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BUSINESS GROUP AFFILIATION, PERFORMANCE, CONTEXT, AND STRATEGY: A META-ANALYSIS

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Research on business groups—legally independent firms tied together in various formal and informal ways—is accelerating. Through meta-analytical techniques employed on a database of 141 studies covering 28 different countries, we synthesize this research and extend it by testing several new hypotheses. We find that affiliation diminishes firm performance in general, but also that affiliates are comparatively better off in contexts with underdeveloped financial and labor market institutions. We also trace reduced affiliate performance to specific strategic actions taken at the firm and group levels. Overall, our results indicate that affiliate performance reflects complex processes and motivations.

The past decade has witnessed a surge in research regarding the performance of business groups, which Khanna and Rivkin defined as "firms which though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action" (2001: 47). Three points of consensus are apparent in this body of work. First, business groups are ubiquitous in many countries; types such as Japan's *keiretsus* and *zaibatsu* (Gerlach, 1992), South Korea's *chaebols* (Chang, 2003), Latin America's *grupos economicos* (Strachan, 1976), Hong Kong's *hongs* (Wong, 1996), India's *business houses* (Encarnation, 1989), Taiwan's *guanxiqiye* (Numazaki, 1996), Russia's *oligarchs* (Perotti & Gelfer, 2001), and China's *qiye jituan* (Keister, 2000) have become emblematic of their nations' enterprise systems.

A second area of consensus is that business groups are structurally different from conglomerate organizations, described by Williamson as "H-" and "M-forms" (Williamson, 1975). Although coordination in conglomerates takes place through the unified internal control of a portfolio of firms (Davis, Diekman, & Tinsley, 1994), coordination in business groups relies on a more complex web of mechanisms, such as multiple and reciprocated equity, debt, and commercial ties (Gerlach, 1992) and kinship affiliation between top managers (Granovetter, 2005).

A third widely held position is that business groups owe their predominance in many countries to the existence of market failures and poor-quality legal and regulatory institutions (Granovetter, 2005). In this view, business owners have formed such groups in these contexts to internalize transactions in the absence of reliable trading partners or legal safeguards guaranteeing transactions between unaffiliated firms (Khanna & Palepu, 1997; Leff, 1978).

Despite these points of consensus, disagreement fueled by ambiguous research findings is apparent over the general question of whether or not the net economic and social effects of business groups are positive (Fisman & Khanna, 2004; Keister, 2000).

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Such disagreement is evident in characterizations of these groups by scholars as either "heroes or villains" (Claessens, Djankov, & Lang, 2000a), "paragons or parasites" (Khanna & Yafeh, 2007), "red barons or robber barons" (Perotti & Gelfer, 2001), or "anachronisms or avatars" (Granovetter, 2005). Specifically, a lack of consensus exists on four key issues regarding business group performance and strategies.

First, researchers are divided regarding the performance implications of business group affiliation (Claessens, Fan, & Lang, 2006; Khanna & Palepu, 2000b). Some scholars have theorized that the net effect of affiliation on profits is positive, others have argued that it is negative for some or all firms, and each can point to empirical support for their positions. Researchers using exchange theory (Keister, 2001), transaction cost analysis (Luo & Chung, 2005; Mahmood & Mitchell, 2004), and the resource-based view (RBV) of the firm (Guillén, 2000) have found that affiliation enhances performance (Almeida & Wolfenzon, 2006; Chang & Hong, 2000). Yet others have found that these potential advantages are often not realized as a result of various offsetting costs of affiliation (Claessens et al., 2006; Lee, Peng, & Lee, 2008). A third group of scholars have found that the relationship between affiliation and performance is not universal and that some firms within a business group benefit at the expense of others (Bertrand, Mehta, & Mullainathan, 2002; Khanna & Yafeh, 2005). The effect of affiliation on performance therefore remains an open question.

Second, uncertainty also exists regarding the institution-level variables that moderate the affiliation-performance relationship. The prevailing viewpoint is that business group affiliation benefits firms most in developing contexts characterized by voids in hard (i.e., telecommunication and transportation) and soft infrastructure (i.e., legal and financial systems) (Fisman & Khanna, 2004; Khanna & Palepu, 1997), but the evidence on this point is inconclusive. In a study of business group affiliation in 14 emerging economies, Khanna and Rivkin (2001) found that affiliation was beneficial in 6 countries, detrimental in 3 others, and ineffectual in the remaining 5. They concluded that the performance effects of business group affiliation "resist any simple normative categorization" (Khanna & Rivkin, 2001: 68) and that a definitive understanding of its effects in various national contexts "must await further data collection and empirical inquiry" (2001: 68).

Third, although many studies have examined the performance consequences of affiliation, little research has examined the strategies of business group affiliates. As a result, there is little evidence on the issues of whether the strategies of affiliate firms differ from those of nonaffiliated firms, and if so, whether these distinctive strategies affect the relationship between affiliation and financial performance. A clearer understanding of affiliate strategic behavior may therefore shed new light on the ambiguous findings regarding the profit impact of business group affiliation.

Fourth, the evidence concerning business group performance has primarily been drawn from studies at the affiliate rather than the group level (but see Chang and Hong [2002], Luo and Chung [2005], and Mahmood and Mitchell [2004]). The shortage of group-level evidence is of concern because some of the main theoretical arguments suggesting that business groups have superior performance emphasize their aggregate scale and scope efficiencies. For instance, it is widely argued that the performance advantages of business groups are a function of their market power and capacity to wield political influence (Claessens, Djankov, & Lang, 2000b; Morck, Wolfenzon, & Yeung, 2005). Similarly, Khanna and Palepu's core argument also pertains to the group level of analysis, as the success of business groups in emerging markets is attributed to their ability to mimic market institutions (Khanna & Palepu, 1999, 2000b). Thus, there appears to be a "disconnect" in the business group literature between theories that emphasize group-level phenomena and empirical studies that examine performance at the affiliate level.

In short, in reviewing the literature we find broad agreement among scholars that business groups are a phenomenon of great theoretical and practical import, but also important points of contention and ambiguity regarding their financial performance and strategies. The purpose of this study is to shed new light on these areas of dissensus with the help of several meta-analytic techniques. As Eden (2002) noted, meta-analyses are useful in addressing open research questions with data that are closer to definitive than those reported in any single primary study. As a point of departure, we performed such a research-synthesizing meta-analysis to examine the mixed empirical findings in the business group literature on the performance effects of affiliation. However, both Eden (2002) and Combs, Ketchen, Crook, and Roth (2010) pointed out that meta-analyses are also a useful theory extension tool. We therefore also employed a set of more advanced meta-analytic techniques to evaluate several hypotheses that are difficult to assess in single-sample primary studies and have thus far eluded empirical scrutiny. These theory-extending hypotheses examine both moderating effects of institutional vari-

ables and mediating effects of affiliate- and group-level strategy variables on which the existing business group literature is largely silent.

THEORY AND HYPOTHESES

Performance Effects of Business Group Affiliation

To explain their prevalence in different host societies, researchers adopting various theoretical perspectives have argued that business group ties have performance-enhancing benefits for affiliates (Yiu, Lu, Bruton, & Hoskisson, 2007). Taking up the theme of business groups as a response to market failures, Khanna and Palepu (1997) reasoned that affiliation benefits firms because these groups function as efficient internal capital and labor markets and as an intermediary organizational form capable of mobilizing valued resources. Guillén (2000) argued that the recurring transactions between business group affiliates lead to richer flows of information that improve resource allocation and allow affiliates to acquire financial resources on favorable terms. Similarly, transaction cost theorists have argued that scarce skilled labor and managerial talent can be developed and shared among affiliate firms more efficiently because of transaction recurrence (Chang & Choi, 1988; Chang & Hong, 2000).

Adopting a social network perspective, other scholars have emphasized benefits arising from enduring and multiple relations between business group affiliates (Gerlach, 1992; Granovetter, 2005). They argue that network embeddedness provides firms with rich formal and tacit information about each other, which offers benefits in terms of uncertainty reduction, contract enforcement, and opportunity identification (Granovetter, 2005). Gerlach (1992) and Keister (1998) reasoned that business groups reduce uncertainty for affiliates through the coordination of investment decisions and by assuring the supply of intermediate goods. Weidenbaum and Hughes (1996) attributed the success of business groups to their informal contract enforcement capacities with regard to credit granting and joint venture participation. Luo and Chung (2005) emphasized that ongoing relations provide a conduit for the dissemination of timely information about market and technological developments that may form the basis for new business opportunities.

But other scholars have argued that business groups do not exist to improve affiliate profitability (Kim, Hoskisson, & Wan, 2004; Morck & Yeung, 2003). Agency theorists have seen business groups as fraught with agency costs, or diseconomies stemming from discord between an entity's majority and minority owners (Morck et al., 2005) and as instruments used by wealthy families to appropriate private benefits through a variety of tactics. These include "pyramiding" (the control of many businesses with limited capital investments through a set of cascading parent-affiliate relationships [Claessens et al., 2000b]) and "tunneling" (a process whereby dominant shareholders transfer assets or profits from peripheral to core firms in which they hold greater equity ownership [Friedman, Johnson, & Mitton, 2003]). Other scholars have suggested that business groups promote the stability rather than the maximization of returns (Gerlach, 1992). In this view, business groups serve as an "insurance policy" (Lincoln, Gerlach, & Ahmadjian, 1996) that reduces bankruptcy risk for affiliates, but also imposes downside costs, or "taxes," on members (Ferris, Kim, & Kitsabunnarat, 2003), such as the obligation to prop up weaker partners (Morck & Nakamura, 1999). Reflecting this dissensus, we propose two competing hypotheses:

Hypothesis 1a. Business group affiliation is positively related to a firm's financial performance.

Hypothesis 1b. Business group affiliation is negatively related to a firm's financial performance.

