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RESEARCH ARTICLE

Returns to Internationalization: Business Group-Affiliated Firms vs Standalone Firms

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Abstract

The purpose of this study is to explore the differential gains from internationalization for different forms of corporate governance. In particular, we seek to move from the question concerning whether firms are able to generate differential gains from internationalization, to the question of why. Our focus is on ownership structure, and the differential rates at which business group affiliated firms and standalone firms gain from internationalization. Using a unique data set of some 356 standalone and business group affiliated firms, we show that while the marginal gains from internationalization may be greater for standalone firms, business group firms are better able to exploit firm-specific assets, leveraging these into higher returns to internationalization.

Keywords Internationalization · Performance · Business group · Firm-specific advantage

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1 Introduction

This paper seeks to explore the relationship between particular ownership structures and firm level returns to internationalization. We do this by asking two related questions. First, whether the returns to internationalization for business group (BG) affiliated firms differ from those of standalone firms. Second, we address why this difference exists, through the lens of internalization theory, by exploring the role of firm-specific advantages (FSAs) and firm's ability to generate resources in this relationship. Thus, we seek to build on an established literature of internalization and institutional voids (Buckley & Casson, 1976; Khanna & Palepu, 1999, 2000a, 2000b; Kirca et al., 2011; Kumar et al., 2012; Luo & Tung, 2007; Mathews, 2006; Rugman & Verbeke, 2003).

The essential premise of this study is that under certain institutional frameworks, BG structures bestow certain advantages over standalone firms. At the heart of the study therefore is internalization theory. We seek to explore internationalization through the relative importance of country-specific advantages (CSAs) or FSAs, following Rugman (1981, 2008, 2010), and equally we seek to understand how the interaction between these advantages drive performance. While the existing literature provides a convincing link between CSAs, BG formation, and institutional voids (Dieleman et al., 2022), it places less emphasis on the nature of FSAs in the internationalization process, though the net influence of internationalization on performance can vary in its magnitude with the value of FSAs (Kirca et al., 2011). As we discuss below, we seek to draw insights from the literatures on internalization, institutional voids, and the returns to foreign direct investment (FDI), to explore and explain the differences in the returns to internationalization of these different groups.

For example, Holmes et al. (2018) propose a research agenda on internationalization of BGs, identifying the potential ambiguities resulting from interactions between corporate governance and international strategy. And Barnard (2021) scrutinizes at length the internationalization strategies of emerging market firms and proposes a set of relationships covering the importance of institutions and FSAs for explaining internationalization. Hejazi et al. (2021) emphasize the learning effects from FDI, but the challenge is to develop a framework to consider these two questions together, exploring both the relationship between ownership structure and FDI and then subsequently the returns to that FDI. We therefore adopt the overarching theoretical hook of using internalization theory, similar to Gaur et al. (2019), to explore differential returns, not merely to internationalization, but in terms of the differential ability of firms to exploit FSAs or ability to generate resources into successful internationalization.

BG affiliations often result from institutional voids and allow firms to utilize internal markets for key resources, such as capital and technology (Banerjee et al., 2015; Elango & Pattnaik, 2007). Pattnaik et al. (2021) go one stage further in their analysis, arguing that the ability to overcome institutional weakness provides important experience in the internationalization process. As Shin et al. (2021) emphasize, an unanswered question concerns whether being part of a BG

can itself be considered an FSA, or whether it is the case that BGs are better placed to generate advantages through the use of internal markets for capital and knowledge. The previous literature in this area and the context in which our study is positioned are presented in Table 1.

Table 1 demonstrates that most of the past research on internationalization–performance relationship have not addressed the moderating effect of BG affiliation on the internationalization–performance relationship. Some studies, including Gaur and Kumar (2009) and Gaur and Delios (2015), have addressed the effect of BG affiliation but have provided unclear findings (Aguilera et al., 2020). Table 1 also highlights that past research has rarely addressed the impact of the ability to generate FSAs and ability to generate resources on the internationalization–performance relationship.

We argue therefore that the existing literature needs to consider the interaction between institutional voids and the ability of firms to generate and exploit FSAs in order to understand the gains from internationalization for both BG and non-BG firms. This is not discussed in the literature that focusses on institutional voids, nor in the more traditional internationalization–performance literature. Essentially, the effect of internationalization on firm performance is still controversial (Garbe & Richter, 2009; Richter, 2014). In particular, in exploring the relationship, Bhaumik et al. (2010), and the literature that develops from it, (for a discussion of this literature, see Debellis et al., 2021), for example, often tend to focus on differences in internationalization between different groups, using the institutional voids literature to explain the prevalence of different groups. Richter (2014) also sheds light on the inconsistent findings yielded by extant empirics examining the relationship between internationalization and performance. In turn, the literature on the returns to internationalization, building on Contractor et al. (2007) and Garbe and Richter (2009), considers the ability to lever the types of FSAs in internationalization, specifically in overcoming liability of foreignness. This however focusses on the nature of the statistical relationship between FDI and performance and compares firms from different home country contexts. The literature on the multinationality–performance relationship is discussed in a number of review papers, see for example Yang and Driffield (2012), and Richter et al. (2017), so we do not intend to go into this literature in detail. However, building on the critique of Hennart (2007, 2011) we argue that these reviews highlight the need to understand both heterogeneity at the firm level, as well as the ability to lever combinations of assets into internationalization (Lee et al., 2021).

Building on the above discussion, we seek to consider the nature of the FSAs that different firms are able to generate, and how these may be translated into performance, which allows us to consider the somewhat mixed results from the previous literature in a holistic way through the lens of internalization theory. Specifically, we hypothesize that when BGs develop unique sets of ownership advantages that can be exploited through internationalization, BG affiliates improve their returns to internationalization compared with standalone firms by exploiting these ownership advantages, even though merely being affiliated to a BG does not bring better returns to internationalization than standalone firms.

Table 1 Previous studies on the relationship between BG and returns to internationalizations and the relative contribution of this paper

(1) Study	(2) Sample	(3) Main findings of each study	(4) Moderating effect of BG affiliation (related to H1)	(5) Findings concerning the ability to generate FSAs and ability to generate resources on the internationalization–performance relationship (related to H2&H3)
Our study	Publicly listed Korean firms during 1981–2013	Main effect of internationalization or BG affiliation on performance U-shaped relationship between degree of internationalization and performance Positive main effect of BG affiliation	Negative effect of BG affiliation on the internationalization–performance relationship, showing that returns to internationalization are lower for BG-affiliated firms than for standalone firms	Showing the positive moderating effects of financing and R&D on the internationalization–performance relationship for BG-affiliated firms only
Gaur and Kumar (2009)	Indian firms during 1997–2001	Main effect of internationalization or BG affiliation on performance U-shaped relationship between degree of internationalization and performance Negative main effect of BG affiliation	Negative effect of BG affiliation on the relationship	Not addressed
Carney et al. (2011)	Meta-analysis	Internationalization mediates firm performance Firms adapt their strategies to reflect institutional settings, and this is expected to impact on performance The lack of transparency in intra group transactions strongly suggests the possibility of endogeneity, the reverse causality between firms' affiliation and performance	Not addressed	Not addressed

Table 1 (continued)

(1) Study	(2) Sample	(3) Main findings of each study	(4) Moderating effect of BG affiliation (related to H1)	(5) Findings concerning the ability to generate FSAs and ability to generate resources on the internationalization–performance relationship (related to H2&H3)
Gaur and Delios (2015)	Publicly listed Indian firms during 1990–2005	Main effect of internationalization or BG affiliation on performance Failed to find a U-shaped relationship between internationalization and performance Negative main effect of BG affiliation	Positive effect of BG affiliation on the relationship	Not addressed
Tsao and Lien (2013)	Publicly listed Taiwanese firms during 2000–2009	Main effect of internationalization The linear relationship between degree of internationalization and performance	Not addressed	Not addressed
Purkayastha et al. (2017)	185 Indian BGs during 2000–2010	Main effect of internationalization Inverted-U shaped relationship between degree of internationalization and performance	Not addressed	Not addressed
Xiao et al. (2013)	114,398 Chinese firms during 2001–2007	Main effect of internationalization S-shaped relationship between degree of internationalization and performance	Not addressed	Not addressed
Marin et al. (2017)	56 Spanish firms with investment in China	Main effect of internationalization Positive relationship between degree of internationalization and performance	Not addressed	Showing a negative impact of financing on the internationalization–performance relationship, with no distinction between BG-affiliated firms and standalone firms

Table 1 (continued)

(1) Study	(2) Sample	(3) Main findings of each study	(4) Moderating effect of BG affiliation (related to H1)	(5) Findings concerning the ability to generate FSAs and ability to generate resources on the internationalization–performance relationship (related to H2&H3)
Aguilera et al. (2020)	Content analysis	Potential for BGs to moderate the relationship between internationalization and performance	Difference between business groups' internationalization required family and state-owned groups' governance	Not addressed

We test our hypotheses using a sample of 356 family firms from South Korea (hereafter, Korea) over the period 1980–2013, of which 319 firms are affiliates of family-controlled BGs and 37 are standalone family firms. Results of our hypotheses testing provide us three findings. First, we find that the marginal returns to internationalization for BG affiliated firms are lower than those gleaned by standalone firms, which is counterintuitive to the strongly held belief that by merely being affiliated to a BG, firms can achieve better returns to internationalization. Second, we show that an ownership advantage that BG affiliates are able to exploit through internationalization in comparison to standalone firms is the ability to generate FSAs such as investment in research and development (R&D). Finally, we also show another ownership advantage that firms affiliated to BGs are able to exploit through internationalization is the ability to generate resources such as better financing. In sum, our second and third findings show that BGs develop unique sets of ownership advantages that can be exploited through internationalization.

