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Business group affiliation and foreign subsidiary performance

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Abstract

Research Summary: Business group (BG) affiliation affects the strategic behavior and performance of firms. Until now it has been theoretically unclear and insufficiently empirically tested whether affiliation advantages extend to the foreign subsidiaries of group members. We attempt to determine if they do, and if so, to identify the boundary conditions that matter. We analyze a large panel of 451 foreign subsidiaries of 136 Indian multinational firms over the 2003–2012 period and find that BG affiliation does enhance foreign subsidiary performance when host-market institutions are weak and when the parent is in manufacturing.

Managerial Summary: Our research speaks directly to managers of multinational firms who seek to leverage the benefits of BG affiliation across national borders. We show that BG affiliation is only beneficial when the foreign subsidiary is located in a country characterized by weak institutions and when the parent is in manufacturing. If, on the other hand, the foreign subsidiary is in a country with well-functioning institutions and the parent in services, managers will not be able to count on BG advantages, rather they will have to develop competitive capabilities locally, that is, the foreign subsidiary will have to function more like a standalone firm.

KEYWORDS
business groups, foreign subsidiary, institutional quality, subsidiary performance

1 | INTRODUCTION

Business groups (BGs) are made up of firms, often in unrelated industries, that are legally independent from one another, and yet they form an interconnected network (Granovetter, 1995; Khanna & Palepu, 1997; Yiu, Lu, Bruton, & Hoskisson, 2007). Member firms—BG affiliates—derive multiple benefits that help them cope with local conditions and derive first-mover advantages when opportunities arise (Guillén, 2000; Khanna & Yafeh, 2007; Manikandan & Ramachandran, 2015). Our understanding of BGs is based largely on the activities and conduct of member firms in their respective home countries (Chang & Hong, 2000; Guillén, 2002; Hoskisson, Cannella, Tihanyi, & Faraci, 2004; Luo & Chung, 2005; Manikandan & Ramachandran, 2015). With BG affiliated firms increasingly expanding into foreign markets (Holmes, Hoskisson, Kim, Wan, & Holcomb, 2018), the question of whether group affiliation benefits extend to foreign subsidiaries has arisen. While some have argued that BG affiliation facilitates foreign market expansion (e.g., Chari, 2013; Chen & Jaw, 2014; Elango & Pattnaik, 2007; Garg & Delios, 2007), there are studies that indicate it does not (e.g., Chittoor, Sarkar, Ray, & Aulakh, 2009; Gaur & Delios, 2015; Pattnaik, Lu, & Gaur, 2018). We need a better understanding of the benefits that foreign subsidiaries of BGs can derive from BG affiliation.

The possibility of cross-border BG benefits takes on additional importance in light of the proactive pursuit of internationalization by firms based in emerging economies where such groups are prevalent (BCG, 2014; Guillén & García-Canal, 2009; Luo & Tung, 2007). Many of those that have become global giants are part of large groups, take LG in Korea, Tata in India, and Haier in China, all of which have been widely researched and observed in practice. PriceWaterhouseCoopers (PWC, 2010) projects a rise of more than 40% in the number of BG affiliated firms by 2024 which will make them an even more significant segment of total global business. We do not know how well BG member firms are performing "[...] in increasingly dynamic and innovative international markets" (Holmes et al., 2018: 134), although a meta-analysis of the vast BG literature shows that "[...] the performance implications of affiliation are very heterogeneous and must be qualified by the moderating effects of institutional contingencies" (Carney, Gedajlovic, Heugens, Van Essen, & Van Oosterhout, 2011, p. 451). Thus, to assess whether BG affiliation has an impact on firm internationalization, institutional context needs to be taken into account. Does BG affiliation efficacy depend on institutional conditions in the country in which a foreign subsidiary is located, and if so, to what extent? As far as we have been able to determine, there has been no systematic analysis of this possibility. We make an important contribution to the BG literature by comparing the financial performance of the foreign subsidiaries of BG affiliated firms to that of their unaffiliated competitors. Our research question is whether BG affiliation is beneficial to foreign subsidiary financial performance, and if so, under what conditions.

We posit that the unique network form of BGs directly benefits the foreign subsidiaries of member firms as it facilitates the redeployment of group resources, notably access to financial and human capital. We predict therefore that the foreign subsidiaries of BG affiliated firms will perform better than the foreign subsidiaries of unaffiliated firms. Specifically, we expect BG affiliation to indirectly benefit foreign subsidiaries by strengthening the firm-specific advantages (FSAs) of the parent firm and that this will be reflected in the financial performance of subsidiaries in institutionally weak markets where the need for fungible BG resources is high and the external market supply of such resources low. Finally, given the inherent attributes of services, such as intangibility, customization, inseparability and simultaneity in terms of production and consumption (Boddewyn, Habrich, & Perry, 1986; Campbell & Verbeke, 1994), and the associated limits on the ability to transfer such advantages (Lamin, 2013), we

expect BG affiliation to be more pertinent for multinational enterprises (MNEs) in manufacturing than in services. Therefore, we postulate that in institutionally weak countries the performance of foreign subsidiaries of BG affiliated manufacturing firms will be superior to that of BG affiliated service ones.

We test our predictions on a sample of 451 foreign subsidiaries of 136 Indian MNEs, of which 83 are BG affiliated. Our sample includes 2,293 observations over the 2003–2012 period. We manually collected subsidiary, parent, and BG-level data from multiple databases. Controlling for subsidiary, parent, and BG-specific effects, we find a positive relationship between BG affiliation and foreign subsidiary financial performance, which is contingent upon the institutional qualities of the host country and the industry of the parent firm.

We contribute to the BG literature and to international business (IB) theory. First, our study shifts the focus away from first-level firm BG affiliation to second-level firm affiliation, i.e. foreign subsidiary affiliation. The BG literature has by and large examined the advantages and drawbacks of BG affiliation by considering first-level firm performance as it evolves over time with changes in its external environment (e.g., Gubbi, Aulakh, & Ray, 2015; Mahmood & Mitchell, 2004; Vissa, Greve, & Chen, 2010). Most of the research comparing BG affiliated firms with unaffiliated ones has assumed that all firms are exposed to the same home country environment (Carney et al., 2011). We do not know whether BG affiliation advantages can be transferred across national borders. In addition, empirical findings to date have been inconclusive, some showing that affiliation can actually constrain or restrict an affiliate's response to external shocks (see the literature review of Holmes et al., 2018). We make a contribution by empirically showing that BG affiliation advantages can be transferred outside the parent firm home country to the benefit of a foreign subsidiary.

