

Initiating internationalization: business group affiliation, export intensity and institutional quality¹

Daniel Shapiro

Beedie School of Business

Simon Fraser University

Vancouver, British Columbia, Canada

Zhixiang Liang

John Molson School of Business

Concordia University

Montréal, Québec, Canada

Saul Estrin*

London School of Economics

London, United Kingdom

S.Estrin@lse.ac.uk

Michael Carney

John Molson School of Business

Concordia University

Montréal, Québec, Canada

* Corresponding author. Authors' names are in reverse alphabetical order. All authors made equal contributions.

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Abstract

We analyse exporting by business group (BG) affiliates. We propose that BGs select better affiliates, but their nonmarket capabilities still generate superior export performance. Our two-equation system therefore takes accounts of the endogeneity of BG affiliation. We also test how these relationships are sensitive to institutional context using multilevel modelling on a large sample of firms from understudied countries. We find that BGs affiliate better quality firms, but controlling for this, BG affiliation still has a positive impact on exporting. We also find that the export advantages of BG affiliation are lower in countries with stronger institutions.

Keywords: Business groups, internationalization, export intensity, capabilities, understudied countries, selection effects, institutional context

1. Introduction

Scholars now understand that business groups (BGs) are a ubiquitous organizational arrangement, especially in emerging markets (Khanna & Yafeh, 2007). Indeed, the BG share of economic activity in their home economies can be substantial and is increasing in several countries (Carney, Estrin, van Essen, Shapiro, 2017). Given their ubiquity, it is not surprising that a considerable and diverse academic literature has evolved evaluating various aspects of their performance and impacts (Carney, Estrin, van Essen, Shapiro, 2018a; Holmes, Hoskisson, Kim, Wan, Holcomb, 2018). Perhaps more surprising is the number of unresolved issues regarding BGs, notably their impact on internationalization.

Based on the recent surveys by Carney et al. (2018a) and Holmes et al. (2018), we identify three broad gaps in the literature. First, there is limited understanding of the performance effects of BG affiliation (BGA), and in particular their performance in international markets. Second, the evidence we do have may be plagued by serious endogeneity problems if it is the case that BGs can effectively select better performing firms as affiliates. We refer to this as the selection issue. Third, there is a need to more fully consider context, since BGs exist in a wide variety of institutional and economic contexts that scholars have not yet fully explored. In fact, much of the previous literature on BGs has largely drawn on the experience of a relatively small number of national examples such as Chile (Khanna & Palepu, 2000b), Korea (Chang & Hong, 2000), Japan (Gedajlovic & Shapiro, 2002) and India (Kumar, Gaur, Pattnaik, 2012).

In this paper, we address each of these gaps by exploring an important element of the performance of BG affiliates in international markets, export intensity. Exporting can be a leading indicator of successful firm performance and international competitiveness (Porter, 1990; Helpman, Mellitz & Yeaple, 2004) and many firms initialize their international activities through exporting (Gaur, Kumar & Singh, 2014; Love, Roper & Zhou, 2016), sometimes with explicit state support (Hobday, 1995). Therefore, following a considerable literature (Filatotchev, Dyomina, Wright, & Buck, 2001; Estrin, Meyer, Wright & Foliano, 2008) we use export intensity as our indicator of international performance.

We develop our hypotheses using a resource-based view (RBV) perspective on the nature of business group capabilities (Guillen, 2000), and with a clear distinction between market and nonmarket capabilities (Doh et al., 2012). We argue that BGs select affiliates based on the quality of their market capabilities (e.g. finance and management), which BGs may then augment using their internal markets. However, we also argue that BGs provide the nonmarket capabilities associated with their political and business networks, and that these are only available to affiliates. We then integrate into the analysis the missing institutions² perspective (Khanna & Yafeh, 2007) by arguing that both the selection of affiliates and the performance of affiliates are contingent on the institutional context of the home country. We argue that after controlling for the selection effect, there remains a positive effect of BG affiliation on exporting intensity which we can largely attribute to the ability of affiliates to access the nonmarket capabilities of the BG parent. We also follow the literature in arguing that this advantage will tend to be lower in countries with stronger institutions (Khanna & Yafeh, 2007).

² In their early work Khanna and his colleagues described poor quality institutions as ‘voids’ (e.g. Khanna & Palepu, 1997), but in later work used the term ‘missing institutions’ (e.g. Khanna & Yafeh, 2007). The term ‘institutional voids’ enjoys wide currency in the IB literature but recent work suggest the term is pejorative carrying the implication that a jurisdiction lacks any institutional framework (Bothello, Nason, & Schnyder, 2018).

Empirically, we develop a two-equation model that permits us to test for the impact of BG affiliation on export intensity while at the same time controlling for the potential endogeneity of BG affiliation in the export equation, an important gap in the current literature. As we have noted, endogeneity arises because BGs may be able to select affiliates more effectively according to their efficiency characteristics, and may choose as affiliates firms that are best able to benefit from their capabilities. Similarly, firms with superior management and financial capabilities may seek to join the BG in order to access its nonmarket capabilities. Hence what may appear in a single equation export intensity model to be BG affiliate performance effects may in fact be affiliate selection effects. Thus, we base our first equation (the selection equation) on the argument that firms with superior managerial and financial capabilities are more likely to join BGs both because of the selection abilities of the BG and because of the access to internal markets for market and nonmarket capabilities that BGs provide. The second equation (the export intensity equation) then says that holding constant the market (finance and management) resource advantages of BG membership, affiliates continue to display a competitive advantage in exporting because of the nonmarket capabilities provided by the BG. We identify these equations by arguing that, while we expect that as institutions strengthen, the selection and export advantages of BGs will diminish, the institutions relevant to each are different.

We contribute to the business group literature in three ways, corresponding to the identified research gaps discussed above. First, by explicitly adopting an RBV perspective, we contribute to the understanding of the capability advantages associated with BGs. The missing institutions' literature already finds that BGs provide their affiliates with access to market-enhancing capabilities associated with tangible assets like capital and labor (Khanna & Yafeh, 2007), and we provide measures of these capabilities. However, by distinguishing market from nonmarket capabilities, we argue that in addition, BGs have distinctive nonmarket capabilities that are intangible (Shaffer & Hillman, 2000; Morck & Yeung, 2003; Bonardi et al., 2006; Frynas et al., 2006), but important in explaining the export performance of BG affiliates. Second, we address theoretically and empirically the selection issues that scholars identify as an important research question (Holmes et al., 2018), and in so doing contribute not only to the empirical literature on BGs, but also to the understanding of the nature and origins of BG advantages (Mahmood, Zhu & Zajac, 2011). Third, we provide a broader understanding of the importance of institutional context in the analysis of BG internationalization. Thus, we explore the general proposition that the advantages associated with BGs diminish as institutions strengthen (Khanna & Palepu, 1997) using both the selection equation and the export intensity equation, and suggest that the institutions relevant to each equation are different. We also explore for the first time whether BGs can exercise a damaging stranglehold over internationalization in countries where their prevalence becomes very large. We argue that if BGs become highly prevalent, they may use their nonmarket capabilities for rent-seeking purposes that limit the attractiveness of exporting for all firms in a country, with consequent macroeconomic implications.

Using appropriate modern statistical techniques, we estimate a simultaneous equation, multilevel model using survey data from the World Bank Enterprise Survey (WBES) database, encompassing more than 35,000 firms in 57 countries with considerable institutional heterogeneity over eleven years, and augmented by country-level institutional data. We find that BGs identify and select firms with superior market capabilities as affiliates and that selection has a positive effect upon affiliates' export intensity. Nonetheless, controlling for the selection effect, BGs also generate an additional positive group effect on export intensity that we attribute to their nonmarket capabilities. We also find ambiguous evidence regarding the relationship between BGs and the level of institutional development, and the effects of BG prevalence.

