Interactive paper

Choosing global cities to overcome the liability of foreignness? MNEs' regional headquarters location strategy: the effects of home-host country cultural distance and within-country connectivity differences between global cities and local cities

Abstract

We develop a theoretical framework that integrates home-host country cultural distance with within-country global connectivity differences between global cities and local cities, and firm-specific characteristics to address multinational enterprises (MNEs)' regional headquarters (RHQs) location strategy. By studying a sample of 617 regional headquarters' location choices, we demonstrate that MNEs adopt a global city strategy to bridge the home-host country cultural distance. Our results show that cultural distance and within-country connectivity differences between global cities and local cities are important drivers behind RHQ global city location strategy, and they mutually reinforce each other's positive effects.

Keywords: the liability of foreignness; global cities; RHQ location strategy; global cities' connectivity

Introduction

International business researchers have long acknowledged the costs incurred to multinational firms, while not to domestic firms, due to being foreign. These costs arising from unfamiliarity with host-country environments and a lack of embeddedness in the local environment, are termed as *costs of doing business abroad* (CDBA) or *the liability of foreignness* (LOF) (Hymer, 1976; Kindleberger, 1969; Zaheer, 1995). While these scholars view the liability of foreignness equal to CDBA that includes both economic and social costs, Eden and Miller (2001) take a different perspective and argue that LOF should be referred to only those social costs arising from unfamiliarity with host country or discrimination. A number of scholars have stressed cultural distance as the important source of liability of foreignness (Calhoun, 2002; Casson, 1979; Kogut and Singh, 1988; Mezias et al., 2002; Zaheer and Mosakowski, 1997). In this paper, we adopt the perspective of Eden and Miller (2001) on the liability of foreignness and argue that cultural distance is the major cause to unfamiliarity with foreign environments and uncertainty and thus a key driver behind the liability of foreignness.

The LOF literature always assumes that LOF is homogenous within a nation (same culture, language, legal system, etc.), while largely ignoring the variation of LOF across locations within a host country. Recent studies have paid attention to the heterogeneity of LOF within countries and argue that varying locations within a host country may directly lead to different levels of LOF (E.g. Mezias, 2002a; 2002b; Nachum; 2003; 2010). In particular, a few studies have pointed out that LOF in global cities is either low or does not exist (Goerzen, Asmussen and Nielsen., 2013; Nachum, 2003; 2010). This implies that multinational firms can take a global city location strategy to overcome the liability of foreignness.

The strategies pursued by multinational firms to overcome the liability of foreignness have been a hot topic in the international business literature (Barney, 1991; Buckley and Casson, 1976; Caves, 1982; Dunning, 1977; Hennart, 1982; Wernerfelt, 1984; Zaheer, 1995). The literature has focused on using firm-specific advantages such as intangible assets, managerial capabilities, learning and experience to

tackle the liability of foreignness problem and compete with domestic firms (e.g. Hymer, 1976; Zaheer, 1995). There are very few studies pointing out location strategy to overcome the liability of foreignness. One exception is the study of Goerzen et al. (2013) which examines how firm-specific characteristics: investment motives, proprietary capabilities, and business strategy affect MNEs' location choice between global cities and elsewhere. The authors argue that global cities' distinctive characteristics: global connectivity, cosmopolitanism, and the agglomeration of advanced producer service firms can help MNEs reduce LOF.

In this paper, we acknowledge within-country LOF variations across cities and focus on MNEs' regional headquarters location choices: whether to use a global city strategy or a local city strategy. We argue that RHQ is appropriate for our study framework, as HQs always concentrate in cities. A regional headquarters is defined in the literature as 'a business establishment that has control and management responsibilities for the operation of one or more other subsidiaries or affiliated companies located in the same host region' (Yeung et al., 2001) or 'an administratively focused entity which dedicates all of its time and resources to performing regional headquarters roles' (Alfoldi, Clegg and McMaughey, 2012). The establishment of regional headquarters has risen as a solution to the trade- off between global integration and local responsiveness (Prahalad and Doz, 1987), by acting as a bridge between the corporate HQ and the host region. The location choice of regional headquarters has received little attention in the literature, although a few studies do argue that HQs are likely to be located in cities (Bel and Fageda, 2002; Klier and Testa, 2002; Davis and Henderson., 2008; Yeung et al, 2001). E.g. Klier and Testa (2002) argue that large metropolitan areas have a comparative advantage in hosting headquarters. Davis and Henderson (2008) state that companies locate their headquarters in metropolitan cities because these cities can provide a large scope of business service suppliers. Yeung et al. (2001) argue that, with respect to location preferences, recent developments tend to favour the location of regional headquarters in world cities that are geographical controlling points of the global economy. However, there are also some RHQs being located in non-global cities. The literature lacks the study of revealing the drivers of RHQ location choice between global cities and local cities within a host country.