The Moderating Role of Institutional Context

Broad agreement exists that business groups emerged as a response to underdeveloped institutions or "institutional voids" (Khanna & Palepu, 1997) in developing economies and that group ties are beneficial in societies in which such voids continue to exist (Carney & Gedajlovic, 2002). The institutional voids thesis is that business groups internalize activities that otherwise fail to materialize owing to limitations in a society's financial, legal, and labor market institutions that jeopardize the exchange of products and services between arm's-length transactors (Leff, 1978). In such contexts, business group ties are beneficial because they provide a safe haven from institutional voids and offer access to resources that are unavailable to unaffiliated firms (Khanna & Palepu, 1997).

Theoretical support for the institutional voids thesis is widespread, but less agreement exists about the relative importance of different types of voids. Although some scholars have focused primarily on deficiencies in financial systems, others have emphasized the importance of deficiencies in legal or labor market institutions. Among the former, business groups are viewed as relatively efficient internal capital markets (Almeida & Wolfenzon, 2006) that remedy impediments to economic growth for their affiliates, such as illiquid equity markets, limited

disclosure, and the absence of market intermediaries (Khanna & Palepu, 2000b). This view is supported by studies documenting the reliance of affiliates on group-specific financial institutions (Keister, 1998; Weinstein & Yafeh, 1998) and those exploring how business groups transfer financial resources from cash-rich to financially constrained affiliates (Lee et al., 2008; Lins & Servaes, 2002).

Yet other studies have focused on deficiencies in legal institutions, which make formal contracts difficult to enforce and the exchange of products and services prone to opportunism (Hoskisson, Canella, Tihanyi, & Faraci, 2004). In this view, business groups serve as a haven in which contracts are more easily enforced and the risk of opportunism is limited. Evidence supporting this view comes from researchers describing how transaction recurrence among business group affiliates provides rich information flows, reputation effects, and informal contract enforcement mechanisms that curb opportunism (Berglöf & Perotti, 1994; Guillén, 2000; Khanna & Palepu, 1997).

Lastly, another group of scholars highlights the roles played by business groups in societies with weaknesses in institutions supporting the development of human capital, such as deficiencies in general, technical, and professional schools, which can lead to acute labor shortages (Fisman & Khanna, 2004). In these contexts, business groups may alleviate shortages by functioning as internal labor markets, investing in training and development (Khanna & Palepu, 2000a; Lincoln & Gerlach, 2004) and dispatching scarce talent to needy affiliates (Lincoln & Gerlach, 2004).

Conceptually, institutional voids are best thought of as moderating variables affecting the relationship between affiliation and performance. Institutional voids theory (Khanna & Palepu, 1997, 2000a) suggests that financial, legal, and human resource voids do not influence all firms equally. Rather, such voids impose a stronger negative performance effect on stand-alone firms because of the various benefits affiliates receive, such as the mutual assistance that group members offer one another. The relationship between affiliation and firm performance is therefore expected to become stronger in a positive direction as institutional voids increase in magnitude. The following three hypotheses capture these moderation effects:

Hypothesis 2a. The relationship between business group affiliation and financial performance is positively moderated by the existence of weak financial infrastructure.

Hypothesis 2b. The relationship between business group affiliation and financial performance is positively moderated by the existence of weak legal institutions.

Hypothesis 2c. The relationship between business group affiliation and financial performance is positively moderated by the existence of weak labor market institutions.

The Mediating Role of Organizational Strategy

Whereas many scholars have examined the affiliation-performance relationship, only a few have looked at the effects of affiliation on firm strategy (e.g., Colpan, 2006; Lamin, 2006), and none have examined the mediating role that strategy plays in the focal relationship. Consequently, the literature is largely silent on the important questions of whether business group affiliates make distinctive strategic choices, and if so, whether these choices explain performance differences between affiliated and nonaffiliated firms. Yet affiliates' strategies are likely to differ from those of stand-alone firms on at least three dimensions: leverage, diversification, and internationalization. We expect these strategic choices to reflect a wider set of motives than profit maximization alone, so that affiliates may face a "performance discount" that unaffiliated firms do not confront. That is, firms affiliated with business groups may individually and collectively pursue value-destroying activities that are valued less than matched portfolios of stand-alone, independent firms (Lee et al., 2008).

Leverage. Four streams of literature suggest that business group affiliates make greater use of debt financing than nonaffiliates. First, agency theorists have argued that affiliates' majority shareholders prefer to finance operations through debt rather than through issuing new equity, which dilutes their effective control (Berglöf & Perotti, 1994). Second, the internal capital markets thesis suggests that affiliates are more leveraged because they have access to sources of debt unavailable to nonaffiliates (Keister, 2001). Third, norms of mutual assistance that other researchers have described as emblematic of business group affiliation may function as an insurance policy (Lincoln et al., 1996), lessening bankruptcy risk and promoting leverage. Fourth, the thick web of information connecting affiliates facilitates monitoring and the detection of default risk, making the intragroup provision of debt less risky for lenders (Gedajlovic & Shapiro, 2002).

Although no studies have investigated the performance consequences of debt-reliant financial strategies in the context of business groups, business group affiliates may tend to invest in too many

projects or in projects of the wrong type, as both privileged access to debt and the coinsurance effect of affiliation may promote unwieldy growth (Whited, 2001). Similarly, both the group norms pertaining to the expectation of supportive affiliates that sociologists have described (e.g., Gerlach, 1992) and the majority shareholder entrenchment effect agency theorists have noted (e.g., Faccio, Lang, & Young, 2001) suggest that debt financing may be used to fund projects for reasons other than profit maximization. Higher leverage by business group affiliates is therefore expected to lead to lower performance relative to stand-alone firms.

Diversification. We expect business group affiliates to engage in more unrelated diversification than other firms for three reasons. First, agency theorists have suggested that many investments by business groups and their affiliates are driven more by controlling shareholders' attempts to appropriate wealth through pyramiding and tunneling than by the profit potential of these investments (Bertrand et al., 2002; Friedman et al., 2003). Second, the availability of financing from a group's internal capital market insulates affiliates from external scrutiny and capital market pressures that constrain unrelated diversification in public corporations (Almeida & Wolfenzon, 2006; Keister, 2001). Third, sociological perspectives suggest that the investment activity of affiliates is driven more by the needs of the group than by their own requirements, leading to their involvement in activities that unaffiliated firms would not take part in (McGuire & Dow, 2009). Given the significant bureaucratic and coordination costs associated with the management of diverse operations (Hoskisson, Johnson, Tihanyi, & White, 2005), we expect these tendencies toward unrelated diversification to negatively influence affiliate-level financial performance.

Internationalization. The literature suggests three reasons for a less pronounced international orientation amongst business group affiliates relative to nonaffiliated firms (Colpan, 2006; Lamin, 2006; Hundley & Jacobson, 1998). First, the specialized services that business groups provide to remedy the institutional voids of their home countries may be more valuable domestically then abroad. Second, many of the potential benefits of affiliation are grounded in a group's network of social and economic ties (Lamin, 2006). As such network benefits are strongest in a firm's home market, they may result in a more domestic orientation among business group affiliates. Third, social norms in many business groups dictate that firms should first look among other affiliates for possible buying and supplying relationships before approaching non–group members, which may engender "complacency and a reduced incentive to export" (Hundley & Jacobson, 1998: 935).

Even though business group affiliates enjoy advantages in access to financial resources (Guillén, 2000; Khanna & Palepu, 1997), their preference for domestic projects may lead them to pass on international opportunities that unaffiliated firms view as profitable. That is, unconstrained by the social-structural forces and behavioral norms associated with group membership, unaffiliated firms can more readily exploit international projects, allowing them to more freely tap into new markets and leverage their existing capabilities. Conversely, the domestic orientation of business group affiliates may lead to their performance lagging behind that of stand-alone firms.

In sum, multiple theoretical perspectives suggest that the strategies of business group affiliates differ from those of nonaffiliates, explaining some of the performance differentials between them. These views are expressed in the following:

Hypothesis 3. The relationship between business group affiliation and affiliate financial performance is mediated by the unique financing, diversification, and internationalization strategies of business group affiliates.

Group-Level Performance Effects

Our focus thus far has been on the strategic and performance consequences of group membership for the affiliates of a business group rather than on the performance of such a group as a whole. This affiliate-level focus is dominant in empirical business group work. We reason that the relative inattention paid to group-level effects is related to difficulties associated with developing a sufficiently large sample of business groups in any single primary study. Such pragmatic considerations have led to a disconnect between theoretical work on business groups, which has focused on group-level processes such as the ability to amass market power and perform intermediating functions, and empirical work, which has examined such processes using affiliate-level data. The meta-analytic nature of our study allows us to surmount such data availability problems related to the evaluation of group-level processes.

Business group size is widely viewed as an important factor explaining group performance, but researchers have offered very different explanations regarding why size matters. In our treatment of size, we strive for greater precision by explicitly distinguishing between the related effects of scale and scope on business group performance. By mak-

ing this distinction, we are able to consider how and why business groups grow and also differentiate between various processes linking their size to performance outcomes. In doing so, we account for the possibility that business group scale and scope have differing effects on group-level performance.

It is widely believed that larger business groups enjoy performance enhancements that smaller groups do not enjoy (Guillén, 2000; Khanna & Yafeh, 2007). Several reasons strongly impel sales and asset growth in business groups. First, larger groups can benefit from economies of scale, allowing them to more cost effectively carry out value-creating intermediating functions (Khanna & Palepu, 2000a), such as administrative and project management activities (Amsden & Hikino, 1994). Second, increased scale may afford business groups reputation-enhancing effects. For instance, Morck et al. (2005) argued that larger business groups may benefit from a reputation for fair dealing with business partners, and Khanna and Palepu (2000b) reasoned that reputation effects provide larger business groups with superior access to foreign capital and technological resources. Third, increased scale can provide business groups with a variety of benefits tied to enhanced market (Khanna & Yafeh, 2007; Mackie, 1992; Yoshihara, 1988) and political power (Carney, 2004; Claessens et al., 2000a; Dieleman & Sachs, 2008). For these reasons, we hypothesize that business group scale is positively related to group-level performance.

Hypothesis 4a. Business group operational scale is positively related to business group financial performance.

