals from 25 emerging economies over a period of 2004-2013. We find a significant positive relationship between multinationality and performance. In particular, investment in developed countries rather than developing countries has a significant positive impact on firm performance. Private owned enterprise has a better performance in foreign markets than state owned enterprise. These results indicate that emerging markets firms can improve performance by investing abroad and the better location choice is developed countries. In addition, firms with different ownership structure should have different internationalisation strategies.

Keywords: Emerging markets, Multinationality, Location strategy, Ownership structure
1. INTRODUCTION

The relationship between multinationality and firm performance remains an important research issue for business scholars over the past three decades (Majocchi & Strange, 2012; Yang & Driffield, 2012). Multinational enterprises (MNEs) expand operations across different nations outside their home countries, bringing some costs and benefits. On the one hand, internationalisation results in costs such as the unfamiliarity with foreign market, huge sunk costs at early internationalization and great coordination cost. On the other hand, international expansion benefits firm performance. It helps MNEs access cheaper resources, acquire foreign knowledge, realise economies of scale, obtain internationalization experience, exploit firm-specific assets in foreign markets and reduce the fluctuations of revenue by geographic diversification. Overall, the observed Multinationality-Performance (MP) relationship is the net effect of these costs and benefits (Contractor, 2007).

It is vital to investigate the relationship between emerging market multinationals’ (EMMs) international activity and firm performance for two reasons. First, recent years have witnessed a surge in foreign direct investment (FDI) outflows from emerging economies. The recent stories about Huawei Technologies (China), Infosys (India) and SABMiller (South Africa) attract lots of scholars’ attentions (Khanna & Palepu, 2006). According to UNCTAD (2014), The FDI outflows from developed economies remain stagnant in the recent years, whose percentage of world FDI outflows dropped from 93% to 61%. On the contrary, developing country MNEs are increasingly acquiring firms in developed countries, the FDI outflows from developing countries have reached a record level. The share of developing and transition economies in world FDI outflows has jumped from 7% in 1999 to 39% in 2013, along with a volume of 454 billion US dollars in 2013. Despite the large amount of MP literature, little attention is
paid to the emerging market multinationals’ international activity. Second, emerging markets differ hugely from the developed economies in terms of institutional environment. The underdeveloped institutional environment in emerging economies are not sufficient to support EMMs’ ambitious internationalisation initiatives. Besides, emerging market multinationals are believed to have constrained resource when comparing their western counterparts. Despite the lack of institutional support and resource, emerging market multinationals have made great progress in going abroad (Khanna & Palepu, 2006). Hence, it is interesting for scholars to understand why and how emerging market multinationals expand globally and subsequently perform.

We develop three research questions and hypotheses after reviewing relevant literature. First, knowledge on MP relationship has been limited to MNEs from developed economies, while there are huge differences between developing and developed countries MNEs. This paper seeks to explain the MP relationship in the context of emerging markets by analysing data from emerging market multinationals, contributing to the existing MP literature. We expect a priori a positive relationship between multinationality and performance for emerging economy MNEs.

Second, FDI destination is an important concern of managers in MNEs. According to World Investment Report published by UNCTAD (2014), FDI inflows to developed countries rose to 566 billion US dollars, contributing to 39% of world FDI inflows. FDI inflows to developing and transition economies reached 886 billion US dollars which account for 61% of FDI inflow in the world. The extant literature pays limited attention to the location choice of host countries, with the exception of some studies (Berry, 2006; Pantzalis, 2001), in which location choices are categorised into developed and developing countries. We intend to look into whether the returns to multinationality for emerging market
multinationals in developing countries are different from that in developed countries. We expect \textit{a priori} that FDI activities in developed economies rather than developing economies have a significant positive effect on performance.

Third, ownership structure plays an important role in internationalisation and firm performance. Based on World Investments Report (\textit{UNCTAD}, 2014), private equity firms have enormous funds to invest, which has reached a record level of at least 1 trillion US dollars. There is huge potential of increased FDI from private equity firms. Besides, state-owned MNEs are vital players in worldwide FDI flows. Although their number consists of less than 1 per cent of all MNEs in the world, their FDI comprises more than 11 per cent of worldwide FDI flows, reaching 160 billion US dollars in 2013. Ownership structure that has been rarely studied in previous MP studies is emphasized in this paper. This paper attempts to investigate whether the ownership structure (private ownership vs. state ownership) moderates the MP relationship for emerging market multinationals. We expect \textit{a priori} that private owned enterprises (POE) perform better than state owned enterprise (SOE). We provide a detailed discussion of the development for the above three hypotheses in the next section.

Overall, this research does not only take into account factors in host country (host country economic development), but also considers factors in home country (domestic institutional environment), both of which may affect returns to FDI for emerging market multinationals.

Most of previous MP studies use cross-sectional rather than longitudinal data. It is argued that international business scholar should increase the use of longitudinal data to better understand the relative change of a MNE’s internationalisation over time (\textit{Hennart}, 2007). We collect time series cross-sectional data given our access to a huge dataset Orbis, which includes emerging economy companies’
financial and operational data. The panel data analysis allows us to relate the changes in performance to the changes in multinationality within firms over time. Our panel data contain 2258s MNEs from 25 emerging economies over a period from 2004 to 2013.

We find a positive linear relationship between multinationality and performance, which is consistent with previous related studies (Goerzen & Beamish, 2003; Kim et al., 1993; Zahra et al., 2000). In terms of location choice for FDI, we find that investing in developed countries rather than developing countries leads to significant improvement of firm performance. Regarding ownership structure’s effect on the relationship between multinationality and performance, we find that POEs perform better than SOEs when going abroad. They also have different performance in different FDI locations. Our suggestions for managers of emerging market multinationals consist of three parts. First, emerging market multinationals are advised to invest abroad to enhance their performance, enjoying the large benefits that exceed the costs of multinationality. Second, the better FDI location strategy for emerging market multinationals is the expansion in developed countries. Finally, POEs are advised to establish more subsidiaries in developed countries. SOEs may not make profit from investing abroad, no matter in either developed or developing countries.

The structure of this paper is as the following. After introduction section, we provide a comprehensive review of the relevant literature and develop hypotheses. Section 3 discusses the theoretical framework and methodology. Section 4 presents and discusses the descriptive statistics and regression results. The final section provides conclusions and limitations.
2. THEORY DEVELOPMENT AND HYPOTHESES

2.1 The Relationship between Multinationality and Performance

International business scholars employ some well-known theories to explain the relationship between multinationality and performance. Previous empirical studies provide mixed evidences of the MP relationship. These studies differ from each other many aspects, such as sampling, measurement of key variables, moderators or control variables and results.