Korea provides an excellent context to conduct our study for at least two reasons. First, while it is important to recognize that Korea, as an Organization for Economic Co-operation and Development (OECD) member and with a Gross Domestic Product (GDP) per capita very close to the OECD average, may no longer be considered an emerging economy, many of its institutions and business nomenclatures still reflect its history. There remains a degree of opacity in business relationships and ownership structures, reflecting the historical legacy of the country's institutions, thereby making it an ideal setting to study BGs that have played a significant role in compensating for the country's institutional voids (Almeida et al., 2015; Chang & Hong, 2000; Gormley et al., 2015; Kim & Song, 2017; Shin & Park, 1999). Second, due to the country's export-driven economic policy, Korean firms have a strong orientation towards internationalization, which provides an appropriate empirical context to test our arguments on the relationship between BG, FSAs, and returns to internationalization.

The remainder of our paper is structured as follows. We begin with exploring various aspects of the literature, covering BGs, internationalization, and returns. Building on this, Sect. 3 develops three hypotheses, with Sect. 4 presenting the data and the tests of the hypotheses. Section 5 discusses the findings in detail, and Sect. 6 concludes by discussing various implications of this study and avenues for future work.

2 Literature Review

BGs are the most common form of inter-firm networks (Dau et al., 2021; Elango & Pattnaik, 2007; Khanna & Palepu, 2000a) and are controlled by a core entity (usually a family). The core administrative entity within BGs provides member firms with common administration, managerial coordination, and privileged access to each other's resources. This creates an institutional structure within which member firms mitigate risks and costs (Khanna & Yafeh, 2007) and share strategic resources (Chang & Hong, 2000), thereby offsetting the drawbacks of weak home institutions (Yiu et al., 2007).

Extensive past research in various management disciplines (e.g.,Bhaumik et al., 2010; Boubakri & Ghouma, 2010; Faccio & Lang, 2002; La Porta et al., 1999, 2000; Villalonga & Amit, 2006) has recognized that BG structures emerge as a result of prevailing institutions, while these institutions also drive FDI decisions (Cuervo-Cazurra et al., 2018). A recent survey by Xu et al. (2021) explores the state of the art in our understanding of the relationships between institutional transparency and ownership structure, and both Gao et al. (2017) and Doh et al. (2017) furnish excellent overviews of how international business theory and conceptual development can help understand institutional voids and, in turn, help firms to overcome them.

Given that both the literatures on BGs and on internationalization rely on internalization theory, it is surprising that little attention has been paid to how these are related, specifically how BG affiliation influences returns to internationalization. The literature concerning the returns to internationalization in the context of varying institutional quality is discussed in detail by Berry and Kaul (2016), who argue that this relationship is far from straightforward. Aguilera et al. (2020) derive similar conclusions regarding the relationships between BG affiliation, internationalization, and performance. As they point out, the findings are rather unclear. One potential reason for the confusion in the literature is a divergence between the underlying theory and the econometric model employed, building for example on the arguments of Hennart (2007, 2011). In the earlier work, Hennart (2007) points to the diversion between the theoretical literature that is often applied to consider the internationalization–performance relationship and the internalization theory literature which underpins analysis of internationalization. Hennart (2007) considers a number of reasons put forward for why internationalization is believed to improve performance, including scale economies, flexibility, and learning (Richter, 2014).

Building on this argument and the BG group literature which is essentially concerned with internalization to overcome missing markets, we argue that the literature on internationalization–performance relationship and the literature on BG should be more aligned. Our rationale for this is that in order to explore the returns to internationalization, one needs to consider the varying ability of firms to both generate and exploit firm-specific assets. In turn, we argue that the distinction between BG-affiliated firms and standalone firms offers an ideal testing ground for this. To illustrate our point, Doh et al. (2017) demonstrate that BG affiliation brings performance gains to member firms in general by substituting for missing or malfunctioning institutions in their home markets. However, BG affiliation that generates benefits tailored to the local market can become an obstacle when firms expand beyond the national boundaries, such that one needs to consider the importance of FSAs in this context.

The gap in this literature has been highlighted in Table 1. To the best of our knowledge, this is the first study to explicitly examine how the effect of BG affiliation on the internationalization–performance relationship varies by the ability to generate FSAs and the ability to generate resources. We clarify the relative contribution of the paper by summarizing main findings in past research and outlining the gaps. As presented in the fourth column of Table 1, there have been only a few studies that have addressed the moderating effect of BG affiliation on the internationalization–performance relationship, which include Gaur

and Kumar (2009), Gaur and Delios (2015), and Aguilera et al. (2020). Gaur and Kumar (2009) report that highly internationalized firms perform worse if they are affiliated to BGs than if they are unaffiliated. On the other hand, Gaur and Delios (2015) report that highly internationalized firms perform better if they are affiliated to BGs than if they are unaffiliated. The unclear nature of the results from both the studies can be attributed to having a slightly different modelling approach, such that Gaur and Kumar (2009) focus only on BG affiliation in the model whereas Gaur and Delios (2015) focus on different types of ownership such as domestic, foreign, and concentration of ownership. Aguilera et al. (2020), on the basis of content analysis, hint that BGs have the potential to moderate the internationalization–performance relationship, without being specific whether the relationship will be positive or negative.

Our results and modelling approach are similar to Gaur and Kumar (2009) in terms of showing that internationalization generates lower returns for firms affiliated to BGs, relative to standalone firms, and also our model focuses only on BG affiliation. But we take a step further to extend the literature by seeking to understand why for example some types of firms are able to generate greater returns relative to others. While it might be an over-simplification to say that the creation of BG is on itself an FSA, we argue that we need to consider how the internal markets for key resources facilitate the returns to internationalization. Tan and Meyer (2010) develop a consistent argument, emphasizing that BG firms have greater access to managerial resources than comparable standalone firms, and as such are better placed to combine the necessary resources for internationalization. Similarly, Elia et al. (2020) show that BG firms are better able to meld these resources in order to reach the global frontier.

We distinguish ourselves by showing that the ability to generate FSAs, such as R&D investment, and the ability to generate resources, such as financing, positively influence the effect of BG affiliation on the internationalization–performance relationship. The selection of these factors is consistent with Vahlne (2020), which discusses the development of the empirical literature in terms of the factors that can be used as indicators of FSAs. He finds that the literature focuses on two factors: the ability of the firms to generate FSAs through innovation and the ability to generate resources to finance internationalization. Hence, we seek to extend the analysis of Kirca et al. (2016), who explore returns to internationalization in emerging market MNEs. They argue that EMNEs will enjoy quicker returns to FDI because of the greater benefits that accrue from exploiting FSAs in new locations. We argue however that the possession of FSAs may be a necessary, but not a sufficient condition to achieve this and that the ability to exploit these should be further considered.

Other studies in Table 1, such as Tsao and Lien (2013), Purkayastha et al. (2017), Xiao et al. (2013), and Carney et al. (2011), have examined the internationalization–performance relationship but have not addressed the effect of BG affiliation. Moreover, they have not even addressed the moderating effect of the ability to generate FSAs or to generate resources on the internationalization–performance relationship. Marin et al. (2017), on the other hand, find a negative impact of financing on the internationalization–performance relationship, but without addressing either the impact of R&D investment or the distinction between BG affiliated firms and

standalone firms. This discussion and a summary of findings presented in Table 1 clearly show the relative contribution of the paper.

3 Hypotheses

Central to our argument is the analysis of BG firms rooted in the concept of internationalization and institutional voids. The well-known contributions of Hitt et al. (2000) or Elango and Pattnaik (2007) suggest that emerging market firms, on the one hand, operate in protected economies and are insulated from international market pressures; on the other hand, they are encumbered with weak home institutions. BG firms are bound together by inter-firm financial transactions, while providing technological support for each other (Gu et al., 2008; Khanna & Palepu, 2000b).