In this paper, we try to fill this literature gap to examine the drivers of RHQ location choice between global cities and local cites and extend Goerzen at al. (2013)'s analysis by developing a theoretical framework that integrates three types of factors influencing the liability of foreignness and ultimately impacting the RHQ location strategy: home-host country cultural distance, global connectivity differences between global cities and local cities within a host country, and firm-specific characteristics. Specifically, we examine under what circumstances an MNE prefers a global city rather than a local city once the MNE has chosen a host country to establish its RHQ. We focus on the effects of the first two types of factors while controlling for the third type of factors.

Our study differs from the study of Goerzen at al. (2013) in several aspects. First, we demonstrate that home-host country cultural distance still matters for MNEs' location strategy in order to overcome LOF, while Goerzen at al. (2013) ignore the cultural distance effects. Second, we examine MNEs' location choices between global cities and local cities within host countries, while Goerzen at al. (2013) examine MNEs' location choices between global cities and elsewhere on a global scale. Third, we take into account the effects of location-specific characteristics differences in the host country, combined with the effects of firm-specific characteristics, while Goerzen at al. (2013) take into account only firm-specific characteristics.

We contribute to the economic geography literature and the international business literature in several points. First, we provide new insights for understanding the relationship between the liability of foreignness and MNEs' location strategy by developing a new theoretical framework that integrates the effects of cultural distance and within-country location differences together with firm-specific characteristics. Second, we demonstrate that MNEs adopt a global city location strategy to overcome LOF, and cultural distance and connectivity differences mutually reinforce each other's positive effects on a global city location strategy.

Theory and Hypotheses

Cultural distance, the liability of foreignness and global cities

Numerous studies in the international business literature have claimed that home-host country distance significantly influences the multinational firms' decisions of where, when and how to invest abroad (e.g. Johanson and Vahlne, 1977; Kogut and Singh, 1988; Chemawat, 2001). Four dimensions of distance among countries have been identified, namely, geographic distance, cultural distance, administrative or political distance and economic distance (Berry, Guillen and Zhou, 2010; Chemawat, 2001)[1]. Each dimension of distance results in a component of *costs of doing business abroad* (CDBA). CDBA arises from geography distance due to transportation costs and coordination costs across distance and time; from cultural distance due to foreign countries' different social norms, values, languages, customer preference, etc.; from administrative or political distance due to a lack of legitimacy of foreign firms and barriers set by local governments; from economic distance due to complexity of doing business abroad.

International business literature has also developed a concept of the so called 'the liability of foreignness' (LOF). LOF refers to disadvantages that foreign firms encounter, while local firms do not, which is originally coined by Hymer (1976) and termed by Zhaeer (1995). Zhaeer (1995) argues that LOF is associated with spatial distance, a lack of experience and roots in local environments and domestic restrictions. Similarly, three kinds of differences are observed to lead to LOF: cultural and language differences, economic and political differences and spatial difference (Matsuo, 2000). While Zaheer (1995) and Matsuo (2000)'s concept of LOF is similar to CDBA, Eden and Miller (2001) contend that LOF should be referred to only those social costs arising from unfamiliarity with host country or discrimination. Further, Eden and Miller (2004) argue that CDBA includes both economic and social costs, while LOF refers to only social costs of doing business abroad.

Cultural distance refers to differences in social norms, beliefs and values between two countries (Hofstede, 1980; Kogut and Singh, 1988). Hofstede (1980) argues that national culture consists of four dimensions: uncertainty avoidance, power distance, individualism, and masculinity. Some cultural features are easily perceived and understood such as languages, collectivism or individualism. Others are much more subtle. Social norms with unspoken principles are often unnoticeable, although people who abide by them in their everyday lives (Chemawat, 2001). Thus, culture distance has a tacit nature and the disadvantages caused by cultural distance has a long time effect as it takes some time for a firm to completely learn and adapt to it, while other dimensions of distance can be anticipated and overcome easily by a fixed or one-time investment by multinational firms.

As cultural distance increases information asymmetry between home and host countries, and the uncertainty of firms' internationalization activities, scholars have found that cultural distance is negatively related to multinational firms' commitments in foreign environments in terms of entry timing and entry mode (e.g. Johanson and Vahlne, 1977; Chang and Rosenzweig, 2001; Kogut and Singh, 1988; Shenkar, 2001). The well-known Uppsala model proposed by Johanson and Vahlne (1977) explains that firms invest abroad in an incremental manner: firms first invest in culturally close countries, and then move gradually to more culturally distant countries. A number of scholars in international business have stressed cultural distance as the important source of liability of foreignness (Calhoun, 2002; Casson, 1979; Kogut and Singh, 1988; Mezias et al., 2002; Zaheer and Mosakowski, 1997). Casson (1979) implies that uncertainty in doing business in a foreign country involves a lack of understanding of local culture. Zaheer and Mosakowski (1997) suggest that the liability of foreignness is 'a function of the social and cultural barriers'. Kogut and Singh (1988) use cultural distance to link with the notion of the liability of foreignness to examine multinational firms' entry mode. Calhoun (2002) argues that cultural difference

[1] A recent study developed the concept of institutional distance which is similar to administrative or political distance in terms of normative, regulatory and cognitive aspects (Ionascu, Meyer and Estrin, 2004).

drives external and internal sources of the liability of foreignness. In the extreme case, Mezias et al. (2002) use national culture distance as a proxy for liabilities of foreignness. Thus, we argue that cultural distance is a key driver behind the liability of foreignness.