**Multinationality and Firm Performance.** There are some costs of doing business in a foreign country ([Hymer, 1976](#)). The liability of foreignness can result from many aspects, such as increased coordination cost due to greater distance, unfamiliarity with host country environment, lack of local legitimacy and some restrictions from home country government (e.g., high-tech export to certain country is restricted by US government) ([Zaheer & Mosakowski, 1997](#)). Compared with a local new firm, a foreign new subsidiary is at a disadvantage in purchasing, staffing and establishing new facilities. The coordination and governance costs, surrounded by extensive multinational network, rise with the increased multinationality or the number of host countries ([Lu & Beamish, 2004](#)). In addition, When operating in multiple countries, the differing political institutions, laws, culture and exchange rates add to the complexity of coordination issue ([Sundaram & Black, 1992](#)).

However, internationalisation also provides firms with lots of benefits. Going abroad can help firm get access to cheap resources such as law material and labour force, which might be more expensive in domestic market ([Contractor, 2007](#)). Increased production of products can lead to economies of scale. Thus expanding sales by either exporting or investing abroad can let firm benefit from economies of scale ([Krugman, 1980](#)). MNEs may enjoy the reduced cost per unit of output because the fixed costs
and huge R&D expenditure can be spread over a large sale of products, thus achieving cost efficiency. According to transaction costs economy, the transaction cost of knowledge is high, since knowledge is like a public good and everyone can easily use it without paying for it. The imperfection of the knowledge market rise the importance of internalisation. Through internalisation by setting up subsidiaries, the firm can transfer the knowledge from innovation centre to production. The effectiveness of internalisation depends whether the cost of internalisation is lesser than in the cost of using external market (Buckley & Casson, 2003). Based on the learning theory, a firm can learn experience and market-specific knowledge of foreign market when investing abroad, in an incremental process (e.g., typically exporting, then sales subsidiary, then foreign production). This market-specific knowledge can help MNE perceive and seize market opportunities, contributing to MNE’s superior performance. Also, the knowledge of how to operate in an unfamiliar foreign environment is valuable because the firm can use this knowledge to operate in other countries, leading to long-term growth. This market-specific knowledge of foreign country is mainly obtained through foreign operation, which is not available to domestic company (Johanson & Vahlne, 1977). According to the real option theory. The MNE is like portfolio of assets in dispersed countries. The multinational network and operating flexibility provide firm with valuable options resulting from different country environments such as differing institutional restrictions. The MNE can exercise the options by shifting resource across national borders through its multinational network, which cannot be done by a domestic firm (Doukas & Travlos, 1988). Foreign operation in a number of countries can reduce the risk of profits if these countries’ economic cycles are not perfectly positively correlated (Rugman, 1976).

Hennart (2007) adopts transaction cost/internalisation (TCI) model to criticise the theoretical
background of MP literature, particularly focus on economies of scale, operational flexibility and learning experience. He argue that there is no direct relationship between multinationality and performance. However, Contractor (2007) responses to Hennart’s critiques. Contractor contends that Hennart’s assumptions about MNE are too stringent and TCI lens provides too limited view, indicating alternative perspectives from strategy and IB (international business) literatures. Contractor concludes that internationalisation is good for companies.

Many previous empirical studies find evidences supporting that international diversification can enhance firm performance, suggesting that the benefits of multinationality exceed costs (Goerzen & Beamish, 2003; Kim et al., 1993; Ramirez-Aleson & Espitia-Escuer, 2001; Zahra et al., 2000). However, the aforementioned argument and results are mainly based on the analysis of developed country MNEs, particularly US firms. We need to further discuss whether the results of these MP literature can be applied to MNEs that originate from emerging markets.

**MP Relationship and Emerging Market Multinationals.** The above findings of MP relationship mainly rely on data from developed country firms. However, researchers question whether these findings is applicable to emerging market MNEs, since emerging market contexts are different from developed country contexts in terms of institution development. The lack of needed resources and the underdeveloped domestic institutional environment do not support firm to go abroad (Gaur & Kumar, 2009). The weak institutional environment (e.g., legal system) in emerging market encourages non-market based transactions (Choi et al., 1999). This prevent emerging market multinationals from accessing adequate resources through market base transaction at home country. Hitt et al. (2000) argue that emerging market multinationals lack sufficient resources (e.g., capital and technology) to compete
in the global market place.

Emerging market multinationals have a lack of resource and institutional support to favour international expansion. However, they still have made outstanding progress in going abroad, using serial acquisitions (Elango & Pattnaik, 2011) and accelerated internationalisation (Mathews, 2006). The emerging giants from several countries, including Huawei Technologies (China), Infosys (India) and SABMiller (South Africa), have attract attentions from scholars and managers (Khanna & Palepu, 2006). Considering that emerging market multinationals are late-movers in the internationalisation and are known to be less resource-endowed, it is fascinating and interesting for academics to understand why and how emerging market multinationals go internationalisation and subsequently perform.

Emerging market multinationals are different from traditional western MNEs, in particular the motivations of internationalisation (Guillén & Garcia-Canal, 2009). It is argued that one important motivation of emerging market multinationals’ overseas investment is to seek strategic assets (Makino et al., 2002). As a latecomer, emerging market multinationals have to learn knowledge quickly in order to compete in the global economy. And emerging market multinationals do not have sufficient capabilities and resource to do greenfield investment. Thus acquisition of strategic assets maybe a favourable option for emerging market multinationals. Through foreign investment, emerging market multinationals can cope with trade barriers that restrict exporting and provide services that are not tradable, thus achieve market expansion (UNCTAD, 2006). In addition, emerging market multinationals want to escape the cumbersome transportation due to underinvestment of infrastructure in home country (Guillén & Garcia-Canal, 2009). Emerging market multinationals could rapidly overcome liabilities of foreignness by acquiring the existing brand, technology and managerial capabilities possessed by local
firms in host countries (Elango & Pattnaik, 2011).

Although emerging market multinationals have lesser resources and developed from weaker institutional environment before foreign expansion when comparing with western counterparts, emerging market multinationals have its own advantages to overcome the liabilities of foreignness when entering the overseas market (Gaur & Kumar, 2009). First, the failure in capital, labour and product market create many institutional voids, as a result of weak institution environment in emerging market. Business group affiliation can imitate the institution by creating internal market for finance, labour and intermediate goods, thus filling the institutional voids (Khanna & Palepu, 1997). Therefore, emerging market multinationals may have easier access to the shared financial and managerial resources within the same business group, which help emerging market multinationals endure the initial high cost of internationalisation. Second, Governments play a vital role in many emerging economies. These government are very supportive on outward FDI. For instance, the China’s government provide firms going abroad with privilege access to subsidies, tax reduction and favourable bank loan (Cai, 1999). The government’s support might help emerging market multinationals offset the ownership disadvantages in overseas markets. Third, emerging market multinationals has networking ability to build beneficial relationship within and outside of firm. This facilitate the access to resource control by others, which is also called relational assets (Dunning, 2002). For instance, emerging market multinationals’ sales can benefit from affinities with ethnic network in host country (Leeraw, 1977). Fourth, emerging market multinationals are described as “latecomer MNEs” who catch up and achieve accelerated internationalisation through organisational innovation. They go through the internationalisation process very quickly, using much lesser time than traditional western counterparts (Mathews, 2006). As a
latecomer, the early adoption of new technology developed by other help emerging market multinationals compete with western MNEs, particularly in infrastructure industry (UNCTAD, 2006).