Here, we observe a potential contradiction that may manifest itself in a particular way when considering the relationship between BG affiliation and returns to internationalization. This presents an interesting question in terms of the respective marginal returns that may be gained from the internationalization of BG affiliated firms and other standalone firms. One can apply here the analysis of Reuber et al. (2021), concerning replication of business models in several foreign markets. BG structures are hard to replicate internationally, rendering returns to internationalization potentially lower. Furthermore, because BG affiliated firms are better placed to overcome the challenges posed by the home country's institutional voids, the marginal benefits of internationalization may be higher for standalone firms, for whom the need to escape such voids is greater. Similar arguments are made by Li et al. (2020), who suggest that older, more established firms may be less agile than others, and by Li et al. (2021), who take a springboard perspective of emerging market firms' internationalization and claim that ambidexterity and adaptability determine the rate of performance growth from internationalization. Other aspects of internationalization can also be difficult due to the complications of accessing resources through internal labor and capital markets (Nadayama, 2019). Xu et al. (2020) test this for a set of Indian firms, documenting that standalone firms have more to gain from connecting to institutions that are less opaque than those at home and these firms incur fewer adjustment costs.

Taken together, we suggest that, despite the performance benefits that BG membership generally confers in the home market, the marginal returns to internationalization for BG affiliated firms are lower than those gleaned by standalone firms.

Hypothesis 1: *The positive effect of the degree of internationalization on firm performance is greater for standalone firms than for BG affiliated firms.*

Our subsequent hypotheses then move on to a more nuanced view of the nature of the gains from internationalization for BG-affiliated firms. Here, we build on recent work concerning the nature of FSAs, and the ability of firms to combine assets that are spatially bounded with ones that are not. There have been various attempts in the applied literature to move from a conceptual understanding of FSAs or Dunning's ownership advantages, to an empirical measure. If one takes the most common understanding of this term of FSA then these are described as "knowledge"

advantages (Rugman, 2010), while Dunning (1979) describes them as the set of firm-specific intangible assets. There have been various attempts to capture this empirically, dating back for example to Driffield and Munday (2000), Kotha et al. (2001), and more recently Contractor et al. (2016) in the international strategy literature, and to Helpman et al. (2004) in the economics literature. Equally, Lee et al. (2021) explore this concept in terms of the ability of firms to engage in "continuous asset upgrading". In line with our discussion concerning the ability of firms to generate new assets, and the previous literature, we focus on investment in new knowledge, in the form of R&D, as our key measure of FSAs.

We argue that notwithstanding the arguments developed in H1, BGs are better placed to combine FSAs, particularly those advantages that may be derived from, or enhanced, by BG affiliated firms through their use of internal markets, such as internal labor and technology markets (Belenzon & Berkovitz, 2010). An example of such FSAs is innovation in the form of R&D, which is crucial for developing the ability to assimilate external knowledge gained through international knowledge sourcing (Bhaumik et al., 2016). Internationalization strongly increases the incentives to invest in R&D, and this is related to improved performance, as highlighted by Castellani et al. (2017). As BG affiliation offers greater potential for intra-organization knowledge flows (Purkayastha et al., 2018), access to these scarce resources may increase the joint returns to innovation and internationalization.

Extending this, we expect to see differential returns to internationalization of R&D intensive businesses when comparing BG affiliated firms with standalone firms. BG affiliates are better able to exploit their R&D investment with opportunities for intra-firm knowledge transfer that do not exist in standalone firms. Internationalization opens BG firms up to greater competition, with innovation boosting performance faster (Iona et al., 2013). In comparison, standalone firms have far fewer opportunities to learn about the technological advancements. Hence, they have to depend on inefficient technology markets to access innovative technology, lowering their chances of developing internationally competitive products.

Taken together, we suggest that the extent to which spending on R&D increases the returns to internationalization is greater for BG affiliated firms, which are better able to achieve greater economies of scale and the increase in scope that is derived from the innovation. Thus, we hypothesize:

> Hypothesis 2: *The moderating effect of R&D on the relationship between the degree of internationalization and firm performance is stronger for BG affiliated firms than standalone firms.*

Our third hypothesis centers on the importance of finance in driving returns to internationalization, most specifically in relation to access to external finance and debt. Employing a similar argument to that outlined in the motivation of H2, the internal market for finance in BGs is crucial. It is recognized that the lack of an efficiently functioning external capital market has been a significant driver of the evolution of BGs (Bhaumik & Gregoriou, 2010), enabling them to rely on internal rather than external capital markets. The large body of finance-based literature (La Porta et al., 1999, 2000) that has developed after the Asian crisis focused on the imperfections in Asia's capital markets that led to extremely inefficient

allocations of capital, with significant over-investment by some firms and severe liquidity constraints elsewhere. Such imperfections increase the cost of capital and reduce the competitiveness of the firms forced to raise finance through poorly functioning capital markets. Firms affiliated to BGs are able to avoid this high cost of capital by borrowing from other member firms at favorable interest rates. For example, BGs might have a few member firms that generate substantial cash flow, which enables the other member firms to access capital and gain economies of scale advantages over standalone firms.

Building on analysis by Nguyen and Almodovar (2018) and Nguyen et al. (2022), we argue that there is a distinction between intra- and inter-firm debts. Debt financing raised through BG affiliates is likely to be "softer" than external debt (Desai et al., 2004), and therefore less likely to constrain further innovation or productivity growth (Coricelli et al., 2012). However, with BG affiliated firms the distinction between internal and external debt is not clear cut. Finance provided by another member of the BG may show up as external debt, or as internal debt. We therefore constrain ourselves to the relationship between debt and performance, and argue that BG affiliated firms are better able to exploit opportunities facing the firms through their ability to raise finance or reallocate financial resources within the wider group.

While Chang and Hong (2000) offer an early analysis of the significance of this internal capital market to performance, this strand of the literature does not explore the international dimension. In contrast, Athreye et al. (2021) show that the motives for internationalization condition both the source of finance and its efficacy, however, without discussing the performance impact of financing. This is similar to the argument, albeit in a different context, made by Buettner and Wamser (2013), who focus on the importance of internal debt within international strategy. Linking these arguments to the importance of firms reducing their cost of capital to compete internationally (Stulz, 1999), we argue that, in the presence of imperfect capital markets, this increased ability to raise finance and allocate it to projects that have the most potential is a key factor leading to superior performance.

Equally, while we focus on internal capital markets, there is also evidence that BG affiliated firms receive favorable treatment from external capital markets. As Gopalan et al. (2007) contend, this happens because capital markets take into account the overall financial strength of the BG, rather than merely one affiliate. Such favorable treatment reduces the cost of capital and improves the firm's ability to internationalize, which results in greater returns from such internationalization through proper financing.

In summary, the ability to raise finance at favorable interest rates not only lowers the cost of capital for BG affiliated firms but also allows them to better spot and exploit opportunities in international markets. This makes them internationally competitive, thereby improving their returns on internationalization. Thus, we hypothesize:

Hypothesis 3: *The moderating effect of financing on the relationship between the degree of internationalization and firm performance is stronger for BG affiliated firms than standalone firms.*

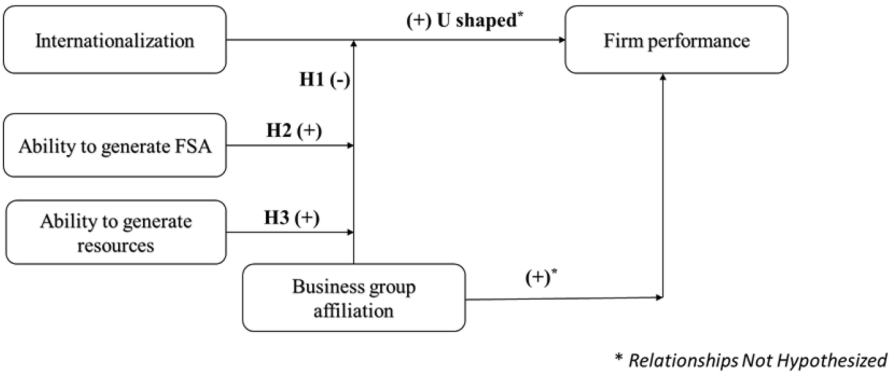

Fig. 1 Conceptual framework

Taken together therefore, our hypotheses suggest the set of relationships illustrated in Fig. 1. It is worth starting with two main relationships although they are not formally hypothesized in this study. Firstly, in keeping with the internationalization–performance literature, we assume that the internationalization–performance is U-shaped. This is widely discussed in the internationalization–performance literature, and centers on the fact that after making initial gains, further internationalization requires further investment, for example, to establish legitimacy and overcome liability of foreignness. Over time however these investments generate positive returns. Second, we consider that BG affiliation generally brings performance benefits, consistent with the previous finding in the literature (e.g., Almeida et al., 2015; Belonzon & Berkovitz, 2010; Chang & Hong, 2000; Dau et al., 2021; Khanna & Rivkin, 2001).