Second, we show that there are limits to the transferability of BG affiliation advantages in that their value is reduced by the strength of institutions in the host country and by the sector in which the parent firm is active. By evaluating the moderating effects of institutional contingencies on the relationship between BG affiliation and foreign subsidiary financial performance in a variety of country institutional settings, we are able to generalize the results of previous single country studies (Khanna & Palepu, 2000; Peng, Wang, & Jiang, 2008; Ramaswamy, Li, & Petitt, 2012). Our research shows that BG affiliation advantages do dissipate with improvement in the quality of institutions, although such dissipation is not uniform across all sectors of the economy (Holmes et al., 2018).

Finally, we bridge two literature streams, BG studies and the role of FSAs in IB (Buckley, 2009; Verbeke, 2013). Our analysis of BG affiliation shifts the emphasis from FSA development within a "single representative actor [the firm], operating in isolation" (Buckley & Casson, 2019: 4) to that of the firm within its internal environment—the BG network—operating in its external environment—under institutional conditions (Buckley, 2018; Narula, 2014; Verbeke & Kano, 2015). In other words, we explore the first-level affiliate parent experience of coping with home country conditions and the second-level affiliate foreign subsidiary need for resources and capabilities. We investigate the sourcing of resources and capabilities within the BG network at lower cost than in the market and then the efficient transfer of them to the foreign subsidiary to give it a competitive edge (Narula, Asmussen, Chi, & Kundu, 2019).

2 | THEORY AND HYPOTHESES

2.1 | BG affiliation advantages

BGs have been defined as "[…] a collection of legally independent firms that are linked by multiple ties, including ownership, economic means (such as inter-firm transactions), and/or social relations

(family, kinship, friendship) through which they coordinate to achieve mutual objectives" (Yiu et al., 2007:1553). They are a particular form of organization found in many countries, but especially in emerging economies (Colpan & Hikino, 2010; Granovetter, 1995; Khanna & Rivkin, 2001). In India 45 of the 50 largest corporations are BGs (Ramachandran, Manikandan, & Pant, 2013), and in China the revenues from registered BGs accounted for more than 93% of the GDP in 2007 (Lee & Kang, 2010). From an institutional theory perspective, by providing an internal market for capital, managerial talent, intermediate products, information, and other important strategic factors, BGs are a solution to factor market underdevelopment (Granovetter, 1995; Khanna & Palepu, 1997; Yiu et al., 2007). BGs help affiliated firms overcome external market deficiencies enablesing them to tap into growth opportunities (Lamin, 2013; Manikandan & Ramachandran, 2015; Purkayastha, Manolova, & Edelman, 2018), and to compete effectively—even survive (Belenzon, Berkovitz, & Rios, 2013; Chang & Hong, 2000; Estrin, Pouliakova, & Shapiro, 2009). BG affiliation is also known to facilitate member firms when coping with exogenous changes in the institutional environment (Gubbi et al., 2015) and respond effectively to threats posed by new competitors (Ayyagari, Dau, & Spencer, 2015).

From a resource-based perspective, BG affiliated firms derive strength from two sources, the first of them being a number of intra-group network attributes, such as reputation, access to financial and human capital, and knowledge that spans industries and consumer markets (Belenzon et al., 2013; Belenzon & Berkovitz, 2010; Buchuk, Larrain, Muñoz, & Urzúa, 2014; Jia, Shi, & Wang, 2013). These kinds of market-based advantages can augment the competitiveness of affiliated firms vis-à-vis their unaffiliated rivals—and allow them to capture monopolistic or Ricardian rents (Cuervo-Cazurra & Genç, 2011; Peteraf, 1993). The second source of strength stems from political and social connections nurtured over time (Bucheli, Salvaj, & Kim, 2019; Chen & Jaw, 2014; Guillén, 2000; Hu, Cui, & Aulakh, 2019; Mukherjee, Makarius, & Stevens, 2018). BGs may leverage such connections to influence government policy to the benefit of their affiliates (Hu et al., 2019; Mukherjee et al., 2018). Non-market advantages, like access to privileged information, help BG affiliated firms cope with aspects of the institutional environment in which they operate, for example, a weak legal system, and to generate "influence rents" (Ahuja & Yayavaram, 2011) by preempting or manipulating business rules and regulations. It is well documented for example that Korean and Indonesian BGs thrive on political patronage and preferential treatment, often offering them a first-mover advantage in newly opened industries (Guillén, 2000; Wan, 2005).

There is a large body of scholarly work on the merits and demerits of BG affiliation across several empirical contexts (see Carney et al., 2011 and Holmes et al., 2018 for reviews). Still, the findings on performance effects remain inconclusive, with some studies reporting that BG affiliation has a positive effect on firm performance (e.g., Chang & Hong, 2000; Estrin et al., 2009; Khanna & Rivkin, 2001), and others finding it adversely affects it, or that the effect is contingent on several factors including the prevailing institutional conditions facing the subsidiary (e.g., Carney et al., 2011). Regardless of the contradictory conclusions, most studies have in common that they derive their findings from comparisons of first-level firms, that is firms with direct BG affiliation, and unaffiliated firms in the same home country context. There has been little attention for the performance aspects of second-level firms such as foreign subsidiaries. This is surprising given the considerable growth in the number of BGs that have been expanding internationally over the last two decades (Bucheli et al., 2019; Gubbi, Aulakh, Ray, Sarkar, & Chittoor, 2010; Kim, Hoskisson, & Lee, 2015; Luo & Tung, 2007; Mukherjee et al., 2018; Purkayastha et al., 2018). BGs are driving globalization in many economies (Holmes et al., 2018) and have benefited from the pro-market reforms in emerging economies (Cuervo-Cazurra, Gaur, & Singh, 2019).

There are notable exceptions to the first-level bent in BG research. Garg and Delios (2007) look at the foreign subsidiaries of affiliated firms and find no independent influence of BG affiliation on the survival of the foreign subsidiaries of Indian MNEs. Chung, Lu, and Beamish (2008) show a positive relationship between Japanese *Keiretsu* affiliation and subsidiary survival. Still, it remains unclear whether—and under what conditions—BG affiliation affects foreign subsidiary performance. We address this lacuna and make an important contribution to the literature in doing so. We begin by examining the nature of BG affiliation advantages across national borders.