Emerging market multinationals can adapt the available technology to small-scale and labour-intensive production, producing low-cost goods (Lecraw, 1977).

To sum up, in spite of the constraint resource and limited institutional support, emerging market multinationals have their own advantages such as the acquisition of foreign strategic assets, business group affiliations, government support, relational assets and the implication of catch-up strategy. Such that, emerging market multinationals realise the benefits of multinationality quickly, which outweigh the costs of multinationality. Thereby, emerging market multinationals enhance firm performance through overseas investments.

**Hypothesis 1:** There is a positive relationship between multinationality and performance.

We consider the possibility that emerging market multinationals may make loss due to huge set-up cost at initial internationalisation stage and experience negative performance resulting from accelerating coordination costs when internationalise too much. Hence, we will test the non-linear relationship by introducing the second and third term of multinationality measure in the empirical model (Contractor, 2007). Thus, we will test the non-linear relationship by introducing second term and third term of multinationality in our empirical models.

### 2.2 Location Choice

The majority of the MP literature focus on the discussion of costs and benefits resulting from
internationalisation, while ignoring the importance of location decision (Beugelsdijk et al., 2010). Location plays a crucial role on MNE’s multinational performance (Dunning, 1988). (Doukas & Travlos, 1988)’s results indicate that if a US MNE acquire a firm in the unfamiliar country, this cross-border acquisition can improve the value of the MNE, suggesting that good location choice can enhance firm performance.

For most MP studies, to draw a conclusion of MP relationship, they regress performance measure on different proxies of multinationality measure. However, the literature generally use an aggregate measures to examine the multinationality, ignoring the important of location (Yang et al., 2013). Insufficient attention paid to connecting firms’ organisational characteristics with geographical characteristics is the main weakness of the convergence of three location-based literature, including international trade, economic geography, strategy and international business (Beugelsdijk et al., 2010). For the few papers (Berry, 2006; Pantazis, 2001) that examine the role of location on MP relationship, they consider the differences between developed and developing countries, since there are huge dissimilarity between developed and developing countries in terms of economic development, resource endowment, risk, culture and institutional environment.

In terms of economic development, developing countries have relatively low GDP and most of the population are low income customers. Developed countries, however, have high GDP, as well as high-income and demanding customers (Qian et al., 2008). Firm can gain competitive advantage through faster innovation to meet advanced customer needs (Porter, 1990). With respect to resource endowment, most developing countries have cheap labour force and nature resource (Berry, 2006), which may overlap the resources in emerging countries. While developed countries have the technology and
knowledge resources which are rare in emerging countries (Martins & Yang, 2009) and essential to the enhancement of emerging market multinationals intangible assets.

Concerning the risk and dissimiliarity within the same country group. The developing countries have high risk (Berry, 2006) and and huge disimilarity (e.g., culture, political and economic system) among countries (Qian et al., 2008). The risks include financial risk such as fluctuating exchange rate, political risk such as the frequently changing government policies, and troublesome infrastructure. In some extreme cases, the expropriation of foreign investment might happen. The developed countries, nevertheless, have low risk and share many similarity within this country group (Berry, 2006). They tend to have relatively more stable currency values and government policies. The government intervention in the market is likely to be small. Hence, if emerging market multinationals expand into various developing countries, they will face the huge risk and large diversity among these countries, resulting in larger transaction costs. Diversification into a moderate number of developed countries (Qian et al., 2008), however, can let emerging market multinationals face lower risk and similar market environment of these countries (Berry, 2006).

Regarding institutional environment, developing countries have weak institutional environment, while developed countries have strong institutional support on investment, particularly the intellectual property rights protection in legal system. Hence, investing in developed countries, emerging market multinationals can enjoy the better institutional environment which is not available in domestic market. Emerging market multinationals have the opportunity to develop their own technological capability and intangible assets in this strong institutional environment of developed countries, where is nearly impossible in home country context where the poor intellectual property enforcement discourage the
emerging market multinationals from investing in R&D and creating new products (Gaur & Kumar, 2009).

Location matters when considering the differences between developed and developing country groupings. It is argue that due to the risker investment environment in developing countries than in developed countries, only when emerging market multinationals obtain enough experience from previous overseas investment about how to hedge the risk and uncertainty in foreign operation, can they enjoy the value increase of geographic diversification in developing countries (Berry, 2006).

Overall, different location decisions have different impacts on emerging market multinationals’ international performance. One the one hand, developing countries have some cheap input such as labour and raw materials, but which may overlap the resources in emerging countries. Besides, the high risk, huge dissimilarity within developing country grouping and weak institutional environment lead to the large liabilities of foreignness when emerging market multinationals enter various developing countries. Developed countries, one the other hand, have demanding customers that force firm to innovate rapidly, abundant technological resource, similar market environments within developed country grouping, strong institutional protection on investment and intellectual property. This help emerging market multinationals gain competitive advantage, hedge the risk, overcome the liabilities of foreignness, protect their investment, learn and exploit knowledge in foreign market.

*Hypothesis 2: The returns to multinationality are significantly positive when investing in developed countries rather than developing countries.*
2.3 Ownership Structure Effects

The final concern of our paper is the ownership structure on MP relationship, which is rarely examined in the extant MP literature. Not only location choice plays an important role on firm’s international performance, but also ownership structure can affect MNE’s performance (Al-Obaidan & Scully, 1993). The MNE’s feature of multinational network indicate that the firm can be affected by the institutional environment at home and host countries (Xu & Shenkar, 2002). Since developed country MNEs are more likely to act as autonomous economic entities, prior studies concentrate on their deal with host country environment (X. Lin, 2010). However, given the historical absence of market economy in emerging market, when analysing the emerging market multinationals’ internationalisation process, one has to focus more on the role of domestic institutional environment on emerging market multinationals (Child & Rodrigues, 2005). The state is not only the formal institution, but also the key actor in an economy, as it is regulating business and economy (Okhmatovskiy, 2010). The institutional factor plays a vital role on the internationalisation strategy of MNEs from emerging markets such as China. The state affect the economy through governmental intervention in the market and involvement in firm’s ownership. The state ownership play an institutional role of the government on firm’s operation (Child & Rodrigues, 2005). As a result of economic reform, the number of private firms are increasing. Some of them are firms that are privatised from SOEs and some are new firms created by entrepreneurs. The private sector is growing rapidly and contributes to a significant portion the economy. Besides, although the number of SOEs is shrinking, SOE still contribute to a considerable portion of output in emerging countries such as China. Both POEs and SOEs are increasingly engaging in internationalisation activities (Ralston et al., 2006). Hence, it is interesting to understand the different effects of state
ownership and private counterpart on international process.