Then our first hypothesis seeks to investigate the link between BG affiliation, internationalization, and performance. We expect that standalone firms gain more from internationalization because they drive advantages through internationalization, such as access to external markets from skilled labor or technology. BG affiliated firms derive such FSAs from relationships with other parts of the group and have relatively marginal effects from internationalization. More central to our argument, however, are the relationships depicted by hypotheses two and three, which concern the greater marginal return to these investments that accrue to BG affiliated firms. We ascribe these to two effects, firstly the greater ability through internal markets to generate FSAs, and secondly to generate the resources to fund such activity. This is a similar argument to that recently made in a more general study by Yang and Driffield (2012) who highlight the importance, not only of the investment in FSAs, but of how to deploy them as drivers of the benefits from internationalization.

4 Empirical Methodology

4.1 Data and Sample

The ideal context for testing our hypotheses on the returns to internationalization of BG-affiliated firms and standalone firms should provide us with: (1) a business environment that is characterized by institutional voids and where the role of BGs stands out; (2) a sample of firms with adequate variation among BG-affiliated firms and standalone firms; and (3) a large enough sample of internationalized firms. Korea provides this empirical context because it meets all of the above requirements, especially during our sample period starting in 1980.

First, research on Korean BGs or *chaebols* has illustrated how BGs have played roles in filling institutional voids in Korea. Korean BGs are known to function as insider lenders through their internal capital markets which allow member firms to access otherwise scarce capital to reduce financing constraints (Almeida et al., 2015; Chang & Hong, 2000; Gormley et al., 2015; Shin & Park, 1999). They are also better positioned to gain access to and share information regarding government policies and investment opportunities, acting as market intermediaries that reduce information asymmetry (Kim & Song, 2017). The benefits that BGs provide are manifested in the performance of BG-affiliated firms, which is generally superior to that of standalone firms in Korea (Almeida et al., 2015; Chang & Hong, 2000). Second, we limit our attention to firms affiliated to family-owned BGs and family-owned standalone firms so as to isolate the effect of the BG on the returns to internationalization. The Korean context, where family ownership plays an important role regardless of BG affiliation (An & Naughton, 2009), provides us with a representative sample of family-controlled BGs and standalone family firms.[1] Third, Korean firms have a strong orientation towards internationalization, yielding a large enough sample for our study. It is reported that Korea's outward FDI development has increased significantly over the past few decades substituting for exports (Buckley et al., 2022; Kim et al., 2018). As such, our empirical context is well-suited to test a set of hypotheses developed in the theory section, providing contextual richness and causality evidence (Knight et al., 2022; Welch et al., 2022).

There were 455 firms listed on the Korean Stock Exchange at the time of data collection in 2013 in the manufacturing industries with SIC codes between 2000 and 3999. We apply three filters to this population of 455 firms to draw our sample. First, because this study basically centers on examining returns to internationalization, all the firms in our sample must have been involved in internationalization to some degree during the sample period. This requires us to exclude 39 firms that have no internationalization data during that period. Second, to compare the internationalization of family-controlled BGs with standalone family firms, firms must have

[1] We regard a firm as a family firm when the largest shareholder and her/his family members hold more than 20% of the shares, and where at least one family member participates in the management of the firm as either the CEO or a member of the board of directors. If the largest shareholder is a family firm, the firm under consideration is also considered to be a family firm. This takes into consideration indirect family ownership via other firms within the same BG, which is a common ownership structure found in Korean BGs controlled by founding families (Rowley & Paik, 2008).

Table 2 Definitions and measurements of variables

Conceptual variable	Measured variable	Data source
Dependent Variable		
ROA	Operating income/total assets	Korea Investor Service (KIS) Database
Independent Variables		
INT	Foreign sales/total sales (FSTS)	KIS Database
Group Affiliation	If the largest shareholder (individual or firm) of a firm owns more than two firms, then we define a set of firms owned by the shareholder as a group and consider the firm as being affiliated with the group	Company's regular reports from the DART system
Other Variables		
R&D Intensity	Total R&D expenditure/total sales	KIS Database
Debt/sales	Total debt/total sales	KIS Database
Firm Size	Natural log of total assets	KIS Database
Firm Age	Natural log of the number of years of incorporation	KIS Database
Exporting Experience	Number of years since first exporting year	KIS Database
Advertising Intensity	Total advertising expenditure/total sales	KIS Database
Average Firm Size by Industry	Average size of firms in an industry	KIS Database

some form of family ownership to be included in the sample. Since 52 firms did not meet the family ownership criteria, they are omitted from our dataset. Finally, there are eight firms for which data on our variables of interest were not available. After applying these three filters, we are left with a sample of 356 family firms over the period 1980–2013, of which 319 firms are owned by 230 family-controlled BGs and 37 are standalone family firms. This provides an unbalanced panel data of 8022 firm-year observations.

To conduct the empirical analysis, we collect data on firm-level variables from two online sources, Korea Investor Service Database for financial information and DART system for firm regular reports, over 34 years (1980–2013). Ownership information, i.e., BG affiliation, is manually collected and measured as described in the next section. Table 2 lists the conceptual variables, the measured variables, and our data sources. We next describe each of our measures.

4.2 Variables

As our hypotheses concern the returns to internationalization, we construct our measures so that they are consistent with those widely used in prior research that investigates the internationalization–performance relationship (e.g., Berry & Kaul, 2016). We employ return on assets (ROA), calculated as annual operating income divided by total assets, as a measure of firm performance (Berry & Kaul, 2016;

Gomes & Ramaswamy, 1999; Lu & Beamish, 2004). This measure indicates how firms use their assets effectively to generate profits and therefore it is appropriate to examine the effect of FSAs and financing capability, compared to market-based measures or perception-based measures of performance. It also has advantages over accounting-based performance indicators such as returns on equity which could be sensitive to the firm's capital structure, as Hitt et al. (1997) noted.

We measure the degree of internationalization, *INT*, using foreign sales over total sales, which captures the level of a firm's dependence on its overseas markets for sales revenues (Gomes & Ramaswamy, 1999; Hennart, 2011). While this is the most commonly used measure of a firm's degree of internationalization (Bausch & Krist, 2007; Capar & Kotabe, 2003; Nguyen, 2017; Ruigrok & Wagner, 2003; Yang & Driffield, 2012), we recognize the shortcoming of this measure such that it includes sales generated through exporting as well as sales through FDI (Hennart, 2011; Nguyen, 2017). To the extent that Korean firms' internationalization through FDIs has substituted for exporting significantly as mentioned earlier (Buckley et al., 2022; Kim et al., 2018), we believe that this measure could be used as a proxy for the degree of internationalization.[2]

A main explanatory variable in our study is *Group Affiliation*, which represents a firm's ownership structure. We manually collect the ownership information from company's annual reports available in the DART system, a repository of Korea's corporate filings, and define *Group Affiliation* as follows: if the largest shareholder in a firm (whether it be an individual or a firm) owns more than two firms, we regard the set of firms owned by the shareholder as a group and consider the firm to be affiliated with the group. Firms in a BG controlled by the same shareholder are tied to each other, formally and informally, and are likely to take coordinated actions (Khanna & Rivkin, 2001). It is worth mentioning that this variable is time-invariant, reflecting the fact that most BGs in Korea are owned and operated by family members with little change over time. Affiliates of a BG are often sold to another BG, but we find it rare for them to become standalone firms.

We define two moderating variables to proxy for a firm' FSAs and its ability to generate financial resource, *R&D Intensity* and *Debt/sales*, respectively. *R&D Intensity* is measured by the ratio of R&D expenses to total sales (Fredrich et al., 2022) and *Debt/sales* is measured by the ratio of total debt to total sales (Berry & Kaul, 2016; Purkayastha et al., 2018). We also control for several variables at the firm-level, which are known to affect a firm's financial performance. Our measures are generally consistent with those used in prior studies (e.g., Abdi & Aulakh, 2018; Chang & Chung, 2017), including *Firm Age*, measured by the natural logarithm of firm age, *Firm Size,* measured by the logarithm of total assets, and *Advertising Intensity*, measured by the ratio of advertising expenses to total sales. *Exporting Experience* is measured by the number of years of exporting; it captures the extent

[2] Bausch & Krist (2007) find in their meta-analysis on the internationalization–performance relationship that foreign sales to total sales and ROA are the most commonly used measures to proxy for a firm's degree of internationalization and performance, respectively. They note that while the internationalization construct is multidimensional, the extent to which these dimensions affect firm performance does not differ significantly.

to which a firm accumulates the necessary experience and knowledge in its international activities even though exporting has been largely substituted by FDIs. Finally, we control for the effect of unobserved year- and industry-specific factors by including the average firm size at the industry level, *Average Firm Size by Industry*, as well as sets of year and industry fixed effects.

We report descriptive statistics and the correlation matrix of our variables in Table 3. The variables, which are not mean-centered, appear to be highly correlated. We try to reduce the correlations between them by centering the continuous variables before creating the quadratic terms and interaction terms (Berry & Kaul, 2016).