The liability of foreignness assumption in the theory of multinational enterprise (Buckley and Casson, 1976; Caves, 1982; Dunning, 1977; Hennart, 1982) has inspired researchers to study under what circumstances firms can overcome the liability of foreignness. Most attention in this area has been paid to the mechanisms that firm-specific advantages, resources and capabilities are served to overcome the liability of foreignness, drawing on the views of Eclectic Paradigm (Dunning, 1977), the transaction cost theory (Hennart, 1982) and the resource-based view of strategy (Barney, 1991; Buckley and Casson, 1976; Caves, 1982; Dunning, 1977; Hennart, 1982; Wernerfelt, 1984; Zaheer, 1995). Empirical findings have confirmed the important role of firm-specific advantages and capabilities in overcoming the liability of foreignness (Nachum, 2003; Zaheer, 1995). Nachum (2003) argues that both firm-specific advantages and multi-nationality help overcome the liability of foreignness, while Zaheer (1995) finds that 'firm-specific advantages may be a more effective way for MNEs to overcome the liability of foreignness than imitation of local practices'. Also some scholars have argued that learning can overcome the liability of foreignness (Kogut and Zander; 1996). However, these studies have overlooked strategic locations to be served as an instrument for overcoming the liability of foreignness. Also, most of the studies in the liability of foreignness literature have assumed that the liability of foreignness is evenly distributed within a host country, ignoring within-country location heterogeneity and overlooking the role of distinctive locations in overcoming the liability of foreignness. Only a few recent studies find that location heterogeneity is associated with different levels of LOF within a country (Mezias, 2002b; Nachum, 2003). E.g. Mezias (2002b) finds state-level heterogeneity with regard to the liability of foreignness in US via the lens of labor lawsuit judgements. Nachum (2003) finds that the liability of foreignness does not exist in the global city of London.

In this paper, we argue that within-country location heterogeneity can lead to different levels of the liability of foreignness. In particular, we focus on the role of global cities in overcoming the liability of foreignness. As early as 1915, Patrick Geddes first coined the term 'world cities' and defined them as 'those places where a disproportionate amount of the world's business is conducted'(Geddes, 1915). Since 1960s, various scholars have developed the world/global city concept. E.g. Hall (1966) defines world cities as major centers of political power, mobility, professional talent, information and culture, as well as great centers of population that contain a 'significant proportion of the richest members of the community' (Hall, 1966). Friedmann (1986) and Sassen (1996) define global cities as command and control centres of the world economy, where multinational firms' headquarters are located (Friedmann, 1986; Sassen 1996; King, 1990). More recently, global cites are claimed as the crucial elements of today's worldwide change: globalization and urbanization (Acuto, 2010) and they represent central points in international business and serve as hubs of global integration (Sassen, 2001), 'strategic loci where globalizing forces and flows are rearticulated'(Acuto, 2010) and 'the strategic sites of globalization, act as central places, gateways for global and regional flows and sources of specialised services for the wider public, beyond their own localities'(Acuto, 2011). Goerzen at al. (2013) postulate that global cities can help MNEs overcome the liability of foreignness thanks to their distinctive features- global connectivity, cosmopolitanism and agglomeration of producer service firms, through the mechanisms of reducing complexity, uncertainty and discrimination in doing business in a foreign country.

In consistent with Goerzen et al. (2013), we posit that locating foreign investments in global cites is an effective location strategy for firms to overcome the liability of foreignness in their internationalization process. Empirically, we examine under what circumstances that an MNE prefers a global city rather than a local city once the MNE has chosen a host country to establish its RHQ.

Global cities' connectivity

There is a recent consensus among scholars that the most striking feature of global cities is global cities' connectivity in the world city network (Acuto, 2011; Derudder et al., 2010, Doel and Hubbard, 2002, Beaverstock et al., 2002; Friedmann, 1986; Sassen, 1996; 2001; Taylor, 2001). The traditional view

that city connectivity is formed by conventional physical infrastructure such as airports through which material flows of people and goods can be transported has been outdated (Batty and Longley, 1994). The recent global cities' connectivity view is far beyond the connectedness created by physical flows of people or goods. Instead, scholars have adopted a relational view on the world city network (WCN) and global cities' connectivity. The 'world city network' is coined by Friedmann (1986) and Taylor (2001) who argue that global cities organize and regulate worldwide, regional, and national flows through WCN. Global cities' connectivity has important implications for the success of a global city. E.g. Beaverstock et al. (2002) argue that the success of a global city depends on its location and the linkage between the flows of capital, human resources and knowledge.