There are many differences between POEs (private owned enterprises) and SOEs in the internationalisation process. The first one is the motivation of internationalisation. One could argue that SOEs tend to be internationalised by government’s pressure, while POEs’ internationalisation activities tend to be motivated by economic reasons, suggesting that POE internationalise for value-adding activity (X. Lin, 2010). Different motivations could lead to the different reaction of investors. Investors are usually more cautious about foreign acquisitions of firms that have state ownership, since government are believed to be in the lack of effectiveness. Compared with POEs, SOEs are suffering from poorer image of corporate governance, resulting in the investor’s negative reaction toward SOEs international acquisitions (Chen & Young, 2010). In addition, state ownership of the firm create poor political image, triggering politicians and public’s negative reaction in host countries. Thus, SOEs’ FDI projects or acquisitions are more likely to be restricted by host country government, leading to enlarged liabilities of foreignness (Cui & Jiang, 2012).

In terms of corporate governance structure, the state owners are less motivated to monitor SOEs’ performance, while managers of POEs are more active in making personal interest in line with firm’s interest. The separation of control and cash flow rights create serious agency problem in SOEs. The central or local government own cash flow such as dividends, while a variety of government agencies control and manage SOEs. The state owners have a lack of incentives and capabilities to closely monitor SOE managers’ behaviour (Zou & Adams, 2008). SOE managers are less likely to pursue long-term opportunities such as purchasing foreign strategic assets, since their promotion is tied to the achievement of firm’s political or economic goal within the tenure (N. Lin, 2011). On the contrary, the private firms
have more methods to solve the agency problems, such as offering stock options to managers (Jensen & Meckling, 1976). Thus POE mangers are more likely to pursue long term growth of the company.

With regard to the domestic institutional environment, unlike POEs, SOEs are not urgent to seek strategic assets abroad. The reason for this is that SOE’s relationship with government or state ownership guarantee their access to domestic financial resource (Cull & Xu, 2003). The government tend to protect them from market competition. SOEs are less urgent to go abroad and seek strategic assets (e.g., managerial capability, knowledge, brand) to develop firm specific advantages (Cui et al., 2014). In contrast, POEs face less favourable domestic institutional environment and are more exposed to market competition. Therefore, they are more eager to escape from home institutional constraints and pursue growth in overseas market (Boisot & Meyer, 2008). This willingness may motivate POEs to seek strategic assets abroad and developed their ownership specific advantage. An interesting example is Geely’s acquisition of Volvo. Geely is a Chinese private owned automobile manufacture. It acquired Volvo’s strategic assets (global brand, technology and management expertise) to quickly catch up with other leading automobile manufacturers in the global market (Cui et al., 2014).

From a view of scale economies, compared with SOEs, POEs tend to expand abroad to benefit from economies of scale. SOEs are more likely to realise economies of scale in domestic market, since they usually hold monopolistic positions in strategic important sectors (e.g., utility) (Ju & Zhao, 2009). Thus they lack necessity to go global to realise economies of scale. Nonetheless, most POEs are relatively small and constrained by the adverse competition environment in home market (Boisot & Meyer, 2008). Thereby, they are more willing to escape this environment and go to other countries, realising economies of scale in a wider global market.
Based on the perspective of organisational capability, SOEs are insufficient and slowly respond to market opportunities because they didn’t have to be efficient and quick before the economic reform (Ju & Zhao, 2009). However, POEs have already developed superior organisational capabilities in order to survive in the unfavourable domestic market. They are efficient in allocating available restrained resources (Goldeng et al., 2008) and quickly identify and respond to overseas market opportunities (Peng et al., 2004).

To sum up, though SOEs have more resources, they are inefficient in allocating resources. SOEs usually hold monopolistic positions in key sectors and are more likely to realise economies of scale in domestic market. They are less motivated and more reluctant to go abroad to seek strategic assets. POEs, on the other hand, are relatively efficient, responsive to overseas market opportunities, active to acquire foreign strategic assets and expand into overseas market to benefit from economies of scale. Hence, POEs are more efficient than SOEs in investing in overseas markets.

Hypothesis 3: Private owned enterprise performs better than state owned enterprise when investing abroad at the same degree of multinationality.

3. METHOD

3.1 Theoretical framework

Figure 1 presents the theoretical framework that summarises the various determinants that influence firm performance and the interaction between these determinants. Regarding multinationality, we employ OSTS\(^1\) to capture the effects of internalisation advantages on firm performance. We expect a positive relationship between multinationality and performance (H1). With respect to location choice,
we focus on different economic development across countries in the world, in particular considering developed and developing countries. We expect location decision of developed country rather than developing country enhances the performance (H2). It is argued that emerging market multinationals go abroad to tap into resources (e.g., finance, technology and brand), which are more abundant in developed country rather developing country. The risks are lower in developed countries than in developing countries. Also, developed countries can provide better protection on investment and intellectual property than developing countries. To compare the effects of different location choice, instead of using an integrated OSTS, we divide OSTS into two parts (OSTS\textsuperscript{D'ed} and OSTS\textsuperscript{D'ing}), corresponding to two different host country location choices (D’ed vs. D’ing). In terms of ownership structure, it influences performance through multinationality. We expect a moderating effect of ownership structure on MP relationship, in particular considering private and state ownership. Because an ownership structure dummy (e.g., SOE is equal to 1 if a firm is an SOE, otherwise 0) will be automatically dropped due to perfect multicollinearity in pool time series cross-sectional data, we decide to use two subsamples (POEs vs. SOEs) and compare the results in these two subsamples to test the ownership effects. We expect that POEs perform better than SOEs when going abroad (H3), since POEs are more efficient than SOEs in identifying and responding to overseas market demand.

Figure 1 goes about here

To estimate more precisely the effects of the aforementioned three determinants of firm performance, we also control several variables that are believed can affect firm performance. Firm size (measured by
number of employees) is expected to positively affect firm performance. Leverage (measured by debt to assets ratio) is expected to have a negative impact on business performance. Labour productivity (measured by sales to employees ratio) is believed to play a positive role in firm performance. Business cycles (e.g., financial crisis in 2007) are also believed to affect firm performance, thus we control business cycle effects (year effects).

3.2 Data

Company data are collected from Orbis dataset whose data are collected by a consultancy called Bureau van Dijck. According to Bureau van Dijck, the dataset Orbis is sourced from different providers. It provides MNEs’ detailed accounting information, parent and subsidiary links, ownership information and locations of subsidiaries. Some scholars use this dataset to publish papers in international business journals (e.g., Bhaumik et al. (2010) in Journal of International Business Studies). We select emerging market multinationals that have an ownership stake of minimum 10% (Bureau of Economic Analysis, 1999) of its foreign subsidiaries and have information about the subsidiary location. Such that, we can calculate a key explanatory variable (multinationality), namely OSTS (overseas/total subsidiaries).

Information of samples is available from 2004 to 2013.

We select emerging market firms that have data available on return on assets, employees, leverage, sales, parent’s ownership structure, parent’s equity ownership of subsidiaries and locations of subsidiaries. Firms with any missing value for one of these variables are excluded from our sample. In this panel data, on average, each firm has 2.7 years observations after deleting observations where any aforementioned variables have missing values. All monetary measures are reported in US dollars. The
final sample includes 2258 firms. Our time series cross-sectional (panel) data has advantage over pure cross-sectional data that are used by many prior studies, since we can exam the dynamic relationships within panel data, which is not possible in pure cross-sectional data (J. M. Wooldridge, 2010).