4.3 Empirical Specification and Modelling Strategy

As the internationalization–performance relationship has been studied intensively in the IB literature and therefore can be regarded as a mature theory, we test our hypotheses taking confirmatory and quantitative methodology using standard statistical methods (Knight et al., 2022). While our approach is rooted in the internationalization–performance literature, it deviates from it in a number of distinct ways. The literature has sired a number of meta-analysis papers in recent years, see for example, Marano et al. (2016) and Yang and Driffield (2012). Marano et al. (2016) argue that much of the literature fails to take into account institutional quality when evaluating the impact of internationalization on performance, though does highlight a small positive effect. Both sets of analysis highlight the different measures of internationalization that are used, and consistent with them, Hennart (2011) point out the weaknesses associated with, for example, measures that focus on international spread. They also however recognize the distinction between the literature which seeks to determine the return that one can ascribe to an individual investment, and that which seeks to explore the internationalization–performance relationship more generally. Based on their analysis, we adopt the following strategy, which is to consider how both firms generate FSAs, and in turn how these are leveraged into subsequent performance, comparing our two distinct groups of firms. We begin with our baseline model, which is an adaptation of the seminal work of Contractor et al. (2007) in seeking to explain the internationalization–performance relationship:

$$\begin{aligned} ROA_{it} = {} & \beta_0 + \beta_1 INT_{it} + \beta_2 INT\ squared_{it} + \beta_3 Group\ Affiliation_i \\ & + \beta_4 Group\ Affiliation_i \times INT_{it} \cdots + \beta_5 Group\ Affiliation_i \\ & \times INT\ squared_{it} + \delta^1 X_{it} + u_i + \varepsilon_{it} \end{aligned} \tag{1}$$

We estimate the model in Eq. 1 to empirically test H1 concerning how a firm's affiliation to a BG affects its gains from internationalization. The variables are as defined in the previous section. For example, the dependent variable ROA_{it} denotes ROA for firm i in year t, and *Group Affiliation* is a binary variable that differentiates between BG-affiliated firms and standalone firms. We include the control variables in the vector X_{it}-*R&D Intensity, Debt/sales, Firm Size, Firm Age, Exporting Experience, Advertising Intensity,* and *Average Firm Size by Industry*. We center all the variables except *Firm Age* and *Average Firm Size by Industry* on their means

Table 3 Descriptive statistics and correlation matrix of variables (uncentered)

		Mean	s.d	1	2	3	4	5	6	7	8	9
1	ROA	0.06	0.07	1								
2	INT	0.27	0.28	−0.08*	1							
3	Group Affiliation	0.89	0.30	0.02*	−0.05*	1						
4	R&D Intensity	0.01	0.02	−0.06*	0.02*	−0.00	1					
5	Debt/sales	0.56	0.27	−0.12*	0.00	−0.00	−0.03*	1				
6	Firm Size	25.73	1.43	−0.18*	0.14*	0.11*	0.00	−0.11*	1			
7	Firm Age	3.28	0.67	−0.14*	−0.06*	−0.02*	−0.08*	−0.13*	0.22*	1		
8	Exporting Experience	13.83	8.26	−0.29*	0.01	0.01	−0.03*	−0.31*	0.46*	0.61*	1	
9	Advertising Intensity	0.01	0.02	0.19*	−0.31*	−0.05*	0.02*	0.01	−0.06*	0.04*	−0.08*	1
10	Average Firm Size by Industry	25.65	0.88	−0.31*	0.10*	0.02*	−0.03*	−0.27*	0.55*	0.21*	0.69*	1

These are statistics of uncentered variables. In analysis, however, all variables except *ROA* and *Firm Age* are mean centered to minimize collinearity

*$p < 0.1$ significance levels

by industry to minimize their collinearity (Berry & Kaul, 2016). u_i represents the unobserved firm-specific effect and ε_{it} is an i.i.d. idiosyncratic error term. We use a random-effects model to estimate Eq. 1 and calculate robust standard errors clustered on firms to correct for heteroscedasticity in the error terms.

INT and *Group Affiliation* are the two important explanatory variables in our study. We follow previous studies by assuming a quadratic relationship between internationalization and performance (for further discussion of this, see Yang & Driffield, 2012).[3] The terms associated with *Group Affiliation* meanwhile capture the effect of group affiliation. While β_1 and β_2 denote the effect of internationalization on ROA, which is common to both groups of firms, β_3 to β_5 illustrate the performance difference between firms with and without the BG affiliation. We expect that although the main effect of BG affiliation captured in β_3 is positive, BG-affiliated firms have a smaller gain from internationalization than standalone firms with a negative estimate of β_4 (H1). This implies that BG-affiliated firms exhibit better performance than standalone firms when they mainly operate in their home markets; however, the performance difference between the two groups may decline with the degree of internationalization, due to the standalone firms gaining higher returns from internationalization than the BG-affiliated firms.

Although statistical testing based on Eq. 1, which includes terms interacted with *Group Affiliation*, allows us to directly determine the performance difference between BG-affiliated firms and standalone firms, it is perhaps limited in a couple of ways. First, it assumes that the coefficients of the control variables are the same across the two groups, which may or may not be the case. More importantly, we use a random-effects model to control for firm-specific heterogeneity in Eq. 1 due to the time invariance for the *Group Affiliation* variable; the combination of fixed-effect estimation and a time invariant variable would lead to automatic deletion of the time invariant variable. If any unobserved firm-specific effect that is correlated with the covariates exists, the estimates of the random-effects model could be biased.

Recognizing the potential shortcomings of the pooling model in Eq. 1, we conduct the subsample analysis where a fixed-effects model is assumed as follows. We split the sample firms into BG-affiliated firms and standalone firms, then estimate the model in Eq. 2 for each group separately in order to test H2 and H3. Based on those hypotheses, *Moderator* refers to *R&D Intensity* or *Debt/sales*. For both variables, we expect the following relation between the coefficient estimates of the BG-affiliated firms (G) and standalone firms (S): ${\gamma_3}^G > {\gamma_3}^S > 0$.[4]

$$ROA_{it} = \gamma_0 + \gamma_1 INT_{it} + \gamma_2 INT\ squared_{it} + \gamma_3 INT_{it} \times Moderator_{it} + \delta^2 X_{it} + u_i + \varepsilon_{it} \quad (2)$$

[3] We run a separate robustness check to test the S-shaped relationship well-cited in the literature but find no evidence of an S-shaped relationship; this is consistent with the findings by Berry and Kaul (2016).

[4] We also test H2 and H3 by estimating an extended version of Eq. 1 in which we add terms interacted with *Debt/sales* or *R&D Intensity*. It does not change our conclusion qualitatively. However, adding three-way interactions, such as *Group Affiliation*×*INT*×*Debt / sales* or *Group Affiliation*×*INT*×*R&D Intensity*, makes it difficult to interpret estimation results and requires more assumptions to be satisfied.

We conduct several tests to check if our empirical model in Eq. 2 presents any problems in terms of specification or methodology and to determine the appropriate model for the data. First, as the multicollinearity issue may arise given the presence of quadratic and interaction terms in our model, we center continuous variables at the firm level using industry mean values to deal with this issue. We find the maximum VIF value of 4.20 (< 10), which ensures that the stability of our parameter estimates is not significantly influenced by multicollinearity (Griffith & Harvey, 2001). Next, we check for heteroscedasticity using the Modified Wald test for group-wise heteroscedasticity in the fixed effects regression model. The test fails to reject heteroscedasticity; hence, we report robust standard errors clustered by firm. The Hausman test for fixed versus random effects rejects the null hypothesis of random effects so we estimate coefficients of the model in Eq. 2 using fixed-effects regressions. The use of multiple methodological procedures and tests enables us to avoid the potential systematic biases and limitations of any single option, increasing validity and reliability of results (Nielsen et al., 2020).

5 Results

We first estimate the pooled model in Eq. 1 and present the empirical results in Columns 1–3 of Table 4. Column 1 includes the control variables only, and independent variables related to a firm's internationalization and group affiliation are sequentially added in Columns 2 and 3. Adding more variables leads to an increase in R-squared value thereby contributes to improving the model fit. The model behaves as anticipated, with the control variables consistent with previous studies, and indeed the variables related to H1 produce the results expected. In Column 2, the positive coefficients of *INT* and its square term indicate that firms gain performance improvement by expanding their activities beyond the home region, consistent with previous studies (e.g., Contractor et al., 2007). We calculate that an increase of the level of internationalization by one standard deviation from its mean value leads to an increase in ROA by 0.003.[5] This amount of increase represents a 5% increase from the sample mean (0.06). Although informative, the estimates in Column 2 do not account for the difference between BG-affiliated firms and standalone firms in their internationalization gains, which is the focus of all of our hypotheses.