2. Relevant Literature and Hypothesis Development

Missing institutions, Affiliate Performance and Selection

The missing institutions perspective (Khanna & Yafeh, 2007) is the dominant approach to studying BGs (Holmes et al., 2018), focusing on how BGs create efficient *internal* markets in the face of widespread market failures (Khanna & Yafeh, 2007). BG advantages are most pronounced when missing institutions are pervasive, allowing BGs to serve as ‘transactional arenas’ that enable affiliates to provide complementarities in the provision of factor inputs (Khanna & Palepu, 1999) and to coordinate activities across business units (Gao, Zuzul, Jones & Khanna, 2017). For example, in the absence of formal protection for property rights, BGs can serve as a microcosm of efficient contract enforcement: a “haven where property rights are protected” (Khanna & Palepu, 1997:7). Missing institutions can also include market intermediaries such as management consultants, executive search firms, and financial actors. BGs compensate for their absence by forming quasi-internal capital and labour markets (Khanna & Palepu, 1997) and by cultivating a reputation for reliability and integrity (Gao et al., 2017). In contrast, freestanding firms in these contexts will confront exchange obstacles that limit their efficiency and hinder their performance.

The missing institutions perspective, therefore, suggests that BG affiliates (BGAs) should possess a performance advantage over non-affiliates, though this will decline as institutional arrangements strengthen (Khanna & Palepu, 2000b). However, in fact, the former proposition has only mixed empirical support to date (Carney et al., 2011), while a growing number of studies find BGs competitive capabilities actually increase with the development of stronger institutions (Castellacci, 2015; Manakandian & Ramachandran, 2015; Siegel & Choudhury, 2012). We suggest that these mixed results argue for a clear distinction between the resources and capabilities associated with potential affiliates, as opposed to those characterizing the BG network, and we later propose that the distinction between market and nonmarket capabilities is important in this regard. Indeed, it has been argued that weak institutions create opportunities for strong firms to create and exploit social and political networks, a nonmarket advantage accruing to the BG but not a potential affiliate (Guillen, 2000).

The missing institutions literature also implies that BGs may choose affiliates on the basis of their stronger capabilities (Estrin et al., 2009) and that firms may join BGs to gain beneficial access to group resource endowments (Chang & Hong, 2000). Hence it is inherently difficult to distinguish between factors determining BG affiliation and the impact of that affiliation on firm performance. As Khanna and Yafeh (2007:337) put it, “comparisons of group versus non-group firms are plagued with selection issues.” One way to address these has been to exploit the fact that affiliation may be historically predetermined. For example, studying the formation of China's business groups, Keister (2001) finds that reformers typically selected groups of firms from the same state bureau. However, affiliation may also be determined by unobserved firm characteristics. In a study of business group innovation, Belenzon & Berkovitz (2010) suggest that BGs may select affiliates with better innovation capacities; “if groups can identify standalone firms with higher expected success probability, they may engage in ‘winner picking’” (p.520). Similarly, other research suggests BGs perform a venture capital function in emerging markets and find freestanding firms that possess “inherent attributes that aid their ability to raise funds independently” (Masulis, Phan & Zein, 2011: 3561).

The selection of firms which become affiliates is therefore central to the analysis of the performance of BGs. Successful selection requires access to a variety of networks that

provide information that is otherwise difficult to obtain regarding a potential affiliate's future performance, including the ability to benefit from BG internal markets. However, the resulting endogeneity, whereby BG affiliates may perform better for reasons of selection rather than because of the benefits of membership *per se*, may bias empirical work if not carefully analysed (Estrin et al., 2009; Holmes et al., 2018).

Performance, Internationalization and Export Intensity

Advocates of the missing institutions view argue that BG affiliates will have performance advantages over standalone firms because of their superior access to resources and capabilities whose acquisition via markets incurs high transaction costs (Khanna & Yafeh, 2007). An important measure of performance is the ability of the firm to compete in international markets, and most studies focus on the outward FDI (OFDI) of BG affiliates (e.g., Chari, 2013; Tan & Meyer, 2010; Kumar et al., 2012), with relatively few studies devoted to exporting (Hundley & Jacobson, 1998; Tajeddin & Carney, 2018). However, the productivity requirements for exporting are lower than those required for investing abroad (Helpman, Melitz & Yeaple, 2004) so a focus on FDI imposes a performance standard that relatively few firms from most emerging markets can meet (Cuervo-Cazurra & Genc, 2011). Indeed, studies of OFDI by BGs have for the most part focused on a small number of countries, including Korea, India, Taiwan and Japan (Holmes et al., 2018). Thus, a research focus on exports rather than OFDI enables researchers to analyse a broader sample of firms from a larger sample of countries representing a broader range of development and institutional heterogeneity.³

The literature on the determinants of exporting has a long tradition of identifying the resources associated with successful exporting (Sousa et al., 2008; Bertrand et al., 2007; LiPuma et al., 2013; Chen et al., 2016). Early studies focused on broad measures of capabilities, notably firm size and age (Bonaccorsi, 1992; Dhanaraj & Beamish, 2003), and this framing persists to some degree (LiPuma et al., 2013; Love et al., 2016). The literature has grown to encompass a wide variety of potential determinants of exporting performance (Chi & Sun, 2013; Filatotchev, Stephan & Jindra, 2008; Ganotakis & Love, 2012; Lu, Xu, & Liu, 2009; Nguyen and Almodóvar, 2018; Wei & Huo, 2018) but has not yet examined the role of BGs in enhancing export capabilities, nor until very recently has it been developed with an explicit focus on emerging markets (Krammer, Strange & Lashitew, 2018). However, there is evidence that institutional context matters for the export performance of small firms (LiPuma et al., 2013).

The export literature has also not drawn on the distinction between market and nonmarket resources and capabilities. Doh et al (2012) articulate the importance of what they call nonmarket capital, which involves the ability of firms to influence the external environment including political and social actors (Shaffer & Hillman, 2000), and to create reputational capital that can be transferred across related units (Mukherjee, Makarios & Stevens, 2016). This is in contrast to the focus on market capabilities, such as management skills and experience and access to finance that have characterized the export literature to

³ A focus on exports also allows a clearer identification of the resources and capabilities associated with BG affiliation. For example, emerging market multinationals (EMNEs) may undertake OFDI for several reasons, only some of which involve the leveraging of firm-specific assets developed at home (Luo & Tung, 2007; Cuervo-Cazurra & Ramamurti, 2014); other motives include resource-, efficiency- and knowledge-seeking. Without controlling for these motives, it is difficult to isolate the nature of the resources and capabilities associated with BGs in studies of OFDI. Models of exporting are less prone to these problems.

date. We argue below that nonmarket capabilities are a critical factor defining performance outcomes in emerging markets, and in particular those involving BGs.

Hypotheses

We have argued that BGs select affiliates on the basis of their superior resources and capabilities. We now propose that BGs choose firms to become group affiliates on the basis of two specific capabilities: (i) *management capabilities*, as indicated by their adoption of ‘good’ management practices and (ii) firms’ *ability to raise external finance*. Differences in firm’s management practices are regarded, in a growing body of research, as the principal determinant of heterogeneity in firm productivity (Bloom & Van Reenen, 2007), and that the adoption of productivity enhancing management practices varies across firms and countries (Bloom & Van Reenan, 2010). The average quality of management practices is known to be particularly poor in many of the countries in our sample (Bloom et al., 2014).

In principle, firms can acquire many of the management practices we investigate in this paper in strategic factor markets (Makadok, 2001), supplied by consultants, auditors, ICT providers, and in markets for high-quality human capital. These are often plentiful in advanced economies. However, because factor market imperfections will be greater in emerging markets (Khanna & Palepu, 1997), and especially in the understudied economies we analyse, many of these suppliers will be absent or expensive. If firms wish to adopt and utilize these practices, then they must develop them internally (Amsden & Hikino, 1994; Kock & Guillen, 2001), and some will do so. However, in general superior management practices are comparatively *rare* in emerging markets and hence likely to be a very *valuable* resource, increasing firm productivity, and competitiveness. In consequence, we expect BGs to be strongly motivated to select as affiliates firms with superior management practices, both because their capabilities can then be diffused throughout the BG network and because such firms are better able to absorb capabilities from other affiliates.