3.3 The Empirical Specification

Pooled time series cross-sectional data analysis (panel analysis) is employed to examine the role of multinationality on firm performance. Following the empirical specification of several scholar’s works (Contractor et al., 2003; Qian et al., 2008; Ruigrok et al., 2007), we use pooled time series cross-sectional regression models to test the above three hypotheses, since we have panel data. Pooled time series cross-sectional data analysis has advantages over pure cross-sectional data analysis. Panel data analysis has two dimensions (i.e., cross-section, time-series). Thus, we can not only look at the variations in the first dimension, but also test the dynamic relationship in the second dimension (J. M. Wooldridge, 2010). Panel data survey the cross section units repeatedly at regular intervals (e.g., each year), so usually the sample size of panel data is relatively large, which means that the estimators can be more precisely estimated (J. Wooldridge, 2012). Additionally, we compare the fixed effects estimates and random effects estimates using misspecification test. The results reject random effects application (Hausman, 1978). Thus pooled time series cross-sectional regression models with fixed effects estimators are employed.
To examine the linear MP relationship (hypothesis one) and potential non-linear ones, the following equations are presented.

\[ Y_{it} = \beta_1 OSTS_{it} + \lambda X_{it} + \gamma_t + \epsilon_{it}, \]  

(1)

\[ Y_{it} = \beta_2 OSTS_{it} + \beta_3 (OSTS_{it})^2 + \lambda X_{it} + \gamma_t + \epsilon_{it}, \]  

(2)

\[ Y_{it} = \beta_4 OSTS_{it} + \beta_5 (OSTS_{it})^2 + \beta_6 (OSTS_{it})^3 + \lambda X_{it} + \gamma_t + \epsilon_{it}, \]  

(3)

In equation 2 and 3 we add the square and cubic of OSTS to equation 1 in order to detect the potential curvilinear (U-shaped or inverted U-shaped) and S-shaped relationship between the multinationality and performance.

To examine the impact of location decision on MP relationship (hypothesis two), the following equation is introduced.

\[ Y_{it} = \beta_7 OSTS_{it}^{D/ad} + \beta_8 OSTS_{it}^{D/ieg} + \lambda X_{it} + \gamma_t + \epsilon_{it}. \]  

(4)

In equation 1, the key parameter \( \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \) and \( \beta_6 \) means the average change in performance caused by changes in multinationality. In equation 4, \( \beta_7 \) and \( \beta_8 \) measure the average change in performance resulting from changes in foreign investments in developed and developing nations, respectively.

To examine the effect of ownership structure (private ownership vs. state ownership) on the relationship between multinationality and performance (hypothesis three), we divided the full sample into two subsample and rerun equation 1 - 4. The first subsample consists of 2112 POEs. The second subsample consists of 146 SOEs. The difference between the numbers of two subsample is reasonable because SOEs, comprising about 6% of all firms, is the minority group in emerging markets. However, this minority group often plays an important role in an economy, particularly in the context of emerging
markets (Ralston et al., 2006).

**Dependent variable.** $Y_r$ refers to the firm performance. In this paper, it is measured by ROA (return on assets). In the last three decades, market-based variables$^4$ and accounting-based variables$^5$ have been used in MP studies. The market-based variables relate to market valuation of the firm according to long-term performance, which are excluded since they are not available for all emerging economies. The accounting-based variables tend to be relevant to the current size of firms and measure short-term performance. ROA has been widely used in previous multinationality-performance literature (Lu & Beamish, 2004; Qian et al., 2008; Ruigrok et al., 2007). This paper chooses ROA as a measure of firm performance. ROA is calculated as the ratio of net income to total assets (Lu & Beamish, 2004).

**Explanatory variables.** This paper use OSTS (overseas/total subsidiaries) as a proxy for multinationality (Yang et al., 2013). $OSTS_r$ is the number of overseas subsidiaries divided by total number of subsidiaries over the same period. Scholars use different measures$^6$ to calculate multinationality. The most common measure is FSTS (foreign/total sales). One problem of this measure is that foreign sales may arise through FDI, but also may through non-FDI (exporting, licensing) or some other form of arm’s length contract. Also, after exploiting the availability in Orbis data set, we found there is difficulty in identifying foreign sales subtracting exporting and licensing when using FSTS measure. Thus we exclude FSTS. In addition, FSTS and FATA (foreign/total assets) are highly correlated (Annavarjula et al., 2006). Thus FATA is also ruled out. Meanwhile, OSTS is another common measure of multinationality. This paper employs OSTS, which is feasible because Orbis dataset has the information
about the numbers and location of subsidiaries.

In order to capture the effects of different location choices of FDI on MP relationship, particularly considering the developed and developing countries (Berry, 2006; Pantzalis, 2001) defined by the (World Bank, 2013), we create two more variables, namely $OSTS_{it}^{D\text{ed}}$ and $OSTS_{it}^{D\text{ing}}$. $OSTS_{it}^{D\text{ed}}$ ($OSTS_{it}^{D\text{ing}}$) is defined as the number of foreign subsidiaries in developed (developing) nations divided by total number of subsidiaries. The developed (developing) nations are defined as high-income (middle- and low-income) countries in the World Bank (2013). To capture the moderating effect of state ownership on emerging market multinationals' FDI performance, we generate the variable $SOE$. It is defined as a dummy variable (Equal to 1 if the firm is SOE, equal to 0 if the firm is non-SOE). We use this variable to divide the full sample into two subsamples. The first subsample contains only POEs, The second subsample includes only SOEs. Then we compare the differences between empirical results of these two subsamples.

**Control variables.** Several variables that are known to affect business performance are controlled in the empirical models, represented by $X_{it}$ involving employment, leverage and sales per worker. Large firms tend to perform better than small firm. Small firm’s subsidiaries are more likely to exit the market (Li, 1995). We use employment as a proxy for firm size. Employment is defined as the number of employees (Zahra et al., 2000). Leverage is expected to have a negative impact on firm performance, since risky debt results in firm’s sub-optimal investment strategy that firm has to turn down value-adding investment opportunities (Myers, 1977). Leverage is here defined as the debt-to-asset ratio (Qian et al., 2008). Labour productivity is typically positively correlated with firm performance. Firms with high
labour productivity are more likely to have higher performance than firms with low labour productivity. In this paper sales per worker is defined as total sales divided by number of employees (Gaur et al., 2014). It measures on average how much sales each worker generates. We take the natural logarithm of employment and sales per worker in order to normalise their distribution. In addition, firm performance may also be affected by unobserved macroeconomic factors over the period. Therefore, we also control business cycle effects by adding year dummy variables (Yang et al., 2013).