Global cities' linkage pattern is argued to be formed through corporate firms' activities in which producer service firms play the crucial role in recent studies (Beaverstock, et al., 2002; Derudder et al., 2013; Doel and Hubbard, 2002; Taylor, 2001). Globalization and World Cities Research Network (GaWC) group has pioneered in the global city connectivity research area. GaWC has adopted a relational approach to quantitatively measure the connectivity of global cities by drawing on Sassen's (1991) seminal work which regards 'global city' as the prime production site and market for financial, professional and creative services for corporate business. Advanced producer service firms often set multiple offices in a large number of cities around the world to offer a seamless service to their corporate clients. Each firm has its own strategy in terms of the location and number of cities in its office network, as well as the size and functions of individual offices (Derudder et al., 2013). Thus these intercity intra-firm office relations through servicing practices consist of flows of information and knowledge which represent the connectivity of global cities (Taylor, 2001; 2004; Derudder et al., 2013). Accordingly, global cities' connectivity is measured by GaWC as the weighted number of linkages between the focal city and all other world cities created by the world's top producer service firms through their intra-firm global networks of offices (Tayor, 2001). The datasets generated by GaWC on global cities' connectivity have been the only references for many years used by many publications such as the Mori Memorial Foundation's Global Power City Index, the Mastercard 'Worldwide Centers of Commerce' ranking, Price Waterhouse and Coopers 'Cities of Opportunity' annual reports, and Knight Frank 'Wealth Report' in collaboration with Citi Bank (Acuto, 2011).

Nevertheless, it is necessary to acknowledge that the approach to measuring global cities' connectivity solely based on producer service intra-firm office linkages has its limitations. 'The GaWC method of measuring the world city network produces theoretically informed, empirically robust assessments of cities in globalization. But it measures just one process in city development: the servicing of global capital'(Taylor et al., 2008). Other non-service forces that connect firms and cities on the national, regional and global scale may shape a different type of city network such as global production networks (GPN) (Mans, 2014). Similarly, Acuto (2010) argue that 'lines of communication and global connectivity are powerful structures that define the reticulated geography of world cities. Telecommunications and optic-fiber networks, for example, are unequivocally pivotal in designing global linkages'. Tranos, Kourtit and Nijkamp (2014) show that digital connectivity formed through modern digital infrastructure leads to other linkage patterns among world cities.

In this paper, as we focus on the location strategy of regional headquarters whose location strategy is mostly pertaining to producer service connectivity as headquarters need to purchase producer services and rely on the service connectivity to gain or disseminate information, and access non-localized resources, we draw on the concept of producer service connectivity to build up our theoretical framework and empirical analysis.

Hypotheses

Cultural distance and RHQ location strategy

As discussed above, a larger home-host country cultural distance leads to a larger liability of foreignness. The cosmopolitan environments of global cities host a large number of cultural amenities, and immigrants and expatriates with diversified cultural backgrounds which make global cities bridge the

cultural distance between home and host countries. Thus, cultural distance is of less importance in global cities than in non-global cities (Nachum and Wymbs., 2005). When the home-host country cultural distance to an MNE is larger, the MNE will have a larger LOF to encounter. The issue of the liability of foreignness is more likely to be the major concern of the firm. Subsequently, the firm will attempt to reduce the LOF by adopting the location strategy of locating its RHQ in a global city rather than a local city. Therefore, we propose that the importance of locating a regional headquarters in a global city will be higher when the cross-national cultural distance between the home and host country is larger. This leads to the following hypothesis:

Hypothesis 1*: The larger the cultural distance between the home and host country, the more likely a multinational firm locates its RHQ in a global city rather than a local city after choosing the host country.*

Global connectivity differences between global cities and local cities within a host country and RHQ location strategy

It is the differences between global cities and local cities within a host country per se that make a multinational firm adopt a location strategy to set up its RHQ in a global city rather than a local city after it has decided to invest in the host country. Some of the differences such as different levels of economic development and the labour force costs can be obviously noticed, while others such as the connectivity differences are not so straightforward. In this paper, we control for economic development differences and focus on the connectivity differences between global cities and local cities, as global connectivity is the key distinctive feature of global cities pertaining to RHQ location strategy.