2.2 | BG affiliation advantages across national borders

According to the internalization theory of foreign direct investment (FDI), foreign subsidiary performance is associated with the transferability and fungibility of resources and capabilities across national borders (Buckley & Casson, 1976; Hennart, 1982; Rugman, 1981, 1985). Specifically, "[…] superior subsidiary performance comes from the possession, transfer, and deployment of the parent's valuable, rare, and inimitable resources" (Fang, Wade, Delios, & Beamish, 2013: 30), that is, their FSAs. FSAs are localized in headquarters-subsidiary relationships (Buckley & Casson, 1976; Hennart, 1982; Rugman, 1981, 2010), and typically include proprietary assets such as technology, brands, and managerial expertise (Caves, 1982). According to internalization theory, firms attempt to maximize profitability by internalizing their FSAs across national borders in the face of various market imperfections, that is, they create a foreign subsidiary. As such, internationalization theory includes critical elements of both the resource-based view and transaction cost economics (Rugman, 1981). The resource-based view explains which key attributes of FSAs, for example, specificity, complexity, and tacitness, enable firms to sustain their competitive advantage, and transaction cost economics explains the conditions under which MNEs will transfer and exploit FSAs either in-house, that is, through a foreign subsidiary, or through markets (Hennart, 1982). Internalization theory is now ascribing a more active role to the environment the MNE faces, often in conjunction with newly accessed complimentary resources for new FSA development (Verbeke & Kano, 2015). We propose that BG affiliation advantages may be the source of competitive capabilities that enables a BG affiliated firm to establish a foreign subsidiary and run it more profitably than an unaffiliated firm (Narula, 2014; Narula et al., 2019).

BG members, whether first-level affiliated firms or their second-level affiliated foreign subsidiaries, will be able to access the financial reserves of the group (He, Mao, Rui, & Zha, 2013; Jia et al., 2013) to take advantage of profitable business opportunities in a host market. The ability to act in a timely and decisive manner with ready financing provides affiliated foreign subsidiaries an inimitable and non-substitutable advantage over unaffiliated foreign subsidiaries and local unaffiliated firms. It also provides some insurance against possible financial difficulties (Jia et al., 2013), allowing BG affiliated subsidiaries to weather risks and survive delayed returns on investment (Boutin, Cestone, Fumagalli, Pica, & Serrano-Velarde, 2013; Jia et al., 2013), and thus outlast unaffiliated rivals.

In addition to a comparative financial advantage, foreign subsidiaries of BG affiliated firms are able to benefit from the BG managerial talent pool and from the proprietary information and experiential knowledge of the intra-group network. For instance the Tata group in India identifies best practices in each affiliate and transmits them to group members. The Tata Group Corporate Center and the Group Executive Office play an influential role in the globalization of member firms by making funding and key human resources available, disseminating critical experience and learning group-wide, and negotiating on behalf of members with suppliers to bring down procurement costs for the entire group (Khanna, Palepu, & Bullock, 2009). The value of these kinds of efforts is shown by

Kim, Hoskisson, and Wan (2004) who found that BG affiliation initially hampered the outward FDI of Korean BG affiliated firms, but that it had a more beneficial impact when BG affiliated firms started to share more knowledge (Kim, Kim, & Hoskisson, 2010). Yet another benefit is the unique ability of BGs to reallocate labor within the group which gives affiliates flexibility and hence a clear competitive advantage (Belenzon & Tsolmon, 2016).

Finally, strong political and social connections at home can be leveraged by BGs to facilitate internationalization (Mukherjee et al., 2018). The governments of a number of countries, including China, Korea and Indonesia, have openly favored the formation of BGs and nurtured their diversification and their global expansion (Khanna & Yafeh, 2007; Lu, Liu, Wright, & Filatotchev, 2014). Sometimes politically and socially connected BGs reap the benefits of privileged access to foreign investment opportunities through government-to-government agreements. The foreign subsidiaries of BG affiliated firms may enjoy first-mover advantages, acquire local assets at lower-than-market cost, be spared bureaucratic red tape, and be assisted in negotiating favorable deals with local agencies (Buckley, Clegg, Cross, Liu, Voss, & Zheng, 2007), all of which contribute to foreign subsidiary performance.

In summary, BG affiliated foreign subsidiaries can benefit from a range of group advantages, and this is likely to result in stronger financial performance compared to that of unaffiliated foreign subsidiaries. The above arguments logically lead to our first hypothesis:

Hypothesis 1 *The financial performance of foreign subsidiaries of business group affiliated firms will be stronger than that of foreign subsidiaries of unaffiliated firms.*

2.3 | BG affiliation advantages across institutional contexts

We focused in the previous discussion on the generic advantages of BG membership that are shared across affiliated firms such as access to financial resources, managerial talent, information, and experiential knowledge. The value of such advantages is contingent on the institutional context in which a foreign subsidiary operates. In countries where resources are relatively scarce or institutions less developed, access to intra-group resources like those we have listed can insulate an affiliated foreign subsidiary against local market vulnerabilities increasing the possibility of it outcompeting local firms (Belenzon et al., 2013; Boutin et al., 2013). This is particularly true in less developed countries where long-term commitment and the ability to capitalize on business opportunities are especially valuable (Arnold & Quelch, 1998). The entry of LG Electronics, a Korean BG, in India and in Brazil serves as a good example (Ramaswamy, 2007). In both cases the LG foreign subsidiary became profitable only after signaling long-term commitment and making a concerted effort to create brand awareness and a local identity. In other words, "there is a 'substitution' between BG affiliation effects and ambient institutional efficiency on firm-level performance" (Chittoor, Kale, & Puranam, 2015: 1279). Some of these advantages may be muted in more advanced markets, for instance in well-developed debt and equity markets where equal access to finance levels the playing field (Jia et al., 2013; Khanna & Palepu, 2000).

Intra-group network advantages are undeniably relevant in countries with low levels of institutional development or that are subject to political or economic hazards (Lessard, 1986). One effective strategy to cope with such hazards is to immunize the foreign subsidiary by tightly integrating it into the parent firm's global production and trading network (Mukherjee et al., 2018). That not only reduces dependence on local institutions, which in some countries are subject to economic volatility,

and lowers the risks of appropriation of rents and of non–payment of receivables, but it also allows the parent firm to monitor the foreign subsidiary and its external environment on an ongoing basis (Feinberg & Gupta, 2009). For the foreign subsidiary this means immediate access to the parent's global production and trading network, but also to that of the parent's sister affiliates (Bucheli et al., 2019; Chen & Jaw, 2014), providing foreign subsidiaries of BG affiliated MNEs a clear advantage over those of unaffiliated firms.

Finally, BGs have in emerging economies considerable political and social influence on the forming of governmental policy and regulation (Chen, Li, & Fan, 2018; Cuervo-Cazurra et al., 2019; Hu et al., 2019; Rajwani & Liedong, 2015). Thus, foreign subsidiaries located in institutionally weak markets benefit more from BG affiliation advantages when compared to foreign subsidiaries located in institutionally developed markets.

