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The roles of contextual distance, knowledge intensity, and target-country experience

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When Do Firms Choose Global Cities as Foreign Investment Locations within Countries? The Roles of Contextual Distance, Knowledge Intensity, and Target-Country Experience

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ABSTRACT

Foreign investors generally need to overcome a liability of foreignness stemming from contextual distance between their home country and the target country. We argue that they can limit that liability more easily by investing in a global city rather than elsewhere in the target country. Accordingly, we hypothesize that the contextual distance to a target country has a positive effect on a firm's propensity to invest in a global city in that country. We also predict that this effect is stronger for investments in knowledge-intensive activities and weaker for investors with more target-country experience in general and target-country experience in global cities in particular. Our hypotheses receive considerable support in an analysis of 11,748 foreign greenfield investments by 1,025 manufacturing and service firms during 2008-2012. Our findings suggest that global cities are superior subnational locations for gathering contextual knowledge about target countries and limiting the liability of foreignness.

Keywords: contextual distance; global cities; knowledge-intensive activities; liability of foreignness; location decisions; target-country experience

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INTRODUCTION

The choice of foreign investment location is a key strategic decision for internationalizing firms and has therefore received widespread attention from scholars in international business (IB) and international economics. Whereas some of these scholars framed a firm's choice of foreign investment location as a choice between countries (e.g., Flores and Aguilera, 2007; Henisz and Delios, 2001; Kang and Jiang, 2012; Ramasamy, Yeung and Laforet, 2012), others have analyzed foreign location choices at the subnational level, thus acknowledging the existence of spatial heterogeneity within countries (e.g., Chung and Alcacer, 2002; Mataloni, 2011; Meyer and Nguyen, 2005). Although such intra-country heterogeneity exists at different levels such as federal regions and counties, the so-called 'global cities' are arguably the most distinctive spatial entities within countries. The reason is that these cities have three attributes that other subnational locations do not simultaneously have, notably (1) a cosmopolitan environment, (2) a high density of advanced producer services, and (3) a high level of connectivity with other locations (Goerzen, Asmussen and Nielsen, 2013; Blevins, Moschieri, Pinkham and Ragozzino, 2016). Accordingly, global cities are seen as the 'command and control centers' in the world economy and have been found to receive disproportionate shares of firms' foreign direct investments (e.g., Derudder *et al.*, 2010; Friedmann, 1986; Sassen, 1996).

Recent IB studies have begun to explore the antecedents of foreign investments in global cities (Belderbos, Du and Goerzen, 2017; Goerzen *et al.*, 2013; Ma, Delios and Lau, 2013). Analyzing a sample of Japanese foreign investors, Goerzen *et al.* (2013) found that the propensity to invest in a global city depends on the strategic motive for the investment and the investor's internationalization strategy and marketing capabilities. However, besides depending on investment and investor characteristics, the choice between investing in a global city or elsewhere

may also depend on external factors. The perhaps most important external factor that foreign investors need to consider is the distance between their home country and the target country they have selected for investment (Zaheer, Schomaker and Nachum, 2012). This distance comes in various forms, with cultural, administrative, geographic, and economic distance being the most well-known and most frequently considered forms (Beugelsdijk, Nell and Ambos, 2017; Campbell, Eden and Miller, 2012; Ghemawat, 2001; Goodall and Roberts, 2003). An important difference among these four forms of distance is that whereas geographic distance increases linearly regardless of whether firms cross national or subnational borders, cultural, administrative, and economic distance tend to increase disproportionately when firms cross national borders, given that average cross-national differences in culture, administrative systems, and economic development tend to be larger than their within-country counterparts (Beugelsdijk, Ambos and Nell, 2018; Beugelsdijk and Mudambi, 2013). Accordingly, cultural, administrative, and economic distance, which have been subsumed under the term ‘contextual distance’ and jointly reflect the degree of environmental differences between home and target countries, have been shown to play a more critical role in international value creation than geographic distance (Beugelsdijk *et al.*, 2017). Moreover, they have been argued to be the key sources of the additional costs of doing business abroad rather than domestically (Calhoun, 2002; Eden and Miller, 2004; Matsuo, 2000; Mezas, 2002a; Rickley, 2019), the so-called liability of foreignness (Zaheer, 1995).

In this article we contend that foreign investors can limit the liability of foreignness stemming from the contextual distance to the chosen target country more easily by investing in a global city in that country than by investing elsewhere in the country, owing to global cities’ unique attributes. We therefore hypothesize that the contextual distance to the target country has a positive effect on the chance that a foreign greenfield investment in that country is made in a global city rather than

elsewhere in the country.¹ We also contend that the strength of this effect hinges on an investor's need for contextual knowledge about the target country and that this need is higher for investors in knowledge-intensive activities whereas it is lower for those with target-country experience, and especially for those with target-country experience in global cities. We therefore hypothesize that the positive effect of the contextual distance to a target country on a firm's propensity to invest in a global city in that country is stronger for investments in knowledge-intensive activities and weaker for investors with more target-country experience in general and target-country experience in global cities in particular. Using a composite measure of contextual distance consistent with our theorizing about such distance (Beugelsdijk *et al.*, 2018), and controlling for geographic distance and other factors, we obtain considerable support for our hypotheses in a statistical analysis of 11,748 foreign greenfield investments made in 56 host countries by 1,025 manufacturing and service firms from 39 source countries.

Our study makes several noteworthy contributions to the IB literature. First, whereas prior research has shown that various forms of contextual distance influence firms' choices of whether and how to invest in a foreign country (e.g., Berry, Guillen and Zhou, 2010; Estrin, Baghdasaryan and Meyer, 2009; Flores and Aguilera, 2007; Slangen and Hennart, 2008), we show that contextual distance also influences their choice of *where* to invest in such a country. By doing so, we shed further light on the subnational dimension of firms' internationalization strategies, a dimension that has received comparatively little research attention, despite its theoretical and empirical relevance (Chan, Makino and Isobe, 2010; Ma *et al.*, 2013; Slangen, 2016). Specifically, our findings suggest that global cities are superior subnational investment locations for gathering contextual knowledge

¹ We do not consider foreign acquisitions because the choice of whether to invest in a global city or elsewhere in a country often does not apply to such investments, given that many acquisition targets are mature firms with operations in both global cities and other subnational locations (Slangen, 2016).

about the target country, especially for foreign investors with the highest need for such knowledge. Second, whereas Goerzen *et al.* (2013) found the propensity to invest in a global city to be a function of investment and investor characteristics, we show that this propensity also depends on the degree of contextual differences between home and target countries. Moreover, our finding that the impact of such differences on the propensity to invest in a global city is moderated by the type of investment and a firm's target-country experience in global cities indicates that investment and investor characteristics also influence this propensity indirectly, rather than only directly as shown by Goerzen *et al.* (2013). Finally, our study advances IB research on the role of foreign investment experience (e.g., Barkema, Bell and Pennings, 1996; Delios and Henisz, 2003) by showing that different forms of subnational experience within a target country affect subnational location choices to different degrees.

BACKGROUND

Global Cities and Multinational Firms

As early as 1915, Patrick Geddes coined the term 'world cities' and defined them as those places where a disproportionate amount of the world's business is conducted. Since 1960s, various scholars further developed the 'world' or 'global' city concept. Hall (1966) defined world cities as major centers of political power, mobility, professional talent, information, and culture. Friedmann (1986) and Sassen (1996) define global cities as the command and control centers of the world economy where most multinational firms' headquarters are located. Global cities are central points in IB networks and serve as 'gateways for global and regional flows and sources of specialized services for the wider public, beyond their own localities' (Acuto, 2011, p. 2967).

According to Goerzen *et al.* (2013), global cities have three features that other subnational locations do not simultaneously have. First, they have a cosmopolitan environment, i.e. an

environment characterized by a culturally diverse body of actors, including consumers, professionals, and university students. Second, global cities host many specialized providers of high value-added services such as marketing, consultancy, and accounting that are important to the functioning and performance of multinational firms' local and global operations. Third, global cities are characterized by high levels of connectivity with other locations, as they typically have a good physical information and communication infrastructure that facilitates and speeds up the international transfer of goods, people, and information. Among others, this high international connectivity has been found to weaken firms' tendency to shun geographically distant global cities as locations for regional HQs (Belderbos *et al.*, 2017). According to Doel and Hubbard (2002), global cities' unique set of features may cause such cities to have more in common with global cities in other countries than with other places in the same country.

Liability of Foreignness and Contextual Distance

Ever since Hymer (1976), it has often been argued and shown that once a firm has invested in a foreign country, it incurs costs that purely domestic firms do not incur, the so-called liability of foreignness (Zaheer, 1995). A key cause of this liability is that, unlike their domestic counterparts, multinational firms are exposed to foreign business environments, which typically differ from a firm's domestic business environment. The degree of environmental differences between a foreign country and a firm's home country has been referred to as the 'contextual distance' faced by a firm and has been argued to have a cultural, administrative, and economic dimension (Beugelsdijk *et al.*, 2017, 2018).