When global cities' connectivity is significantly different from that of local cities, by locating their RHQs in global cities, firms can enjoy lower levels of LOF and get easier access to information and knowledge from distant, but still integrated locations around the world. In contrast, if firms locate their RHQs in local cities, they will incur higher levels of and sometimes unbearable LOF. This is the case in China whose global cities are highly advanced, while local cities lag behind. Beijing and Shanghai are well-known global cities with higher level of global connectivity, compared with other cities in China. Thus firms place their RHQs in Beijing or Shanghai will experience much lower LOF than other cities in China. This explains that Beijing and Shanghai host a disproportionate share of multinational firms' offices in China. When the global connectivity differences between global cites and local cities is low, multinational firms will incur similar levels of LOF in global cities and local cities, thus they will be indifferent to adopting a global city strategy or not, once they have decided the host country. This is the case in US or a few European countries whose global cities and local cities both have a high level of connectivity such that global cities' distinction is moderate. Thus, we posit that the connectivity differences between global cities and local cities within a host country are required to be big enough to drive firms to go to global cities.

Hypothesis 2*: The larger the global connectivity differences between global cities and local cities within a host country, the more likely a multinational firm locates its RHQ in a global city rather than a local city after choosing the host country.*

The moderating effects of connectivity differences between global cities and local cities

When a firm from a culturally distant country chooses to set its RHQ in a country whose global cities are significantly different from local cities in terms of global connectivity, it is more likely to choose to locate its RHQ in a global city, as the connectivity superiority of global cities can help the firm to bridge the cultural distance between the home and host country. In other words, the connectivity differences positively moderate the effect of cultural distance on the location decision between global cities and local cities. This leads to the following hypothesis:

Hypothesis 4*: The positive effect of cultural distance on the propensity of multinational firms choosing to locate their RHQs in global cities over local cities is more pronounced in host countries that have a larger global connectivity difference between global cities and local cities.*

The moderating effects of cultural distance

When a firm chooses to set its RHQ in a culturally distant country, it is more likely that LOF becomes its primary concern for this investment. In order to reduce or overcome LOF, the firm is more motivated to choose a location that can resolve this concern. Thus, the superiority of global cities in terms of global connectivity is more valued by the firm and drives the firm to choose to locate its RHQ in a global city rather than a local city to benefit from global cities' connectivity. In other words, cultural distance positively moderates the effect of global connectivity differences between global cities and local cities. This leads to the following hypothesis:

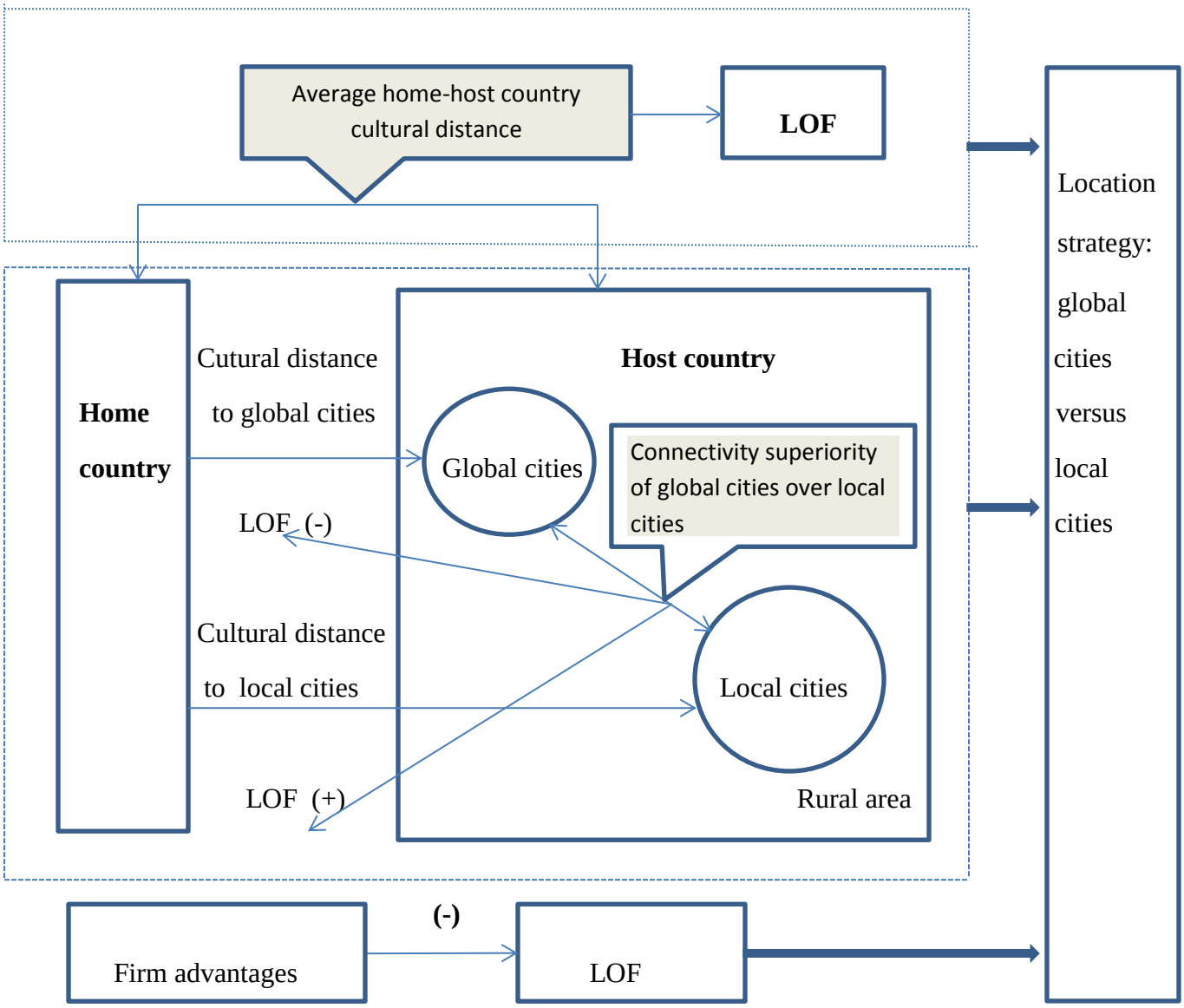
Hypothesis 3*: The positive effect of global connectivity differences between global cities and local cities on the propensity of a multinational firm choosing to locate its RHQs in a global city rather than a local city is more pronounced in culturally distant host countries.*