Although the arguments summarized in relation to Hypothesis 4a suggest there is a strong impetus for sales and asset growth in business groups, they do not distinguish between the various types of activities their managers may pursue to achieve that greater scale. At a fundamental level, like executives elsewhere, business group managers face decisions regarding whether to grow their operations by increasing their commitment to existing product-markets, or by expanding the scope of their activities by entering new lines of business. In this respect, the literature suggests that the pull toward increasing size through growth in the scope of activities is especially strong in business groups because of the types of leverageable resources they control, as well as the nature of the new business opportunities available to them (Guillén, 2000; Khanna & Palepu, 2000b; Kock & Guillén, 2001). For example, Chang and Hong (2000) reasoned that the types of assets available to business groups allow them to assemble the resources they need to take advantage of diverse business opportunities, and Luo and Chung (2005) similarly contended that network embeddedness in business groups provides a conduit for timely information exchange, leading to the pursuit of diverse business opportunities.

Thus, researchers have generally agreed that growth in business groups tends to be manifested in activities that increase the scope of a group's operations, and several streams of research offer theory about the performance effects of such increased scope. Hoskisson et al. (2005) contended that broader scope in business groups leads to performance-impairing challenges related to bureaucratic and coordination costs associated with the management of increasingly complex groups. Others, however, have seen the effects of increased business group scope in a more favorable light and argued that it can actually enhance profits. In particular, proponents of the institutional voids thesis have suggested that broader scope allows business groups to perform interstitial functions and provide resources and support for their various businesses. Khanna and Palepu (1997), for example, argued that greater scope enables business groups to function effectively when reliable trading partners are unavailable, as it addresses affiliates' need for complementary products and services.

The preceding discussion suggests that the impetus for sales and asset growth in business groups (see Hypothesis 4a) tends to manifest itself in the form of performance-impacting activities that increase group scope. Consequently, we hypothesize that the scope of a business group mediates the relationship between its scale and its performance.

Hypothesis 4b. Business group operational scope mediates the relationship between business group operational scale and business group financial performance.

METHODS

Sample and Coding

To identify relevant studies, we used five complementary search strategies (Heugens, van Essen, & van Oosterhout, 2009). First, we consulted several review articles (e.g., Carney, 2008; Khanna & Yafeh, 2007; Yiu et al., 2007). Second, we explored five electronic databases: (1) ABI/INFORM Global, (2) EconLit, (3) Google Scholar, (4) JSTOR, and (5) SSRN, using the following search terms: "business group," "business houses," "chaebol," "grupos economicos," "guanxiqiye," "hongs," "keiretsu," "oligarchs," "pyramids," "qiye jituan", and "zaibatsu." Third, we manually searched 25 scholarly journals,

including the *Academy of Management Journal*, *Journal of Comparative Economics*, *Journal of Corporate Finance*, *Journal of Finance*, *Journal of International Business Studies,* and *Strategic Management Journal*. Fourth, we explored the reference lists of all identified articles and traced all sources citing them using Google Scholar and ISI Web of Knowledge. Fifth, we corresponded with 54 authors of business group papers with missing effect size information, asking them for correlation tables. These efforts yielded a sample of 141 primary studies, consisting of 102 published and 39 unpublished studies. Appendix A lists the studies included in the meta-analysis.

We then read all the articles and developed a coding protocol (Lipsey & Wilson, 2001) for extracting data on all relevant variables. To test Hypotheses 1a and 1b, we collected effect size information for the relationship between business group affiliation and firm performance, as well as sample size information. To test Hypotheses 2a, 2b, and 2c, we collected covariates from secondary sources. For testing Hypotheses 3, 4a, and 4b, we collected effect size information for relationships between all dependent, independent, and control variables in our analyses.

HOMA Procedure

We used Hedges-Olkin–type meta-analysis (HOMA), a set of statistical procedures for calculating meta-analytic mean correlations and corresponding confidence intervals (Hedges & Olkin, 1985; Lipsey & Wilson, 2001), to test Hypotheses 1a and 1b. HOMA inputs are effect sizes capturing the strength of the focal relationship in a given sample, such as the Pearson product-moment correlation (r) or the partial correlation coefficient ($r_{xy.z}$). In this study, we relied on both r and $r_{xy.z}$. We used r because it is a widely published effect size statistic in management scholarship. Yet because r is a bivariate measure of association, examining it alone ignores the effect of other variables that are often used as controls in multivariate investigations of focal relationships. We therefore also use $r_{xy.z}$, which can be computed directly from regression tables (Doucouliagos & Ulubaşoğlu, 2008). In our case, $r_{xy.z}$ captures the association between business group affiliation, designated with a subscript "x" ($_x$) and affiliate performance ($_y$), given a set of n controlling variables ($_{\boldsymbol{z}}$).[1] The $\boldsymbol{z}$-vector typically contains control variables such as firm size, age, and risk.

When studies reported effect size statistics other than r or $r_{xy.z}$, such as Cohen's d, we converted these to an r value (Lipsey & Wilson, 2001). When multiple measurements of the focal effect were reported, we included them all in our analyses, as Monte Carlo simulations have shown that procedures using complete sets of measurements outperform those representing each included study by a single value in areas such as parameter significance testing and parameter estimation accuracy (Bijmolt & Pieters, 2001). Since HOMA procedures rely on the assumption that effect sizes are normally distributed, we used Fisher's (1928) *Zr*-transformation to correct for skewness in the effect size distribution (Hedges & Olkin, 1985). In line with current conventions, we used random-effects HOMA for combining study estimates (Geyskens, Krishnan, Steenkamp, & Cunha, 2009; Raudenbush & Bryk, 2002). To estimate mean effects appropriately, differences in the precision of effect sizes have to be accounted for, so we weighted each by its inverse variance weight (w; Hedges & Olkin, 1985), which is the inverse of its squared standard error.[2] We also used these weights to calculate the standard error of the mean effect and its confidence interval.[3]

MARA Procedure

To test Hypotheses 2a through 2c, we used meta-analytic regression analysis (MARA; Lipsey & Wilson, 2001), a special type of weighted least squares (WLS) regression analysis, designed to assess the relationship between effect size and moderator

[1] Partial correlations were computed as follows: $\sqrt{(t^2/[t^2 + df])}$, where t is the t-statistic and df is degrees of freedom. As this calculation always produces a positive number, it was necessary to convert it to a negative number if the regression coefficient was negative (see Greene, 2008, Chapter 3). The t-statistics, which result from the scaling of primary coefficients by their respective standard errors, are by definition standardized and defined on a dimensionless scale.

[2] This value is calculated as follows: $w_i = \frac{1}{\text{s.e.}^2_i + \hat{v}_\theta}$, where s.e. is the standard error of the effect size and $\hat{v}_\theta$ is the random-effects variance component, which is in turn calculated as $\text{s.e.}(z_r) = \frac{1}{\sqrt{n-3}}$. The formula of random-effects variance is: $\hat{v}_\theta = \frac{Q_T - k - 1}{\Sigma w - \left(\frac{\Sigma w^2}{\Sigma w}\right)}$.

[3] The meta-analytic mean is calculated as follows: $\overline{ES} = \frac{\Sigma(w \times ES)}{\Sigma w}$, with its standard error: $\text{s.e.}_{\overline{ES}} = \sqrt{\frac{1}{\Sigma w}}$, and with its 95% confidence interval computed as lower = $\overline{ES} - 1.96(\text{s.e.}_{\overline{ES}})$, upper = $\overline{ES} + 1.96(\text{s.e.}_{\overline{ES}})$.

variables by modeling heterogeneity in the effect size distribution (Lipsey & Wilson, 2001). In MARA, effect sizes are weighted by *w* to account for differences in precision (Hedges & Olkin, 1985). The use of a special macro published by Lipsey and Wilson (2001) prevents data analysis software from interpreting these weights as "representing multiple effect sizes rather than weightings of single effect sizes" (Lipsey & Wilson, 2001: 122). As scholars are concerned about the inaccuracy of fixed-effects models (Geyskens et al., 2009), we used a more conservative mixed-effects specification, which attributes effect size variability to systematic between-study differences, firm-level sampling error, and an unmeasured random component (Lipsey & Wilson, 2001). The moderator variables we used captured aspects of the institutional context from which effect sizes were drawn as well as methodological study characteristics.

To test the moderating effects of local institutions, we collected data from additional sources and employed them in conjunction with those obtained from the primary studies. We used two variables to assess the impact of financial infrastructure (Hypothesis 2a). The availability of equity capital was measured by dividing each country's total stock market capitalization by its gross domestic product. Ease of obtaining debt financing was taken from the *IMD World Competitiveness Yearbook*. Three variables were used to capture the effects of legal institutions (Hypothesis 2b). To measure the overall quality of legal institutions, we used Kaufmann, Kraay, and Mastruzzi's (2005) "rule of law" measure. We assessed the level of legal protection against self-dealing, or self-serving financial transactions such as excessive compensation or providing personal loans to insiders (Djankov, La Porta, López-de-Silanes, & Shleifer, 2008: 430), using Djankov et al.'s "anti-self-dealing index." To measure the efficiency of the legal system in resolving commercial disputes, we used the "enforcing contracts" indicator from the World Bank's Doing Business database. To assess the general education level, we utilized four variables to measure the effect of labor market institutions (Hypothesis 2c). We used World Development Indicator (World Bank) data. To measure the availability of professionally trained managers, we created a new variable, a count of the number of business schools in each country accredited by the Association to Advance Collegiate Schools of Business (AACSB); AACSB membership data were the source. To assess the quality of these schools, we consulted the *Global Competitiveness Report* from the World Economic Forum. The same report also provided a measure capturing overall labor market competitiveness.