4 RESULTS

4.1 Descriptive Statistics

In Table 1, the left panel is summary statistics, the right panel is correlation matrix. As shown in the left panel, regarding parent-subsidiary linkage information, on average, an emerging market multinationals has almost 52 percent subsidiaries locating in overseas countries. In terms of the location choice, it sets up 31 percent subsidiaries in overseas developed countries, 22 percent subsidiaries in overseas developing countries. Concerning the accounting information, on average, the return on assets is 6% for an emerging market MNE. An emerging market MNE has a labour force of about 10000 employees, a sales per worker of 1.24 million US dollars. With regard to the capital structure, 36% of a multinational’s assets is debt. As shown in the right panel, most of the correlation coefficients are low.

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Table 1 goes about here

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Table 2 shows the country distribution and mean for most key variables used in this paper, including
return on assets, SOE, OSTS, $\text{OSTS}^{\text{Dep}}$, $\text{OSTS}^{\text{Ding}}$, Employment, Leverage and Sales per worker. The firms from country grouping of BRICS\textsuperscript{7} (Graceffo, 2011) comprise 43.5% of the full sample. Unsurprisingly, the average of $\text{SOE}$ (the ratio of number of SOEs to total number of firms) is appears to be low at 6%. This is reasonable because most emerging markets have alleviate governments’ control on economies and experienced privatisation of some SOEs. Nowadays SOEs are minority group of firms but still play an important role on emerging economies (Ralston et al., 2006). China, Indonesia, Russia and South Africa are emerging countries that have higher $\text{SOE}$ ratios (more than 10%) than other countries.

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Table 2 goes about here

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Figure 2 offers a better understanding of our data coverage and FDI location choices. Our data cover 178 countries. 25 emerging countries have both parent and subsidiary information (in black). 153 countries have only subsidiary information (in light grey). Countries with no information are in blank. As we can see from Figure 2, most emerging markets locate in East Asia, South Asia, Southeast Asia, CEE (Central and Eastern Europe), South Africa and Latin America. The emerging markets’ FDIs flow into developed countries (mainly in North America, Western Europe, Oceania and Japan), developing countries (mainly in Central Asia, Middle East and Africa) and emerging countries.

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Figure 2 goes about here

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4.2 Regression Results

Table 3 shows the main results. Column 1, 2 and 3 are to test hypothesis 1. One column represents one model. Model 1 to 4 correspond to equation 1 to 4. F-statistics are all significant across all columns, indicating all models are significant. The number of observations is 6140. There are 2258 firms that have an average of 2.7 years observations. Adjust R-squared is 0.176 for all models, suggesting 17.6% of the firm performance’s (ROA) variance can be explained by these models. All control variables are significant and have the expected signs. The firm size measure (employment) has a significant positive coefficient, suggesting bigger firms perform better than the smaller firms, which is consistent with previous related literature. Sales per worker also has a significant positive sign, suggesting firm with high labour productivity perform better than firm with low labour productivity. However, leverage has a significant negative sign, suggesting high leverage is detrimental to firm performance. The key variable of our interest is the multinationality measure OSTS. Column 1 report a significant positive sign of OSTS, suggesting multinationality has significant positive impact on firm performance, which supports our first hypothesis that there is a relationship between multinationality and performance. This indicates that 10% increase in OSTS leads to 0.00184 increase of Return on Assets, this economic effect is not small when considering that a mean of Return on Assets is 0.06. We add squared and cubic term in Column 2 and 3, and none of them are significant, suggesting there is no quadratic and cubic relationship between multinationality and performance. Overall, Column 1, 2 and 3 jointly support the hypothesis 1 and confirm a relationship between multinationality and performance. In particular, this relationship is positive linear, which is consistent with many international business literature (Goerzen & Beamish, 2003; Kim et al., 1993; Ramirez-Aleson & Espitia-Escuer, 2001; Zahra et al., 2000).
Column 4, 5 and 6 are to test hypothesis 2. In Column 4, we divide OSTS into two parts, namely OSTS^{Ded} and OSTS^{Ding}. Only developed OSTS’s coefficients is significant and positive, while developing OSTS’s coefficients is not significant. We interpret that developed countries’ subsidiaries have a significant positive effect on firm performance. Thereby hypothesis 2 is supported by the evidence. We split the samples into emerging market multinationals in low-tech sectors and emerging market multinationals in hi-tech sectors, according to Eurostat (2014) classification of hi-tech manufacturing and knowledge-intensive service industry according to their technological intensity at NACE 2-digit level. Then we re-ran the estimations and report the estimates in columns 5 and 6. We find that emerging market multinationals which are in low-tech sectors achieve a positive return (0.03) through investing in other developing countries, although the size of effect is lower than the returns from investing in developed countries. This positive return was not found in hi-tech sectors. Technology is important for hi-tech firms to compete with other firms. When hi-tech emerging market multinationals invest in a distant country, the institution and culture differences reduce the extent of knowledge transfer within the emerging market multinationals, which lowers the returns from overseas investments.

Overall, based on the results from Table 3, we find evidence supporting hypotheses 1 and 2. There is a strong and positive linear multinationality-performance relationship. Emerging market multinationals can benefit from investing in overseas countries. When considering different location choice, particular developed and developing countries as FDI host countries, we find that developed country location
decisions have a positive impact on firm performance, while the latter has no significant or smaller impact on firm performance. These results are similar to Berry (2006) and Qian et al. (2008) finding. It is argued that firms investing in developing countries can enjoy a cheap labour force and natural resource (Berry, 2006). However, there resources might overlap the resource in emerging countries. Besides, developing countries are associated with high risk, particularly the political risk and economic risk. Since emerging market multinationals are still relatively younger and smaller than developed country MNEs, emerging market multinationals do not have much international experience and the ability to manage the high risks in investing in developing countries. So it is better to first go to learn in developed countries where there are low risks and strong institutional protection of investment and intellectual property.

Table 4 is to test hypothesis 3, whether ownership structure matters in MP relationship. We rerun equation 1 to 4, but using two subsamples. We divide the full sample into two subsamples by ownership type. One sample consists of POEs, another sample comprises SOEs. The reason for distinguishing between private ownership and state ownership is that both of them play an important role in emerging market. The government’s control used to play or is still playing a vital role in many emerging market economies, such as Russia, China and transition economies (such as Central and Eastern Europe countries), through market intervention or equity control in SOE. Besides, POE are young and fast growing in emerging markets.

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Table 4 goes about here

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Column 1 and 2 report the results for private owned emerging market multinationals. We again find that investing in foreign countries has a significant positive linear relationship with firm performance. There is no evidence of curvilinear and S-shaped MP relationship, we haven’t included these results for brevity. With regard to location decision, similar to the results in full sample, setting up subsidiaries in developed countries enhances firm’s performance, while investing in developing countries does not have significant effect on firm performance.

Column 3 and 4 present the results for state owned emerging market multinationals. The number of observations drop substantially, which may affect the statistical significance of the results. We find no significant MP relationship, no matter what shape (linear, curvilinear or S-shape) of relationship it is. For brevity, we just report the results for linear relationship. For SOEs, we find foreign presence in either developed or developing countries has no significant impact on firm performance. Overall, these results indicate that POEs perform better than SOEs in international market. Thus hypothesis 3 is also supported.