Secondly, firms often confront serious difficulties in raising external credit, even more so in emerging markets (Levine, 1999; Love & Klapper, 2002). Capital is scarce in emerging markets, and because of the risk attributes of the markets, missing institutions are particularly pronounced (Khanna & Yafeh, 2007). Moreover, underdeveloped legal systems accentuate the problem of attracting external credit (Hearn & Piesse, 2013). However, well-managed firms are likely to have higher quality assets and be better able to overcome creditors’ concerns, thereby attracting more external credit. In this capital-constrained environment, we suggest these firms will be more attractive to BGs because their lower capital constraints will generate enhanced business performance. Accordingly, we reason that BGs are likely to select their affiliates primarily by the quality of management practices and their ability to attract external credit⁴.

BGs are also likely to possess advantages in the selection of affiliates. For example, BGs formed around commercial banks, such as in North Africa (Hearn et al., 2016) and Central America (Strachan, 1976), will typically possess information on potential affiliates’ financial and managerial attributes. Elsewhere, BGs may form among linguistic or ethnic communities, where firms will tend to have access to intra-community sources of information about other firms’ quality (Biggs, Raturi, & Srivastava, 2002). Thus, BGs in emerging markets have incentive to attract better performing firms to their ranks and the necessary capabilities to select such firms effectively. Thus,

⁴ BGs provide nonmarket advantages which are not available to non-affiliates, so there is also an incentive for high performing firms to become BG affiliates.

H1: BG affiliates will have higher quality management practices and greater access to external credits than non-affiliates.

The missing institutions perspective predicts that the competitive advantage of BG affiliates will erode in the wake of improved institutional quality (Khanna & Palepu, 1999) because the transaction costs limiting the development of fruitful exchanges on strategic factor markets will decline as institutions improve. A key component in the development of market supporting institutions is the liberalization of capital markets that enable the emergence of new sources of credit and equity (North, 1994; Levine, 1999). Growth in third-party service providers in the financial industry, including credit rating agencies and risk assessment specialists, should ease access to credit for start-ups and SMEs. Capital rationing may no longer be necessary while credit granting institutions develop risk management tools that enable them better to assess credit risk (Demirgüç-Kunt & Levine, 1996). Hence, we expect that improvements in market supporting institutions will be associated with more availability of affordable financing options for both group affiliated- and freestanding firms and as a result, the benefits of BG capital market internalization to decline. The same is true of access to better management practices, which are more readily available in countries with stronger institutions and higher per capita incomes (Bloom et al, 2014).

Moreover, the superior tangible resources, notably management practices and credit access, associated with BG membership when missing institutions are common, will become more readily available as institutional quality strengthens. Freestanding firms can now acquire on factor markets those management practises and credits previously only available internally to BG affiliates. Hence as institutions improve, these resources will become less rare, and the resource differences between freestanding firms and BGAs will decline.

Secondly, with improvements in the quality of market supporting institutions, the value of BGs *nonmarket* abilities should also diminish (Lu & Ma, 2008, Siegel, 2007). For example, with better quality regulatory agencies, access to licenses and permits should be eased, and freestanding firms will no longer be attracted to join BGs to acquire these advantages. Indeed, because there are costs as well as benefits of BG affiliation (Hoskisson Johnson, Tihanyi & White, 2005) when benefits decline, affiliates may find it no longer worth the cost to remain in the group and may choose to exit. Accordingly, in countries with better quality institutions, we expect that the selection advantage of BGs will atrophy while the incentives for free-standing firms to join a BG will also diminish. Thus,

H2: In countries with a higher quality of market supporting institutions, the likelihood of BG affiliation is lower.

Export Performance

We have argued that firms with superior management and financial capabilities are more likely to be BG affiliates. At the same time, the RBV approach to export advantage would suggest that these same capabilities are important for successful exporting. For example, more effective use of ICT to control inventory, and respond to customers are key export enablers for emerging market firms (Todd & Javalgi, 2007). Thus, tangible resources and capabilities such as superior management and financial access would be expected to positively influence the ability to export whether or not a firm is a BG affiliate.

However, we argue that the market-based capabilities associated with management and finance are not the only advantages in internationalization provided by BGs. First, we suggest that the *nonmarket capabilities* of BGs provide affiliates with better access to exporting possibilities, over and above those associated with market-based advantages. Thus, at the political level, it is widely understood that weak national institutions present challenges for the

international strategies of firms (Gaur et al., 2014). These challenges include access to government permits and patronage (Krammer et al., 2018), means of dealing with corruption (Fisman and Gotti, 2006) and the related uncertainty surrounding these weak institutions (Gao et al., 2010). BG affiliation may bring with it access to the networks and political channels that will alleviate these problems (Khanna & Yafeh, 2007).

Also, the social and business networks available to BGs can be a nonmarket capability (Doh et al, 2012) that may serve to augment the capabilities of affiliates. For example, Chari & Dixit (2015) argue that BGs can improve their affiliates' international competitiveness by importing and disseminating among group affiliates new technologies and practices from more advanced economies. Thus, access to external networks provides BG affiliates with a competitive advantage and lowers the liability of foreignness in internationalization. These networks may also permit BGs to develop their proprietary capabilities through accumulated experience and contacts with their affiliated firms and their networks (Mahmood et al., 2011). In general, BGs may develop sharable intangible assets previously identified in the BG literature to include international marketing skills (Siegel & Choudhary, 2012), access to the foreign market knowledge and connections of sister affiliates (Lamin, 2013) and group sponsorship of an affiliate into an international network (Elango & Pattnaik, 2007).

Finally, the financial networks available to BGs may enable affiliates to gain external credit above what they could otherwise obtain (Khanna & Palepu, 2000). The internal capital market of BGs may be used to guarantee loans and trade credit among affiliates. This is important, especially in foreign currency strapped emerging markets, since export transactions cannot be easily settled via spot market contracting: hence instantaneous payment for the exchange of goods is difficult and often contingent on access to export credit (Auboin & Engemann, 2014).

Thus, we propose that the nonmarket capabilities of BGs serve to augment the capabilities of affiliates, both by providing nonmarket capabilities that are unavailable to non-group members (such as access to political networks), and by augmenting existing market capabilities through access to BG networks (Mahmood et al., 2011). Furthermore, to the extent that groups select their affiliates for their superior management practice and credit access, they may possess greater absorptive capacity and are thus able to benefit relatively more from the accumulated resources and capabilities available in the group. In this regard, we can identify a category of proprietary, group specific and largely nonmarket resources that reside at the group level which, through the quasi-market BG structure, can be disseminated to affiliates (Kock & Guillen, 2001). As per the RBV, the group structure is sufficiently well organized to exploit the resources available within group boundaries (Barney, 1995; Khanna and Palepu, 2000a, b). In summary, we argue that the advantages of BG affiliates underlying their selection as members notwithstanding, BG affiliation brings *additional* benefits arising from shared access to the nonmarket capabilities associated with the BG. Therefore,

H3: Controlling for their superior management practices and credit access, business group affiliates will export more (higher export intensity) than non-affiliates.

We argued in H2 that the benefits of group affiliation will diminish as market-supporting institutions strengthen. We now propose that similar arguments apply to a different notion of institutional quality, specifically concerning social and political institutions (Fisman, 2001). In particular, the nonmarket capabilities we have associated with BGs, notably the value of political networks, is expected to diminish as the state and civil society become stronger (Carney et al., 2018a). When states are weak, they can be captured by oligarchs, but the value of elite entrenchment and personal ties are reduced by state

capacity building. Thus, the “strength” of the state is related to its autonomy or freedom from dependence upon any particular sector of the society (Evans, 1995) and this facilitates greater political accountability, bureaucratic transparency, and rule of law (Siegel, 2007)⁵.

Moreover, the potential disadvantages of BG affiliation increase as political and social institutions become stronger. We can identify three costs of affiliation: sticky commitments, group coinsurance and the bureaucratic costs of group complexity. Sticky commitments refer to an expectation that affiliates continue to remain loyal to one another even when the terms of trade between them are changed, turning mutually beneficial exchange into a dysfunctional drag on efficiency. Similarly, coinsurance involves mutual propping up of member firms to reduce bankruptcy risk, which implies that underperforming firms must be subsidised (Jia et al., 2013). Finally, as groups grow larger in scale and scope, they incur rising coordination and conflict resolution costs (Hoskisson et al., 2005). Critically, these costs of group affiliation are likely to increase with the development of social and political institutions, perhaps ultimately exceeding the benefits and thereby reducing relative efficiency and ability to export. In contrast, unencumbered by these costs, freestanding firms may be better positioned to respond effectively to market opportunities.