Cultural distance refers to the degree to which the shared norms and values in a country differ from those in another, for instance with respect to power relationships, individualism, ambiguity, assertiveness, and time horizons (Beugelsdijk, Kostova, Kunst, Spadafora and Van Essen, 2018; Hofstede, Hofstede and Minkov, 2010; Kogut and Singh, 1988). This type of contextual distance

often translates into a liability of foreignness because it complicates negotiations with local suppliers and government officials and the management of local employees, and requires the adaptation of a firm's products, management practices, and value-chain activities to local preferences (Brett and Okumura, 1998; Newman and Nollen, 1996; Slangen, Beugelsdijk and Hennart, 2011). Administrative distance pertains to differences in administrative systems between countries, covering such aspects as differences in political stability, the rule of law, government effectiveness, and control of corruption (Beugelsdijk *et al.*, 2017; Campbell *et al.*, 2012; Ghemawat, 2001). Administrative distance usually translates into a liability of foreignness because it requires foreign investors to adjust their products, practices, and activities to local regulations in the sphere of health, safety, and zoning, and makes them susceptible to governmental discrimination and labor lawsuits (Campbell *et al.*, 2012; Ghemawat, 2001; Mezias, 2002b). Economic distance, finally, reflects differences in the level of economic development between countries (Ghemawat, 2001; Tsang and Yip, 2007). Such differences tend to translate into a liability of foreignness by hampering the transferability of foreign investors' technologies and business models and calling for product adaptation (Campbell *et al.*, 2012; Ghemawat, 2001). The higher either of these dimensions of contextual distance between a foreign investor's home country and country it has invested in, the higher the liability of foreignness tends to be (Calhoun, 2002; Eden and Miller, 2004; Matsuo, 2000; Mezias, 2002a; Rickley, 2019) and, hence, the worse the investor will likely perform relative to local rivals and the higher the chance that it will eventually exit the host country (Zaheer, 1995).

HYPOTHESIS DEVELOPMENT

Contextual Distance and the Choice of Investment Location within Target Countries

Although foreign greenfield investors typically experience a liability of foreignness stemming from contextual distance, they can limit this liability by obtaining knowledge about the national context they have entered (Eriksson, Johanson, Majkgard and Sharma, 1997; Johanson and Vahlne, 1977). The more of such ‘contextual knowledge’ they manage to obtain, the better they will be able to tailor their products, practices, and activities to local preferences and regulations, resulting in higher legitimacy among local actors such as employees, customers, and officials and, hence, higher performance and survival chances compared to local rivals (Hymer, 1976; Zaheer, 1995).

Contextual knowledge about a host country, we argue, can usually be obtained more easily in a global city in that country rather than elsewhere in the country, owing to the unique features of global cities identified by Goerzen *et al.* (2013). Global cities’ cosmopolitan environment facilitates the gathering of such knowledge because the culturally diverse body of professionals residing in this type of environment is generally more open to foreign firms (Hannerz, 1990; Riefler, Diamantopoulos and Siguaw, 2012) and therefore more willing to share information with them. Likewise, the extensive presence of advanced producer services in global cities facilitates the gathering of contextual knowledge about the host country by offering foreign investors easy access to a broad base of expertise about host-country customer preferences, regulations, and human resource management practices (Blevins *et al.*, 2016). Global cities’ high connectivity with other locations, finally, facilitates the gathering of contextual local knowledge by smoothening the flow of such knowledge from other parts of a firm’s network to its local operations (Belderbos *et al.*, 2017). Since foreign investors can usually obtain contextual knowledge most easily in a global city in the target country, they will likely be able to limit the liability of foreignness stemming from contextual distance more efficiently by investing in such a city rather than elsewhere in the country.

Besides facilitating the acquisition of contextual knowledge, global cities' cosmopolitan environment may enable foreign investors to exclusively target culturally close subgroups of customers and job seekers (Beugelsdijk, Slangen, Maseland and Onrust, 2014) and thus limit the liability of foreignness stemming specifically from the cultural dimension of contextual distance. Indeed, when Western consumer-facing firms such as Starbucks invest in emerging economies, they usually do so in more cosmopolitan cities precisely because these cities host relatively many consumers with Western-like values and lifestyles (Beugelsdijk *et al.*, 2014). Likewise, Latin American banks are overrepresented in Miami, owing to the city's large and fast growing Hispanic community (Miller, Thomas, Eden and Hitt, 2008).

Since global cities generally offer better possibilities to limit the liability of foreignness stemming from contextual distance compared to other locations within the same country, we propose the following hypothesis:

Hypothesis 1: *The contextual distance between a home country and a target country has a positive effect on a firm's propensity to invest in a global city in the target country rather than elsewhere in that country.*

The Moderating Role of a Firm's Need for Contextual Knowledge

Although the contextual distance to a target country will likely have a positive effect on the chance that a firm invests in a global city there, the strength of this effect will likely vary across firms. The reason is that although global cities' unique attributes facilitate the gathering of contextual knowledge about the target country, not all foreign investors have the same need for this knowledge. The higher this need, we argue, the more strongly the contextual distance to the target country will prompt firms to invest in a global city rather than elsewhere in the country. A firm's need for contextual knowledge about the target country is determined to an important degree by

two factors, i.e. (1) the knowledge intensity of the value-chain activity invested in, and (2) a firm's investment experience in the target country in general and in global cities in that country in particular.

Whereas some value-chain activities primarily concern advanced processes designed and executed by high-skilled actors, others are less sophisticated and involve more lower-skilled personnel. The former activities are commonly referred to as knowledge-intensive activities whereas the latter can be seen as being less knowledge intensive. Following prior research, we consider R&D, HQ, and high-technology manufacturing and service activities as the value-chain activities that are knowledge intensive (e.g., Crescenzi, Pietrobelli and Rabelotti, 2014; Jofre-Monseny, Marín-López and Viladecans-Marsal, 2011).

Foreign R&D activities often involve collaboration between expatriates on the one hand and local engineers and external researchers on the other hand (Almeida and Phene, 2004; Belderbos, Capannelli and Fukao, 2001; Kenney and Florida, 1994). In order for such collaboration to be effective, expatriates need to have intimate local knowledge about complex contextual issues, such as local engineering practices, technological knowledge standards, and R&D regulations. Likewise, foreign HQ activities often involve interaction among expatriate and local members of the HQ's management team (Belderbos *et al.*, 2017; Harzing, 2002), as well as between expatriate managers and highly-trained external actors such as local senior officials and local suppliers and union representatives (Slangen *et al.*, 2011). In order for expatriates involved in foreign HQ activities to successfully interact with their high-skilled local colleagues and external contacts, they need to have substantial understanding of a range of complex contextual issues as well, including local management and negotiation practices and local competition and unionization rules. A similar logic applies to high-tech manufacturing and service activities, which generally require complex contextual knowledge about local engineering practices and labor markets. By contrast, the

effective execution of value-chain activities that are not so knowledge intensive, such as low-tech assembly, distribution, and sales activities, generally requires relatively straightforward forms of contextual knowledge (e.g., Goerzen *et al.*, 2013; Song, 2002).

Since the contextual knowledge required for effectively executing knowledge-intensive activities abroad tends to be more complex, and since more complex knowledge is harder to collect and absorb (Cohen and Levinthal, 1990), firms investing in knowledge-intensive foreign activities will be less successful in gaining the required contextual knowledge prior to establishing the activities, for example through a target-country study. They will therefore face a higher liability of foreignness than investors in less knowledge-intensive foreign activities. This difference in the liability of foreignness associated with investments in knowledge-intensive and less knowledge-intensive activities will increase with a target country's contextual distance, since that distance will add further complexity to the contextual knowledge required for effectively executing knowledge-intensive activities in the target country, making it even harder for firms to collect and absorb this knowledge prior to investment. Consequently, investors in knowledge-intensive foreign activities are likely to have a greater need for contextual knowledge about the target country as a function of its contextual distance. Since such knowledge can be gained more easily in a global city than elsewhere in a target country, firms establishing knowledge-intensive activities will be more eager to invest in such a city as a function of the country's contextual distance. We therefore hypothesize:

Hypothesis 2: *The positive effect of the contextual distance between a home country and a target country on a firm's propensity to invest in a global city in the target country rather than elsewhere in that country is stronger for investments in knowledge-intensive activities than for those in less knowledge-intensive activities.*

Besides the knowledge intensity of the value-chain activity invested in, a foreign investor's experience in the target country will likely also determine the investor's need for contextual knowledge. The more target-country experience a foreign firm has, the more contextual knowledge it will have gained about the country already (Barkema *et al.*, 1996; Chang, 1995; Johanson and Vahlne, 1977) and, hence, the less the country's contextual distance will cause the firm to face a liability of foreignness. Consequently, the higher a firm's target-country experience, the less the country's contextual distance calls for contextual local knowledge to limit the liability of foreignness. Firms with more target-country experience will therefore attribute less value to the fact that such knowledge can be obtained more easily in a global city in the target country rather than elsewhere in the country. As a result, they will have a weaker preference for investing in a global city in the target country as a function of its contextual distance. Put differently:

Hypothesis 3a: *The positive effect of the contextual distance between a home country and a target country on a firm's propensity to invest in a global city in the target country rather than elsewhere in that country is weaker for firms with more target-country experience.*