5. CONCLUSIONS

The extant knowledge on MP relationship has been limited to MNEs from developed economies (mainly US firms). Few papers test the MP relationship in emerging economy context. Also, although location advantage is emphasised in eclectic theory, surprisingly only few papers attempts to analyse the location decision of MNEs. Most MP literature disregards the huge differences between developed and developing countries and use an aggregate multinationality measure. In this paper, FDI Location decisions are emphasised. Moreover, ownership structure is rarely considered in previous MP studies, while ownership structure plays a vital role on internationalisation, particularly considering private
ownership and state ownership in emerging market context, since POEs and SOEs have been influenced by domestic institutional environment before they go abroad. Finally, most of the data used in extant MP papers are cross-sectional in nature. This prevents those papers from controlling unobserved firm fixed effects. This also does not allow researchers to analyse the dynamic nature of the multinationality over time.

These aforementioned research gaps are filled in this paper by using a time series cross-sectional data from a large sample that includes 2258 multinationals from 25 emerging markets over a period from 2004 to 2013. Our results support all three hypotheses, contributing to the existing MP literature, emphasising the importance of FDI location decision and highlighting the effect of ownership structure.

First, our findings support the first hypothesis and find a significant positive linear MP relationship for emerging economy firms. Second, we find that emerging market multinationals' FDI activities in developed economies have a significant positive effect on firm performance. This is to some extent consistent with the works of Berry (2006) and Qian et al. (2008). Third, we find that POEs perform better than SOEs when going abroad.

Though emerging market multinationals do not have strong country-of-origin effects and competitive technological capability (e.g., patent, trademark and technological know-how), they have their own advantages such as acquisition of foreign strategic assets, diversified business group, government support, relational assets and the implication of catch-up strategy. Emerging market multinationals’ internationalisation process is very quick (Mathews, 2006). Thus emerging market multinationals overcome the liability of foreignness and realise the potential from internationalisation quickly. Emerging market multinationals are suggested to invest abroad to boost their performance, enjoying the
large benefits that outweigh the costs of multinationality.

Location choices are important concerns for emerging market multinationals. When investing in developed countries, emerging market multinationals can learn and develop their own technological and marketing capability under strong institutional protection of intellectual property and investment, which translated into the improved performance of emerging market multinationals. Diversifying into various developing countries can provide emerging market multinationals with cheap inputs (Berry, 2006) (these cheap inputs may already exist in emerging countries themselves). However, these advantages are offset by disadvantages from high risk (Berry, 2006) and huge differences among developing countries in terms of culture and political systems (Qian et al., 2008), making investing in developed countries a better location choice. Hence, regarding the strategy for FDI location, emerging market multinationals are advised to set up overseas subsidiaries in developed countries. Additionally, we find that emerging market multinationals in low-tech sectors can benefit from investing in other developing countries. The extent of knowledge transfer within the emerging market multinationals is small, which lowers the returns from overseas investments for emerging market multinationals in hi-tech sectors.

Ownership structure can influence emerging market multinationals internationals’ performance. It is important to compare private and state ownership in emerging market context, since POSs and SOEs are affected by home institutional environment before they expand into foreign countries. POEs perform better than SOEs in foreign markets. This is because, compared with counterpart SOEs, POEs are more active in acquiring strategic assets (Cui et al., 2014), more efficient in allocating resources (Ju & Zhao, 2009) and quicker in responding to overseas market opportunities (Peng et al., 2008). This suggests private ownership is the better ownership structure in internationalisation of emerging market
multinationals. In terms of location choice strategy for POEs, investment in developed countries can significantly improve firm performance. We believe that it is because POEs are facing unfavourable resource allocation environment in domestic market, where SOEs can easily obtain bank loan with below-the-market rate from state-owned banks while POEs cannot. This adverse competitive environment prompts POEs to go abroad to find financial resources. Developed countries are the better location choice because of their well-established financial and knowledge market. Thus the better location choice is the developed countries. Additionally, SOEs are suggested not to invest in either developing or developed countries since they cannot make a significant profit from investing abroad.

Nevertheless, there are some limitations of this paper. FDI is the strategic decision of firms, so the endogenous issue should be ruled out or alleviated. Perhaps better-performed firms are more likely to go abroad and can afford to establish overseas subsidiaries, suggesting there is some form of sample selection bias. Also, additional robustness checks would be useful.

**Endnotes**

1 OSTS is the number of overseas subsidiaries divided by total number of subsidiaries. More detailed discussion and explanation are provided in the empirical specification.
2 OSTS$^{D}$ (OSTS$^{D^{ing}}$) is the number of overseas subsidiaries locating in developed (developing) nations divided by total number of subsidiaries. More detailed discussion and explanation are provided in the empirical specification.
3 The 25 emerging countries included in this paper are a country group defined by IMF (International Monetary Fund).
4 E.g., Tobin’s Q, Excess Q,
5 E.g., ROE - return on equity, ROA - return on assets, ROS
7 BRICS is a major emerging economies group that includes Brazil, Russia, India, China and South Africa.
FIGURES

Figure 1: Theoretical Framework of the Role of Location Choice and Ownership Structure in the Multinationality-Performance Relationship

Note: H1, H2 and H3 refer to hypothesis 1, 2 and 3 respectively.

Control variables
Firm characteristics:
- Firm size
- Leverage
- Capital intensity
Country characteristics:
- GDP per capita
- GDP growth
Business cycle effects
Figure 2: Country coverage

Note: Our data cover 178 countries. We have 25 countries with both parent and subsidiary information (in black). We have 153 countries with only subsidiary information (in light grey). Countries with no information are in blank.
### Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
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<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
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<td>0.09</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>OSTS</td>
<td>0.52</td>
<td>0.20</td>
<td>0.06***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>OSTS_{D}^{ed}</td>
<td>0.31</td>
<td>0.25</td>
<td>-0.01</td>
<td>0.41***</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>OSTS_{D}^{ing}</td>
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<td>0.06***</td>
<td>0.38***</td>
<td>-0.69***</td>
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<td>0.01</td>
<td>0.06***</td>
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<td>Sales p. worker</td>
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<td>12200000.00</td>
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<td>-0.03*</td>
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<td>-0.02*</td>
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<td></td>
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<td>8373.16</td>
<td>4685.27</td>
<td>0.02*</td>
<td>0.00</td>
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<td>GDP growth</td>
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<td>0.03**</td>
<td>-0.01</td>
<td>-0.46***</td>
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</table>

Note: There are 2258 emerging market multinationals and 6140 observations. ROA is return on assets using net income, “OSTS” is the number of overseas subsidiaries divided by total number of subsidiaries. OSTS_{D}^{ed} (OSTS_{D}^{ing}) is the number of overseas subsidiaries locating in developed (developing) nations divided by total number of subsidiaries. “Employment” is the number of employees. “Leverage” is the debt to assets ratio. “Sales p. worker” is sales per worker, measured by total sales to number of employees. “GDP p. capita” is GDP per capita. All monetary variables are in millions of US dollars. Significance levels: *0.1; **0.05; ***0.01
Table 2: Number of firms and key variables by emerging market multinationals’ home country