We also employed seven control variables to establish the robustness of our hypothesis tests. First, we used a dummy variable capturing whether particular effect sizes were derived from published (coded 1) or unpublished (0) studies. Second, a dummy variable indicated whether a study utilized cross-sectional (1) or longitudinal (0) data. Third, to account for differences in journal quality, we controlled for the "impact factor" of a publication outlet, as computed by the ISI Social Science Citation Index, assigning a value of 0 to unpublished work and that in sources ISI does not cover and taking the actual impact factor otherwise. Fourth, to control for potential time dependence (cf. Khanna & Yafeh, 2007), we coded the year of data collection for each effect size, taking the median sampling year for longitudinal designs. Fifth, to control for voids in physical infrastructure (cf. Fisman & Khanna, 2004), we compiled a new composite index based on five *Global Competitiveness Report* indicators related to railroads, ports, air transport, electricity supply, and phone lines. Sixth, to control for the high proportion of Japanese data in the primary studies, we used a dummy variable segregating Japanese (1) from other (0) effect sizes. Seventh, to control for (partial) overlap in studies' sampling time frames, we included dummy variables for each set of studies relying on similar data.

MASEM Procedure

To test Hypotheses 3, 4a, and 4b, we used meta-analytic structural equations modeling (MASEM; Cheung & Chan, 2005; Viswesvaran & Ones, 1995), which uses a two-stage procedure. First, mean correlations between variables of interest are established through separate HOMA analyses. Second, structural equations modeling is applied on the matrix of mean correlations, using maximum-likelihood modeling routines (Cheung & Chan, 2005). MASEM has two advantages over other meta-analytic techniques. First, not all relationships specified by the theory under investigation need to be included in each primary study, as each cell in the data matrix represents a different subset of all included studies (Viswesvaran & Ones, 1995). Second, MASEM can be used to test previously untested research hypotheses, especially those such as our Hypotheses 3, 4a, and 4b, which stipulate mediating relationships connecting two previously unlinked literatures (Eden, 2002).

Testing Hypothesis 3 required us to assess: (1) the direct effect of business group affiliation on firm performance, (2) the effect of affiliation on

firms' revealed strategy choices, and (3) the consequences of these choices for firm performance. The included strategic choice variables are leverage (ratio of total debts to total assets), diversification (Herfindahl or entropy measure capturing presence in multiple business segments), and internationalization (ratio of exports to total sales). We also controlled for the influence of firm size (total assets, sales, or employees) and firm age (years since founding) on strategy choices and for the influence of firm risk (volatility of returns) and R&D intensity (ratio of R&D expenditures to total sales) on affiliate performance. Given the potential endogeneity of firms' strategy and affiliation choices on performance (cf. Khanna & Palepu, 1997), independent tests of these effects could introduce biased estimates. We therefore tested the following system of simultaneous equations:

$$Diversification = b_1\ affiliation + b_2\ size + b_3\ age + \epsilon. \quad (1)$$

$$Internationalization = b_4\ affiliation + b_5\ size + b_6\ age + \epsilon. \quad (2)$$

$$Leverage = b_7\ affiliation + b_8\ size + b_9\ age + \epsilon. \quad (3)$$

$$Performance = b_{10}\ affiliation + b_{11}\ risk + b_{12}\ research\ \&\ development + b_{13}\ diversification + b_{14}\ internationalization + b_{15}\ leverage + \epsilon. \quad (4)$$

Hypotheses 4a and 4b call for a test of (1) the direct effect of a business group's scale on its performance, (2) the effect of a business group's scale on its scope, and (3) the influence of a business group's scope on its performance. Group scale was measured as assets, sales, or employees summed across all affiliates, and scope, as a Herfindahl index or entropy measure capturing the business group's presence in multiple business segments. We also controlled for the influence of group leverage, R&D intensity, and risk on business group performance. Because of the potential endogeneity among business group scale, scope, and performance, biased estimates could result from independent tests of these effects (Khanna & Palepu, 2000b; Kock & Guillén, 2001). We therefore evaluated the following simultaneous equations:

$$Scope = b_1\ scale + \epsilon. \quad (1)$$

$$Performance = b_2\ scale + b_3\ scope + b_4\ leverage + b_5\ research\ \&\ development + b_6\ risk + \epsilon. \quad (2)$$

Both systems of equations were estimated on firm- and group-level meta-analytic correlation matrices, using the full information maximum-likelihood method in LISREL 8.80. To deal with sample size differences among the correlation coefficients comprising these matrices, we based our analyses on harmonic mean sample sizes (firm level: $N = 7{,}065$; group level: $N = 16{,}353$).

TABLE 1
Firm-Level HOMA Results[a]

Predictor	*k*	*N*	Mean	s.d.$_\rho$	CI 95%	*Q* (*p*)	I^2
Correlation-based							
Business group affiliation to firm performance	284	831,807	−0.02*	0.01	−0.04/−0.01	5,805.29 (0.00)	0.95
Accounting measures	201	672,765	−0.03*	0.01	−0.04/−0.02	4,687.64 (0.00)	0.96
Market measures	83	159,042	−0.01	0.01	−0.03/0.01	954.16 (0.00)	0.48
Partial correlation–based							
Business group affiliation to firm performance	50	52,146	−0.02*	0.01	−0.04/−0.00	252.36 (0.00)	0.80
Accounting measures	27	24,143	−0.02	0.02	−0.05/0.01	126.24 (0.00)	0.79
Market measures	23	28,003	−0.01	0.01	−0.04/0.02	106.38 (0.00)	0.78

[a] k = number of effect sizes; N = total sample size; mean ρ = estimate of population correlation; s.d.$_\rho$ = standard deviation of mean ρ; CI$_{\text{mean }\rho}$ 95% = 95 percent confidence interval for mean ρ; Q = Cochran's homogeneity test statistic; p = probability of Q; I^2 = scale-free index of heterogeneity.

*$p < .05$

RESULTS

Firm-Level Bivariate and Partial Correlations

Table 1 shows that Hypothesis 1a should be rejected in favor of Hypothesis 1b: the mean correlation of the focal relationship is –.02 for both the bivariate ($k = 284$) and partial correlation ($k = 50$) HOMAs. As the confidence intervals do not include zero, the effects are significant.

Three caveats apply, however. First, the control group of unaffiliated firms was not identical to the treatment group in terms of either prevalence or size. Across all included studies, affiliated firms represented 34 percent of the sample. Table 2, which presents correlation-based results by country, shows this value. Furthermore, a HOMA on the relationship between business group affiliation and firm size yielded a strong correlation (.26; $k = 164$), so we controlled for size in all firm-level analyses. Second, the results in Table 1 suggest that the chosen performance measure drives the strength of the focal relationship. Affiliation is negatively related to accounting performance (–.03; see Table 1), implying that affiliates are less profitable than stand-alone firms. On the other hand, tests using market-based measures of performance reveal no significant effect (–.01, n.s.). Third, the mean effects we found are small by conventional standards (Cohen, 1977), implying that the effect of affiliation is modest. Furthermore, the amount of (true) heterogeneity present in both effect size distributions is substantial (r-based: $Q = 5{,}805.29$, $p < .01$, $I^2 = .95$; $r_{xy.z}$-based: $Q = 252.36$, $p < .01$, $I^2 = .80$). Under these conditions, mean effects are best interpreted as an average rather than a common true correlation value (Hedges & Olkin, 1985: 235), implying that further moderator analyses are warranted.

We also conducted three robustness checks. First, the primary studies in our sample derive from journals of varying status. To control for these differences, we ran separate r-based HOMAs on effect sizes derived from published studies ($k = 180$), journals with an editorial team dominated by U.S.- or Western Europe–based scholars ($k = 173$),[4] peer-reviewed publications ($k = 159$), journals included in the ISI Social Science Citation Index (SSCI) in 2008 ($k = 123$), journals continuously included in SSCI from 2004 through 2008 ($k = 118$), journals with an SSCI impact factor greater than 1.0 ($k = 109$), and the ten journals in our data set with the highest five-year SSCI impact factors ($k = 44$). All mean correlations are significant and between –.02 and –.03, suggesting that publication outlet quality does not moderate the focal relationship.

Second, some of the samples in our analysis overlap in terms of included firms and time periods, which could result in similar correlation structures between same-country samples. We used several checks to diagnose the severity of this "drinking from the same well" problem. In a separate HOMA, we included only the largest nonoverlapping samples per country ($k = 51$). At –.04, this result is materially similar to the overall mean correlation. We also ran two separate mixed-effects WLS regression analyses (MARAs); Table 3 presents these results. The first MARA includes dummy variables for each set of overlapping samples (model 1), and the second also includes other control variables (model 2). In both cases, the model constant (i.e., the control variable–adjusted mean correlation) was –.03. Two z-tests for meta-analytic mean differences (Feingold, 1992) corroborate that the corrected and uncorrected mean correlations are not significantly different (see Table 3). In short, "drinking from the same well" does not appear to affect our results.

Third, because business groups are prominent in Asia, we assessed whether the financial crisis that struck that continent in 1997–98 (e.g., Mitton, 2002) affected our findings. We split our sample into four subgroups: observations from the precrisis period (prior to 1996), the crisis period (1997 and 1998), the postcrisis period (1999 and after), and the mixed category of observations covering two or more of these periods. Separate r-based HOMAs show that our findings are robust against the effects of the crisis (precrisis: –.04, $k = 105$; crisis: –.02, n.s., $k = 20$; postcrisis: –.02, $k = 75$; mixed: –.02, $k = 84$).

Jurisdiction-Level Moderating Effects

Table 2 reports country-specific r-based HOMA results.[5] The effect of affiliation on performance is positive in six countries: Chile, Colombia, Hong Kong, Indonesia, Sweden, and Turkey. It is negative in five others: France, Japan, Nigeria, Pakistan, and South Korea. No significant affiliation effect exists in seven other countries: Belgium, China, India, the Philippines, Russia, Taiwan, and Thailand. We could not estimate a separate mean effect for the remaining nine countries, owing to a lack of

[4] One of our reviewers suggested this distinction.

[5] One of the countries in our sample, Italy, is not included in Table 2, as we retrieved correlations between our independent (MASEM) variables for it, but not for the focal relationship.