In order to explore this further, we add three interaction terms as in Column 3 of Table 4. The coefficient of *Group Affiliation* is positive and statistically significant, indicating that membership of a BG gives rise to a performance gain in general. The coefficient of the interaction term between *Group Affiliation* and *INT* is found to be significantly negative, which supports H1. We see that when BG-affiliated firms have no internationalization or a low level of it, they show higher performance than standalone firms; this arises from the benefits gained by BG affiliation in the home country market. The relative gains for BG-affiliated firms then decrease as

[5] To evaluate the economic significance of our coefficients, we use coefficient estimates given in Column 2 of Table 4, and statistics of mean-centered *INT* with a mean value of -0.001 and standard deviation of 0.138.

Table 4 H1: Returns to internationalization and business group affiliation

Dependent variable: *ROA*	Pooled analysis			Subgroup analysis	
	(1) All firms	(2) All firms	(3) All firms	(4) BG-affiliated firms	(5) Standalone firms
INT		0.018**	0.063***	0.013*	0.068***
		(0.008) [0.012]	(0.023) [0.003]	(0.008) [0.055]	(0.021) [0.002]
INT Squared		0.040**	−0.014	0.042**	−0.006
		(0.023) [0.039]	(0.079) [0.432]	(0.024) [0.044]	(0.095) [0.476]
Group Affiliation			0.006*		
			(0.005) [0.099]		
Group Affiliation×INT			−0.050**		
			(0.024) [0.019]		
Group Affiliation×INT Squared			0.052		
			(0.081) [0.260]		
R&D Intensity	−0.529***	−0.531***	−0.537***	−0.595***	−0.625***
	(0.136) [0.000]	(0.136) [0.000]	(0.137) [0.000]	(0.185) [0.000]	(0.209) [0.003]
Debt/sales	−0.054***	−0.056***	−0.055***	−0.056***	−0.046**
	(0.013) [0.000]	(0.012) [0.000]	(0.012) [0.000]	(0.013) [0.000]	(0.023) [0.024]
Firm Size	−0.002	−0.002	−0.002	−0.006*	0.013
	(0.002) [0.134]	(0.002) [0.120]	(0.002) [0.105]	(0.004) [0.052]	(0.016) [0.205]
Firm Age	−0.003	−0.003	−0.003	−0.002	−0.095**
	(0.005) [0.271]	(0.005) [0.255]	(0.005) [0.278]	(0.006) [0.387]	(0.046) [0.023]
Exporting Experience	−0.002***	−0.002***	−0.003***	−0.003***	0.001
	(0.001) [0.009]	(0.001) [0.009]	(0.001) [0.007]	(0.001) [0.000]	(0.002) [0.331]
Advertising Intensity	0.149*	0.151*	0.154**	0.183**	0.085
	(0.094) [0.056]	(0.093) [0.052]	(0.092) [0.047]	(0.100) [0.034]	(0.235) [0.360]
Average Firm Size by Industry	0.004	0.003	0.003	0.010	−0.029
	(0.007) [0.261]	(0.007) [0.329]	(0.007) [0.322]	(0.007) [0.102]	(0.026) [0.141]

Table 4 (continued)

Dependent variable: *ROA*	Pooled analysis			Subgroup analysis	
	(1) All firms	(2) All firms	(3) All firms	(4) BG-affiliated firms	(5) Standalone firms
Constant	−0.036	−0.003	−0.016	−0.180	1.124*
	(0.163) [0.414]	(0.164) [0.492]	(0.165) [0.463]	(0.191) [0.174]	(0.727) [0.062]
Firm−specific effect	Random	Random	Random	Fixed	Fixed
N obs/N firms	8022/356	8022/356	8022/356	7198/319	824/37
R^2	0.215	0.216	0.217	0.14	0.13

Every second row contains robust standard errors clustered by firm id in parentheses and *p*-values between square brackets. Year and industry dummies are included in all analyses but not reported. Firm dummies are additionally included in Columns 4–5

BG business group

*p < 0.10, **p < 0.05, ***p < 0.01 significance levels based on one-tailed tests

they increase their levels of internationalization. We also estimate the gains of internationalization separately for each group based on Eq. 2 and report results in Columns 4 and 5 of Table 4, respectively; this is with the additional inclusion of firm-specific effects. Assessing the performance difference between the two groups based on separate sets of estimates, we find similar results to those reported in Column 3 of Table 4.

We provide an illustration of this in Fig. 2 by showing the predicted ROAs for the two groups with the other variables being held at their mean values. We use coefficient estimates reported in Column 3 of Table 4. The degree of internationalization (*INT*) represented in the horizontal axis is mean-centered, hence it can have negative values when firms internationalize less than the average firms in their industries. At the 25th percentile of the degree of internationalization (mean-centered $INT = -0.05$), the average BG-affiliated firm, represented by the red solid curve, has a 0.01 higher ROA than the average standalone firm, represented by the blue dotted curve. This ROA difference between the two groups, 0.01, amounts to a 16.7% of the sample mean of ROA. On the other hand, the average BG-affiliated firm at the 75th percentile of the degree of internationalization (mean-centered $INT = 0.05$) generates only half of this uplift in comparison to the corresponding standalone firm.

We further assess the size of the effect of BG affiliation on the relationship between the degree of internationalization and performance, which is hypothesized in H1, by calculating the size and change of the performance difference between the two groups of firms with different values of mean-centered *INT* in Table 5. We use coefficient estimates in Column 3 of Table 4 and assumes other variables at their means. Values in the first column are varying degrees of internationalization (mean-centered); values in the second column are the difference in *ROA* between the two groups of firms; and those in the third column are the difference in the marginal effect of *INT* on *ROA* between the two groups of firms. The positive values reported in Column 2 indicate that BG-affiliated firms have additional ROA gains over standalone firms in most ranges of *INT*. These differences are statistically significant where a firm's degree of internationalization is smaller than the industry average (or when the mean-centered value of *INT* is less than zero). However, the gains that BG-affiliated firms enjoy relative to standalone firms decrease with the degree of internationalization; this is due to the negative slopes of the performance difference in Column 3 of Table 5. Overall this is another way of showing that standalone firms have greater effect of internationalization than BG-affiliated firms and therefore mitigates the disadvantage of being standalone as the degree of internationalization increases, consistent with H1.

We further try to address an endogeneity concern that a firm's level of internationalization is not randomly determined but may depend on unobserved characteristics of a firm such as its competitive capability (Richter et al., 2022), which affects both internationalization and performance. We test for potential endogeneity in the observed relationship between internationalization and firm performance. The Davidson–MacKinnon test (1993) rejects the null hypothesis of exogeneity, hence, we additionally estimate our model using the 2SLS method. To model the endogenous relationships, we calculate industry average levels of internationalization excluding a focal firm and include the measure and its square term for the

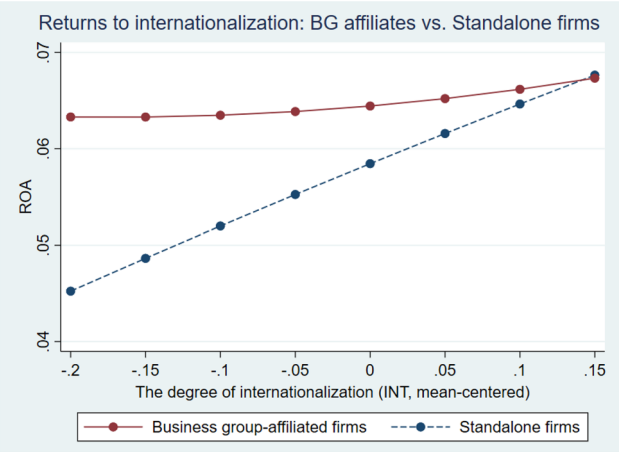

Fig. 2 Returns to internationalization: Business group-affiliated firms vs. standalone firms

Table 5 Performance differences between business group-affiliated firms vs. standalone firms

(1) Value of *INT* (mean-centered)	(2) The performance difference (size) between BG-affiliated firms and standalone firms $\beta_3+\beta_4\times INT+\beta_5\times INT\ squared$	(3) Changes (slope) in the performance difference $\beta_4+2\beta_5\times INT$
−0.15	0.015 (0.005)***	−0.066 (0.035)**
−0.10 (10 percentile level)	0.012 (0.005)***	−0.060 (0.030)**
−0.05	0.009 (0.005)**	−0.055 (0.026)**
0	0.006 (0.005)*	−0.050 (0.024)**
0.05	0.004 (0.005)	−0.045 (0.025)**
0.10 (90 percentile level)	0.002 (0.006)	−0.040 (0.025)*

Coefficient estimates given in Column 3 of Table 4 are used for this numerical analysis, assuming other variables at their means; *lincom* STATA command is used; standard errors are in parentheses

BG business group

*$p<0.10$, **$p<0.05$, ***$p<0.01$ significance levels based on one-tailed tests

instrumental variables. They appear to be valid instruments for this study. The average industry level of internationalization captures industry structure associated with internationalization activity and, thus, influences a firm's level of internationalization (a correlation coefficient of 0.231, statistically significant at the 0.01 level). However, it is not likely to affect a focal firm's ROA because a focal firm's level of internationalization is excluded in calculating the measure (a correlation coefficient of −0.018, not statistically significant at the 0.01 level). Our results of IV-2SLS estimation are given in Table 6. Results in Columns 1 and 2 again appear to confirm that there is a smaller return to internationalization for BG-affiliated firms relative to standalone firms. Taken together, we conclude that H1 is supported.