Furthermore, the degree to which firms have gained contextual knowledge from their target-country experience may vary with the type of subnational location to which this experience pertains. If firms can indeed gather contextual local knowledge more easily in global cities than in other subnational locations, firms with a given amount of target-country experience with investments in global cities should have gained more contextual knowledge about the target country than firms with the same level of investment experience elsewhere in the country. Consequently, compared to target-country experience in other locations, target-country experience in global cities should reduce a firm's need for contextual local knowledge more strongly. The latter experience should therefore exert a stronger weakening effect on the positive relationship

between a country's contextual distance and a firm's preference for investing in a global city. In other words:

Hypothesis 3b: *Compared to a firm's target-country experience in other locations, its target-country experience in global cities weakens the positive effect of contextual distance on a firm's propensity to invest in a global city more strongly.*

DATA, VARIABLES, AND METHODS

Data Collection and Sample

To test our hypotheses, we used the *FDI Markets* database compiled by Financial Times Ltd. to create a sample of worldwide cross-border greenfield investments made over the period 2008-2012. This database is the world's most comprehensive database on foreign greenfield investments, covering all countries and industries, and has been used in several prior studies (e.g., Belderbos *et al.*, 2017; Castellani, Jimenez and Zanfei, 2013; Crescenzi *et al.*, 2014). For each foreign investment, the database lists the name of the investing firm, the firm's home country and main industry, the country and city, town, or village where the investment was made, as well as the main value-chain activity invested in, distinguishing between HQ, R&D, manufacturing, logistics, services, retail, and sales activities.² Given that investments in foreign HQ and R&D activities are relatively rare (Belderbos, Leten and Suzuki, 2013; Di Minin and Bianchi, 2011; Meyer and Benito, 2016), we only selected firms that made at least one foreign investment in either of these activities over the sample period, so as to ensure a relatively balanced sample of investments in different value-chain activities. We obtained additional data on the investing firms from Bureau van Dijk's

² The category 'R&D' also includes design activities, whereas the category 'sales' also includes marketing, support, and customer contact activities.

ORBIS database, notably data on their founding year, annual revenues, annual total debt and total assets, and their number of trademarks and patents.

We analyze a sample of investments made over the 2008-2012 period for two reasons. First, doing so enables us to operationalize our target-country experience variables based on firms' target-country investments over the preceding five years (Basuil and Datta, 2015; Kavusan, Noorderhaven and Duijsters, 2016), given that *FDI Markets* covers cross-border investments made as of 2003. Second, the use of a longer period would have disproportionately increased the risk of misclassifying target locations as global cities, given that the lists we used for identifying such cities (described below) were updated every other year over the 2008-2012 period but subsequently only again in 2016.

We categorized the target cities of the investments into global cities and other subnational locations based on the 2008, 2010, and 2012 lists of world cities compiled by the Globalization and World Cities (GaWC) Research Network. This scholarly network, which was founded by the Geography Department of Loughborough University, conducts research on the external relations of world cities. It distinguishes between three categories of cities: (1) alpha cities, defined as 'very important world cities that link major economic regions and states into the world economy', (2) beta-level cities, which are 'important world cities that are instrumental in linking their region or state into the world economy', and (3) gamma-level cities, which 'can be world cities linking smaller regions or states into the world economy, or important world cities whose major global capacity is not in advanced producer services'. Because gamma-level cities do not necessarily excel in advanced producer services, they are not unambiguously global cities, leading us to limit our operationalization of global cities to alpha and beta-level cities.

Unlike other lists of major world cities such as those by Beaverstock, Smith and Taylor (1999) and MasterCard (2008), the lists by the GaWC Research Network are available for several years

and thus allow for a dynamic classification of global cities as investment locations. Specifically, we used the 2008 list for investments made in 2008 and 2009, the 2010 list for investments in 2010 and 2011, and the 2012 list for investments in 2012. The number of global cities was 81 in 2008 and had increased to 122 in 2012.

To be able to reliably determine how the contextual distance to a target country influences the choice of whether to invest in a global city in that country or elsewhere in the country, we need to ensure that our sample only contains target countries to which this choice applies. We therefore excluded all target countries without global cities in a given year, as well as Singapore and Hong Kong, since these two territories as a whole can be seen as global cities.

The above-described procedure resulted in complete data for a sample of 11,748 foreign greenfield investments made by 1,025 firms in 52 countries. The investing firms are based in 39 countries and include both manufacturing firms (658) and service firms (367). Twenty-nine percent of the investments in the sample were made in global cities, with 102 global cities receiving at least one investment. Approximately 29% of the investments were made by US firms, 15% by German companies, and 14% by Japanese firms. Table 1 lists the number and percentage of investments in each target country, the number and percentage of investments in global cities in each country, the number and percentage of investments per value-chain activity, and the number and percentage of investments in global cities per value-chain activity. Almost 14% of the investments were made in China and almost 11% in the US. All other target countries received less than 10% of the investments each. The percentage of investments made in global cities varies substantially across countries, with global cities receiving about 34 percent of investments in China, and about 19 percent of investments in the United States, for instance. Among the different value-chain activities, the preference for global cities is highest for knowledge-intensive service activities

(56%), followed by HQ (55%), sales (44%) and R&D activities (39%), while the share of investments in global cities is only eight percent for non-high-tech manufacturing.

Table 1. The distribution of investments across host countries, global cities, and value-chain activities

Host country	Number of investments	Percentage of all investments	Number of investments in global cities	Percentage of investments in global cities	Major global cities (number of investments)
China	1,595	13.6	540	33.9	Shanghai (299), Beijing (146), Guangzhou (70)
United States	1,318	11.2	247	18.7	New York (39), Chicago (28), Miami (28)
India	1,034	8.8	323	31.2	Bangalore (125), Mumbai (81), New Delhi (59)
United Kingdom	672	5.7	142	21.1	London (135), Birmingham (5), Edinburgh (2)
Germany	463	3.9	167	36.1	Frankfurt (36), Munich (35), Berlin (34)
Brazil	445	3.8	114	25.6	Sao Paulo (86), Rio de Janeiro (28)
Russia	444	3.8	81	18.2	Moscow (81)
Spain	362	3.1	118	32.6	Madrid (64), Barcelona (54)
France	349	3.0	74	21.2	Paris (72), Lyon (2)
Mexico	328	2.8	50	15.2	Mexico City (43), Monterrey (7)
Poland	282	2.4	45	16.0	Warsaw (45)
Canada	270	2.3	61	22.6	Toronto (31), Calgary (12), Montreal (9)
Unit. Arab Em.	269	2.3	218	81.0	Dubai (196), Abu Dhabi (22)
Thailand	247	2.1	62	25.1	Bangkok (62)
Australia	228	2.0	133	58.3	Sydney (58), Melbourne (48), Brisbane (16)
Vietnam	221	1.9	56	25.3	Ho Chi Minh City (55), Hanoi (1)
Malaysia	208	1.8	44	21.2	Kuala Lumpur (44)
Ireland	187	1.6	68	36.4	Dublin (68)
Romania	173	1.5	53	30.6	Bucharest (53)
Indonesia	172	1.5	35	20.3	Jakarta (35)
Turkey	165	1.4	57	34.5	Istanbul (57)
Belgium	150	1.3	38	25.3	Brussels (35), Antwerp (3)
Czech Republic	146	1.2	40	27.4	Prague (40)
Japan	146	1.2	51	34.9	Tokyo (48), Osaka (3)
Argentina	142	1.2	37	26.1	Buenos Aires (37)
South Africa	133	1.1	42	31.6	Johannesburg (31), Cape Town (11)
Hungary	132	1.1	44	33.3	Budapest (44)
South Korea	129	1.1	40	31.0	Seoul (40)
Netherlands	127	1.1	36	28.3	Amsterdam (36)
Italy	124	1.1	44	35.5	Milan (32), Rome (12)
Philippines	115	1.0	17	14.8	Manila (17)
Saudi Arabia	111	0.9	34	30.6	Riyadh (27), Jeddah (7)
Switzerland	102	0.9	27	26.5	Zurich (21), Geneva (6)
Austria	100	0.9	43	43.0	Vienna (43)
Colombia	77	0.7	29	37.7	Bogota (29)
Chile	63	0.5	22	34.9	Santiago (22)
Egypt	62	0.5	25	40.3	Cairo (25)
Sweden	62	0.5	23	37.1	Stockholm (23)
Nigeria	45	0.4	12	26.7	Lagos (12)
Portugal	42	0.4	11	26.2	Lisbon (11)
Morocco	38	0.3	9	23.7	Casablanca (9)
Denmark	36	0.3	9	25.0	Copenhagen (9)
Israel	36	0.3	7	19.4	Tel Aviv (7)
Peru	34	0.3	12	35.3	Lima (12)
New Zealand	32	0.3	15	46.9	Auckland (15)
Jordan	31	0.3	1	3.2	Amman (1)
Pakistan	31	0.3	12	38.7	Karachi (12)
Greece	20	0.2	11	55.0	Athens (11)
Norway	18	0.2	7	38.9	Oslo (7)
Venezuela	12	0.1	1	8.3	Caracas (1)
Uruguay	11	0.1	4	36.4	Montevideo (4)
Luxembourg	9	0.1	5	55.6	Luxembourg (5)
<i>Value-chain activity</i>					
Headquarters	782	6.1	433	55.4	
R&D	1,458	13.1	566	38.8	
High-tech manufacturing	331	3.0	46	13.9	
Knowledge-intensive service	572	4.3	319	55.8	
Non-high-tech manufacturing	3,620	32.2	309	8.5	
Retail	1,097	10.1	312	28.4	
Sales	2,164	18.3	963	44.5	
Non-knowledge-intensive services	939	5.7	277	29.5	
Logistics	785	7.2	171	21.8	
Total	11,748		3,396	28.9	

Variables

Dependent variable. To operationalize a firm's propensity to invest in a global city within a target country rather than elsewhere in the country, we created a dummy variable coded 1 for investments made in alpha and beta-level cities in the target country concerned and 0 for investments made in any other city, town, or village in the target country, including gamma-level cities.