In summary, the institutional benefits of BG affiliation are valuable and of even greater value in an environment characterized by weak institutions than in one with well-developed institutions. Therefore, we propose:

Hypothesis 2 *The positive effect of business group affiliation on the financial performance of foreign subsidiaries is stronger when the foreign subsidiary is located in a country with weak institutions.*

2.4 | BG affiliation advantages across sectors

We have described BG affiliation advantages as advantages emanating from intra-group network attributes such as reputation, financial capital, human capital, information, and knowledge that span industries and consumer markets. We hypothesized that such advantages positively affect the financial performance of group affiliated foreign subsidiaries, and also that the effect is stronger when a foreign subsidiary is located in a country with weak institutions. To extend the theoretical logic used to develop our hypotheses, we examine whether BG affiliation advantages are equally effective across all types of industries.[1] If our arguments regarding BG affiliation advantages and foreign subsidiary performance (H 1) and the effect of host country institutional quality (H2) are correct, one would expect BG affiliation advantages to positively affect the performance of foreign subsidiaries in manufacturing, but not in services.

Our argument is based on some unique aspects of our empirical setting, Indian MNEs. Market liberalization in India in 1991 triggered an aggressive pursuit of cross-border investment by many domestic firms, which contributed to rapid economic growth (Gubbi et al., 2010). Since then Indian firms have invested in other developing economies to such an extent that according to UNCTAD's World Investment Report 2015 India has become one of the largest outward investors in emerging countries (UNCTAD, 2015). The BG is the most prevalent form of business organization in India, and many Indian MNEs are BG affiliated, making BGs key players in India's outward FDI growth (Chittoor & Aulakh, 2015; Sauvant, Pradhan, Chatterjee, & Harley, 2010).

Empirical data shows that firms in knowledge-based services were among the earliest Indian firms to internationalize and become multinationals (Gaur, Kumar, & Singh, 2014). Ever since, Indian firms in services have had the highest ratio of FDI to total assets (Chari, 2013). That sector has been dominated in India by firms in the information technology (IT) industry (Lamin, 2013) which relies heavily on client-specific and project-management capabilities (Ethiraj, Kale, Krishnan, & Singh, 2005). Indian manufacturing firms, in contrast, are involved in a broad spectrum of value-added

activities (Gubbi et al., 2010). This makes our Indian setting ideal given differences in the nature of activities between services and manufacturing in terms of intangibility, perishability, customization, inseparability and simultaneity in production and consumption, as well as heterogeneity and regulatory control (Boddewyn et al., 1986; Campbell & Verbeke, 1994).

We hypothesize that some of the advantages of BG affiliation that we set out in forming our other hypotheses are of less value to firms in services than manufacturing firms. For instance, the human-capital intensive IT industry does not have to make the same level of investment as most manufacturing firms to enter and become established in new markets (Lamin, 2013). Moreover, the Indian government has heavily invested in supporting IT education and the development of IT professionals. This is one reason why the foreign subsidiaries of Indian IT multinationals, especially those whose parent firm is part of a large intra-group network, are able to enter countries with institutionally underdeveloped labor markets (Zaheer & Rajan, 2003). This allows Indian IT MNEs to get around the potentially constraining lack of a qualified local workforce, and thus their foreign subsidiaries benefit less from BG affiliation.

The characteristics of the global IT industry also make expropriation risk relatively low, which diminishes the intermediary role traditionally played by BGs. The IT industry in less developed countries tends to be low end, and system implementation and software programming are often done on-site (Ethiraj et al., 2005). Indian IT parent firms send local engineers overseas to visit clients and to work under their supervision. Since the work done by the deputed personnel is on-site, contractual risks, if any, are reduced due to direct interface between the client and the provider of software services. BG affiliation is likely to be more valuable to manufacturing firms as they derive advantages from group-wide resources that help in building economies of scale and scope. This logically leads to our third hypothesis.

Hypothesis 3 *The positive impact of business group affiliation on the profitability of foreign subsidiaries in institutionally weak countries will be greater when the parent firm is in manufacturing rather than in services.*

3 | EMPIRICAL ANALYSIS

3.1 | Sample and data collection

We test our hypotheses on Indian MNEs. From the moment India opened its economy to international trade and foreign competition, the economy has grown at an annual rate of roughly 7% and has become increasingly integrated in world markets (World Bank, 2013). According to UNCTAD (2015), Indian firms have been among the most active emerging economy foreign direct investors. The recent surge in outward FDI coupled with the prominence of BGs in India (Chittoor & Aulakh, 2015) makes India a suitable setting for testing our hypotheses.

We use multiple sources of data to compile our sample of MNEs, the ORBIS database (Bureau van Dijk) to identify all wholly-owned foreign subsidiaries of Indian MNEs, and Zephyr, the most comprehensive database of worldwide merger and acquisitions, to determine if a foreign subsidiary has been created by an acquisition. The unavailability of subsidiary-level data prior to 2003 in ORBIS, led us to compile a sample spanning 10 years ending in 2012. This is appropriate in the context of our study as it covers important years of rapid growth and internationalization by Indian firms (2004–2008) (UNCTAD, 2015), as well as a period of sharp decline in the global economy, giving

TABLE 1 Sample description

The sample structure	BG affiliated			Non-BG affiliated	
MNEs	83			53	
Service (manufacturing)	24 (59)			18 (35)	
Foreign owned	0			11	
State owned	0			3	
Foreign subsidiaries	342			109	
Acquisition (greenfield)	64 (278)			14 (95)	
Observations	1,758			535	
Host countries	ARG	FRA	NLD	ARG	MEX
	AUS	GBR	NOR	AUS	MYS
	AUT	HUN	POL	BEL	NLD
	BEL	IRL	PRT	CZE	NOR
	BGR	ITA	RUS	DEU	NZL
	BRA	JPN	SGP	ESP	POL
	CHE	KOR	SVK	FIN	PRT
	COL	LUX	SWE	FRA	SGP
	CZE	MAR	THA	GBR	SVK
	DEU	MEX	USA	GRC	SWE
	DNK	MLT	ZAF	IRL	THA
	ESP	MYS	ZMB	ITA	USA
					VNM

us a sample that includes years of both high and low growth across industrial sectors and countries. We link the subsidiary-level data of ORBIS with the Prowess database published by the Centre for Monitoring the Indian Economy. We use Prowess to collect both parent firm-specific data and BG-level data. Prowess covers most public companies in India, both those that are BG affiliated and those that are not, and has been extensively used for Indian BG-related research (e.g., Elango & Pattnaik, 2007; Manikandan & Ramachandran, 2015). Finally, we use World Bank data to collect country-level information (World Bank, 2013). Our final sample consists of 2,293 subsidiary-year observations of 451 foreign subsidiaries owned by 136 Indian MNEs, of which 83 are BG affiliated and 53 not. An overview of the sample structure is given in Table 1.