TABLE 2
Country-Specific Correlation-Based HOMA Results[a]

Country	Percentage of Business Group Affiliates	*k*	*N*	Mean	s.d.$_\rho$	CI 95%	*Q*
Argentina	0.51	1	129	−0.28			
Belgium	0.09	4	20,033	−0.03	0.03	−0.09/0.03	59.48 (0.00)
Brazil	0.48	1	629	0.08			
Bulgaria	0.13	1	114	−0.05			
Chile	0.47	10	9,633	0.07*	0.03	0.02/0.12	45.79 (0.00)
China	0.66	14	8,402	0.01	0.03	−0.03/0.07	76.01 (0.00)
Colombia	0.50	3	1,238	0.05*	0.02	0.00/0.09	1.67 (0.43)
France	0.38	2	3,041	−0.05*	0.02	−0.09/−0.01	1.16 (0.28)
Hong Kong	0.20	9	14,488	0.03*	0.01	0.01/0.05	12.05 (0.15)
India	0.43	21	89,380	0.02	0.02	−0.01/0.06	434.19 (0.00)
Indonesia	0.29	3	3,674	0.04*	0.02	0.00/0.08	2.63 (0.26)
Israel	0.33	1	86	−0.01			
Japan	0.41	87	402,257	−0.07*	0.01	−0.09/−0.06	1,548.03 (0.00)
Malaysia	0.43	1	121	0.14			
Mexico	0.32	1	344	0.06			
Nigeria		2	186	−0.21*	0.07	−0.36/−0.07	0.00 (0.99)
Pakistan	0.52	3	498	−0.23*	0.04	−0.32/−0.14	0.41 (0.81)

[a] k = number of effect sizes; N = total sample size; mean ρ = estimate of population correlation; s.d.$_\rho$ = standard deviation of mean ρ; CI$_{\text{mean }\rho}$ 95% = 95 percent confidence interval for mean ρ; Q = Cochran's homogeneity test statistic; p = probability of Q; I^2 = scale-free index of heterogeneity.

*$p < .05$

observations. Table 3 shows three MARA models. Models 1 and 2 report results for data source quality and other controls. Model 3 reports results for Hypotheses 2a, 2b, and 2c. Model 3 fits the data well ($R^2 = .28$; Q_{model} $p < .01$).

The results support Hypothesis 2a. The development of a jurisdiction's financial infrastructure, captured by debt availability and stock market capitalization, negatively moderates the affiliation effect. When external financing is not easily available, affiliation becomes relatively more advantageous because a business group's internal capital market can be turned to for financing. Hypothesis 2b is rejected. The quality of business-relevant legal institutions, as captured by the rule of law, anti-self-dealing, and enforcing contracts variables, does not negatively moderate the focal relationship. In contrast, the rule of law index positively moderates it, indicating that without access to effective courts, the performance of business group affiliates suffers. This suggests that inefficient resource allocation decisions caused by agency problems such as tunneling and propping may more negatively impact firm performance in contexts with weak overall legal protection (Bae, Kang, & Kim, 2002; Johnson, Boone, Breach, & Friedman, 2000). Hypothesis 2c is supported. The quality of labor market institutions, as captured by general education level and the business school count and quality variables, negatively moderates the focal relationship. Business group affiliation is more advantageous in contexts characterized by labor market voids. No significant effect was found for overall labor market competitiveness, however, suggesting that groups are better at filling specific rather than generic voids.

Table 3 also reports control variable results. Publication status and research design did not moderate the focal effect. The significant, negative effect for median sample year suggests that business group affiliation becomes less beneficial over time (cf. Khanna & Palepu, 2000a). Journal impact factor moderated the focal relationship negatively, implying a modest publication bias among more highly cited journals. Finally, the physical infrastructure variables were not significant, implying that business groups are not effective at filling "harder" infrastructural voids. Finally, the Japan dummy has a significant, negative, moderating effect.

Firm-Level Mediating Effects

Table 4 shows a firm-level meta-analytic correlation matrix. All 36 cells below the diagonal contain a separate meta-analysis, indicating both the mean effect and its standard deviation (s.d.$_\rho$). Cells above the diagonal report the number of primary observations (N) and samples (k) on which the mean effect is based. For entries printed in bold, a significant Q-test indicates the presence of moderating variables, suggesting that the reported value is an aver-

TABLE 3
Results of Mixed-Effects WLS Regression[a]

Variable	Model 1	Model 2	Model 3
Constant	−0.03 (0.01)*	−0.03 (0.02)†	−0.04 (0.02)*
Financial infrastructure			
Stock market capitalization			−0.06 (0.02)**
Debt availability			−0.01 (0.00)*
Legal institutions			
Rule of law			0.06 (0.03)†
Anti-self-dealing index			−0.13 (0.10)
Enforcing contracts			0.00 (0.00)
Labor market institutions			
General education level			−0.02 (0.01)*
Business school count			−0.02 (0.01)**
Quality of business schools			−0.02 (0.01)†
Labor market competiveness			0.04 (0.04)
Controls			
Published study		−0.01 (0.01)	−0.01 (0.01)
Cross-sectional design		0.02 (0.01)†	0.01 (0.01)
Median year sampling window		−0.00 (0.00)	−0.003 (0.00)*
Journal impact factor		−0.01 (0.00)†	−0.01 (0.00)*
Physical infrastructure			0.06 (0.05)
Japan dummy[b]			−0.10 (0.03)**
Same data[b]	Yes	Yes	No
R^2	0.34	0.35	0.28
k	284	284	263
Q_{model} (p)	127.50 (0.00)	131.36 (0.00)	103.46 (0.00)
Q_{residual} (p)	252.03 (0.47)	243.21 (0.56)	264.34 (30.21)
v	0.005	0.005	0.004
z	−1.28 ($p > .10$)	−1.44 ($p > .10$)	

[a] Unstandardized regression coefficients are presented for study moderators and substantive moderators, with standard errors in parentheses; k is the total number of effect sizes; Q is the homogeneity statistic, with its probability in parentheses; v is the random-effects variance component.

[b] These control variables could not be included in model 2 because of collinearity issues.

† $p < .10$
* $p < .05$
** $p < .01$

age rather than a common true correlation value (Hedges & Olkin, 1985: 235).

Table 5 presents firm-level MASEM results. MASEM addresses simultaneity issues with respect to affiliation and strategy choices and incorporates control variables. As such, it offers a more precise test of Hypothesis 3 than the bivariate analyses reported in Table 4. The model fits the data well ($\chi^2 = 760.09$, RMSR = .10, GFI = .98). Furthermore, all conditions for mediation are met (Baron & Kenny, 1986). First, business group affiliation significantly affects all three hypothesized mediators: diversification ($b = .06$), internationalization ($b = -.09$), and leverage ($b = .05$). Second, business group affiliation significantly affects firm performance in the absence of these mediators (–.02; see Table 4). Third, two out of three mediators have a significant effect on firm performance: diversification ($b = -.05$), internationalization ($b = .01$, n.s.), and leverage ($b = -.12$). Fourth, the effect of affiliation on performance shrinks when the mediators are added to the model (to $b = -.01$, n.s). Formal tests (MacKinnon & Dwyer, 1993) confirmed that mediating variables carry the influence of business group affiliation to firm performance (Sobel test: $z = 3.77$, $p < .01$; Aroian test: $z = 3.75$, $p < .01$; Goodman test: $z = 3.80$, $p < .01$). Thus, the data support Hypothesis 3.

Group-Level Mediating Effects

Table 6 presents a group-level meta-analytic correlation matrix consisting of 15 separate HOMAs.

TABLE 4
Firm-Level Meta-analytic Correlations[a]

Variable	1	2	3	4	5	6	7	8	9
1. Business group affiliation		13,914 (6)	754,005 (164)	61,473 (44)	79,801 (30)	309,545 (78)	54,380 (30)	173,171 (39)	831,807 (284)
2. Firm age	−0.00* (0.02)		9,058 (4)	2,127 (2)	6,073 (2)	7,044 (3)	1,314 (1)	13,101 (5)	4,658 (3)
3. Firm size	0.26* (0.02)	0.09* (0.11)		14,835 (15)	81,534 (30)	167,529 (51)	38,012 (15)	67,308 (31)	247,693 (118)
4. Diversification	0.09* (0.01)	−0.13* (0.20)	0.13* (0.06)		609 (4)	6,792 (5)	2,121 (4)	7,355 (4)	20,317 (14)
5. Internationalization	−0.01* (0.02)	0.06* (0.05)	0.29* (0.06)	−0.09 (0.06)		56,956 (7)	5,655 (5)	29,310 (18)	67,080 (19)
6. Leverage	0.06* (0.01)	0.04 (0.02)	0.07* (0.01)	0.00 (0.01)	−0.02 (0.02)		18,828 (13)	67,466 (15)	192,874 (65)
7. Risk	−0.01* (0.03)	−0.03	−0.19* (0.05)	−0.04 (0.02)	0.10 (0.02)	0.18* (0.03)		10,562 (5)	49,860 (21)
8. R&D	0.04* (0.01)	−0.01* (0.03)	0.14* (0.02)	0.03* (0.03)	0.17* (0.03)	−0.00* (0.02)	0.05* (0.05)		57,505 (23)
9. Performance	−0.02* (0.01)	0.05* (0.06)	0.07* (0.01)	−0.04* (0.02)	0.01* (0.02)	−0.14* (0.02)	−0.14* (0.04)	0.05* (0.02)	

[a] Cells below the diagonal contain mean correlations ($mean_\rho$) and standard deviations ($s.d._\rho$). Cells above the diagonal contain the total number of observations (N) and number of samples (k). Bold font indicates a significant Q-test, suggesting the presence of moderator variables.