Main independent variables. Since "a composite index is required when the nature of the theoretical argument has to do with distance in general" (Beugelsdijk *et al.*, 2018: 1117), we use such an index to measure the contextual distance between the target country of an investment and the investor's home country. Following Campbell *et al.* (2012) and Beugelsdijk *et al.* (2017), we performed a factor analysis of a variety of commonly-used indicators of cultural, administrative, and economic distance, notably the absolute difference in the score of a home and target country on each of Hofstede, Hofstede and Minkov's (2010) six cultural dimensions, the absolute difference in the scores of a home and target country on the World Bank's six indicators of governance quality in the year prior to an investment, and the absolute difference in home and target countries' GDP per capita at purchasing power parity in that year as reported in the World Bank's *World Development Indicators*. As shown in Panel A of Table 2, this analysis yielded one factor with an eigenvalue greater than 1, with 10 items having factor loadings above the commonly-used threshold of 0.3 and three items (i.e., absolute differences in masculinity, uncertainty avoidance, and pragmatism) having loadings below that threshold. We therefore performed a second factor analysis of the 10 items with sufficiently high factor loadings and again obtained a single factor with an eigenvalue greater than 1, with all 10 items having sufficiently high loadings (see Table 2, Panel B). The factor score of a given home-target country pair on that factor constitutes our measure of contextual distance.

Table 2. Factor analyses of the indicators of contextual distance

Panel A1. Factor analysis of 13 indicators of contextual distance

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	5.73	5.24	0.91	0.91
Factor2	0.48	0.13	0.08	0.99
Factor3	0.36	0.10	0.06	1.05
Factor4	0.26	0.18	0.04	1.09
Factor5	0.08	0.06	0.01	1.10
Factor6	0.02	0.04	0.00	1.10
Factor7	-0.02	0.00	0.00	1.10
Factor8	-0.03	0.01	0.00	1.10
Factor9	-0.04	0.04	-0.01	1.09
Factor10	-0.08	0.04	-0.01	1.08
Factor11	-0.11	0.05	-0.02	1.06
Factor12	-0.17	0.04	-0.03	1.03
Factor13	-0.20	.	-0.03	1.00

Panel A2. Factor loadings and unique variances of contextual distance indicator

Variable	Factor1	Uniqueness
Absolute difference in GDP per capita	0.67	0.55
Absolute difference in power distance	0.59	0.65
Absolute difference in individualism	0.52	0.73
Absolute difference in masculinity	-0.06	1.00
Absolute difference in uncertainty avoidance	0.10	0.99
Absolute difference in pragmatism	0.02	1.00
Absolute difference in indulgence	0.43	0.82
Absolute difference in control of corruption	0.93	0.13
Absolute difference in government effectiveness	0.92	0.15
Absolute difference in political stability	0.65	0.58
Absolute difference in regulatory quality	0.93	0.14
Absolute difference in rule of law	0.95	0.09
Absolute difference in voice and accountability	0.74	0.45

Panel B1. Factor analysis of 10 indicators of contextual distance

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	5.71	5.29	0.97	0.97
Factor2	0.41	0.28	0.07	1.04
Factor3	0.14	0.11	0.02	1.06
Factor4	0.02	0.03	0.00	1.06
Factor5	0.00	0.02	0.00	1.06
Factor6	-0.03	0.01	0.00	1.06
Factor7	-0.04	0.03	-0.01	1.05
Factor8	-0.06	0.04	-0.01	1.04
Factor9	-0.11	0.04	-0.02	1.02
Factor10	-0.14	.	-0.02	1.00

Panel B2. Factor loadings and unique variances of contextual distance indicators

Variable	Factor1	Uniqueness
Absolute difference in GDP per capita	0.67	0.55
Absolute difference in power distance	0.59	0.66
Absolute difference in individualism	0.51	0.74
Absolute difference in indulgence	0.42	0.82
Absolute difference in control of corruption	0.93	0.13
Absolute difference in government effectiveness	0.92	0.15
Absolute difference in political stability	0.65	0.57
Absolute difference in regulatory quality	0.93	0.14
Absolute difference in rule of law	0.95	0.09
Absolute difference in voice and accountability	0.74	0.45

To test hypothesis 2, we interacted our measure of contextual distance with a dummy variable indicating whether or not the investment concerned a knowledge-intensive activity. In line with our definition of knowledge-intensive activities, we coded the dummy variable 1 for investments that mainly concerned HQ, R&D, high-tech manufacturing, or knowledge-intensive service activities, and 0 for investments that mainly concerned a different type of value-chain activity. To determine the main value-chain activity to which an investment pertained, we used the value-chain category in which the investment appeared in *FDI Markets*. To separate investments in the ‘manufacturing’ category of *FDI Markets* into high-tech and other manufacturing investments, we used EUROSTAT’s (2018) classification of manufacturing industries, which is based on industries’ R&D intensity. Specifically, we considered a manufacturing investment to be an investment in

high-tech manufacturing activities when EUROSTAT classified the investment's industry listed in *FDI Markets* as a high-tech industry. Likewise, to determine whether an investment in the 'services' category of *FDI Markets* concerned a knowledge-intensive service, we used the list of knowledge-intensive business services of the European Monitoring Centre on Change.³

To test hypothesis 3a, we interacted our measure of contextual distance with an indicator of a firm's target-country experience. This indicator is a count of the firm's greenfield investments in the target country recorded in the *FDI Markets* database over the five years prior to the focal investment. Like prior studies (e.g., Basuil and Datta, 2015; Kavusan *et al.*, 2016), we use an experience window of five years because knowledge gained from older experiences may have disappeared from a firm's knowledge base, for instance due to employee turnover. To test hypothesis 3b, we used the *FDI Markets* data on an investment's target city to split our measure of a firm's target-country investment experience into a count of the firm's prior target-country investments in global cities and a count of its prior target-country investments in other locations.⁴

Control variables. Following Beugelsdijk *et al.* (2017), we control for the spatial, non-contextual distance between an investor's home country and the target country by including the great-circle geographic distance in kilometers between their respective most populated cities as reported in the *CEPII* database. We also control for the general attractiveness of global cities as foreign investment locations within a target country. We do so by entering the ratio of the total number of foreign investments made in such cities in a given target country to the total number of

³ According to this list, the following services are knowledge intensive: information media and telecommunications, financial and insurance services, professional scientific and technical services, post and courier pick-up services, rental and hiring services (except real-estate), commission based wholesaling, employment services and other administrative services.

⁴ We obtained similar results when we used the log transformed values of the experience variables.

foreign investments made elsewhere in the country over the five years prior to the sample period. We derived these numbers from the *FDI Markets* database. Since manufacturing and service firms' foreign investment location choices may differ, we also enter a dummy variable coded 1 for service firms and 0 for manufacturing ones. We control for a firm's size by entering the natural logarithm of its worldwide revenues in millions of US dollars in the year before the focal investment, for its age by entering the number of years between its founding year and the year prior to the focal investment, and for a firm's leverage by entering the ratio of its total debts to total assets in the year prior to the focal investment. We also enter a firm's trademark intensity and its patent intensity, measured by the ratio of the firm's number of trademarks to its worldwide revenues in millions of US dollars in the year before the focal investment and the ratio of its number of patents to these revenues, respectively.

Besides the interaction term of contextual distance and the dummy variable for investments in knowledge-intensive activities, we also enter this dummy variable separately. We do so because investments in knowledge-intensive activities may be more likely to be made in global cities than investments in less knowledge-intensive activities, given that global cities may be innovation hubs and may therefore be especially appealing to firms establishing knowledge-intensive activities such as R&D (Belderbos *et al.* 2017; Laud, Grein and Nachum, 2009). Finally, we include a set of dummy variables for investments in the different types of less knowledge-intensive activities, i.e. logistics, retail, sales, and non-knowledge-intensive services, with investments in non-high-tech manufacturing forming the omitted category.

Statistical Methods

Since the dependent variable is dichotomous, we used binary logit analysis to test our hypotheses. We clustered the error terms of observations on foreign investments made by the same firm, so as

to account for the possibility that such investments are not independent observations and avoid biased standard errors.

RESULTS

Table 3 displays the descriptive statistics of all variables and their correlations. The highest correlation between pairs of variables included in the same model is 0.53 and pertains to a firm's target-country experience in global cities and that in other subnational locations. Since this correlation is relatively modest, multicollinearity is unlikely to be a concern in our regression models. This was confirmed by the fact that the variance inflation factors of all variables in all models were lower than the commonly-accepted multicollinearity threshold of 10 (Hair *et al.*, 2006), with the highest value being 5.2.