3.2 | Variables and measures

3.2.1 | Dependent variable

We use return on assets (ROA) to measure *foreign subsidiary performance*. There is research both in the strategy and in the IB literature that uses ROA extensively as a measure of financial performance (Chang, Chung, & Moon, 2013; Chittoor et al., 2009; Elango & Pattnaik, 2007). ROA explicitly considers the assets used to support business activities and determines whether the company can generate an adequate return on these assets. For internationalizing firms "resources are needed for absorbing the high costs of marketing, for enforcing patents and contracts, and for achieving

economies of scale" (Agarwal & Ramaswami, 1992, p. 4). In order to make sure that outliers in the dependent variable do not skew our analysis, we identify and remove outliers via the outlier labeling rule with $g = 2.2$ (Hoaglin & Iglewicz, 1987; Hoaglin, Iglewicz, & Tukey, 1986; Tukey, 1977).

3.2.2 | Independent variables

BG affiliation. We construct a dummy variable which takes the value of one if the foreign subsidiary is part of a BG member firm, and zero otherwise. This is standard practice in the literature on BGs since affiliates do not usually belong to two different BGs at the same time (e.g., Belenzon & Berkovitz, 2010; Manikandan & Ramachandran, 2015). Also, no firm in our sample was partially owned by a BG, and hence the use of a dummy variable is appropriate.

Institutional quality. We measure institutional quality in each host country with the World Governance Indicators (Kaufmann, Kraay, & Mastruzzi, 2010). The World Governance Indicators measure the governmental quality of a country through six dimensions (see Appendix). We add the six dimensions together in order to create an (standardized) institutional quality index (Beugelsdijk, Ambos, & Nell, 2018; Dikova, 2009; Malhotra & Gaur, 2014).[2] Institutional quality ranges from −3.2 to 1.3, with higher scores meaning higher quality.

3.2.3 | Control variables

We included as many variables as possible to control for foreign subsidiary performance. First, at the level of the subsidiary we control for *foreign subsidiary age* and *foreign subsidiary size*. It is likely that MNEs with superior resources and capabilities can acquire highly profitable firms. Hence, we control for *foreign* subsidiary *entry mode* with a dummy variable taking a value of one for acquisitions, and zero for greenfields. At the level of the parent, we control for *MNE age* and *MNE size*, as well as for *MNE performance (ROA)* and *MNE current ratio*. We lag the latter two variables to avoid potential endogeneity problems. Using the number of foreign subsidiaries of the MNE, we also control for *MNE degree of international expansion*, since more experienced MNEs are likely to perform better abroad. We also control for *government owned MNEs* (multinational parent firm owned by the Indian government) and *foreign owned MNEs* (multinational parent firm not Indian owned) by including two sets of dummies. Furthermore, we add the 3-year average of both *MNE R&D expenditures* and *MNE's marketing expenditures* as controls. At the level of the economy, we control for host country *market size* by entering the host country's annual GDP (Buckley et al., 2007). We control for *cultural distance* between India and the host country with the Kogut and Singh index (Beugelsdijk, Kostova, Kunst, Spafadora, & van Essen, 2018; Kogut & Singh, 1988). We also control for whether the subsidiary operates in the *same industry* as its parent. Moreover, we add industry fixed effects for the MNE's industry, the subsidiary's industry, and the year of observation. Finally, to exclude any confounding effect of BG characteristics not accounted for, we incorporate group-specific effects by including dummies for each BG. A full overview of all included variables, variable transformations, and data sources is given in the Appendix.

3.3 | Estimation procedure

Our data has a partially nested structure. While each foreign subsidiary is fully nested in the Indian MNE (i.e., each foreign subsidiary belongs to a specific Indian MNE only), not every MNE is nested in a BG (some MNEs are affiliated to a specific BG, while others are standalone MNEs) (see also

Table 1). To avoid "lumping together" all the foreign subsidiaries of non-affiliated MNEs in one large cluster, which would result in biased effects (Baldwin, Bauer, Stice, & Rohde, 2011), we created a unique cluster ID for each of the non-affiliated MNEs, incorporating their unique variance, and measuring all variation present in this nested data structure. By adding BG-specific dummies, we control for BG-specific effects. We create unique intercepts for each BG such that specific BGs may differ in their effect on foreign subsidiary performance. Since BG affiliation is time-invariant (although, in theory, it can change over time, we do not observe it in our sample) and a fixed-effects model absorbs all variation between groups, we estimate a random-effects panel model (Kohler & Kreuter, 2012). A Hausman test confirms that a random-effects model is preferred over a fixed-effects model for our data (p = 0.38).

4 | RESULTS

Table 2 shows the mean and *SD* of all variables, as well as their correlations. The correlations among our independent variables are low and we find no evidence of multicollinearity (all variance inflation factors are below 10). Table 3 presents the results of our regression analyses. We add all independent variables of interest stepwise. The full model (Model 3) with all key independent variables explains 15% of the total variance and represents a significant improvement over the controls-only model (Model 1), as reflected in the partial F-test (prob > chi^2 = 0.002).

Model 1 includes only control variables. In Model 2, we add the dummy for BG affiliation. Our results suggest a positive generic direct effect of BG affiliation on foreign subsidiary financial performance (b = 3.762; *p* = .062), providing initial support for our first hypothesis. The coefficient of the variable continues to remain positive and significant even after the inclusion of the moderator (Model 3). Thus, we claim support for our first hypothesis that states that foreign subsidiaries of BGs will have superior performance. To test our second hypothesis in which we predict that BG affiliation benefits are more prominent if the foreign subsidiary is located in institutionally weak countries, we interact in Model 3 BG affiliation with host country institutional quality. We find this interaction has a negative effect on foreign subsidiary performance (b = −1.949; *p* = .009). This tells us that BG affiliation benefits the financial performance of foreign subsidiaries located in institutionally weak environments, thereby supporting Hypothesis 2. Finally, we test Hypothesis 3 by creating two subsamples.[3] We split the sample between parents in manufacturing and parents in services (information and communication). Model 4 has results for the manufacturing subsample and Model 5 for the services subsample. According to Hypothesis 3, BG affiliation benefits should be stronger for manufacturing than for services in institutionally weak countries. The interaction between BG affiliation and institutional quality is negative and significant (b = −3.030; *p* = .001) for the manufacturing subsample and positive and non-significant (b = 1.997; *p* = .229) for the services subsample, thus indicating that BG affiliation effects are stronger in manufacturing than in services MNEs.

We probed the results reported in Table 3 further by plotting the relevant coefficients over the range of values in our sample. As marginal effects for interaction models are hard to interpret from regression tables (Haans, Pieters, & He, 2016; Meyer, van Witteloostuijn, & Beugelsdijk, 2017), we plot in Figure 1 the marginal effect of BG affiliation for all levels of host country institutional quality. The graph shows the marginal effects, that is, the degree to which BG affiliation does have an effect on foreign subsidiary performance for both manufacturing and services, as well as for the whole sample.

Figure 1 leads us to make two observations. First, the marginal effects of BG affiliation on foreign subsidiary performance are higher when institutional quality is low, confirming Hypothesis 2.