* $p < .05$

TABLE 5
Firm-Level MASEM Results[a]

Predictors	Diversification	Internationalization	Leverage	Performance
Business group affiliation	0.06* (4.70)	−0.09* (−7.73)	0.05* (3.72)	−0.01 (−1.06)
Firm size	0.13* (10.55)	0.31* (26.35)	0.05* (4.46)	
Firm age	−0.14* (−12.08)	0.03* (2.81)	0.04* (2.94)	
Risk				−0.12* (−10.62)
R&D				0.06* (4.87)
Diversification				−0.05* (−3.84)
Internationalization				0.01* (0.53)
Leverage				−0.12* (−9.98)
Harmonic mean *N*	7,065			
χ^2	760.09			
GFI	0.98			
RMSR	0.098			

[a] Values in parentheses are *t*'s.
* $p < .05$

These results confirm Hypothesis 4a: business group scale has a significant, positive effect on business group performance (.07). Table 7 shows the group-level MASEM results. This model fits the data well ($\chi^2 = 172.10$; RMSR = .02; GFI = .99), and all remaining conditions for mediation are met (Baron & Kenny, 1986). First, business group scale has a substantial and significant positive effect on business group scope ($\beta = .47$). Second, business group scope has a significant, unique effect on business group performance ($\beta = -.13$). Third, the positive effect of business group scale on business group performance increases when business group scope is added to the model (to $\beta = .09$). Formal tests (MacKinnon & Dwyer, 1993) confirm the mediating role of the business group scope variable (Sobel test: $z = 15.26$; $p < .01$; Aroian test: $z = 15.26$; $p < .01$; Goodman test: $z = 15.27$; $p < .01$), thereby supporting Hypothesis 4b.

DISCUSSION

Scholars have alternatively portrayed business groups as heroes, paragons, and avatars, or as villains, parasites, and anachronisms (Claessens et al., 2000a; Granovetter, 2005; Khanna & Yafeh, 2007). Our results show that such categorical classifications are unwarranted and that the character of business groups is considerably more complex. Specifically, our study offers four substantive contributions to the business group literature, each of which adds nuances to the dichotomous categorical schema through which scholars and policy makers have tended to approach business groups.

First, we conducted a meta-analysis synthesizing all evidence on the effect of affiliation on performance (Geyskens et al., 2009). Whereas this effect is negative and significant, its magnitude (–.02) offers no grounds for discarding business groups as

TABLE 6
Group-Level Meta-analytic Correlations[a]

Variable	1	2	3	4	5	6
1. Business group scale		23,436 (22)	27,124 (3)	42,817 (18)	23,064 (23)	73,326 (71)
2. Business group scope	0.47* (0.05)		31,206 (7)	33,029 (16)	5,672 (24)	38,495 (77)
3. R&D	0.25* (0.06)	0.04* (0.04)		52,200 (6)	3,086 (1)	37,627 (7)
4. Leverage	−0.07* (0.02)	0.01* (0.02)	−0.03* (0.01)		12,366 (9)	62,646 (29)
5. Risk	−0.12* (0.02)	−0.04* (0.01)	−0.04	0.25* (0.04)		38,266 (44)
6. Performance	0.07* (0.02)	−0.08* (0.03)	0.05* (0.02)	−0.19* (0.03)	−0.26* (0.03)	

[a] Cells below the diagonal contain mean correlations ($mean_\rho$) and standard deviations ($s.d._\rho$). Cells above the diagonal contain the total number of observations (*N*) and number of samples (*k*). Bold font indicates a significant *Q*-test, suggesting the presence of moderator variables.
* $p < .05$

TABLE 7
Group-Level MASEM Results[a]

Predictors	Business Group Scope	Performance
Business group scale	0.47* (68.08)	0.09* (10.53)
Business group scope		−0.13* (−15.62)
Leverage		−0.13* (−16.45)
R&D		0.02* (2.58)
Risk		−0.22* (−28.79)
Harmonic mean N	16,353	
χ^2	172.10 (0.00)	
GFI	0.99	
RMSR	0.02	

[a] Values in parentheses are t's.
* $p < .05$

a dysfunctional organizational form. Rather, our research synthesis shows that the performance implications of affiliation are very heterogeneous and must be qualified by the moderating effects of institutional contingencies and the mediating effects of strategic actions taken by group- and affiliate-level managers.

Second, we unpacked the notion of institutional voids (Khanna & Palepu, 1997, 2000b) by exploring the moderating effects of a broad set of theoretically derived institutional variables on the focal relationship. We revealed that affiliates perform relatively well in contexts characterized by "soft" voids in labor and financial market institutions, but also that business groups add no value in contexts lacking "hard" infrastructure and actually impair affiliate performance in settings with underdeveloped legal institutions. Scholars and policy makers therefore need to avoid labeling national contexts with such terms as "developed," "emerging," and "developing," and instead place greater emphasis on the varied effects of different types of institutions.

Third, we identified differences in the revealed strategic choices of business group affiliates (relative to nonaffiliates) and assessed the performance implications of these choices. We found that affiliates tend to be more leveraged, diversified, and locally oriented than their stand-alone counterparts, which explains much of the performance discount they incur. These results both reveal previously unidentified strategic mediators (e.g., financing and product-market strategies) and point to the underexplored effect of managerial processes on affiliate performance.

Fourth, we advanced prevailing theoretical accounts of the drivers of group-level performance (e.g., Chang & Hong, 2002; Luo & Chung, 2005; Mahmood & Mitchell, 2004). Whereas current theorizing often conflates various processes associated with business group size, we disentangle these into positive scale and negative scope effects. Owing to such factors as size-related cost savings and increased market and political power, greater scale improves business group performance. However, greater scale also tends to broaden the operational scope of these groups, which increases bureaucratic and control costs and negatively impacts their performance. Scope is therefore best seen as a mediator suppressing the otherwise positive effect of scale on group-level performance.

Complexity and Nuance in the Affiliation-Performance Relationship

Our analyses reveal a small but significant negative relationship between affiliation and performance (see Hypotheses 1a and 1b). This finding suggests that on average the costs of business group affiliation, such as the agency problems described by Morck and Yeung (2003) and the "insurance premiums" discussed by Lincoln et al. (1996), slightly outweigh benefits such as access to internal capital markets and dispute resolution mechanisms (Chang & Hong, 2000; Khanna & Palepu, 1997). However, more striking than this modest negative relationship is the heterogeneity of the focal effect, as illustrated by the considerable differences found in the direction and strength of the performance-affiliation relationship across national contexts (see Table 2).

Thus, our findings indicate that business groups are highly variegated, complex phenomena, implying that nuanced methodologies and theories are necessary to bring their core attributes to light. In terms of methodologies, we advocate research designs adopting middle-range perspectives (Merton, 1968), centering on conceptual frameworks that permit a more generic research approach than descriptive case studies of individual groups and their affiliates, but also permit more specific analysis than universalistic approaches that treat all cases as essentially similar. For instance, future research may be usefully directed toward in-depth comparative studies explaining cross-national performance differentials (see Table 2). We expect that these differences can only partly be traced to variation in institutional development and that cross-country differences in the behavior of managerial actors will also prove to be an important driver of business group performance.

The theoretical frameworks used to understand business group behavior will likewise have to evolve and become more nuanced. To date, most

business group studies have employed monotheoretical lenses such as agency theory (Morck & Yeung, 2003), transaction cost theory (Luo & Chung, 2005), exchange theory (Keister, 2001), and the resource-base view (Guillén, 2000). Whereas each of these theories offers a useful perspective on business group behavior and performance, none of them in isolation suffices to explain this complex and variegated organizational form. Therefore, we see a need for future studies offering concurrent tests of multiple theories, as well as studies developing and testing eclectic explanatory frameworks combining variables from multiple-source theories.

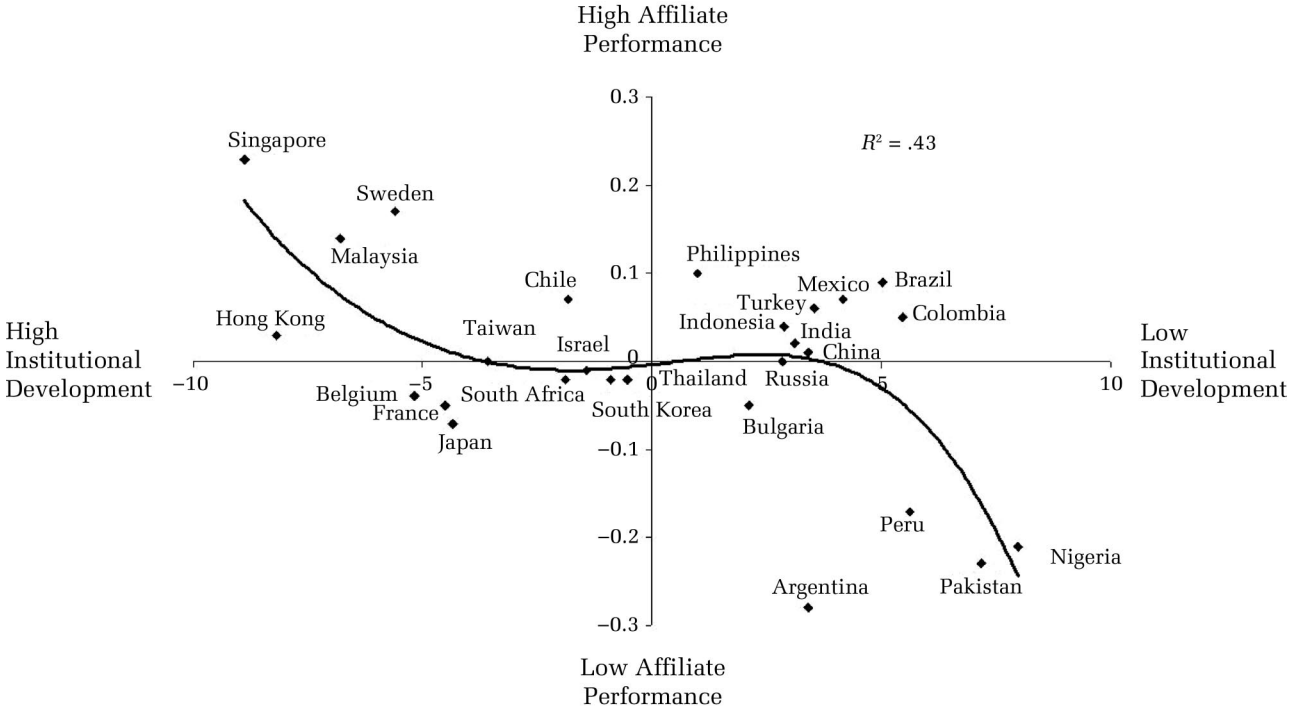
Local Institutions and the Institutional Voids Thesis

Our meta-analytic approach allowed us to consider a more heterogeneous set of 28 jurisdictions than any previous study (e.g., Khanna & Rivkin, 2001) in assessing the moderating effects of institutions on the focal relationship. In addition to data obtained from earlier studies, we also collected data for ten institutional variables pertaining to financial infrastructure as well as legal and labor market institutions. We thus considered a broader range of institution-level variables than previous studies and explored their effects over a more inclusive set of national contexts. This allowed us to unpack the notion of institutional voids, which has emerged as an umbrella term for a nation's stage of development (cf. Khanna & Palepu, 1997, 2000b), and our findings indicate that although some institutional factors moderate the focal relationship in the conventionally theorized direction, others do not.