The theoretical framework of this paper

Figure 1 illustrates the theoretical framework developed in this paper. LOF levels determine MNEs' location decision of choosing a global city versus a local city within a host country, which is affected by three types of factors: the home-host country cultural distance, the global connectivity differences between global cities and local cities in the host country, and firm-specific advantages and capabilities. In this paper, we stress the first two types of factors while controlling for the third type of factors. The home-host country cultural distance directly affects LOF and drives firms to go to global cities in order to benefit from global cities' superiority to reduce the levels of LOF. As illustrated, global connectivity differences between global cities and local cities within a host country can reduce the levels of LOF in global cities, while increase the levels of LOF in local cities. Thus, the greater the global connectivity differences between global cities and local cities, the more likely a firm to invest in global cities.

In addition to the direct effects of home-host country cultural distance and connectivity differences between global cities and local cities within a host country, we argue that moderating effects exist in the relationships. Specifically, we posit that cultural distance and connectivity differences mutually reinforce each other's positive effects on an MNE' RHQ global city location strategy.

Figure 1. The theoretical framework: home-host country cultural distance, the liability of foreignness and MNEs' location strategy for RHQs: global cities versus local cities



DATA, VARIABLES AND METHODS

Our analysis draws on an extensive database on cross-border greenfield investments (FDI Markets) compiled by Financial Times Ltd. The dataset records more than 120,000 cross-border investment projects between 2003 and early 2012, covering activities such as HQs, R&D, manufacturing, and sales & service. The dataset identifies the investing firm, the type of project, the home and host country, and the host city and the sector in which the investing firm operates. The dataset also contains a short text describing the characteristics of the investment project. From these texts, we coded the type and

regional mandate of headquarters investment projects. For our study, we are interested in regional headquarters covering a wider territory rather than national headquarters projects. In total we identified 2510 RHQ investments.

We identity a host city as a global city or a local city according to the global city list ranked by the Mastercard, an authoritative source on city research (Mastercard, 2008). Matercard ranked 75 global cities based on seven dimensions of city characteristics such as legal and political framework, economic stability, ease of doing business, financial flow, business center, knowledge creation and information flow and livability. Data constraints did not allow us to include three of these cities: Beirut, Chengdu and Chongqing.

A second source of firm-level data is from Bureau van Dijk's ORBIS database which contains not only information on worldwide affiliate ownership, but also financial information on firms such as revenues, debts, trademarks, etc. Using ORBIS we obtained establishment year data for the focal firms and identified the active controlling firm behind the investment project and this firm's worldwide affiliate network. We examined historical ownership data in ORBIS and information on mergers and acquisitions in the Zephyr database to establish firm consolidation in earlier years. We also complement financial information on focal firms by using Datastream, a database that delivers global financial and macro-economic data developed by Thomson Reuters. Since not all firms with RHQ investment projects were included in ORBIS, our sample of RHQ projects was reduced to 617 investments made by 514 firms.

Variables

Dependent variable. The dependent variable is a binary variable, taking the value one if the host city is a global city, and zero if the host city is a local city.