We estimate Eq. 2 using the IV-2SLS approach to test our H2 and H3 and report estimation results for BG-affiliated firms and standalone firms in Columns 3 and 4 of Table 6, respectively. For this model, we use industry average levels of internationalization excluding a focal firm, its square term, and its interactions with *R&D Intensity* and *Debt/sales* as instrumental variables. The results are supportive of H2, concerning the role of R&D on the returns to internationalization across the two groups. R&D in the short run is often found to be negatively associated with profitability because firms have to fund R&D from internal resources that could otherwise be reported as profits (Cui & Mak, 2002). Consistent with this, we find the main effect of *R&D intensity* to be negative for both groups of firms in Columns 3 and 4 of Table 6. The interaction between *R&D Intensity* and internationalization, however, is indicative of how the returns from R&D may be realized alongside internationalization. The result illustrates that R&D generates additional performance effects from internationalization but only for BG-affiliated firms, as in Column 3 of Table 6; for standalone firms, the negative and insignificant coefficient of the interaction between *R&D Intensity* and *INT* in Column 4 of Table 6 indicates that R&D does not have a meaningful impact on the internationalization–performance relationship of standalone firms.

We evaluate the extent to which R&D enhances the return to internationalization for BG-affiliated firms using our coefficient estimates in Column 3 of Table 6. Upon increasing the level of internationalization by one standard deviation from its mean value, BG-affiliated firms with a low level of R&D intensity (−0.0018, the value at the 1st quartile of mean-centered R&D intensity) achieve an increase in ROA of 0.0021 while those with a high level of R&D intensity (0.0005, the value at the 3rd quartile of mean-centered R&D intensity) achieve an increase in ROA of 0.0036. A ROA increase of 0.0021 (or 0.0036) represents a 3.5% (or 6%) increase from the sample mean. Put differently, a higher level of R&D leads to higher returns to internationalization for BG-affiliated firms who better utilize their R&D in their international activities, mitigating the negative main effect of R&D. Figure 3 illustrates this relationship for BG-affiliated firms, showing that returns to internationalization, represented by the slopes of the curves, are greater for BG-affiliated firms with high R&D intensity (represented by the red dotted curve) than BG-affiliated firms with low R&D intensity (represented by the blue solid curve).

The third hypothesis concerns the effect of debt on the internationalization–performance relationship between BG-affiliated firms and standalone firms. Overall, our estimates of coefficients in Columns 3 and 4 of Table 6 suggest that an increase in a firm's debt/sales ratio has a negative effect on ROA, in common with, for example, the literature discussed in Coricelli et al. (2012) and Marin et al. (2017). However, a firm's debt appears to moderate the performance effect of internationalization for BG-affiliated firms, providing support for H3. The negative performance effect of debt is mitigated as BG-affiliated firms increase the extent of their internationalization, illustrated by the positive coefficient of the interaction between *Debt/sales* and *INT* in Column 3 of Table 6. This is in contrast to standalone firms for whom this interaction effect is insignificant in Column 4 of Table 6. For such firms the relationship between internationalization and ROA is not likely to be affected by their debt/sales ratio.

Table 6 IV-2SLS fixed effects estimation (subgroup analysis)

Dependent variable: ROA	H1		H2 and H3	
	(1) BG-affiliated firms	(2) Standalone firms	(3) BG-affiliated firms	(4) Standalone firms
INT	0.005	0.077***	0.012	0.080**
	(0.021) [0.407]	(0.033) [0.010]	(0.017) [0.244]	(0.036) [0.013]
INT Squared	0.068	−0.052	0.082	0.002
	(0.168) [0.344]	(0.150) [0.364]	(0.140) [0.279]	(0.191) [0.495]
INT × R&D Intensity			1.777***	−1.409
			(0.623) [0.002]	(1.269) [0.134]
INT × Debt/sales			0.047*	0.245
			(0.030) [0.059]	(0.314) [0.218]
R&D Intensity	−0.595***	−0.626***	−0.532***	−0.242
	(0.188) [0.001]	(0.208) [0.002]	(0.222) [0.009]	(0.433) [0.288]
Debt/sales	−0.056***	−0.046**	−0.061***	−0.039**
	(0.013) [0.000]	(0.022) [0.019]	(0.012) [0.000]	(0.024) [0.050]
Firm Size	−0.006*	0.014	−0.006*	0.011
	(0.004) [0.055]	(0.016) [0.198]	(0.004) [0.054]	(0.015) [0.239]
Firm Age	−0.001	−0.096**	−0.001	−0.098**
	(0.006) [0.423]	(0.047) [0.020]	(0.006) [0.447]	(0.048) [0.020]
Exporting Experience	−0.003***	0.001	−0.003***	0.001
	(0.001) [0.000]	(0.002) [0.329]	(0.001) [0.000]	(0.002) [0.342]
Advertising Intensity	0.180**	0.087	0.190**	0.094
	(0.102) [0.040]	(0.236) [0.356]	(0.102) [0.032]	(0.239) [0.348]
Average Firm Size by Industry	0.010*	−0.029	0.010	−0.024
	(0.008) [0.094]	(0.026) [0.136]	(0.008) [0.102]	(0.023) [0.142]
Constant	−0.199	1.129*	−0.187	1.011*
	(0.200) [0.161]	(0.726) [0.060]	(0.196) [0.170]	(0.634) [0.056]

Table 6 (continued)

Dependent variable: ROA	H1		H2 and H3	
	(1) BG-affiliated firms	(2) Standalone firms	(3) BG-affiliated firms	(4) Standalone firms
Firm-specific effect	Fixed	Fixed	Fixed	Fixed
N obs/N firms	7,198/319	824/37	7,198/319	824/37
R^2	0.14	0.13	0.14	0.13

We implement IV-2SLS analysis to account for potential endogeneity between firm's level of internationalization and performance. We calculate industry averages of *INT* excluding a focal firm, *INTothers*. We use *INTothers* and its square term as instrumental variables in Columns 1 and 2; we use *INTothers*, its square term, and its interactions with *R&D Intensity* and *Debt / sales* as instrumental variables in Columns 3 and 4. Every second row contains robust standard errors clustered by firm id in parentheses and *p*-values between square brackets. Year, industry, and firm dummies are included in all analyses but not reported, while industry dummies are dropped in the fixed effects model. BG: business group. $^{*}p<0.10$, $^{**}p<0.05$, $^{***}p<0.01$ significance levels based on one-tailed tests

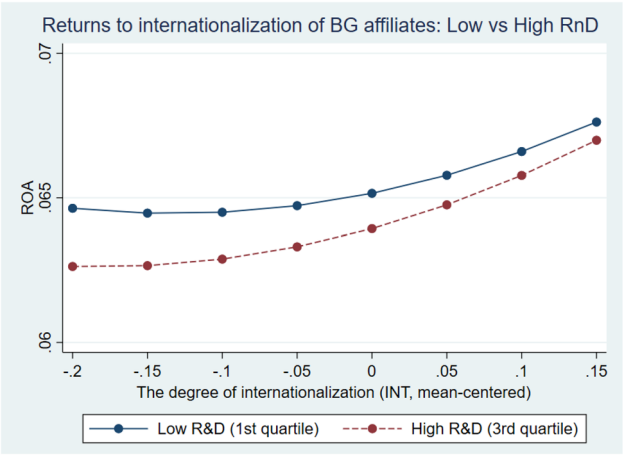

Fig. 3 The effect of R&D on returns to internationalization for BG-affiliated firms

Results in Column 3 of Table 6 suggest that for BG-affiliated firms, the effective returns to internationalization must be determined by the combined effect of *INT, INT squared,* and *INT*×*Debt/sales*. A simple numerical analysis using the estimates in Column 3 of Table 6 shows that an increase in the degree of internationalization by one standard deviation from the mean value results in an increase in ROA by 0.0015 for low-debt/sales BG-affiliated firms (at the 1st quartile of mean-centered debt/sales) and an increase in ROA by 0.0043 for high debt/sales BG-affiliated firms (at the 3rd quartile of mean-centered debt/sales). A ROA increase of 0.0015 (or 0.0043) represents a 2.5% (or 7.2%) increase from the sample mean.