TABLE 2 Means, SDs, and correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Foreign subsidiary performance	3.02	10.50	1.00																	
2. BG affiliation[a]	0.77	0.42	0.04	1.00																
3. Institutional Quality[c]	0.00	1.00	−0.02	0.08	1.00															
4. Market size	1960.73	2018.03	0.05	0.09	0.14	1.00														
5. Cultural distance	1.96	1.48	−0.05	−0.06	−0.30	−0.02	1.00													
6. MNE size[b]	6.83	1.79	0.01	0.38	0.02	−0.03	−0.02	1.00												
7. MNE age	41.82	30.88	0.07	0.21	−0.03	0.03	0.14	0.11	1.00											
8. MNE R&D expenditures	25.42	60.50	−0.01	0.03	−0.06	−0.02	0.02	0.40	0.20	1.00										
9. MNE marketing expenditures	56.11	105.26	−0.03	0.15	0.08	−0.09	−0.13	0.61	−0.07	0.37	1.00									
10. MNE international diversification	33.06	32.52	0.09	−0.20	−0.05	0.12	0.01	−0.17	−0.31	−0.07	−0.30	1.00								
11. MNE current ratio	1.62	1.34	−0.03	−0.19	−0.02	0.05	0.06	−0.32	−0.06	−0.16	−0.34	0.23	1.00							
12. MNE performance	2.19	3.77	0.01	−0.05	0.03	0.01	−0.01	−0.07	−0.10	−0.09	−0.11	0.08	0.26	1.00						
13. Foreign owned MNE[a]	0.04	0.21	0.13	0.13	−0.21	−0.06	−0.02	−0.21	−0.05	−0.09	−0.11	0.13	0.06	0.04	1.00					
14. Government owned MNE[a]	0.01	0.10	0.02	−0.17	0.06	−0.04	−0.02	0.01	0.06	−0.03	0.07	−0.08	−0.03	−0.03	−0.02	1.00				
15. Foreign subsidiary size[b]	9.55	2.04	0.02	0.15	0.08	0.10	−0.11	0.31	0.17	0.20	0.26	−0.13	−0.12	−0.06	0.00	0.02	1.00			
16. Foreign subsidiary age	12.90	13.93	0.07	0.01	0.08	0.12	−0.02	−0.01	0.24	0.07	0.00	−0.09	−0.10	−0.05	−0.01	0.00	0.10	1.00		
17. Same industry[a]	0.43	0.49	0.08	0.15	−0.10	0.05	0.16	−0.06	0.02	−0.17	−0.15	0.13	0.08	0.02	0.06	−0.08	0.05	0.09	1.00	
18. Foreign subsidiary entry mode	0.21	0.40	−0.02	0.08	0.07	−0.03	0.05	−0.06	0.11	−0.01	−0.18	−0.14	0.01	−0.05	−0.08	−0.05	0.18	0.19	0.12	1.00

Note: n = 2,296.
[a]Dummy.
[b]Logarithmic value.
[c]Standardized.

T A B L E 3 Main regression results

| Dependent variable | Foreign subsidiary performance (ROA) | | | | |
| | Full sample | | | Manufacturing | Services |
	Model 1	Model 2	Model 3	Model 4	Model 5
BG affiliation (**H1**)		3.762*	4.193**	4.323	3.101
		(0.062)	(0.047)	(0.501)	(0.277)
Institutional quality (IQ)			0.700	2.269***	−3.511**
			(0.291)	(0.002)	(0.031)
BG affiliation * IQ (**H2**)			−1.949***	−3.030***	1.997
			(0.009)	(0.001)	(0.229)
Foreign subsidiary entry mode	−1.108*	−1.069*	−0.959	−2.628***	0.608
	(0.085)	(0.096)	(0.138)	(0.000)	(0.641)
Market size	0.0002	0.0002	0.0002*	0.0003	0.000
	(0.104)	(0.119)	(0.086)	(0.141)	(0.937)
Cultural distance	−0.573***	−0.565***	−0.598***	−0.245	−0.869***
	(0.001)	(0.001)	(0.001)	(0.294)	(0.005)
MNE size	0.824**	0.736**	0.732**	0.512	1.002
	(0.025)	(0.045)	(0.049)	(0.285)	(0.149)
MNE age	0.088***	0.084***	0.089***	0.190***	0.058
	(0.000)	(0.001)	(0.000)	(0.000)	(0.514)
MNE R&D expenditures	−0.006	−0.007	−0.006	0.008	0.006
	(0.285)	(0.275)	(0.336)	(0.312)	(0.877)
MNE marketing expenditures	0.006	0.006	0.005	0.005	0.006
	(0.219)	(0.224)	(0.24)	(0.513)	(0.432)
MNE international diversification	0.066***	0.066***	0.067***	−0.002	0.078***
	(0.000)	(0.000)	(0.000)	(0.940)	(0.004)
MNE current ratio	−0.003	0.059	0.046	0.095	−0.076
	(0.991)	(0.801)	(0.844)	(0.765)	(0.880)
MNE performance	0.046	0.042	0.044	−0.106	0.049
	(0.447)	(0.490)	(0.468)	(0.644)	(0.514)
Foreign owned MNE	6.002***	6.877***	7.090***	12.450***	5.147**
	(0.001)	(0.000)	(0.000)	(0.001)	(0.05)
Government owned MNE	1.411	2.616	1.701	−4.730	
	(0.675)	(0.438)	(0.626)	(0.266)	
Foreign subsidiary size	−0.088	−0.087	−0.065	−0.002	−0.067
	(0.51)	(0.516)	(0.624)	(0.991)	(0.797)
Foreign subsidiary age	0.037**	0.036**	0.048***	0.045**	0.3052***
	(0.038)	(0.042)	(0.008)	(0.011)	(0.000)
Same industry	−3.167**	−3.412**	−3.231**		
	(0.032)	(0.021)	(0.029)		
Constant	−10.641***	−10.869***	−11.370***	−11.866***	−20.634***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
N	2,293	2,293	2,293	1,515	778

(Continues)

TABLE 3 (Continued)

| | Foreign subsidiary performance (ROA) | | | | |
| | Full sample | | | Manufacturing | Services |
Dependent variable	Model 1	Model 2	Model 3	Model 4	Model 5
R^2	14.7	14.5	15	20	19.7
Partial F-test		0.062*	0.002***	0.005***	0.008***

Note: All models control for subsidiary industry, year, and business group fixed effects. Exact *p*-values are shown between parentheses.