Thus, we expect that the advantages of BG affiliation concerning exporting will be less salient in countries with more developed political and social institutions. Hence we propose that institutional quality negatively moderates the positive effect of BG affiliation on exporting:

H4: Controlling for the superior management practices and credit access of BG affiliates, the positive effect of BG affiliation on export intensity will be lower in countries where the quality of political and social institutions is higher.

The analysis of the relationship between exporting, BG affiliation and institutional quality also needs to take into account whether BGs represent major or minor actors in the national economic context. We analyse these issues with reference to the concept of *BG prevalence* - the share of BG activity in total in the national economy (Carney et al., 2017). In fact, Carney et al (2017) show that BG prevalence in emerging markets is typically high (averaging between 40 and 55%), though with considerable heterogeneity (ranging from 3% to 90%).

BG connections can facilitate both domestic and international linkages, consistent with our emphasis on the nonmarket advantages of BGs linked to political and other networks. Guillen (2000) argues that these network ties are difficult to imitate and provide resources such that BGs develop “an inimitable capability to combine foreign and domestic resources” (2000:367). However, the imitability of these advantages can be threatened by imports and foreign direct investment, especially from more developed economies and more technologically advanced and intangible asset rich competitors. Hence in combination, BG leaders are powerful enough to influence this aspect of national policy, and they may impede the development of market supporting institutions that threaten their interests (Schneider, 2009). In so doing they make the domestic market more attractive than foreign markets and thus favour domestic diversification over exporting (Estrin, Meyer, Nielsen & Nielsen, 2017). Reduced export incentives may also arise from the ability of group affiliates to extract higher

⁵ There is some evidence that state strength enhances internationalization for BG affiliates and non-affiliates. Thus, stronger institutions are associated with more exporting by private firms (Cuervo-Cazurra & Dau, 2009), small enterprises and younger firms (LiPuma et al., 2013).

rents in the domestic markets compared with more competitive foreign markets; an outcome related to domestic market power and therefore the prevalence of BGs in the national economy. Affiliate loyalties and ‘sticky ties’ may also encourage a parochial outlook; for example, BG affiliates may be expected to look to one another for trading relationships (Li, & Samsell, 2009). Such expectations may create “complacency and a reduced incentive to export” (Hundley & Jacobson, 1998: 935). Moreover, BGs nonmarket capabilities may be tilted towards domestic political networks and away from foreign networks, again favouring domestic activity for their affiliates. Thus, even though group affiliates enjoy superior access to group mediated resources, their embeddedness in a domestically oriented group structure may produce a more parochial orientation if BGs can collectively exert undue political influence.

Powerful and pervasive BGs may also support actions that limit the innovative capacity of other, non-affiliated firms. Thus, Morck et al. (2005) contend that when economic control becomes concentrated in the hands of BGs, they use their political power to support measures that protect their elite positions, and thereby limit the dynamism of the economy. Thus, measures that restrict competition, in turn, inhibit innovation (Mahmood & Mitchell, 2004) and access to capital by freestanding firms (Almeida & Wolfenzon, 2006), both of which reduce their capacity to export. Schneider (2009) suggests that BG prevalence results in a “crowding out” of innovative, independent firms. Thus, we propose that as BG prevalence increases within a country, the resulting exercise of monopoly power may reduce exporting by *all* firms in the economy, including BG affiliates. We, therefore, hypothesize that there will be a negative relationship between BG prevalence and the exporting performance of all firms.

H5: The export intensity of all firms, BG affiliates, and non-affiliates, will be negatively related to BG prevalence at the national level.

We summarize our theoretical framework in Figure 1.

-Figure 1 about here-

3. Data, Specification and Estimation

With a primary focus on less developed and emerging economies, the World Bank has undertaken firm level surveys (World Bank Enterprise Surveys (WBES)) since 2006. Each survey is a global stratified random sample with strata chosen to reflect variation in firm size, business sector, and geographic region of the country, but the survey instrument is standard, facilitating cross-country comparisons. WBES data are used increasingly in economics and economic development studies (Harrison, Lin, & Xu, 2014; Mitton, 2016), management (Carney et al., 2018b) and in recent BG studies (Castellacci, 2015; Tajeddin & Carney, 2018).

We use the most recent wave of surveys on 57 understudied countries conducted between 2006 and 2016. Our full sample contains some 86,000 firms representing all sectors of economic activity, particularly in the manufacturing and service sectors. Table 1 summarizes the country-time dimensions of the sample. However, many of the firms are extremely small (one or a few workers only), and therefore not suited for an analysis of internationalization. We, therefore, follow the literature by excluding firms with fewer than ten workers. For similar reasons, we also initially exclude state-owned firms (the state owns more than 50% of the firm’s equity) and foreign-owned firms, though in robustness tests we add these back into the sample while controlling for these organizational forms. In

supplementary tables available from the authors on request, we show that our findings are not sensitive to their inclusion.

Simultaneous equations and the dependent Variables

As seen in Figure 1, we propose a simultaneous equation approach to identify the impact of BG affiliation on export propensity while taking into account the potential superior organizational capabilities that lead BGs to select those affiliates. We therefore estimate two equations jointly in a system, BG selection and export intensity respectively.

Our first equation – the BG selection equation - therefore focuses on the determinants of group affiliation. The WBES is valuable for our research questions because it allows for the fact that the firm may be embedded in a broader enterprise; whether the firm is ‘a firm on its own’ or ‘related to another enterprise’. WBES then uses a standard definition of group affiliation across jurisdictions, which requires that firms identifying themselves as group members must be independent. WBES establishes that firms are independent according to the following criteria: a firm must i) be legally registered for tax purposes, ii) make its own financial decisions and iii) have its own financial statements separate from those of the group, iv) have its own management and control over its payroll and v), be owned by private domestic individuals, companies, or organizations. Thus, we classify firms that self-identify as being related to larger enterprise as group affiliated (*GAF*) and we code them as 1, and 0 otherwise. This definition meets the criteria for BG affiliation found in the literature specifically that 1) legally independent companies comprise groups, 2) firms affiliate with a larger organization in a stable manner and 3) are subject to coordination and support by the larger enterprise (Castellacci, 2015). Note that *GAF* is also an independent variable (instrumented) in the second equation below.

The second equation in our system – the firm performance equation - focuses on the firm’s performance in internationalization measured by export intensity. We follow the literature in using as the dependent variable export intensity (*exports*), defined as the percentage of sales directly exported, (He, Brouthers, & Filatotchev, 2013).

Independent Variables

We used several survey items from the WBES to construct the two key explanatory variables - Management Practices and Financial Access - which are independent variables (H1) in the first equation and controls in the second. *Management practices* refer to the number of practices that a firm has applied in the last fiscal year. These are generated from six survey items that ask respondents about the implementation of the practice: 1) whether the firm has internationally-recognized quality certification; 2) whether the firm has an annual financial statement reviewed by an external auditor; 3) whether the firm has used technology licensed from foreign companies; 4) whether the firm has a website for business related activities; 5) whether the firm uses E-mail to communicate with clients or suppliers, 6) whether the firm has provided formal training to full-time employees. We include the ICT variables because the countries in our sample are often distant from major markets and characterized by poor transportation infrastructure so that communication using the internet and websites is likely to be important for export-oriented firms. All items are coded 1 if the firm has the practice and 0 otherwise. Our measure is a count variable with the range from 0 to 6.

Financial Access refers to the firm’s sources of capital. We incorporate four items to construct the scale: 1) whether the firm has a checking or savings account; 2) whether the firm has an overdraft facility; 3) whether the firm has a line of credit or a loan from a financial institution; 4) whether the firm has applied for any loans or lines of credit. All items

are coded 1 if the firm has the practice and 0 otherwise. Again, this measure is a count variable with the range from 0 to 4.