Table 3. Descriptive statistics and correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Investment location is a global city	0.29	0.45	1																		
2 Contextual distance	-0.01	0.99	0.02	1																	
3 Knowledge-intensive activity	0.27	0.44	0.19	-0.09	1																
4 Target-country experience	4.65	7.92	-0.11	0.14	-0.11	1															
5 Target-country experience in global cities	1.13	2.41	0.01	0.26	-0.02	0.73	1														
6 Target-country experience in other locations	3.52	6.37	-0.15	0.08	-0.13	0.97	0.53	1													
7 Non-high-tech manufacturing investment	0.31	0.46	-0.30	0.11	-0.40	0.05	-0.01	0.07	1												
8 Non-knowledge-intensive service investment	0.08	0.27	0.00	0.02	-0.18	0.05	0.07	0.04	-0.197	1											
9 Retail investment	0.09	0.29	0.00	-0.03	-0.19	0.19	0.07	0.21	-0.21	-0.09	1										
10 Sales investment	0.18	0.39	0.16	0.01	-0.29	-0.12	-0.07	-0.13	-0.32	-0.14	-0.15	1									
11 Logistics investment	0.07	0.25	-0.04	-0.03	-0.16	0.01	0.00	0.01	-0.18	-0.08	-0.09	-0.13	1								
12 Geographic distance (*1000 km)	6.76	4.10	0.07	0.22	0.03	-0.04	0.03	-0.06	0.02	0.03	-0.14	0.05	-0.03	1							
13 Ratio of target-country investments in global cities to those elsewhere	0.66	0.91	0.21	0.01	0.05	-0.03	0.06	-0.06	-0.09	0.01	-0.02	0.06	0.00	0.07	1						
14 Service firm	0.29	0.45	0.17	-0.04	0.05	0.05	0.04	0.05	-0.41	0.13	0.14	0.14	0.15	-0.05	0.02	1					
15 Firm's size (in million USD)	52,100	68,700	-0.12	0.04	-0.14	0.44	0.23	0.46	0.04	0.03	0.22	-0.11	0.05	0.02	-0.04	0.00	1				
16 Firm's age	75.44	52.31	-0.10	0.06	-0.10	0.06	0.07	0.04	0.16	0.18	-0.06	-0.12	-0.05	0.00	0.01	-0.20	0.12	1			
17 Firm's leverage	20.84	53.09	0.01	0.05	0.02	0.03	0.04	0.02	0.00	-0.02	0.00	-0.02	-0.01	0.00	-0.03	0.02	0.084	0.02	1		
18 Firm's trademark intensity	0.05	1.00	0.02	-0.02	0.04	-0.02	-0.02	-0.02	-0.02	-0.01	0.00	0.00	-0.01	0.01	0.00	0.01	-0.03	-0.04	0.00	1	
19 Firm's patent intensity	0.00	0.08	0.02	0.00	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	0.03	0.00	0.00	0.00	0.02	-0.01	-0.01	-0.01	0.02	1

Note: Descriptives and correlations for firm size are shown before logarithmic transformation.

Table 4. Logit analyses of the determinants of firms' propensity to invest in a global city in the target country

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Contextual distance		0.171*** (0.033)	0.077* (0.036)	0.164*** (0.034)	0.185*** (0.032)	0.081* (0.036)
Contextual distance * Knowledge-intensive activity			0.264*** (0.058)			0.271*** (0.054)
Contextual distance * Target-country experience				0.002 (0.005)		
Contextual distance * Target-country experience in global cities					-0.110*** (0.021)	-0.113*** (0.021)
Contextual distance * Target-country experience in other locations					0.011 (0.011)	0.015 (0.011)
Knowledge-intensive activity	1.804*** (0.080)	1.859*** (0.078)	1.848*** (0.078)	1.857*** (0.078)	1.802*** (0.079)	1.786*** (0.080)
Target-country experience	-0.018*** (0.005)	-0.022*** (0.005)	-0.022*** (0.005)	-0.023*** (0.006)		
Target-country experience in global cities					0.191*** (0.029)	0.190*** (0.028)
Target-country experience in other locations					-0.076*** (0.012)	-0.077*** (0.012)
Non-knowledge-intensive service investment	1.334*** (0.114)	1.366*** (0.117)	1.341*** (0.115)	1.365*** (0.117)	1.339*** (0.116)	1.311*** (0.114)
Retail investment	1.446*** (0.195)	1.500*** (0.198)	1.455*** (0.194)	1.499*** (0.197)	1.529*** (0.171)	1.479*** (0.168)
Sales investment	1.804*** (0.101)	1.829*** (0.103)	1.797*** (0.101)	1.827*** (0.103)	1.803*** (0.114)	1.770*** (0.112)
Logistics investment	0.887*** (0.138)	0.935*** (0.136)	0.892*** (0.136)	0.934*** (0.136)	0.917*** (0.126)	0.872*** (0.127)
Geographic distance	0.032*** (0.007)	0.022*** (0.007)	0.022** (0.007)	0.022*** (0.007)	0.022*** (0.007)	0.022*** (0.007)
Ratio of target-country investments in global cities to those elsewhere in the target country	0.634*** (0.074)	0.635*** (0.074)	0.622*** (0.072)	0.633*** (0.074)	0.559*** (0.067)	0.547*** (0.065)
Service firm	0.332*** (0.082)	0.331*** (0.084)	0.350*** (0.083)	0.330*** (0.084)	0.304*** (0.074)	0.322*** (0.073)
Firm's size	-0.089*** (0.016)	-0.092*** (0.016)	-0.093*** (0.016)	-0.091*** (0.016)	-0.097*** (0.015)	-0.097*** (0.015)
Firm's age	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Firm's leverage	0.001*** (0.000)	0.001*** (0.000)	0.000* (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000* (0.000)
Firm's trademark intensity	-0.017 (0.020)	-0.015 (0.019)	-0.013 (0.019)	-0.015 (0.019)	-0.015 (0.019)	-0.013 (0.019)
Firm's patent intensity	0.236 (0.208)	0.245 (0.207)	0.227 (0.209)	0.246 (0.207)	0.238 (0.206)	0.219 (0.208)
Constant	-1.961*** (0.170)	-1.882*** (0.172)	-1.832*** (0.173)	-1.884*** (0.170)	-1.778*** (0.162)	-1.730*** (0.163)
Observations	11,748	11,748	11,748	11,748	11,748	11,748
Number of firms	1.025	1.025	1.025	1.025	1.025	1.025
Chi square	1,257***	1,217***	1,264***	1,216***	1,298***	1,320***
Likelihood-ratio test		52***	32**	0	178***	32**
		vs Model 1	vs Model 2	vs Model 2	vs Model 2	vs Model 5

Notes: Firm-clustered standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05 (two-tailed tests)

Table 4 reports the results of the logit analyses. Model 1 only contains the control variables, whereas Models 2 through 6 shed light on the validity of our hypotheses. For the control variables we find that, compared to investments in non-high-tech manufacturing activities (the omitted category), investments in all other types of value-chain activities are more likely to be made in global cities. This especially holds for investments in knowledge-intensive activities and those in sales activities, as shown by their relatively large regression coefficients. We also find that target-country experience has a negative effect on firms' propensity to invest in global cities. Models 5 and 6 make clear that this effect is caused by firms' lower propensity to invest in such cities when they have more target-country experience in other subnational locations; when they have more target-country experience in global cities, they actually have a higher propensity to invest in such cities. The latter finding may be driven by advantages associated with collocating a firm's value-chain activities within a country (e.g., Alcacer and Delgado, 2016; Defever, 2006), given that the number of global cities in a country is usually limited.

We also find that target-country geographic distance increases a firm's propensity to invest in a global city, presumably because investments in more remote countries entail higher parent-subsidiary communication challenges (Slangen, 2011), which are mitigated by global cities' high international connectivity (Belderbos *et al.*, 2017). Firms are also more likely to invest in global cities when such cities have received relatively more of a country's inward investments, reflecting global cities' greater general location advantages. Finally, we find that service firms, smaller firms, and firms with a higher leverage are more likely to invest in global cities.

Model 2 tests hypothesis 1, which states that the contextual distance to a target country has a positive effect on a firm's inclination to invest in a global city in that country. This hypothesis is supported, as the regression coefficient of our measure of contextual distance is significantly positive in Model 2 ($p < 0.001$). Model 3 tests hypothesis 2, which proposed that the positive effect

of contextual distance on a firm's propensity to invest in a global city is stronger for investments in knowledge-intensive activities than for those in less knowledge-intensive ones. This hypothesis also receives support, as the interaction between contextual distance and the dummy variable for investments in knowledge-intensive activities is significantly positive in Model 3 ($p < 0.001$). Even though the effect of contextual distance is weaker for investments in less knowledge-intensive activities, we find that this effect is still significantly positive for such investments ($p < 0.05$). This suggests that even firms establishing less knowledge-intensive activities find global cities increasingly attractive investment locations as a target country's contextual distance becomes larger.