Hypothesis testing variables. The variable 'c*ultural distance*' was created by using information from the website Hofstede centre. The Hofstede centre allows us to compare the values for six dimensions: power distance, individualism, masculinity, uncertainty avoidance, long term orientation, and indulgence. To calculate the cultural distance, a composite index based on the deviation along each of the six dimensions by Kogut and Singh (1988) was used. The deviations were corrected for differences in the variances of each dimension and then arithmetically averaged. The model takes on following form:

$$\mathrm{CDju} = \sum_{\mathrm{i}=1}^{6} \frac{(\mathrm{Iij} - \mathrm{Iiu})^2 / \mathrm{Vi}}{6}$$

where CDju is the cultural difference between the jth country and the uth country. Iij is the ith cultural dimension of the jth country, Iiu is the ith cultural dimension of the uth country and Vi is the variance of the index of the ith dimension.

We use the ratio of average global city connectivity to country level connectedness to proxy for *connectivity differences* between global cities and local cities in the host country. Data on global connectivity of global cities are obtained from Loughborough University's GaWC resources for the year 2000, and from Derudder et al. (2010) for the years 2004, 2008 and 2012. We obtain yearly data on cities' connectivity by interpolating values for the intermediate years. Connectivity is taken as a relative index score of the city compared to London (with the score of London taking the value 100).

Data on country level connectedness scores come from the report of 'DHL Global Connectedness Index 2014'. The DHL Global Connectedness Index rank the world's most globally connected countries covering 140 countries. The ranking is based on hard data on 12 types of trade, capital, information, and people flows. It takes into account not only the depth of international interactions (countries' international flows relative to the size of their domestic economies), but also the breadth of international flows (their geographic distribution) and their directionality (outward versus inward). The leading countries and territories in the index tend to be wealthy and relatively small, such as Netherlands, Hong Kong, Singapore, and Luxembourg.

Control variables. We include a range of control variables in our analysis. First, we control for *economic development level differences* between global cities and local cities proxied by the ratio of average global city GDP per capita to host country GDP per capita. Both global city level GDP per capita data and country level GDP per capita data come from the OECD's metropolitan database. The larger the economic development level difference between global cities and non-global cities of a country, the more likely that an MNE locates its regional headquarters in a global city. Thus, we expect GDP per capita ratio has a positive impact on the probability of choosing a global city.

Second, we control for a series of firm-specific characteristics that may affect the liability of foreignness to specific firms and eventually affect the multinational firm's location choice between global cities and local cities. We control for *firm size*, *firm age*, *firm's prior experience with the host country*, *leverage*, *trademarks intensity* and *subsidiary spreadness across the host region*. Firm age and firm's prior experience are expected to have a negative effect on a firm' RHQ global city location strategy, as prior experience with the host country can help the focal firm to be familiar with local environments such that the liability of foreignness decreases to the focal firm. Firm size and subsidiaries spreadness across the host region are expected to have a positive effect, as the larger the firm size or subsidiaries spreadness, the more the focal firm values global cities' connectivity to better coordinate its geographically spread subsidiaries. Leverage is expected to have a negative sign, as the larger the leverage a firm uses, the more it care about cash, thus it will choose to locate its RHQ in a city with lower office- rent costs. Trademarks intensity is expected to have a positive sign, as the larger the trademarks intensity, the more the focal firm needs to cooperate with advertisement suppliers which concentrate in global cities.

All these variables are constructed by using ORBIS database, complemented with Zephyr and Datastream. Firm size is proxied by annual revenue of the focal firm. Firm age is the number of years since the focal firm was established or formed. Firm's prior experience with the host country is a dummy variable that takes the value of one if the focal firm has prior experience with the host country and zero, otherwise. Leverage is calculated as the ratio of annual debts to annual revenues of the focal firm. Trademarks intensity is calculated as the ratio of number of trademarks to annual revenues of the focal firm. Subsidiaries spreadness across the host region is calculated as one minus Herfindahl index of the focal firm's subsidiaries concentration across countries within the host region. So it is the opposite index to concentration index.

The descriptive statistics of all variables and their correlation coefficients are presented in Table 1.

METHODS

We use logit model and split sample analysis to test our hypotheses. By using the median splits method, we divided our full sample into 'high' cultural distance subsample (above median) and 'low' cultural distance subsample (below median), and into 'high' connectivity differences between global cities and local cities subsample (above median) and 'low' connectivity differences subsample(below median).

EMPIRICAL RESULTS

Table 2 reports the results of logit models examining location strategy for RHQ investments between global cities and local cities. Model 1 reports the results of a baseline model that includes only the control variables. Model 2 reports the results of the full sample model including all variables simultaneously.

In model 1, all control variables with significant coefficients have the expected sign. Economic development differences between global cities and local cities, firm size, and subsidiaries spreadness across the host region have a positive influence, while host country prior experience and leverage have a negative effect. Firm age and trademarks intensity are found not having a significant effect.

Model 2 includes the hypothesis testing variables, home-host country cultural distance and producer service connectivity differences between global cities and local cities within host countries.

Compared with Model 1, this model shows a significantly improved fit, indicated by a highly significant loglikelihood ratio test. The positive and significant effect of cultural distance and connectivity differences support Hypothesis 1 and 2 respectively. While connectivity differences have a positive effect, the positive effect of economic development differences disappear in the complete model, indicating that connectivity differences are more important than economic development differences to the global city location strategy for RHQs.