Our second hypothesis concerns the impact of the development of market supporting institutions on BG affiliation. For this purpose, we follow a large literature (e.g. Ghemawat, 2007; Hallward-Driemeier & Pritchett, 2015) in employing the World Bank's Doing Business dataset, which has measured the quality of market supporting institutions and their enforcement across 190 economies since 2002.⁶ Doing Business (DB) methodology uses a Distance to Frontier (DTF) score to measure the gap between the country's performance and the best practice across the entire sample of 41 indicators over ten topics. The scores obtained from each indicator are aggregated by simple averaging into one DTF score for each country and range from 0 (the worst performance) to 100, the frontier. Thus, the score represents the overall quality of the jurisdiction's business environment across a range of market supporting activities.

Hypothesis 3 considers the relationship between export intensity and GAF having controlled for potential reverse causality between GAF and firm performance. Hypothesis 4 concerns the moderating effect of political and social institutions on this instrumented relationship. For this purpose, we employ the *Fragile State Index*, an institutional measure which aims to assess states' political and social stability. It ranks all sovereign states based on scores from 12 separate indicators related to various aspects of state stability and strength. Indicators are divided into three (social, economic, and political) categories, covering topics like state legitimacy, economic equality and provision of public services. The original scale scores each indicator between 0 and 10, with a higher number indicating a higher level of fragility. For interpretation purpose, we reverse the scale so that a higher number represents a *lower* level of state fragility or a higher level of stability. The twelve indicators are summed to create a scale spanning 0–120.

Finally, to measure BG prevalence effects in the second equation (H5), we introduce a country level variable *BG prevalence*, which measures the degree of BG concentration within a country. We follow the market concentration literature and calculate this variable as a Herfindahl Index by summing the squares of the market shares of BG sales as reported in WBES within each country. It takes a value between zero and one.

Control Variables

To address potential omitted variable bias, we included several standard firm-level characteristics as control variables in each equation. Thus, since larger firms are likely both to be group affiliated (Khanna & Palepu, 2000a) and more productive (Hall & Weiss, 1967), and are more likely to export (Chen et al., 2016) we control for *Firm Size*, measured by the logged number of permanent employees, in both equations. We also control for *Firm Age* measured by years of operation since establishment in both equations. As noted above, age is a prominent variable in the exporting literature, and could also be related to selection if older firms' capabilities are easier to evaluate. We also control for year- and industry-specific fixed effects.

Descriptive Statistics

⁶ Doing Business (*DB*) covers 10 factors reflecting the needs of business from the start-up phase to eventual winding up of a business including securing construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency. The measures are constructed from country based expert respondents.

We report all variable definitions and descriptive statistics in Table 2, which contains the means, standard deviations, minima, and maxima as well as the sources of all the variables used in our regressions. In Table 3, we report the correlation coefficients for the dependent variables in each regression, the GAF (selection) equation in the first panel and the export intensity in the second. There are a few issues of collinearity in the upper panel: as one might expect firm size is quite closely correlated (above 0.2) with firm age, management practice and financial access. We address this issue in the robustness tests below by omitting one or both of the control variables that are highly correlated. Our results are not affected by this collinearity. There are no serious issues of collinearity observed in the lower panel, though once again in regressions that include firm size, management practice and financial access, we omit variables to check for robustness in our regressions. Once again, our findings are not affected.

Estimating equations and hypothesis testing

We estimate two equations:

- (1) $GAF = a_1 + a_2 \text{Management practices} + a_3 \text{Financial access} + a_4 \text{DB} + a_5 \text{Firmage} + a_6 \text{Firmsize} + \text{industry and time controls}$.
- (2) $\text{Export intensity} = b_1 + b_2 \text{GAF}^* + b_3 \text{Fragile} + b_4 \text{BGprevalence} + b_5 \text{Management practices} + b_6 \text{Financial access} + b_7 \text{Firmsize} + b_8 \text{Firmage} + b_9 \text{Fragile}^* \text{GAF} + \text{industry and time controls}$.

The * against GAF in equation (2) indicates that it is instrumented by equation (1). As noted above, in some specifications of equation 2, we do not include either or both firm size and firm age. Our hypotheses are tested by the sign and significance of estimated coefficients as follows: Hypothesis 1 implies that $a_2, a_3 > 0$; Hypothesis 2 implies $a_4 < 0$; Hypothesis 3 implies $b_2 > 0$; Hypothesis 4 implies $b_9 > 0$, and Hypothesis 5 implies $b_4 < 0$.

Method of Analysis: two stage least squares and multilevel analysis

We follow a structured approach to estimation of the two equations. In our first regressions, we estimate equation (1); since the dependent variable varies between zero and one, we use the logit method (Angrist, 2001). We also estimate, initially separately, equation (2) determining export intensity using the Ordinary Least Squares method (OLS).

We go on to estimate the two equations jointly using *two stage least squares* (2slq), to account for the potential endogeneity of GAF in the export intensity equation and determined by the factors in equation (1). In this formulation, the GAF equation explains how firms are selected into the BG, and the coefficient on GAF in equation (2) represents the impact of business group affiliation on exporting taking into account that better firms, in terms of management practices and financial access, are selected to be BG affiliates and that these factors also influence export intensity.

Thirdly, we estimate the two equations jointly using two stage least squares (2slq) in a *multi-level framework*. Multilevel analysis is recommended for analysis of data with a nested structure, to take account of the lack of independence among observations (Arregle et al., 2006). Datasets with a nesting structure such as firms nested within countries and industries contain variability at each level of nesting, and the purpose of the multilevel analysis is to explain such variability. Multilevel modeling (MLM) is an extension of the multiple regression model that includes nested random coefficients (Estrin, Nielsen, Nielsen, 2017). Our dataset contains variables at two levels; firm (firm size, age, management practices, financial access, GAF, export intensity) and country (DB, fragile, BG prevalence). We first estimate using only MLN and then estimate the two equations as a system, using two stage least squares estimators within an MLM framework.

We report the results of these estimation methods of the two equations within a single table, Table 4. The table contains two panels, the first reporting the estimates of the GAF (selection) equation and the second the results of estimating the export intensity equation. For

estimates using 2slq, columns with the same number are estimated simultaneously. Thus, in models (1) and (2) of each panel, we report the single equation estimates (logit and OLS respectively) of the GAF and export intensity equations. The first model in each panel represents the basic specification containing only control variables and model (2) reports the single equation estimates of the full specification. We next address the selection problem by estimating the GAF equation simultaneously with the export intensity equation using 2slq, reported in model 3 of each panel. In model 4, we use MLM estimation and in model 5 of the second panel, we report estimates of the combined MLM simultaneous equation system.

4. Results

The first panel in Table 4 reports the results of the five specifications and estimation approaches to the GAF equation. It will be seen by comparing models (1) and (2) that the independent variables significantly improve the explanation of BG affiliation over that offered by only the control variables. Moreover, as we scan across models (2) to (5), we find for the most part that the three alternative estimation methods do not yield great differences in the estimates of the coefficients of interest, which are almost all statistically significant. The one exception concerns market supporting institutions, DB, which is not statistically significant except when MLM is employed. This is perhaps unsurprising because DB varies only across countries and the MLM country level random effect estimator addresses biases arising from this hierarchy of data. We usually consider our hypotheses within the context of model 3 so that we can later, in the second panel, take into account the selection effects regarding the performance of BG affiliates. However, the consistency of results across models provides reassurance about the robustness of our interpretations.

Commencing with Hypothesis 1, this rests on the sign and significance of a_2 and a_3 in equation (1). The results provide strong support for this hypothesis; in model 3 the coefficients on management practice and financial access are both positive and significant at the 95% level. However, the results are slightly less clear-cut for Hypothesis 2 concerning market supporting institutions; the coefficient is not statistically significant in model 3 though it is weakly significant and negative in model 4, as noted above likely reflecting the hierarchical nature of the data. Thus, there is at best weak support for the hypothesis that BG affiliation will decline as market supporting institutional quality improves.