In Fig. 4, we graphically illustrate how the relationship between ROA and the degree of internationalization for BG-affiliated firms is moderated by debt/sales. This figure shows that BG affiliates with high debt/sales, represented by the red dotted curve, have a sharper slope (or greater returns to internationalization) than those with low debt/sales, represented by the blue solid curve. In summary, although debt itself has a negative performance impact, the size of the negative effect decreases as BG-affiliated firms increase their international expansion.

Additional results of 2SLS models, including estimation results of random effects model, are given in the Electronic Supplementary Material (ESM) Appendix. In summary the results presented in ESM Appendix Tables show that, while our concerns regarding endogeneity were valid, our findings are not particularly sensitive to the use of instrumental variables approaches because qualitatively, the results without the instrumental variables remain the same as presented in ESM Appendix A1. In addition, we also show that a model that tests all three hypotheses jointly yields similar results to testing 1 separately from 2 and 3 as given in ESM Table A4. This again is an important robustness test for our findings, given that conceptually one could argue that a firm may choose how to allocate resources, to internationalization or innovation for example. As explained, we apply various combinations

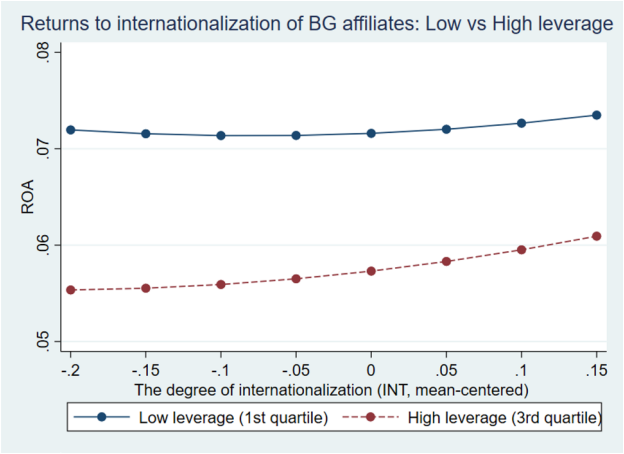

Fig. 4 The effect of debt-to-sales ratio on returns to internationalization for BG-affiliated firms

of statistical methods for analytical triangulation, ensuring credibility and rigor of empirical analysis of this study (Nielsen et al., 2020; Richter et al., 2022).

6 Concluding Remarks

In this study, we have shown that the performance benefits that BG affiliation brings in comparison to standalone firms rely on its international orientation and the ability to exploit FSAs. We found that, with greater capacity to invest in FSAs and to generate financing, BG-affiliated firms are better positioned to gain from internationalization than standalone firms. Our results resonate with, and contribute to, the perspective that the heterogeneity of governance structures within emerging economies helps develop international business theory, building on, for example, Bhaumik et al. (2019). A key insight from our research is that the returns to investment in firm-specific assets for BG-affiliated firms are greater than the previous literature has suggested. This increases the apparent incentives for innovation, particularly within BGs, but also the better sharing of this innovation and the financing of it across the group.

6.1 Theoretical Contributions

The findings of this study make important contributions to several themes in the international strategy literature. First, we contribute to the literature on institutional voids in emerging economies by empirically showing that internationalization can be a substitute for BG status by standalone firms, and who make immediate gains from internationalizing. In contrast, firms affiliated with BGs to mitigate the adverse effects from institutional voids potentially benefit from internationalization more slowly, and with a greater commitment of resources.

In turn, this study extends the literature on the relationship between internationalization and performance. We demonstrate that the nature of the returns to internationalization seems to vary with ownership structure. Our finding highlights the role that institutional voids play in explaining the relationship between corporate governance, internationalization, and performance, both directly and indirectly. We are able to explore this in the context of not only the differential ability of different governance structures to lever FSAs into new markets, but also the role of such structures in explaining variations in firms' ability to generate these FSAs. Further, we explore what this means in the context of the critique of the internationalization–performance literature offered by Hennart (2011) and the more recent understanding of asset recombination offered by Lee et al. (2021).

Figure 2 illustrates that BG-affiliated firms demonstrate a U-shaped relationship between internationalization and performance, while standalone firms have a positive, linear relationship. As such we resolve some of the apparent controversy in the literature concerning this relationship, see for example, Grant (1987), Grant et al. (1988), Han et al. (1998), Kim et al. (1989), Ruigrok and Wagner (2003), and Tallman and Li (1996). This result suggests the possibility that the form of the relationship is conditional on a firm's attributes, and accounts for why previous studies often report mixed results on the forms of the relationship. Berry and Kaul (2016) discuss some potential reasons for these discrepancies, and we have been able to explore some of these, highlighting the potential for differential returns to internationalization at the firm level and exploring the motives or drivers of internationalization in understanding this relationship.

As Berry and Kaul (2016) also suggest, much of the standard internationalization–performance literature relies on establishing a correlation rather than a causation, and we have sought to unpack this, allowing for differences in ownership as well as differential returns through the ability to lever different firm-specific assets into internationalization. This calls for future research that identifies the boundary conditions of the relationships in addition to the shape of the relationship. Finally, this study seeks to provide contextual richness by choosing an appropriate empirical context to test the role of specific corporate governance structures (Knight et al., 2022).

6.2 Managerial Relevance

There are several managerial implications from our study. First, the internal markets within BGs have the ability to generate finance from within the wider group, which facilitates greater returns for BG-affiliated firms. The onus is then on managers within the firm to ensure that the gains from greater access to finance are translated into superior performance for BG-affiliated firms. Second, our findings also show strong links between R&D investments and firm performance. This places the onus on the management of companies to facilitate processes whereby executives with appropriate R&D skills can be recruited. Potentially, recruiting executives with appropriate R&D skills places BGs at an advantage, with the capacity for using internal markets for knowledge transfer, resulting in better performance

of BG-affiliated firms. Third, for managers who particularly wish to use FDI as a springboard for their performance enhancement, our findings advise us who should more eagerly pursue internationalization between BG-affiliated firms and standalone family firms. Four, this study will assist managers in doing better budgeting by understanding more efficient allocation of resources in an annual budget at the beginning of the year. Balancing annual budgets between R&D expenses and managing debts is akin to a "tightrope walk," and our study provides insights to managers on how to effectively allocate budgets in ways that will improve firm performance. Finally, our findings will help analysts in stock markets to track firms on the basis of internationalization, R&D expenses, and debt. Analysts, who keep a close eye on the internationalization, R&D expenses, and debt of firms, will be able to make better predictions about the performance of the firms.

6.3 Limitations and Potential Avenues for Research

This study has a few limitations, which may reflect opportunities for further research. First, although our theorizing on FSA is general in scope, our empirical context is limited to a single country, i.e., South Korea. Despite its membership in the OECD, South Korea is a country that is still plagued with institutional voids which are typically regarded as characteristic of emerging markets (Lee et al., 2014; Park et al., 2014). We believe future studies can apply our research framework to different geographical contexts, further extending our knowledge about the relationship between internationalization, ownership, and performance in emerging markets.

Second, in this paper, we focus on comparing two groups of firms: family-controlled BG-affiliated firms and standalone family firms. These two groups are undoubtedly important firm categories within the economy of an emerging market. Nevertheless, to gain a complete picture of the relationship between a firm's ownership and performance, future researchers may wish to examine firms with different ownership structures, such as state ownership, financial institution ownership, and so on.

Third, we have examined two important factors that proxy for firm's capabilities, which are debt and R&D, as a means of testing the relationship between internationalization and performance. These drivers, although broad, capture a significant amount of the variance in the relationship between internationalization and performance. More fine-grained FSAs can be examined, and this may provide greater insights. Future research could examine different types of debt (such as short-term versus long-term debts) and different types of R&D expenditure (like expenses for product innovation, expenses for process innovation, purchase of new technology, and purchase of intellectual property and patents).

Finally, Bausch and Krist (2007) summarized different measures used to examine the internationalization–performance relationship. While our measures of internationalization and performance are the most commonly used ones, we are limited to testing the hypotheses with diverse sets of measures. For example, alternative operationalizations of internationalization focusing on FDIs might be tried to investigate the role of FSAs (Hennart, 2011; Nguyen, 2017). Similarly, we use ROA as

a measure of performance. It is undoubtedly one of the important measures of firm performance; however, skeptics can argue that alternative measures, such as return on foreign assets, could be used in this study. We believe that addressing return on foreign assets or adopting other statistical methods is beyond the scope of this paper, and thus, we leave the agenda as a potential future research avenue.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s11575-023-00511-7.

Data availability The dataset for company financial information that supports the findings of this study are available from Korea Investor Service (KIS) Database but not publicly available as it contains proprietary information that could be acquired through a license. Information on how to obtain it is available at https://www.kisvalue.com/web/index.jsp, which is written in Korean. The business group affiliation variable that is manually generated during the current study is based on companies' regular reports and news articles. The regular reports of Korean firms are publicly available on the DART system at https://englishdart.fss.or.kr/. Derived data supporting the findings of this study are available from the corresponding author Yunok Cho on request with the permission of KisValue.

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