Abbreviation: BG, business group.
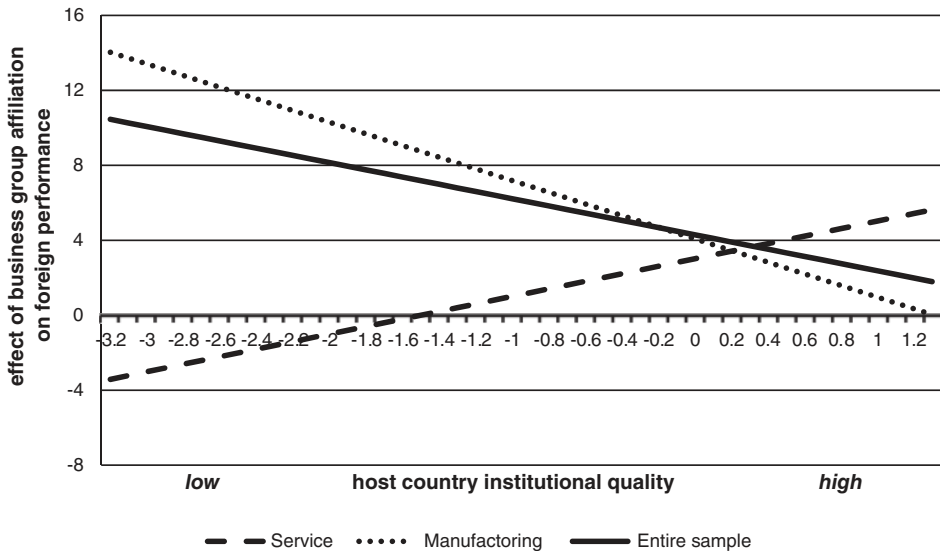
*p < .10; **p < .05; ***p < .01.

FIGURE 1 Marginal effects of business group affiliation on foreign subsidiary performance for different levels of institutional quality in the host country

Second, the increase in marginal effects of BG affiliation in institutionally weak countries are much steeper for manufacturing firms suggesting that under weak institutional conditions, BG affiliation benefits are stronger for foreign subsidiaries of manufacturing MNEs than for those of services MNEs. This supports our Hypothesis 3. Interestingly, Figure 1 seems to suggest that BG affiliation benefits for services tend to increase with institutional quality of the host country. In other words, BG affiliation appears to confer an advantage to foreign subsidiaries of MNEs in services located in developed economies.

4.1 | Robustness and endogeneity

To test for the robustness of our results, we substitute our dependent variable and our key independent variable with alternative measures. First, we retested all our models substituting ROA with return on equity. Second, we used the average scores of five dimensions of the economic freedom index from the Heritage Foundation as an alternative indicator of institutional quality (e.g., Gubbi

et al., 2010; Meyer, Estrin, Bhaumik, & Peng, 2009). The results are qualitatively similar to those reported in Table 3.

By controlling for lagged MNE performance and lagged MNE current ratio, we control for omitted variable bias as a source of endogeneity. In addition, we test for self-selection as a possible source of endogeneity (Brouthers, 2013; Shaver, 1998) by exploring whether BG affiliation is associated with a higher likelihood of foreign subsidiaries being located in institutionally weak host countries. We test for such a possibility by taking the average value of the institutional quality of the host country where the foreign subsidiary is located, and then splitting the sample for those above and below the average value, and calculating the probability of a BG affiliated foreign subsidiary lying above or below it. We find that the probability of finding a BG affiliated foreign subsidiary is 0.78 when the institutional quality in the host country is above average, and 0.70 when it is below average. Contrary to what one might expect, the foreign subsidiaries of BG affiliated MNEs are more likely to locate in an institutionally advanced country than in an institutionally weak one. A t-test shows that the difference in probabilities is significant at $p < .01$. Overall, it appears that in our sample BG affiliated MNEs do not self-select into lower institutional quality countries. In addition, the results in Table 3 show that there is no significant relationship between MNE performance and subsidiary performance. Similarly, the correlation table (Table 2) shows that the correlation between MNE performance and institutional quality is small and not significant. MNE performance and foreign subsidiary performance correlate at 0.01 ($p = .64$), and MNE performance and institutional quality at 0.03 ($p = .11$). Hence, we do not find evidence that more successful MNEs or BG affiliated MNEs self-select into lower institutional quality countries.

5 | DISCUSSION AND CONCLUSION

We have attempted to determine whether BG affiliation enables foreign subsidiaries to perform better than their unaffiliated rivals. Our central argument is that affiliated foreign subsidiaries directly benefit from BG resources such as superior information, capital, and human resources. We argue that BG affiliation allows foreign subsidiaries to benefit from established relationships with key stakeholders and that this allows them to more quickly adapt in difficult host countries. We test our hypotheses on a longitudinal panel of Indian MNEs and find support for our predictions. We discuss the theoretical and practical implications of our results below.

First, we find a positive relationship between BG affiliation and foreign subsidiary performance which shows that BG affiliation benefits can be transferred across international boundaries to second-level affiliates, that is, to foreign subsidiaries of BG members. This finding complements those of previous studies which have found differences in the internationalization process and performance between BG affiliated and unaffiliated MNEs (Chen & Jaw, 2014; Elango & Pattnaik, 2007; Garg & Delios, 2007; Kim et al., 2015). To the best of our knowledge, ours is the first study of its kind to establish a direct connection between BG affiliation and foreign *subsidiary* financial performance.

Second, we find that BG affiliation has a greater effect on foreign subsidiary performance when the foreign subsidiary is located in a market characterized by weak institutions. Thus, we make a contribution by establishing the boundary conditions of BG affiliation advantages and by showing that they dissipate when the institutional quality of a host country improves. Several studies have explored the performance implications of BG affiliation, but most have looked at the performance of first-level affiliated firms in a specific country context, either in single country studies or in meta analyses of single country studies. We are one of the first to look at BG affiliated firms from one home

country and the benefits they provide to their subsidiaries in multiple host countries. This allows us to compare the financial performance of the subsidiaries of BG affiliated firms to that of unaffiliated firms across institutional settings and to generalize the results of previous single country studies (e.g., Khanna & Palepu, 2000).

Our findings indicate that BG affiliation advantages are not necessarily confined to the home country but can be extended abroad conditional upon host country institutional quality. Our third finding that the benefits of BG affiliation depend on whether BG member firms are in manufacturing or services is a significant departure from most studies which tend to assume BG affiliation affects member firms in a similar manner, whether belonging to manufacturing or service (Gubbi et al., 2015; Lamin, 2013). By combining the resource based view—BG affiliation benefits—with institutional theory—host country institutional quality—and exploring industry effects—manufacturing versus services—our study contributes to the strategy tripod perspective (Peng et al., 2008) and shows that the combination of its different "legs" allows for a better understanding of the nature of BG affiliation advantages.