We test the remaining hypotheses on the export intensity equation reported in the second panel of Table 4. As in the GAF equation, the results for each coefficient regarding sign and significance, though not always exact estimated value, is usually consistent across estimation methods. The exception is BG prevalence, measured at the country rather than the firm level, where the use of MLM methods somewhat reduces its statistical significance. We test Hypothesis 3 by the sign and significance of the coefficient on GAF; there is strong support for H3 because this is always positive and statistically significant. Moreover, if selection is playing a major effect on the relationship between BG affiliation and export intensity, we would expect to see that in the difference in the sign and significance of the coefficient between models 2 and 3. Indeed, we observe a large difference in this coefficient between column 2 and 3: it increases from 5.4 to 377.

Hypothesis 4 argues that stronger political, social and economic institutional environment will negatively moderate the positive relationship between BG affiliation and export intensity. We test this hypothesis via the sign and significance of coefficient b_9 in equation (2). We predicted that this coefficient would be negative, and this is consistent with the evidence in model 3 and indeed all the specifications. Once again, the coefficient is much larger when estimated as part of a simultaneous equation system than when the selection effects are not taken into account (model 2).

Finally, we hypothesized about the impact of BG prevalence in the economy as a whole on firm internationalization, arguing that the effects of high levels of BG concentration would be negative. We test this via coefficient b_4 in equation 2. We find support for this hypothesis in the 2SLS estimates in model 3, but not when country random effects are taken into account in model 4 nor when 2SLS and MLM are used together in model 5. Since BG prevalence is a level 2 (country level) variable, the use of nested random effects (MLM) is especially important. Hence we conclude that our estimates do not provide strong support for Hypothesis 5.

Regarding the control variables, our results are highly consistent across equations and largely conform to expectations. Thus, larger firms are more likely to be selected as BG affiliates and larger, and younger firms have a higher propensity to export. We noted above the collinearity between these variables which lead us to the robustness tests reported below.

At the bottom of Table 4, we report post-estimation tests of significance for our econometric methods. For 2sls models, we use Durbin and Wu-Hausman instrumental tests for considering whether the simultaneous equation system of equations (1) and (2) is appropriately identified. The statistics are both significant indicating the treatment of GAF as endogenous is justified. For MLM models, we perform Hausman tests of their validity and find significant statistics with high chi-square, indicating substantial difference from the single level method. Hence the data support the combined use of MLM and 2slq on this dataset.

Finally, we conducted a series of robustness tests of the above estimates. For the GAF equation, they concern the exclusion singly and jointly of management practices and financial access to address the collinearity with firm size. In tables available from the authors on request, we show that our conclusions concerning hypotheses 1 and 2 are not affected by these changes in specification. We use model 3 in the export intensity equation to explore the robustness of H3-5. We are concerned about the potential effects of collinearity between management practices, financial access and BG affiliation and therefore exclude these variables singly. Once again in tables available on request, the results are consistent across models and confirm hypotheses 3 and 4, as well as providing slightly stronger support for hypothesis 5.⁷

5. Discussion

In this paper, we have used a large cross-national dataset of firms in understudied countries to extend our understanding of the nature and impact of BGs. Specifically, we have addressed three prominent issues in the BG literature. First, using export intensity as a performance measure, we have identified performance advantages of BG affiliates in international markets, providing support for the view that BGs are efficient organizational alternatives in the face of missing institutions. Second, we have shown that these advantages result from both a selection effect, in which firms with superior market capabilities belong to BGs and a direct effect, which we attribute largely to the nonmarket capabilities of BGs. Put otherwise, although we find that BGAs have export advantages over non-affiliated firms, we also find that affiliated firms have stronger management and finance capabilities. However, even when these are held constant, there is still a BGA advantage, which we suggest results from the intangible nonmarket capabilities available through the BG. Finally, we have shown that

⁷ The same exercise was repeated using a sample that included state- and foreign-owned firms. This does not alter our conclusions. Results are also available on request.

these relationships are strongly context specific. Stronger political and social institutions diminish the affiliate performance advantage, although the ability of BGs to select better firms does not seem to dissipate in countries with stronger market supporting institutions. The former result further supports our emphasis on the importance of nonmarket capabilities, whose value declines as political and social institutions strengthen.

We organise our discussion around three themes. The first concerns the origins and nature of BG's functional capabilities. The second is the idea of the portability of domestically cultivated capabilities and their value for BG affiliates in forming international competitive advantage. The third concerns the possibility for BG cumulative longer-term competitive advantage, even in the face of institutional development.

The origins and nature of BGs functional capabilities

Much of the business group literature is premised on the supposition that BGs exist to create an internal market for resources that are otherwise expensive to acquire. However, the assumption has not been carefully tested nor has account been taken of the endogeneity of BG affiliation.

We explore the association between BG affiliation and two important measures of firm capabilities and resources: managerial practices and access to financial resources. These capture the main elements of internalization advantages in the BG literature (Khanna and Yafeh, 2007) and are consistent with the capabilities approach of the export literature (Chen et al., 2016). We argue that BGs would choose affiliates with superior capabilities in these areas, and our data provide unambiguous support for this hypothesis. The estimated scale of these effects in Table 4 panel A is large; a one percent improvement in managerial practice increases the probability of BG affiliation by 22.6% and a one percent increase in financial access increases the probability of BG affiliation by 5.6 %.

Turning to the effects of BG affiliation on exporting, we account for the possibility that BG affiliates may have been selected to join the group because of their superior efficiency; something that we established above. Failing to address this selection effect may lead researchers either to underestimate or falsely accept hypotheses about the impact of BG affiliation on exporting. Our use of simultaneous equation methods allows us to identify the impact of BG affiliation on export intensity conditional on the (potentially) superior performance of BG affiliates, and therefore to isolate the specific benefits brought to the internationalization process by BG membership. The extent of the actual bias is shown in Table 4 panel B by comparing the measured impact of BG membership on export intensity using the single equation (model 2) and taking into account the selection effect using two stage least squares (model 3) and MLM (model 5). Interestingly the impact is found to be positive and significant in all models, but the nature of the bias differs between models 3 and 5. Model 3 suggests that the selection bias leads to an underestimate of the BG effect on export intensity, while model 5 suggests the opposite. Nevertheless, in any case, and contrary to many critics of the economic impact of BG affiliation, our results show that affiliation always enhances export intensity, even when the selection effect is controlled for. This implies that BG affiliates have higher levels of internal resources and capabilities, but BG membership allows for these to be exploited even more effectively. We interpret this to suggest that BG affiliation brings access to critical additional resources and capabilities that contribute to internationalization.

Moreover, since we also control for management practices and financial access in the export intensity equation, these benefits of BG membership will likely concern areas of internalization not previously stressed in the literature. We suggest that these will primarily

be nonmarket capabilities, described by Fisman & Khanna (2004: 621) as ‘industrial embassies... whose sole purpose is to handle group relations with the government’. We propose that the combination of nonmarket capabilities and affiliate selection capabilities may represent a potent bundling of competitive resources. We estimate the scale of such effects to be large; if we compare BG affiliates with non-affiliates within model 3 of table 4, we find that affiliation increases export intensity by 44.59%.

The international portability of domestic advantage

A conventional view of BGs nonmarket capabilities is that they are not portable across national boundaries, being location-bound and difficult to leverage abroad (Luo, 2003). Tan & Mayer (2010:157) conclude that domestic political ties “inhibit international activities by being bound to the specific domestic context from which the BG originates.” However, our findings are consistent with recent research that finds nonmarket capabilities to be transferable across borders (Carney, Dieleman, & Taussig, 2016; Cuervo-Cazurra & Genc, 2011; Martin, 2014). Ties with governments in several countries can become a source of institutional advantage for a multinational firm and their subsidiaries (Martin, 2014); for example, energy companies have cultivated relations with multiple governments that have been usefully leveraged in other jurisdictions (Frynas et al., 2006).

Our study contributes to a more balanced and nuanced understanding of BG nonmarket capabilities, with its implied cultivation of both political and market-based networks. Thus, the finding of a positive net BG effect on exports can be interpreted as implying that the possession of nonmarket capabilities may be unique to BGs because they allow them to use their political and social networks to add value to affiliates in ways additional to the internalization of other resources. For export performance, the nonmarket benefits of BG affiliation may include better access to export permits and export subsidies and superior connections to networks outside the home market. Hence, we suggest that BG sponsorship of their affiliates into international markets may become the basis for subsequent FDI.