As suggested by the institutional voids thesis, we found that firms benefited from affiliation in contexts characterized by weak financial and labor market infrastructure (Hypotheses 2a, 2b, and 2c). Yet, even though the view that affiliation benefits firms in contexts with weak legal safeguards is widely held (cf. Almeida & Wolfenzon, 2006), little evidence for this position emerged. Although our results support the institutional voids thesis in general, they also suggest the need for researchers and practitioners to make finer-grained distinctions between specific types of institutional voids and their consequences for firms and economies.

Our findings indicate that researchers should exercise caution in drawing broad conclusions regarding institutional development and affiliate performance. Figure 1, which combines insights from our jurisdiction-level HOMA and MARA analyses (Tables 2 and 3), testifies to the need for further middle-range theorizing. We computed its horizontal axis by transforming the scores of a given country on all statistically significant variables capturing institutional voids (Table 3) to *z*-scores and

FIGURE 1
Relationship between Institutional Voids and Affiliate Performance



then adding and averaging them, so that we obtained a scaled measure of institutional development ranging from near-perfect development (left) to very low development (right). The vertical axis shows the country-specific mean effect sizes we retrieved (Table 2), ranging from substantial affiliate "underperformance" (bottom) to "outperformance" (top). The figure also portrays a best-fitting line, showing the general tendencies flowing from the empirical observations, obtained by regressing country-specific mean effect sizes on the first-, second-, third-, and fourth-power terms of these countries' institutional development scores. It shows that the institutional voids thesis as it is conventionally stated is only applicable to the nations in the right-upper quadrant (e.g., Brazil, Mexico, and Turkey), where group membership compensates for missing institutions, and the left-lower quadrant (e.g., Belgium, France, and Japan), where affiliates suffer from the conglomerate performance discount that is commonly observed in developed nations (Khanna & Palepu, 1997). However, the nations in the remaining two quadrants present some enigmatic questions for institutional voids theorists. Why do business group members do so well relative to unaffiliated firms in contexts with generally well-functioning institutions, such as Malaysia, Singapore, and Sweden? And why do they do so unexpectedly poorly in contexts with severe voids, such as Nigeria, Pakistan, and Peru? Additional studies are needed to explore why extant institutional voids theory explains these outliers so poorly and to reveal which institutional variables are responsible for their counter-theorized positioning.

Strategic Choices and Affiliate Performance

Given the mixed and contingent findings of empirical research on the affiliation-performance link (cf. Khanna & Rivkin, 2001), summarized in our competing hypotheses, 1a and 1b, it is surprising that little prior research has examined the influence on this relationship of affiliate-level strategic processes. As noted above, only a few studies have explored how affiliation affects the strategic choices that firms make (e.g., Kim et al., 2004), and no prior work has explicitly evaluated the extent to which such choices mediate the focal relationship. On this point, our findings indicate that greater financial leverage and more diversified product-market strategies are pathways associated with lower performance among business group affiliates. As both high levels of leverage and diversification suggest pyramiding and tunneling behavior (cf. Mitton, 2002; Morck & Yeung, 2003), which results in the inefficient allocation of resources (Scharfstein & Stein, 2000), our findings are supportive of agency-theoretic perspectives on business groups, at least for affiliates that are on the high end of the leverage and diversification distributions. On the other hand, the application of other theoretical perspectives, such as the resource-based view (cf. Guillén, 2000) and the institutional voids thesis (cf. Khanna & Palepu, 2000b), may be necessary to explain affiliation-strategy-performance dynamics among affiliates with moderate to low leverage and diversification levels.

More generally, our findings suggest that affiliate-level strategic choice plays an important role in the affiliation-performance link. However, given the scarcity of strategy variables in the body of primary empirical business group studies, we have been unable to evaluate a more comprehensive set of potential strategy mediators. We view this gap in the body of empirical research as an area of great opportunity for business group scholars. Our leverage and diversification findings provide evidence that certain strategic choices represent pathways through which business group affiliation can harm firm performance. On the other hand, given the evidence that many firms benefit from business group affiliation, there should also be other strategic choice pathways which lead to improved performance levels. Accordingly, we call for future research directed toward identifying those specific types of strategies and competence-building activities associated with superior performance among business group affiliates and reason that frameworks and hypotheses drawn from multiple theoretical perspectives represent a logical point of departure for such inquiries.

Group-Level Size Effects: Scale and Scope Both Matter (Differently)

Our results on the effects of business group size on group-level performance highlight a salient distinction between the related effects of group scale (Hypothesis 4a) and group scope (Hypothesis 4b). In this regard, we find that scope mediates the relationship between group scale and performance. More specifically, we find that although the direct effect of scale is strongly positive, scale also tends to increase the operational scope of business groups and that such scope actually counteracts some of the performance-enhancing benefits of scale.

In terms of their relevance to alternative theoretical accounts of the size-performance relationship, these findings support the view that size affords performance-enhancing benefits related to economies of scale in central management functions (e.g., Amsden & Hikino, 1994), reputation benefits (e.g.

Morck et al., 2005), and the accumulation of market and political power (e.g., Claessens et al., 2000a; Khanna & Yafeh, 2007). On the other hand, we find no benefits associated with scope, such as those Khanna and Palepu (1997), Chang and Hong (2000), and others have suggested. On the contrary, our results support the findings of Hoskisson et al. (2005), who highlighted the bureaucratic and other costs of managing widely diversified business groups. Thus, although some researchers (e.g., Khanna & Palepu, 1997) have argued that greater scope benefits business groups, as it allows them to fill institutional voids in emerging economies, our findings indicate that the capacity to fill such voids through increased scope is not without concomitant costs (cf. Hoskisson et al., 2005). Viewed in this light, the evident scope of many business groups is better described as a cost of doing business in their institutional contexts, rather than as a source of competitive advantage in its own right.

More generally, our findings concerning the contrasting effects of scale and scope suggest that the relationship between group size and performance is complex. That is, rather than being singular in nature, size consists of multiple contrasting effects. Like other findings reported earlier, these results point to the need for researchers, practitioners and policy makers to adopt theories and methodologies that allow them to make sufficiently fine-grained distinctions to capture the complex associations that underlie business group performance characteristics. In this respect, our findings highlight the need for business group researchers to distinguish between the effects of scale and scope both conceptually and empirically. Future research exploring how business group executives manage the complex trade-offs between scale benefits and scope costs and the effects such choices have on their group's competence building and developmental trajectories can yield important new insights regarding the performance characteristics of this important organizational form.

Limitations

The various meta-analytical techniques we employed allowed us to address several previously untested research questions, yet our study also has two limitations that can only be remedied by means of future primary business group studies. A first limitation is that although we were able to identify mediating roles for variables such as diversification and leverage at both the affiliate and group levels of analysis, data limitations prevented us from exploring any cross-level interactions involving these variables. Future primary studies are needed to, for example, test whether group-level diversification leads to more focus among affiliates because they intentionally avoid competition among themselves (Gerlach, 1992), or to more affiliate-level diversification, because they engage in pyramiding and tunneling behavior (Morck & Yeung, 2003).

A second limitation of our study design is that meta-analyses do not allow for modeling the influence of time, except in a crude way, as a moderator of the focal effect (Coombs et al., 2010), as we did in our MARA analyses. Additional primary longitudinal studies are therefore needed to capture more nuanced time-dependent performance effects of business group affiliation. For instance, several authors have suggested the hypothesis that the benefits of affiliation decrease over time, as the gradual filling of institutional voids by business groups creates positive externalities that erode the originating benefits of affiliation (Carney, Shapiro, & Tang, 2009).

Conclusion

Business groups come in many shapes and sizes, and their heterogeneity across time and place defies any simple explanation. So what should one conclude? On the evidence assembled in this study, we conclude that highly polarized characterizations of business groups as either heroic paragons or villainous robber barons are unwarranted and unproductive. Historical accounts tell us that their emergence and early establishment often occurred under very difficult institutional conditions and that they played a pivotal role in the early stages of many countries' and regions' economic development (Carney & Gedajlovic, 2002; Gerlach, 1992; Keister, 1998). These descriptions indicate that business groups are complex social and economic phenomena serving diverse purposes (Cuervo-Cazurra, 2006; Yiu et al., 2007). As a result, they are likely to have multiple, conflicting, and complementary effects on their host societies and the firms that affiliate with them. Scholars should, then, eschew monotheoretical accounts characterizing a business group in singular terms, as an internal capital market, an extraction device for wealthy families, or a generalized response to chronic institutional failure, for example, since these characterizations likely divert attention away from the evident structural and strategic complexity of business groups and the kinds of performance they can attain. More productive, in our view, is research that employs insights from multiple theoretical streams and is attuned theoretically and methodologically to the complex tensions embodied in business groups. Thus, the development of

appropriately nuanced theories and methodologies is both the challenge and opportunity for future research on this important and multifaceted organizational form.