Finally, we make an important theoretical contribution by bridging the BG literature and internalization theory. Internalization theory emphasizes the role of complimentary resources, including network relationships, as a source of FSA (e.g., Buckley, 2018; Hennart, 2009; Narula et al., 2019; Verbeke & Kano, 2015). Firms develop capabilities to correct for market failures in their home country. Our study shows that BG affiliation advantages are not location bound, but that they also work well in host countries with institutional voids but add less value in countries with well-functioning institutions. Our focus on international BG affiliation benefits raises new questions regarding the exact nature of these advantages. Does superior foreign subsidiary performance stem from the direct effect of BG affiliation, and if so, do subsidiaries automatically absorb advantages or does the MNE have agency in the process? To what extent do BG advantages strengthen existing FSAs or lead to new ones? As a BG is a diversified network of loosely coupled firms linked by formal and informal ties (Leff, 1978), BG affiliation may strengthen global competitiveness by providing opportunities for recombining existing FSAs (Narula, 2014) with BG affiliation advantages (for example tapping into a BG's distribution network may strengthen a subsidiary's technological knowledge).

An important implication of our paper for managers of the foreign subsidiaries of BG affiliated MNEs in advanced countries with well-functioning institutions is that they should be aware that their ability to leverage BG affiliation advantages is limited, thus they will have to develop competitive capabilities locally and function more like a standalone firm as they will not be able to rely on their parents. The options open to managers of unaffiliated firms are different, but they too need to take the economic environment into consideration. In markets characterized by institutional weakness where BG affiliated firms will benefit most from BG affiliation, unaffiliated firms should focus on occupying niche spaces where the chances of head-on competition are least. They might altogether relinquish to BG affiliated firms in institutionally weak countries where they themselves are at a disadvantage.

5.1 | Limitations and future directions

Our study has limitations which could be overcome by future research. First, our paper is based on a sample of MNEs headquartered in the same single home country, India. We do so in order to explore the variation in host country context while keeping home country differences constant. Even though we believe that the theoretical arguments we have made apply to all BGs, it would be useful to replicate the analysis with BGs from many home countries in order to corroborate the generalizability and external validity of our findings. It is possible that studying BGs from many home countries investing

in many host countries would shed further light on the impact of a BG's home country on foreign subsidiary performance. For example, it would be interesting to know whether the foreign subsidiaries of Indian BG affiliated firms are similar or different from those of Chinese BG affiliated ones, and if so, how. Is there a difference in their financial performance for instance? Second, we have established that there is a relationship between BG affiliation and foreign subsidiary performance and that that relationship is contingent on host country institutional quality. Due to data limitations, we have not been able to elaborate on the exact mechanism by which this effect unfolds. Determining that would require measurement of FSAs, which is difficult to do in large-scale quantitative studies like ours. Thus, further qualitative case research is needed to uncover the nature of BG advantages (Verbeke & Kano, 2015). Third, like most other studies comparing BG affiliated firms with unaffiliated ones, we use a dummy measure for BG affiliation, which does not capture the heterogeneity that exists within BGs. Hence, we are unable to determine whether certain group-level features such as size, scope, relatedness of business activities, extent of geographic spread, etc. also affect foreign subsidiary performance. This limitation might be overcome by testing a subsample of only BG affiliated firms in a separate model and incorporating some of the group-level attributes in the modeling (see for example Gubbi et al., 2015). However, this would exclude comparisons with unaffiliated firms since a firm either belongs to a BG or does not. Another possibility would be to compare joint-ventures with BG affiliated firms to joint ventures with unaffiliated firms and wholly-owned subsidiaries of BG affiliated firms with those of unaffiliated firms. If there are systematic differences in the performance of joint-ventures and wholly-owned subsidiaries, one might be able to determine whether the transfer of BG affiliation benefits require ownership and control by a member firm.

6 | CONCLUSION

We have advanced what was known about BGs by shifting the focus away from home conditions to the transferability of BG advantages across national borders. We uncovered important contingencies in the relationship between parent BG affiliation and the performance of their foreign subsidiaries, finding that BG affiliation is only beneficial when a foreign subsidiary is located in an institutionally weak country, and when the parent firm is in manufacturing. Although this study represents only an initial step into unexplored territory in an important research area, we believe that what we have done will prompt further research that will lead to an even more comprehensive understanding of the effect BG affiliation has on foreign subsidiary performance and the transferability of FSAs within BGs.

ENDNOTES

[1] Although firm activities can straddle multiple industries, we focus on the primary economic activity performed by the firm. For example, Tata Motors' primary activity according to the Orbis database is the manufacturing of passenger cars and transport vehicles (NACE Rev. 2 code 2910). However, Tata Motors also performs secondary activities such as after-sale maintenance and vehicle dealerships, which fall under services (NACE Rev. 2 code 4519). In such cases, we categorize MNEs by their primary activity code.

[2] The six dimensions included in the World Governance Indicators are very highly correlated (0.9 and higher). A factor analysis shows that these dimensions eventually collapse into just one construct, and hence the creation of an index is appropriate.

[3] We also estimated a three-way interaction model. Results are in line with the findings as reported in Table 3. However, since three-way interactions are difficult to interpret, we adopt the split sample approach (Dawson & Richter, 2006).

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APPENDIX

Variable	Description	Source
Foreign subsidiary performance	Return on assets of the foreign subsidiary.	ORBIS
BG affiliation	Dummy indicating whether the foreign subsidiary is owned by a parent firm, which is member of a business group.	PROWESS
Institutional quality	Six dimensions (voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption) of the world governance indicators, grouped together and standardized.	WORLDBANK
Market size	Gross domestic product of the host country in billions of USD.	WORLDBANK
Cultural distance	Kogut and Singh index on Hofstede data with four dimensions.	HOFSTEDE
Same industry	Firm and subsidiary are in the same industry	ORBIS
MNE size	Log of the asset size of the parent firm.	PROWESS
MNE age	Age of the parent firm.	PROWESS
MNE R&D expenditures	Three-year average of the capital & current R&D expenditures of the parent firm.	PROWESS
MNE marketing expenditures	Three-year average of the advertising & marketing expenditures of the parent firm.	PROWESS
MNE international diversification	The foreign sales of the parent firm divided by its total sales.	PROWESS
MNE current ratio	Current ratio of the parent firm, lagged by one year.	PROWESS
MNE performance	Return on assets of the parent firm, lagged by 1 year.	PROWESS
Foreign owned MNE	Dummy indicating whether the parent firm is foreign owned or not.	PROWESS
Government owned MNE	Dummy indicating whether the Indian parent firm is government owned or not.	PROWESS
Foreign subsidiary size	Log of the asset size of the foreign subsidiary.	ORBIS
Foreign subsidiary age	The age of the foreign subsidiary.	ORBIS
Foreign subsidiary entry mode	Dummy indicating whether the foreign subsidiary has been established via an acquisition (1) or via a greenfield investment (0).	ZEPHYR

Abbreviation: BG, business group.