Model 4 tests hypothesis 3a, which predicted that a firm's target-country experience weakens the positive effect of contextual distance on a firm's propensity to invest in a global city. This hypothesis does not receive support, as the coefficient of the interaction between contextual distance and a firm's target-country experience is insignificant. However, we do find support for hypothesis 3b, which is tested in Model 5. In that model, we find that the interaction between contextual distance and a firm's target-country experience in global cities is significantly negative ($p < 0.001$), whereas that between contextual distance and a firm's target-country experience in other locations is non-significant. A t-test confirms that the difference between the coefficients of the two interaction terms is significant ($p < 0.01$). These findings lend support to hypothesis 3b, which predicted that a firm's target-country experience in global cities weakens the positive effect of contextual distance on a firm's propensity to invest a global city more strongly than a firm's target-country experience in other locations. Finally, Model 6 shows that the moderating effects of investments in knowledge-intensive activities and target-country experience in global cities remain significant when we enter all interaction terms simultaneously.

To gain insight into the economic significance of our findings, we used the regression coefficients of Model 6 to calculate the effects of a standard deviation change in our main independent variables on the odds that an investment is made in a global city rather than elsewhere in a target country. Specifically, we calculated $e^{b*SD} - 1$, where b is the estimated coefficient of the variable of interest and SD the standard deviation of the variable. For less knowledge-intensive activities a standard deviation increase in contextual distance increases the odds of investing in a global city by 8 percent, while for knowledge-intensive activities the increase is substantially greater, at 41 percent. These percentages apply to firms without target-country experience. For firms whose level of target-country experience in global cities is one standard deviation above zero, the effect of contextual distance for less knowledge-intensive activities turns negative (-17 percent), while for knowledge-intensive activities, the positive effect is reduced to 8 percent. For comparison, a standard deviation increase in firm size reduces the odds of investing in global cities by 19 percent.

Supplementary Analyses

To assess the robustness of our above results, we performed several additional analyses.⁵ First, we used an alternative data source to distinguish between investments in global cities and those in other subnational locations, notably MasterCard's (2008) list of the world's 75 leading commercial cities (Belderbos *et al.*, 2017). The use of this more limited and time-invariant list generated similar results. Second, we classified towns and villages nearby our original set of global cities as being part of these cities, thus broadening global cities' geographic scope.⁶ We no longer found support

⁵ The results of these analyses are available from the authors upon request.

⁶ We defined nearby towns and villages as those belonging to the same agglomeration as the global city. Given the lack of a uniform worldwide definition of agglomerations, we defined them as Metropolitan Statistical Areas for the US, whereas for other countries we manually identified them based on Google

for hypothesis 1, but continued to find support for hypotheses 2 and 3b. A possible reason for the loss of support for hypothesis 1 is that nearby towns and villages tend to be less cosmopolitan and host fewer providers of advanced producer services than global cities themselves. Compared to global cities, nearby towns and villages may therefore be inferior places for gathering target-country contextual knowledge, causing the inclusion of such locations in the spatial definition of a global city to nullify the positive effect of contextual distance on the propensity to invest in such a city.

Third, we split investments in global cities into those in alpha cities and those in beta-level cities and reran our models using multinomial logit analysis, with investments in other subnational locations forming the baseline category. We continued to find support for hypotheses 1, 2, and 3b, both for the subset of investments in alpha cities and for those in beta-level cities. Fourth, we split investments in global cities into investments in ‘established’ and ‘new’ global cities and again performed a series of multinomial logit analyses using investments in other subnational locations as the baseline category. We operationalized established global cities as cities that were already classified as alpha or beta-level cities on a previous list published by the GaWC Research Network and new global cities as alpha and beta-level cities that were classified as such for the first time. We again found support for hypotheses 1, 2, and 3b, both for the subset of investments in established global cities and for those in new ones.

Fifth, since Hofstede’s cultural dimensions are the most strongly criticized elements of our measure of contextual distance (e.g., Kirkman, Lowe and Gibson, 2006), we replaced them by the nine dimensions uncovered in the GLOBE project (House *et al.*, 2004). Although this project has

maps data on proximity and driving distance. The results of this additional analysis should therefore be considered as tentative.

also been criticized (Hofstede, 2006; Taras, Steel and Kirkman, 2010), we consider it useful to assess whether our results are sensitive to the use of cultural distance measure. Following prior studies, we used countries' practices scores on the GLOBE dimensions rather than their value scores (e.g., Reus and Lamont, 2009). Since the GLOBE study's cultural dimensions are available for fewer countries than Hofstede's, our sample was reduced to 7,341 investments by 832 firms. Nevertheless, we obtained results similar to those of our original analyses.

Finally, we ran our models for each of the three forms of contextual distance separately. We again obtained similar results, although in Model 2 the level of significance of the positive effect of cultural distance was somewhat lower than that of administrative and economic distance ($p < 0.05$ vs. $p < 0.001$).

DISCUSSION

In this study we have argued that firms can limit the liability of foreignness stemming from contextual distance between their home country and a target country more easily by investing in a global city in the target country rather than elsewhere in the country. The reason, we proposed, is that global cities have a unique set of attributes – notably a cosmopolitan environment, a dense network of advanced producer services, and high connectivity with other locations – that facilitate the gathering of contextual knowledge about the target country of an investment. This led us to hypothesize that the contextual distance to a target country has a positive effect on the chance that a foreign investment is made in a global city rather than elsewhere in the country. We have also argued that the strength of this effect depends on a foreign investor's need for contextual knowledge about the target country, and that this need is higher for investments in knowledge-intensive activities and lower for investors with more target-country experience and target-country experience in global cities in particular.

We obtained considerable support for our framework in an analysis of 11,748 cross-border greenfield investments from and into various countries over the period 2008-2012. Specifically, we found that firms are indeed more likely to invest in global cities than in other subnational locations as the contextual distance to a target country increases, and especially so if they invest in knowledge-intensive activities or lack target-country experience in global cities.

These findings enrich several streams of IB research. The first is the literature on the role of contextual distance in firms' international expansion. Whereas prior studies have shown that various forms of contextual distance affect firms' choices of whether and how to expand into a foreign country (e.g., Berry *et al.*, 2010; Estrin *et al.*, 2009; Flores and Aguilera, 2007), we show that such distance also influences firms' choices of where to expand within such a country.

Second, prior research has shown that foreign investors can gain efficient access to contextual knowledge about a target country by consulting their existing operations there (Barkema *et al.*, 1996; Hennart and Park, 1994) or those of fellow business group members (Chang, 1995), and by acquiring locally-experienced firms rather than making greenfield investments (Caves, 1996; Hennart and Park, 1993; Slangen and Hennart, 2008). We add to these insights by reporting evidence consistent with the idea that another way to gain relatively easy access to contextual local knowledge, in particular for greenfield investors, is to make an investment in a global city rather than elsewhere in the target country.

Third, prior IB studies of the role of foreign investment experience have shown that different forms of supranational experience affect firms' internationalization strategies to different degrees. For instance, Dow and Larimo (2009) found that experience with the cultural block to which a target country belongs increases foreign investors' preference for wholly-owned subsidiaries over joint ventures whereas experience with other cultural blocks does not. Likewise, Delios and Henisz (2003) found that experience with politically instable countries weakens the negative effect of

political instability in a country on a firm's propensity to invest there, whereas experience with politically stable countries strengthens that negative effect. We add to these studies by drawing attention to the role of foreign investment experience at the subnational level and showing that different forms of such experience also exert differential effects. Specifically, our findings indicate that target-country experience in global cities significantly lowers the degree to which contextual distance stimulates investment in a global city, whereas target-country experience in other locations does not.

Finally, our study contributes to the small but growing body of IB research on global cities (Belderbos *et al.*, 2017; Blevin *et al.*, 2016; Goerzen *et al.*, 2013). Specifically, whereas Goerzen *et al.*'s (2013) seminal study found foreign firms' propensity to invest in a global city to be a function of investment and investor characteristics, we show that this propensity also depends crucially on the degree to which the home and target-country context differ from one another. Moreover, our finding that the impact of contextual differences on the propensity to invest in a global city is moderated by the knowledge-intensity of the activity invested in and an investor's target-country experience in global cities indicates that investment and investor characteristics also influence this propensity in a more complex manner, rather than only directly as shown by Goerzen *et al.* (2013). Overall, our study sheds further light on the subnational dimension of firms' internationalization strategies, a dimension that has received relatively little research attention, despite its theoretical and empirical relevance (Chan *et al.*, 2010; Ma *et al.*, 2013; Slangen, 2016).

Our findings entail valuable insights for managers of internationalizing firms as well as city-level policy makers. Managers could use our findings to determine the attractiveness of choosing a global city as an investment location within a target country, based on the country's contextual distance from their firm's home country, the knowledge-intensity of the activity they plan to invest in, and their firm's target-country experience in global cities. Especially, when managers plan to

invest in a knowledge-intensive activity in a contextually distant country where their firm lacks global city experience, they are well advised to invest in a global city, because they will likely require much contextual knowledge in this case and thus have much to gain from the fact that such knowledge can be sourced relatively efficiently in global cities. For city-level policymakers, particularly those who wish to expand their city's business ecosystem by diversifying its base of inward foreign investors, our findings suggest benefits of aspiring a 'global' status for their city. Such a status will likely result in more inward investments from contextually distant countries, especially investments in knowledge-intensive activities and investments by firms with little target-country experience in global cities. To develop their city into a 'global' one, city officials should strive to (1) create a more cosmopolitan environment, for instance by investing in livability aspects that are particularly appealing to high-skilled foreigners; (2) attract more providers of advanced producer services, for example by offering such providers financial incentives to set up shop locally; and (3) improve their city's connectivity by investing in airport and ICT infrastructure.