Model 3 and 4 report the results for the same model specification for the full sample, but for high cultural distance and low cultural distance sub-samples. For the high cultural distance sub-sample (Model 3), as compared to the full sample results, cultural distance lost its significant effect. Connectivity differences still have a positive and significant effect, while in Model 4, for the low cultural distance sub-sample, the significant connectivity differences effect disappears. This indicates that connectivity differences only matter in culturally distant host countries, while not important in culturally close host countries. Thus, Hypothesis 3 is supported.

Model 5 and 6 report the results for the same model specification for the full sample, but for high connectivity differences and low connectivity differences sub-samples. For the high connectivity differences sub-sample (Model 5), as compared to the full sample results, cultural distance and connectivity differences still have a positive and significant effect, while in Model 6, for the low connectivity differences sub-sample, the significant cultural distance effect disappears. This indicates that cultural distance only matters in host countries whose global cities and local cities' connectivity differences are high, while not important in host countries whose global cities and local cities' connectivity differences are low. In model 6, connectivity differences have a negative and significant effect, indicating that RHQs tend to invest in local cities if the connectivity differences between global cities and local cities are low. Thus, Hypothesis 4 is supported.

CONCLUSION AND DISCUSSION

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Table 1. Descriptive statistics and correlations coefficients

Variable name	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
1. RHQ location choice	0.58	0.49	1.00									
2. Cultural distance	2.01	1.41	0.19	1.00								
3. Connectivity differences	0.82	0.49	0.18	0.12	1.00							
4. Prior experience with host country	0.57	0.50	-0.14	0.05	0.09	1.00						
5. Gdp per capita ratio	1.33	0.62	0.11	0.11	0.57	0.12	1.00					
6. Subsidiaries spreadness	0.49	0.37	0.12	0.07	0.04	0.07	0.11	1.00				
7. Firm size (revenue in million USD)	13700	34000	0.11	0.28	0.11	0.04	0.03	0.40	1.00			
8. Firm age	42.64	45.45	0.02	0.16	0.03	0.08	-0.03	0.18	0.55	1.00		
9. Leverage	0.23	1.41	-0.02	0.10	0.03	0.01	0.00	0.13	0.37	0.28	1.00	
10. Trademarks intensity	0.0038	0.0036	-0.05	-0.11	-0.05	0.03	0.03	0.00	-0.39	-0.18	-0.22	1.00

Table 2. The results of logit models: location choice for RHQs between global cities and local cities within the host country

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Baseline model	Full sample	High cultural distance	Low cultural distance	Hign connecitivity differences	Low connecitivity differences
Cultural distance		0.337***	0.248	0.022	0.277**	0.171
		(0.085)	(0.416)	(0.119)	(0.113)	(0.144)
Connectivity differences		1.680***	1.923**	0.591	3.288***	-1.597*
		(0.468)	(0.759)	(0.519)	(1.044)	(0.942)
Economic development differences	0.683***	-0.179	-0.197	-0.480	0.251	-2.228***
	(0.248)	(0.339)	(0.463)	(0.727)	(0.586)	(0.661)
Prior experience with the host country	-0.957***	-1.095***	-1.895***	-0.756**	-0.823*	-0.824**
	(0.251)	(0.260)	(0.563)	(0.313)	(0.465)	(0.347)
Subsidiaries spreadness in the host region	0.092*	0.125**	0.145*	0.083	0.113	-0.014
	(0.047)	(0.049)	(0.076)	(0.066)	(0.078)	(0.072)
Firm size	0.087**	0.032	0.129*	-0.042	-0.044	0.081
	(0.045)	(0.047)	(0.078)	(0.062)	(0.072)	(0.067)
Firm age	-0.068	-0.068	-0.174	0.043	-0.166	0.028
	(0.103)	(0.106)	(0.167)	(0.146)	(0.169)	(0.148)
Leverage	-0.111	-0.115	-0.117	-0.104	-0.090	-0.131
	(0.070)	(0.071)	(0.123)	(0.089)	(0.107)	(0.101)
Trademarks intensity	-0.028	-0.021	0.123	-0.076	-0.103	0.044
	(0.043)	(0.044)	(0.076)	(0.055)	(0.065)	(0.064)
Constant	-0.966	-6.502***	-7.024**	-0.606	-13.846***	11.956***
	(0.737)	(1.648)	(2.865)	(2.562)	(3.845)	(4.257)
Observations	617	617	309	308	306	311
LR chi square	37.63***	70.90***	38.90***	11.52	68.43***	39.54***
Log likelihood	-399.9	-383.2	-164.2	-206.3	-168.8	-194.2
LR ratio test		33.4***(vs.Model1)				

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1