Finally, Hypothesis 5 sought to identify limits on the beneficial impact of BG affiliation on internationalization by identifying a potential negative effect on exporting if BG political power was too great. Thus, it predicted that if business groups collectively become too prevalent, they would exploit their power to protect their monopoly positions, thereby strangling economic development, and producing inward focused activities. However, we found little support for this argument; the coefficient on BG prevalence is negative and significant at up to the 95% level as predicted in Table 4 panel B, models (2) and (3). However, BG prevalence is a country level variable and these models are biased because they do not take into account that the structure of the data is nested. BG prevalence is not significant in models (4) and (5), and these are the more appropriate ones to test this hypothesis. Our interpretation takes us back to non-market capabilities, especially political ties, which are often interpreted as nefarious attempts at rent-seeking. However, ties between firms and officials might be equally interpreted as a form of embedded autonomy (Evans, 1995) whereby a strong state can interact with business leaders while the government retains its autonomy to pursue the national interest and firms seeking to develop their competitive capabilities (Carney et al., 2018a).

The potential for cumulative and sustained competitive advantage

Finally, we consider the evolution of BGs as institutions develop. We find mixed evidence in this regard, suggesting the need for more future research. In our sample of understudied countries, we do not identify a clear and unambiguous relationship between market

supporting institutional development and BG affiliation, though there is some weak supportive evidence. On balance, therefore, we cannot claim to provide unambiguous support for the proposition that BGs will gradually wither away as economic development proceeds, as proposed for example by Khanna and Palepu (2000b). On the other hand, we find relatively strong evidence that as political and social institutions strengthen, the export advantages associated with BG affiliation are reduced. Thus, as market supporting institutions improve, BGs are still probably able to attract better performing firms though the benefits they provide in terms of internationalization may be diminishing as political institutions mature. We have used different measures of institutional strength in each equation, and this may explain some of these differences.

Moreover, our results do not resolve the question of whether BGs might obtain a cumulative advantage such that BG affiliates gain a head start over freestanding firms in the early stages of institutional development that can be sustained in later stages of growing institutional maturity. While our export results suggest that this is not true and that BG advantages erode, the selection equation provides more ambiguous results. If the early market capabilities advantages of BG affiliates can be accentuated and carried over into a later developmental period to replace eroding nonmarket advantages, then BGs may sustain a competitive advantage, even in international markets. Alternatively, BGs may be able to adapt the nature of their nonmarket capabilities to focus more on knowledge networks and less on political networks. BGs that so adapt may be better positioned to seize emergent opportunities (Lamin, 2011; Manikandian & Ramachandran, 2015; Siegel & Choudhary, 2012). In general, our results reinforce the arguments made by Carney and colleagues (2018a) who suggest that the evolution of BGs is contingent on both their institutional context and their capacity for internal adaptability and organizational learning.

One strength of this paper is the use of a large dataset at both the firm and the national level, which focuses on understudied countries. The WBES is an important research asset for IB scholars, allowing us to test whether concepts and hypotheses developed in the context of economies with stronger institutions and higher levels of income per capita can be extended to cover emerging markets in which there is much greater heterogeneity of institutional norms and practices. However, this dataset is also the source of the main limitations of our study. Though as we note in Table 1, some countries are sampled twice, or even three times, the dataset can probably best be viewed as a cross-country cross-section sample. As such, we are inferring dynamic relationships such as the impact of market-supporting institutions on BG affiliation (H2) or the effect of BG prevalence on export intensity (H5) from variation in institutional quality across countries, rather than from variation in institutional quality within a country over time. It is quite a strong assumption that countries follow a similar dynamic path in the evolution of institutions so that one can infer dynamic effects from cross-country data. Future work might wish to address this limitation by exploiting more systematically the panel element of the WBES, or by developing new cross-country panel datasets in which the evolution of the relationship between BG affiliation, business context, and firm performance can be identified directly.

A second limitation of our work concerns the available indicators of firm resources and capabilities. WBES contains interesting attempts to measure capabilities, especially management practices. However, the survey questions were developed in the early 2000s, and considerable research work has been undertaken since then (Bloom & Van Reenen, 2007). The use of data with a richer specification of the firm resources and capabilities would enhance the reliability of our analysis.

Conclusions

Our study of the role of BGs and their impact of affiliate internationalization in a large sample of understudied countries offers some fresh insights into the behavior and impact of these ubiquitous emerging market business institutions. Our findings are broadly consistent with the “paragon” view of BGs (Khanna & Yafeh, 2007), in which BGs attract high quality firms into efficient internal markets in response to market failures and use these internal-markets to transfer valuable resources and capabilities to BG affiliates. These resources and capabilities create competitive advantages in the form of exports but more advanced institutions reduce this effect. At the same time, we also propose nonmarket capabilities as an important source of the BG advantage but find little evidence to suggest that as BG prevalence increases the exercise of these nonmarket advantages may impede export performance.

This perspective on BGs has considerable significance for the direction of future research. We have already noted important areas for future research arising from the limitations of our dataset. Also, a deeper analysis is needed to understand the factors that lead business groups to select particular affiliates from among the potential candidate firms, and the incremental benefits, probably of a nonmarket sort, that this selection and the group’s resources go on to provide. This is ultimately a dynamic story and one that needs to be understood better to explain the somewhat counterintuitive positive role of BGs in the development process identified in this paper.

The role of institutional context is also clearly of fundamental importance. Our work suggests that, conditional on certain aspects of the institutional context, BG affiliation can assist affiliates in their internationalization strategies, and that this assistance is not merely a consequence of these firms’ superior competitiveness, nor of the additional resources, market and non-market, brought into play by the BG. These relationships are sensitive to the character, quality and evolution of the institutional environment. Thus, we have distinguished between two sorts of institutional drivers. The first is market-supporting institutions, as developed for example by Acemoglu and Robinson (2012) and Hallward-Driemeier & Pritchett (2015), which we argue might affect the relative benefits and costs of BG affiliation. The second represents a different conceptualization of institutions which takes into account the political and social context (e.g., Jackson and Deeg, 2008, Carney et al., 2018b). The former we view as being primarily relevant in explaining the dynamics of BG evolution; the latter in understanding the overlap between BGs economic and political power. Our empirical work provides support for such distinctions and points future research in the direction of much more careful specification and explanation of business relationships that are conditional on institutional factors.

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Figure 1: The Model and Hypotheses