Despite its merits, our study also has some limitations, which may form the foundation for future research. First, by analyzing how a foreign investor's choice of subnational investment location is affected by the contextual distance to the target country of the investment, we have made the implicit assumption that this choice is made on a country-by-country basis and, thus, that firms first decide on the target country and then on where to invest within that country.⁷ Although several studies have shown the validity of this assumption (Head and Mayer, 2004; Mataloni, 2011) and although others have also been made it (e.g., Crescenzi *et al.*, 2014), future studies could relax the assumption and develop more complex models that allow for the possibility that subnational location choices are made across sets of countries.

⁷ We thank an anonymous reviewer for pointing this out.

Second, given the scarcity of fine-grained data on the contextual characteristics of subnational regions, we measured contextual distance at the country level rather than at the subnational level. However, in some cases, firms deciding on whether to invest in a global city or in a different micro-location might not assess the contextual distance to an entire target country but rather that to a broadly-defined subnational region hosting a global city, for instance a Chinese province or a US state. Similarly, they might not assess contextual distances at the level of their home country but rather at the level of the domestic subnational region where their HQ or the bulk of their domestic operations are based. Our country-level measure of contextual distance does not capture variation that may ensue from such region-level views on contextual distance. To gain insight into the prevalence of such views and, thus, the need for region-level measures of contextual distance, future studies could survey managers responsible for foreign investment location decisions.

Finally, since we aimed to contrast global cities and other subnational locations, we paid scant attention to variation among global cities and, moreover, assumed away variation among other subnational locations. However, both global cities and other subnational locations are likely to be characterized by varying degrees of cosmopolitanism, presence of advanced producer services, and connectivity (see e.g., Belderbos *et al.*, 2017) and, thus, by variation in the degree to which they facilitate the gathering of target-country contextual knowledge. Future research could therefore attempt to create finer-grained categories of subnational locations in terms of their suitability for gathering such knowledge and explore how foreign investors decide between these location categories.

CONCLUSION

Foreign investors facing a greater contextual distance to a target country have a higher propensity to invest in a global city rather than in a different subnational location. This positive association is

driven by global cities' unique attributes, which facilitate the gathering of contextual knowledge about the target country and therefore make it relatively easy to limit the liability of foreignness stemming from contextual distance. The propensity to invest in a global city as a function of a target country's contextual distance is even higher for firms investing in knowledge-intensive activities and for those with little target-country experience in global cities, as such firms have a greater need for local contextual knowledge. Subnational location choices for foreign investments are thus driven by a nuanced interplay between a country's contextual distance and investment and investor characteristics.

REFERENCES

- Acuto, M., 2011. Finding the global city: An analytical journey through the 'Invisible College'. *Urban Studies*, **48**(14): 2953-2973.
- Alcacer, J. and Delgado, M., 2016. Spatial organization of firms and location choices through the value chain. *Management Science*, **62**(11): 3213-3234.
- Almeida, P. and Phene, A., 2004. Subsidiaries and knowledge creation: The influence of the MNC and host country on innovation. *Strategic Management Journal*, **25**(8-9): 847-864.
- Barkema, H.G., Bell, J.H.J. and Pennings, J.M., 1996. Foreign entry, cultural barriers, and learning. *Strategic Management Journal*, **17**(2): 151-166.
- Basuil, D.A. and Datta, D.K., 2015. Effects of industry- and region-specific acquisition experience on value creation in cross-border acquisitions: The moderating role of cultural similarity. *Journal of Management Studies*, **52**(6): 766-795.
- Beaverstock, J., Smith, R. and Taylor, P. 1999. A roster of world cities. *Cities*, **16**(6): 445-458.
- Belderbos, R., Capannelli, G. and Fukao, K., 2001. Backward vertical linkages of foreign manufacturing affiliates: Evidence from Japanese multinationals. *World Development*, **29**(1): 189-208.
- Belderbos, R., Du, H. S. and Goerzen, A. 2017. Global cities, connectivity, and the location choice of MNC regional headquarters. *Journal of Management Studies*, **54** (8): 1271-1302.
- Belderbos, R., Leten, B. and Suzuki, S. 2013. How global is R&D? Determinants of the home country bias in R&D. *Journal of International Business Studies*, **44**(8): 765-786.
- Berry, H., Guillen, M.F. and Zhou, N., 2010. An institutional approach to cross-national distance. *Journal of International Business Studies*, **41**(9): 1460-1480.

- Beugelsdijk, S., Ambos, B. and Nell, P. C. 2018. Conceptualizing and measuring distance in international business research: Recurring questions and best practice guidelines. *Journal of International Business Studies*, **49**(9): 1113-1137.
- Beugelsdijk, S, Kostova, T, Kunst, V.E., Spadafora and Van Essen, M., 2018. Cultural distance and firm internationalization: A meta-analytical review and theoretical implications. *Journal of Management*, **44**(1): 89-130.
- Beugelsdijk, S. and Mudambi, R., 2013. MNEs as border-crossing multi-location enterprises: The role of discontinuities in geographic space. *Journal of International Business Studies*, **44**(5): 413-426.
- Beugelsdijk, S., Nell, P.C. and Ambos, B., 2017. When do distance effects become empirically observable? An investigation in the context of headquarters value chain for subsidiaries. *Journal of International Management*, **23**(3): 255-267.
- Beugelsdijk, S., Slangen, A.H.L., Maseland, R. and Onrust, M., 2014. The impact of home-host cultural distance on foreign affiliate sales: The moderating role of cultural variation within host countries. *Journal of Business Research*, **67**(8):1638-1646.
- Blevins D.P., Moschieri C., Pinkham B.C. and Ragozzino R., 2016. Institutional changes within the European Union: How global cities and regional integration affect MNE entry decisions. *Journal of World Business*, **51**(2): 319-330.
- Brett, J.M. and Okumura, T., 1998. Inter-and intracultural negotiation: U.S. and Japanese negotiators. *The Academy of Management Journal*, **41**(5): 495-510.
- Calhoun, M., 2002. Unpacking the liability of foreignness: identifying culturally driven external and internal sources of liability for the foreign subsidiary. *Journal of International Management*, **8**: 301–321.
- Campbell, J.T., Eden, L. and Miller, S.R., 2012. Multinationals and corporate social responsibility in host countries: Does distance matter? *Journal of International Business Studies*, **43**(1): 84-106.
- Castellani, D., Jimenez, A. and Zanfei, A., 2013. How remote are R&D labs? Distance factors and international innovative activities. *Journal of International Business Studies*, **44**(7): 649-675.
- Caves, R.E., 1996. *Multinational enterprise and economic analysis*. Cambridge university press.
- Chan, C.M., Makino, S. and Isobe, T., 2010. Does subnational region matter? Foreign affiliate performance in the United State and China. *Strategic Management Journal*, **31**(11): 1226-1243.
- Chang, S.J., 1995. International expansion strategy of Japanese firms: Capability building through sequential entry. *The Academy of Management Journal*, **38**(2): 383-407.
- Chung, W. and Alcacer, J., 2002. Knowledge seeking and location choice of foreign direct investment in the United States. *Management Science*, **48**(12): 1517-1644.
- Cohen, W. and Levinthal, D., 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, **35**(1), 128-152.

- Crescenzi, R., Pietrobelli, C. and Rabellotti, R. 2014. Innovation drivers, value chains and the geography of multinational corporations in Europe. *Journal of Economic Geography*, **14**(6): 1053-1086.
- Defever, F., 2006. Functional fragmentation and the location of multinational firms in the enlarged Europe. *Regional Science and Urban Economics*, **36**(5): 658-677.
- Delios, A. and Henisz, W.J., 2003. Political hazards, experience, and sequential entry strategies: the international expansion of Japanese firms, 1980-1998. *Strategic Management Journal*, **24**(11): 1153-1164.
- Derudder, B., Taylor, P., Ni, P., De Vos, A., Hoyler, M., Hanssens, H., Bassens, D., Huang, J., Witlox, F., Shen, W. and Yang, X., 2010. Pathways of change: Shifting connectivities in the world city network, 2000–08. *Urban Studies*, **47**: 1861-1877.
- Di Minin, A. and Bianchi, M. 2011. Safe nests in global nets: Internationalization and appropriability of R&D in wireless telecom. *Journal of International Business Studies*, **42**(7): 910-934.
- Doel, M. and Hubbard, P., 2002. Taking world cities literally: Marketing the city in a global space of flows. *City: Analysis of Urban Trends, Culture, Theory, Policy, Action*, **6**: 351–368.
- Dow, D. and Larimo, J., 2009. Challenging the conceptualization and measurement of distance and international experience in entry mode choice research. *Journal of International Marketing*, **17**(2): 74-98.
- Eden, L. and Miller, S., 2004. Distance matters: Liability of foreignness, institutional distance and ownership strategy. In: *Theories of the Multinational Enterprise: Diversity, Complexity and Relevance*, pp. 187-221, Emerald Group Publishing Limited.
- Eriksson, K., Johanson, J., Majkgard, A. and Sharma, D.D., 1997. Experiential knowledge and costs in the internationalization process. *Journal of International Business Studies*, **28**(2): 337-360.
- EUROSTAT, 2018. https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:High-tech_classification_of_manufacturing_industries.
- Estrin, S., Baghdasaryan, D. and Meyer, K., 2009. The impact of institutional and human resource distance on international entry strategies. *Journal of Management Studies*, **46**(7): 1171-1196.
- Flores, R.G. and Aguilera, R., 2007. Globalization and location choice: an analysis of US multinational firms in 1980 and 2000. *Journal of International Business Studies*, **38**(7): 1187-1210.
- Friedmann, J., 1986. The world city hypothesis. *Development and Change*, **17**: 69-83.
- Geddes, P., 1915. *Cities in Evolution*. Williams & Norgate, London.
- Ghemawat, P., 2001. Distance still matters: The hard reality of global expansion. *Harvard Business Review*, **79**(8): 137-147.
- Goodall, K. and Roberts, J., 2003. Only connect: teamwork in the multinational. *Journal of World Business*, **38**: 150-164.
- Goerzen, A., Asmussen, C.G. and Nielsen, B.B., 2013. Global cities and multinational enterprise location strategy. *Journal of International Business Studies*, **44**(5): 427-450.