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APPENDIX A
Studies Included in the Meta-analysis

Author	Year	Publication
Aburime	2008	Working paper, Faculty of Business Administration, University of Nigeria
Ananchotikul	2006	Working paper, Department of Economics, University of California, Berkeley
Ang & Constand	2002	*Journal of Multinational Financial Management*
Bae & Jeong	2007	*Journal of Business Finance & Accounting*
Baek, Kang, & Park	2001	Working paper, Department of Business, Pyong Taek University
Basu, Hwang, Mitsudome, & Weintrop	2007	*Pacific Basin Finance Journal*
Belenzon & Berkovitz	2008	Working paper, Fuqua School of Business, Duke University
Bertrand, Mehta, & Mullainathan	2002	*Quarterly Journal of Economics*
Beuselinck & Deloof	2006	Working paper, Department of Accountancy, Tilburg University
Black, Jang, & Kim	2006	*Journal of Corporate Finance*
Black & Khanna	2007	*Journal of Empirical Legal Studies*
Boubaker	2007	*Multinational Finance Journal*
Buysschaert, Deloof, Jegers, & Rommens	2008	*Corporate Governance: An International Review*
Carney, Shapiro, & Tang	2009	*Management and Organization Review*
Chang, Cho, & Sin	2007	*Corporate Governance: An International Review*
Chang & Shin	2006	*Corporate Governance: An International Review*
Chang	2003	*Academy of Management Journal*
Chang & Hong	2000	*Academy of Management Journal*
Chang, Chung, & Mahmood	2006	*Organization Science*
Cheng & Firth	2005	*Corporate Governance: An International Review*
Cheng & Firth	2006	*Managerial and Decision Economics*
Choe & Roehl	2007	*Long Range Planning*
Choi, Park, & Yoo	2005	Working paper, Fox School of Business, Temple University
Choi & Yoo	2005	Working paper, Fox School of Business, Temple University
Chu	2004	*Small Business Economics*
Chung	2008	Working paper, Department Management & Organization, National University of Singapore
Chung & Luo	2008	*Organization Science*
Chung & Luo	2008	*Organization Science*
Chung	2006	*Asia Pacific Journal of Management*
Chung, Ho, & Kim	2004	*Journal of International Accounting, Auditing and Taxation*
Claessens, Djankov, Fan, & Lang	1999	Working paper, Department of Finance, Hong Kong University of Science & Technology
Claessens, Fan, & Lang	2006	*European Management Review*
Collin	2002	Working paper, Department of Business Studies, Kristianstad University College
Colpan	2006	*Asian Business and Management*
David, Hitt, & Liang	2003	Working paper, Lee Kong Chian School of Business
Dewaelheyns & Van Hulle	2009	*European Financial Management*
Douthett & Jung	2001	*Journal of International Financial Management and Accounting*
Douthett, Jung, & Kwak	2004	*Review of Quantitative Science and Accounting*
Dow & McGuire	2004	Working paper, Département Stratégie des Affaires, Université du Québec à Montréal
Dow & McGuire	2007	Working paper, Département Stratégie des Affaires, Université du Québec à Montréal
Elango & Chinmay	2007	*Journal of International Business Studies*
Estrin, Poukliakova, & Shapiro	2009	*Journal of Management Studies*
Faccio & Sengupta	2006	Working paper, Research Division, Federal Reserve Bank of St. Louis
Ferris, Kim, & Kitsabunnarat	2003	*Journal of Banking & Finance*
Ferris, Kumar, & Sarin	1995	*Pacific-Basin Finance Journal*
Filatotchev, Lien, & Piesse	2005	*Asia Pacific Journal of Management*
Firth, Tam, & Tang	1999	*Omega*
Fisman & Khanna	2004	*World Development*
Flath	1994	*Contemporary Economic Policy*
Gadhoum	2002	Working paper, Département Stratégies des Affaires, University of Quebec, Montreal
Gadhoum, Gueyié, & Zoubeidi	2007	*Corporate Governance*
Gaur & Kumar	2008	*British Journal of Management*
George & Kabir	2008	*Journal of Business Research*
George, Kabir, & Qian	2005	Working paper, Center of Economic Research and Department of Finance, Tilburg University
George	2007	*South Asian Journal of Management*
Ghosh	2006	*Emerging Markets, Finance and Trade*
Ginglinger & Hamon	2007	Working paper, University Paris Dauphine
Gohar	2008	Working paper, NUST Business School, National University of Sciences and Technology, Islamabad

APPENDIX A
(Continued)

Author	Year	Publication
Gonenc & Aybar	2006	*Corporate Governance: An International Review*
Gonenc, Kan, & Karadagli	2007	*Emerging Markets, Finance and Trade*
Gormley, Johnson & Rhee	2008	Working paper, Olin School of Business, Washington University in St. Louis
Gramlich, Limpaphayom, & Rhee	2004	*Journal of Accounting and Economics*
Guillén	2000	*Academy of Management Journal*
Guillén	2002	*Academy of Management Journal*
Guillén	2003	*Journal of International Business Studies*
Gutierrez & Pombo	2007	Working paper, Department of Economics, Universidad del Rosario
Habib	2006	*Review of Accounting and Finance*
Hoskisson, Cannella, Tihanyi, & Faraci	2004	*Strategic Management Journal*
Hundley & Jacobson	1998	*Strategic Management Journal*
Isobe, Makino, & Goerzen	2006	*Asia Pacific Journal of Management*
Jung, Kim, & Kim	2007	Working paper, Korea Advanced Institute of Science and Technology
Kakani	2001	Working paper, XLRI Jamshedpur
Kato, Kim, & Lee	2007	*Pacific-Basin Finance Journal*
Keister	1998	*American Journal of Sociology*
Khanna & Palepu	2000	*Academy of Management Journal*
Khanna & Rivkin	2001	*Strategic Management Journal*
Khanna & Rivkin	2006	*Organization Science*
Kim & Chizema	2008	Paper presented at the annual conference of the SASE, Paris
Kim, Jung, & Kim	2005	*Review of Quantitative Finance and Accounting*
Kim, Heshmati, & Aoun	2006	*Asian Economic Journal*
Kim & Kim	2008a	Paper presented at the annual meeting of the Academy of Management, Anaheim
Kim & Kim	2008b	Paper presented at the annual meeting of the Academy of Management, Anaheim
Kim, Kim, & Lee	2008	*Organization Science*
Kim & Yi	2006	*Contemporary Accounting Research*
Kim, Lim, & Sung	2007	*Pacific-Basin Finance Journal*
Kim, Lyn, Park, & Zychowicz	2005	*Journal of Business Finance & Accounting*
Kim	2005	*Corporate Governance: An International Review*
Kim, Park, Ratti, & Shin	2004	*Hitotsubashi Journal of Economics*
Kobeissi	2004	Working paper, Department of Management, Long Island University
Lamin	2006	Working paper, Carlson School of Management, University of Minnesota
Lee & Hahn	2007	*Strategic Management Journal*
Lee, Peng, & Lee	2008	*Journal of World Business*
Lee, Park, & Shin	2009	*Journal of Banking & Finance*
Lefort & Walker	2005	Working paper, Business School, Pontificia Universidad Catolica de Chile
Lensink, van der Molen, & Gangopadhyay	2003	*Journal of Development Studies*
Lichtenberg & Pushner	1994	*Japan and the World Economy*
Lincoln, Gerlach, & Ahmadjian	1996	*American Sociological Review*
Lu & Yao	2006	*Asia Pacific Journal of Management*
Luo & Chung	2005	*Administrative Science Quarterly*
Ma, Yao, & Xi	2006	*Asia Pacific Journal of Management*
Mahmood & Mitchell	2004	*Management Studies*
Majumdar & Sen	2006	*Public Choice*
Manos, Murinde, & Green	2007	*Journal of Economics and Business*
Marisetty & Subrahmanyam	2010	*Journal of Financial Markets*
Mitton	2002	*Journal of Financial Economics*
Morck, Nakamura, & Shivdasani	2000	*Journal of Business*
Mueller, Dietl, & Peev	2003	*Journal for Institutional Innovation Development and Transition*
Mursitama	2006	*Asia Pacific Journal of Management*
Nguyen & Nivoix	2009	*Applied Financial Economics*
Pak & Park	2004	*Management International Review*
Pallathitta	2005	Dissertation
Park & Kim	2008	*Journal of World Business*

APPENDIX A
(Continued)

Author	Year	Publication
Park, Lee, & Jang	2004	Working paper, Business School, Korea University
Peng & Jiang	2006	Working paper, School of Management, University of Texas, Dallas
Peng & Jiang	2010	*Journal of Management Studies*
Perotti & Gelfer	2001	*European Economic Review*
Piga & Vivarelli	2004	*Oxford Bulletin of Economics and Statistics*
Ramaswamy, Li, & Petitt	2004	*Asia Pacific Journal of Management*
Rommens, Cuyvers, & Deloof	2007	Working paper, Department of Accounting and Finance, University of Antwerp
Sambharya & Banerji	2006	*Management International Review*
Selarka	2005	*Emerging Markets, Finance and Trade*
Shumilov & Volchkova	2004	Working paper, Center for Economic and Financial Research, New Economic School, Moscow
Silva, Majluf, & Paredes	2006	*Journal of Business Research*
Singh	2009	*International Business Review*
Singh & Gaur	2009	*Corporate Governance: An International Review*
Singh, Nejadmalayeri, & Mathur	2007	*Journal of Business Research*
Sirmon, Arregle, Hitt, & Webb	2008	*Entrepreneurship Theory & Practice Journal*
Suetorsak	2007	*Journal of Economics and Finance*
Tabeta & Rahman	1999	*Asia Pacific Journal of Management*
Unite, Sullivan, Brookman, Majadillas, & Taningco	2008	*Pacific-Basin Journal of Finance*
van der Molen & Lensink	2004	Working paper, Department of Finance, University of Groningen
Volchkova	2001	Working paper, Center for Economic and Financial Research, New Economic School, Moscow
Weinstein & Yafeh	1995	*Journal of Industrial Economics*
White, Hoskisson, Yiu, & Bruton	2008	*Management and Organization Review*
Xu	2008	Working paper, Department of Management & Organization, National University of Singapore
Yamak & Üsdiken	2006	*British Journal of Management*
Yiu, Bruton, & Lu	2005	*Journal of Management Studies*
Yoo	2008	Working paper, San Diego State University
Yoshikawa & Colpan	2008	Working paper, DeGroote School of Business, McMaster University
Yoshikawa & Gedajlovic	2002	*Asia Pacific Journal of Management*
Yu, Lensink, & Van Ees	2007	Working paper, Department of Finance, University of Groningen

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