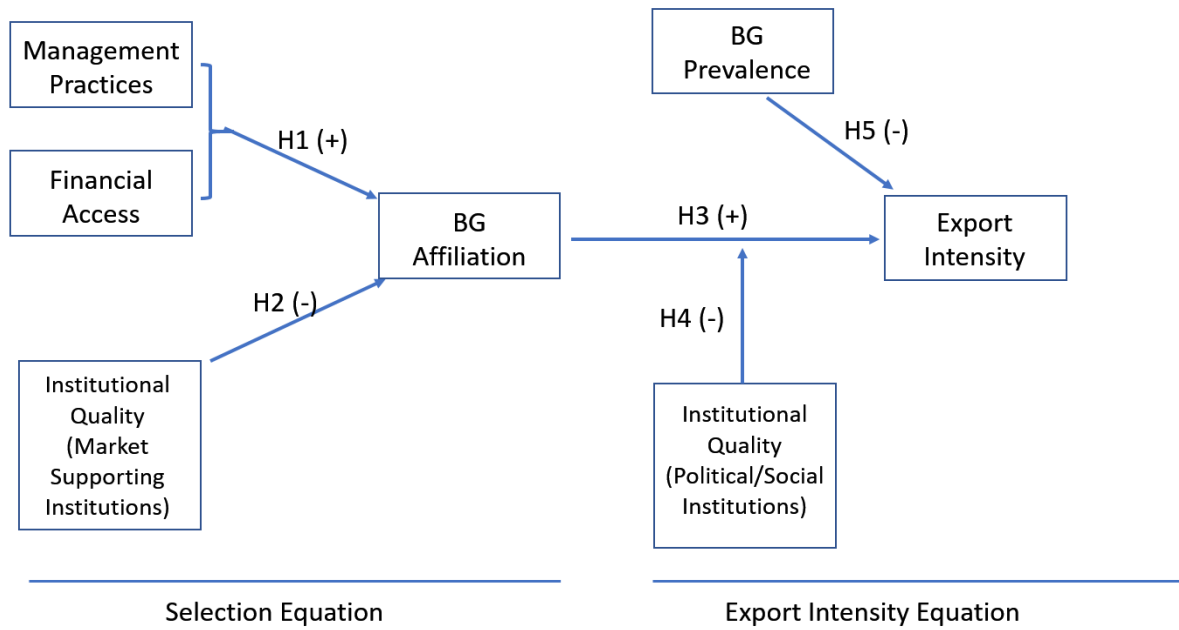


Figure 1

Table 1: Sampled countries and years

Country	No. of Obs	Sample Year			Country	No. of Obs	Sample Year	
Angola	229	2006	2010		Malaysia	523	2015	
Argentina	1,074	2006	2010		Mexico	1,621	2006	2010
Azerbaijan	176	2009	2013		Mongolia	193	2009	2013
Bangladesh	2,174	2007	2013		Morocco	165	2013	
Belarus	132	2008	2013		Namibia	164	2006	2014
Botswana	93	2006	2010		Nigeria	1,212	2007	2014
Brazil	1,135	2009			Pakistan	1,283	2007	2013
Bulgaria	584	2007	2009	2013	Peru	828	2006	2010
Cameroon	72	2009			Philippines	1,365	2009	2015
Chile	1,168	2006	2010		Poland	238	2009	2013
China	1,511	2012			Romania	256	2009	2013
Colombia	970	2006	2010		Russia	1,612	2009	2012
Czech Republic	154	2009	2013		Rwanda	32	2006	
DR Congo	214	2006	2010	2013	Senegal	276	2007	2014
Egypt	1,534	2013			Slovakia	133	2009	2013
Estonia	112	2009	2013		Slovenia	118	2009	2013
Ethiopia	440	2011	2015		South Africa	502	2007	
Georgia	172	2008	2013		Sri Lanka	225	2011	
Ghana	319	2007	2013		Sudan	88	2014	
Hungary	125	2009	2013		Tanzania	396	2013	
India	6,455	2014			Thailand	631	2016	
Indonesia	1,415	2009	2015		Tunisia	270	2013	
Israel	167	2013			Turkey	1,627	2008	2013
Jordan	261	2013			Uganda	350	2006	2013
Kazakhstan	315	2009	2013		Ukraine	923	2008	2013
Kenya	588	2007	2013		Venezuela	62	2010	
Latvia	122	2009	2013		Vietnam	1,118	2009	2015
Lebanon	180	2013			Yemen	216	2010	2013
Lithuania	144	2009	2013					

Note: "No. of Obs" refers to total observation from all sample years.

Table 2: Panel A Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
EXPORT	7.548	22.061	0	100
AGE	2.580	0.796	0	5.347
SIZE	3.344	1.415	0	10.539
GAF	0.177	0.382	0	1
BGP	0.213	0.209	5E-07	0.887
DBDTF	57.184	9.408	30.413	81.546
FRAGILE	42.452	16.570	8.1	88
MAN	2.591	1.674	0	6
FIN	1.910	1.219	0	4

Table 2 Panel B: Variable Definitions

Variable	Definition	Source
EXPORT	Sales exported directly as percentage of total sales.	WBES
AGE	Year firm began operation to year of survey conducted	WBES
SIZE	Logged value of permanent workers	WBES
GAF	Dummy indicating whether firms being part of larger enterprise	WBES
BGP	BG cluster effect within a country (BG sales/ Total sales) ^2	Calculated from WBES
DBDTF	Doing Business Distant to Frontier score	Easy of Doing Business
FRAGILE	Fragile State Index (Reverse Scale)	Fragile state Index
MAN	Number of practices that a firm applied in management	Calculated from WBES
FIN	Number of means that a firm adopted in acquiring financial access	Calculated from WBES

Table 3: Correlation Coefficients (Selection Equation and Export Equation)

	AGE	SIZE	GAF	DBDTF	MAN	FIN
AGE	1					
SIZE	0.2127*	1				
GAF	0.0772*	0.2312*	1			
DB DTF	0.0632*	0.0334*	-0.0133	1		
MAN	0.1676*	0.5056*	0.1969*	0.1148*	1	
FIN	0.1287*	0.2496*	0.0868*	0.1644*	0.3585*	1

	AGE	SIZE	GAF	BGP	FRAGILE
AGE	1				
SIZE	0.2127*	1			
GAF	0.0772*	0.2312*	1		
BGP	0.0770*	0.0089	0.1287*	1	
FRAGILE	0.0877*	-0.0027	-0.006	0.0916*	1

*p < 0.01

Table 4: Results using the sample excluding small, foreign and state firms

Variable	Panel A: GAF as Dependent Variable			
	Model 1	Model 2	Model 3	Model 4
	Logit	Logit	Logit	MLM
Firm Age(Log)	0.034 (0.020)	0.007 (0.012)	0.007 (0.012)	-0.029* (0.013)
Firm Size (Log)	0.513** (0.012)	0.227** (0.008)	0.226** (0.008)	0.241** (0.009)
Management Practices (MAN)		0.112** (0.007)	0.114** (0.007)	0.131** (0.008)
Financial Access (FIN)		0.026** (0.009)	0.028** (0.009)	0.011 (0.010)
Doing Business DTF score			-0.002 (0.001)	-0.018* (0.008)
Constant	-2.627** (0.182)	-2.136** (0.153)	-1.957** (0.181)	-1.540 (0.932)
Industry Control	Yes	Yes	Yes	Yes
Year Control	Yes	Yes	Yes	Yes
Chi ²	3,516.807	3,494.991	3,498.444	2,205.342
Log likelihood	-14,793.931	-12,284.280	-12,282.553	-11,287.561
N	35,690	30,73	30,732	30,732

* p<0.05; ** p<0.01

Note: To compare coefficients between Multilevel and Logistic models (model 3 vs model 4), we perform the Hausman test and find Chi² score at 642.55 significant at .001 level of, indicating the two models have a significant difference in explanatory power.

Table 4: Results using the sample excluding small, foreign and state firms

Variable	Panel B: Export Intensity as Dependent Variable				
	Model 1 OLS	Model 2 OLS	Model 3 2SLS	Model 4 MLM	Model 5 2SLS&MLM
Firm Age(Log)	-0.665** (0.168)	-0.550** (0.169)	-0.081 (0.395)	-0.585** (0.171)	-0.766** (0.184)
Firm Size (Log)	6.483** (0.103)	5.775** (0.108)	2.870** (0.394)	5.722** (0.107)	5.941** (0.116)
Gaf Dummy		5.374** (1.002)	377.375** (36.554)	3.175** (1.012)	2.719* (1.137)
BG prevalence		-1.587* (0.658)	-11.839** (1.778)	0.031 (4.102)	-0.239 (5.586)
Fragile Index		0.100** (0.009)	1.220** (0.112)	0.161** (0.042)	0.121* (0.055)
Gaf Dummy* Fragile Index		-0.089** (0.022)	-7.455** (0.724)	-0.053* (0.022)	-0.049* (0.024)
Cons	-21.66** (1.709)	-12.194** (1.531)	-78.365** (7.384)	-17.855** -6.854	-17.765 (9.349)
Industry Control	Yes	Yes	Yes	Yes	Yes
Year Control	Yes	Yes	Yes	Yes	Yes
Adj R ²	0.142	0.125			
Chi ² /F	238.765	170.313	1,105.27	4,245.493	3,875.6
N	37,250	35,417	30,580	35,417	30,580

* p<0.05; ** p<0.01

Note: To test endogeneity in model 3, we perform the Durbin and Wu-Hausman tests. Both tests results have Chi² scores (474.665 and 481.644) significant at .001 levels, rejecting the hypothesis that GAF is exogenous.

To compare coefficients between Multilevel and OLS (Model 4 vs Model 2), we perform the Hausman test and find Chi² score of 70.59 significant at .001 level, indicating that the two models have significant differences in explanatory power.