- Hair, J., Black, W., Babin, B., Anderson, R. and Tatham, R., 2006. *Multivariate Data Analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hall, P. G., 1966. *The World Cities*. London: Weidenfeld and Nicolson.
- Hannerz, U., 1990. Cosmopolitans and locals in world culture. *Theory, Culture & Society* (SAGE, London, Newbury Park and New Delhi), **7**:237-251.
- Harzing, A.W., 2002. Acquisitions versus greenfield investments: International strategy and management of entry modes. *Strategic Management Journal*, **23**(3): 211-227.
- Head, K. and Mayer, T., 2004. Market potential and the location of Japanese investment in the European Union. *Review of Economics and Statistics*, **86**(4): 959-972.
- Henisz, W.J. and Delios, A., 2001. Uncertainty, imitation and plant location: Japanese multinational corporations, 1990-1996. *Administrative Science Quarterly*, **46**(3):443-475.
- Hennart, J. and Park, Y.R., 1993. Greenfield vs. acquisition: The strategy of Japanese investors in the United States. *Management Science*, **39**(9): 1054-1070.
- Hennart, J. and Park, Y.R., 1994. Location, governance, and strategic determinants of Japanese manufacturing investments in the United States. *Strategic Management Journal*, **15**(6): 419-436.
- Hofstede, G., 2006. What did GLOBE really measure? Researchers' minds versus respondents' minds. *Journal of International Business Studies*, **37**(6), 882-896.
- Hofstede, G., Hofstede, G.J. and Minkov, M., 2010. *Cultures and organizations: Software of the mind* (3rd Ed.). New York: McGraw-Hill.
- House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W., and Gupta, V., 2004. *Culture, leadership and organizations: the GLOBE study of 62 societies*. Thousand Oaks, CA: Sage Publications.
- Hymer, S.H., 1976. *The international operations of national firms: A study of direct investment*. Cambridge, MA: MIT Press.
- Jofre-Monseny, J., Marín-López, R. and Viladecans-Marsal, E., 2011. The mechanisms of agglomeration: Evidence from the effect of inter-industry relations on the location of new firms. *Journal of Urban Economics*, **70**(2-3): 61-74.
- Johanson, J. and Vahlne, J.E., 1977. The internationalization process of the firm-a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, **8**(1): 23-32.
- Kang, Y. and Jiang, F., 2012. FDI location choice of Chinese multinationals in East and Southeast Asia: Traditional economic factors and institutional perspective. *Journal of World Business*, **47**: 45-53.
- Kavusan, K., Noorderhaven, N.G. and Duysters, G.M., 2016. Knowledge acquisition and complementary specialization in alliances: The impact of technological overlap and alliance experience. *Research Policy*, **45**(10): 2153-2165.
- Kenney, M. and Florida, R., 1994. The organization and geography of Japanese R&D: results from a survey of Japanese electronics and biotechnology firms. *Research Policy*, **23**: 305-323.

- Kirkman, B.L., Lowe, K.B. and Gibson, C.B., 2006. A quarter century of ‘culture’s consequences’: A review of empirical research incorporating Hofstede’s cultural values framework. *Journal of International Business Studies*, **37**(3): 285-320.
- Kogut, B. and Singh, H., 1988. The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, **19**(3): 411-432.
- Laud, R., Grein, A., Nachum, L., 2009. Gaining advantage through global learning hubs. *Journal of Practical Global Business*, **8**: 19-41.
- MasterCard, 2008. *Worldwide Centers of Commerce Index*. Purchase, NY: MasterCard WorldWide.
- Ma, X., Delios, A. and Lau, C. M., 2013. ‘Beijing or Shanghai? The strategic location choice of large MNEs’ host-country headquarters in China’. *Journal of International Business Studies*, **44**: 953–61.
- Mataloni, R.J., 2011. The structure of location choice for new U.S. manufacturing investments in Asia-Pacific. *Journal of World Business*, **46**(2): 154-165.
- Matsuo, H., 2000. Liabilities of foreignness and the uses of expatriates in Japanese multinational corporations in the United States. *Sociology Inquiry*, **70**(1): 88–106.
- Meyer, K. and Benito, G.R.G., 2016. Where do MNEs locate their headquarters? At home! *Global Strategy Journal*, **6**: 149-159.
- Meyer, K. and Nguyen, H.V., 2005. Foreign investment strategies and sub-national institutions in Emerging Markets: Evidence from Vietnam. *Journal of Management Studies*, **42**(1): 63-93.
- Mezias, J. M., 2002a. How to identify liabilities of foreignness and assess their effects on multinational corporations. *Journal of International Management*, **8**(3): 265–283.
- Mezias, J.M., 2002b. Identifying liabilities of foreignness and strategies to minimize their effects: The case of labor lawsuit judgement in the United States. *Strategic Management Journal*, **23**: 229-244.
- Miller, S.R., Thomas, D.E., Eden, L. and Hitt, M., 2008. Knee deep in the big muddy: the survival of emerging market firms in developed markets. *Management International Review*, **48**(6): 645-666.
- Newman, K.L. and Nollen, S.D., 1996. Culture and congruence: The fit between management practices and national culture. *Journal of International Business Studies*, **27**(4): 753-779.
- Ramasamy, B., Yeung, M. and Laforet, S., 2012. China’s outward foreign direct investment: Location choice and firm ownership. *Journal of World Business*, **47**:17-25.
- Reus, T.H. and Lamont, B.T., 2009. The double-edged sword of cultural distance in international acquisitions. *Journal of International Business Studies*, **40**(8): 1298-1316.
- Rickley, M., 2019. Cultural generalists and cultural specialists: Examining international experience portfolios of subsidiary executives in multinational firms. *Journal of Management*, **45**(2): 384-416.
- Riefler, P., Diamantopoulos, A. and Siguaw, J.A., 2012. Cosmopolitan consumers as a target group for segmentation. *Journal of International Business Studies*, **43**(2): 285-305.

- Sassen, S., 1996. Whose city is it? Globalization and the formation of new claims. *Public Culture Winter*, **8**(2): 205-223.
- Slangen, A.H.L., 2011. A communication-based theory of the choice between greenfield and acquisition entry. *Journal of Management Studies*, **48**(8): 1699-1726.
- Slangen, A.H.L., 2016. The comparative effect of subnational and nationwide cultural variation on subsidiary ownership choices: The role of spatial coordination challenges and Penrosean growth constraints. *Economic Geography*, **92**(2): 145-171.
- Slangen, A.H.L., Beugelsdijk, S. and Hennart, J.F., 2011. The impact of cultural distance on bilateral arm's length exports: An international business perspective. *Management International Review*, **51**(6): 875-896.
- Slangen, A.H.L. and Hennart, J., 2008. Do multinationals really prefer to enter culturally distant countries through greenfields rather than through acquisitions? The role of parent experience and subsidiary autonomy. *Journal of International Business Studies*, **39**(3): 472-490.
- Song, J., 2002. Firm capabilities and technology ladders: Sequential foreign direct investments of Japanese electronics firms in East Asia. *Strategic Management Journal*, **23**(3): 191-200.
- Taras, V., Steel, P. and Kirkman, B.L., 2010. Negative practice–value correlations in the GLOBE data: Unexpected findings, questionnaire limitations and research directions. *Journal of International Business Studies*, **41**(8): 1330-1338.
- Tsang, E.W.K. and Yip, P.S.L., 2007. Economic distance and the survival of foreign direct investments. *The Academy of Management Journal*, **50**(5): 1156-1168.
- Zaheer, S., 1995. Overcoming the Liability of Foreignness. *Academy of Management Journal*, **38**(2): 341-364.
- Zaheer, S., Schomaker, M. and Nachum, L., 2012. Distance without direction: Restoring credibility to a much loved construct. *Journal of International Business Studies*, **43**(1):18-27.

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