<table>
<thead>
<tr>
<th>Country</th>
<th>N</th>
<th>SOE</th>
<th>ROA</th>
<th>OSTS</th>
<th>OSTS\textsuperscript{Ded}</th>
<th>OSTS\textsuperscript{Ding}</th>
<th>Employment</th>
<th>Leverage</th>
<th>Sales p. worker</th>
<th>GDP p. capita</th>
<th>GDP growth</th>
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<td>13500000.00</td>
<td>12921.43</td>
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<td>0.26</td>
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<td>0.60</td>
<td>0.29</td>
<td>0.31</td>
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<td>0.38</td>
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<td>2170.92</td>
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<td>0.06</td>
<td>0.52</td>
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<td>0.18</td>
<td>1866.17</td>
<td>0.30</td>
<td>420189.91</td>
<td>12150.42</td>
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<td>0.27</td>
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<td>0.04</td>
<td>0.52</td>
<td>0.35</td>
<td>0.17</td>
<td>9289.70</td>
<td>0.45</td>
<td>2510000.00</td>
<td>9776.12</td>
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<td>0.06</td>
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<td>0.17</td>
<td>5356.46</td>
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<td>3060.04</td>
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<td>0.33</td>
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<td>32000000.00</td>
<td>8329.65</td>
<td>8.75</td>
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</table>

Note: N is the number of firms. SOE refers to the ratio of number of SOEs to total number of firms. ROA is return on assets using net income, “OSTS” is the number of overseas subsidiaries divided by total number of subsidiaries. OSTS\textsuperscript{Ded} (OSTS\textsuperscript{Ding}) is the number of overseas subsidiaries locating in developed (developing) nations divided by total number of subsidiaries. “Employment” is the number of employees. “Leverage” is the debt to assets ratio. “Sales p. worker” is sales per worker, measured by total sales to number of employees. “GDP p. capita” is GDP per capita. All monetary variables are in millions of US dollars.
Table 3: Multinationality and Performance; the Role of Location Choice

<table>
<thead>
<tr>
<th></th>
<th>All Emerging Multinationals</th>
<th></th>
<th>Emerging Multinationals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td>(6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSTS</td>
<td>0.0178*</td>
<td>0.0036</td>
<td>-0.0060</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.011)</td>
<td>(0.012)</td>
<td></td>
</tr>
<tr>
<td>OSTS^2</td>
<td>0.0123*</td>
<td>0.0903</td>
<td>(0.057)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSTS^3</td>
<td>-0.0668</td>
<td></td>
<td>(0.049)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSTS^{Ded}</td>
<td></td>
<td>0.0286**</td>
<td>0.0487***</td>
<td>-0.0008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.011)</td>
<td>(0.019)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>OSTS^{Ding}</td>
<td></td>
<td>0.0073</td>
<td>0.0325**</td>
<td>-0.0300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.011)</td>
<td>(0.019)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>Employment</td>
<td>0.0180***</td>
<td>0.0182***</td>
<td>0.0184***</td>
<td>0.0181***</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.1715***</td>
<td>-0.1711***</td>
<td>-0.1711***</td>
<td>-0.1715***</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.014)</td>
<td>(0.014)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>Sales per worker</td>
<td>0.0217***</td>
<td>0.0219***</td>
<td>0.0221***</td>
<td>0.0219***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>0.0309***</td>
<td>0.0303***</td>
<td>0.0296***</td>
<td>0.0301***</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.010)</td>
</tr>
<tr>
<td>GDP growth</td>
<td>0.0029***</td>
<td>0.0029***</td>
<td>0.0029***</td>
<td>0.0029***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Adj R-squared</td>
<td>0.176</td>
<td>0.176</td>
<td>0.177</td>
<td>0.176</td>
</tr>
<tr>
<td>No. observation</td>
<td>6140</td>
<td>6140</td>
<td>6140</td>
<td>6140</td>
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<tr>
<td>F statistics</td>
<td>24.392</td>
<td>23.074</td>
<td>23.712</td>
<td>23.172</td>
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</tbody>
</table>

Note: ROA (return on assets using net income) is the dependent variable, “OSTS” is the number of overseas subsidiaries divided by total number of subsidiaries. OSTS^{Ded} (OSTS^{Ding}) is the number of overseas subsidiaries locating in developed (developing) nations divided by total number of subsidiaries. “Employment” is the natural logarithm of the number of employees. “Leverage” is the debt to assets ratio. “Sales per worker” is sales per worker, measured by natural logarithm of the ratio of total sales to number of employees. Columns 1-4 include full sample. Columns 5 includes emerging market multinationals in low-tech sectors. Column 6 includes emerging market multinationals in hi-tech sectors. All monetary variables are in millions of US dollars. Values in parentheses are robust standard errors. Significance levels: *0.1; **0.05; ***0.01.
Table 4: The Role of Ownership Structure

<table>
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<tr>
<th></th>
<th>Private Owned Enterprises</th>
<th>State Owned Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>OSTS</strong></td>
<td>0.0186*</td>
<td>0.0182</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.019)</td>
</tr>
<tr>
<td><strong>OSTS^{Ded}</strong></td>
<td>0.0305**</td>
<td>0.0268</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.021)</td>
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<tr>
<td><strong>OSTS^{Ding}</strong></td>
<td>0.0082</td>
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</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td></td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td>0.0186***</td>
<td>0.0186***</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
</tr>
<tr>
<td><strong>Leverage</strong></td>
<td>-0.1728***</td>
<td>-0.1730***</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.015)</td>
</tr>
<tr>
<td><strong>Sales per worker</strong></td>
<td>0.0216***</td>
<td>0.0218***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
</tr>
<tr>
<td><strong>GDP per capita</strong></td>
<td>0.0317***</td>
<td>0.0309***</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.010)</td>
</tr>
<tr>
<td><strong>GDP growth</strong></td>
<td>0.0030***</td>
<td>0.0031***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td><strong>Adj R-squared</strong></td>
<td>0.176</td>
<td>0.176</td>
</tr>
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<tr>
<td><strong>F statistics</strong></td>
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<td>21.637</td>
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</table>

Note: ROA (return on assets using net income) is the dependent variable, “OSTS” is the number of overseas subsidiaries divided by total number of subsidiaries. **OSTS^{Ded} (OSTS^{Ding})** is the number of overseas subsidiaries locating in developed (developing) nations divided by total number of subsidiaries. “Employment” is the natural logarithm of the number of employees. “Leverage” is the debt to assets ratio. “Sales per worker” is sales per worker, measured by natural logarithm of the ratio of total sales to number of employees. Columns 1 and 2 include POEs. Columns 3 and 4 include SOEs. All monetary variables are in millions of US dollars. Values in parentheses are robust standard errors. Significance levels: *0.1; **0.05; ***0.01.
References


